



Bank of Israel

INFLATION REPORT

October-December 2009

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Bank of Israel

1 February 2010

Letter of the Governor accompanying the Inflation Report for October–December 2009

This Inflation Report, covering the fourth quarter of 2009, is submitted to the government, the Knesset and the public as part of the process of assessing the inflation rate in relation to the inflation target set by the government. The Report was prepared in the Senior Monetary Forum of the Bank of Israel, headed by the Governor, the forum in which the Governor makes decisions on the interest rate.*

The CPI rose by 0.5 percent in the last quarter of 2009, reflecting in particular the increase in world energy prices. Prices increased by a total of 3.9 percent in 2009, with relatively rapid increases in April–August due mainly to government policy decisions—the increase in VAT and the temporary increase in water prices; excluding this effect, the CPI rose by 2.8 percent in 2009. The upward trend in the housing price index evident since the summer of 2008 moderated in 2009:Q4, with a rise of 0.3 percent, compared with 2.3 percent in the third quarter. These developments support the assessment that the upward trend in housing prices is slowing.

Developments in the fourth quarter of 2009 reinforce the assessment that there was a sharp turnaround in Israel's economic and financial environment in the second half of the year. This was clearly reflected in the capital market: since the beginning of the recovery in financial asset prices, in March 2009, share and bond price indices have climbed steeply, and in the last quarter of 2009 returned to their record pre-crisis levels. Indeed it seems that the real recovery is quite strong. GDP in 2009:Q4 is expected to show an increase of more than 4 percent over its level in Q3. This indicates that the growth of real activity—first signs of which could be seen in the second quarter of 2009 after sharp drops in activity in the last quarter of 2008 and the first quarter of 2009—is becoming more firmly established. According to initial assessments of the Central Bureau of Statistics, GDP increased by 0.5 percent in 2009, a good performance relative to the assessments at the beginning of 2009 predicting a decline of 1.5 percent. The unemployment rate declined slightly in 2009:Q4, breaking the upward trend recorded since July 2008. Thus, the improvement in economic activity is expressed also in the labor market, supporting the assessment that growth is more firmly based.

These developments led to a marked upward revision of the growth forecasts for 2010, and the current forecast of the Bank of Israel is of 3.5 percent growth, and those of some other forecasters are even higher. The sharp change in the economic environment caused a significant reduction in the budget deficit, and the total deficit in 2009, excluding credit, came to 5.2 percent of GDP, almost one percentage point lower than the ceiling specified in the law, which was set in light of the earlier assessments that negative growth would lead to a marked decline in tax revenues.

Economic activity around the world started expanding in the third quarter of 2009 as a result of macroeconomic intervention measures taken in many countries. Growth, however, was accompanied by a very high degree of uncertainty regarding its strength and likely duration. In the fourth quarter macroeconomic data were published that indicated a substantial improvement in production and growth, and even some improvement in the labor markets

* This report incorporates the report on the rise in the money supply, in accordance with section 35 of the Bank of Israel Law, 5714–1954: in each month from October to December 2009 (inclusive) the money supply exceeded that in the preceding twelve months by more than 15 percent. The change in the money supply is discussed in section 1d.

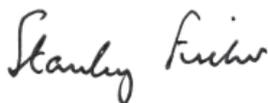
and the start of a process of replenishing stocks. Against this background many economies' growth forecasts were revised upwards. Some of the global growth, however, was based on significant fiscal expansion, accompanied by considerable increases in public debt. As a result, there was greater concern over the solvency of some countries, which in turn led to the lowering of their credit ratings and their rating outlooks.

The announcements accompanying the Fed and the ECB interest rate decisions towards the end of the quarter under review spoke of the exit strategy from the unconventional monetary expansion measures introduced during the crisis. In contrast, in the UK the decision was taken to increase further its bond purchase program. In Australia and Norway, which were affected relatively slightly by the crisis, the central banks increased the rate of interest. Despite the economic recovery and continued rising inflation expectations, the major central banks still expect inflation to remain moderate, in light of the large negative output gaps in those economies. In some economies, with Japan at the top of the list, there is even concern regarding deflation. Against this, increases in food and energy prices raise the spectre of increased inflation, mainly in the emerging market economies.

Israel's monetary policy adapted to the rapid changes in economic activity and in the inflation environment. When the crisis became more severe, in 2008:Q4 and 2009:Q1, the Bank of Israel adopted a very expansionary monetary policy, which it continued in the second quarter of 2009. In 2009:Q3 the Bank began gradually to rein in the degree of monetary expansion, and in the fourth quarter, when growth in Israel became more firmly ensconced, the Bank boosted the rate of its cutback in monetary expansion, and increased the interest rate by 25 basis points for December and January. At the end of the quarter under review the interest rate was 1.25 percent, and the Bank does not intervene in the foreign currency market on a regular basis, but only when changes in the exchange rate are out of line with the basic economic conditions.

The assessment in the Bank of Israel is that in the first quarter of 2010 prices in Israel will increase at a rate consistent with the achievement of the inflation target, and that the upside and downside risks of deviation are balanced. For the next few months, inflation viewed over the previous twelve months will remain above the upper limit of the target range. This assessment is based on (1) the expected expansion in economic activity, which boosts demand, and increases in world commodity prices, which pushes up prices of factors of production and which are passed on to consumers, and (2) on the contractionary effect of the increases totaling 75 basis points in the Bank of Israel's interest rate, on the relatively slow pace of the global recovery, and the half-a-percentage point reduction in the rate of VAT on 1 January 2010, which will have some downward effect on the CPI in the first months of the year. The Bank's inflation assessment is consistent with the inflation expectations derived from the capital market and those of professional forecasters—both of which reflect expectations that inflation will be in the upper part of the price stability target range.

The Bank of Israel will continue to implement an expansionary monetary policy that seeks to support economic growth, while bringing inflation in 2010 back to the midpoint of the target price stability range. It will do this by means of a gradual return of the interest rate to a "normal" level; the path of the return will be determined in accordance with the inflation environment, the firmness of growth, both global and in Israel, and the pace at which the major central banks increase their interest rates, and will take into account developments in the exchange rate of the shekel. The current conditions, with the risks balanced but with much uncertainty still prevailing, make forecasting developments difficult; in any event, decisions on the interest rate and on intervention in the foreign currency market will be taken on the basis of the latest ongoing assessments of real and financial developments.



Stanley Fischer
Governor, Bank of Israel

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Summary*

- **Inflation:** The CPI rose by a cumulative 0.5 percent in the fourth quarter of 2009 (the period reviewed in this Report). Inflation in that quarter reflected mainly the rise in energy prices, a seasonal rise in clothing and footwear prices, and a rise in housing prices (although these dropped in December). In the last twelve months the CPI rose by 3.9 percent, higher than the target inflation range, but reflecting, in addition to the factors mentioned above, also the temporary price increases—mainly in the third quarter—that resulted from government intervention and that contributed 1.1 percentage points to the rise in the CPI. Excluding the effect of that intervention, the CPI rose by 2.8 percent in the last twelve months. Inflation expectations for a year ahead and beyond remained around the 2.5 percent level.
- **The global economic environment:** Following a deep global recession, that reached a peak at the end of 2008 and continued in the first half of 2009, growth around the world became positive as a result of unconventional macroeconomic intervention measures—monetary, fiscal and financial. Despite the improvement in the global economic situation, the annual rate of growth remains moderate, and is below the rate of growth that usually characterizes exits from recessions. Although the process of recovery from the crisis has started, it is surrounded by certain prominent uncertainty factors: continued fiscal expansion, slack in the labor market, the fragile situation of many banks, and continued macroeconomic support for activity on the one hand, and policymakers' announcements of their intention to end such support on the other. Central banks are continuing with their expansionary monetary policies, and the exceptionally low level of their interest rates is expected to continue until the middle of 2010. Inflation world wide is low, as are inflation expectations, due to the large negative output gap (actual minus potential output).
- **Real activity in Israel:** the recovery in real activity strengthened in the third quarter, and unemployment fell slightly. Much of the growth can be ascribed to private consumption and increased exports, against the background of the expansion in world trade. The increase in demand served to hold back the expansion of the output gap, thus dampening its moderating effect on prices. Initial indications regarding the last quarter of 2009 suggest that activity continued to expand, and the Central Bureau of statistics estimates growth in the second half of 2009 at 2.9 percent, and in the whole of 2009, at 0.5 percent. It seems that in the fourth quarter the process of recovery from the recession gained strength, and that the exit was taking place faster than had been expected.
- **The financial markets:** Prices of financial assets in Israel continued to increase in 2009:Q4, in line with their performance around the world and particularly in the emerging market economies, against the background of expectations that real activity would continue to expand and the low level of the Bank of Israel interest rate. Nonbank credit also continued increasing in the last quarter, while bank credit, in particular to the business sector, contracted.
- **The exchange rate:** In the fourth quarter the trend of appreciation shown by the index of the effective nominal exchange rate shekel halted, and there was actually some depreciation for a short time. This occurred despite the surplus in the current account of the balance of payments and the differential between interest rates in Israel and abroad. The Bank intervened in the foreign currency market only in instances of exceptional strengthening of the shekel exchange rate that did not reflect substantial changes in economic conditions, or when the foreign currency market did not function properly, or when there was evidence of a market failure. In October the Bank of Israel's purchases of foreign currency totaled \$1,274 million, in November it did not intervene in the market, and in December it bought \$132 million.

* The monetary regime within which the Bank of Israel operates is aimed at achieving price stability, defined as an inflation rate of between 1 percent and 3 percent a year. (For details see Box 1 on page 11 in the Bank of Israel Inflation Report No. 17, July–December 2005.)

- Monetary policy: Monetary policy in the quarter under review expressed the continuation of the move from a very expansionary policy to a slightly less expansionary one, with the Bank of Israel interest rate undergoing adjustments along a gradually rising path towards the level required in the new economic environment. The increase in the interest rate from 0.5 percent in August 2009 to 1.25 percent in January 2010 was made possible as a result of the easing of the risks that the recession would persist, and some increase in inflationary pressures. This, in light of the accumulation of several indicators that showed a significant and ongoing recovery—expectations of continued growth in Israel and globally, albeit with uncertainty about its strength and duration, and an increase in actual inflation to the upper part of the inflation target range, even after excluding the effect of the government intervention. Expected inflation also increased, accompanied by expectations of an increase in the rate of interest. The Bank of Israel kept the interest rate unchanged for February 2010.
- Forecast: The Bank of Israel forecast is that growth in Israel in 2010 will be 3.5 percent, the rate of unemployment will decline to 7.1 percent on average, and the negative output gap will start narrowing. The annual rate of inflation is expected to moderate in 2010, returning to the target range in the middle of the year, and reaching 2.5 percent a year hence—this, alongside a gradual process of increases in the interest rate. The moderation of inflation will continue due to the negative output gap created as a result of the effect of the global crisis on economic activity in Israel and the effective appreciation of the NIS in the last few weeks.

1. THE BACKGROUND AND INFLATION

In its management of monetary policy, the Bank of Israel monitors developments in the global environment and real financial activity in the domestic economy. By keeping abreast of developments in their totality, the Bank can continually examine the response of the markets and its implications for expected inflation, and, in response, set interest at the level that will best attain the price-stability target for the upcoming period while encouraging employment growth and maintaining financial stability in the markets. During the fourth quarter of 2009 (hereinafter: the review quarter), the Bank gradually adjusted the interest rate from its very low level to the level warranted by the new economic environment. The gradual pace of the rate increases reflected a balance between continued support of the real expansion, which became increasingly solid during the quarter as global activity recovered, and the maintenance of price stability. The main developments in the global economy, the exchange rate, and real and financial activity—which underlay of the Bank of Israel's interest decisions during the review quarter—are described below.

a. The global environment

(1) Real activity and financial stability abroad

After the severe global recession, global economic growth became positive due to macroeconomic intervention measures that were designed to support demand and mitigate uncertainty and risk in the financial markets. Despite the global improvement and the expansion of world trade (Figure 1), the annual growth rate remained modest (Figure 2) and sluggish relative to the rate typical of the exit from a recession. In the Asian countries, foremost China, where the financial sectors were hit less hard, the expansion was stronger (at more than 8 percent) than in the developed countries, as was the expectation that it would continue. Thanks to the real recovery, activity in financial markets around the globe improved, price levels in equities markets rose, and the flow of capital to Asia and the emerging markets increased during the year.

Despite these developments, several conspicuous real and financial factors still cloud the exit from the recession: the fiscal situation, which reflects massive government intervention and is continuing to deteriorate due to the burden of financing the fiscal

Figure 1
World Trade in Goods and Services
(quarterly rates of change, 1990:Q1
to 2009:Q3)

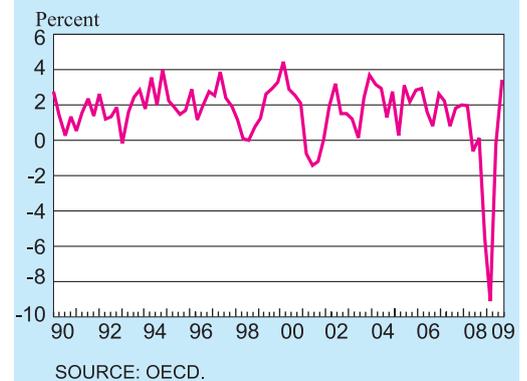


Figure 2
GDP Growth Rates in Selected
Countries, 2005:Q1 to 2009:Q3
(annual rates, seasonally adjusted)

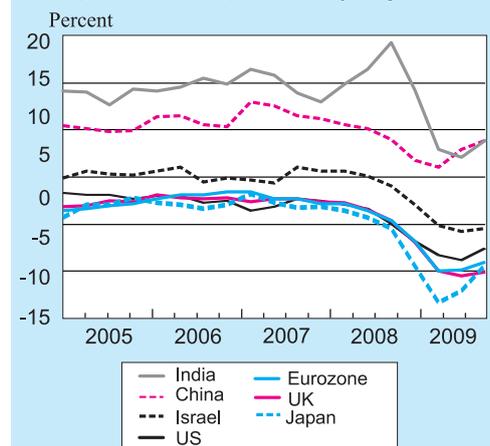
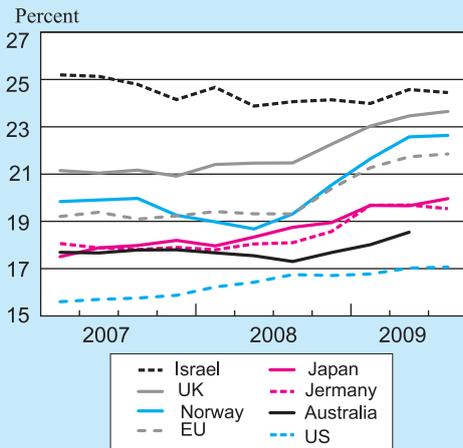
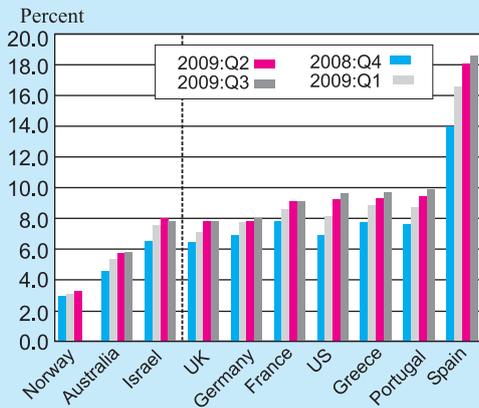


Figure 3
Public Consumption, 2007:Q1-2009:Q3 (percent of GDP)



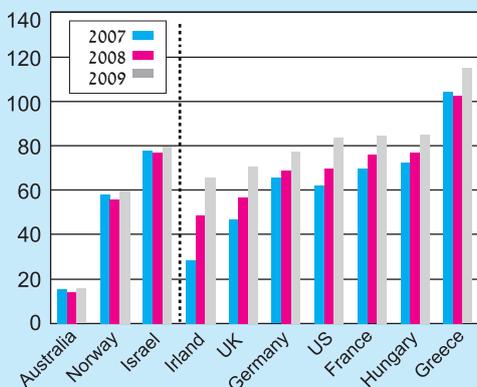
SOURCE: Bureau of Statistics of each country.

Figure 4
Unemployment Rate, Selected Countries, 2008:Q4-2009:Q3



SOURCE: OECD, Bank of Israel.

Figure 5
Debt/GDP Ratio, Selected Countries, 2007-09



SOURCE: OECD, Bank of Israel.

stimulus (government debt has attained all-time record levels);¹ slack in the labor market, which is dampening the increase in private consumption; the still-high level of leveraging among households and financial institutions, and weak ability to meet debt obligations. Against this background, many banks are in fragile condition: debt write-offs by banks and delinquencies in payback of credit continued to trend upward with no signs of abatement. The consequences of this include the contraction of credit volume to the detriment of the economic recovery, as well as continued macroeconomic support of activity in advanced economies on the one hand and policymakers' statements about their intention to downscale this assistance, on the other—all of which continue to shroud the durability of the recovery process in uncertainty. An excessively rapid and premature retreat from the macroeconomic involvement policies may allow the crisis to recur. The longer the stability of the financial markets continues and economic activity expands, the less likely it is that this will happen.

The growth rate in the United States settled at around 2.2 percent (annualized) in the third quarter. Although this rate reflects the turnaround in the inventory cycle and the housing market, it still relies heavily on massive government support resulting in an increase in the government deficit, among other things (Figure 3). The growth is also typified by an upturn in savings rates and a downturn in investment. Private consumption rose slightly due to a wealth effect that originates mainly in an upturn in equity indices leading to greater optimism, and zero interest. Although exports made a negative contribution to growth due to slack global demand, the effect of this factor on the balance of payments was offset by the contraction of imports. The employment situation improved as the net number of jobs filled increased. The negative economic conditions, however, are still weighing on the exit from the recession and the restoration of financial stability: the U.S. unemployment rate rose to 10 percent—a level not observed since the early 1980s—the budget deficit ballooned, and the public debt/GDP ratio surged (Figures 4 and 5).

In Europe, the recovery trend that began in the second quarter continued and a 0.5 percent growth rate was posted in the third quarter. This growth, however, is unstable and there are concerns that it will stop, especially due to the relations between economies that are already recovering and those still mired in crisis. Against this background and given the weakness in the real estate market,

¹ Ratings and rating outlooks of Greece, Portugal, and Spain have been lowered in a reflection of fears about their solvency.

banks' losses in the EU countries continued to increase, clouding financial stability. Germany and France have been powering the improvement in the EU economy; UK product continues to contract, albeit at a slower pace than before; and real activity in other countries—foremost Greece, Ireland, and Portugal—continues to stagnate. Consequently, the EU unemployment rate has risen, the budget deficit has grown, and the public debt/GDP ratio has widened severely (Figures 4 and 5).

(2) Global inflation

Global commodity and oil prices continue to rise during the review quarter—pursuant to the trend that began in the second quarter—due to the resumption of global growth and the upturn in optimism (Figure 6). The effects of these increases on inflation trends offset those of the counter-inflationary pressures; as a result, the core-inflation indices (those excluding food and energy prices) were no longer lower than the total index (Table 1). Against the background of the start of the recovery, the offsetting effect of the output gap on price increases became weaker than it was before the crisis began. Increases in food prices toward the end of the year also evoked inflation concerns in emerging markets. Despite all these factors, global inflation rates remain low by and large and deflation is feared in several economies, especially Japan.

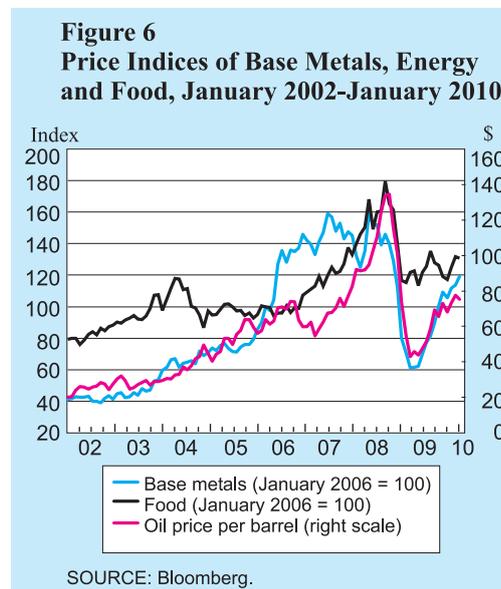


Table 1
The CPI and Selected Components in Israel and Abroad, 2008 and 2009

	Israel				US				Europe			
	2008	2009	2009: Q3*	2009: Q4*	2008	2009	2009: Q3*	2009: Q4*	2008	2009	2009: Q3*	2009: Q4*
CPI	3.8	3.9	5.1	1.9	0.1	2.7	0.5	0.0	1.6	0.9	-1.2	2.7
Energy ^a	-9.5	13.1	8.6	10.0	-21.3	18.2	-6.0	0.1	-3.7	1.8	-4.9	2.6
Food (excluding fruit and vegetables)	9.1	1.1	6.0	-2.7	5.9	-0.5	-0.9	0.7	3.5	0.7	0.3	1.0
Fruit and vegetables	-2.0	8.4	18.9	-4.4	3.4	-3.0	-7.1	8.6	2.8	-1.5	-9.8	2.4
Housing	12.1	5.6	9.6	1.4	2.4	-0.2	-1.6	-3.0	2.2	1.9	1.7	1.3
CPI excluding energy, food, and fruit and vegetables	3.6	3.4	4.0	2.4	1.8	1.8	1.6	-0.2	1.8	1.5	0.0	2.7

* In annual terms.

^a An index made up of several components of the CPI.

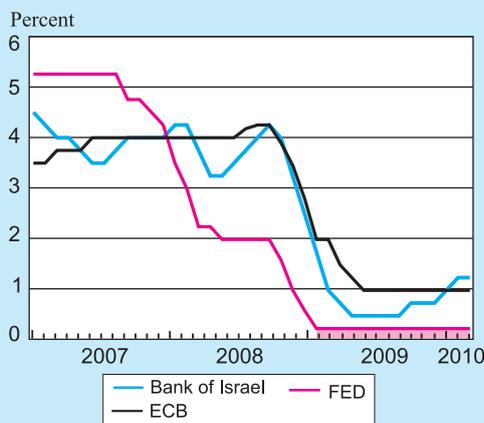
SOURCE: Based on Central Bureau of Statistics, ECB, Eurostat, and US Bureau of Labor Statistics data.

(3) Monetary policies abroad

Central banks continued to conduct expansionary monetary policies in concert with relief programs that aimed to improve market liquidity. However, central-bank governors began to speak of conditions under which they would cut back on the monetary expansion and the tools used to achieve it. In some countries, the use of unconventional tools is already being phased out. Despite the increase in commodity and oil prices due to the economic recovery, and the continued upturn in the markets' expectations of inflation and interest rates, the world's main central banks still forecast mild inflation due to the effect of the large negative output gap.

The U.S. Federal Reserve left its key rates within the 0–0.25 percentage point range (Figure 7). In the minutes attached to its interest decision for November, the Fed announced that it had no intention of continuing the massive expansion and would raise its rate once a significant improvement in the output gap and core inflation is obtained. The European Central Bank left its rate unchanged at 1 percent but announced, for the first time, its intention of gradually easing its expansionary monetary policy and discontinuing its one-year auctions—a change that it began to implement in December. The central banks of rapidly growing Brazil and Chile gave hints of their intention to raise their rates as early as the first quarter of 2010. In the UK, another increase in bond purchases was announced. In Australia, where the output gap is verging on zero, the central bank raised its rate three times consecutively, by 0.75 percentage point in cumulative terms. In Norway, which was relatively unscathed by the crisis, interest was raised by 0.25 percentage point in view of economic recovery and the advancement of inflation into the target range and not below.

Figure 7
The Short-Term Interest Rate in Israel, the US and the Eurozone, January 2007-February 2010



SOURCE: The Bank of Israel, the ECB and the FED.

(4) The effect of the global environment on domestic prices

Economic developments abroad have conflicting effects on domestic inflation via several pass-through channels. The protracted increase in commodity and energy prices has a direct upward effect on domestic inflation by making imported goods costlier and has an indirect effect by raising the prices of imported intermediates. The still-sluggish recovery of global demand for domestic product acts in the same direction, although more gently. In contrast, the low interest rates and the widening of the interest rate differential vis-à-vis Israel are conducive to shekel appreciation and thus more moderate domestic price increases, despite the weakening of the transmission mechanism from the exchange rate to prices.

(5) *The global recovery from the crisis: Israel vis-à-vis the global environment*²

Thanks to Israel's positive economic fundamentals, the adverse effect of the global financial crisis and its implications on real domestic activity was weaker than had been foreseen and mild by international standards. The domestic unemployment rate rose gently, and in the third quarter of 2009 actually dipped, in contrast to the steep increases in other economies; the fiscal-support measures in Israel were moderate, and no fiscal stimuli were provided over and above the operation of the automatic stabilizers and specific expenditures that were offset by tax increases of a similar magnitude. This contrasted with heavy financial injections in developed countries. In most countries government deficits ballooned; Israel's deficit also increased, but at a slower rate, and it was lower than the ceiling mandated by law; Israel's public debt/GDP ratio was basically unchanged, due to the strength of the shekel and the rise in the GDP deflator, while that in other economies widened; its financial markets recovered swiftly as did those in emerging markets; and the prices of its financial assets surged. The recovery of the equities market was stronger in Israel than in developed markets (Figure 8). Long-term government-bond yields fell more steeply than the global norm and the domestic inflation rate was higher than inflation abroad. For all these reasons, it has become possible to begin the process of adjusting interest rates to the new domestic economic environment earlier in Israel than elsewhere; in most leading economies abroad, very low interest rates were necessary and the process of raising interest is expected to begin only in the second half of 2010.

b. The development of the NIS exchange rate

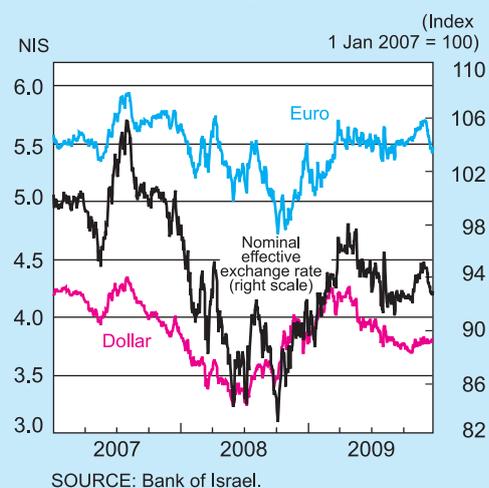
The nominal effective exchange rate behaved unevenly in the fourth quarter, as did the NIS/euro rate, and was basically unchanged for the quarter all told (Figure 9). The nominal effective rate remained relatively stable in October, pursuant to its behavior since the middle of the third quarter. Two percent depreciation in November was entirely offset in December as the USD again began to lose ground in international markets (Figure 9). Concurrently, uncertainty—evidenced by the implied volatility derived from the trade in NIS/USD options on the Tel Aviv Stock Exchange (TASE)—was stable at a lower environment than its high crisis level. The depreciation trend halted, and even reversed temporarily during the review quarter, despite the surplus in the

² For a more detailed discussion of Israel, see below in this Report.

Figure 8
Share Price Indices around the World
January 2008 to December 2009
(adjusted by dollar exchange rate,
daily data, 15 Sep 2008 = 100)



Figure 9
The NIS/\$, NIS/Euro and the
Nominal Effective Exchange Rate,
2007 to 2009 (daily data)



current account and the interest rate differential between Israel and abroad.

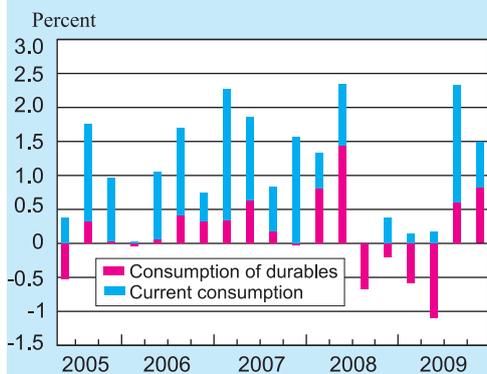
c. Real economic developments

(1) Demand

The recovery of real activity that began in the second quarter of 2009 gathered strength in the third quarter, in which total uses grew at a 4.8 percent annual pace. The increase embraced most components of demand for GDP—reflecting an exit from the recession—and was driven mainly by upturns in private consumption and exports (Table 2). The Companies Survey for the fourth quarter of 2009 shows that the expansion of activity accelerated due to an upturn in demand—the contraction of demand until the second quarter having been the main reason for the blow to growth. Preliminary estimates of the National Accounts, produced by the Central Bureau of Statistics, indicate that growth in the second half of the year totaled 2.9 percent, and in the whole of 2009, 0.5 percent. Additional partial indicators of the level of activity in the last few months of 2009 also point to the continued expansion of aggregate demand, as explained in detail below.

Private consumption continued to increase in the third quarter, at a 5.6 annual pace that surpassed the trend rate on the eve of the crisis. Almost all components of private consumption participated in the growth (Figure 10). Most of the upturn occurred in consumption of durable goods—household appliances and, above all, personal transport vehicles. The increase originated in the deferral of large purchases due to the recession³ and shows that households expected the recession to end.⁴ The share of private consumption in GDP also increased. The main factors behind the upturn in private consumption were (1) an increase in households’ disposable income⁵ and the expectation of further increase in view of the real recovery; (2) the rising value of the public’s portfolio of financial assets, occasioned largely by rising

Figure 10
The Contribution of the Components of Private Consumption to its Changes, 2005-2009:Q3 (quarterly rates of change)



SOURCE: Based on Central Bureau of Statistics data.

³ Demand for durable goods is sensitive to business cycles and slumps at times of recession.

⁴ The “green taxation” reform relating to motor vehicles also acted in this direction by encouraging households to engage in “preemptive shopping.”

⁵ According to research carried out in the Bank of Israel, half of the population that has an income bases its consumption level on the effect of current income. See Y. Lavi (2004), “Do Changes in Current Income Help to Explain Changes in Consumption in Israel?” *Israel Economic Review*, vol. 1, no. 2.

equity and bond prices, which enhanced consumer optimism;⁶ and (3) the very low interest environment, which influenced household expenditure in an upward direction by making credit cheaper. The expectation of a rising interest trajectory seems to have offset some of this effect and contributed to “preemptive buying” of durable goods. Preliminary indications for the fourth quarter suggest that private consumption continued to increase: a sharp upturn in indirect tax revenues, an increase in purchases by credit card, and continued increases in retail-chain sales (0.9 percent in quarterly terms), and trade and services revenue (1.4 percent). Gross domestic investment began to recover moderately in the third quarter but its share in product is still stagnating at less than 18 percent (Figure 11). After contracting more steeply than the downturn in product, as typically happens in a state of recession, investment has been recovering more slowly than product.

Exports of goods and services began to recover in the third quarter, growing at a 7.2 percent annual pace. The increase was evident in all industries and at all levels of technology intensity except traditional industries. The trajectory of export

Figure 11
The Composition of Uses,
2001 to 2009:Q3
(percent of GDP)

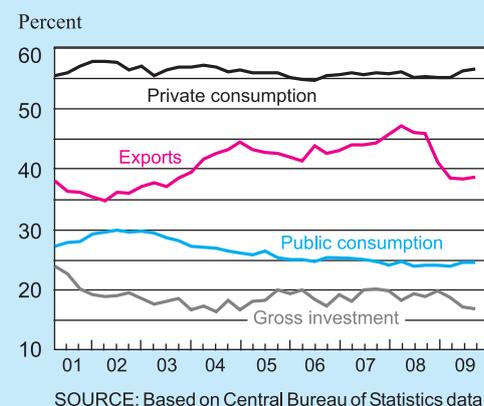


Table 2
GDP, Imports and Uses, 2007-09

(volume change from previous period, percent, seasonally adjusted, in annual terms)

	2007	2008	2009	2008:Q3	2008:Q4	2009:Q1	2009:Q2	2009:Q3
GDP	5.2	4.0	0.5	0.6	-1.6	-3.1	1.1	3.0
Business sector output	5.6	4.5	-0.4	0.3	-2.9	-5.1	1.0	2.5
Imports excluding defense imports, ships, aircraft and diamonds	13.6	7.2	-13.4	-2.7	-5.9	-43.9	5.2	11.7
Private consumption	6.3	3.6	1.1	0.9	-1.8	-3.5	10.2	5.6
<i>of which:</i> Private consumption excluding consumer durables	5.1	2.7	2.1	1.7	0.6	0.7	7.8	0.3
Public consumption	3.4	2.1	1.7	3.8	-0.3	-5.6	11.5	0.9
<i>of which:</i> Public consumption excluding defense imports	4.1	2.2	2.5	7.1	-0.5	-7.2	18.4	3.8
Gross domestic investment	10.1	1.4	-9.4	-8.1	15.5	-20.5	-28.7	-4.1
<i>of which:</i> Fixed investment	15.3	4.4	-6.6	-17.3	-4.2	-14.4	2.7	9.9
Exports excluding diamonds	10.4	10.5	-10.8	4.3	-23.5	-27.9	-2.3	2.9
<i>of which:</i> Exports excluding dia- monds and start-ups	10.9	9.7	-10.1	6.0	-25.1	-29.4	3.8	2.6

SOURCE: Based on Central Bureau of Statistics data.

⁶ Evidence of this is the upward movement of consumer-confidence indices from the second quarter on, leveled off later on at a plateau resembling that preceding the crisis. The probability-of-slowdown index, based on Google searches, also declined.

Figure 12
Exports and World Trade, 2004:Q4-
2009:Q3
(quarterly rates of change)

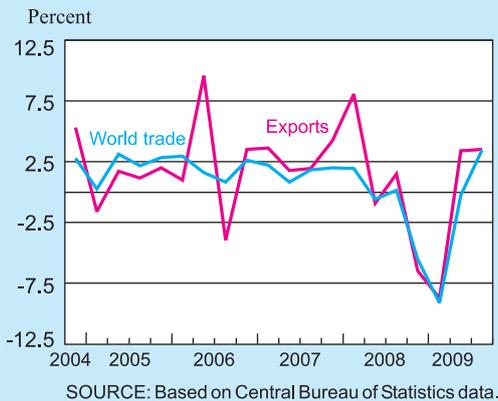
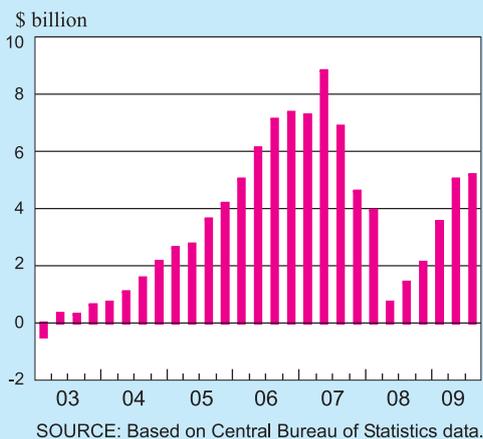


Figure 13
The Current Account, Running
Four-Quarter Totals,
2003:Q1-2009:Q3 (quarterly)



development was affected by a combination of contrasting forces. The recovery of demand abroad enhanced demand for Israeli exports and contributed to an increase in export prices, some of which was offset in the third quarter. These favorable effects on export profitability offset the adverse effects of higher prices for imported energy products, other raw materials, and commodities in the third quarter, as well as the effects of the real cumulative currency appreciation that began in the second quarter. The share of exports (excl. diamonds) in GDP began to grow in the second quarter (Figure 11) after retreating from its upward trend, illustrating the growing dependency of domestic growth on the global economy. Since exports are strongly affected by developments in world trade (Figure 12), their continued increase depend heavily on the strength and durability of the recovery of global demand for imported goods. Imports also began to recover in the third quarter in view of the currency appreciation, which encouraged households to consume more imported goods (foremost motor vehicles) and encouraged firms to consume more imported capital goods. In the third quarter, the surplus on balance-of-payments current account remained at roughly its second-quarter level, reflecting a worsening on services account that was offset by an improvement on income account and stability on goods and current-transfers account (Figure 13).

Public consumption rose at a modest 0.9 percent pace in the third quarter due to an upturn in domestic defense expenditure—a mild increase that was reflected in underperformance of the program budget. Although the underperformance increased as the year progressed, it reverted to almost full performance as expenditures scheduled for 2010 were moved up to the end of 2009. On the revenue side, a surplus came about due to above-program collection of direct and indirect taxes, occasioned by the economic expansion and increases in tax rates.⁷ For these reasons and due to stronger growth that the budget had assumed, the total deficit excluding net issue of credit came to 5.15 percent of GDP in 2009—under the ceiling of 6 percent set in the budget. Given the economy's positive fundamentals, the fiscal support measures for real activity were kept moderate; public consumption increased by 1.7 percent since the beginning of the year and its share in GDP was stable at 25 percent (Figure 11). This kind of composition of uses, in which the proportion of public consumption in GDP does not increase—as has been typical of the exit from the current recession—is supportive of sustainable growth. The public debt/

⁷ On cigarettes, fuel, and water, and an increase in the rate of VAT.

GDP ratio was basically unchanged, in contrast to that in other economies.

(2) Supply

Gross domestic product increased in the third quarter at a 2.9 percent annual pace (Figure 14) and business-sector product advanced by 2.4 percent, after both indicators rose by around 1 percent in the second quarter. The growth rate of GDP lagged behind that of total aggregate demand because much of the increase in demand went to imports. Pursuant to favorable indications in the previous quarter—and despite the upturn in production costs due to increases in oil and raw-materials prices abroad—several indicators point to an exit from the recession. Thus, from April on, the composite state-of-the-economy index has been rising each month. The increase during the fourth quarter—1.3 percent in cumulative terms—was composed of improvements in all components, especially the industrial-exports index. The Companies Survey shows that in the third quarter business activity began to recover more quickly than firms expected after the contraction of this indicator until the fourth quarter of 2008. The favorable trend gathered strength in the fourth quarter of 2009, reflecting an increase in manufacturing output that originated mainly in stronger industrial exports. The trend is expected to continue in view of an increase in orders for industrial exports and services. As the foreign-trade data also show, the average increase in industrial exports in October and November was shared by many industries, not only the two industries (pharmaceuticals and computer chips) that had been spearheading the growth during the year. Construction activity remained sluggish in the third quarter but expectations for the coming quarter were slightly more optimistic. Another auspicious indicator for the fourth quarter was the steep increase in all components of the purchasing managers' index. Demand for exports posted an especially conspicuous upturn relative to corresponding indices abroad.

In the labor market, initial indicators of turnaround are evident, making it seem that the recovery of real activity has begun to affect this sector of the economy as well. According to the Companies Survey, demand for workers increased in the third quarter of 2009 for the first time after a year of downward movement. According to the Labor Force Survey, the number of jobless persons decreased by about 3,000 in the third quarter and the number of those employed climbed by 18,600. Accordingly, the unemployment rate fell by 0.2 percentage point (Figure 15), to

Figure 14
GDP, Quarterly Growth Rates,
2006:Q1–2009:Q3
(in annual terms)

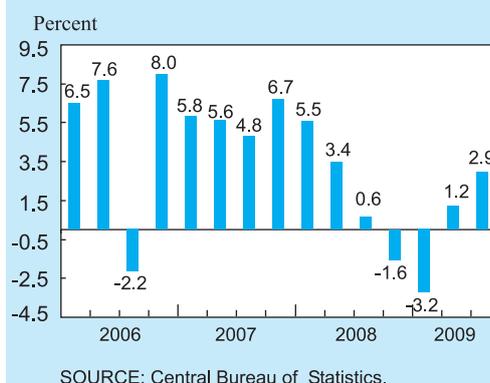


Figure 15
The Employment Rate and the
Unemployment Rate,^a
2002:Q1–2009:Q3
(seasonally adjusted, quarterly, percent)

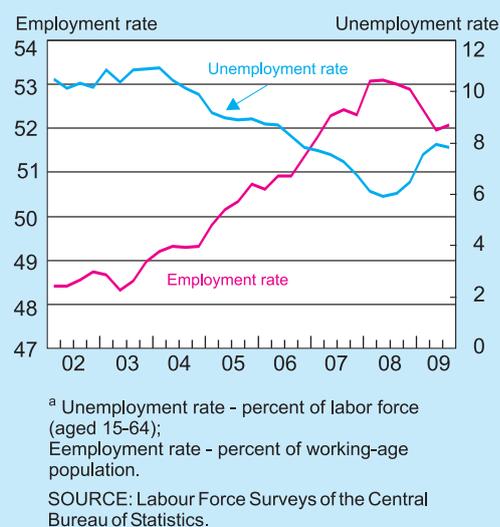
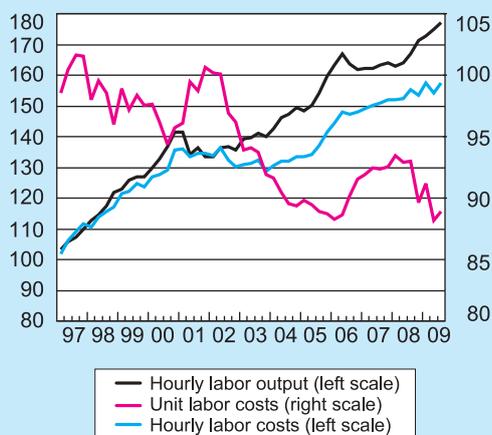


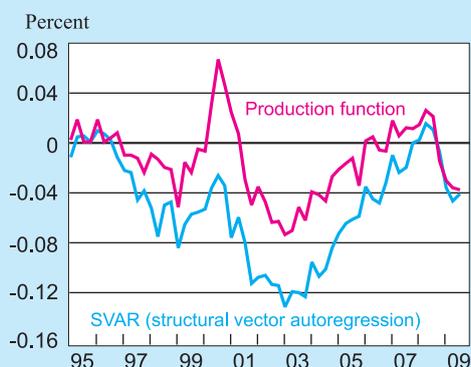
Figure 16
Index of Gross Unit Labor Costs in the Business Sector, 1997 to 2009:Q3
 (quarterly, seasonally adjusted, nominal)
 (1997:Q1=100)



SOURCE: Based on Central Bureau of Statistics data.

7.8 percent—a startling performance by international standards⁸ (Figure 4). The increase in employment was concentrated almost entirely in the services; manufacturing employment, in contrast, decreased in an intensification of the trends in recent quarters. The upturn in employment was composed of a steep increase in full-time employment and a decline in the number of part-time employees and persons temporarily absent from their jobs. Further evidence of the turnaround in the labor market is an increase in total wage payments, as evidenced in higher health-tax receipts even excluding the increase in collection originating in the doubling of the maximum income on which National Insurance contributions are made. The average real wage per employee post rose by 0.6 percent in the third quarter relative to the second quarter, but the only industry that actually paid higher wages was banking, insurance, and finance—up 6.9 percent. The steepest decrease in real wage was in agriculture, at 5.3 percent. Given that labor cost per hour worked rose more gently than the increase in product per hour worked, unit labor cost declined to its low early-2006 level, thereby heading off inflation pressure (Figure 16).

Figure 17
Indices of the Output Gap^a, 1995-2009



^a For details of the calculation of the output gap see Box 2.1, p.63, in the Bank of Israel Annual Report, 2008.

SOURCE: Bank of Israel.

(3) The effect of real activity on prices—summary

Since the third quarter of 2009, excess production capacity has been narrowing amid continuing expansion of total aggregate demand. This combination of developments evidently signals a turning point in the business cycle, i.e., the exit from the recession. The contraction of excess production capacity was reflected, among other things, in the falling unemployment rate, an increase in employment, and a decline in capital utilization coupled with the accumulation of capital stock. These developments had a braking effect on the widening of the GDP gap that began in early 2008; indeed, according to some indicators used by the Bank of Israel Research Department, the output gap, while still negative, stopped widening and may even have narrowed (Figure 17). To summarize, the narrowing of the output gap acted to dampen its moderating effect on prices. Hence, in the period reviewed no inflationary pressure was evident from the real activity side, partly due to the lack of upward price pressure from the labor market.

d. Financial developments

Prices of domestic financial assets increased during the review quarter, pursuant to the positive trend that followed the late-2008

⁸ See section on the global environment in this Report.

and early-2009 trough. Against the background of the continued upturn in real activity and the low level of the Bank of Israel interest rate (notwithstanding the beginning of the rising interest rate path) and absent attractive investment alternatives due to the decrease in returns on low-risk domestic financial assets, the equity indices continued to trend upward in tandem with the behavior of indices abroad (Figure 8). Price increases in the equity market encompassed all industries—especially real estate, banking, and oil and gas exploration. The strong correlation between Israel’s equity markets and counterparts abroad gives evidence of Israel’s firm connection with the global economy, even though the upward trend in Israel was faster. The strength of the upward march of domestic prices in the quarter reviewed resembled that in the emerging market economies, in which high rates of growth persisted. The prices observed in the review quarter, verging on their late 2007 peak, may reflect a higher level of risk due to the increase in investors’ risk appetite, against the background of an upturn in the risks in global markets and Israel’s strong dependency on global growth.

The value of the public’s portfolio of financial assets continued to rise in the fourth quarter, and by the end of the quarter reached NIS 2.3 billion, higher than its level prior to the crisis and 20 percent higher than at the beginning of the year. About half of the increase during the year offset the contraction of portfolio value that occurred in 2008 and the upward trend that had previously been in evidence continued. Most of the growth was in equities and CPI-indexed assets; it was based more on increases in the market prices of financial assets than on issues. Total assets managed by mutual funds expanded and the pace of accumulation quickened. Redemptions from money market mutual funds, which had been prompted by the low interest level, decreased in November against the background of the upward interest rate path, expectations that the process would continue, and relatively stable inflation expectations. In December, the diversion of money to investments in unindexed assets gathered strength. Accumulation in mutual funds specializing in corporate bonds continued in the quarter reviewed.

Yields to maturity of government bonds, both nominal and real, continued to fall in October and November on all segments of the curve (Figure 18). The decline is consistent with the level of the interest rate, which has long been low for some time, and favorable domestic fiscal developments. Yields declined also in government bond markets in the U.S. and the European Union. From late November onward, in view of the rate increase and expectations of more of the same, slopes flattened slightly and short- and medium-term yields turned upward, as did yields in other countries.

Figure 18
Yield To Maturity Curves of Indexed and Unindexed Bonds,
September-December 2009
(monthly averages)

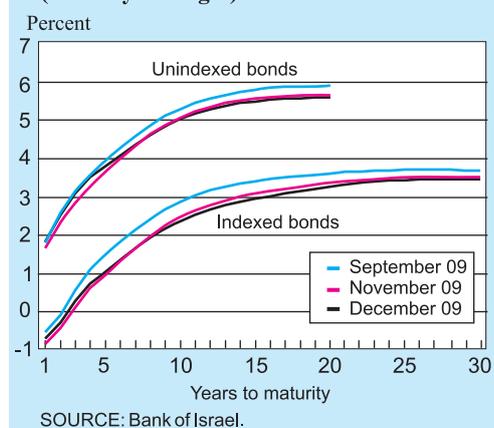


Figure 19
Inflation Expectations Derived from the Capital Market for Periods Longer than One Year (averages)

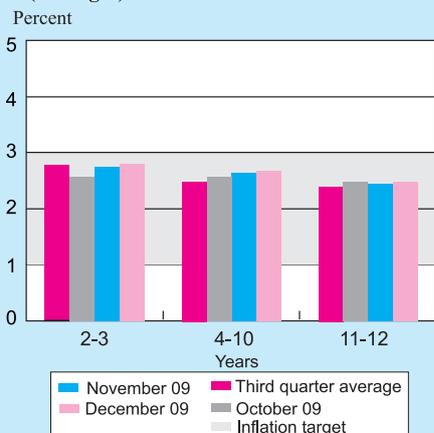


Figure 20
The Average Weighted Yield Gap between CPI-Indexed Corporate Bonds, by Rating, and Galil-type Government Bonds, July 2005 to December 2009

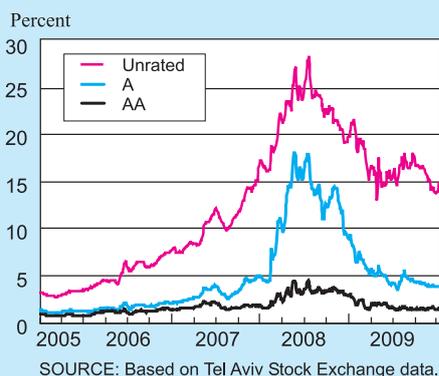
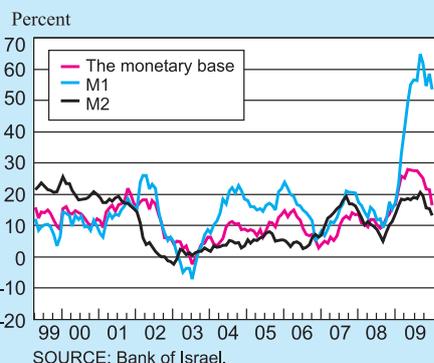


Figure 21
The Monetary Aggregates, March 1999 to December 2009 (rates of change over previous twelve months)



Despite the rise in yields in December, the yield environment remains relatively low in historical terms and the real short-term yield even remained negative. The relatively steep positive slope of the real yield curve attests to the monetary expansion, which remains strong, market expectations of interest rate increases, and the belief that economic growth will continue. Even though the nominal and real curves moved in the same direction, the decline in real yields was slightly greater and reflected a modest upturn in inflation expectations (Figure 19).

In the fourth quarter, outstanding nonbank credit to the business sector increased, pursuant to the trend since the beginning of the year. Corporate-bond issues to the nonbanking business sector came to NIS 26 billion since the beginning of the year, including NIS 6.3 billion in October and November. One factor facilitating the increase in capital issues is investors' quest for a higher return in a low-interest environment. While the trend in issues gives evidence of the recovery of the markets from the crisis, the extent of the issues still falls short of its pre-crisis level. The characteristics of the issuing trend shows that, while some sobering has occurred, the full implementation of the lessons of the crisis remains in doubt. Thus, while the proportions of unrated issues, of real estate firms in total issues, of unsecured issues, and of issues without financial strings attached declined, they remained high by international standards. Several companies announced that they would be unable to meet future debt paybacks, and yield spreads between indexed corporate bonds (mainly those of unrated companies) and government bonds that had similar characteristics continued to narrow but remained high in comparison with the especially low pre-crisis level (Figure 20). While nonbank credit expanded, total bank credit stagnated as credit to the business sector contracted and lending to households—chiefly for home purchases, some of which for investment purposes—continued to increase. Against the background of these developments, it is still premature to use the increase in credit-market activity as a basis for inferences about total economic activity. The relative flexibility of the processes used to raise nonbank credit makes it possible to internalize the optimistic climate in the markets rather quickly; hence the importance of this market for growth.

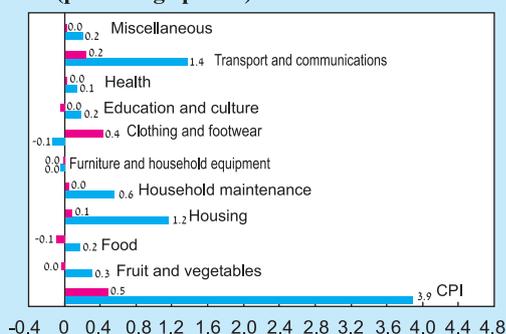
During the review quarter, the annualized growth rates of the various monetary aggregates slowed in concurrence with the Bank of Israel's interest rate increases (Figure 21). The growth of the aggregates, which reflected the rapid diversion of money to liquid assets, was the outcome of the slashing of rates to an unprecedentedly low level until April, followed by no change until August.

e. Inflation and inflation expectations

The consumer price index (CPI) rose by a cumulative rate of 0.5 percent during the last quarter. The principal factors contributing to inflation during that period, as they had since the beginning of the year, were: the rise in housing prices, although this increase became more moderate; the delayed response to the renewed increase in energy prices which pushed up prices, directly via the apartment maintenance items⁹ and especially transportation¹⁰ (Figure 22), and indirectly via an increase in the prices of imported

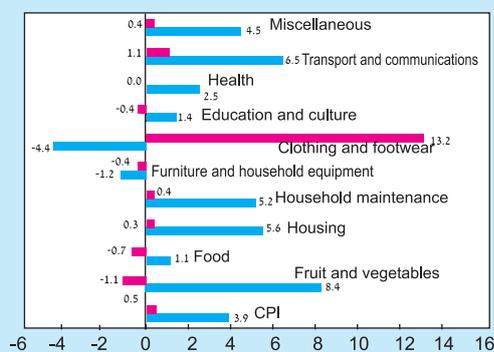
Figure 22

Contribution of the Components of the CPI to the Changes in the CPI, 2009:Q4 and the whole of 2009 (percentage points)



SOURCE: Based on Central Bureau of Statistics data.

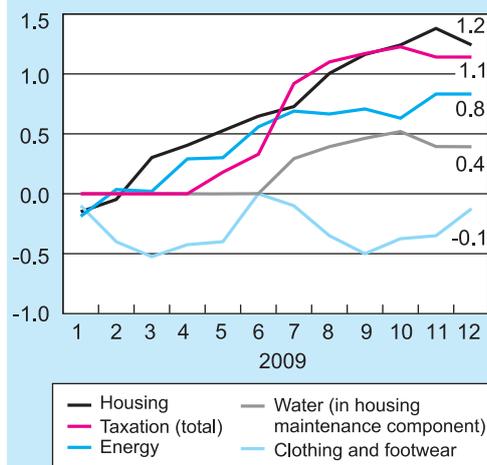
Changes in the Components of the CPI, 2009:Q4 and the whole of 2009 (percent)



inputs; and a seasonal increase in the clothing and footwear item during the quarter reviewed. Counteracting these factors and after the temporary effect of government-initiated price increases had passed, price developments remained subject to moderating effects. These were: the negative output gap, although it has declined; the continued strengthening of the shekel against the effective exchange rate (despite a temporary weakening in November); the decrease in the unit labor cost; and low inflation abroad.

The CPI rose by 3.9 percent in 2009. This rate of increase to a considerable degree reflected price rises deriving from government intervention, principally during the third quarter of the year. Excluding the effect of the intervention, the CPI rose by 2.8 percent. The rise in the actual CPI since the beginning of the year reflected the increase in housing (Figure 23) and energy

Figure 23
The Cumulative Contribution of Components of the CPI^a



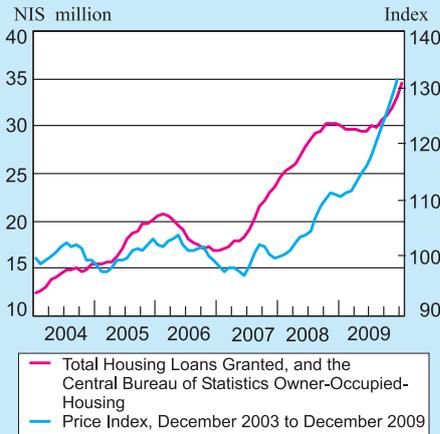
^a Some of the components overlap.

SOURCE: Based on Central Bureau of Statistics data.

⁹ Including electricity, heating oil and diesel, gas and service fees.

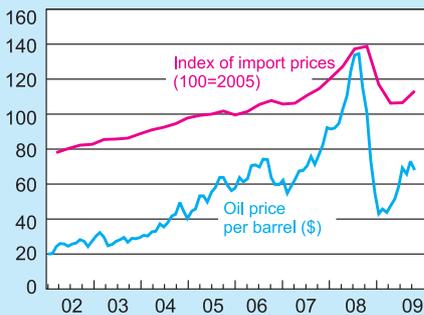
¹⁰ Including automobile oils and fuel.

Figure 24
Total Housing Loans Granted, and the
Central Bureau of Statistics Owner-
Occupied-Housing Price Index,
December 2003 to December 2009



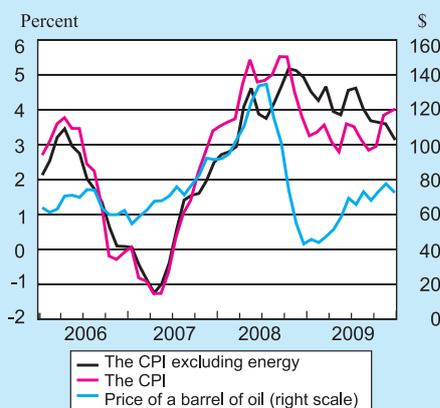
SOURCE: Based on Central Bureau of Statistics Data.

Figure 25
Oil Price per Barrel Compared with
the Index of Import Prices,
2002-09



SOURCE: Based on Bloomberg and the Central Bureau of Statistics.

Figure 26
The CPI excluding Energy, the CPI,
and the Oil Price 2006-09
(annual rate of change)



SOURCE: Based on Bloomberg and the Central Bureau of Statistics.

prices. The large rise in the annualized inflation rate during the quarter reviewed reflects the non-inclusion in the annualized calculation of soaring energy prices at the end of 2008. The housing component and the energy component contributed 1.2 percentage points and 0.8 percentage points respectively to the annual increase in the general index. The price increases deriving from government intervention contributed a cumulative 1.1 percentage point rise in the index during the year,¹¹ of which 0.4 percentage point resulted from an increase in the water component in the apartment maintenance item.

The rise in the consumer price index also resulted from an increase in asset prices, including real estate assets. The rise in the housing price index, which constitutes a component of the overall CPI, totaled 0.3 percent in the fourth quarter (declining in December), and in the whole of 2009 by 5.6 percent. The rise in the prices of owner-occupied housing according to the Central Bureau of Statistics, which do not constitute part of the CPI, totaled 18 percent from the beginning of the year. The latter increase was due, among other things, to the low Bank of Israel interest rate, which reduced the cost of mortgages and had the effect of increasing demand in the housing market as reflected by the larger number of mortgage loan approvals (Figure 24). The growth in demand for housing reflects an adjustment in the public's asset portfolio and the shift to non-financial assets resulting from the lack of attractive investment alternatives. The contribution of the low interest rate to increasing supply in the housing market was only minor. The number of building starts and completions actually fell during the year, as did the number of apartments for sale built by private developers.

The rise in energy prices affected domestic prices during the entire year and particularly in the quarter reviewed (Figure 25). The increase in domestic prices was affected by the renewed upturn in world prices for energy at the beginning of 2009, which resulted from burgeoning demand, principally in the developing countries. The annual rate of increase in the CPI excluding energy actually declined. The rise in energy prices was reflected directly in the prices of imported consumer goods, and indirectly via the prices of imported inputs (Figure 26). However, the large increase in food prices at the end of the quarter reviewed did not affect domestic prices in that quarter.

¹¹ Part of the rise in the energy component was affected by the government intervention.

Inflation expectations

Inflation expectations derived from the capital market (break-even inflation)¹² and private analysts' forecasts for a year ahead were stable. This stability indicates that the public perceived the price rises deriving from tax increases as temporary, and reflects the credibility of monetary policy. Since June 2009, market and private analysts' forecasts averaged 2.4 percent, a level consistent with the inflation target, with slight increases towards the end of the year (Figure 27). Inflation expectations derived from the capital market for terms of over a year developed in a similar manner in a slightly higher environment, but without deviating from the upper limit of the inflation target. The relative stability of expectations during the quarter reviewed expressed two mutually-offsetting forces: the relatively rapid increase in prices, which had the effect of pushing up expectations; and the negative output gap, which had the effect of reducing expectations. Moreover, the public appear to have regarded the price increases as a temporary phenomenon, and the impact of the negative output gap was only minor because it had contracted.

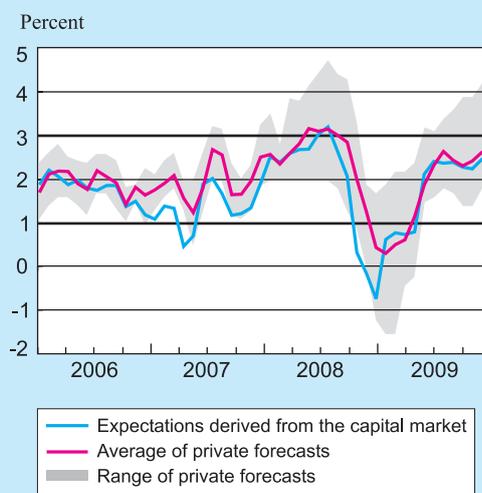
Against the background of the very low interest rate environment and the upsurge in domestic demand, and despite the increases in the Bank of Israel's interest rate for December and January, the slow rise in expectations for all terms towards the end of the year may be indicative of a future change in their trend, implying an increase in inflation expectations and a change in the pace of price increases. Moreover, the increase in inflation expectations was accompanied by an upward adjustment in assessments regarding increases in the interest rate, and by reduced uncertainty with respect to it, as reflected by the decrease in the range of private analysts' forecasts. However, the level of uncertainty is still relatively high due to the conflicting forces affecting inflation and its forecasting.

2. MONETARY POLICY

Monetary policy in the fourth quarter of 2009 was, as previously, directed at achieving price stability within the framework of the inflation target regime. Policy was applied by means of two instruments: determination of the interest rate for the banks' sources, and foreign-currency purchases. Policy was reflected by a continued move from a very expansionary position to a slightly less expansionary position at the end of the quarter reviewed:

¹² Nominal and real yields include a premium which is intended to compensate investors for inflation risks and lack of liquidity; this factor complicates the interpretation of inflation expectations. The further the horizon of the expectations, the larger will be the risk premium.

Figure 27
Inflation Expectations for the Next Year Derived from the Capital Market and According to Private Forecasters, 2006 to 2009^a



^a From April 2007, the real yield used in the calculation of inflation expectations is based on the entire yield curve.

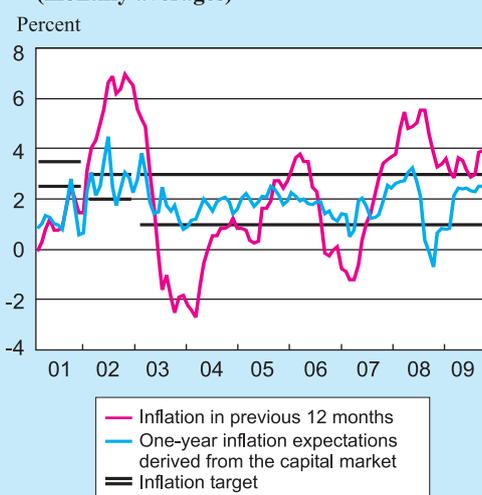
SOURCE: Private forecasters' reports and Bank of Israel.

For October and November, the Bank of Israel left the interest rate unchanged, and for December and January raised it by 0.25 percentage point each time, to a level of 1.25 percent. It was kept at this level for February. In addition, the Bank of Israel purchased \$1,274 million of foreign-currency in October. In November the Bank did not intervene in the foreign currency market, and in December it purchased \$132 million.

During the period reviewed, policy-makers were faced with the challenge of continuing to gradually and cautiously reduce the monetary stimulus that had been adopted since the fourth quarter of 2008. This was done by means of an upward adjustment of the very low 0.5 percent level of the interest rate to the level required in the new economic environment. The Bank of Israel interest rate had been cut in order to moderate the impact of the deep global recession on the financial and non-financial markets in Israel, against the background of the weakness in overseas markets and the growing risks of a serious recession here as well. From September 2009, as indicators of a significant recovery increased and in view of the expectation of continued growth and of inflation within the targeted range, it became possible to increase the interest rate. The slow pace of interest rate increases reflects a balance between continued support for economic expansion and the maintenance of price stability over time. Although inflation exceeded the target in the short term, the Bank of Israel and the markets regarded this deviation as only temporary, and expected inflation to revert to within the targeted range after the short-term effects of taxation changes had passed.¹³ This was also apparent from inflation expectations, which did not exceed the inflation target (Figure 28), and from April to September were accompanied by assessments that the interest rate would not be changed.

The Bank of Israel's policy measures matched the flexible approach to attaining the inflation target. Under this approach, monetary policy is directed at stabilizing inflation within the range of the inflation target while supporting economic activity in order to assure maximum utilization of production capacity and concurrently maintaining the stability of the financial system. Accordingly, monetary policy-makers had to gradually adjust the low interest rate to a level that would balance between the need for continued support for real activity, where the rebound still appears to be fragile, and the maintenance of price stability. This had to be done in an environment of conflicting forces affecting the development of prices: On the one hand, increased

Figure 28
Inflation in Previous 12 Months,
Inflation Expectations and Inflation
Targets, 2001 to December 2009
 (monthly averages)



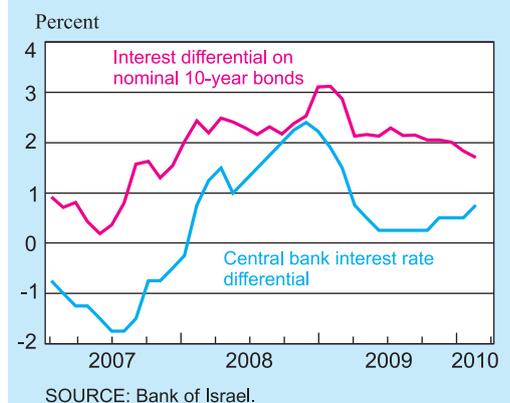
SOURCE: Based on Central Bureau of Statistics data and Bank of Israel.

¹³ The increases in cigarettes and fuel tax and VAT, and the imposition of the drought tax.

utilization of production capacity, burgeoning demand and high cost of imported inputs might have led to rising inflation, and would therefore require a higher interest rate policy. On the other hand, a high interest rate could depress growth, attract capital imports and thereby strengthen the shekel, and together with the output gap, which was still negative, would lead to a decline in inflation. Indicators of an exit from the recession accumulated during the quarter reviewed, but these were accompanied by intense uncertainty regarding the extent and sustainability of the rebound. Inflation rose slightly due to the increase in prices of assets, housing and energy. Inflation expectations also rose concurrent with the expectations of an interest rate increase (Box 1). In the third quarter the risk of a continuation of the recession still exceeded the risk of an upsurge in inflationary pressures, but during the fourth quarter these risks became balanced. In order to provide the right solution for the entire range of risks, together with the need to reduce the monetary stimulus, the Bank of Israel gradually raised the interest rate to a level of 1.25 percent between September 2009 and January 2010. The Bank of Israel kept the interest rate unchanged at this level, against the background of assessments that inflation in the first quarter of 2010 would be low—in part because of shekel appreciation—and the increase in uncertainty regarding the strength of the global recovery.

The Bank of Israel interest rate was adjusted to the new local economic environment against the background of developments in the global economic environment, which in their timing and intensity did not match developments in the Israeli economy. At a time when local developments already necessitated an increase in the interest rate, most of the world's leading economies still required a very low interest rate, and an upturn in the interest rate there is not expected before the second half of 2010. This is because the exit from the recession worldwide has been more gradual and delayed than in Israel, and its continued extent is uncertain; also, the worldwide level of inflation is lower. Global uncertainty led to increased doubts regarding the extent of growth in Israel itself. This situation has limited policy-makers freedom of action in the small and open Israeli economy, which is heavily dependent on the global economy. Nonetheless, the Bank of Israel increased the interest rate, and the differential between the short-term interest rate in Israel and those in the leading economies expanded continually. In contrast, as yields on long-term bonds fell, the long-term interest rate differential contracted (Figure 29). Towards the end of the year, the European and US central banks also began to take measures to end their unusually expansionary

Figure 29
Short-Term and Long-Term Interest Rate Differentials between Israel and the US, January 2007 to January 2010



monetary policy, and two countries where the recovery had gained hold actually raised their key interest rates.¹⁴

The Bank of Israel operates in the foreign-currency market in situations of excessive volatility in the exchange rate, which do not reflect material changes in economic conditions, and in situations where the market is malfunctioning or when a market failure has occurred. The period of regular daily intervention in the foreign-currency market started in March 2008 and ended in August 2009. The regular intervention was aimed at increasing the economy's financial robustness by boosting the foreign exchange reserves and at alleviating the impact of the global recession on local activity. This policy appears to have helped maintain stability in the economy, while reducing the impact of the recession on exports by preventing an excessive appreciation deriving from short-term effects (with respect to the appreciation estimate derived from a long-term calculation based on balance-of-payment fundamentals).¹⁵ In October the Bank of Israel purchased \$1,274 million of foreign currency, in November it did not intervene at all in the foreign currency market, and in December it purchased \$132 million. By examining the development of an effective exchange rate index, the Bank of Israel takes into account the value of the shekel against a basket of currencies whose weightings reflect the composition of Israel's principal trading partners.

Box 1

The effects of surprises in the Bank of Israel's interest rate decisions on inflation expectations

This Box attempts to assess how one-year-forward inflation expectations of capital market participants are affected by the Bank of Israel's interest rate decisions. Inflation expectations are an important indicator which the Bank uses to assess inflationary or deflationary pressures¹ in its interest rate deliberations. Market participants employ all the information available to them at any time, forecast developments of the various parameters, including the Bank of Israel interest rate decisions, and base their assessment of future inflation on those factors. It is expected that if their forecast of the interest rate is realized, their inflation expectations will not change, whereas an interest rate decision different from their forecast will prompt them to change their inflation expectations.

The figure below shows surprise changes in the Bank's interest rate from January 2005² to November 2009, i.e., the gap between the forecast of the interest rate (the average of predictions by the forecasters

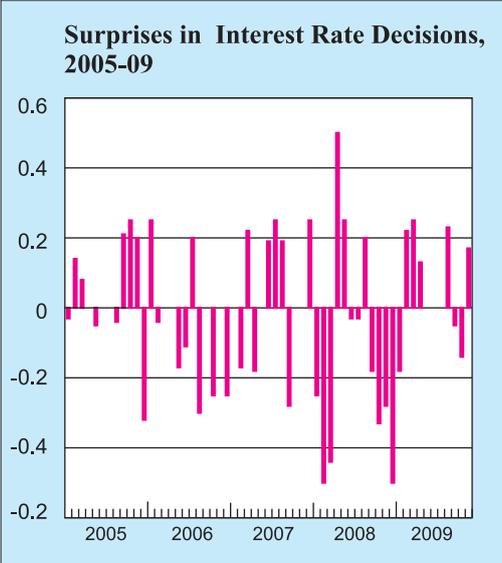
¹ Pressures that are likely to cause inflation to deviate from the target range.

² The sample starts in 2005 and not earlier as the surprise interest rate decisions in December 2001 and June 2002, and the concurrent sharp changes in inflation expectations, were exceptional. Furthermore, from the middle of 2002 to 2005 interest rate decisions were generally in line with expectations (i.e., a zero gap between the forecast change and the actual), and inflation expectations were relatively stable.

¹⁴ See the discussion on the global environment in this report.

¹⁵ See Box 2.2 in the Bank of Israel Report for 2008.

prior to the Bank’s interest rate decision) and the actual rate set by the Bank. Thus the average of the surprise changes and the average of expected changes are zero (with a standard deviation of 0.2 percent). The figure shows, for example, that towards the end of 2008 the markets were surprised, as they had not foreseen the change in monetary policy adopted—the reduction of the interest rate to an unprecedented low level—to help the economy deal with the global financial crisis. The markets also failed to predict the timing of the end of the reductions, when the economy started to recover from the crisis, and thereafter, the rising interest rate path.



To examine the relation between inflation expectations and monetary policy surprises³ the event-study approach⁴ was used. This overcomes two major difficulties, the simultaneity of inflation expectations and the monetary policy, and the omission of variables that affect both inflation expectations and the policy interest rate, such as the publication of forecasts and macroeconomic data. Thus, the effect of a surprise interest rate decision on a change in inflation expectations was examined close to the policy announcement⁵ in order to isolate the effect of that surprise from the effect of other possible surprises.

The equation used for the estimate was:⁶

$$\Delta inf_t = \beta_1 * \Delta i_{unexp}_t + \beta_2 * \Delta i_{exp}_t + \varepsilon_t$$

Coefficient	-0.4	-0.2
t-value	(-2.3)	(-1.1)

where Δinf is the change in one-year-ahead inflation expectations close to the announcement of the interest rate; Δi_{exp} is the expected change in the Bank of Israel interest rate;⁷ Δi_{unexp} is the unexpected change in the Bank of Israel’s declared interest rate, i.e., the difference between the actual change in the rate and the average expected change of the forecasters; and ε_t are the other effects.

The results of the estimation of the equation show that if the forecast change in the interest rate is realized, it has no effect on inflation expectations, as they incorporate that change. In other words, pursuing a policy that matches the forecast policy does not cause a change in inflation expectations, so that such a policy is appropriate in situations where inflation expectations are within the target inflation range, and the

³ Note that in the Box the intention is not to estimate inflation expectations, so that the quality of the estimate R^2 has no significance here.

⁴ This approach is used in financial economics research to estimate the effects of macroeconomic policy statements on asset prices in financial markets.

⁵ As inflation expectations are highly volatile, in order to obtain their “real” change the change from average expectations prior to the policy announcement to the average after the announcement was calculated.

⁶ The equation does not require a constant. Indeed, in an equation with a constant it turns out that it is not significant.

⁷ In the mid-October and mid-November 2008 policy decisions were made at times other than in the regular meetings. These changes in the interest rate were not included in the sample, as there were no forecasts for them.

Bank of Israel would like to keep them there. The estimation from the equation also shows that the sign of the coefficient of the monetary surprise is negative and significant, as expected. This means that there is a negative relation between a monetary policy surprise and the change in inflation expectations: an increase (decrease) in the interest rate 1 percentage point greater than that forecast contributes to a reduction (increase) of about 0.4 percentage points in inflation expectations. A change in inflation via inflation expectations will occur if monetary policy makers change the interest rate by more than the market expects, in other words, if they surprise the market, because as stated above, expected inflation incorporates the expected interest rate change. To summarize: this examination of the effect of expected and unexpected interest rate decisions on inflation expectations shows that the public has confidence in monetary policy decisions that are directed at

3. UPDATE OF FORECASTS

a. The global environment

The international institutions raised their assessments regarding the global recovery of economic activity in 2010. The IMF updated its forecast of world growth in 2010 to 3.9 percent (from 3.1 percent in the previous forecast), in light of the gradual recovery in world trade (Table 3). This growth is based on governments' extraordinary stimulus policies adopted because of the severe global crisis. Growth rates will differ between different groups of countries: growth in most of the advanced economies, where it will be based on a turnaround in stock replenishment and an increase in private consumption, it is expected to remain moderate, whereas in the emerging and developing market economies, where growth is based mainly on domestic demand, it is expected to gain strength.

Commodity prices, and in particular oil prices, are expected to continue to increase against the background of the economic recovery, after their slump in 2008. Their future path will depend partially on the level of demand from the developing economies, on the strength and timing of the global recovery, and on the value of the dollar vis-à-vis other currencies. The IMF forecasts an increase of 22.6 percent (annual rate) in fuel prices in 2010, and of 5.8 percent in commodity prices. Increases in food prices towards the end of 2009 gave cause for concern over future inflation in the emerging market economies. Despite the above, inflation around the world is generally low, and the major central banks still expect it to remain low, reflecting the large negative output gap. The IMF forecasts inflation of 1.3 percent in 2010 in the advanced economies, and of 6.2 percent in the emerging market economies. In some countries, Japan in particular, there is apprehension regarding the possibility of deflation. Against this

background, central banks' interest rates are expected to increase gradually, but not before the recovery gains strength and surplus capacity contracts significantly. Thus the low level of interest rates is expected to persist in the next few months, and most rates may not increase at all during 2010.

Table 3
GDP Growth in 2009, and IMF Forecasts for 2010 and 2011

	2009	2010	2011
Average GDP growth, percent			
Global	-0.8	3.9	4.3
Advanced economies	-3.2	2.1	2.4
US	-2.5	2.7	2.4
EU	-3.9	1.0	1.6
Japan	-5.3	1.7	2.2
Emerging markets	2.1	6.0	6.3
Inflation (annual average, percent)			
Advanced economies	0.1	1.3	1.5
Emerging markets	5.2	6.2	4.6

SOURCE: IMF World Economic Outlook Update, January 2010.

b. Real activity in Israel

As positive data came to light regarding economic activity in the second half of 2009 in Israel and around the world, and in light of the improvement in forecasts of growth and world trade in 2010, the Bank of Israel's forecasts of economic activity in Israel were revised upwards. GDP in 2009 grew by 0.5 percent, and unemployment to be 7.7 percent. In 2010 GDP is expected to grow at a rate of 3.5 percent, with unemployment falling to 7.1 percent. Growth is expected to be led by exports, in light of the recovery of world demand. Hence, the main risk relating to this forecast is that the global recovery will be slower than expected. Consumption of durables and investment are expected to increase rapidly, largely due to increased imports. As a result, the surplus in the current account of the balance of payments is expected to contract in 2010, to \$3 billion. In contrast with most of the major economies, the government deficit in Israel is expected to contract, to 3.8 percent of GDP, and public debt to decline to 80 percent of GDP. The share of interest payments in GDP will decline due to the low interest rates in 2009.

Table 4
Economic Indicators

(rates of change, percent, unless stated otherwise)

	Actual	Estimate	Bank of Israel Forecast
	2008	2009	2010
GDP	4.0	0.5	3.5
Private consumption	3.6	1.1	4.8
Gross domestic investment	1.4	-9.4	9.3
Public consumption	2.1	1.7	1.0
Imports (civilian, excluding diamonds)	7.2	-13.4	11.4
Exports (excluding diamonds)	10.5	-11.0	8.6
Current account (\$ billion)	1.6	7.2	3.0
Unemployment rate	6.1	7.7	7.1
Public deficit (percent of GDP) ^a	2.2	5.0	3.8
Gross debt/GDP ratio (percent of GDP) ^a	76.8	79.8	80.3

^a Excluding the Bank of Israel.

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

c. Assessments of exchange rate and the balance of payments

In 2010 the current account of the balance of payments is expected to show a surplus of \$3 billion, compared with \$7.2 billion in 2009 and \$1.6 billion in 2008. The current account surplus together with the weakness of the dollar is expected to support the trend of appreciation shown by the effective exchange rate. Other pressures are expected to be exerted leading to shekel appreciation due to the interest rate differential between Israel and the major economies, as Israel started increasing its interest rate sooner than other countries.

d. Assessments regarding the the development of inflation and the balance of inflation risks

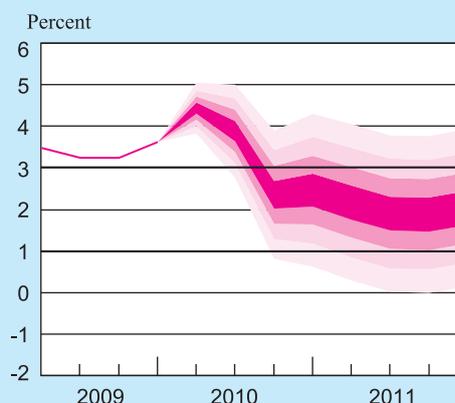
In the past 12 months inflation amounted to 3.9 percent. Excluding the price increases resulting from government intervention, inflation was 2.8 percent. According to all market assessments, the inflation rate in 2010 will become more moderate, but will remain in the upper part of the target range. Inflation expectations for a year as measured from the capital market amounted to 2.7 percent in January compared with 2.3 percent when the previous Inflation Report was compiled. Private analysts' inflation forecasts at the end of January averaged 2.3 percent, similar to the average of their forecasts in the previous quarter. The average forecast in the Companies Survey is even higher, at 2.8 percent, but lower than in the previous quarter (3.2 percent). These expectations are

accompanied by assessments regarding the rise in the interest rate and its reaching a level of 2.5 to 2.8 percent in a year's time.

The Bank of Israel also expects inflation to moderate this year,¹⁶ and to converge within the limits of the inflation target in mid-2010 and in another 12 months to amount to 2.5 percent—above the center of the targeted range. The downturn in inflation will be accompanied by a gradual rise in the interest rate (Figures 30 and 31). The main factors that will have the effect of moderating inflation during the year are the effective appreciation that took place in the last few weeks and the negative output gap. This gap developed due to the almost zero growth in Israel's GDP during 2009 which resulted from the global financial crises and its implications for real activity. Based on the central bank's forecast of a 3.5 percent growth rate in 2010, which is actually slightly more than the economy's potential growth rate, the negative output gap can be expected to start closing but will still be negative during the coming year-and-a-half. The negative output gap implies that the economy's production capacity (which was scarcely affected by the recession) exceeds the level of demand for local production—a situation that has a moderating effect on inflation. In the short term however, a number of forces appear to be pushing up prices, so that inflation in the coming year will be above the center of the target range. These forces include the consolidation of the public's expectations that inflation will be in the upper part of the target inflation range. (The public's expectations include forecasts of private analysts, expectations calculated from the capital market, and forecasts in the Companies Survey). Inflation expectations can lead to a rise in current inflation. This is because manufacturers take future inflation into account when adjusting prices and concluding wage agreements. Another factor that could exert a short-term effect is the high rate of increase in asset prices during the past year, and especially the 18 percent increase in housing prices. Although asset prices are not directly included in the consumer price index, they can lead indirectly to a general price increase in the economy. It should be noted that the high level of inflation expectations and the increase in asset prices were supported by the low level of the Bank of Israel interest rate at the end of 2009. Finally, the effect of the cumulative rise

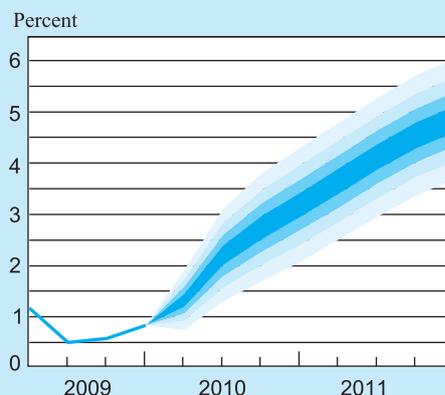
¹⁶ The Bank of Israel Research Department's inflation forecast is presented in this Inflation Report for the first time. The forecast is built around two quarterly models, a number of monthly models and indicators and the department's own assessments. This differs from previous Inflation Reports, in which the inflation and interest rate forecasts were based mainly on one of the quarterly models used by the Bank of Israel—the DSGE model. Accordingly, the depiction of the fan-range in this report cannot be compared to that in the previous reports. For this reason, we have not presented the central tendency of the diagrams in the previous report in the present one.

Figure 30
Actual Inflation and Fan Chart^a of Expected Inflation, 2009-11
(cumulative increase in prices in previous four quarters)



^a The center of the fan chart is based on the Bank of Israel Research Department assessment. The width of the chart is based on the Department's DSGE (dynamic stochastic general equilibrium) model. The full fan covers 66 percent of the distribution of expected inflation. SOURCE: Bank of Israel.

Figure 31
Actual Bank of Israel Interest Rate and Fan Chart^a of Expected Interest Rate, 2009-11



^a The center of the fan chart is based on the Bank of Israel Research Department assessment. The width of the chart is based on the Department's DSGE (dynamic stochastic general equilibrium) model. The full fan covers 66 percent of the distribution of the expected interest rate. SOURCE: Bank of Israel.

in commodity prices, and especially oil prices, will also affect inflation, along with the assessment that the probability that they will continue to rise during the coming months is greater than the probability that they will adjusted in the direction of the low level of mid-2009.

Despite the inflationary factors reviewed above, the Bank of Israel expects the output gap and the shekel appreciation in the last weeks to become dominant restraining factors within several quarters, so that in 2011 inflation will stabilize around the midpoint of the target range. Another restraining factor is the very low level of central bank interest rates worldwide (0.0–0.25 percent in the USA, 1.0 percent in Europe), which is expected to persist during 2010 at least.

These assessments are based on a number of assumptions and in particular, that the effective exchange rate will remain close to its present level (resulting in a shekel-dollar exchange rate of around NIS 3.7), that central bank interest rates worldwide will hardly rise at all during 2010, that world trade will gradually recover and expand by 7.0 percent in 2010 (compared with a long-term expansion of 6.5 percent), and that commodity prices and especially oil prices will rise by slightly more than two percent this year. Since these assumptions could actually prove to be unfounded, actual inflation could deviate from the forecast and require a differing course in the Bank of Israel interest rate. (See Box 2 for a historical review of the deviation from the inflation forecasts that were presented in previous Inflation Reports). We estimate that the balance of inflation risks (with respect to the forecast presented above) is indeed balanced.

The main factors that could lead to an upward deviation from the forecast are continued high rates of increase in the housing component of the consumer price index and a rapid recovery from the global financial crisis. Such a recovery may be reflected by a rapid growth in world trade (and Israeli exports with it), by a rise in central banks' interest rates as early as this year, and by the renewed rapid increase in commodity prices and especially oil prices. Since the downturn in Israel's activity was entirely "imported" from the global recession and did not derive from internal factors, it can be assumed that such a scenario of rapid global recovery will have the effect of increasing growth in Israel as well. As a result, the GDP gap will close more rapidly than assumed in the main forecast.

The main forces that could lead to a more rapid downturn in inflation and even bring it toward the lower limit of the target range within a year to a year-and-a-half are a serious deterioration in the global situation, i.e., the realization of a W (double-recession)

scenario, high shekel appreciation which would restrain inflation by means of import prices, and a major rapid adjustment of the government's tax hikes and levies, which in 2009 contributed over one percentage point to inflation. Abolishing these increases (by for example reducing the rate of VAT and by abolishing the water surcharge and usage fee increases) will lead directly to a decrease in prices at a similar rate.

Table 5
Assessments of Inflation over Next Twelve Months (percent)

	Target	Capital market ^a	Private forecasters ^b	Companies Survey ^c	Bank of Israel's forecast
Average	2	2.7	2.3	2.8	2.5
Range	1-3		1.8-3.0	1.1-4.5	

^a January average.

^b After publication of the December CPI.

^c Range of assessments (covering 90 percent, i.e., excluding the tails). Based on companies' responses received in the second half of December.

SOURCE: Bank of Israel.

Box 2

Assessing forecasts of inflation and the balance of its risks derived from the Bank of Israel's DSGE model

Since the first quarter of 2008, the Bank of Israel has published quarterly inflation reports¹ containing a central assessment derived from one of its models² (the DSGE model) regarding the development of inflation and the balance of its risks, which are also presented in a fan-spread.³ Concurrently, the Bank of Israel publishes the average of private analysts' forecasts regarding inflation for a year ahead and the range covered by their forecasts.⁴

This Box attempts to compare these two types of forecast of one-year-ahead inflation as published in the quarterly Inflation Reports with actual inflation. It was found, as can be seen from the figure, that generally the Bank of Israel's forecast and those of private forecasters were similar, and that sometimes the latter were higher than the former. It was also found that most central inflation forecasts for a year ahead from both sources matched actual inflation developments⁵ or were slightly below it.⁶

In two cases, inflation exceeded the upper limit of the range of the forecasts: in the fourth quarter of 2008 and to a greater extent in the quarter reviewed in this report—the fourth quarter of 2009. We will analyze the deviation of the Bank of Israel's forecast from actual inflation in light of the effect of shocks

¹ Publication of the Inflation Reports began in 1997. From 1998 to 2008 they were published half-yearly, and since 2008, quarterly.

² It should be noted that the Bank of Israel's assessments of the future course of inflation are based on a range of indicators. The DSGE model is one of them.

³ The fan-spread contains 66 percent of the distribution around the main forecast.

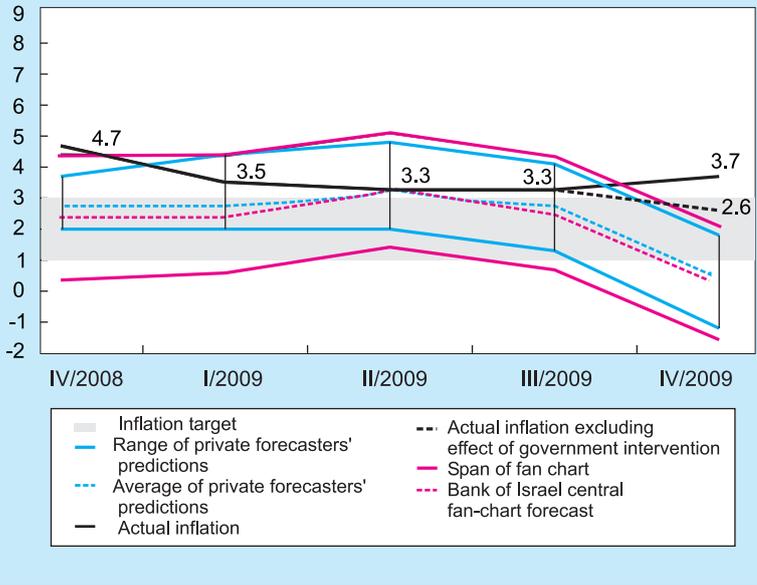
⁴ The difference between the highest forecast and the lowest forecast.

⁵ The Bank of Israel forecast is of the annualized average quarterly change in the consumer price index, while private analysts' forecasts are for the December-on-December annual change. The actual course of inflation as calculated by private analysts from the fourth quarter of 2008 until the quarter reviewed is: 4.2 percent, 2.8 percent, 3.6 percent, 3.6 percent and 3.9 percent.

⁶ The inflation forecast for the fourth quarter of 2010 appears in Section 3d above in this report.

that the economy experienced. In the first case, actual inflation was slightly above the upper limit of the Bank of Israel’s balance of risks, and above the target inflation range, in other words, the upward inflation risks materialized. The factors responsible for the rise in inflation prior to the forecast unexpectedly became more serious and delayed a reversion to the target—world commodities prices continued to increase, the shekel depreciated, and wages increased as a result of the excess demand prevailing when the forecast was compiled. In the second case, inflation exceeded the Bank of Israel forecast despite assumptions—which turned out to be too weak—that world trade would

Bank of Israel Annual Inflation Forecast and its Distribution Pattern (covering 66 percent), and the Average and Range of Private Forecasters' Predictions



contract at a more moderate rate than actually occurred, and that the recession would be less serious than actually happened. The deviation resulted from unexpected changes, described in this report, principally the government intervention, the steep increase in housing prices and a reversal of the downtrend in world prices for inputs and especially oil. As can be seen in the figure, exclusive of the effects of the government intervention, inflation in that quarter was 2.6 percent, annual rate, and not 3.7 percent.

The assessment of Bank of Israel forecasts is a complex matter. The fact that a forecast turns out to be correct does not reflect the quality of the forecast, as it could be realized by chance even if the assumptions on which it was based did not materialize. With regard to a forecast that was not realized, it must be borne in mind that the forecasts discussed herein related to a specific point in time⁷—a year ahead—while price stability must be measured over time. As the interest rate set is intended to strike a balance between a range of considerations, principally the maintenance of price stability⁸ within a target range long term, policy-makers have a flexible approach to inflation, which allows short-term deviations from the target, so that deviations from the forecast may occur.

The Bank of Israel’s inflation forecast, which is compiled before the interest rate decision, is based on a range of indicators, of which the DSGE model forecast is only one, and on the central bank’s discretion in attributing a different weighting to each indicator. Economic shocks, internal or external, are unexpected, and hence the importance of the model which enables the effects on the forecast inflation path of different scenarios, including extreme scenarios, to be analyzed. The Bank of Israel constantly examines its forecasts in order to improve them and to increase the sophistication of the instruments which it uses to analyze the balance of inflation risks.

⁷ The model forecast is for a future continued trajectory until the convergence of inflation to its target, which is dependent on the course of the interest rate.

⁸ See the section on monetary policy in this report.

Appendix Table 1
The Domestic Assets Markets, April to September 2009

	06/09	07/09	08/09	09/09	10/09	11/09	12/09
Yields to maturity (monthly average, percent)							
3-month <i>makam</i>	0.3	0.4	0.5	0.7	0.7	0.7	1.1
1-year <i>makam</i>	1.3	1.3	1.6	1.7	1.5	1.6	1.1
Unindexed 5-year bonds	4.6	4.2	4.4	4.0	3.8	3.7	4.1
Unindexed 20-year bonds	6.3	6.3	6.2	6.1	6.1	5.8	5.8
CPI-indexed 1-year bonds	-1.1	-1.1	-0.8	-0.5	-0.7	-0.8	-0.6
CPI-indexed 5-year bonds	1.8	1.5	1.6	1.5	1.2	1.0	1.4
CPI-indexed 30-year bonds	3.9	3.9	3.7	3.7	3.7	3.5	3.6
Yield gap between government bonds and							
private bonds rated AA–AAA ^a (percentage points)	1.7	1.9	1.5	1.6	1.4	1.4	1.4
private unrated bonds excluding real estate ^a (percentage points)	12.1	12.0	13.0	13.7	13.1	12.3	11.0
Share market (percentage change during the month)							
General share price index	1.2	9.0	-0.4	3.4	3.0	5.4	4.9
Tel Aviv 25 index	-2.2	10.2	-0.5	7.4	2.7	5.9	5.8
Foreign currency market (percentage change during the month)							
NIS/\$	-1.0	-3.3	0.6	-1.0	-0.3	1.2	-0.4
NIS/€	1.1	-3.4	1.8	1.0	0.7	2.7	-4.5
Nominal effective exchange rate	0.2	-2.9	0.8	0.4	0.2	2.0	-2.4
Risk indices derived from the trade in NIS/\$ options in the Tel Aviv Stock Exchange (monthly averages, percent)							
Implied standard deviation	14.8	13.5	15.0	11.7	10.2	10.4	10.1
Probability of depreciation greater than 3%	9.1	8.7	10.1	5.7	4.9	5.1	5.0
Probability of appreciation greater than 3%	10.9	8.6	11.1	4.5	2.8	3.2	2.6

^a CPI-indexed bonds, excluding convertibles, with a yield of up to 60 percent, and with a duration of more than one year.
 SOURCE: Bank of Israel.

Appendix Table 2
The Inflation Environment and Interest Rates, July to December 2009

(monthly averages)

	07/09	08/09	09/09	10/09	11/09	12/09
Inflation environment (percent)						
Monthly change in CPI	1.1	0.5	-0.3	0.2	0.3	0.0
Forecasters' predictions of monthly CPI (average of forecasts prior to publication of CPI)	0.6	0.5	-0.1	0.2	0.3	0.3
Annual change in CPI	3.5	3.7	2.8	2.9	3.8	3.9
One-year inflation expectations derived from the capital market	2.4	2.4	2.3	2.2	2.5	2.5
Forecasters' one-year inflation predictions	1.8	2.4	2.4	2.4	2.6	2.7
Forward inflation expectations^a to different terms						
Short term (second and third years forward)	3.0	3.2	2.8	2.8	2.9	3.0
Medium term (fourth to sixth years forward)	2.4	2.3	2.4	2.8	2.7	2.5
Long term (seventh to tenth years forward)	2.5	2.7	2.5	2.6	2.6	2.6
Interest rates and interest rate differentials						
Bank of Israel interest rate	0.5	0.5	0.75	0.75	0.75	1.0
Derived real interest rate	-1.8	-1.8	-1.5	-1.5	-1.6	-1.4
Short-term interest rate differential between Israel and the US (prior to decision for the next month's rate)	0.3	0.5	0.5	0.5	0.5	0.8
Short-term interest rate differential between Israel and the eurozone (prior to decision for the next month's rate)	-0.5	-0.5	-0.3	-0.3	-0.3	0.0
Forecasters' predictions of nominal interest rate for next month (prior to the decision)	0.0	0.2	0.2	0.0	0.1	0.1
Forecasters' predictions of interest rate a year hence	1.9	2.1	2.2	2.5	2.6	2.8
Long-term (10-year) nominal interest rate differential between Israel and US	2.1	2.0	2.1	2.0	1.8	1.7
Long-term (10-year) real interest rate differential between Israel and US	1.2	1.1	1.2	1.1	1.2	1.2

^a Inflation expectations are measured from the difference between yields on local currency unindexed and indexed bonds. These expectations include an element of risk premium, which rises with the length of the term to which the expectations relate.

SOURCE: Based on Central Bureau of Statistics data and private forecasters' reports.