Bank of Israel

# INFLATION REPORT

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The Inflation Report for the first quarter of 2008 (the period covered by this report) is submitted to the government, the Knesset and the public as part of the process of monitoring inflation and adherence to the inflation target set by the government. The Report was prepared in the Bank of Israel within the framework of the Senior Monetary Forum, headed by the Governor, the forum in which the Governor makes decisions on the interest rate.

The current report is the first of the new, more concise, quarterly reports on which the Governor and the Senior Monetary Forum decided in summer 2007, after reviewing the features of Israel's inflation targeting regime. The increased frequency of the report and its focus on explaining monetary policy is intended to help improve the transparency of the Bank's policy and its communication with the public.

The CPI rose in the first quarter of 2008 by 0.1 percent, but in the twelve months to March 2008 it rose by 3.7 percent, higher than the upper limit of the price stability target range (inflation of 1 to 3 percent a year). The deviation from the target range was the result of exceptional price rises of 2.5 percent in the months June–August 2007 related to the weakness of the shekel at that time, and to the significant increase in food and energy prices, particularly during the last months of 2007. These prices rose in Israel because of their steep increases world wide, and fruit and vegetable prices also rose due to several weeks of frost in Israel last winter. These upward pressures on prices were moderated by the sharp appreciation of the shekel.

Economic uncertainty increased in the first quarter of 2008, both in the financial markets and with regard to real economic activity and inflation. This was due to the worsening of the global financial crisis, which had started in the area of subprime mortgages in the US and spread to other financial markets in the second half of 2007. At that time it was very difficult to assess the effect of the crisis in the US on Israel's economy. Specifically, it was not known to what extent real activity in the US would be affected by the financial situation, how successful other countries would be in maintaining a stable level of activity ("decoupling"), or the degree to which the slowdown in global growth would impact on Israel's exports and level of economic activity.

The indications in the period reviewed suggested the realization of a pessimistic global scenario: (1) The financial crisis became more severe—there were further big losses by large financial institutions, a large investment bank collapsed, and aid to the financial sector by authorities in the US and around the western world continued and even increased; (2) data on real activity and employment in the US and some other leading economies were disappointing, and assessments that the slowdown in real activity would be more severe than originally expected, that it would continue into 2009, and that the US economy would suffer a recession became firmer; (3) the US dollar weakened against the currencies of the advanced economies, partly due to the sharp cuts in the Fed interest rate and expectations of further reductions.

Against the background depicted above, the appreciation of the shekel gained momentum, mainly against the dollar, but also against the euro and other currencies. From the end of 2007 until the end of February 2008 the NIS strengthened against the dollar by 6.7 percent, and in the first two weeks of March by another 6 percent, to a rate of NIS 3.40 to the dollar. This appreciation of the shekel enabled inflation to decline steeply, due to the pass-through from the exchange rate to consumer prices, which, although it has weakened somewhat, still exists. In addition, the appreciation is likely to affect future inflation if it persists and has a negative impact on Israel's exports and real economic activity in Israel.

Whereas until the end of 2007 there were no indications of a weakening of current economic activity, in the first quarter of 2008 the first signs of some slackening became evident, particularly in the results of the Companies Survey. In addition, in light of the global financial crisis there was concern that continued significant appreciation of the shekel and a serious adverse effect on exports could cause financial difficulties in Israel too, something avoided hitherto.

During February and March the Bank of Israel expected that upward pressure on prices in Israel would ease significantly, so that inflation would return to the target range in 2008 against the background of the strengthening of the shekel against the major currencies and expectations that the global slowdown would reduce the rapid rates of increase of international prices of energy and food, and as a result also of slower growth in Israel. In light of these assessments, the Bank of Israel cut the interest rate for March and April by half a percentage point each. This brought the rate down to 3.25 percent, its lowest level for very many years.

In March the Bank of Israel intervened in the foreign exchange market for the first time in eleven years: on 13 and 14 March, against the background of abnormal movements in the shekel exchange rate in the previous few days, the Bank purchased about $600 million of foreign currency on the market.

At about the same time, on 20 March, the Bank started implementing a program to increase the level of the foreign exchange reserves by about $10 billion in the next two years, by buying about $25 million a day on the market. This is a small amount compared to the average daily volume of trade in the market, about $2 billion, although the cumulative annual purchases are not small. The program, which had been drawn up in the course of the previous few months, is intended to adjust the level of Israel's foreign exchange reserves to the levels customary in comparable economies, against the background of Israel's rapid economic growth and its increasing integration into the global economy.

The monetary measures related to the interest rate and the foreign exchange market were taken on the basis of the assessment that inflation will return to the inflation target range in the second half of 2008.

To summarize: the advanced economies are undergoing a financial crisis, possibly the most complex one in the last sixty years, and there is a slowdown in real global growth. Israel has enjoyed four years of economic prosperity, largely thanks to a responsible and prudent macroeconomic policy and improved functioning of the business sector. As a result of its openness to international trade in goods and services and in the financial field, Israel's economy is affected by global developments, but it appears that the effects of the current crisis on Israel will be relatively moderate compared to most other economies.

The Bank will continue to pursue a policy aimed at maintaining price stability, and subject to that, to support growth, employment and financial stability. In that way monetary policy will contribute to sustainable economic growth.

Stanley Fischer

Stanley Fischer

Governor, Bank of Israel

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**Summary**[1]

- The CPI rose by 0.1 percent during the first quarter of the year. This brought the rate of inflation for the previous 12 months to 3.7 percent, which exceeds the upper limit of the inflation target range (1–3 percent). This was primarily due to the increase in oil and food prices worldwide in recent years and the particularly high increases in the CPI during June–August of 2007 (2.5 percent) which resulted from the depreciation of the shekel. Therefore, the deviation of inflation from the target range appears to be temporary. According to most estimates, including those of the Bank of Israel, inflation (for the previous 12-month period) is expected to return to the target range during the second half of 2008, both because the indexes of last summer will no longer be in the calculation and the inflationary pressures that have characterized the past year will have weakened.
- Against the background of the global financial crisis, which began in the US sub-prime mortgage market and quickly spread to both real and financial markets worldwide, global growth slowed during the last quarter of 2007, especially in the US. The macroeconomic data indicate a continued slowdown also in early 2008 and, according to IMF estimates, global growth will slow during the next two years, particularly in the US where a recession is expected.
- During the quarter under review, the shekel strengthened significantly at a rate of 10.1 percent against the dollar and 7.2 percent against Israel's main trading currencies. The appreciation contributed to a drop in the CPI during the quarter through lower costs of imports; however, it appears that the pass-through is now weaker than it was in the past. It is possible that some import prices have not yet been adjusted to the low exchange rate out of fear that it will change direction and therefore the stabilization of the exchange rate at its present level implies disinflationary pressure. In addition, the appreciation hurt export profits at a time when exporters were already facing a slowdown in global economic activity. This is liable to also cause a slowdown in private consumption and investment.
- During the second week of March, the exchange rate appreciated sharply. As a result of extraordinary movement of the exchange rate during two days in mid-March, the Bank of Israel intervened in foreign currency trading by purchasing $600 million on a one-time basis over that two-day period.
- On 20 March the Bank of Israel announced its intention of purchasing $10 billion over two years, in order to raise the level of the foreign exchange reserves to the desired level. At this time, with the exchange rate so strong, adjusting the forex reserves, which had been planned for some time, is consistent with the Bank’s price stability objectives and its support for real activity.
- As of the end of 2007, the global crisis had not led to a contraction of real activity in the local economy and GDP even grew at a faster rate than its potential, thus creating excess demand. This was not reflected in the cost of labor but apparently was one of the reasons that inflation exceeded its target since it allowed the rapid pass-through of world price increases, particularly those of food, to the Israeli consumer. In the first months of 2008, the basket of indicators, which tends to lead real economic activity, pointed to somewhat of a slowdown in the rate of growth.
- In January, the Bank of Israel interest rate was raised against a background of accelerating inflation, both actual and expected, and a number of indications of excess demand in the economy.
- During the months of March and April, the Bank of Israel interest rate was reduced by a total of one percentage point. The reduction was necessary in view of the accumulating evidence of the severity of the global crisis, the accelerated appreciation in the exchange rate and the drop in US interest rates, which created conditions that tended to moderate inflationary pressure. The reduction in the rate of interest is likely to moderate the effect of the global crisis on Israel's economic growth.

[1] 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.

- The rate of growth is expected to reach 3.2 percent in 2008, which is less than in the previous year. This is due to the effect of the slowdown in growth of the major economies, the continuing rapid increase in commodity prices, especially oil, the fall in share indexes in Israel and abroad and the real appreciation of the shekel against its main trading currencies.
- In coming months, inflation is expected to remain above the upper boundary of the target range, due to the continuing increase in global commodity prices during the past quarter. However, according to the Bank of Israel's assessment, the stabilization of commodity prices later in the year together with the appreciation that has occurred in the exchange rate and the slowdown in global economic activity will be sufficient to gradually bring down the rate of inflation. Thus, within a year, inflation will be located slightly above the center of the target range. Given this assessment, it is expected that the Bank of Israel will maintain the interest rate at a relatively low level during the course of the year in order to offset the influence of the global economic crisis on local real economic activity.
- The risk of inflation is tending upward and is dependent on the intensification or change in direction of the major trends that are currently affecting inflation: an additional acceleration in world commodity prices, a transition to depreciation of the exchange rate or an increase in wages in the economy as a result of excess demand that will delay the return of inflation to the vicinity of the center of the target range. It is possible that this will necessitate an increase in the rate of interest during the course of the year. In contrast, a continuation of the appreciation in the exchange rate or the intensification of the global crisis will work to constrain inflation to the point where it may even drop below the target range.

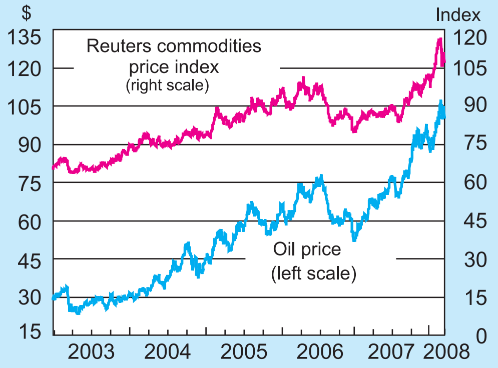
I. INFLATION AND THE BACKGROUND

## a. The international context

Major developments worldwide continued to reflect the financial crisis that began with the sub-prime mortgages in the United States and rapidly overflowed into a broad range of financial and non-financial markets (see the Inflation Report No. 21, for the second half of 2007, Box 2, and the Bank of Israel Annual Report 2007, Chapter 4). The financial crisis was expressed in a rise in the perception of risk on the part of investors, and a rapid reduction in the supply of credit, which created fears of a recession in the United States and a significant slowdown in global growth. In light of the above, particularly sharp decreases of 10 to 20 percent were recorded during the quarter in stock-exchange indices worldwide, as well as increases in risk spreads. At the same time, yields on government bonds in the US, Europe and Japan fell as investors searched for a secure haven for their money. Global growth had already decreased in the last quarter of 2007, especially in the United States economy which grew by 0.6 percent as opposed to 4.9 percent in the third quarter. Current macroeconomic figures published in the United States, particularly in the housing and labor markets, point to a continuation of the slowdown at the beginning of 2008.

Despite the slowdown in global activity, inflation in most of the large economies worldwide continued to be high throughout the quarter. Annual inflation in the United States is 4 percent and in Europe 3.6 percent, a result of the ongoing increase in commodity prices, primarily oil and food products.[2] Commodity prices continued to increase during the quarter to record levels (Figure 1). Thus, for example, the Reuters Commodity Index climbed by 15 percent and the price of a barrel of oil increased by 12 percent (from $92 in December to $103 in March). The rise in commodity prices, including oil and food, is a reflection, on the one hand, of long-term factors such as: (1) Expansion of the Indian and the Chinese economies, a derivative of which is their demand for energy and food products (see the Bank of Israel Annual Report 2007, Box 3.1); (2) Increasing use of corn for producing biofuels (for further details, see the Bank of Israel Annual Report 2007, Chapter 3); and on the other hand, short-term factors, such as the weakness of the dollar worldwide. Furthermore, the increase in commodity prices might well be the expression of a conception that commodities are a good alternative investment in a situation

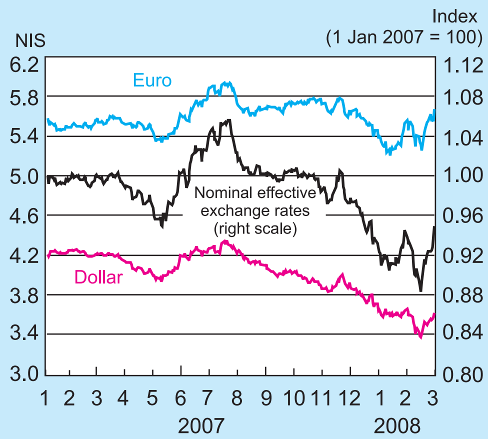
**Figure 1**
**The Commodities Price Index and Oil Prices, 2003 to March 2008**



SOURCE: Bloomberg.

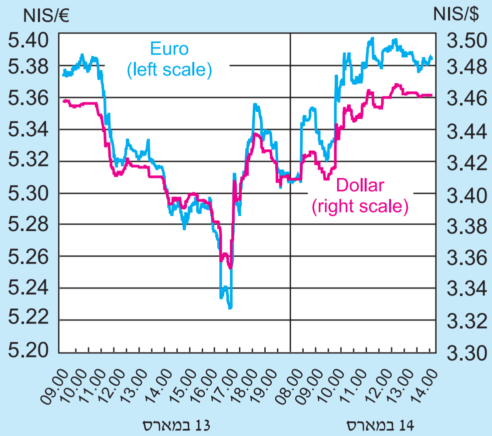
[2] After deducting the energy and food items, annual inflation in the United States was only 2.4 percent, and in Europe 2.7 percent.

**Figure 2a**
**The NIS/$, NIS/Euro and the Nominal Effective Exchange Rates, January 2007 to March 2008**




SOURCE: Bank of Israel.

**Figure 2b**
**The NIS/$ and NIS/€ (Bid) Exchange Rates 13 and 14 March 2008**




המקור: רויטרס.

in which interest rates in the United States are falling, the dollar is weakening, and stock indices are falling rapidly.

Against the background of widespread concern about the depth of the recession in the United States and the price falls on the stock markets, the Federal Reserve Bank reduced the interest rate by two percentage points during the quarter to 2.25 percent in March. Furthermore, one of the reductions was instituted about a week before the planned date and by a particularly steep rate (0.75 percentage points). These reductions, which were accompanied by a broad fiscal package and several actions for increasing liquidity in the markets, signaled, on the one hand, the depth of the crisis into which the United States had slid, and on the other, the Federal Reserve Bank's determination to assist in moderating the crisis, despite the current inflation level. In its announcements, the Fed claimed that the economic slowdown would lead to moderating the inflation.

Europe, Japan and Great Britain faced a similar dilemma. On the one hand, the global crisis creates real risks for the continuation of growth, and on the other, the risks of inflation tend upward in view of the takeoff in commodity prices. Since price stability is defined as a major objective in these economies, and since they have not demonstrated any clear signs of a fall-off in activity, the central banks, as of now, have chosen not to resort to significant expansionary moves.[3]

### b. Developments in the exchange rate and capital movements

In the period under review, the shekel strengthened significantly against most currencies: it appreciated by 10.1 percent against the dollar, and by 7.2 percent against the effective[4] exchange rate (Figure 2). The appreciation took place against the background of several forces that have recently come to the fore: (1) The continuing improvement in the basic state of the economy and the consolidation of confidence in the macroeconomic policy, which were reflected in the constant inflow of long-term capital, the improvement in Israel's credit rating and the decision of the OECD to begin the process of Israel's admission to that organization; (2) A surplus on current account that last year totaled 5 billion dollars, which is approximately 3 percent of GDP (Figure 3); (3)

[3] The Bank of England reduced the interest rate twice by 0.25 percentage points to 5 percent. Europe and Japan left the interest at 4.0 percent and 0.5 percent respectively.

[4] Weighted average of the shekel against the currencies of Israel's trading partners.

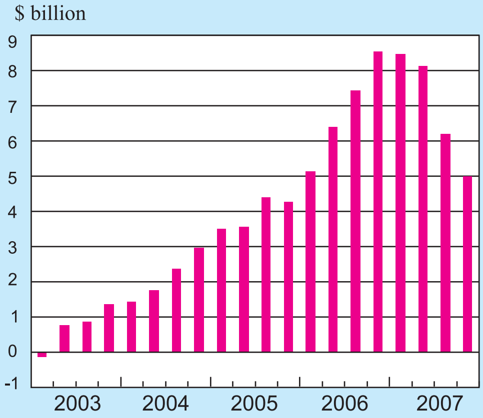
The transition to positive interest-rate differentials between Israel and the United States (Figure 4); and (4) The activity of most sectors supported the strengthening of the shekel: the investments of institutional bodies abroad were negligible, as opposed to the previous year in which the institutional investors worked toward increasing the scale of their investments abroad, in light of the reduced tax rates on these investments (Figure 5); households realized investments in mutual funds specializing in foreign currency and in investments abroad (Figure 5); and foreigners continued to invest directly in Israel, even on the Tel Aviv Stock Exchange, despite sharp decreases in the share indices and the global trend of realizations in emerging economies. The latter contributed to the shekel strengthening against the currencies of the emerging economies as well.

The appreciation of the shekel against the dollar by 5.7 percent in January mainly reflected local factors leading to the strengthening of the shekel worldwide. The appreciation took place against the widening of interest-rate differentials at a time that the United States had reduced its interest rate and it seemed that other central banks were likely to follow suit, and on the other hand the increase of the domestic interest rate in January by 0.25 percentage points.

A temporary remission took place in the appreciation in February, but it continued vigorously in March. Then, the appreciation largely reflected the weakening of the dollar worldwide in the wake of the substantial deficit in the balance of payments in the United States, the deepening of the financial crisis there, and the reduction of interest by the Fed. Against the background of the reduction in the Bank of Israel's interest by 0.5 percent in March, the shekel depreciated slightly against the effective basket of currencies, but this lasted only one week, following which the shekel strengthened against most of the currencies. Furthermore, households, institutional investors and foreign residents whose activities supported the strengthening of the shekel, were joined by the business sector that began selling foreign currency. This contradicts the perennial phenomenon of the business sector acting against the exchange-rate trend—purchasing foreign currency at a time of appreciation and selling at a time of depreciation (Figure 6). Possibly the export sector feared a continuing appreciation and exchanged foreign currency for shekels. Partial, although by no means clear-cut evidence of this was the massive withdrawal by the business sector of more than a billion dollars in foreign exchange deposits.

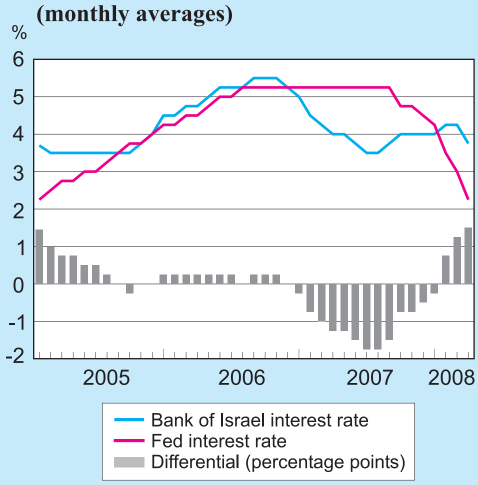
During March the shekel strengthened against the dollar by 2.3 percent. Even though the shekel had continued to strengthen

**Figure 3**
**The Current Account, Running Four Quarter Totals, 2003:Q1 to 2007:Q4**



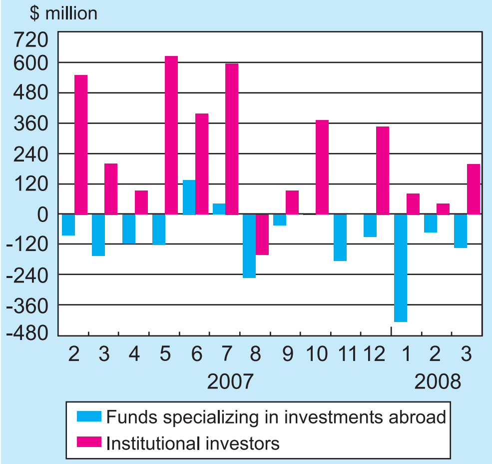

SOURCE: Based on Central Bureau of Statistics data.

**Figure 4**
**Short-Term Interest Rates in Israel and the US and the Differential Between Them, January 2005 to March 2008**
**(monthly averages)**



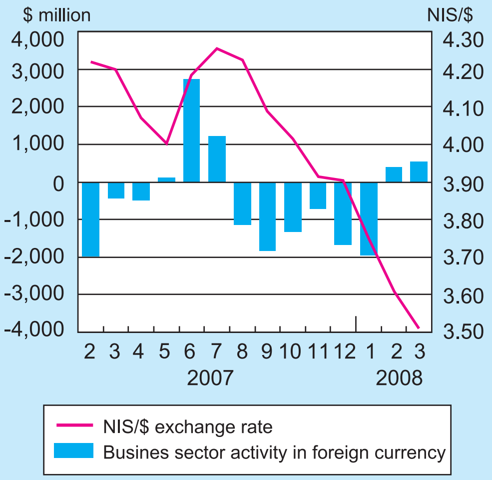

SOURCE: Bank of Israel.

**Figure 5**
**New Deposits (+) in Provident Funds Specializing in Investments Abroad, and Institutional Investors' Investments Abroad (+), February 2007 to March 2008**




SOURCE: Bank of Israel.

**Figure 6**
**The NIS/$ Exchange Rate and Business Sector Activity in Debt Instruments, February 2007 to March 2008**
**(net foreign currency sales (+))**




SOURCE: Bank of Israel.

against the dollar since the beginning of 2006, the intensity of the appreciation this month was exceptional. Within four days of trading, the shekel-dollar exchange rate fell from NIS 3.6 to below NIS 3.4 (about 6 percent), and on 13 March it fell from NIS 3.45 to the dollar to NIS 3.55, (about 3 percent) within five hours of trading. In light of this rapid rate of appreciation, the Bank of Israel took the unusual step of intervening in the market by purchasing 600 million dollars in two days of trading. The aim of the intervention was to prevent a free fall in the dollar rate, a fall that is not a consequence of basic economic forces, yet one that creates downward inflationary pressure and has an adverse effect on economic activity.

Furthermore, the Bank of Israel announced a change in its foreign-exchange-reserves policy, as part of which it would purchase 10 billion dollars within two years in order to increase its reserves. Increasing the reserves has been viewed as desirable for several years in order to ensure that in times of crisis the Bank of Israel will be able to finance various demands placed on the reserves: serving the government's foreign currency debt, the government's exceptional expenses for the import of commodities and services in emergency situations, and operations of the Bank of Israel in times of financial crisis. Furthermore, expanding the reserves reduces the probability of a crisis in the foreign-exchange market, and improves the country's standing in the international financial community (see the Bank of Israel Annual Report—2003, Foreign Exchange Department, Chapter 1). Adding reserves by direct purchasing of foreign currency by the Bank of Israel affects the exchange rate in view of the demand created for foreign currency. At present, foreign-currency reserves can be increased in a way that is consistent with the objective of price stability and with the desire to prevent substantial harm to real activity in general and to the export sector in particular.

Taken as a whole, these activities of the Bank of Israel, even though their goals and nature are completely different, have lent support to a certain weakening in the rate, with the result that at the end of the quarter it stood at NIS 3.55 to the dollar. However, during April the shekel appreciated again, and towards the end of the month the exchange rate stood at NIS 3.45 to the dollar.

The nominal appreciation was also reflected in the real rate of exchange,[5] which fell by 6.7 percent during the quarter, the result being that last twelve months the real appreciation was 10 percent. In other words, when measured in the same currency,

[5] In accordance with the index published by the IFS (International Financial Statistics), which measures Israel's real exchange rate, in terms of the consumer price index, against that of its trading partners.

prices to the Israeli consumer rose more than those of our trading partners. This phenomenon could be a result of temporary factors, such as excess demand that may exist in the Israeli economy, or that the influence of the nominal appreciation on prices to the consumer has not yet exhausted itself. Furthermore, there may be long-term forces that are strengthening the real exchange rate. Israel is still a developing country, in which real wages are lower than those in the developed countries. Long-term forces that are raising wages in Israel beyond those of our trading partners will also support an ongoing process of real appreciation.

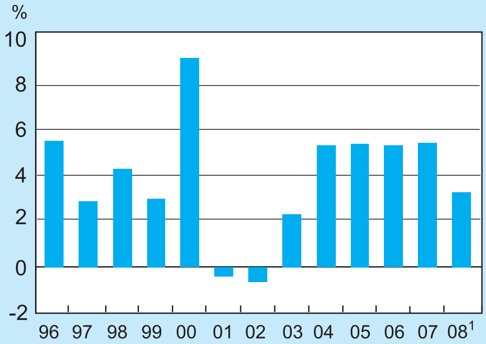
### c. Real activity

Up to the end of 2007, the worldwide crisis had not adversely affected domestic real activity. Growth figures for the fourth quarter of 2007 continued to be good, and the improvement in the labor market maintained itself. However, initial indicators of activity in the first quarter point to a more moderate pace of expansion than in the previous year.

The last quarter of 2007 witnessed something of a growth surge—GDP grew by 6.1 percent as opposed to 5.3 percent for the year as a whole; the business-sector gross product grew by 7.7 percent, as opposed to 6.1 percent for the year as a whole (Figure 7). Despite the worldwide crisis and the continuing appreciation in the exchange rate, the high growth level reflected a substantial expansion in export and investment components.

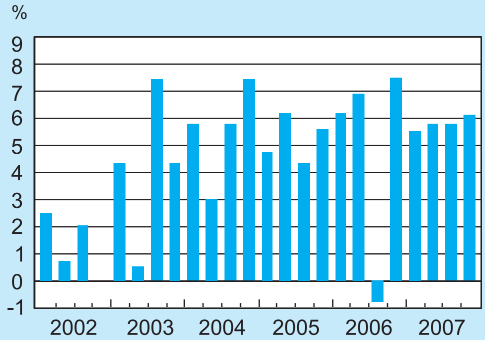
Exports, excluding diamonds, grew by 11.7 percent, similar to the growth rate in the previous quarters. Initial foreign-trade figures for the first months of 2008 point to a certain slowdown in exports, even though they are still at a higher level than the previous year. This situation has occurred despite the real

**Figure 7**
**GDP, Annual Growth Rates, 1996–2008**




[1] Bank of Israel forecast.

**Quarterly Growth Rates, 2002 to 2007 (in annual terms)**




SOURCE: Bank of Israel Annual Report and Central Bureau of Statistics.

**Table 1**
**GDP, Imports and Uses**

| | 2005 | 2006 | 2007 | 2007:Q1 | 2007:Q2 | 2007:Q3 | 2007:Q4 |
|---|---|---|---|---|---|---|---|
| GDP | 5.3 | 5.2 | 5.3 | 5.5 | 5.8 | 5.8 | 6.1 |
| Business sector output | 6.5 | 6.5 | 6.1 | 6.2 | 6.8 | 7.1 | 7.7 |
| Imports excluding defense imports, ships, aircraft and diamonds | 5.3 | 5.1 | 14 | 19 | 20.7 | 8.7 | 12.3 |
| Private consumption | 4 | 4.5 | 6.6 | 9.7 | 3.7 | 7.4 | 1.6 |
| Public consumption | 2.9 | 2.3 | 2.6 | -3.0 | 6.0 | 2.0 | -5.0 |
| Gross domestic investment | 11.1 | 5.3 | 13.8 | -21.1 | 60.8 | 0.9 | 17 |
| Exports excluding diamonds | 6.6 | 10.1 | 9.3 | 9.2 | 10.6 | 11.8 | 11.7 |

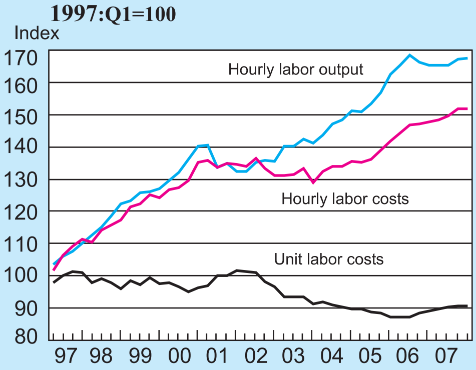
SOURCE: Based on Central Bureau of Statistics data.

**Figure 8**
**The Employment Rate and the Unemployment Rate,[a] 2002 to 2007**
**(seasonally adjusted, percent)**


[a] Unemployment rate, percent of labor force; employment rate, percent of working-age population.

SOURCE: Labour Force Surveys.

**Figure 9**
**Index of Gross Unit Labor Costs in the Business Sector, March 1997 to September 2007**
**(quarterly, seasonally adjusted)**
**1997:Q1=100**




SOURCE: Central Bureau of Statistics.

appreciation of 10 percent in the past year, which reduces the profitability of exports. This phenomenon reflects a limited ability to divert Israeli export commodities to the domestic market when the exchange rate falls—the elasticity of the level of exports relative to its price reaches 0.2 in the long term, so that the above appreciation can lead to only a decrease of 2 percent in the amount of exports.[6] Thus, the appreciation mainly harmed the profitability of exports and not their volume, something that emerges also from the survey of expectations in industry. The continuing expansion of exports also attests to the fact that the crisis in the world economy has still not led to a decrease in demand for Israel's exports of goods and services, which are mainly high-tech.

Gross domestic investment grew in the last quarter by 17 percent,[7] evidence of expectations that the expansion of economic activity will continue in the coming period. Possibly the worldwide crisis is expressed to some extent in private consumption—the index of consumers' confidence, which is a measure of the extent of households' optimism about the future economic situation, has shown a decreasing trend since the crisis broke out in July 2007. This decrease may already have begun to show signs during the last quarter of 2007 when private consumption grew by 1.6 percent as opposed to 6.6 for the year as a whole. The continuing slackening of the rate of growth of credit-card purchases in 2007 and at the beginning of 2008 are an initial indication that the slowdown in private consumption will also characterize the first quarter of the year.

The improvement in the labor market, which had already started in 2004, continued to the end of 2007. The rate of unemployment in the last quarter decreased from 7.2 to 6.7 percent (Figure 8). On the one hand, the decrease in the unemployment rate is a result of the fall in the rate of participation and not a growth in employment, so that the employment rate fell from 52.4 to 52.2 percent, following a significant increase in recent years. Were it not for the fall in the rate of participation in the labor force, the unemployment rate would actually have risen to 7.5 percent. On the other hand, in the fourth quarter there was a decline in the numbers and in the rate of people seeking jobs for more than six months (a decrease in the depth of unemployment), a decrease in the rate of unemployed persons who had not worked in the previous twelve months, and a decrease in the number of part-time employees. These developments in the labor market,

[6] See the Bank of Israel Annual Report 2007, Chapter 2.

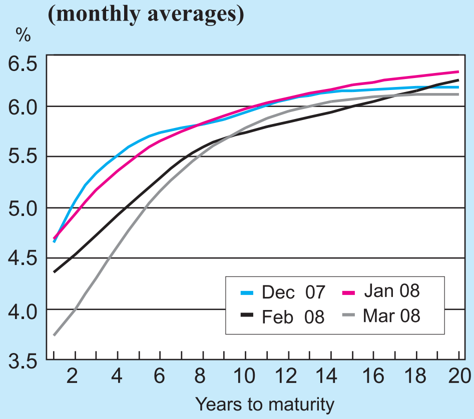
[7] The quarterly growth in investment (17 percent) reflects a sharp growth in inventories and investment in fixed assets, excluding ships, aircraft and diamonds.

in conjunction with the high growth rate, attest to the fact that at the end of the year the economy was approaching a state of exhausting its production capability.

It is difficult to evaluate the contribution of the improvement in real activity and in the labor market to the development of inflation in the period under review. On the one hand, various assessments of the output gap indicate that in reality GDP grew at a more rapid rate than its potential in recent years, possibly resulting in the development of inflationary pressures. On the other hand, the inflationary pressures, if there were any, did not arise from domestic cost factors—labor cost per unit of GDP remained almost unchanged in the fourth quarter of 2007, in continuation of only a moderate increase that took place in the second half of 2006 (Figure 9). Possibly the excess demand contributed to accelerating inflation by enabling a rapid pass-through of price rises abroad, particularly food, on to the Israeli consumer.

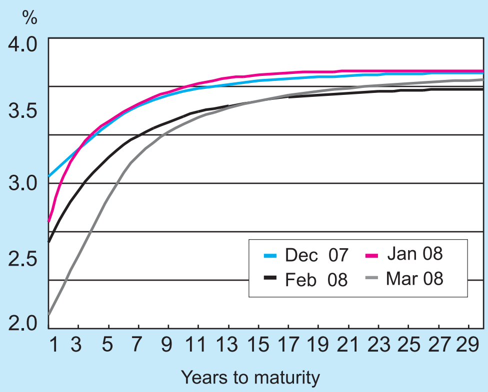
An examination of the overall indicators preceding the real activity at the start of 2008 points to a slowdown in the rate of expansion relative to the previous year. The monthly composite state-of-the-economy index rose from December 2007 to February 2008 by 0.4 percent on average, a lower rate than the previous year in which the index rose, on average, by 0.6 percent a month. From the survey of companies, it emerges that the pace of expansion of economic activity in the first quarter was significantly lower than that of the previous year, and that the slowdown encompassed most branches. The slowdown was mainly the result of a moderation of growth in domestic activity, but was also the result of a slowdown in the rate of growth of activity with overseas customers. The survey further reveals that the demand constraint had intensified, as opposed to the supply constraint that was more emphasized in previous surveys, which could indicate a growing surplus in production capacity. The leading index does not indicate further deterioration in the coming quarter.

**Figure 10**
**Yield-To-Maturity Curve of Unindexed Bonds, December 2007 to March 2008**
**(monthly averages)**




SOURCE: Bank of Israel.

**Figure 11**
**Yield-To-Maturity Curve of CPI-Indexed Bonds, December 2007 to March 2008**
**(monthly averages)**

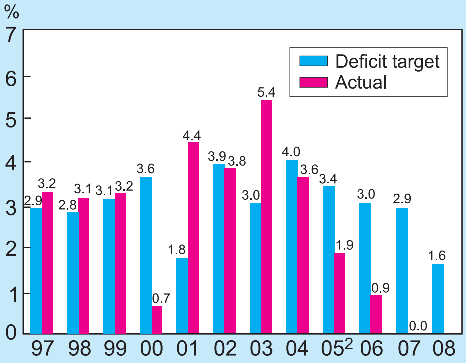



SOURCE: Bank of Israel.

## d. Financial developments

The development of the financial indices such as stock prices, yields and credit spreads definitely matched the global directions. However, contrary to other large economies (the United States, Europe and Great Britain), the stability of the financial market has been maintained, local financial bodies did not encounter any significant setbacks, and no liquidity deficit or credit squeeze developed. Contributing to this was the fact that the banking system and the local investment houses were not particularly

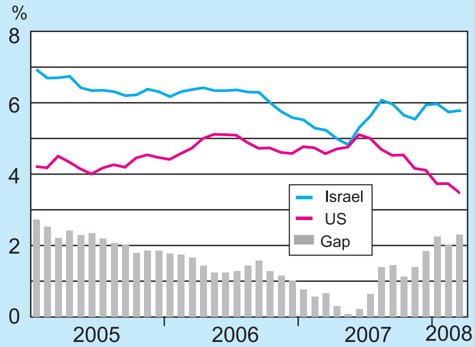
**Figure 12**
**The Government Deficit (percent of GDP), Targets and Actual, 1997 To 2008[a]**




[a] Total deficit excluding credit granted. From 2000, excluding realized Bank of Israel profit.
[b] Including the cost of the disengagement from Gaza.

SOURCE: Based on data from the Accountant General in the Ministry of Finance.

**Figure 13**
**Long-Term (10-Year) Nominal Yields in the US and Israel, and the Gap Between Them, 2005 to March 2008 (monthly averages)**




SOURCE: Based on IFS data.

exposed to the sub-prime mortgages and the problematic credit in the United States.

The rise in the perception of risks worldwide also led to sharp falls in local stock prices. The general share-price index and the Tel Aviv-25 Index fell by almost 20 percent. As with other share indices worldwide, the falls took place in two major waves in January and March, and were accompanied by considerable fluctuations. Leading the falls were the shares of the financial, real estate and hi-tech companies, while the fall in share prices in the industrial branches was moderate. This attests to the fact that investors' fears focused on the financial risks and not on significant harm to real activity. At the same time, the blow to the value of financial property, in Israel as in the rest of the world, was liable to lead to a decrease in private consumption, as in fact happened, and in its wake a decrease in real activity.

Yields on government bonds, both indexed and nominal, fell during the quarter (Figures 10 and 11, and Table 2). In addition to the global tendency to transfer investments to secure assets, the declining yields were also supported by the low government deficit in recent years (Figure 12) and the decrease in the public debt in its wake. In light of investors' fears of a further rise in inflation, the demand for indexed assets grew, especially short-term assets. As a result, the fall in yields of indexed bonds was more pronounced in the short term. Yield differentials between unrated bonds and government bonds continued to widen. Thus, during the quarter, the yield on unrated bonds rose by approximately one percent, while the yield on government bonds fell. The fall in yields here was somewhat more moderate than in the United States, so that yield differentials widened during the quarter (Figures 13 and 14).

### e. The development of inflation during the quarter

In the first quarter of the year, the CPI rose by 0.1 percent. After deducting seasonal factors, it rose by 0.5 percent, a level consistent with an annual rate of inflation that matches the middle of the inflation target, i.e., 2 percent. However, inflation in the past 12 months was 3.7 percent, exceeding the upper limit of the target (Figure 16). The deviation of inflation from the target began last December, and is primarily the result of rising oil and food prices worldwide in recent years. Thus after deducting energy and food items (excluding fruit and vegetables), the CPI rose by only 1.8 percent. Furthermore, the measurement of inflation during the past 12 months includes the CPIs for June to August 2007, which were particularly high (a cumulative 2.5 percent!)

### Table 2
### The Domestic Assets Markets

| | Oct 2007 | Nov 2007 | Dec 2007 | Jan 2008 | Feb 2008 | Mar 2008 |
|---|---|---|---|---|---|---|
| **Yields to maturity (monthly average, percent)** | | | | | | |
| 3-month *makam* | 4.3 | 4.3 | 4.6 | 4.4 | 4.1 | 3.4 |
| 1-year *makam* | 4.4 | 4.5 | 4.6 | 4.7 | 4.4 | 3.8 |
| Unindexed 5-year bonds | 5.2 | 5.2 | 5.8 | 5.7 | 5.3 | 5.0 |
| Unindexed 20-year bonds | 6.0 | 5.9 | 6.3 | 6.3 | 6.1 | 6.1 |
| CPI-indexed 5-year bonds | 3.3 | 3.3 | 3.2 | 3.1 | 2.7 | 2.3 |
| CPI-indexed 30-year bonds | 3.7 | 3.6 | 3.7 | 3.7 | 3.5 | 3.5 |
| Yield gap between government bonds and private unrated bonds excluding real estate (percentage points) | 4.6 | 5.0 | 5.7 | 6.0 | 6.5 | 7.2 |
| **Share market (percentage change during the month)** | | | | | | |
| General share price index | 5.4 | -4.8 | 1.4 | -11.9 | 4.5 | -9.7 |
| Tel Aviv 25 index | 8.0 | -4.0 | 2.5 | -12.8 | 4.6 | -10.2 |
| **Foreign currency market (percentage change during the month)** | | | | | | |
| NIS/$ | -1.2 | -3.4 | 0.4 | -5.7 | 0.3 | -2.3 |
| NIS/€ | 0.7 | -1.5 | 0.2 | -4.8 | 2.6 | 1.6 |
| Effective exchnage rate | -0.1 | -2.7 | 0.1 | -5.3 | 2.5 | -2.2 |
| **Risk indices calculated from the trade in NIS/$ options in the Tel Aviv Stock Exchange (monthly averages, percent)** | | | | | | |
| Implied volatility | 9.5 | 10.4 | 11.4 | 12.4 | 15.1 | 14.7 |
| Probability of depreciation greater than 2% | 4.0 | 6.6 | 7.9 | 9.1 | 12.9 | 16.1 |
| Probability of appreciation greater than 2% | 2.5 | 3.0 | 4.2 | 8.9 | 9.5 | 7.3 |

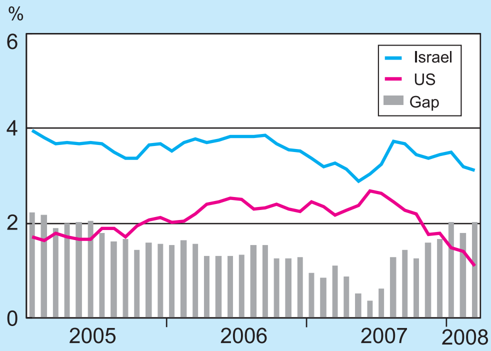
SOURCE: Bank of Israel.

under the influence of the depreciation that took place then in the exchange rate. The removal of these CPIs from the calculation in a few months time will lead to a decrease in the level of measured inflation.

The development of energy prices,[8] which as mentioned above contributed to rising inflation during the past year, was not uniform in the past quarter. Against the background of the decrease in the price of oil in January, the energy component in the CPI fell in the first two months of the quarter by 1.7 percent. However, at the beginning of February the oil price again increased, so that the energy component in the March CPI rose by 1.8 percent, as a result of which, for the quarter as a whole it remained unchanged.

Food prices (excluding fruit and vegetables) also continued to rise significantly during the quarter by 4.2 percent, which contributed 0.6 percentage points to the CPI increase. In this case, the rising food prices resulted from food-price increases on

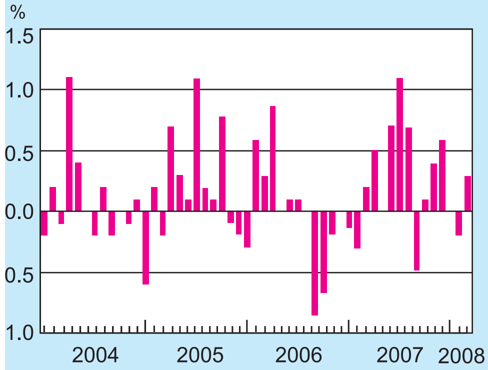
**Figure 14**
**Long-Term (10-Year) Real Yields in the US and Israel and the Gap Between Them, 2005 to March 2008 (monthly averages)**




SOURCE: Based on St. Louis Fed data.

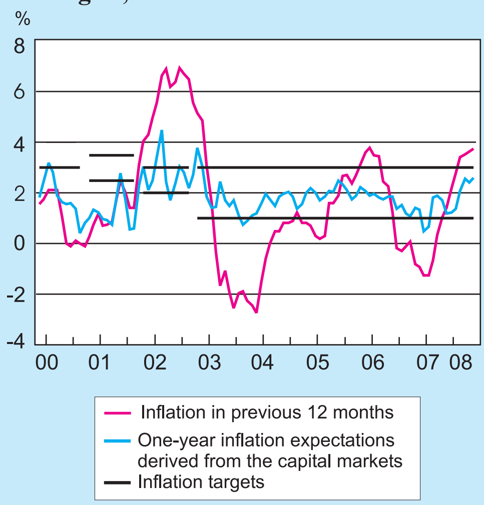
[8] Prices refer to electricity, kerosene and diesel oil for home heating, gas and service fees, and oil and fuel for vehicles.

**Figure 15**
**Monthly Rates of Change of the CPI, 2004 to March 2008**




SOURCE: Central Bureau of Statistics.

**Figure 16**
**Inflation in Previous 12 Months, Inflation Expectations and Inflation Targets, 2000 to March 2007**




SOURCE: Based on Central Bureau of Statistics data.

international markets.

Fruit and vegetable prices rose by 8.1 percent and contributed 0.3 percentage points to the CPI increase. This exceptional price rise was a result of severe frost during the winter, which led to diminished supply of fresh vegetables (marrows, cucumbers, eggplant, cabbage, etc.). Another factor contributing to the rise in the prices of fruit and vegetables was the production costs connected to the *Shmitah* year (the Sabbatical Year when Jewish Law requires that the land lie fallow).

The price rises in all the above items are a result of reductions on the supply side (and not expansion of domestic demand) which, in equilibrium, leads to a rise in price on the one hand, and a decrease in quantity on the other. An increase in energy and food prices reflects a decrease in world supply that the Israeli economy had to deal with, while the increase in vegetable prices, is, as we said, a result of a decrease in domestic supply. The latter, however, should be dealt with somewhat differently from the former, the reason being that since the adverse effect on the supply of vegetables is temporary—when weather conditions improve and the *Shmitah* year ends, supply will again expand, and prices can be expected to return to their former level. Monetary policy should thus not react to shocks of this kind. As opposed to this, the increasing energy and food prices worldwide are an ongoing process of several years, which will not necessarily reverse itself; a restraining monetary policy is thus required in order to offset pressure for increasing inflation. It needs to be borne in mind, however, that both the reduction in supply and the monetary restraint create forces that reduce real activity.

The housing item fell during the quarter by 2.3 percent and thus subtracted 0.5 percentage points from the general CPI. The decrease in the housing index parallel to appreciation in the exchange rate against the dollar, raises the possibility that the connection between the variables, which for many years was absolute and seems to have loosened in the past year, still exists to some extent. However, the frequency of use of the dollar in rental contracts continued to decrease during the quarter to only 45 percent, as opposed to 65 percent at the end of 2007 and about 90 percent in the past. The steady transition to the use of shekels in the housing market will continue to reduce the influence of the dollar rate on the housing index.[9]

[9] For further details, see the inflation report for the second half of 2007, Box 1, and the Bank of Israel Annual Report 2007, Box 3.2.

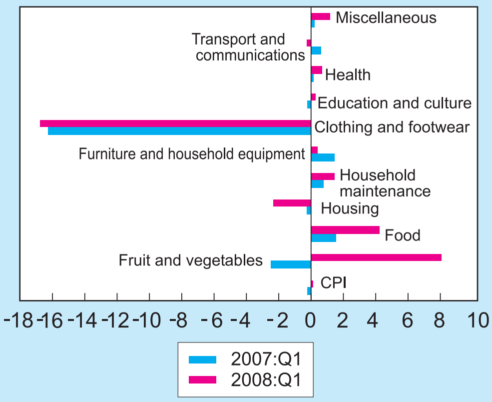
**Table 3**
**Selected Components of the Consumer Price Index (CPI), and their Contribution to the Change in the CPI**

| | | Previous 12 months | | 2008:Q1 | |
|---|---|---|---|---|---|
| | Weight in index | Rate of change | Contribution to CPI | Rate of change | Contribution to CPI |
| CPI | 100.0 | 3.7 | 3.7 | 0.1 | 0.1 |
| Energy | 7.3 | 14.2 | 1.0 | 0.0 | 0.0 |
| Food (excl. fruit and vegetables) | 13.7 | 9.1 | 1.3 | 4.2 | 0.6 |
| Fruit and vegetables | 3.4 | 18.6 | 0.6 | 8.1 | 0.3 |
| Housing | 21.0 | -0.2 | 0.0 | -2.3 | -0.5 |
| Clothing and footwear | 3.4 | -1.3 | 0.0 | 16.8 | -0.5 |

SOURCE: Based on Central Bureau of statistics data.

The appreciation in the exchange rate contributed to the decrease in the general CPI through its impact on import prices. Econometric models that estimated the strength of the pass-through in the past from appreciation (or depreciation) to the CPI found a short-term elasticity of 0.3 to 0.4. That is to say, the strengthening of the shekel by 5 percent, as occurred during the quarter would, in itself, lead to a decrease of 1.5 to 2 percent in inflation in that quarter! About half of this pass-through arose from the close connection between the dollar rate and the housing index, which, as mentioned above, had already weakened last year. The weakening of the pass-through apparently transcended the housing item: during the past 12 months the CPI, excluding housing, grew by 4.8 percent, while the effective exchange rate appreciated by 7.4 percent. This is most unusual, because the correlation between these sequences in the past was high—0.6. The gap is probably a result of the fact that importers did not rush to adapt their prices to the decrease in the exchange rate (which reduces the cost of the commodity to the importer), as they used to do in the past, fearing the trend would reverse itself and that they would again be forced to raise their prices. Taking all these changes into account, our assessment is that the appreciation in the exchange rate contributed up to 0.7 percentage points to the fall in prices during the quarter.

**Figure 17**
**Changes in the Components of the CPI, 2007:Q1 and 2008:Q1 (percent)**



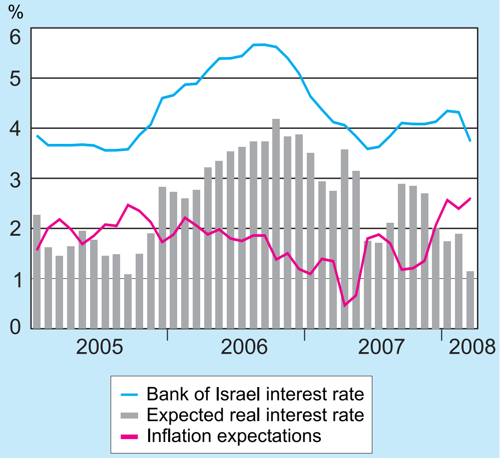

SOURCE: Based on Central Bureau of Statistics data.

## II. MONETARY POLICY

In January, the Bank of Israel raised the interest rate by 0.25 percentage points and following that—in March and April—reduced it by 0.5 percentage point each month (see Figure 18). The interest rate for May was left unchanged.

There were four main factors that influenced the interest rate decision and which affect local economic activity in opposite

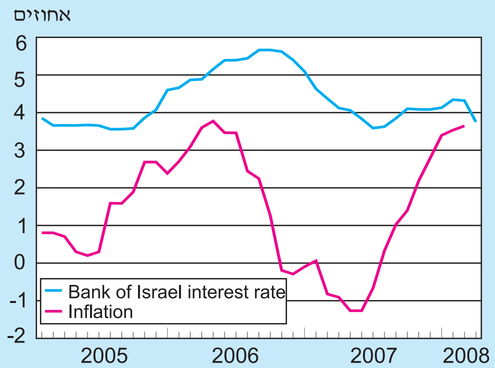
**Figure 18a**
**The Bank of Israel Interest Rate,[a] Inflation Expectations,[b] and the Expected Real Interest Rate, 2005 to March 2008** (monthly averages)




[a] The effective interest rate in the Bank of Israel auctions.
[b] For 12 months, derived from the capital market.

SOURCE: Bank of Israel.

**Figure 18b**
**The Bank of Israel Interest Rate[a] and Inflation in Previous 12 Months, 2005 to March 2008** (monthly averages)




[a] The effective interest rate in the Bank of Israel auctions.

SOURCE: Bank of Israel.

directions: the increase in world commodity prices and the situation of local demand, which were inflationary factors that had already pushed actual inflation above the upper boundary of the target range in 2007, and the trend of appreciation in the exchange rate and the slowdown in world economic activity which threatened the demand for local output and worked to restrain inflation during the course of the year.

At the end of 2007, the rate of inflation accelerated, primarily due to the effect of increased world commodity prices. This process was supported by a high level of local demand, which allowed local producers to pass the increase in commodity prices on to the consumer rather than absorb them. At the same time, expectations of inflation increased. Thus, although the expectations of inflation derived from the capital market stood at only 1.2 percent during September–October, they rose in December to 2.1 percent (Figure 19). During that same month, following the announcement of the November CPI, local forecasters raised their forecasts of inflation to 2.7 percent on average. Against this background, expectations in the financial markets were that the Bank of Israel would moderately raise the rate of interest.

The question that faced the Bank of Israel was whether the acceleration in inflation is temporary or reflects persistent factors that call for a higher rate of interest. At the same time, there do not appear to be any indications that the global slowdown will restrain world commodity prices. The skyrocketing commodity prices are first and foremost the result of increased demand in the developing economies of the Far East, which have not necessarily been affected in a significant way by the crisis which began in the US. In addition, indications of excess demand have begun accumulating. The continuation of these processes has created concern that inflation in Israel will exceed the target range by an even greater magnitude.

Already at the end of 2007, there was growing concern over the contractionary effects of the crisis that began in the US and spread to global markets. Nonetheless, most indicators showed that the economy was continuing to grow at a high rate and that the crisis would not lead to the restraint of inflation in Israel. Supporting this view was the fact that during the six months since the financial crisis began, there had been no major pressure in the credit market or a shortage in liquidity, as occurred in the US and Europe.

Out of concern over an acceleration in inflation, the Bank of Israel raised the rate of interest for January by 0.25 percentage points to 4.25 percent.

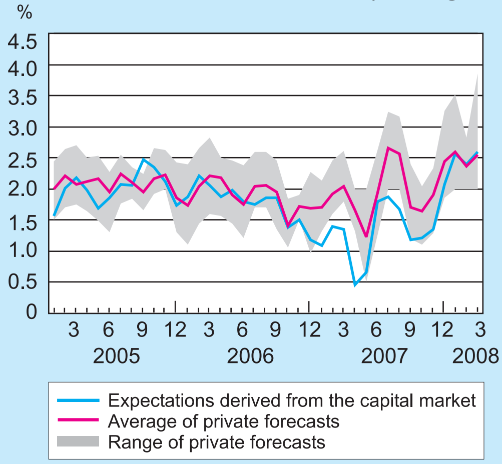
**Table 4**
**The Interest and Inflation Environment**
**(monthly averages)**

| | Oct 07 | Nov 07 | Dec 07 | Jan 08 | Feb 08 | Mar 08 |
|---|---|---|---|---|---|---|
| **Inflation environment (percent)** | | | | | | |
| Monthly change in CPI | 0.1 | 0.4 | 0.6 | 0.0 | -0.2 | 0.3 |
| Annual change in CPI | 2.2 | 2.8 | 3.4 | 3.5 | 3.6 | 3.7 |
| Forecasters' predictions of monthly CPI (average of forecasts prior to publication of CPI) | -0.1 | -0.1 | 0.3 | 0.0 | -0.3 | -0.1 |
| One-year inflation expectations derived from the capital market | 1.2 | 1.4 | 2.1 | 2.6 | 2.4 | 2.7 |
| Forecasters' one-year inflation predictions | 1.7 | 2.0 | 2.5 | 2.6 | 2.4 | 2.5 |
| **Forward inflation expectations[a] to different terms** | | | | | | |
| Short term (second and third years forward) | 1.9 | 1.9 | 2.7 | 2.2 | 2.3 | 2.6 |
| Medium term (fourth to sixth years forward) | 2.3 | 2.3 | 2.6 | 2.5 | 2.5 | 2.6 |
| Long term (seventh to tenth years forward) | 2.6 | 2.5 | 2.5 | 2.6 | 2.8 | 2.9 |
| **Interest rates and interest rate differentials** | | | | | | |
| Bank of Israel interest rate | 4.0 | 4.0 | 4.0 | 4.25 | 4.25 | 3.75 |
| Derived real interest rate | 2.8 | 2.7 | 2.0 | 1.7 | 1.9 | 1.1 |
| Differential between short-term rates in Israel and US | -0.75 | -0.5 | -0.25 | 0.0 | 1.25 | 1.5 |
| Forecasters' predictions of change in interest rate for next month | 0.0 | 0.0 | 0.25 | 0.0 | 0.0 | -0.5 |
| Forecasters' predictions of interest rate a year hence | 4.3 | 4.4 | 4.7 | 4.6 | 4.3 | 3.8 |
| Long-term (10-year) nominal interest rate differential between Israel and US | 1.1 | 1.4 | 1.8 | 2.3 | 2.0 | 2.3 |
| Long-term (10-year) real interest rate differential between Israel and US | 1.2 | 1.6 | 1.7 | 2.0 | 1.8 | 2.0 |

[a] Inflation expectations are measured from the difference between yields on local currency unindexed and indexed bonds (break-even inflation). 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.

During the first part of 2008, the picture began to change. The appreciation of the exchange rate accelerated and created concern of both a decline in inflation and a contraction in economic activity through its effect on the export sector and the incentive it creates for preferring imported products over locally-produced ones. Although it appeared that the pass-through from the exchange rate to prices has weakened, in hindsight it is possible that importers did not adjust their prices to the drop in the exchange rate out of fear that the trend would change direction. Therefore, the stabilization of the exchange rate at a lower level than the one it actually reached is liable to eventually lead to an adjustment of import prices and this becomes even more likely if there is a drop in local demand. This implies that a slowing of the pass-through from the exchange rate to prices does not reduce the potential disinflationary effect of a persistent appreciation in the exchange rate.

**Figure 19**
**Inflation Expectations for the Next Year Derived from the Capital Market and According to Private Forecasters, 2005 to March 2008[1] (monthly averages)**




[1] 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.

The severity of the economic crisis in the US became even more apparent at the beginning of the year. Indicators published during this quarter, together with the collapse of a number of financial companies, provided evidence that the US has entered a recession that may be the most serious in recent decades. The deepening of the crisis in the US is liable to have an effect on other economies and indeed in January and April the IMF lowered its forecast of the global rate of growth to 3.7 percent, as compared to 4.9 percent in 2007.

The global crisis could affect Israel through a number of channels: The drop in world trade is liable to reduce Israeli exports which may negatively affect employment and household income and therefore also reduce private consumption. Such a development on its own could bring about a contraction of excess demand, which may exist in the economy, and as a result a reduction in inflationary pressure, which has contributed to an increase in actual inflation beyond the upper boundary of the target range. It is clear that the question facing the Bank of Israel is to what extent this scenario will be realized. In other words, to what extent will the Israeli economy in general and exports in particular be negatively affected by global developments and, if they are, to what extent will inflationary pressure be reduced. In view of the depth of the crisis in the US and initial indications of a slowing in the local rate of growth, the Bank of Israel arrived at the assessment that the effect will be sufficient to offset inflationary pressures that are the result of the continuing increase in world commodity prices and the level of local demand prior to the crisis.

Another channel through which the developing global crisis may restrain inflation is the drop in world interest rates. During the quarter under review, the main reductions occurred in the US where the rate of interest was reduced by two percentage points during the quarter. However, the financial markets have taken into account the possibility that the European Central Bank will be forced to reduce its rate of interest during the course of the year as a result of the crisis spreading to the EU and despite the increase in inflation there. The reduction in world interest rates—those which have already occurred and those expected to occur—may create additional pressure for an appreciation of the exchange rate.

Due to the fear of the effects of the global crisis on the Israeli economy and in view of the expectations of an appreciation, together with somewhat slower growth, which will help in returning inflation to the center of the target range within about a year, the Bank of Israel reduced the rate of interest for the months of March and April.

In each of these months, the rate of interest was reduced by a relatively large increment of 0.5 percentage points. The goal was to avoid as much as possible an ongoing process of interest rate reductions. This would likely have created additional pressure for an appreciation of the exchange rate due to the expectations of further reductions in the rate of interest that would create capital gains on shekel assets. The reductions in the rate of interest were carried out despite the expectations of inflation in the capital market and of local forecasters that were higher than the center of the target range, which apparently reflected continuing concern over increased world commodity prices, expectations of a limited depreciation in the exchange rate and the limited influence of the global crisis on inflation.

**Box: Oil Price "Shocks" Then and Now: Cause or Effect?**
**By Prof. Robert Barsky[1]**

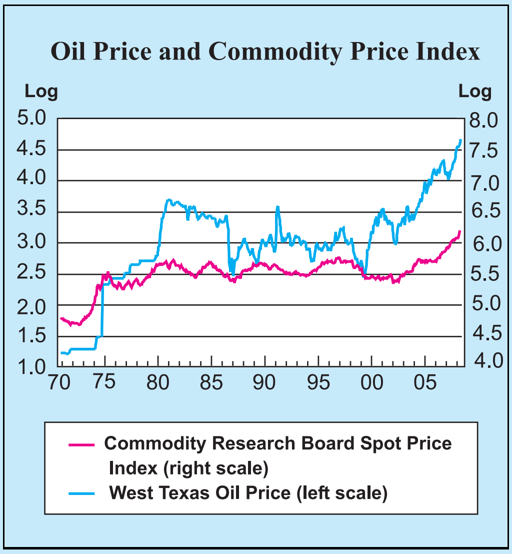
The coincidence of drastic increases in the price of oil with both worsening inflation and the apparent onset of a recession in the U.S. has renewed interest in the possible role of "oil shocks" in the generation of stagflation. Enshrined in the textbooks, and apparent in many policy discussions, are two notions: 1) Oil prices are largely exogenous, and dramatic price changes in particular are driven by political and military events in the Middle East and 2) Oil price increases are the most important single example of an adverse supply shock that simultaneously lowers output and increases the inflation rate. Most notably, oil prices bear the bulk of responsibility for the notorious worldwide stagflation of the 1970s.

In two papers written in the last several years, Lutz Kilian and I challenge both of these views. Our alternative account goes roughly as follows. Oil is a commodity like many other resources, and shares many of the same economic determinants. Worldwide aggregate demand and real interest rates, in particular, are key determinants of the prices of commodities including oil. Stagflation, on the other hand, is primarily a monetary phenomenon. The association of past stagflations with oil price increases was far less a causal relationship than an endogenous outcome of the monetary mechanism that lead to the stagflation.

Monetary expansions put upward pressure on oil and other commodity prices both through higher worldwide aggregate demand and lower real interest rates. This conclusion arises both from an appropriately modified version of the classic Hotelling model (which emphasizes competitive forces) and the Green-Porter model of cartel behavior when the outputs of individual oil-producing countries are imperfectly observable. As a matter of fact, the monetary expansion of the early 1970s lead to both an output boom and to unusually low—probably negative—real rates. The most striking single piece of evidence that these forces were at the core of the oil price increases is that a dramatic rise in the prices of a broad range of non-oil commodities preceded by one to two years the famous OPEC-led tripling of oil prices

[1] Professor Robert B. Barsky, of the University of Michigan, is in Israel on a sabbatical as a resident scholar in the Bank of Israel. The views in this box are those of the author alone and do not necessarily reflect the views of the Bank of Israel.

centered around 1974 (Figure 1—which also shows that commodities dropped sharply prior to the OPEC collapse of 1985-86). During the pre-spot market "OPEC period" (roughly 1971–85), Middle Eastern politics were often pretexts for—rather than causes of—oil price rises that were ultimately due to the economic interests of the oil-producing countries.




The "go-stop" monetary policies of the 1970s (occasioned in part by the collapse of Bretton Woods and in part by attempts to keep output above its natural rate—which in turn was overestimated due to less-than-full understanding of the productivity slowdown) caused stagflation as follows. Overexpansion that reached its height in the pre-election period of 1972 lead to inflation that (characteristically) was delayed relative to the output boom. As output began to fall back towards its natural rate, inflation continued to worsen. The inertial behavior of inflation alone would have lead output to overshoot and go below its natural rate for a time while inflation remained high—i.e., stagflation—but this tendency was accentuated by the Fed's sharp turn towards monetary contraction in 1973-74 as it responded with alarm to the inflation that was in fact a result of its own previous behavior. Under a monetary regime that avoids "go-stop" and includes a strong element of inflation targeting, there is little reason to expect strong stagflationary consequences from even a dramatic rise in oil prices—or for that matter, the prices of other commodities. Further, there may not even be a strong "policy dilemma" that requires central bankers to choose between inflation and recession.

The above conclusions seem to have fared rather well in light of recent evidence. Oil again rose along with the prices of a wide range of other commodities (Figure 1, 2000 to present; why the elasticity of oil prices with respect to commodity prices has—quite stably—been somewhat greater than 2 is beyond the scope of this note). It is widely argued that new demand from India and China, on top of the continuing high demand in the West, is at the heart of these price increases—while OPEC is no longer viewed as particularly powerful or important. The account of Barsky and Kilian ought to be modified to view worldwide demand in broader terms than the monetary terms appropriate for the 1970s—but worldwide demand forces rather than "supply shocks" continue to be the primary culprit for increases in the prices of both oil and non-oil commodities. While recent rises in oil and other commodity prices are less a consequence of monetary policy (and of the behavior of the United States in particular) than were the price rises of the 1970s, they have a great deal to do with world economic growth and the consequent growth in commodity demand. The lesson that oil and non-oil commodity prices are endogenous with respect to the world macroeconomy is still relevant and important.

Meanwhile, even dramatic oil price rises since the end of the 1970s have not been followed by stagflation, and the 1985-86 oil price collapse was not associated with an output boom (though it did reduce CPI inflation for a brief period.) There is some evidence of emerging stagflation at the present time, but increases in inflation so far have been very modest by 1970s standards, and there are plenty of other—and more convincing—explanations for the onset of recession.

III. UPDATE OF FORECASTS

## a. The global environment

The assessment of the global environment was updated based on the spread of the financial crisis and increasing indications of a slowdown in US growth. Thus, the forecasts of global growth, particularly in the developed economies, were lowered. The forecasts of central bank interest rates were also lowered in view of the reductions in the US rate of interest. Finally, inflation is expected to decline already during the course of the coming year.

According to IMF World Economic Outlook (WEO) that appears in Table 5 world growth during the next two years will be 3.7 percent as compared to 4.9 percent in 2007. The low level of growth will be particularly felt in the developed nations: in the US growth will be affected by a drop in aggregate demand due to the difficulty in obtaining credit (as a result of the weakness in the housing market); in Europe, growth will slow as a result of foreign trade spillovers, the contraction in the supply of credit and negative developments in the housing market in some European countries. Growth in the developing economies will slow somewhat due to the efforts by their central banks to prevent

**Table 5**
**Growth and Inflation in 2007, and IMF Estimates for 2008 and 2009**

| | Actual 2007 | Estimate 2008 | Estimate 2009 |
|---|---|---|---|
| **GDP growth (average, percent)** | | | |
| Global growth | 4.9 | 3.7 | 3.8 |
| Advanced economies | 2.7 | 1.3 | 1.3 |
| US | 2.2 | 0.5 | 0.6 |
| EU | 2.6 | 1.4 | 1.2 |
| Japan | 2.1 | 1.4 | 1.5 |
| UK | 3.1 | 1.6 | 1.6 |
| Emerging markets | 7.9 | 6.7 | 6.6 |
| **Inflation during the year (percent)** | | | |
| Advanced economies | 2.9 | 2.2 | 2.0 |
| US | 4.1 | 2.0 | 2.1 |
| EU | 3.1 | 2.2 | 1.7 |
| Japan | 0.7 | 0.6 | 1.3 |
| UK | 2.0 | 2.2 | 2.1 |

SOURCE: IMF, World Economic Outlook, April 2008.

the development of inflationary pressures, but it will still remain relatively high.

In view of the of the slowdown in global demand and the assumption that commodity prices will remain at their presently high levels without any additional acceleration until the end of the year, the IMF is predicting a reduction in global inflationary pressure, particularly in the US and Europe where inflation is expected to be approximately 2 percent already by the end of 2008.

Both the financial markets and the major investment houses expect that world interest rates will remain low. It is believed that most of the reduction in the US rate of interest has already occurred and that at the end of the year it will reach a level of 2 percent while interest rates in Europe will remain at their present levels of about 4 percent until the end of the year.

**b. Real activity**

Israel's rate of growth is expected to decline somewhat relative to 2007. Thus, GDP is forecast to expand by 3.2 percent in 2008 as compared to 5.3 percent in 2007. The forecasted rate of growth was lowered by somewhat more than a percentage point since the Inflation Report for the second half of 2007 in which it was estimated that GDP would grow by 4.4 percent.[10] The lowering of the forecast was primarily the result of negative global developments: the lowering of growth forecasts for the US, the EU and other countries and the resulting lowering of the forecast for growth in world trade to only 4 percent; continued increases in commodity prices, particularly that of oil, during the last quarter which led to a worsening in the terms of trade; falling share prices in Israel and worldwide; and a real appreciation of the shekel against Israel's main trading currencies. In contrast, data from the national accounts for the last quarter of 2007 indicate higher-than-expected growth in economic activity, in particular exports, although in early 2008 there were signs that growth was slowing.

The reduced rate of growth relative to last year is expected to manifest itself in most components of demand, particularly exports which are expected to grow by 4.2 percent (as compared to 8.4 percent in 2007) due to the real appreciation and lower growth in world trade. The growth in private consumption is expected to fall to 3.5 percent, in contrast to 6.6 percent in 2007, primarily as a result of the decline in the purchase of durable

[10] According to the Report's more pessimistic scenario, which increasingly appears to be the one that is developing, growth will total only 3.6 percent.

goods which is particularly sensitive to changes in financial wealth. The rate of growth in investment is expected to drop from a level of 13.8 percent to 5.3 percent as a result of the expected decline in corporate profits, particularly among exporters, due to the global slowdown and the appreciation of the exchange rate.

Apart from the significant effect of the global slowdown and appreciation of the exchange rate, the slowing of growth in GDP was also due to the fact that the economy came close to fully exploiting its productive capacity last year, following more than four years of rapid growth. According to forecasts, the slowdown in the growth of local economic activity will also be felt in the labor market. Thus, the rate of unemployment is expected to rise in 2008 with an average of 7.4 percent for the year (which is similar to its average for 2007).

The continued worsening in the terms of trade, the real appreciation and the expected worsening in the foreign income account, which is a result of the decline in the rate of interest on the dollar, are expected to bring about a significant deterioration in the goods and services account. Thus, a rapid decline is expected in the current account surplus and perhaps even a small deficit of $0.5 billion will appear in 2008.

The implementation of the government budget and government revenues during the first few months of the year are in line with the budget targets for 2008, i.e. growth of 1.7 percent in expenditure and a deficit ceiling of 1.6 percent of GDP. On the assumption that growth does not fall below its forecast, the expected surplus in tax revenue together with a small shortfall from budgeted expenditure will lead to a deficit just under the ceiling. However, full implementation of the multi-year programs, which the government decided on in 2007 in order to deal with social needs that remained unmet in previous years, will make it impossible to meet fiscal targets during 2009–12. In particular, the full implementation of the programs, without making other adjustments, is not compatible with the law limiting growth in government expenditure to 1.7 percent annually. This will result in a larger deficit and will halt the decline in the debt to GDP ratio (for future details, see the Bank of Israel Annual Report for 2007, Chapter 6).

### c. Expected exchange rate developmnts

In contrast to last year which was characterized by pressure for an appreciation of the exchange rate, this year there are fundamental forces working in offsetting directions. Thus, the contraction of the current account surplus, and perhaps even the creation of a deficit, together with the ongoing process to increase the Bank of Israel's foreign exchange reserves, will support the weakening of the shekel against most currencies. On the other hand, a number of factors will continue to work towards a strengthening of the shekel this year: (1) an expected slowdown in capital outflow by Israelis—through continued selling of mutual funds specializing in foreign currency and investments abroad or through the halting of the expansion of investment by institutional investors abroad, as occurred last year as a result of the reduced tax rates on investments abroad; (2) investment in Israel by foreign residents, particularly direct investment, which is expected to continue thanks to the relative resilience of the Israeli economy; and (3) the transition to a positive interest rate gap with the US which is expected to support the strengthening of the shekel, primarily against the dollar.

**d. Assessments of inflation**

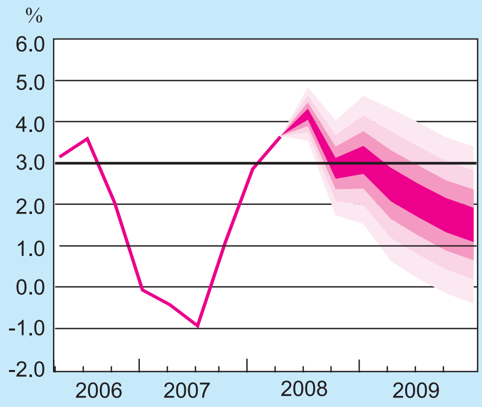
According to the forecasts of the Bank of Israel, the capital markets, the Survey of Companies and private forecasters, the rate of inflation will decrease during the coming year. The Bank of Israel's forecast was updated in view of the global slowdown and the continuing appreciation of the exchange rate on the one hand and the continuing increase in world commodity prices on the other. In addition, the rise in the CPI for March of 0.3 percent was higher than the markets' forecast (-0.1 percent), apparently due to the additional weakening in the link between the exchange rate and consumer prices. According to the Bank of Israel's main scenario, inflation is expected to decline gradually. During the coming year, inflation will be affected by the high level of world commodity prices, especially of oil, which reached a record level of $118 in April, and of food. Therefore, towards the middle of the year, inflation (for the previous 12 months) is expected to reach 4 percent or more. During the second half of 2008, it is expected that inflation will return to the target range and in another 12 months to be somewhat above its center (see Table 6). However, during the next two years, there will be forces at work to reduce inflation which will become dominant in 2009 and therefore inflation may even drop to the lower part of the target range for a limited time. The forces acting to bring down inflation include:

- The continuing appreciation of the exchange rate has led to lower costs of imports, particularly from the US, due to the weakened dollar. Since it appears that these lower costs have not yet been fully passed on to the consumer, the lack of a major depreciation will in the end lead to lower prices to the consumer during the coming two years.

- The global slowdown is expected to reduce inflation through a number of channels: the drop in world trade will reduce the demand for exports and will lead to the restraint of local demand and some degree of weakness in the labor market. The drop in the exchange rate was also reflected in a real appreciation which is reducing the demand for exports even further (although to only a limited extent) and is shifting demand from local production to imports. Therefore, the surplus in productive capacity will grow and inflationary pressures, which may have developed as the economy approached full utilization of productive capacity in 2007, will lessen. There is a two-fold difficulty in assessing the extent of this factor's influence: First, in view of the low level of the real rate of interest (about one percent), which acts to encourage the demand for private consumption and investment, it is unclear what effect the global slowdown will have on overall local economic activity. This is of course dependent on the severity of the global slowdown and the extent to which it affects Israeli exports. Second, in view of the exchange rate's past dominance in determining the rate of inflation, it is difficult to assess the extent to which changes in demand will affect consumer prices.
- The global slowdown and drop in world demand is liable to moderate the increase in world commodity prices. The assumption in the scenario that was presented is that commodity prices will not continue to rise significantly during the course of the year but will remain at their currently high levels.
- Finally, due to the global slowdown, the US Federal Reserve has significantly reduced the rate of interest and is expected to continue doing so in coming months. Other central banks, especially the European Central Bank, may follow suit. The worldwide reduction in interest rates is creating additional pressure for an appreciation of the exchange rate which, as mentioned, works to restrain inflation and real local economic activity.

There are still a number of factors working to increase inflation: First, world commodity prices, particularly of production inputs, such as oil, and of unprocessed foods, are still high measured in real terms and some of them are still on an upward trend. Second, the state of the economy is still positive. Thus, some indicators pointed to a situation of excess demand at the end of last year and the rate of unemployment is at its lowest point since 1996. This combination led to an acceleration of inflation last year and therefore in coming months inflation is liable to remain at higher-than-target levels.

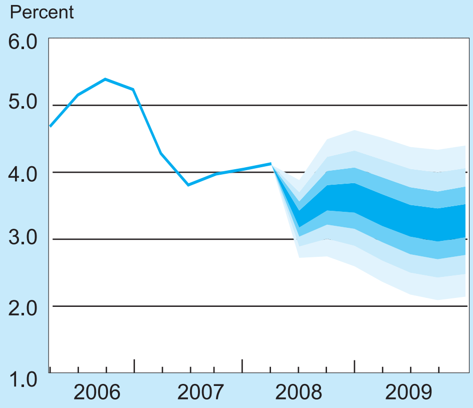
**Figure 20**
**Actual Inflation and Fan Chart[a] of Expected Inflation 2006-09**
**(rate of cumulative price increases in previous four quarters)**




[a] The full fan covers 66 percent of the distribution of expected inflation.

SOURCE: Bank of Israel.

**Figure 21**
**Actual Bank of Israel Interest Rate and Fan Chart of Expected Interest Rate 2006–09**




[a] The full fan covers 66 percent of the distributiuon of the expected interest rate.

SOURCE: Bank of Israel.

Taking all the factors into account, it is assessed that the effect of the global slowdown and the appreciation in the exchange rate will be sufficient to restrain inflation. Therefore, it is expected that the rate of interest will be maintained at a relatively low level during the course of the year in order to offset the effects of the factors working to reduce inflation and also to moderate the effect of the global crisis and past appreciation on economic activity in Israel. It is clear that there exists uncertainty as to the realization of this scenario in view of the unexpected shocks (whether positive or negative) that may occur. The main scenario and its degree of uncertainty are presented in the fan charts for inflation (Figure 20) and the interest rate (Figure 21). In the next section on the balance of inflation risks, various scenarios are described in which the rate of inflation could deviate from this forecast in the future.

In contrast, the forecasts derived from the capital market and the Survey of Companies, as well as those of private forecasters, indicate that the reduction in inflation will be of a smaller magnitude and will be located near the upper boundary of the target range in another 12 months from now. The private forecasts and the Survey of Companies are based on the assumption that the exchange rate will depreciate somewhat during the coming year.

**Table 6**
**Assessments of Inflation over Next Twelve Months from Different Sources**
**(percent)**

| | Target | Capital market | Private forecasters | Companies Survey | Bank of Israel |
|---|---|---|---|---|---|
| Average | 2.0 | 2.6 | 3.0 | 2.65 | 2.3-3.2 |
| (Range) | (3-1) | | (2.0–3.5) | (0.8–4.0) | |

[a] Covering 90 percent of the inflation expectations (excluding the tails).

## e. The balance of inflation risks

It appears that most of the possible reasons why the inflation forecast might not be realized are related to the intensification or change in direction of the main factors currently affecting inflation, i.e. the exchange rate, the global crisis, the status of real economic activity and world commodity prices.

The increase in global commodity prices in recent years has been the main factor in the acceleration of inflation beyond the upper boundary of the target range. In the main scenario, we assumed that there would be no additional increases in commodity prices, in particular the price of oil and some other goods, in view of the global slowdown. However, commodity prices may continue to rise during the course of the year. According to past forecasts of the IMF, the global forces responsible for the increase in commodity prices, particularly food, will continue in 2008. This is due to, among other things, the rise in demand which is expected to increase faster than supply. In addition, geopolitical shocks, such as those which occurred during the last month, may lead to an increase in oil prices. If this scenario is realized, then the rate of inflation will remain high which will necessitate hikes in the rate of interest in order to return inflation to within the target range.

The main scenario assumes that the US economy will slide into recession and that a slowdown in global economic activity will follow. Clearly, a further intensification of the global crisis will strengthen the contractionary effect on Israel. However, if the effect of the US economy on economic activity in Israel is weak (i.e. the economies are decoupled), either because demand for Israeli exports remains unaffected or because the continuing expansion of the economies in the Far East offsets the slowdown in the US, then the Israeli economy will remain near the limit of its productive capacity at low levels of the real interest rate. In this environment, excess demand may develop that will lead to inflationary pressure through, among other things, wage increases in the economy.

There are a number of scenarios that could lead to a change in the trend of the exchange rate, i.e. a depreciation. These include the intensification of the global financial crisis which could lead to an additional extraction of capital from the emerging economies, including Israel; the Bank of Israel's plan to increase foreign exchange reserves and the reduction in the current account surplus which could have a larger-than-expected effect; and a possible correction in the value of the dollar worldwide. A depreciation of the exchange rate (if not too large) is not expected to necessarily lead to a significant increase in the rate of inflation but only to delay its reduction. This is due to the fact that the appreciation until now has apparently not led to a significant drop in prices and therefore a depreciation, if it occurs, will only offset the pressure that the appreciation has created but will not lead to an increase in prices.

In contrast, the continued appreciation of the exchange rate will intensify the pressure for a reduction in import prices. It may also contribute to a slowdown in economic activity, accompanied by a contraction of local demand. Furthermore, if the adjustment of import prices to the appreciation occurs rapidly, the drop in inflation is likely to be a steep one and may even result in the rate of inflation falling to below the target range.

Taking into account all the abovementioned risks, it appears that on balance the risk is tending upward. The risk that the return of inflation to the center of the target range will be a lengthy one has been taken into account by the Bank of Israel in its decision making. This is a reasonable risk in view of the concern over the magnitude of the effect that negative global developments may have, whether on growth, employment or inflation. The upper bound of the range of Bank of Israel forecasts in Table 6 reflects the possibility of the realization of some of the inflationary risks.

Whatever scenario is realized, the Bank of Israel will continue to monitor developments, as well as indications that these and any other risks are being realized. Foremost among these indications are the appreciation of the exchange rate to the vicinity of NIS 3.45 to the dollar, the increase in the price of oil to a record $118 per barrel and an increase in the expected rate of inflation in the capital market to the upper boundary of the target range during the second half of April. The Bank of Israel will continue to work towards the return of the rate of inflation to within the price stability range (1–3 percent) and, subject to this goal, to support real economic activity and employment while maintaining the economy's financial stability.