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Letter of the Governor, Professor Stanley Fischer

Jerusalem
July 2005

The Inflation Report for the first half of 2005 is submitted to the government, the Knesset and the public as part of the process of periodic monitoring of the course of inflation and adherence to the inflation targets set by the government.

The Consumer Price Index (CPI) rose by 0.5 percent in the first half of 2005, and over the last twelve months by 0.3 percent, below the lower limit of the target range (inflation of between 1 percent and 3 percent a year). At the beginning of the year the Bank of Israel reduced its interest rate in two steps to 3.5 percent, with the intention of raising the inflation rate to within the target range. The Bank's ability to reduce its interest rate and to hold it at a low level, contrary to previous assessments in the capital market that the interest rate would be raised during the period, reflected stability in the financial markets and inflation expectations that were around the midpoint of the target range. The maintenance of fiscal discipline made it easier to pursue an expansionary monetary policy that encouraged economic activity.

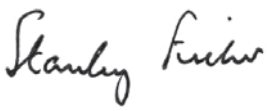
The question arises: why was the rate of inflation in the last twelve months below the target range despite the cuts in the Bank of Israel interest rate and its low level? The main reason is that the rate at which the exchange rate rose in that period was slower than had been expected. A year ago the assessments in the financial markets, in the Bank of Israel Companies Survey, and those of private forecasters, all pointed to two factors that would cause the NIS to depreciate against the dollar, and hence would raise prices to within the target range: the contraction of the interest-rate differential between the US and Israel, and the equalization of tax rates on foreign and domestic assets at the beginning of 2005. In practice, the exchange rate remained stable for most of the period (to June) despite the cuts in the interest rate, against the background of a significant inflow of long-term capital to Israel.

Economic growth continued in the range of 3.5–4 percent during the first half of the year, and is expected to continue at similar levels in the next half-year and in 2006. Recent declines in unemployment also indicate the consolidation of growth and companies' assessment that it will continue. Growth is being powered by the rise in private consumption and the continued increase in exports, albeit at a slower rate than in 2004 due to a slowdown in the growth of world trade. The continuation of growth in this period was supported by the credibility of fiscal policy—which, together with monetary policy, was reflected in low interest rates—and the extended calm in the security situation. These factors, as well as the relatively favorable environment in the global economy, are expected to continue and to support growth in the coming year too. However, there is as always some uncertainty about the growth forecast. For example, if the security and geopolitical situation should deteriorate to a considerable extent, or if world economic and trade growth slow down significantly, the rate of growth in Israel is likely to be lower than currently predicted.

Inflation is expected to rise in the next twelve months, to a rate within the target range. This will result from continued growth and reduced unemployment, from the low level of the real interest rate, and from the depreciation that has already occurred. Monetary policy will act to achieve the targeted inflation range, and endeavor to prevent

both downward and upward deviations from it, while preserving financial stability. At the same time it will support the government's economic objectives, with sustainable growth heading the list.

Stanley Fischer



Governor, Bank of Israel

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Summary

- The Consumer Price Index (CPI) went up by a cumulative 0.5 percent in the first half of 2005, and by 0.3 percent in the last twelve months—a rate below the lower limit of the inflation target range of 1–3 percent. This is a continuation of the low-inflation environment that prevailed in the last two years.
- The Bank of Israel continued to lower the interest rate at the beginning of the period reviewed. This took place against the background of a moderate level of price increases, inflation expectations that were within the inflation target range, a reduction in bond yields, and stable domestic currency markets. Thus the interest rate was cut by 0.2 of a percentage point in each of the months December 2004, and January and February 2005, to reach the low level of 3.5 percent.
- In the second quarter the capital and money markets remained stable, while the short-term-interest differentials continued to contract. It seemed that inflation in the next twelve months was expected to be close to the midpoint of the price stability target range. The Bank of Israel therefore kept the interest rate for the months March to June unchanged.
- The NIS/dollar exchange rate is known to have a considerable effect on price changes in Israel, both via its effect on housing prices (most of which are quoted in dollars), and via its effect on imported goods. For most of the first half-year the NIS was traded with no clear trend and with low volatility, and constituted a major reason for the small rise in the CPI. In June the NIS depreciated sharply against the dollar, and the effect of this on prices has not yet been realized in full.
- Global factors, headed by the strengthening of the dollar world wide, served for most of the period reviewed to weaken the NIS (against the dollar), while domestic developments had only a minor effect. In contrast the rapid depreciation that occurred in June was due almost entirely to domestic factors.
- The differential between the short-term interest rates of the US Federal Reserve and the Bank of Israel stood at only 0.25 percentage points at the end of the period reviewed. The contraction of the differential to this unprecedented level without causing shocks in the Forex market could occur in the light of the decline in Israel's country risk and the rise in the US dollar currency risk.
- The continued growth of economic activity in the first half of the year, albeit at a slower rate than in the equivalent period in 2004, and the sharp fall in the unemployment rate in the first quarter of 2005 did not cause upward pressure on prices, as a result of spare production capacity in the economy.
- Two other stabilizing influences affected price rises and monetary policy in the period reviewed: (a) fiscal discipline, which the public afforded credibility despite the delay in approving the budget, and which was reflected by the reduction of future yields on long bonds; and (b) the relative calm in the security situation in Israel at this time.
- The rate of inflation in the last twelve months, which was below the target range, as stated above, was also lower than the level forecast a year earlier. At the end of the first half of 2004 inflation expectations—derived from the capital market, private forecasters, responses of companies participating in the Bank of Israel's Company Survey, and Bank of Israel models—were within the price-stability target range, with a rise expected in the Bank's interest rate. The difference between actual inflation and that which had been predicted derived mainly from the assessments a year earlier that the contraction of the interest–rate differential between Israel and abroad and the equalization of tax rates on domestic and foreign assets would lead to NIS depreciation against the dollar, and hence to price increases. The depreciation did not occur, as mentioned above, despite the response of Israelis to the contraction of the interest-rate differential, mainly due to large unanticipated inflows of capital from nonresidents into the economy.

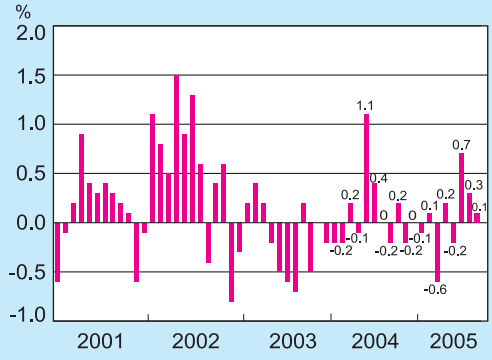
- Current assessments and expectations—derived from the capital market, private forecasters, companies participating in the Company Survey, and Bank of Israel models—are that prices will rise somewhat faster during the year to a rate close to the midpoint of the target range (2 percent). Some of these assessments are based on the assumption that the Bank of Israel interest rate will be raised a little towards the end of the year. Simulations carried out in the Bank of Israel using economic models show that if the NIS/dollar exchange rate settles at the level it reached at the end of June, and the Bank of Israel interest rate also remains at its present level, the rate of price increases in 2005 will be close to the upper limit of the target inflation range, and in the next twelve months is even likely to exceed it and make it necessary to raise the interest rate thereafter. Under these assumptions, according to the models, a higher rate of inflation than that prevailing hitherto will be caused by continued growth, the reduction of unemployment, the low level of real interest, and the depreciation that has already taken place.

I. THE CPI AND THE ECONOMIC FORCES AFFECTING PRICES

The CPI rose by a cumulative 0.5 percent in the first half of 2005 (the period reviewed). This is the result of price drops in the first quarter, and rises in the second, partly due to seasonal factors (Figure 1). From June 2004 to June 2005 the CPI rose by a modest 0.3 percent (Figure 2), below the lower limit of the target range of price stability (i.e., a rise of between 1 percent and 3 percent a year). The rise excluding certain components of the index that fluctuate seasonally, e.g., fruit and vegetables (prices of which fell steeply, Figure 3), and clothing and footwear, was slightly higher than that of the all-items (or headline) index in the period reviewed (see Box 1). Price changes in the first half of the year were a direct extension of the low-inflation environment prevailing in the last two years, at the lower limit of the price-stability target or below it.

The main economic forces acting to moderate the rate at which the CPI rose in the period reviewed were the changes in the exchange rate and spare production capacity in the economy (the output gap). The NIS/dollar exchange rate remained almost unchanged until the beginning of June, when the NIS showed depreciation (Figure 4), and over the previous twelve months the exchange rate showed a high degree of stability, with a trend of appreciation in the second half of 2004. This had a moderating influence not only on imported goods included in the consumption basket, but also on housing prices, a high proportion of which are quoted in dollars, and which have a high weighting in the index (over 20 percent). The stability of the NIS/dollar exchange rate until June was even more notable in the light of the continued lowering of interest rates to levels lower than nominal interest rates in the advanced economies, and particularly in the US, and in the light of the completion of the tax reform (that brought taxation on capital gains on foreign assets and on domestic assets into line). The second factor moderating the rate of price increases in the period reviewed was surplus production capacity, despite continued growth and the marked decline in unemployment. This surplus capacity is reflected inter alia in an unemployment rate that is high both historically and by comparison to the rate considered "natural" for Israel's economy, about 7 percent. This spare capacity motivates companies to respond to demand without raising prices significantly. The modest rate of wage increases, that was lower than the rise in labor productivity, also supported price stability.

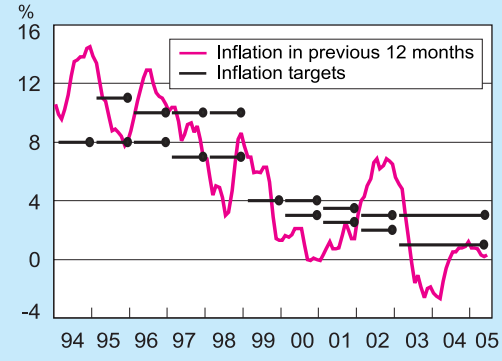
Figure 1
Monthly Rates of Change of the CPI, 2001–2005



SOURCE: Central Bureau of Statistics.

Prices fell in the first quarter of 2005, but rose in the second quarter, partly due to seasonality.

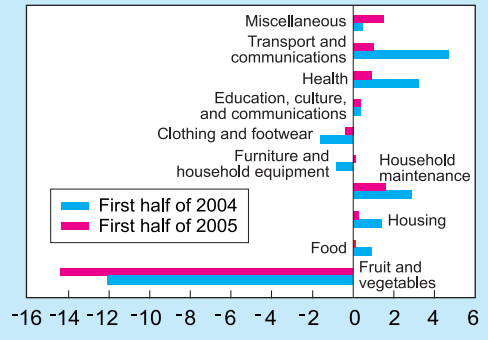
Figure 2
Inflation in Previous 12 Months, and Inflation Targets, 1994–2005



SOURCE: Central Bureau of Statistics.

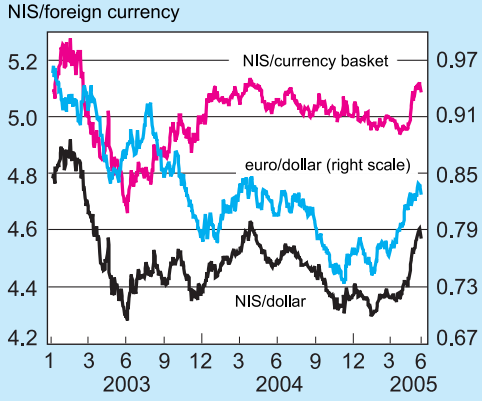
The rate of inflation in the last twelve months was less than 1 percent, i.e., below the lower limit of the target range.

Figure 3
Changes in the Components of the CPI in the Second Half of the Year, 2004 and 2005 (percent)



SOURCE: Based on Central Bureau of Statistics data.

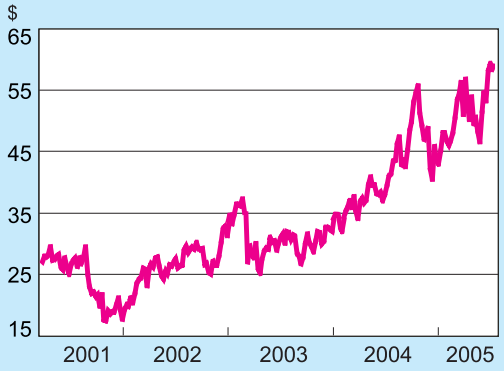
Figure 4
The NIS Exchange Rate against Selected Currencies and the Euro/Dollar Exchange Rate, 2003 and 2005 (daily data)



SOURCE: Bank of Israel.

For most of the first half of 2005 the NIS exchange rate against the dollar and against the currency basket moved within a narrower band than in the past, with no clear trend. From April some slight weakening of the NIS against the dollar was evident against the background of the worldwide strengthening of the dollar, which accelerated in June and stopped at the beginning of July.

Figure 5
The Gap between Inflation Expectations and Actual Inflation,[a] 2001–2005



SOURCE: Bloomberg

[a] The difference between expected inflation derived from the capital market and actual inflation for the same time.

World oil prices continued to rise, after reaching peak levels in 2004.

Despite the low inflation environment, some economic forces did exert pressure for faster price increases during the first half of the year. Monetary policy continued to be expansionary: the Bank of Israel's interest rate was reduced each month from December 2004 to February 2005, when it reached a historically low 3.5 percent.[1] The lowering of the Bank of Israel's interest rate was also reflected in a fall in the expected real short-term interest rate. These expectations dropped to below the level of interest expected to prevail in the long term ("natural interest"). Another factor acting to raise prices in the period reviewed was the persistent rise in prices of imported inputs, headed by oil prices that rose again following their considerable rise in 2004 (Figure 5). However, the effect of oil prices on prices in Israel has diminished over the last decades as a result of reduced reliance on oil in production processes (as described in the Inflation Report No 15, June to December 2004), so that their effect on inflation in the first half of the year was not felt very strongly. Nonetheless, the effect of oil prices may still be felt after a lag, as it was reflected in a considerable rise (5.1 percent in annual terms) in the wholesale price index in the first half of the year, and part of this rise is expected to be expressed in a rise in the CPI in the future.[2]

The moderate rate of price changes in the last twelve months raises the question, "why was price stability not achieved in the period reviewed?" The question becomes even more pointed against the backdrop of the continued cuts in the Bank of Israel interest rate during the period, to a historically low level, low also relative to previous capital-market assessments of its future level. The main reason that the inflation target was not achieved was the stability of the exchange rate in the period, which surprised also the players in the capital market. In the middle of 2004 they had estimated that the NIS would depreciate in the light of the contraction of the narrowing short-term interest-rate differential between the NIS and the dollar and the equalization of taxation on domestic and foreign assets, and they therefore expected prices to rise faster. These effects, however, were offset by large long-term-capital inflows from nonresidents to Israel, as Israel's risk premium declined.

[1] The Bank of Israel's monthly press releases on the interest rate can be seen on the Bank's website, www.bankisrael.gov.il.

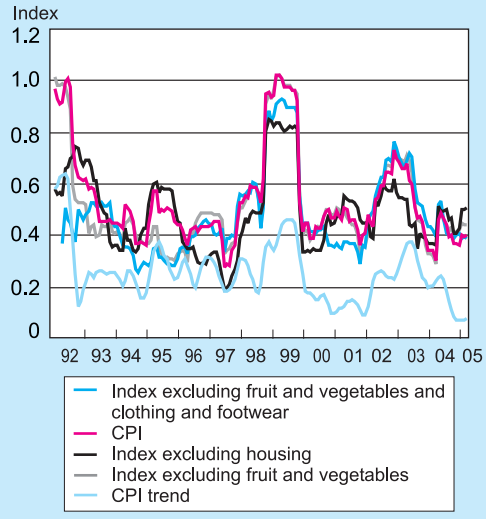
[2] A description of the pass-through between the wholesale price index and the CPI appears in Recent Economic Developments No 109, October 2004–March 2005, Bank of Israel. The analysis shows that in the long run the two indices are related, whereas in the short run there may be discrepancies between them, which are corrected by adjustments to the wholesale price index.

Box 1

Indices of Basic Inflation: Different Methods of Calculation, and What can be Learned from them with regard to the Period Reviewed[1]

Changes in the CPI from month to month are characteristically volatile, and can therefore make it difficult to identify changes in the development of inflation. This volatility is higher in Israel than in many other countries,[2] but despite the reduction in inflation it has remained relatively stable over the last fifteen years (see figure). The volatility is due both to seasonal or temporary changes in some prices that do not reflect a persistent price change, and also to changes in the relative prices of different goods. As it is policymakers' objective to identify the rate of inflation and its turning points to enable them to determine a policy that will lead to the achievement of the inflation target,[3] it is customary to use the term "underlying inflation" or "core inflation." Although the concept has a very high level of acceptance in economics, there is no single "correct" way of calculating it, as it an unobserved variable. According to a major approach developed in the literature and in central banks throughout the world, underlying inflation is the enduring component of actual inflation, which reflects the ongoing economic pressures. Therefore, to calculate this core inflation, the "noise" existing in monthly prices must be isolated from the signals broadcast regarding expected developments, i.e., the "new" must be isolated.

Standard Deviation of Price Indices, 1992–June 2005 (in previous 12 months)



SOURCE: Based on Central Bureau of Statistics data.

The approaches towards the calculation of core inflation can be divided into two main groups: numerous and varied statistical calculations on the one hand, and structural calculations, based on a model that examines the basic factors affecting inflation, on the other. The following focuses on the first group. One way of calculating core inflation is to adjust for the noise and the short-term fluctuations of the monthly indices. This can be done by removing (cutting off) a certain percentage of the large or small monthly price changes, or by calculating a price trend by various statistical methods. The rationale behind these calculations is that price changes located at the extremes of the distribution reflect inflationary pressures less than do changes in the middle of the distribution. The drawback of this method is that it also ignores a genuine inflationary shock that may contain new and important information. An examination of the trend of the CPI in Israel,[4] which in effect smoothes the noises in the index, shows that it is significantly lower than that of the overall index (see figure). Against this advantage, the major disadvantage of the price index is that it is changed retroactively,

[1] The terms used and the various approaches are taken from Mankiker and Paisley, 2004, "Core inflation: a critical guide," Working paper No. 242, Bank of England.

[2] See also the Bank of Israel Annual Report, Monetary Department, 2003, Box 2.1, on the standard deviation of price changes at different inflation rates between Israel and other countries.

[3] In Israel the inflation target is defined in terms of the CPI. Other countries that adopted inflation targets in the 1990s referred to the General Consumer Price Index (e.g., Canada, Spain and Sweden); others (Austria, Finland, New Zealand and the UK) chose to define the target in terms of a "Basic Inflation" Index derived from the CPI. See R. Amir and S. Ribon, "The Choice and Formulation of an Inflation Target: Points for Consideration," in Inflation and Disinflation in Israel (L Leiderman, ed.), Bank of Israel, 1999.

[4] Calculated and published by the Central Bureau of Statistics that uses a system based on Henderson's symmetrical moving averages method, which also handles exceptional observations.

as the calculation of the trend is revised in accordance with new information. This can create problems in using the index trend in real time to understand the inflation environment.

Another widely accepted method of calculating underlying inflation is to remove from the index several components that are known to be very volatile, and that therefore add much noise in monthly terms. In Israel (as in the rest of the world), two central components of the CPI are highly volatile on a month-to-month basis, mainly due to seasonality and temporary changes in supply—the prices of fruit and vegetables, and the prices of clothing and footwear (although during the last ten years the latter have also been heavily affected by exposure to imports, so that their relative price fell steeply, reflecting not only seasonal changes). However, it was found that in Israel removing these two components from the CPI did not significantly reduce the volatility of the index (see figure), because they do not carry a high weighting in the overall index. In many countries energy prices are also excluded from the CPI, because they are also highly volatile, and are affected by temporary shocks in the global supply. However, such an adjustment is not an obvious one, as there are periods when changes in energy prices are caused by changes in demand, as occurred worldwide in the last year and a half, due to world growth, and particularly growth in China.

Another approach is to try to isolate the effect of the exchange rate on the index. In Israel, as housing prices are measured via rental contracts, many of which are written in dollar terms, changes in the NIS/dollar exchange rate are immediately reflected in the CPI and increase its volatility. The standard deviation of the CPI excluding housing in a high proportion of the last few years was lower than that of the all-items index (see figure). Thus, although housing expenditure constitutes a major item in households> basket of expenditure (more than 20 percent), the index excluding housing can serve as a less volatile indicator of price developments.

One central question in deciding whether a particular index is a good indicator of core inflation is whether it achieves its objective—to estimate the current and expected inflation environments. It is thus widely accepted in the literature to examine core inflation using an measure that satisfies three criteria: it changes in the long term together with actual inflation as measured by the CPI; in cases of short-term deviations of one from the other, the CPI converges to the core inflation index; and the reverse does not apply, i.e., core inflation does not converge to the CPI. Tests performed relating to Israel show that the CPI excluding fruit and vegetables, and clothing and footwear satisfies the above criteria, and can therefore serve as the core index. The price trend index also meets the two requirements that define a good index of the inflation environment. On the other hand, the index excluding housing was found to be unsuitable as an index of underlying inflation, according to the above definition, because in the last eight years the housing index did not change together with the CPI (there was an uncorrected deviation). This may have derived from the persistent decline in activity in the construction industry in the last few years.

To summarize: there are several indices of core or underlying inflation, each with its own advantages and disadvantages. The use of indices excluding certain components can help in an analysis of the inflation environment and in forecasting expected inflation, together with other indicators from the financial markets (such as inflation expectations derived from the capital market). The purpose is to enable a monetary policy to be pursued that will achieve the price-stability target defined for the overall CPI. The changes in the above adjusted indices during the last year show they rose at a rate slightly below the lower limit of the targeted price-stability rate. Thus, the index excluding fruit and vegetables, and clothing and footwear rose by 0.6 percent, and the index excluding housing by 0.9 percent. Moreover, the trend of the CPI, which as stated has the advantage of lower volatility, shows that the inflation environment in the economy is below the lower limit of the price-stability target.

II. MONETARY POLICY, INFLATION, AND THE ECONOMIC ENVIRONMENT

a. Monetary policy

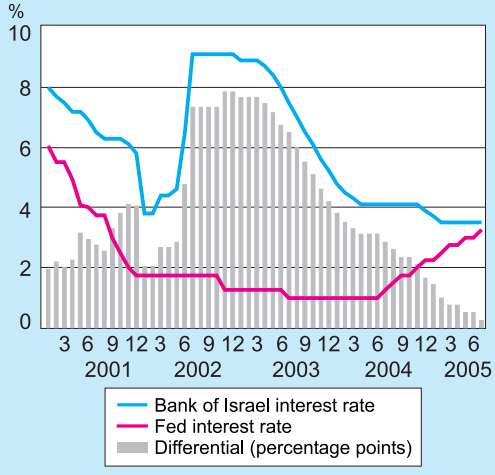
In the first half of 2005, monetary policy was implemented under the convenient conditions of consolidation of stability in the domestic financial and capital markets—as reflected, among other things, in low inflation expectations within the target ranges—and in view of responsibility and credibility in fiscal policy and the continued recovery of economic activity.

The stability in the financial markets was especially conspicuous in view of the steady narrowing of the NIS/dollar interest-rate differential during the past year and expectations of more of the same. The spread contracted from 3.1 percentage points in June 2004 to 0.25 percentage point in June 2005, mostly due to rate hikes in the United States and partly due to rate-cutting in Israel at the beginning of the year (Figure 6). Although the interest differential fell to a historic low during the review period, the NIS/dollar exchange rate did not change substantially and the exchange-rate risks from the public's standpoint, derived from the implicit standard deviation in NIS/forex options, remained small. Israel's country-risk premium also remained stable during the half-year reviewed, as an upturn in global risk aversion in April, accompanied by a capital outflow from emerging markets, overlooked the domestic market. Notably, the NIS depreciated against the dollar toward the end of the review period. The depreciation, which peaked at 4.7 percent, was reflected in an increase in exchange-rate risks as derived from the options markets.

During the review period, the financial markets continued to affirm the credibility of the multiannual budget discipline that the government established even though the budget was not approved until the end of the first quarter of the year. The public seemed to believe that the trend of responsible policy management would continue. The policy management was reflected, among other things, in structural reforms that have been making the capital market more liquid and tradable and cutbacks in government expenditure and long term debt. The public's assessments also contributed to the continued decline in yields on medium- and long-term bonds, while Treasury bills also declined.

The recovery of economic activity that began in 2004 continued during the review period, even though a slowdown in global trade caused the pace of activity expansion to ease. The continuation of these favorable real trends is being abetted by a

Figure 6
Short-Term Interest Rates in Israel and the US and the Differential Between Them, 2001–June 2005 (monthly averages)



SOURCE: Bank of Israel.

Since June 2004, the Fed has raised the federal funds rate by 2.25 percentage points, to 3.25 percent. In December 2004 and January and February 2005, the Bank of Israel cut its key rate by a cumulative 0.6 percentage points, setting it at 3.5 percent. Thus, the NIS-dollar interest spread narrowed from 3.1 percentage points in June 2004 to 0.25 percentage point in July 2005.

macroeconomic policy that aims to maintain price stability at low short- and long-term interest rates, and by relative security calm. The recovery of domestic demand and the falling unemployment rate did not generate significant upward pressure on prices, evidently (according to estimates; see footnote 5) because the economy still has excess capacity.

During the review period, monetary policy continued to encourage price stability in terms of the target that the government, by resolution, defined as annual inflation of 1–3 percent. The monetary policy operated in a low-interest environment against the background of a rate-cutting policy that has been applied since 1999 and the stepwise decrease in inflation to Western levels. This policy, temporarily halted in 2002 due to a price spike, was reinstituted in early 2003. From then until April 2004, the key rate was cut by 5 percentage points in cumulative terms and leveled off at 4.1 percent until November 2004.

Monetary policy during the review period was affected by (among other factors) macroeconomic developments in the second half of 2004 that continued in early 2005, including a recessionary price level, inflation expectations and outlooks within the target ranges, stability in the forex market, and the responsible budget policy. As these factors led to the belief that price stability could be sustained at a lower level of interest, the interest rate was lowered by 0.2 percentage point in December 2004 and by the same increment in each of the first two months of 2005, bringing it to 3.5 percent.

After the three rate cuts, which added up to 0.6 percentage point in cumulative terms, the indicators for February and March placed future inflation in the middle of the price-stability target range. Expectations to one year ahead climbed and leveled off around the middle of the target; the forecasters' outlooks remained around the middle of the target; bond and T-bill yields stopped declining; the forex market showed stability that was reflected, among other things, in scanty exchange-rate volatility and low standard implicit deviations in options; and Israel's risk premium remained steady at a low level despite the continued narrowing of the short-term interest-rate differential and expectations of further contraction. These factors led to the belief that the prevailing level of interest at the time was appropriate for the attainment of the target and that no further rate-cutting was needed. Additional factors from the real and fiscal domains reinforced this assessment: the 2004 growth data outperformed the outlooks, the budget was not approved until the end of the first quarter of the year, and the real expected interest rate fell to

a mere 1.5 percent. Given this set of factors, the Bank of Israel left the key rate for March and April unchanged.

In the second quarter of 2005, the inflation estimates remained in or even below the middle of the stability target range. Inflation expectations to one year ahead slipped under the middle of the target range and the outlooks remained steady at around the middle. Expectations to longer terms also declined to around the upper bound of the target. The Bank of Israel's econometric models and Companies Survey yielded similar estimates. The financial markets, too, elicited a picture of relative stability during this time (except for the end of the period). Bond and T-bill yields began to decline again; the forex market maintained the stability that it had attained in the first quarter of the year, the real expected interest rate climbed slightly but remained low at 1.8 percent, fiscal policy operated within the framework of an approved budget for 2005, and real data for the first quarter attested to continued growth, albeit slower than in 2004. In view of these factors, the interest level at the time was considered compatible with inflation in or slightly under the middle of the stability target. The principal menace to the attainment of the target in this quarter was the continued narrowing of the short-term interest-rate differential and an expectation of further contraction due to expected rate increases in the United States—a development that might lead to sharp changes in the exchange rate. In consideration of all these factors together, the Bank of Israel left the key rate for May and June unchanged.

The trends that were typical of most of the review period stopped in the last two weeks of June and in early July. The NIS/dollar exchange rate slipped by 4.7 percent and exchange-rate risks, as derived from the options market, increased. In the T-bill and bond markets, the downtrend in yields that was prevalent during most of the review period reversed itself. Thus, twelve-month inflation expectations as derived from the capital market rose to a level slightly higher than the middle of the stability target. Expectations to medium and long terms ahead, in contrast, remained steady at around the upper bound of the target. Notwithstanding the changes, the Bank of Israel expressed the belief that financial stability was still being preserved and that inflation was unlikely to overstep the bounds of the target. Therefore, the central bank left the key rate for July unchanged.

To summarize: the Bank of Israel key rate was lowered in January and February by 0.4 percentage points in cumulative terms, pursuant to the rate cut in December 2004, and was left unchanged at 3.5 percent in March–July.

The assessment that inflation twelve months ahead would remain approximately in the middle of the target range also prevailed at the end of the first half of 2004. It was reinforced by inflation expectations as derived from the capital market, private forecasters' outlooks, and the Companies Survey and the econometric models of the Bank of Israel. All of these were based on estimates of expected developments during the year: that the NIS would lose a little ground against the dollar, that the key rate would be raised moderately, that real activity would continue to expand, and that fiscal policy would continue to strive for the targets. In practice, however, the rate of price increases during this time was slower than the early estimates and also under the lower bound of the target.

The inflation trend during the past twelve months and the variables that affected it indicate that the aforementioned estimation about the direction of the NIS/dollar exchange-rate trend did not come to pass. This evidently explains the gap between actual inflation and the inflation outlook. About a year ago, the expectations and outlooks, taken as a whole, suggested that the narrowing of the differential in short-term interest rates, coupled with the equalization of tax rates on foreign and domestic assets, would probably induce some NIS depreciation and lead to price increases. In practice, the NIS appreciated during the past year, for reasons including the increase in long-term foreign investment. Accordingly, inflation was milder than expected.

b. The indicators that guide monetary policy

In the process of making its interest-rate decisions, the Bank of Israel monitors the development of various economic indicators from the capital, money, and forex markets and analyzes macroeconomic data on inflation and real activity. In its analyses, it uses econometric models that have been developed to predict inflation. Monitoring this range of indicators allows the Bank to keep a constant watch on the markets' reactions and their implications for inflation expectations, and to determine what it considers the appropriate level of interest to attain the inflation target for the next one year and two years without prejudicing the stability of the financial markets.

The indicators and their behavior during the first half of 2005 are described below.

(i) Indicators of expected inflation

Inflation expectations and outlooks are more than tools that may be used to predict future inflation. They also affect prices by means

of the mechanisms that firms use to adjust prices and determine wages in the labor market. Since vendors and service providers adjust prices not continually but periodically (since adjustments come at a cost), they take into account expected price increases when they make such adjustments. Similarly, since labor accords are periodic, expected price increases (among other things) are built into them.

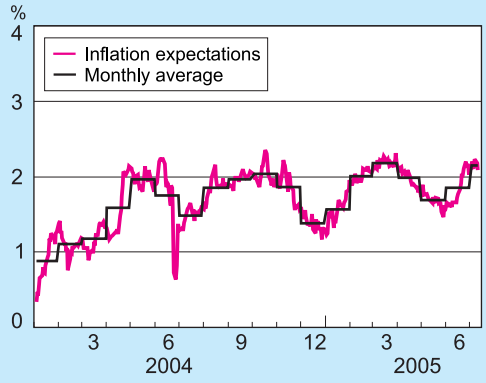
Inflation expectations to one year ahead, as derived from the capital market (measured in terms of the difference in yields between unindexed securities [Treasury bills] and CPI-indexed Galil bonds), fluctuated within the price-stability target range during the first half of 2005. Early in the year, in tandem with the rate cuts, expectations climbed from 1.4 percent on average in December 2004 to 2.2 percent in March, whereas in the second quarter they fell to 1.7 percent on average in May and in the first half of June. In the second half of June, expectations moved slightly over the midpoint of the stability target, reflecting the jitters that beset the capital and money markets at the time (Figure 7). At the end of the review period, inflation expectations rested approximately at the middle of the stability target, with low nominal and real interest rates—much as in developed economies around the globe.

Forecasters' estimates[3] of inflation expectations to one year ahead leveled off during the review period at around the midpoint of the price-stability target. All outlooks fluctuated within the target ranges and the spread between the highest inflation outlook and the lowest was rather small, at no more than 1 percentage point (Figure 8). The estimates were accompanied by predictions of rate hikes during the second half of 2005, but the timing of the predicted increase was postponed with each successive month and the rate of the foreseen increase declined.

Inflation expectations to medium and long terms ahead (2–10 years) are measured on the basis of differences in yields between unindexed Shahar bonds and CPI-indexed Galil bonds. During the review period, expectations to 2–3 years ahead fluctuated between the midpoint and the upper bound of the price-stability range. Expectations to medium terms (4–6 years) and long terms (7–10 years) ahead declined during the review period, from 3.6 percent in December 2004 to the target range in medium terms (2.7 percent) and slightly above the range in long terms (3.2 percent) (Figure 9). Notably, the expectations as measured include a risk-premium component that rises commensurate with the horizon of the expectations.

[3] A sample of seven forecasters from the financial sector, most from the banking system.

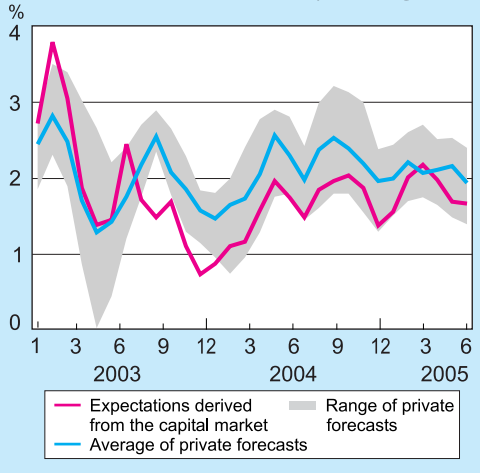
Figure 7
Twelve-Month Inflation Expectations Derived from the Capital Market, 2004–July 2005 (daily data)



SOURCE: Bank of Israel Monetary Department.

During the review period, inflation expectations derived from the capital market fluctuated within the price-stability target range at 1.6 percent 2.2 percent on monthly average, trending upward during the first quarter and declining during the second quarter (except for the end).

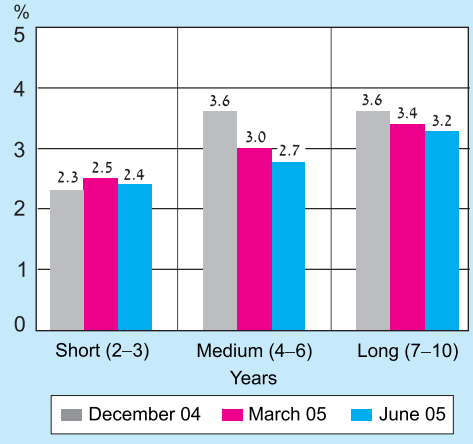
Figure 8
Inflation Expectations for the Next Year Derived from the Capital Market and According to Private Forecasters, 2003–June 2005 (monthly averages)



SOURCE: Private forecasters' reports and the Bank of Israel Monetary Department.

Private forecasters' estimates of inflation to one year ahead leveled off during the review period at around the middle of the price-stability range. The difference between the highest inflation outlook and the lowest was rather paltry, at up to 1 percentage point. Inflation expectations derived from the capital market were under the forecasters' outlooks during most of the review period.

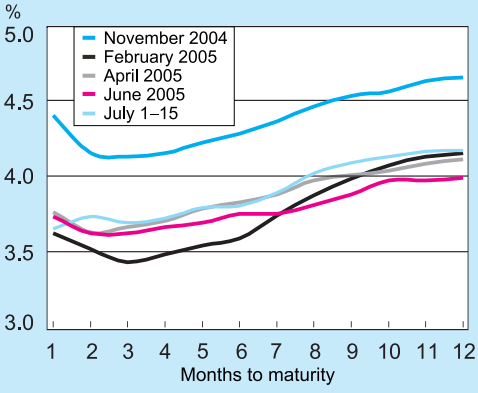
Figure 9
Long-Term Forward Inflation Expectations Derived from the Capital Market, December 2004–June 2005 (monthly averages)



SOURCE: Bank of Israel Monetary Department.

During the review period, short-term inflation expectations approximated the midpoint of the price-stability target. Medium- and long-term expectations slipped from 3.6 percent in December 2004 to 2.7 percent and 3.2 percent, respectively.

Figure 10
The Treasury-Bills Yield Curve, November 2004–July 2005 (monthly averages)



SOURCE: Bank of Israel Monetary Department.

Treasury-bill yields declined between December 2004 and February 2005 (in tandem with reductions in the monetary interest rate) and in May, and increased from mid-June and in the first half of July.

The Bank of Israel has developed **econometric models** that help it to estimate expected inflation and the interest path that is needed to attain the inflation target. The models, which almost all central banks around the world accept as economic-analysis and forecasting tools, are used by policymakers to test various projections based on alternative assumptions about the different variables. By using past economic relationships as a basis for the forecasting of future developments, the models create a convenient structured framework for analysis. However, since they cannot cope with significant and unforeseen changes in the economic environment and cannot reflect specific developments in each period, their results are not always accurate. Therefore, they are only one of many elements in the estimation of expected inflation; additional analytical tools and judgmental assessment of all indicators are also used.

In the first quarter of 2005, the models showed that the actual key rate was lower than that needed to attain the inflation target, indicating that the rate should be raised during the year. The models had elicited a similar picture in the second half of 2004. From the second quarter of 2005 onward, they showed that the key rate was at or slightly under the necessary level and suggested the possibility of gentler increases in the future than those that had been foreseen at the beginning of the year. The gap between the interest path derived from the model and that actually needed may have formed due to an increase in the credibility that the public attributed to the policy. Since the credibility factor is hard to estimate in quantitative terms, it is not explicitly reflected in the Israeli models or in most models abroad. Although it may be indirectly reflected in the estimated parameters, these estimates were performed in the past, when credibility was lower.

(ii) Additional indicators from the capital market

Bond and Treasury-bill yields declined in the first two months of the year, in tandem with rate cuts by the Bank of Israel. After the trend slowed somewhat in March and April, the decreases resumed in May. At the end of the review period, all yields were found to be at their lowest level in several years. This is evidence of the consolidation of stability in the capital market, reinforced by low inflation expectations, low monetary interest, and fiscal discipline. Notably, yields on Treasury bills and unindexed Shahar bonds rose toward the end of the review period and in early July.

After stability in the last few months of 2004, **Treasury-bill yields** declined from December 2004 to February 2005 by 0.7 percentage point (short-term) and by 0.5 percentage point (up

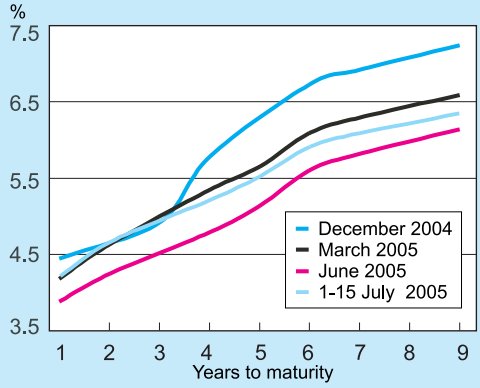
to one year), commensurate with the behavior of the key rate during these months. In March and April, the trend halted and yields edged upward, especially short-term yields, but declined again from May onward (Figure 10). At the end of the first half of the year, Treasury-bill yields were very low—from 3.7 percent in short terms to 4 percent in long terms—indicating the consolidation of stability in the capital markets, reinforced by inflation expectations within the target ranges and a low monetary interest rate. The positive slope of the curve, moderate to begin with, became even gentler during the review period, attesting to moderate expectations of rate increases within a range of one year. This moderate slope includes a risk premium that provides compensation for future uncertainty.

Yields on Shahar bonds declined during the review period by 0.5 percentage point (short-term) and up to 1 percentage point (long-term) (Figure 11). Most of the decrease occurred in January–February, coinciding with the rate cuts, and in May, due to expectations of a decrease in government bond issues in view of relatively strong privatization and the downtrend in US long-term yields that began in the second quarter. By the end of the review period, Shahar yields had fallen to a paltry 3.9 percent in short terms and 6.2 percent in long terms. The positive slope of the yield curve slackened, attesting to a decline in expectations of rate hiking in long terms or to a decline in the implicit risk premium in yields.

Yields on CPI-indexed bonds declined in the first quarter of the year. Most of the decrease—more than 1 percentage point—occurred in short-term yields; long-term yields lost only 0.3 percentage point (Figure 12). Thus, the positive slope of the curve became steeper, reflecting the easing of monetary restraint. In the second quarter, short-term yields rose whereas long-term yields were largely unchanged, making the slope gentler. At the end of the review period, real yields were also at the lowest level observed in years—2.4 percent short-term and 4 percent long-term.

The expected real rate of interest on Bank of Israel funds is derived from the spread between the key rate and inflation expectations and serves as an indicator of the degree of monetary restraint. The real expected interest rate fell from 2.6 percent in December 2004 to 1.5 percent at the end of the first quarter of 2005, largely due to the upturn in inflation expectations and partly due to rate cutting by the Bank of Israel. In the second quarter, the real expected interest rate increased slightly due to a decline in inflation expectations and ended the first half of the year at 1.8 percent as against 5 percent at the end of 2003 (Figure 13).

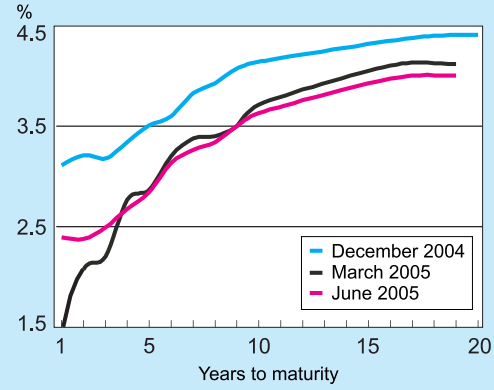
Figure 11
Yield-To-Maturity Curve of Unindexed (*Shahar*) Bonds, December 2004–July 2005 (monthly averages)



SOURCE: Bank of Israel Monetary Department.

During the review period, *Shahar* yields declined at rates ranging from 0.6 percentage point in short terms to 1.1 percentage point in long terms. Most of the decline occurred in January and February, coinciding with rate cuts, and in May. *Shahar* yields began to climb in mid-June and continued to rise in the first half of July.

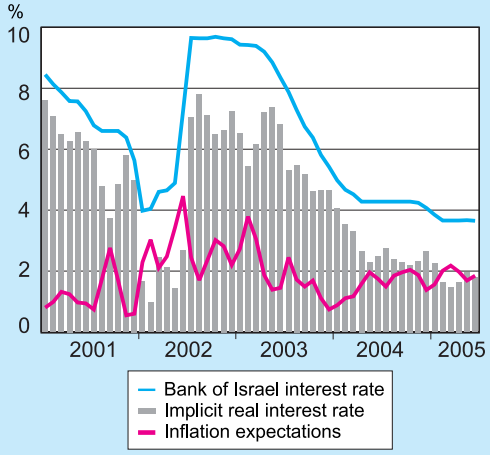
Figure 12
Yield-To-Maturity Curve of CPI-Indexed Bonds, December 2004–June 2005 (monthly averages)



SOURCE: Bank of Israel Monetary Department.

CPI-indexed bond yields declined in the first quarter of 2005. The decrease was steepest (more than 1 percentage point) in short term yields and gentler in long terms (0.3 percentage points). In the second quarter, short-term yields climbed whereas the rest of the curve was almost unchanged.

Figure 13
The Bank of Israel Interest Rate,[a] Inflation Expectations,[b] and the Implicit Real Interest Rate, 2001–June 2005 (monthly averages)

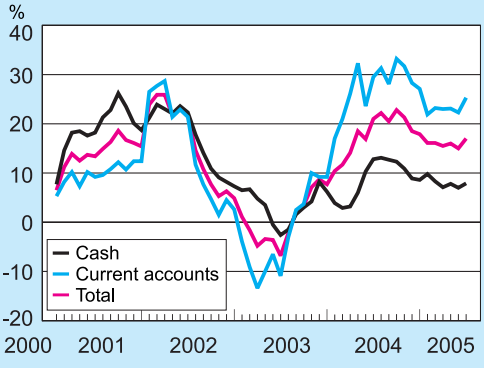


[a] The effective interest rate in the Bank of Israel auctions.
[b] For 12 months, derived from the capital market.

SOURCE: Bank of Israel Monetary Department.

The implicit real interest rate fell from 2.6 percent in December 2004 to 1.5 percent at the end of the first quarter of 2005, mainly due to an upturn in inflation expectations and partly due to rate cutting by the Bank of Israel. In the second quarter, the implicit real interest rate rose slightly, due to a decline in inflation expectations, and came to 1.8 percent at the end of June.

Figure 14
Annual Change in M1 and its Components, December 2000–June 2005 (monthly averages)



SOURCE: Bank of Israel Monetary Department.

The money supply expanded by 11 percent during the review period and by 17 percent in the past 12 months. Most of the increase originated in current acounts, which increased steeply by about 15 percent during the review period, whereas the cash supply expanded at a more moderate 7 percent pace.

The low real interest rate is the combined result of a long-term monetary policy that operates within the frame of a multiannual inflation target and a fiscal policy that is increasingly committed to cutting the government deficit. This integrated macroeconomic policy provides a crucial backdrop for sustainable growth amidst price stability, in an environment of low real interest rates to both short and long horizons.

(iii) Money and credit aggregates and the public's assets portfolio

The money supply (narrow money—the M1 aggregate), which is determined by demand for money in a regime where monetary policy is conducted via the interest rate in the context of an inflation target, expanded by 13 percent during the review period and by 19 percent during the year ending in June 2005, after an 18 percent increase in 2004 (Figure 14). Most of the expansion occurred in the demand-deposit component, which expanded by a steep 17 percent during the review period, whereas cash expanded by a gentler 7 percent. The money-supply trend was affected by the ongoing adjustment to low interest rates, in view of the rate-cutting that has occurred since early 2003, and by the expansion of real activity. This may also be seen from econometric estimates of demand for money (presented in Inflation Report 15, Box 2).

Unindexed interest-bearing NIS deposits increased during the review period by a gentle 4 percent, pursuant to a downward trend in the growth rate of this indicator since December 2001. This trend, occasioned mainly by the process of cutting the nominal interest rate, has been reinforced by a gradual changeover in the management of monetary policy from bank deposits to market instruments, i.e., Treasury bills and Repo. **The wide monetary aggregate**, M2, expanded during the review period by 5 percent, mainly due to the increase in M1. The share of long-term deposits climbed during the review period by almost 1 percentage point and came to a steep 15.1 percent—at the expense of medium-term deposits, which contracted to 7.8 percent, while short-term deposits were almost unchanged at 77 percent (Figure 15). Although the term of deposits has been trending up since 2003, short-term deposits still account for most of the total.

The **total bank-credit aggregate** (C3) was almost unchanged during the review period after a cumulative decrease of 1 percent in 2003 and 2004 (Figure 16). Two factors explain the decline in bank credit amidst economic recovery: a decrease in the amount of credit that banks have been making available in recent years as they assimilated the need to manage their risks in a climate

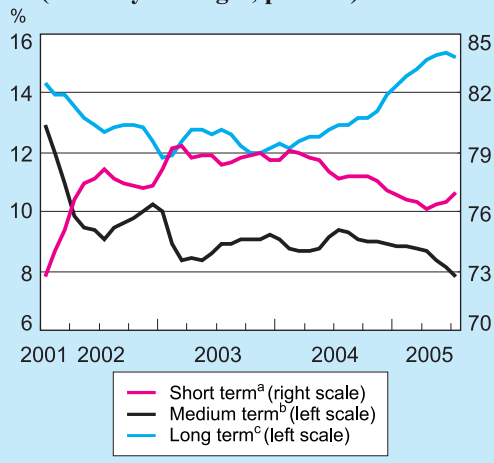
of regulatory restrictions on borrowers, and an increase in the supply of alternative nonbank sources of credit available to investors looking for attractive channels due to the low rates of interest. Thus, the share of banks in total sources of credit for the financing of business activities has contracted and, concurrently, an alternative market of tradable and nontradable **corporate bonds** has developed in recent years. In January–May 2005, corporate bond issues for capital-raising purposes increased perceptibly and came to NIS 18 billion, approximating the level of issuing in all of 2004. The continuing decline in yields on government bonds, which serve as a basis for the costing of corporate bonds, and the narrowing of the gap between these yields and those on corporate bonds helped to lower the cost of corporate debt issues. A third contributing factor in the increase in capital raising via corporate bonds was the freeing of institutional investors' sources that was occasioned by the expansion of institutions' investment possibilities and the decline in government issues in the domestic market. During the review period, issues by means of **structured financial instruments** (structured bonds, certificates of deposit, and basket certificates), which do not provide an alternative to bank credit for the financing of nonfinancial activity but are steered to re-investment in the capital market, accelerated pursuant to a trend that began in 2004 and has been helping to make the capital market more efficient, deep, and liquid. This should make capital less expensive to raise, thereby abetting the continued expansion of issues for the financing the business sector' nonfinancial activities. Just the same, Israel's corporate-bond market remains small[4] relative to the government bond market.

In addition to the capital-raising vehicles described above, firms raised capital on the Tel Aviv Stock Exchange. NIS 4.4 billion was raised in **capital issues** (shares and convertible bonds) during the review period as against NIS 6 billion in all of 2004.

The value of the public's financial assets portfolio continued to increase during the first five months of 2005, showing a 6.2 percent upturn that traced largely to continued increases in share prices. In regard to the distribution of the portfolio by types of indexation, excluding shares, two trends that typified the portfolio in recent years—a proportional increase in the unindexed component and proportional decline in the indexed component—slowed and even turned around. Thus, the fraction of unindexed assets in the total declined by 1.7 percentage point, falling to 40.2 percent, and that of the CPI-indexed component

[4] Trading volumes in the corporate-bond market increased from NIS 8 million per day in mid-2002 to NIS 155 million on average in 2005, as against daily volumes of more than NIS 1 billion in the government-bond market.

Figure 15
The Composition of Unindexed NIS Deposits (M2), December 2001–June 2005
(monthly averages, percent)

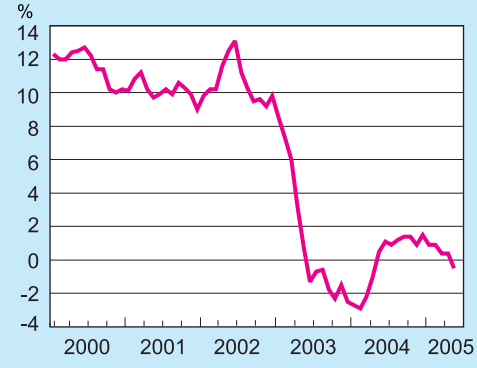


[a] M1, three-month resident time deposits and SRO deposits.
[b] Three-month to one-year resident time deposits.
[c] Deposits for one year or longer.

SOURCE: Bank of Israel Monetary Department.

The share of long-term deposits in total deposits climbed during the review period by about 1 percent, to 15.2 percent, at the expense of medium-term deposits, which fell to 7.8 percent, whereas the share of short-term deposits was almost unchanged at 77 percent. Although the term of deposits has been trending up since 2003, the large majority of total deposits are still short-term.

Figure 16
Annual Rates of Change of Bank Credit to the Public (C3), 2000–June 2005 (monthly averages)



SOURCE: Bank of Israel Monetary Department.

Total bank credit was almost unchanged during the review period after a 1 percent cumulative decrease in 2003 and 2004.

increased by 1.3 percentage point and came to 41.6 percent. The forex-indexed component also edged upward, to 18.2 percent. Some of the increase in the CPI-indexed component traced to an upturn in issues of corporate bonds, most of which are CPI-indexed. The share of tradable assets continued to rise at the expense of nontradable ones, ending the review period at about half the portfolio as against only 35 percent in 2002, in view of the personal-tax and pension-fund reforms that were launched in recent years.

Box 2
New Method of Calculating Inflation Expectations

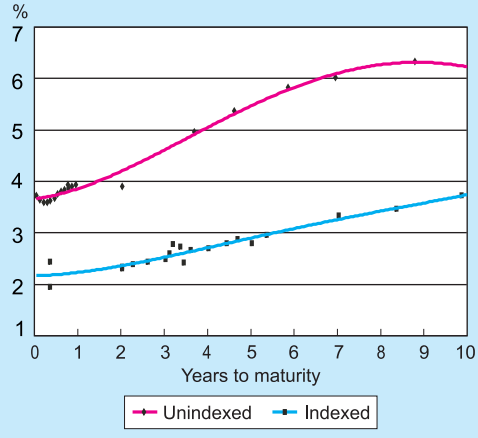
Recently the Bank of Israel revised its method of calculating inflation expectations as derived from capital-market data. Inflation expectations, especially to one year ahead, are an important indicator in the formulation of monetary policy. Expectations are calculated (approximately) as the difference between the yield to maturity of a one-year unindexed bond (a one-year Treasury bill) and the yield on an indexed bond to the same horizon.

The revision became necessary because the considerable thinning of the number of indexed-bond series of up to one year to maturity had led to a perceptible increase in the volatility of yields on such bonds.

According to the new method, inflation expectations to one year ahead are derived from a real yield that is calculated on the basis of the zero-coupon yield curve and not as a simple average of yields on bonds of approximately one year to maturity, as had been the practice. This box describes the main features of the new method and explains why the change was made.

For the past several years, the government's financing needs have been declining and its policy on bond issues has encouraged tradability in the bond market by favoring fewer but larger series. The decline has resulted in steadily widening spreads between the terms to maturity of indexed and unindexed bond series. To calculate expectations precisely, however, both series should have exactly the same term to maturity—a situation that rarely occurs in practice. To surmount the difficulty in calculating expectations on the basis of yields that do not match in terms to maturity, it was the conventional practice, in the old method, to perform a simple averaging of real yields to maturity in series of *about* one year to maturity. The nominal yield taken into account was always that of the longest-term series of Treasury bills, which were issued to about one year to maturity. Since usually there were several series of indexed bonds within the relevant range of around one year, whenever an individual series showed an aberrant yield for some specific reason, e.g., lack of market tradability or severe concentration of holdings of the series, the averaging of this yield among the yields of adjacent series mitigated the effect of the aberration.

Figure 1
Zero Coupon Yield Curve of Unindexed and Indexed Bonds



SOURCE: Bank of Israel.

Beyond the problem of misalignment in terms to maturity between the longest-term Treasury bill series and the series of indexed bonds, another problem came up: the distance between terms to redemption of indexed series and the benchmark terms, which are full years. Since bonds are issued to terms of many years, the aforementioned phenomena had been foreseen and the Bank of Israel made preparations to deal with them, as we describe below.

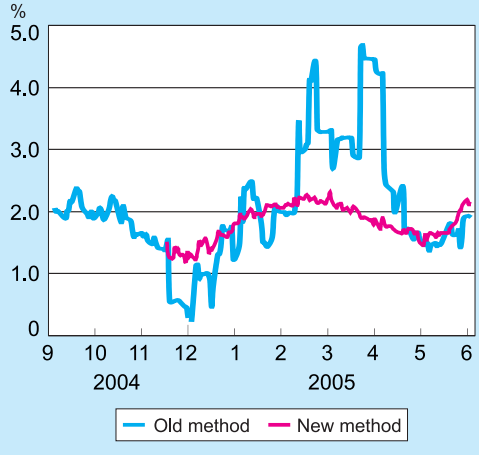
These problems are well known around the world because most developed countries have encountered phenomena that resemble Israel's. The developed countries had smaller financing needs than Israel's (relative to GDP) and long ago adopted the policy of issuing large series. The common approach toward the problems that result from a small number of observations of individual yields is to estimate a continuous yield curve that passes through the yields on the time axis on which terms to maturity are plotted (Figure 1). Since the various bonds pay different coupon interest rates, it is the standard practice to establish a common denominator among them in terms of interest rate by calculating a virtual yield on the assumption of a zero-coupon rate (i.e., a zero coupon equivalent yield). After estimating two zero-coupon yield curves—one for unindexed yields and one for indexed yields—one may derive inflation expectation to any chosen horizon up to the shortest maximum horizon between the two types of bonds.[1]

The Bank of Israel decided to adopt this approach.[2] Among various detailed methods that may be used in applying the yield-curves approach, one of the most common—used, for example, by the Bank of England—was selected. In this method, several benchmark yields are estimated in a manner that minimizes the sum of two types of "penalties": (1) the sum of the distances between calculated yields and actual yields and (2) an estimate of the volatility of the curve itself.[3]

The Bank of Israel introduced the method for internal use in December 2004 and, during a run-in period of several months, compared the inflation expectations data that were derived from both methods (Figure 2). Inflation expectations to a given horizon ahead may, of course, be calculated as the difference between the yield computed on the basis of the nominal curve and that derived from the real curve, but since it is the Bank of Israel's policy on issuing Treasury bills that there must always be a T-bill series with a horizon of close to one year that is a direct observation from the market, the Bank decided to use expectations to one year ahead as calculated on the basis of the difference between the yield on the longest T-bill series and the yield calculated from the real curve to an identical horizon.

Figure 2 plots the data on inflation expectations to one year ahead according to the old method since the beginning of October 2004 and according to both methods since the middle of December 2004. The decrease in volatility of the expectation data, i.e., an improvement in their reasonableness, is plainly evident.

Figure 2
Twelve-Month Inflation Expectations, by Old and New Methods



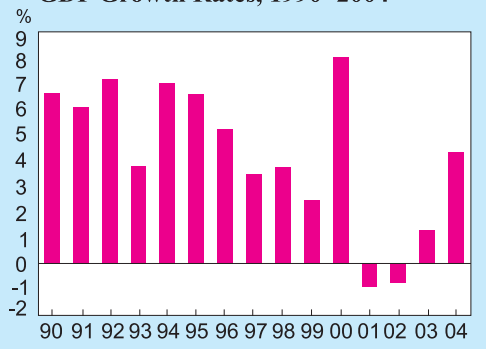
SOURCE: Bank of Israel.

[1] For a survey, see, for example, Anderson, Nicola, et al., *Estimating and Interpreting the Yield Curve,* New York, Wiley, 1996.

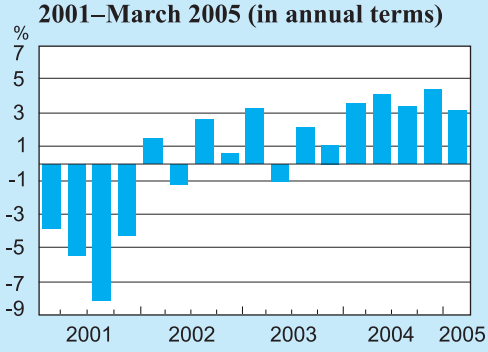
[2] Wiener, Zvi, and Pompushko, Elena, "Deriving Smooth Zero-Yield Curves from Bond Market Data," Bank of Israel Monetary Department, unpublished memorandum, forthcoming as discussion paper, 2005.

[3] In the literature on yield curves, this method is called the Variable Roughness Penalty (VRP) method and is parallel to the Hodrick-Prescott Filter that is used in macroeconomics.

Figure 17
GDP Growth Rates, 1990–2004



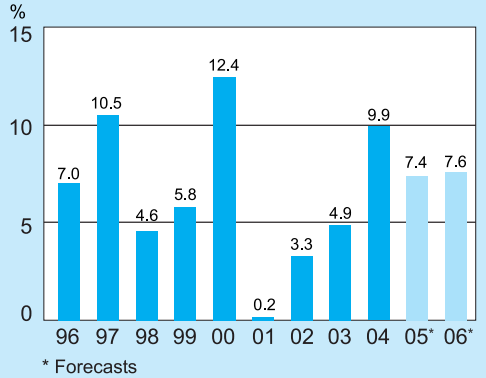
Quarterly Growth Rates, 2001–March 2005 (in annual terms)



SOURCE: The Bank of Israel Annual Report.

The growth rate slowed in the first quarter of the year relative to the 2004 pace.

Figure 18
The Increase in World Trade, in Volume Terms, 1996–2006



* Forecasts

SOURCE: World Economic Outlook, IMF, April 2005.

The growth of global trade is expected to slow in 2005 relative to 2004; this will have a braking effect on the growth of Israeli exports.

c. Real activity

Growth of economic activity is one of several factors that affect the price trend in the short term.[5] Evidence in the case of Israel shows that some of this effect is reflected at a lag, i.e., the prices that firms set in a given quarter are influenced by growth in the previous quarter. However, Israel's current economic growth, which began in late 2003 when the recession began to end, has not generated upward pressure on prices due to surplus capacity (a GDP gap). The underutilization of available factor inputs, especially labor, is allowing firms to meet the increase in demand without raising prices significantly.[6]

Although the growth rate slowed in the half-year reviewed relative to 2004, the favorable developments in the labor market indicate that the growth has consolidated and that firms expect it to continue. In the first quarter, GDP expanded by 3.3 percent (annualized) as against 4.5 percent in 2004, and product of the business sector grew by 3.9 percent after increasing by 6.6 percent in 2004 (Figure 17). The slowdown of domestic growth traced mainly to a similar phenomenon at the global level, as the pace of expansion of global trade slowed from 9.9 percent in 2004 to a projected 7.4 percent in 2005. (Figure 18. Even the slowed pace, however, is quite vigorous in comparison with the average in recent years and continues to have a sustaining effect on growth in Israel.) Another factor in the growth slowdown during the review period was the tight fiscal policy that was adopted during that time, mainly due to the delay in passing the state budget until late March, resulting in short-term contractionary effects. Several factors abetted the continuation of growth during this time: the stable security situation; the credibility of fiscal policy, through which the government demonstrated its commitment to the attainment of its targets; and the low domestic interest rates to all terms, which stimulated domestic demand. The Bank of Israel's Companies Survey for the second quarter of 2005 shows that economic activity continued to expand during this period, too, and that the growth embraced most industries.

Growth in the first quarter was powered mainly by an increase in **private consumption**. Current private consumption, excluding

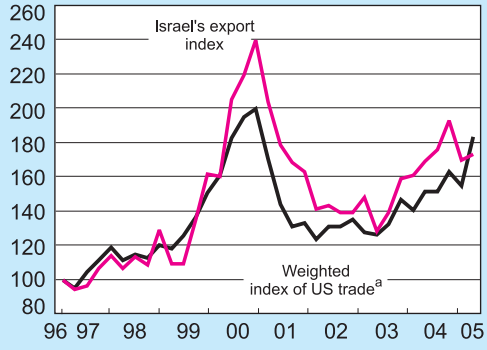
[5] This assumes that GDP is determined by demand. In the long run, GDP is determined by supply, which is affected by the levels of capital and labor.

[6] In Israel, the GDP gap—the spread between actual product and potential product—has been calculated in various ways. (See Box 1.1 in Chapter 1 of the 2004 *Annual Report* of the Research Department, Output and the Principal Industries.) All show that even though the recession ended in late 2003 and the economy has been growing quite briskly since, a gap that thwarts inflation pressures still exists.

durable goods, expanded by 3.6 percent after a rapid upturn in 2004. Indicators for the second quarter of the year, especially the responses of firms in the commercial sector to the Bank of Israel's Companies Survey, attested to the continued brisk pace of expansion. These firms reported continued rapid increases in activity and expectations of more of the same in the next quarter. Consumption was boosted by an increase in disposable income, the decline in the unemployment rate, low interest rates, and the wealth effect that originated in the capital market. **Exports** continued to expand during the half-year reviewed but the pace of expansion slipped below the level in 2004, when exports powered economic growth. According to the National Accounts data, exports increased in the first quarter of 2005 at an annual pace of 2 percent. The main factor behind the slowdown in the growth rate of exports was the decline in global trade after rapid expansion in 2004. Nevertheless, the increase in Israel's exports during this quarter fell short of the growth rate of global trade. In recent years, a strong correspondence has been found between the behavior of Israel's high-tech exports (electronics, communication products, etc.), and US trade in the same fields (Figure 19). The correspondence remained valid during the review period, as the slowdown in Israel's high-tech exports was matched by a slump in US trade. Current indicators of foreign trade in the second quarter show that the slowdown in export growth has continued.

In contrast to the expansion of current private consumption, **gross domestic investment** decreased in the first quarter of the year by a hefty 10 percent—despite the continued growth in activity and the continued decline in domestic interest rates, which should have favored an increase in investment. The decline centered on nonresidential investment—a parameter that expanded rapidly in the last quarter of 2004—whereas housing investment was almost unchanged. The flat performance of housing investment was much different from developments in this field in 2004; it may signal the onset of stabilization in the **construction industry**, which has been performing sluggishly since 1997 (as reflected in a protracted decline in industry output). According to the Companies Survey, construction activity continued to slump in the second quarter as well but firms expect the declines to cease in the third quarter. Economic fundamentals that favor an increase in housing demand have been present for some time—an upturn in national disposable income, the falling unemployment rate, a decrease in housing-loan interest to a very low plateau by the standards of recent

Figure 19
The Electronics Industry: Israel's Exports, and US Trade, December 1996–June 2005[a]



[a] Data for 2005:II extrapolated from the known data of April and May 2005.

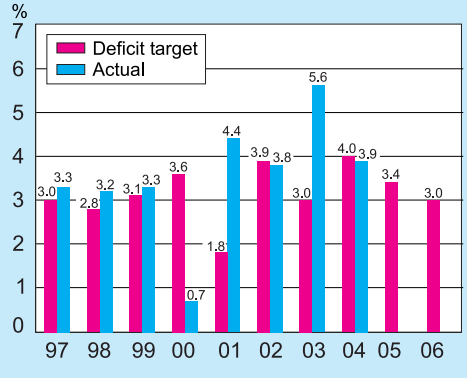
SOURCE: Israel's exports based on Central Bureau of Statistics data; US data-United States International Trade Commission.

The growth of Israel's high-tech exports slowed during the review period, against the background of a slowdown in the United States' high-tech trade in the first quarter of the year.

years, and construction-industry expansion at a slower pace than population growth would imply. The importance of the housing industry in price developments exceeds the industry's direct impact on economic activity because of the large share of housing expenditure in the public's consumption basket and, for the same reason, in the Consumer Price Index. The behavior of housing prices is measured mainly on the basis of rent, which is indirectly affected by the housing market. During the review period, the housing index continued to decline (by 1.1 percent) but the rate of decline was somewhat slower than in 2004. If the industry begins to grow, the downward trend in housing prices will probably change direction, affecting the entire price index. (However, the index of rent prices is strongly affected not only by housing-industry developments but also by the NIS/dollar exchange rate.)

Another contributing factor in the decline in demand during the review period, as stated, was **government consumption**.[7] This indicator declined in the first quarter of 2005 by 4.9 percent, continuing the downward trend for the third consecutive year. Until May, government expenditure also fell short of the level that would correspond to full utilization of the budget in view of the seasonal trajectory and the 2005 deficit target—3 percent of GDP net of expenditure related to the disengagement from the Gaza Strip and northern Samaria and 3.4 percent of GDP including disengagement expenditure (Figure 20). The slack in spending traces mainly to the delayed passage of the state budget in late March, which led to underperformance in spending by all government ministries. Although the budget was not passed according to schedule, in 2004 (it was eventually passed at the end of March 2005), indicators from the financial markets (e.g., interest on long-term bonds) indicated that the public considered the situation temporary and treated as credible the government's commitment to its targets. The stabilizing effect of the credibility of fiscal policy on the financial markets makes it possible to maintain a stable price environment, and during the review period it also allowed the Bank of Israel to continue applying monetary expansion. Moreover, the fiscal policy was reflected in an improvement in general-government saving, which helps to lower the current-account deficit and promote exchange-rate stability.

Figure 20
The Government Deficit (percent of GDP), Targets and Actual, 1997–2006



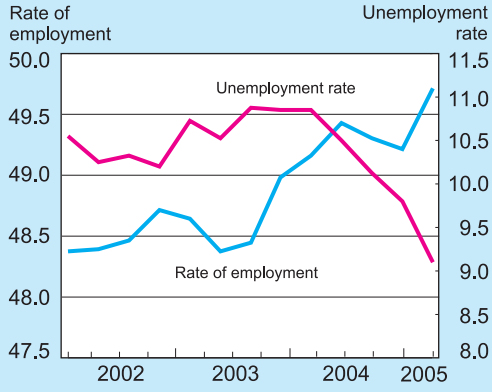
SOURCE: Based on Bank of Israel Annual Reports.

The 2005 government deficit is expected to fall to 3.4 percent of GDP.

[7] A decrease in government expenditure affects domestic demand in the short term. Over longer periods of time, the downscaling of public expenditure may allow economic activity to expand by (among other things) enhancing the private sector's ability to raise sources of finance for larger investments.

The rapid economic growth in 2004 found conspicuous expression in the **labor market** during the review period, since this market tends to respond at a lag to developments in activity. The unemployment rate declined with unexpected vigor in the first quarter of the year, falling to 9.1 percent of the labor force (Figure 21), in a continuation and acceleration of the trend that began in the second quarter of 2004 after the unemployment rate had peaked at 10.9 percent. The employment rate rose to 49.7 percent in the first quarter of 2005 as against 49.2 percent in the previous quarter. The labor-force participation rate rose (after three quarters of declines), the proportion of jobseekers who were out of work for more than half a year decreased, and the number of persons employed full-time increased (to 64.6 percent of all persons employed). Employee posts in the business sector also rose in the first quarter of 2005 by 2.3 percent relative to the year-earlier quarter. In the past four quarters (Figure 22), employment increased in all principal industries except for construction and focused on the business sector. In the first quarter of 2005, however, employment in general government increased. The labor market influences price developments directly by means of changes in wages, which affect firms' expenses and, in turn, the prices of their products. In the first quarter of the year, real wages in the business sector edged upward by 1.3 percent—less vigorously than in 2004, when the increase (3.7 percent) was outpaced by the improvement in labor productivity and, therefore, did not generate upward pressure on prices.

Figure 21
The Rate of Employment and the Unemployment Rate,[a] 2002–March 2005 (seasonally adjusted, percent)



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

SOURCE: Labour Force Surveys.

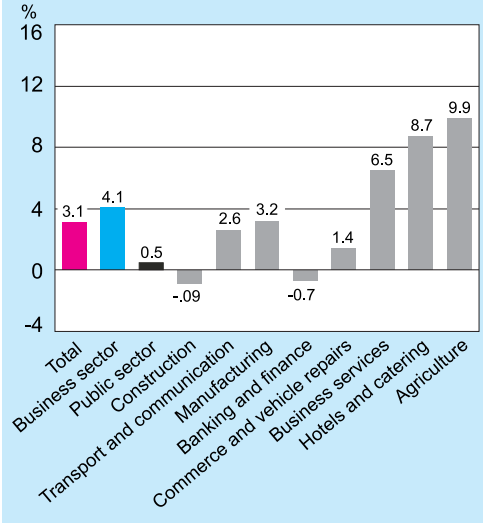
The unemployment rate declined steeply in the first quarter of 2005 while the employment rate rose.

d. The exchange rate and foreign-currency activity of the different sectors

(i) Main developments

In January–June 2005, the NIS was traded with no particular trend and within a narrow range of fluctuation. Long-term foreign investment increased perceptibly, to $ 4.9 billion, and the nonbanking private sector acquired $ 5.6 billion in forex by means of short-term instruments. Domestic activity in forex and vis-à-vis nonresidents was very steady due to the macroeconomic improvement and the strengthening of financial stability despite the continued narrowing of short-term NIS/forex interest-rate differentials and the completion of the tax reform. In June, the NIS depreciated rapidly against the dollar by a cumulative maximum of 4.7 percent in view of an upturn in forex purchases by households.

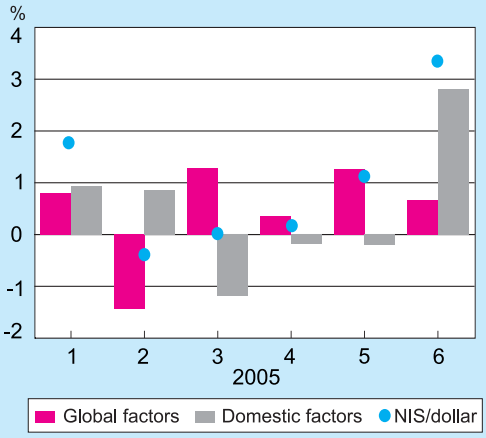
Figure 22
Percentage Increase in the Number of Employed Israelis, by Industry, last four quarters vis-à-vis equivalent period previous year



SOURCE: Labour Force Surveys.

The increase in employment in the first quarter of 2005 embraced most industries.

Figure 23
Components of the Monthly Change in the NIS/Dollar Exchange Rate, January–June 2005



SOURCE: Bank of Israel.

By separating the change in the NIS exchange rate into components, it was found that global factors applied depreciation pressure and domestic factors were conducive to appreciation during most of the half-year reviewed. Most of the depreciation in June, however, traced to domestic factors.

Until June, most of the depreciation during the review period traced to global factors;[8] the effect of domestic factors was negligible. The rapid depreciation in June, in contrast, originated mainly in domestic factors (Figure 23).

Most foreign investment was either direct investment or domestic portfolio investment in Israeli shares. Foreign investment on the Tel Aviv Stock Exchange (TASE) climbed to $ 2.1 billion during the review period; nonresident activity in short-term instruments was paltry. Rather large forex sales by nonresidents allowed residents to pay back forex credit at a relatively low exchange rate, as the continuing contraction of the short-term NIS/forex interest-rate differentials made forex credit more expensive in relative terms.

Several factors converged to keep the exchange rate stable during the review period. They included the recovery in domestic activity, as reflected in the balance sheets of the business sector and the economy at large; geopolitical improvement; an improvement in fiscal management; and the advancement of privatization and structural-reform processes—factors that reduced country risks and encouraged domestic investment, among other outcomes. The economy also benefited from a push in foreign investment that originated in a tendency of investors in global capital markets to invest in shares in emerging market economies.

In view of the domestic economic improvement, the effects of the continued narrowing of the short-term interest differential and the completion of the tax reform at the beginning of 2005 were gentle. The unprecedentedly narrow spread did not cause exchange-rate shocks given the low level of NIS risk. The pace at which institutional investors and households adjusted their portfolios to the equalization of tax rates on external and domestic investments was moderate, largely due to an increase in the attractiveness of the domestic capital market.

The exchange-rate band of the NIS against the five-currency "basket," instituted in 1989, was officially abolished in June 2005, making the NIS fully mobile. Notably, in practice the exchange rate had been allowed to find its own level since the middle of 1997, without direct intervention by the Bank of Israel except for

[8] The forces that affect the NIS–dollar exchange rate are separated into domestic and global factors by comparing the change in the NIS–dollar rate with changes in the dollar exchange rates of emerging economies' currencies. The underlying premise is that external forces affect the NIS–dollar exchange rate much as they do the dollar exchange rates of emerging markets' currencies. If the change in the NIS–dollar exchange rate is greater than the change in the other currencies' exchange rates against the dollar, the difference is attributed specifically to domestic factors that affect the exchange rate. (For further explanation, see Box 2.1.1 in the NIS–Forex Market section of the 2004 annual report of the Foreign Exchange Activity Department.)

several days at the end of that year. (The history of the exchange-rate band is described in Box 3.)

(ii) Exchange-rate and sectoral developments

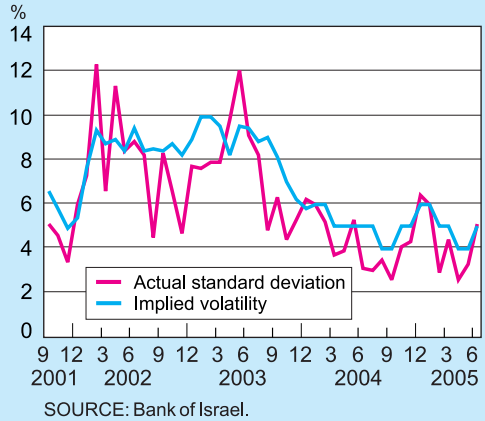
During most of the first half of the year, the NIS fluctuated against the US dollar and the currency "basket" within a narrower range than in the past and with no obvious trend. From the beginning of the review period to June 8, the Israeli currency depreciated by a gentle 2.3 percent against the dollar and was virtually unchanged against the "basket" (Figure 4). The NIS lost ground against the dollar due to the appreciation of the dollar around the globe but gained against the euro and the currencies of other emerging markets. At the end of the period, the dollar made up lost ground against global currencies and the NIS, causing the NIS to depreciate by another 3.5 percent.

Trading in forex increased in the first quarter to roughly $ 1 billion on daily average (as against $ 0.6 billion on average in the previous two years) and the share of nonresidents in trading increased slightly, somewhat in reflection of the perceptible increase in forex purchases by nonresidents and the nonbanking private sector during the review period. Nonresident activity—both in over-the-counter derivatives and on the Tel Aviv Stock Exchange—remained heterogeneous during the period. The increase in forex activity in the economy at large peaked in March and April, coinciding with the upturn in nonresident activity on the domestic stock exchange.

The Israeli economy benefited from a push in foreign investment that was prompted by a trend among investors in global capital markets to invest in emerging-economy shares in response to high returns (relative to developed economies), expectations of growth in the relevant countries, and a low level of investor risk aversion (according to risk-aversion indexes). In developed economies, in contrast, the share indexes did not perform notably well in view of sluggish country growth outlooks and uncertainty.

As activity increased during the review period, there was a consolidation of stability in the various parameters of trading. Exchange-rate risk (measured in terms of the implicit standard deviation) declined after the beginning of the review period from a periodic peak of 6.7 percent to a plateau of 4 percent, a low level in historical terms and relative to other currencies (Figure 24). By February, the decline in NIS risk had fallen into line with the currency-risk trend in other emerging markets, but the NIS risk also continued to decrease during the review period while the downtrend in the other emerging markets stopped. The

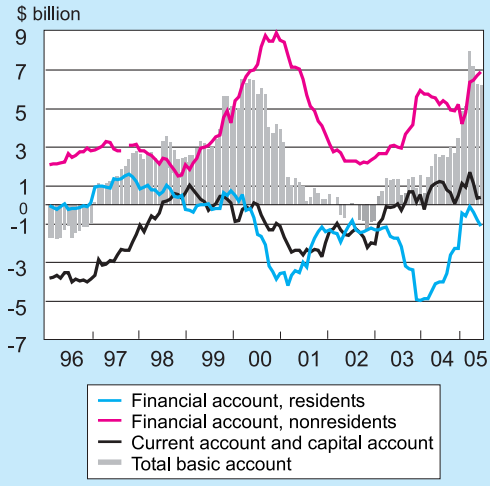
Figure 24
The Standard Deviation of the Daily Changes in the NIS/$ Exchange Rate and the Implied Volatility in NIS/$ Options Traded Over the Counter, 2001–June 2005 (monthly data)



SOURCE: Bank of Israel.

Exchange-rate risk fell to a low 4 percent after rising at the beginning of the year in tandem with the increase in the currency risk of other emerging markets.

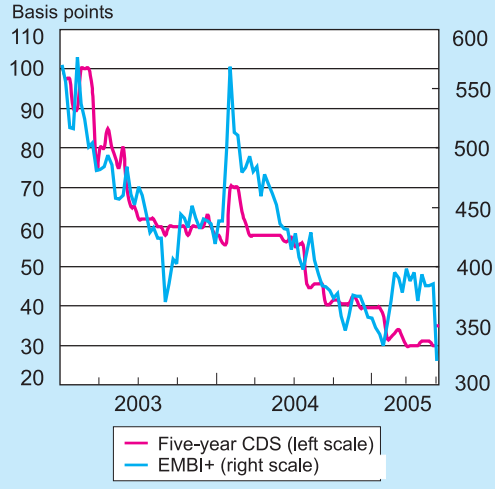
Figure 25
Sales (+) and Purchases (–) of Long-Term Foreign Currency (the Basic Account), 1996–June 2005 (cumulative over the previous 12 months)



SOURCE: Bank of Israel Foreign Exchange Activity Department.

The basic account, which constitutes the supply of long-term forex in the economy, continued to support the NIS against the background of balance in the current account and continued long-term capital inflows.

Figure 26
The Credit-Risk Premium, Israel and the Emerging Markets, 2003–June 2005



SOURCE: Bank of Israel.

Country risk fell to a historic low; in April and May it also declined relative to other emerging markets.

stabilization of the exchange-rate risk at a historically low level was especially noteworthy in view of the structural changes in the forex market in recent years—foremost, greater flexibility of the exchange-rate band and completion of the liberalization process—that are supportive of an upturn in risk toward the levels typically observed in developed countries. One factor that may explain the continued decline in risk is the increase in long-term capital inflows (Figure 25), which has mitigated the relative effect of short-term flows on exchange-rate volatility.

Country risk also declined, relative to previous periods and relative to other emerging markets. Israel's credit margin sank to about 80 basis points and the CDS margin fell to about 30 basis points (Figure 26).

Several long-term developments underlie the stability: the improvement in the real situation; improvement in firms' balance sheets; continued improvement in fiscal policy, including the government deficit; the advancement of reforms; the credibility of monetary policy; geopolitical improvement; the surplus in, and the stable composition of, the external debt-assets surplus (Figure 27); the appreciation exposure of domestic industries (Figure 28); an increase in long-term capital inflows; and a balanced capital account (both components of the basic account).

The stability and the low risk level abetted exchange-rate stability even though the **short-term NIS/forex interest-rate differential narrowed to a historically low 0.25 percentage point** (Figure 29). The short- and long-term yield spreads also contracted, although more moderately.

The developments during the review period demonstrate emphatically that the level of short-term interest-rate differentials consistent with market stability varies in accordance with changes in the fundamentals and in the domestic risk level relative to the risks of alternative assets abroad. The steady improvement in the fundamentals made it possible to continue narrowing the interest differential as the effect of short-term forces became less intensive among the totality of forces that affect the exchange rate and, in particular, relative to long-term forces that were supportive of NIS stability.

Various indicators for April and May showed that the Israeli economy performed well relative to other economies. The trends in regard to the exchange rate, foreign investment, and exchange-rate risk were usually similar to corresponding trends around the world and differed only in intensity. For example, the appreciation and depreciation of the NIS against the US dollar corresponded to the trends in other currencies' behavior against the dollar (Figure 30) and the trend in foreign investment largely

resembled the prevailing investment trends in other emerging markets. However, several developments in April and May—such as the steeper increase of the Tel Aviv share index than other stock indexes, negligible capital outflow in response to the increase in US long-term yields in April, less depreciation of the NIS against the US dollar, and a steeper decline in exchange-rate and country risk—show that the Israeli economy performed handsomely in relative terms.

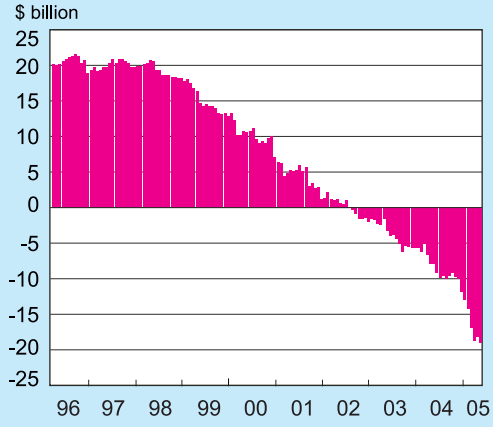
The acceleration of domestic investment caused the balance of foreign investment to surge, largely in capital instruments. Residents, in contrast, built up their balance of debt assets abroad, particularly in external deposits by banks. Consequently, Israel's net debt-instrument surplus vis-à-vis the rest of the world continued to increase and the composition of the surplus—the ratio of short-term debt assets to long-term debt assets—continued to improve.

Overall, the indications of stability reviewed show that **the financial stability of domestic economic activity vis-à-vis the rest of the world and in forex has improved**. Two developments, however, may upset this stability. (a) The exposure of the economy to abroad has increased, with the risks that this implies against the background of upturns in Israel's external liabilities and assets and in the exposure of various sectors to NIS appreciation, in view of concern about rapid and perceptible appreciation of the currency. (b) Although investments in shares for the portfolio are classified as long-term, they may also be considered short-term because their strong liquidity and their dependency on global trends make them susceptible to changes in trend. During the second half of the review period, however, investments of this sort declined and direct investments increased, mitigating the economy's external vulnerability.

To analyze activity in the NIS/forex market, it is useful to divide those active in the market into sectors on the basis of the characteristics of their activity and the considerations behind their decisions. One may assume, for example, that nonresidents who manage global portfolios respond to global financial developments more quickly and vigorously than residents do, and that households' financial behavior may be categorized as less complex than that of other sectors. Evaluation of the forces that affect the exchange rate furthers our understanding of the behavior of the exchange rate and, hence, our ability to assess the effect of the exchange rate on inflation.

In the first half of 2005, the nonbanking private sector and, in particular, the business sector, acquired an appreciable $ 6.4 billion in forex and **the business sector repaid a hefty $ 2.3**

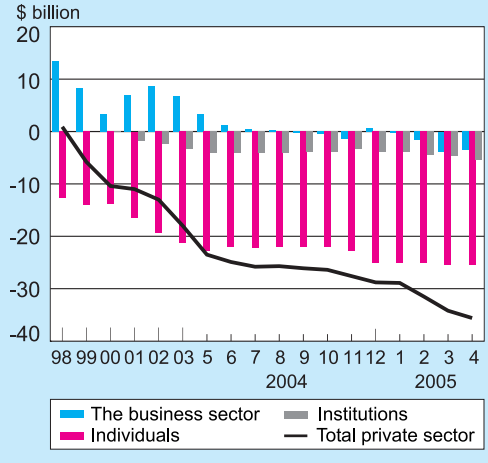
Figure 27
Israel's Net External Debt, 1996–June 2005



SOURCE: Bank of Israel Foreign Exchange Activity Department.

The net external debt situation continued to improve during the review period. Since January 2002, Israel has been a net lender to the rest of the world.

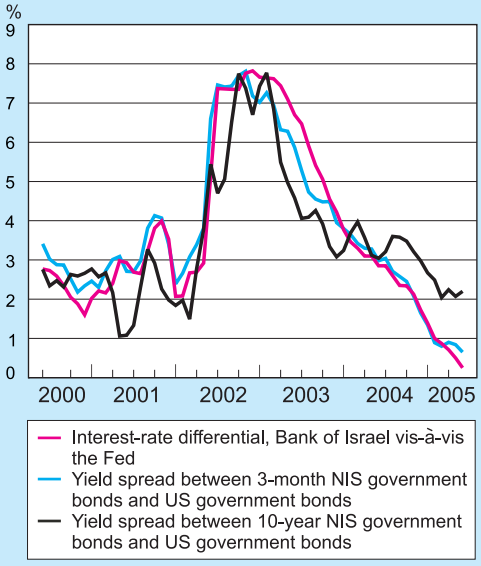
Figure 28
Exposure to Depreciation of the NIS, by Sector, December 1998–April 2005



SOURCE: Bank of Israel Foreign Exchange Activity Department.

Forex assets held by households stabilized at a peak level and the business sector's depreciation exposure declined steeply.

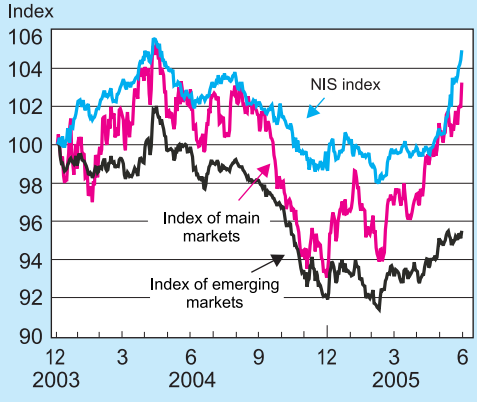
Figure 29
Long- and Short-Term NIS/Dollar Interest-Rate Differentials and Yield Spreads, 2000–June 2005



SOURCE: Bank of Israel Foreign Exchange Activity Department.

The central banks' interest spread and the short-term yields spread contracted to the lowest levels witnessed.

Figure 30
The Exchange Rate of the US$ World Wide, and the NIS/$ Exchange Rate, 2004–June 2005 (Index: January 2004 = 100)



SOURCE: Bloomberg and the Bank of Israel Foreign Exchange Activity Department.

The NIS/dollar exchange rate trend corresponded to the trends of other currencies' exchange rates against the dollar. In the second part of the half-year review period, the dollar gained ground against the other currencies, including the NIS.

billion in forex credit taken from domestic banks. The credit payback was distributed mainly among many firms in the real estate and holding industries that perform most of their activity in NIS. The principal motive behind their behavior was the continued narrowing of the already-low NIS/forex interest-rate differential, which made borrowing in forex relatively more expensive than borrowing in NIS. The low level of the exchange rate, affected by vigorous foreign investment, also encouraged borrowers to repay credit.

Institutional investors made $ 1.0 billion in external and forex investments during the review period. Their investment activity accelerated somewhat in March and April, coinciding with the upturn in US long-term yields.

At the beginning of the year, the terms of taxation for external and domestic investments were equalized for two types of institutional investors, new pension funds and provident funds. The intention behind this measure was to prompt these investors to step up their pace of investing abroad. In practice, however, the pace during the review period was rather lethargic, at around $ 0.1 billion per month. Several factors explain the modest rate of adjustment: (a) Foreign capital markets were less attractive than the domestic markets during the review period; the US bond market was the object of special uncertainty due to expectations of continued increases in interest rates and long-term yields. (b) It became riskier to invest in dollar assets; this, coupled with the favorable trends in the domestic capital market, cemented the preference of the latter market. (Notably, institutional investors, although long-term by nature, sometimes adopt short-term investment considerations. One reason is their requirement of reporting to the public about the value of their assets and their performance at high frequency.) (c) A continued process of preparing by institutional investors for the expected changes in their patterns of investment.

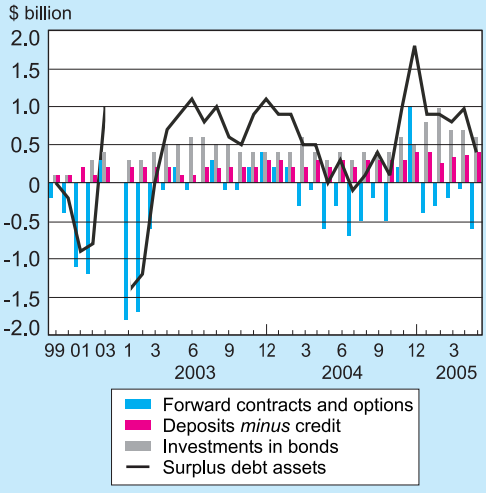
Individuals' external investment slowed during the first few months of the review period despite the continued contraction of the short-term interest differential and the implementation of the tax reform. In early 2004, in contrast, households acquired large amounts of forex. During June, households started buying forex again (at the rather large scale of $ 0.7 billion) as an alternative investment vehicle to shares and NIS deposits and bonds, in view of dollar appreciation around the world and an upturn in uncertainty in regard to the disengagement plan.

Nonresidents sold $ 3.3 billion in forex (net) in the first half of 2005, mainly **for large-scale investment in Israeli securities ($ 4.9 billion), especially in domestically traded**

Israeli portfolio shares ($ 1.6 billion). Most investment on the TASE was made in the shares of several large firms. Nonresident activity and the proportion of nonresidents in trading increased considerably and contributed to the upturn in share prices on the TASE. Nonresidents continued to invest little in government bonds. In the past, nonresidents preferred to invest in Israeli shares abroad. Therefore, nonresident investments in the TASE on these scales are a new phenomenon that traces partly to the privatization process. Such investments tailed off in April–May, in tandem with global trends.

As nonresident long-term investment activity escalated, **nonresident activity in short-term instruments declined** in view of the decrease in general interest in this type of investment, occasioned by the narrow interest-rate differential and the low volatility of the exchange rate. The balance of the nonresident short-term asset surplus (position) in NIS, a parameter that is used to estimate the direction and intensity of short-term nonresident pressure on the NIS, stood at $ 1 billion in favor of the NIS at the end of the review period (Figure 31).

Figure 31
Nonresidents' Surplus NIS Debt Assets, 1999–May 2005



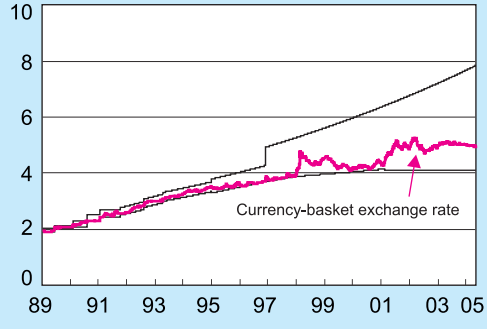
SOURCE: Bank of Israel.

During most of the review period, the nonresident short-term NIS position was steady at about $1 billion.

Box 3
The NIS/Currency-Basket Exchange-Rate Band and its Discontinuance

In June 2005, the NIS/currency-basket exchange-rate band was abolished by joint resolution of the Office of the Prime Minister, the Ministry of Finance, and the Bank of Israel. The band had long been superfluous due to its great width and the de facto unregulated behavior of the exchange rate in the middle of the range. When the exchange-rate band was instituted in January 1989, the NIS exchange rate against the currency basket was allowed to fluctuate by 3 percent over and under the midpoint. The band replaced the constant NIS/dollar exchange-rate regime that had been introduced as part of the 1985 Economic Stabilization Program (and was subsequently replaced with a constant exchange rate against the currency basket). To keep the exchange rate from overshooting the limits of the band, the Bank of Israel regularly purchased and sold forex from and to the public.

The Exchange-Rate Band and the NIS/Currency-Basket Exchange Rate, 1989–June 2005



SOURCE: Bank of Israel.

The properties of the band were adjusted and modified over the years (Figure 1). Thus, the midpoint was occasionally changed (lowered) and the bounds were widened to ± 5 percent. Another change in the exchange-rate policy was made in summer 1991: a gradual, constant, and predetermined adjustment of the midpoint and of the width of the band. Since the midpoint rose at a constant daily rate, its annual cumulative rate of increase was predetermined and foreknown. The exchange-rate band was pitched at a

slope, for which reason it was called the "diagonal band." The band was widened to ± 7 percent in May 1995 and to ± 15 percent in June 1997.

The purpose of the diagonal regime was to place the exchange rate on a specific and foreknown trajectory in order to reduce economic uncertainty. The idea was to lower the probability of the development of speculative capital flows that Israel had experienced whenever expectations of a relatively large nonrecurrent adjustment of the horizontal band evolved. Occasional adjustments of this sort, made due to inflation differentials between Israel and its trading partners, were accompanied by severe volatility in interest rates.

The slope of the diagonal band was initially derived from the spread between Israel's inflation target for the coming year, set by the government, and the outlook on inflation abroad. In view of the successful domestic disinflation process, the rate of the slope was adjusted downward over the years. The slope of the upper bound was left unchanged at 6 percent per annum during the last few years of the band's existence. The slope of the lower bound, in contrast, was eased incrementally until it flattened out; at that point, the exchange rate was set at NIS 4.1021 per currency-basket unit. Thus, the band steadily widened. By the time it was eliminated, its width exceeded 60 percent.

The exchange-rate band gradually lost its *raison d'être* after 1994, when the Bank of Israel shifted from the use of the exchange rate as a monetary peg to a regime of inflation targets and the use of the key rate as its main policy tool. The central bank took this action in view of its inability to control the interest rate, the exchange rate, and the money supply ("the impossible trinity") simultaneously and over time. This weakness came into plain sight in 1995–1997, when residents responded to high domestic interest rates by borrowing large sums in forex and converting them into NIS. The Bank of Israel had to buy up the forex in order to defend the lower bound of the band and to borrow from the public—at interest—the NIS proceeds in order to sterilize the effect of the monetary expansion that the acquisition of the dollars created. The band also had the adverse effect of lowering the exchange-rate risk in the public's eyes. Thus, the private sector tended to take excessive risks in managing its exchange-rate exposure because the Bank of Israel had made itself into the sector's de facto insurer against exchange-rate risk. The adoption of complementary policy measures—the development of the NIS/forex market, the liberalization of capital flows (completed in early 2003), and Israel's integration into the global economy as its high-tech industries developed, etc.—also contributed to the growing disutility of the exchange-rate band.

Since the middle of 1997—except for a few days at the end of that year—the Bank of Israel had had no need to intervene directly in defense of the exchange-rate band. Thus, in practice the exchange rate floated freely. For this reason, the elimination of the band is not expected to affect forex trading; its main purpose is to "make it official" that Israel has an unrestricted forex market that resembles developed markets around the world. This message is especially important for international financial institutions and foreign investors. Additionally, the band had limited the potential trading spread of the exchange rate and there was occasional concern about its distorting the risk perception of market players.

e. Global developments

The Israeli economy, as a small economy open to capital flows, is subject to the influence of global growth, which drives exports, and global inflation, which affects changes in the prices

of products and imported inputs, including the development of the CPI in Israel. The economic indicators for 2005 show thus far that **global growth** is continuing but doing so more slowly than in 2004. After a 5.1 percent growth performance in 2004, the global economy is poised to grow in 2005, according to the *IMF Outlook*, by 4.3 percent. Low interest rates, an improvement in firms' balance sheets, a gradual increase in employment, and strong economic performance in China will support this growth. However, the recent major resurgence of oil prices is endangering the coming year's growth outlook. The main engines of global growth in 2005 are the United States and China; the eurozone economies and Japan have been growing more slowly.

During 2004 and in the first quarter of 2005, there was a conspicuous global imbalance: the US current-account deficit rose to 5.7 percent of GDP in 2004, causing the US net external debt to climb to 30.7 percent of GDP. In contrast, Japan, the developed countries in Asia, the countries of the Middle East, and Russia recorded current-account surpluses and increases in net debt assets.

During the first half of 2002, the relation between the world's **main currencies** was shrouded in uncertainty for several reasons: the magnitude of the US current-account deficit and the question of the US economy's ability to sustain it without shocks; assessments about the continuation of the US tight economic policy in view of the evaluation of the state of economic activity; the effect of China's rapid growth on global trade and the impact on global currencies of the continued pegging of the yuan exchange rate to the dollar; and the effect of the uncertainty about the future of the euro on the depreciation of the euro against the dollar. In the second part of the review period, the dollar stopped losing ground against the other currencies, contrary to most early 2005 outlooks about its behavior.

The United States continues to lead global growth. Although its GDP growth rate eased from 4.4 percent in 2004 to 3.5 percent in the first quarter of 2005,[9] additional economic indicators—foremost the increase in employment, continued strong consumer demand, and a decline in imports, which led to an improvement in the trade balance—suggest that activity remains strong. After nine consecutive rate increases of 0.25 percentage point apiece, the federal funds rate stands at the present writing at 3.25 percent.

In the eurozone, despite the surprising growth data for the first quarter, the slowdown in economic activity that began in the second half of 2004 is expected to resume later in the year. The

[9] The rates of change in this section are annualized.

deceleration traces to high oil prices and the high unemployment rate, both of which have been adversely affecting consumer and business confidence, and, in turn, domestic demand, and to the strong euro, which is making the eurozone less competitive vis-à-vis other markets. However, toward the end of the first half of 2005, the dollar began to appreciate against the euro due to vagueness about the passage of the EU constitution and a downward adjustment of the eurozone growth outlooks, on the one hand, and continued growth, interest-rate hikes, and an improvement in the trade-deficit data in the U.S., on the other hand. The eurozone accounts for a very important share of Israel's trade—36.6 percent of total trade[10] and 33.0 percent of total exports in 2004. Hence, the continued slowdown in eurozone economic activity may have adverse effects on domestic activity.

III EXPECTED DEVELOPMENTS IN INFLATION AND FORECAST FOR THE NEXT FEW YEARS

a. Expected changes in the main variables affecting inflation

(i) Real activity and fiscal policy

Activity is expected to grow in 2005 and 2006 as the economy continues to emerge from the recession that ended in late 2003. GDP growth in 2005 is projected at 3.5 percent and gross product of the business sector at 4.1 percent, representing a slowdown relative to 2004, occasioned by the deceleration of global growth and global trade (from 9.9 percent in 2004 to a projected 7.4 percent this year). In 2006, 4 percent GDP growth is foreseen. Although global trade has been expanding more slowly in 2005 than in 2004, it is continuing to increase briskly relative to the average in recent years, especially in the U.S.; therefore, it is expected to support increases in Israel's exports and GDP. Additional factors that are expected to favor continued growth are the current low domestic interest rates to all ranges, the credibility that the public attributes to fiscal and monetary policies—reflected, among other things, in stability in the financial markets—and the security stability, assuming that it continues. The components that will lead economic growth in 2005 and 2006 are the continued growth of exports and rapid growth of private consumption, abetted by continued tax cuts prescribed by the government program that was approved in

[10] Defined as total Israeli exports and imports of goods, excluding diamonds. The data are based on data from the Central Bureau of Statistics, processed by the Bank of Israel.

early June 2005, the increase in disposable income, low interest rates, and the increase in the value of the public's portfolio of assets—especially the component of shares—which creates a positive wealth effect. In view of the economy's excess capacity, the foreseen growth is not expected to generated upward pressure on prices in 2005.

The government is expected to meet its 2005 deficit target (3.4 percent of GDP, including expenditure related to the disengagement) and to avoid overrunning its targeted maximum rate of increase in expenditure. The attainment of these targets will abet continued stability in the financial markets and, therefore, will allow prices to remain stable. By meeting the deficit target this year, the government will lower its deficit relative to the 2004 level (3.9 percent of GDP). The government expects to meet the targets despite some revenue shortfall, mainly due to foreseen underperformance of budgeted expenditure. Later in the year, government consumption is expected to increase, offsetting the rather large contraction in the first quarter that was caused by the delay in approving the budget. Data from the Central Bureau of Statistics Labor Force Survey, reinforced by National Insurance Institute data on employee posts, support this assessment by pointing to a significant increase in general-government employment in the fourth quarter of 2004 and the first quarter of 2005.

In contrast to the expectation that the government will meet its targets this year, there is much uncertainty about its ability to do the same in 2006. NIS 2.2 billion is budgeted for disengagement-related expenditure in 2005 and a similar amount will be authorized in 2006. Since various estimates define these sums as underestimates of the spending that will be needed (as explained in *Recent Economic Developments* 109), the government may be unable to meet its targets in 2006. Furthermore, the 2006 growth outlook rests on assumptions about continued global growth and easing of security tension.

(ii) Forex activity and capital flows

According to Bank of Israel estimates of long-term activity in the forex market, **equilibrium between long-term supply and demand for forex** is expected in the second half of 2005, to the benefit of exchange-rate stability. In contrast, the trend and intensity of short-term capital flows are hard to predict.

This outlook is based, among other things, on the belief that **foreign investment will continue, albeit at a slower pace than in the first half of 2005**, in view of an expected slowdown in privatization after rapid privatization in the first half of the year. Overseas issuing by Israeli firms is expected to continue at a pace

resembling that observed in the first half. The current-account surplus is expected to grow. The level of foreign investment for the portfolio in the secondary market is difficult to predict because such investment depends strongly on market trends in Israel and abroad. However, a slowdown trend in investment in emerging markets has come into sight. The corporate-tax cut is expected to make the economy more attractive for direct foreign investment.

Resident external investment is expected to continue at a moderate pace amidst the ongoing adjustment of portfolios to the completion of the reform in taxation of investments in foreign securities. The pace of investment may change depending on the extent of attractiveness of foreign financial markets relative to those in Israel, especially if yields on long-term bonds settle at a plateau that is perceived as sustainable. Furthermore, the continued narrowing of the short-term NIS/forex interest differential is having a weakening effect on the NIS by making external investment relatively more attractive. The extent of its effect on investment, however, also depends on changes in the perceived risk of investing in the dollar and the euro.

Expected developments in the NIS/dollar exchange rate will be influenced by international economic and financial developments and by changes in the dollar exchange rate against other currencies. The connection traces to concern about the sustainability of the US twin deficits, changes in assessments of the characteristics of US monetary policy and interest rates, an expected change in China's exchange-rate policy, and concern about the stability of the euro. These developments are expected to affect the attractiveness of other currencies, including those of emerging markets, among which Israel is numbered. The direction of these factors' impact on the NIS, however, is hard to estimate up front. The dollar appreciation trend at the end of the review period might also weaken the NIS.

Geopolitical developments in the second half of the year—especially the implications of the disengagement plan and the possibility of general elections following it—may also influence the exchange rate. The direction and intensity of the effect on the exchange rate, however, are not clear.

(iii) Global developments

According to IMF outlooks, **global growth** is expected to continue in the years to come, but more moderately than in 2004. The projected growth rate for 2006 is 4.4 percent. Oil prices are expected to continue impeding growth in the short term; the global imbalance may impair growth in the longer term. The growth rate

of the developed economies is projected at 2.6 percent in 2005 and 3.0 percent in 2006, and the inflation rate during these two years is estimated at 2.0 percent and 1.9 percent, respectively.

There is a rather broad consensus about the problematic nature of the **global imbalance**, as summarized in the *IMF Outlook*. In the IMF's estimation, three measures are needed to tackle the problem: fiscal stabilization in the U.S., structural reforms to encourage growth and domestic demand in Europe and Japan, and steps toward greater exchange-rate flexibility in the developing countries of Asia. The *IMF Outlook* projects the US current-account deficit in the coming year at 5.5 percent of GDP, whereas Japan's current-account surplus is poised to climb to 4 percent of GDP. The developing countries in Asia, the countries of the Middle East, and Russia are expected to continue maintaining current-account surpluses, although the size of the surpluses is expected to decrease relative to 2004. Lack of progress in taking the above steps is increasing the risk of a precipitous decline in investor demand for dollar liabilities in the future and, as a result, a steep increase in the US interest rate, with implications for global growth and international financial markets.

OECD economists expect US Gross Domestic Product to grow by 3.6 percent in 2005 and 3.3 percent in 2006. US inflation is projected at 2.7 percent in 2005. The Federal Reserve is expected to continue applying its policy of measured monetary restraint in order to ease inflation pressures that originate in the narrowing of the GDP gap (reflected in a falling unemployment rate and rising capacity utilization). The federal funds rate is expected to climb to 4.0 percent by the end of 2005.

Recovery in the **eurozone** is not expected to resume until 2006. The projected growth rates are only 1.2 percent in 2005 and, due to expansion of domestic demand, 2.0 percent in 2006. Two factors—another increase in oil prices and appreciation of the euro against the dollar—may delay the recovery. Due to the sluggishness of economic activity and the characteristic weakness of the eurozone labor market, inflation pressures are not foreseen in the near future and the probability of an interest-rate hike in the eurozone is small. In fact, the possibility of a reduction in the interest rate to encourage growth will be considered. The projected annual inflation rates are 1.9 percent in 2005 and 1.7 percent in 2006.

In **Japan**, the recovery trend is expected to continue. Stronger domestic demand and continued economic growth and expansion in the US and China are expected to contribute to the recovery. The Bank of Japan expects deflation to continue in 2005 after 1.2 percent deflation in 2004.

Data and Estimates of Macroeconomic Developments in Selected Countries, 2004–2006

(year on year percent change)

		2004	2005	2006
Growth	U.S.	4.4	3.6	3.3
	Eurozone	1.8	1.2	2.0
	Emerging markets	7.2	6.3	6.0
	China	9.5	9.0	9.2
Inflation	U.S.	2.7	2.7	2.4
	Eurozone	2.2	1.9	1.7
	Emerging markets	5.7	5.5	4.6
	China	3.9	3.0	2.5

SOURCE: estimates and outlooks from OECD *Economic Outlook,* May 2005, and IMF *World Economic Outlook,* April 2005.

b. Assessments of future inflation and the balance of inflation risks

(i) Assessments of future inflation

Inflation rates in 2005 and in the coming twelve months are expected to rest within the price-stability target range. All inflation estimates—as derived from the capital market, as expressed by private forecasters, and as presented in the Bank of Israel Companies Survey—indicate as much. Most of the estimates rest on several assumptions: the Bank of Israel will raise the key rate gradually at a pace of up to 1 percentage point over the coming year, starting in the last quarter of 2005; the NIS will depreciate moderately against the dollar; real activity will continue to expand; and fiscal policy will strive to attain the targets set.

According to Bank of Israel simulations based on econometric models, assuming that the interest rate will remain at its current level and the exchange rate will level off at the plateau that it attained at the end of June, inflation in 2005 will be in the upper portion of the price-stability target and inflation in the next twelve months and in 2006 will approximate or slightly surpass the upper bound. These simulations, along with other indicators described above, provide a point of departure for analysis of expected developments and for determining the interest trajectory that is needed to attain the target. According to the simulations, it seems that unless the variables change, some increase in the interest rate will be needed to attain the price-stability target over a term of one year. The Bank of Israel will examine the extent of the need for a rate hike each month, as it has in the past.

The fan diagram[11] (Figure 32) allows us to examine some of the uncertainties[12] about the attainment of the inflation target on

[11] For a detailed explanation of the fan diagram, see box in Inflation Report 11.

[12] The uncertainty examined by the fan isthat surrounding the effect of the different variables on inflation. Another kind of uncertainty, not reflected in the fan, concerns the future behavior of the variables that affect inflation, such as the exchange rate.

Inflation Estimates for 2005 and to One Year Forward

(percent)

	Target	Capital market	Private forecasters	Companies Survey
2005, average	2		1.8	
Range	(1–3)		(1.3–2)	
12 months forward, average	2	1.8	2.1	2.4
Range	(1.3)		(1.5–2.4)	

the basis of the inflation comparison that the Bank of Israel uses, among other models, to forecast inflation. The outlook data shown in the diagram for 2005 show that, given the current interest rate and assuming no change in the exchange rate, the probability of staying within the price-stability target range is around 50 percent and the probability of undershooting the target exceeds the probability of overshooting it. Under the same assumptions, it was found that the middle of the distribution in the next twelve months, and in 2006, approximates the upper bound of the stability target. Accordingly, the probability of overshooting the target climbs to more than 40 percent while the probability of being in the target range falls to about one-third and that of undershooting the target slips to about one-fourth. These results originate mainly in the low real interest rate and the continued recovery of real activity, which the simulation expresses via the continued decline of the unemployment rate in 2006.

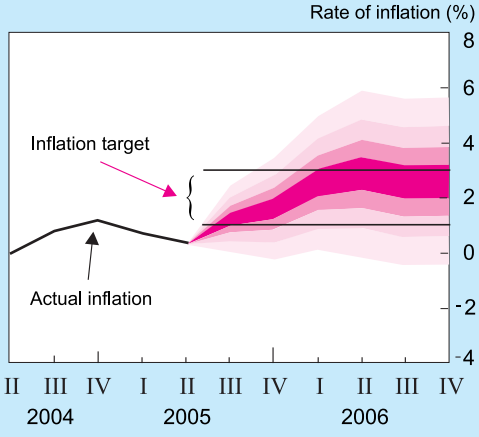
(ii) The balance of inflation risks

The main risk factor in price developments in 2005 and in the next twelve months is the exchange rate. The behavior of the exchange rate, which is difficult to predict in terms of its direction, may generate upward pressure on prices in the event of depreciation but also allows for continued stability or appreciation, which may push prices downward. At the present writing, the exchange rate is being acted upon by two contrasting forces. In the short term, the ongoing contraction of the short-term NIS/dollar interest-rate differential may divert capital flows from Israel and result in a certain amount of depreciation; in the opposite direction, the long-term forces, including continued global growth and the likelihood of an awakening in the issues market, are conductive to capital inflows, which may also be abetted by the political and security improvement and the recent tendency of investors to invest more in emerging markets and high-tech industries.

However, there are also potential risk factors from the exchange-rate side—some conducive to appreciation and others to depreciation:

— The global imbalance may be reflected in abrupt changes in the dollar/euro cross-currency rates, which, in turn, may affect the NIS exchange rate against the currency basket. Since prices are

Figure 32
Actual and Expected Inflation, 2004–2006 (cumulative increase in prices over previous four quarters)



SOURCE: Bank of Israel Research Department.

The forecasts for 2005 in 2006 assume no change in the interest path and the exchange rate. The areas of values of future inflation around the specific forecasts are indicated in shades of magenta. The farther the inflation value is from the specific-forecast value, the paler the color.

influenced more strongly by changes in the NIS/dollar exchange rate than by changes in the NIS/euro rate, acute changes in the NIS/dollar rate, in either direction, may be reflected in unforeseen price changes in upward or downward directions.

— The nonbanking private sector has an appreciation exposure. If an appreciation process begins, attempts to close the exposure (e.g., by selling forex) may intensify the process.

— Experience shows that households, unlike other sectors, rarely act gradually in adjusting their forex portfolios to structural or expected changes in markets. If households take rapid and sudden action to adjust their portfolios to the tax reform or to a change in interest-rate differentials, the NIS may depreciate sharply and rapidly.

— If the geopolitical and security situation deteriorates, upward pressure on the exchange rate may ensue. (See further detail below.)

In addition to the exchange rate, prices may be affected by geopolitical risk factors, particularly those related to the implementation of the disengagement plan:

— The disengagement appears to have been severely underbudgeted. This may make the government's targets more difficult to attain, especially in 2006, and may apply upward pressure on prices.

— A deterioration on the political and security front may undermine financial stability, push the exchange rate up, and, in turn, force prices up.

— If the security situation deteriorates badly during or after the disengagement, then, according to experience, significant damage may be inflicted on tourism, investment, and private consumption. If this situation comes about, the GDP growth rate may fall far short of that predicted under the assumption of security calm and prices may be pushed down. From the opposite direction, the government's ability to meet its deficit target will be severely limited.

— Elections for the Knesset and the premiership are expected to take place at the end of 2006. This factor may also endanger the attainment of the government's targets and create uncertainty in the financial markets.

In view of the range of possible scenarios, the Bank of Israel will continue to assess developments on an ongoing basis and adjust the interest rate to the level that it believes necessary to meet the inflation target.

Appendix Table 1
Range of Monthly Change in CPI, Standard Deviation of the Monthly Change, and Annual Inflation Rate, 1993–2004

(percent)

	Annual rate of inflation (–1)	Largest monthly change (–2)	Smallest monthly change (–3)	Difference and smallest monthly change (4) = (2) – (3)	standard deviation (–6)
1993	11.2	1.4	0.1	1.3	0.46
1994	14.5	2	0.6	1.4	0.36
1995	8.1	1.2	–0.1	1.3	0.46
1996	10.6	1.7	0.3	1.4	0.45
1997	7.0	1.2	–0.3	1.5	0.55
1998	8.6	3.0	–0.2	3.2	0.93[a]
1999	1.3	0.7	–0.8	1.5	0.44
2000	0.0	0.9	–0.6	1.5	0.48
2001	1.4	0.9	–0.6	1.5	0.42
2002	6.5	1.5	–0.8	2.3	0.71
2003	–1.9	0.4	–0.7	1.1	0.36
2004	1.2	1.1	–0.2	1.3	0.37
Second half of 2003	–2.8	0.2	–0.7	0.9	0.32
First half of 2004	2.8	1.1	–0.2	1.3	0.48
Second half of 2004	–0.4	0.2	–0.2	0.4	0.16

[a] The deviation of this figure from the long-term trend derives from the steep rise in the exchange rate in December 1998, which constituted only a temporary shock.

Appendix Table 2
Interest Rates in Israel and the US, 1998–2004

End of year	Central banks' interest rates					Yield spread between US and Israel 10-year government bonds[b]
	Israel		US		Differential between central banks' interest rates	
	Change	Interest rate[a]	Change	Interest rate		
	Percentage points	%	Percentage points	%	Percentage points	Percentage points
1998	13.5		4.75		8.75	
1999	11.2	–2.3	5.5	0.75	5.7	–3.05
2000	8.2	–3.0	6.5	1.0	1.7	–4.0
2001	5.8	–2.4	1.75	–4.75	4.05	1.6
2002	9.1	3.3	1.25	–0.5	7.85	6.8
2003	5.2	–3.9	1.00	–0.25	4.2	3.0
Monthly data						
2004 January	4.8	–0.4	1.00	0.0	3.8	3.1
February	4.5	–0.3	1.00	0.0	3.5	3.5
March	4.3	–0.2	1.00	0.0	3.3	3.8
April	4.1	–0.2	1.00	0.0	3.1	3.6
May	4.1	0.0	1.00	0.0	3.1	3.2
June	4.1	0.0	1.00	0.0	3.1	3.0
July	4.1	0.0	1.25	0.25	2.85	3.2
August	4.1	0.0	1.50	0.25	2.6	3.7
September	4.1	0.0	1.75	0.25	2.35	3.8
October	4.1	0.0	1.75	0.0	2.35	3.4
November	4.1	0.0	2.00	0.25	2.1	3.2
December	3.9	–0.2	2.25	0.25	1.65	2.7
2005 January	3.9	–0.2	2.25	0.0	1.45	2.6
February	3.7	–0.2	2.25	0.0	1.25	2.6
March	3.5	0.0	2.5	0.25	1.0	2.0
April	3.5	0.0	2.75	0.25	0.75	2.3
May	3.5	0.0	3.00	0.25	0.5	2.1
June	3.5	0.0	3.00	0.0	0.5	1.9
July	3.5	0.0	3.25	0.25	0.25	

[a] The rate of interest set in the previous month's monetary program for the month indicated in the table.
[b] The risk premium as measured in the 5-year CDS market amounted to 41 base points in November compared with 45 in the previous month.
[c] The yield spread between the yields on 10-year unindexed government bonds and the yields on US government bonds for the same term.
[d] The US central bank's FOMC committee is due to convene on February 2 for its regular discussion on interest rate policy.

Appendix Table 3
The Bank of Israel Nominal and Real Rates of Interest, and the Yield on Treasury Bills and on CPI-Indexed and Unindexed Government Bonds, 1998–2004

(monthly average, percent)

		Headline rate (simple)[a]	Bank of Israel rate of interest Effective[b]	Yield on 12-month Real[c]	Yield on unindexed Treasury bills	Real yield on 10-year bonds	year bonds[d]
2002	December	9.1	9.6	7.2	8.3	5.7	10.9
	December	5.2	5.4	4.6	4.9	4.1	7.0
2004	January	4.8	5.0	4.1	4.7	4.0	7.0
	February	4.5	4.7	3.5	4.8	4.1	7.4
	March	4.3	4.5	3.3	4.7	4.2	7.4
	April	4.1	4.3	2.7	4.8	4.3	7.6
	May	4.1	4.3	2.3	5.2	4.4	7.9
	June	4.1	4.3	2.5	5.0	4.3	7.8
	July	4.1	4.3	2.8	4.8	4.3	7.8
	August	4.1	4.3	2.4	4.8	4.3	7.9
	September	4.1	4.3	2.3	4.7	4.2	7.7
	October	4.1	4.3	2.2	4.8	4.2	7.6
	November	4.1	4.3	2.3	4.7	4.2	7.4
	December	3.9	4.1	3.0	4.3	4.1	7.2
2005	January	3.7	3.9	2.3	4.2	4.0	6.9
	February	3.5	3.7	1.6	4.2	3.8	6.7
	March	3.5	3.7	1.5	4.1	3.7	6.6
	April	3.5	3.7	1.6	4.1	3.8	6.6
	May	3.5	3.7	2.0	4.0	3.6	6.2
	June	3.5	3.7	1.8	4.0	3.7	6.2

[a] Announced interest rate in simple annual terms (excluding compound interest).
[b] Calculated as the daily compound interest rate, based on the interbank rate.
[c] The real rate of interest is the effective rate of interest less inflation expectations derived from the capital market.

Appendix Table 4
The Differential between Yield on Treasury Bills and Government Bonds and the Bank of Israel Interest Rate, 1998–2004

	Differential between yield on 12-month Treasury bills and the effective Bank of Israel interest rate	Differential between the yield on unindexed 10-year bonds and the effective Bank of Israel interest rate	Differential between the yield on CPI-indexed 10-year bonds and the Bank of Israel real interest rate
2002 December	–1.3	1.3	–1.5
2003 December	–0.5	1.6	–0.5
2004 January	–0.3	2.0	–0.1
February	0.1	2.7	0.6
March	0.2	2.9	0.9
April	0.5	3.3	1.6
May	0.9	3.6	2.1
June	0.7	3.5	1.8
July	0.5	3.5	1.5
August	0.5	3.6	1.9
September	0.4	3.4	1.9
October	0.5	3.3	2.0
November	0.4	3.1	1.9
December	0.2	3.1	1.1
2005 January	0.3	3.0	1.7
February	0.5	3.0	2.2
March	0.4	2.9	2.2
April	0.4	2.9	2.2
May	0.3	2.5	1.6
June	0.3	2.5	1.9

Table 5
Inflation Expectations

		Derived from the capital market			
		For first year[a]	For second year[b]	For third year and beyond	Average of 12-month inflation forecasts[c]
2001	December	0.6	1.3	2.5	1.6
2002	December	2.2	3.8	5.4	2.0
2003	December	0.7	2.6	2.8	1.6
2004	January	0.9	2.1	3.3	1.5
	February	1.1	2.5	3.5	1.7
	March	1.2	2.8	3.4	1.7
	April	1.6	3.0	3.6	2.0
	May	2.0	3.1	3.7	2.6
	June	1.7	2.6	3.7	2.3
	July	1.5	2.2	3.8	2.0
	August	1.9	2.6	3.9	2.4
	September	2.0	2.3	3.7	2.5
	October	2.0	2.5	3.6	2.4
	November	1.9	2.0	3.4	2.2
	December	1.4	1.9	3.5	2.0
2005	January	1.6	2.0	3.3	2.0
	February	2.0	2.4	3.1	2.2
	March	2.2	2.4	3.1	2.1
	April	2.0	2.0	3.1	2.1
	May	1.7	1.9	3.0	2.2
	June	1.9	2.2	2.9	1.9

[a] Twelve-month inflation expectations.
[b] Calculated from yields on *Shahar* and *Galil* or *Sagi* bonds with equivalent terms.
[c] Average of inflation forecasts of commercial banks and economic consultancy firms that publish their forecasts on a regular basis.