Chapter 3 Prices

The Consumer Price Index (CPI) rose by 8.1 percent during 1995—only one tenth of a percentage point above the lower limit of the inflation target. The underlying inflation rate was 8.8 percent, so that inflation fell slightly below the 9–11 percent plateau above which it had risen in 1994. The slowing of the inflation rate was achieved alongside a marked reduction in the unemployment rate and continued rapid economic growth, while import prices rose sharply.

The slower rate of price increases in 1995 was led by a marked decline in fruit and vegetable prices due to the expansion of supply, and by the substantial moderation of the increase in apartment prices, following the accelerated sale of land for construction in 1994. Demand for housing fell as long-term interest rose. Contractionary monetary policy helped to slow the inflation rate, bringing it back towards the pre-set inflation target. This was achieved by drastically reducing inflationary expectations, slowing the rate of local-currency depreciation, and monitoring changes in M1.

1. MAIN DEVELOPMENTS

In 1995 the rise in the CPI was the lowest in 26 years—8.1 percent. This is 6.4 percentage points lower than the 1994 increase, and only one tenth of a percentage point above the lower limit of the inflation targe. The underlying inflation rate for 1995 fell by less—1 percentage point—to a rate of 8.8 percent during the year (Box 3.1). The slow rise in the CPI in 1995 is particularly impressive in view of the high rate of inflation in Israel in the last quarter of 1994, the sharp increase in import prices, the reduction of the unemployment rate, and the continued high rate of economic growth. The fact that the inflation rate fell sharply and that the 1995 target was met is particularly significant in view of the marked divergence from the inflation target in 1994.

As in 1994, the main factors influencing the CPI were exceptional developments in fruit and vegetables and in housing, but in 1995 they had the opposite effect, dampening price increases and contributing 90 percent of the slowing of inflation. Housing prices rose by 13.6 percent during 1995, compared with 23.6 percent in 1994, while fruit and vegetable prices fell by a nominal 24.6 percent, compared with an increase of 56.1 percent during 1994. These developments appear to have also been behind the markedly slower rise in price-indices derived from national accounts figures this year (Table 3.1).

Table 3.1

					mange, percenty
	CPI	Domestic use of resources ^a	GDP	ex of Business- sector product	- Wholesale prices
Change during period ^b					
1992	9.4	11.3	11.7	10.7	9.1
1993	11.2	8.8	9.3	8.2	7.2
1994	14.5	15.1	14.2	9.3	9.7
1995	8.1	8.8	9.7	7.8	10.0
1993					
I	16.2	11.7	11.0	7.6	10.2
П	8.0	12.3	15.4	8.8	6.2
Ш	8.6	8.8	10.9	9.6	4.4
N	12.4	2.9	0.6	6.7	8.1
1994					
I	9.6	9.4	12.7	8.6	9.3
П	19.6	28.7	27.9	6.4	8.2
ш	13.9	16.6	14.3	10.2	7.8
IV	15.0	6.8	3.4	12.3	13.8
1995					
I	1.0	1.1	7.0	4.0	10.9
П	9.3	19.8	9.7	-2.5	14.9
Ш	10.1	6.5	6.8	8.7	4.8
IV	12.3	8.7	15.7	22.2	9.6
Average change					
1992	11.9	11.4	11.9	11.8	10.2
1993	10.9	10.4	11.2	9.9	8.2
1994	12.3	12.4	12.6	8.4	7.9
1995	10.0	10.1	9.3	6.8	10.7

Selected Price Indices, 1992-95

^b CPI and wholesale price figures based on monthly data; GDP and use of resources—quarterly data.

Since prices of fruit, vegetables, and housing always vary greatly from year to year, the underlying inflation rate is derived from an index that excludes these items. This index rose by 8.8 percent during 1995, thus falling from the upper to the lower segment of its range in the last four years, despite the rise in 1994 (Table 3.3, Figure 3.1). Hence, it looks as if, in contrast to the past, the faster increase in prices in 1994 did not lead to a further acceleration in 1995, and the underlying inflation rate even slowed slightly.



BOX 3.1: UNDERLYING INFLATION IN ISRAEL

Underlying inflation reflects the long-term inflation trend, and differs from the current annual inflation rate as it excludes short-term price changes arising from unique temporary events (e.g., exceptional weather) or seasonal factors. Thus, the level and trend of underlying inflation reflect the general inflation environment and long-term developments in it.

There is no general agreement as to how best to measure underlying inflation, as it is impossible to state with absolute certainty which factors influence inflation only in the short run, nor is the extent to which seasonal factors affect prices always clear. Furthermore, the indices which measure underlying inflation during the year may not be appropriate indicators of long-term inflation. For example, whereas it is better to measure underlying inflation during the year by excluding items which exhibit marked seasonal price changes (e.g., clothing and footwear), this clearly cannot be used as a method of measuring underlying inflation over several years.

An accepted technique for assessing the underlying inflation rate is based on excluding volatile items from the CPI (taking into account the long-term trend of change in their relative price) and examining changes in the resultant index. The items usually treated thus are fruit and vegetables, housing, clothing and footwear, and goods whose prices are controlled by the government. Table 3.3 shows the annual rates of change of these prices alongside various commonly used indices based on the exclusion of these items. The variance in the annual rates of change of fruit and vegetables and housing is significantly higher than that of the other components of the CPI; clothing and footwear prices also display high quarterly variance, though the annual variance is relatively small.

A good measure of the underlying inflation rate should include a substantial share of the total weighting of items in the CPI and display an inter-year variance that is as small as possible. According to this criterion, the preferred index for inter-year examination excludes fruit and vegetables and housing, combining low variance with a relatively high weighting of CPI items, while during the year it is advisable also to exclude clothing and footwear. Figure 3.1 shows the development of the adjusted CPI at two important plateaus: an annual inflation rate of 14–16 percent which prevailed in 1988–91, and of 8–10 percent which has been evident since 1992.

The moderate fall in the underlying inflation rate in 1995 was attained in spite of expansionary pressures. Prominent among these were the continued wage hikes in the public sector, the increase in the public-sector deficit, and the marked decline in the unemployment rate. In addition, there were notable increases in the prices of imported intermediates and fuel in 1995. In the light of these development, the trend of inflation in 1995 should be viewed as a commendable achievement.

The main burden of restraining inflation fell on monetary policy in 1995. This involved keeping the interest rate high while closely monitoring the growth of M1, and was reflected by the slowing of the average rate of depreciation, with frequent

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Table 3.2

Prices of Tr	radables	and N	ontradabl	es, 1990	-95
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(annual change, percent)

		СРІ				Implicit price indices					<u> </u>
		N	ontradables								
	Total	Excl. housing	Excl. fruit & veg.	Excl. fruit & veg. and housing	Tradables	Domestic resource use A ^a	Domestic resource use B ^b	GDP	Business sector product ^c	Imports ^a	Exports excl. dia- monds
Change during period ^d											
1992	9.7	12.1	9.3	11.8	8.8	11.3	10.3	11.7	11.0	9.8	10.1
1993	13.7	8.3	14.7	9.5	6.5	8.8	7.7	9.3	9.5	6.6	6.9
1994	18.0	15.2	15.2	10.5	9.0	15.1	11.1	14.2	11.0	8.5	4.8
1995	8.4	4.9	11.6	9.5	7.7	8.8	7.2	9.7	8.5	7.7	5.2
1990-95 ^e	131.7	97.8	137.5	102.3	74.3	104.2	83.7	113.7	103.2	62.5	63.1
Average change											
1992	12.5	13.2	12.1	12.7	10.9	11.4	11.1	11.9	11.6	7.0	7.6
1993	12.8	9.4	13.7	10.4	7.3	10.4	8.9	11.2	11.0	9.7	9.8
1994	15.1	10.9	14.6	9.6	7.8	12.4	9.0	12.6	10.3	7.4	5.8
1995	11.4	9.2	12.2	10.2	8.1	10.1	8.4	9.3	7.7	9.8	5.4
1990–95 ^e	139.9	102.9	146.7	107.9	75.4	107.9	86.4	114.8	103.8	68.1	65.3
Weight in CPI (1995)	(585.6)	(377.9)	(548.7)	(341.0)	(380.4)						

^a Excluding direct defense imports and diamonds.
 ^b Excluding direct defense imports, public services wages, nonprofit institutions, and housing services.

^c Including housing services.

^d Rates of change of CPI during period are based on monthly data, and of implicit price indices on quarterly national accounts data.

^e Cumulative rate of change for period.

fluctuations in the exchange rate. Despite the many restrictions on implementing a policy of this kind in an economy that is open to capital flows, the combination of particularly low increases in price indices at the beginning of the year and the determination displayed by monetary-policy-makers in adhering to the inflation target in 1995 reversed the upward trend of inflationary expectations evident in the second half of 1994, and markedly reduced the gap between these expectations and the target. The reduction of expectations was an important channel through which monetary policy affected prices in 1995. This process was also affected by the slower rate of M1 growth in 1994.

Prices rose unevenly during the year. In the first quarter they increased by only 1 percent (annual rate), but later on accelerated gradually to annual rates of 9.3, 10.1, and 12.3 percent in the second, third, and fourth quarters respectively. Although the annual rate of price increases was slower than in 1994, most of this slowdown was concentrated in the first two quarters of 1995, when prices rose by less than half the rate of the equivalent quarters in 1994.

Prices as derived from national accounts figures present a similar picture to that of the CPI in 1995 (Table 3.1). Thus, the implicit price index of GDP rose by 9.7 percent (14.2 percent in 1994), while the implicit price index of business-sector product increased by 7.8 percent (9.3 percent in 1994), and that of domestic use of resources went up by 8.8 percent (15.1 percent in 1994).

In 1995 the exchange rate of the NIS against the basket of currencies continued to be managed within a crawling band. In June the band was widened to ± 7 percent around the midpoint rate, in order to make the exchange rate more flexible, and the midpoint rate was raised by 0.8 percent. At the same time, the basket of currencies was adjusted, its dollar component being increased from 50 to 55 percent. The trend of the exchange rate was not even throughout the year: in the first half it moved parallel to the midpoint rateremaining about 2 percent below it, then overlapping it. From June, following the widening of the band and the greater flexibility of exchange-rate policy, and in view of the large interest-rate differential between Israel and abroad, the exchange rate fell significantly below the midpoint rate. Altogether, the NIS depreciated by an average of 4.6 percent against the currency basket-a lower rate than the slope of the band. However, because of the marked changes in 1995 in the cross rates of the currencies comprising the basket, the depreciation of the NIS against the dollar, in which a large share of exports is denominated, was less-3.1 percent during the year-and the annual average of the NIS/dollar exchange rate remained unchanged. On the other hand, the exchange rate of the NIS against the German mark rose by 12.5 percent during the year, and by an annual average of 13 percent.

The inflation target for 1995 was lower than the 1994 inflation rate, and the Bank of Israel adopted a tight monetary policy at the end of 1994 and the beginning of 1995. This sent a clear message to the public regarding the firmness of policy-makers' intentions of bringing inflation down, and caused the rising trend of inflationary expectations in 1994 to reverse in 1995. As derived from the capital market, estimated expectations of inflation for a 12-month horizon (Figure 3.4) indicated a sharp and consistent decline,

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Table 3.3Main Components of Consumer Price Index, 1990–95

(annual change, percent) Weight in CPI Change during period^b Average change (1995)^a SDf 1990-95 SDe 1992 1993 1994 1995 1990-95 1992 1993 1994 1995 Total (1000.0)9.4 11.2 14.5 8.1 13.1 4.2 11.9 10.9 12.3 10.0 13.5 3.6 22.0 9.2 Housing (207.7) 5.4 23.7 23.6 13.6 20.7 9.8 11.2 19.3 14.3 23.6 0.3 8.4 9.4 Fruit and vegetables (42.3) 14.2 -1.2 56.1 -24.6 8.1 26.5 16.9 0.6 21.4 2.3 Clothing and footwear (59.5) 6.6 4.3 7.7 6.0 6.9 3.1 9.2 6.3 4.5 7.2 6.4 Total excl. fruit and 3.8 vegetables (957.7) 9.2 11.9 12.7 10.0 13.3 4.0 11.7 11.5 11.9 10.5 13.8 Total excl. fruit & 3.0 vegetables, and housing (750.0)10.4 8.1 9.8 8.8 11.2 3.1 11.9 9.0 8.7 9.3 11.5 Total excl. controlled goods, etc. c,d (535.1)9.3 7.9 9.3 9.2 10.6 2.7 10.9 8.3 8.6 9.3 10.9 2.8

^a The weights of the groups were changed in 1994.

^b End-quarter or end-year data.

^c Controlled goods include subsidized essentials, and goods and services supplied by public authorities, government enterprises, or supported corporations. New definitions were introduced at the beginning of 1991.

^d Total excluding controlled goods, fruit and vegetables, housing, clothing and footwear.

e Standard deviation.

from about 15 percent in November 1994 to 10–12 percent in April 1995. Expectations fluctuated within the inflation target range in the subsequent 4 months, but in August and September 1995 they rose again, exceeding the upper limit of the band. Towards the end of the year expectations dipped slightly, though they remained two percentage points above the actual inflation rate.

Israel's terms of trade, which are determined in world markets, deteriorated by an average of 4.5 percent in 1995. In NIS terms, import prices excluding defense and diamonds (1994 and 1995 annual averages) rose by 9.8 percent, while corresponding export prices (excluding diamonds) rose by only 5.4 percent. On the other hand, a comparison of end-year prices shows that during the year the deterioration was less—only 2.5 percent: during 1995 import prices rose by 7.7 and export prices by 5.2 percent.



The change in the terms of trade (i.e., the different rates at which import and export prices rose) makes it difficult to determine precisely how much the real exchange rate changed. It is clear, however, that the trend of real appreciation, evident in Israel for several years, moderated in 1995 (Figure 3.3). Prices of tradable goods in the CPI rose by an annual average of 8.1 percent, and those of nontradables by 11.4 percent, yielding real appreciation of 3 percent, compared with 7 percent in 1994. Slightly higher appreciation (4 percent) is derived from the export/GDP prices ratio (annual average), but this was also less than the 1994 rate (6 percent). On the other hand, the equivalent import/GDP prices ratio fell by about 0.5 percent in 1995.

The decline in fruit and vegetable prices was due mainly to the rapid expansion of the supply of vegetables in the first few months of 1995, after Israeli farmers' fears that the market would be flooded by imports from the Gaza Strip were proved unfounded. The slowing of the rate at which apartment prices rose in 1995 was primarily the outcome of the rapid expansion of the supply of units—as a result of the accelerated pace at which land was made available for construction from mid-1994, and the higher cost of short-term credit to building contractors (see below). It was also due to the decline in the demand for housing, as long-term credit and mortgage loans became more expensive, and the expected rate of return on housing investment fell.

2. DETERMINANTS OF PRICES

The exchange rate and prices of tradable and nontradable goods

The exchange rate is managed within a crawling band and rises at a known, predetermined rate. This has been one of the principal features of the Bank of Israel's monetary policy in recent years. The crawling band, which replaced the horizontal band of 1989–91, plays a major role in influencing expectations regarding local-currency depreciation against the basket of currencies during the year, and in determining the actual trend of prices of tradable goods (imports, exports and their domestic substitutes). The rate at which these prices rise approximates the sum of the rate at which the exchange rate and prices abroad change. Thus, the depreciation of the nominal exchange rate (adjusted for the exogenous development of prices abroad) is associated with the rate at which prices of tradable goods change.

The direct effect of the exchange-rate on overall price increases in Israel is only partial, however, because of the existence of a large group of nontradable goods. Although the prices of the latter, which consist primarily of services and housing, are affected by the exchange rate, via its influence on the prices of imported intermediates and on expected inflation, this is indirect. The crucial factor in determining the prices of nontradable goods is changes in domestic demand for them relative to their supply, because in comparison with tradables, their supply curve is relatively inelastic in the short term. Consequently, in the short term, the price trends of nontradables and tradables may differ.

Table 3.2 shows various indicators of the real exchange rate trend in Israel in the last five years, as derived from the relative trends of tradable and nontradable goods and from national accounts data (implicit price indices). The table shows quite clearly (together with Figures 3.2. and 3.3) that the trend of real appreciation of the last few years slowed significantly in 1995. For example, during the year prices of tradables declined relative to those of nontradables by only 0.7 percent, compared with falls of 6.3 and 7.5 percent in 1993 and 1994 respectively, while the export/GDP prices ratio fell by 4.1 percent during the year, down from 8.3 percent in 1994. Because of the marked



deterioration in the terms of trade in 1995, however, importers experienced a lower rate of real appreciation—some 2 percent. Thus, whichever measure is used, the rate of real appreciation in 1995 was below its long-term trend. In contrast with 1994, the moderation of the rate of real appreciation in 1995 was due not to excess demand, but largely to world price trends which worsened the terms of trade.

Most industrialized western countries have experienced persistent appreciation in recent years, because of common real factors-a rapid rise in living standards which biases demand towards nontradables, high and rising productivity in the tradables segment, and changes in the terms of trade (see Chapter 2). In Israel prices of nontradables have risen faster than those of tradables in each of the last five years, and since 1990 total appreciation in terms of prices of tradables relative to those of nontradables has reached 25 percent. Similar trends, though with varying intensities, are obtained from comparing the index of tradables with indices of subsets of nontradables. Thus, if it is assumed that changes in the price of fruit and vegetables do not reflect any long-term trend, the relevant index which serves as an indicator of the long-term trend of the real exchange rate is the index of prices of nontradables excluding fruit and vegetables. Under this assumption, real appreciation since 1990 has been higher-26.5 percent. The argument that housing prices should be excluded from the index of nontradables prices, because the rise in the former in recent years reflects special conditions rather than a permanent change, works in the opposite direction. However, even under this rather extreme assumption, cumulative real appreciation since 1990 has been 12 percent.

Unlike the CPI, national accounts data include figures for all traded goods and services, thereby making it possible to derive alternative estimates of the real exchange rate. Thus, the ratios between prices of imports and those of GDP and/or business-sector product can serve as estimates of the real exchange rate to importers and producers of import substitutes. Similarly, the real exchange rate faced by exporters can be estimated as prices of exports relative to those of GDP and/or business-sector product. These indices give a similar picture to that obtained from the CPI—total real appreciation of 20–24 percent since 1990.

Policy factors

In the last few years Israel's policy-makers have made reducing the rate of price increases their long-term goal. The underlying approach to attaining this is a gradual and controlled reduction of inflation towards a nominal target, enabling real goals, such as an adequate growth rate and low unemployment, to be attained.

In view of the marked deviation from the inflation target in 1994, returning to the track of declining inflation and reducing inflationary expectations were perceived as crucial in 1995. The latter have a direct effect on the process of price increases, through the pricing mechanism: to avoid the high menu cost of making frequent price-adjustments, many producers and providers of services tend to set prices that reflect the inflation rate they expect. These expectations also affect important economic variables, such as wage agreements and the *ex ante* real interest rate implicit in a given nominal interest rate, and hence directly determine the decisions of economic agents and indirectly exert pressure on prices. Note also that in the short run inflationary expectations affect the trade-off between unemployment and inflation.

As part of the overall effort to bring the inflation rate down in a controlled way, in recent years the Ministry of Finance and the Bank of Israel have published the target inflation rate for the coming calendar year towards the end of the year. This is perceived by the public as an official commitment on the part of policy-makers, and is intended to give greater credibility to disinflationary policy and stabilize expectations around the published target. Economic policy is implemented via a combination of fiscal and monetary policies. In the fiscal sphere, the government has undertaken to maintain a downward path for the domestic deficit as a proportion of GDP, and to maintain the policy of exposure to competing imports. It is also committed to persisting with a series of specific actions intended to moderate price increases in certain sectors-accelerating the sale of land for construction, granting licenses to import fresh fruit and vegetables, etc. In the monetary sphere, the Bank of Israel's disinflationary policy is based on two principles. The first is a firm interest-rate policy, which is determined in accordance with both the way expectations adjust to the inflation target, and changes in the monetary aggregates and real economic activity. The second is maintaining the exchange rate against the basket of currencies within a pre-set crawling band, whose slope is determined in accordance with the inflation target.

Table 3.4 Inflation and the Exchange Rate: Target and Actual, 1991–95										
					(percent ch	ange during year)				
	400.000 0000 0000	Target								
	Announce-	_	Exchange	-rate band ^a	A	tual				
	ment	Rise in		Realign-		Exchange				
	date	CPI	Slope	ment	CPI	rate				
1991					18.0	11.6				
1992	Dec. 1991	Up to 14-15	9	3	9.4	14.9				
1993	Nov. 1992	10	8	3	11.2	8.0				
1994	Jul. 1993	8	6	2	14.5	5.4				
1995	Sep. 1994	8-11	6	-	8.1	5.8				
1996	Oct. 1995	8–10	6	0.8						
^a Against	basket of current	vies.								

BOX 3.2: DERIVING INFLATIONARY EXPECTATIONS FROM THE BOND MARKET

The existence side by side of unindexed nominal bonds and CPI-indexed Treasury bonds makes it possible to estimate inflationary expectations daily by comparing the stockexchange prices of matched bonds (as regards term to redemption). Assuming that in equilibrium the two bonds yield the same return, it is possible to derive investors' assessments of the last CPI to which bonds will be indexed at redemption from the price of the bonds. The forecast inflation rate is obtained by deflating the estimated CPI by the last known CPI on each trading day. Repeating this procedure for pairs of bonds with different maturity dates makes it possible to estimate the complete expectations curve for periods of between one month and two years.

Estimating inflationary expectations by this technique is not without theoretical and practical problems. On the practical level, the question arises of the relevant tax liability of the marginal investor, i.e., the one whose transaction brings the returns from the two kinds of bond to equilibrium, as regards indexed bond payments (under the current tax laws there is no tax liability on unindexed bond payments). Assuming that this investor is liable for maximum tax (as are all private investors in Israel, for example), the estimate of expectations will be higher than if it is assumed that he is exempt from tax (e.g., provident funds). This gives two estimates of expected inflation which differ from one another by between one and two percentage points.

In addition, investors may not be indifferent to changes in the real yield which ensue if their inflationary expectations are disproved. In this case, investors in unindexed bonds will demand a risk premium as compensation for exposure to unexpected inflation, and the estimate of expectations obtained from the calculation will be biased upward. In the absence of data on a risk premium, it is impossible to calculate this bias accurately, though it is generally assessed as being up to one percentage point. Another problem presented by this estimating method is that it is not clear whether the forecasts implicit in capital market prices do in fact represent the public's inflationary expectations, or only that of agents who are active in the capital market.

The inflation target and inflationary expectations: The policy of setting an annual inflation target was introduced in December 1991, together with the switch to the crawling band, as part of the effort to make the policy of reducing inflation more transparent (Table 3.4). From time to time the slope of the crawling band was adjusted in accordance with the expected gap between the next inflation target and inflation abroad. The first target—a maximum annual inflation rate of 14–15 percent for 1992—was attained, and the total rate of price increases that year was only 9.4 percent. In 1993 and 1994 specific inflation targets of 10 and 8 percent respectively were set. These reductions were supported by the lowering of the slope of the crawling band and slight realignments of the midpoint rate, and at the same time exchange rates were unified by cancelling subsidies and reducing import tariffs.

The inflation target policy was put to the test towards the end of 1994, when it transpired that the overall inflation rate in 1994 had overshot the target by far, and that estimated inflationary expectations for 1995, as derived from the capital market (see Box 3.2) were far higher than the 1994 target. The policy-makers had to decide whether to adjust the parameters of the crawling exchange-rate band, which had been set in accordance with the 1994 inflation target, and thus to adapt to an inflation rate that was higher than that target, or to adopt a contractionary monetary policy in order to correct the deviation from the target. It was decided not to adapt to the high inflation rate and to avoid changing the parameters of the crawling band. The inflation target was altered from a point to a range of several percentage points. This was necessary because it became clear that random and seasonal factors make it difficult to attain a specific inflation target, and the object was to avoid the loss of credibility which would follow from failing to meet the target, as well as to allow greater flexibility in implementing policy. The inflation target was set at between 8 and 11 percent, reflecting the desire to continue with the long-term non-rising inflation path, and the assessment that in view of the rapid rate of price increases in 1994 the cost of bringing inflation down to below 8 percent in 1995 might be too high.



There are no data on inflationary expectations for December 1993 to May 1994 as no government bonds fall due between January and June 1995. The estimate of net expectations assumes full tax liability for investors in indexed government bonds, and that of gross expectations assumes full tax exemption (see Box 3.2). SOURCE: Bank of Israel.

As stated, the September 1994 announcement of the inflation target for 1995 was not accompanied by any adjustment of the exchange-rate band. However, the high rate of capital inflow, due to the interest-rate differential between Israel and abroad, exerted downward pressure on the exchange rate and forced the Bank of Israel to intervene in trading in order to prevent the exchange rate from plummeting. In this context, the Bank of Israel decided in early June 1995 to widen the band from ± 5 percent to ± 7 percent around the midpoint rate. This step was intended to permit the central bank to reduce its intervention in trade, enable the exchange-rate changes within the band. The combination of a wider band, avoidance of intervention in trade, and persistence of the interest-rate differential between Israel and abroad brought the exchange rate down to 5 percent below the midpoint rate. Capital inflow did not diminish greatly, however, and this may reflect some undermining of the midpoint rate as a stabilizer of exchange-rate expectations in the medium term.

Annual forecasts of inflationary expectations in 1991–95, as derived from capitalmarket data, and the marginal interest on the monetary loan are shown in Figure 3.4. Inflationary expectations fell to a lower plateau at the end of 1991, following a decline in the actual inflation rate and in the context of the higher unemployment rate, and the expected inflation rate fluctuated between 8 and 12 percent in 1992 and 1993. In mid-1994 sharp, continuous increases in expected inflation began, apparently in the context of the acceleration of the actual inflation rate at that time. These increases were checked only in November, after the interest on the monetary loan was twice raised sharply. The combination of the central bank's determined interest-rate policy, and the reduction in the actual inflation rate at the beginning of 1995, caused inflationary expectations to decline, so that by April 1995 they had stabilized at an annual rate of between 10 and 12 percent. Thus, the expected inflation rate for a 12-month horizon fell by a cumulative 4 percentage points between September 1994 and April 1995.

Between May and August 1995 inflationary expectations remained between 10 and 12 percent, but rose by a cumulative one percent in August and September. They declined slightly once more towards the end of the year, but increased again in December, reaching 11–12.5 percent. Altogether, expectations adjusted to the slower rate of actual inflation in 1995, but apart from the period between April and July they remained above the announced target. Note, however, that estimates of expectations derived from the capital market may be biased upward because of the existence of an inflation-risk premium (see Box 3.2), so that actual expectations may have remained within the target range for a longer period.

Monetary policy: Because of the marked deviation from the inflation target in 1994, and fears that this would undermine the role of the inflation target as a stabilizer of expectations, monetary policy-makers regarded attainment of the inflation target in 1995 as being of supreme importance. Nonetheless, the Bank of Israel did not view the series of particularly low CPIs at the beginning of the year as indicating a permanent reduction

of the inflation rate, and hence continued with its policy of monetary restraint in order to achieve a low inflationary environment throughout the year.

The decision to act on both the domestic money and the foreign-currency markets arose from the desire to avoid damaging real economic activity in the framework of disinflationary measures. Given the high accessibility to foreign capital in Israel, a policy which relies solely on action in one market leaves developments in the other to market forces. Thus, contractionary monetary policy which is not combined with support for the exchange rate, will cause higher nominal appreciation (or lower nominal depreciation). If there are economic rigidities, this development could harm exports and the chances of export-oriented growth. On the other hand, a policy that relies solely on the exchange rate as a price anchor neutralizes the ability to influence the monetary aggregates and, if it does not manage to rapidly close the gap between domestic and foreign inflation rates, invites speculative pressure on local currency. While combined action enabled the Bank of Israel to avoid these situations, it imposed several restrictions on policy-makers, obliging them to take the interdependence of the two markets into account.

Monetary policy in 1995 was based principally on keeping interest on the monetary loan relatively high and intervening on the foreign-currency market in order to moderate the pressure for exchange-rate appreciation exerted by capital flows (see Chapter 7). As stated, most of the slowing of the rate of price increases was concentrated in two markets—fruit and vegetables, and housing. The relative price of fruit and vegetables (compared with the CPI excluding these items) plunged by 32 percent, though this was unrelated to monetary policy. The relative price of housing (compared with the CPI excluding housing) rose by 6.7 percent, compared with 10.2 percent in 1994, with industry-specific factors acting alongside monetary policy. Consequently, it is also necessary to examine the contribution of monetary policy in 1995 on the basis of developments outside these markets, i.e., as regards the reduction of the CPI excluding these items.

Contractionary monetary policy can affect prices in an open economy in four ways: by reducing domestic demand, limiting the expansion of the monetary aggregates (under Israel's current exchange-rate regime), slowing the rate of local-currency depreciation, and reducing inflationary expectations. Monetary policy appears to have operated mainly through the last three channels in 1995.

The annual rate of expansion of domestic uses (excluding direct defense imports), which serves as an indication of the growth of demand for domestic product, slowed from 8.1 percent in 1994 to 7.2 percent in 1995 (Table 2.1). This rate was very close to that of the expansion of GDP in 1995, and the share of the import surplus in GDP was virtually unchanged. While the composition of domestic uses indicates a slowing of the rate at which private and public consumption (excluding direct defense imports) expanded, the increased rate of growth of investment in 1995 offset this to some extent. It seems, therefore, that while there was no significant slowing of the expansion of demand in 1995, monetary policy prevented its acceleration. Nonetheless, the marked increase in investment despite the rise in long-term interest rates indicates the intensity of

the process underlying investments and raises doubts about the ability of monetary policy alone to contend with the implications for the rate of price increases in the future, without significant budgetary restraint.

It is generally assumed that M1 affects prices with a lag. Hence, part of the acceleration of the rate of price increases in 1994 must be ascribed to the expansion of M1 in 1993, and the slower expansion of the aggregates in 1994 acted in a similar way to moderate price increases in 1995. This year M1 expanded by 17 percent, a pace which is consistent with the inflation target. The expansion of the other aggregates—though at a slower rate than in 1994—was still rapid, however. M2 expanded by 34 percent (38 percent in 1994), and nondirected credit by 23 percent (32 percent in 1994). It would seem, therefore, that the process of expansion of these aggregates has not yet reached long-term equilibrium.

Regarding the exchange rate, monetary policy acted to slow the rate of depreciation in 1995 by more than that implied by the slope of the exchange-rate band. Although the total rise in the exchange rate against the basket of currencies was 5.8 percent—close to the slope of the band—its average level during the year rose by only 4.6 percent. The slowing of the rate of depreciation against the dollar, which accounts for a particularly large share of exports, was even sharper, because of the NIS against the dollar vis-à-vis the other currencies in the basket. The exchange rate of the NIS against the dollar rose by only 3.1 percent during 1995, and its annual average showed no change from 1994.¹ In the context of the accelerated rate at which world prices rose in 1995, the slowing of nominal depreciation contributed directly to the slower increase in prices of tradable goods—by only 7.7 percent, compared with an increase of 11 percent in the dollar prices of goods imports (excluding fuel and diamonds).

The contribution of monetary policy to the slower price increases of 1995 should be examined not only in the light of the reduced rate at which actual prices rose, but also and primarily—on the basis of the pace at which prices would have increased had it not been for the effect of monetary policy. In the context of the inflationary inertia that has characterized price shocks in the past, it is reasonable to assume that had it not been for monetary policy, price increases in 1994 would have been rolled over to a high increase in 1995, too. The public did in fact expect inflation to accelerate, as is indicated by estimates of expectations derived from the capital market: these were between 14 and 16 percent in November 1994 (Figure 3.4). Consequently, the main contribution of monetary policy in 1995 must be regarded as preventing the acceleration of inflation beyond the high level of 1994, and setting it back on track towards the target.

The exact timing of the reversal of the upward trend of inflationary expectations— November 1994—reflects the special contribution of the contractionary monetary policy of the second half of 1994. In November and December 1994 the current trend of the inflation rate—as estimated from the CPI of the previous 12 months—was upwards

¹ However, against the German mark, for example, the exchange rate rose by 12.5 percent during the year, and by 13 percent on average.

(Figure 3.1), and it began to fall only in January 1995. Even without taking into account the fact that the January CPI was published on 15th February, it is obvious that the decline in inflationary expectations preceded the decline in actual inflation by about two months. It would appear, therefore, that the direct cause of the trend change in expectations lies in the message sent to the public by two significant interest-rate increases (1.5 percent each time) in September and October 1994. A third increase, in December 1994, and the decline in actual inflation in January and February 1995, set the seal on the downward trend, which eventually led to the cumulative 4 percentage point decline in expected annual inflation.

The achievement of monetary policy at the end of 1994 in bringing down inflationary expectations is unusual. Research on the subject has shown that in the last few years there has in fact been a high positive correlation between interest rates and expectations (although it is difficult to adjust for the influence of other factors on expectations), and in principle expectations are determined on the basis of past inflation. A closer examination of the timing of changes in long-term trends in the past does not necessarily indicate an inverse relation between the development of interest and expectations. Thus, the key to the success of monetary policy in reducing inflationary expectations in 1995 would seem to have been its intensity—three successive interest-rate increases of 1.5 percent—indicating policy-makers' determination to reduce the inflation rate.

It is reasonable to assume that even though it is impossible to measure the precise contribution of each of the various factors that slowed the rate of housing price increases, at least some of it was due to monetary policy. This is supported by the significant negative link established empirically in the past between short-term interest and housing prices, as well as by the positive correlation usually found between interest rates of different terms. Thus, for example, there was a steep rise in the yield to maturity on long bonds in the first two months of 1995, when short-term nominal interest was at a peak.

Fiscal policy: As was the case in 1994, in 1995 the struggle against inflation was not supported firmly and unequivocally by the government's fiscal policy. Although the domestic demand of the public sector (adjusted for the effect of the Health Law) increased by only 2.4 percent—significantly lower than the growth rate of business-sector product—and the rate at which labor input rose in the business sector was 3.9 percent (5.7 percent in 1994), purchases expanded faster than in 1994, 4.2 percent compared with 3.6 percent. In addition, increased public-sector employment and wages, and the failure to achieve the planned domestic deficit, all contributed to the expansion of private consumption, conveyed a negative message regarding the government's readiness to combine forces with the Bank of Israel in the effort to combat inflation, and adversely affected attempts to reduce expectations of inflation.

The real wage per employee post in the public sector rose by 5.6 percent in 1995 (Table 4.1), having risen by 10 percent in 1994. Although most of this increase was anticipated, because the majority of the public-sector wage agreements were signed in

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Price Developments: Related Indicators, 1992-95

(annual change, percent) During period^a Average 1995 1992 1993 1994 1995 1992 1993 1994 Price changes^b 11.1 Imported intermediates^c 9.0 9.1 14.0 8.0 6.8 12.1 4.5 5.4 Goods exports excl. shipping, aviation & diamonds 8.3 11.0 5.6 5.5 10.9 8.4 4.7 -0.9 -4.7 Terms of trade: exports/civilian imports^d -0.6 -0.9 0.5 -3.6 -1.9 -4.6 ~7.1 14.7 5.0 Fuel 2.8 2.1 3.8 10.9 0.3 Real change in GDP and use of resources^e 6.9 3.0 7.1 0.7 8.9 GDP 3.4 6.5 6.8 7.2 Domestic use of resources^f 6.7 5.0 8.1 7.2 0.7 8.9 6.7 6.0 12.7 Exports (excl. diamonds) 14.9 12.6 9.6 9.6 4.9 14.7 Nominal change in labor costs Public-sector wages per employee post 11.6 12.2 23.6 16.9 12.6 27.9 11.0 11.1 Business-sector wages 4.7 10.3 10.0 Wage per employee post 14.0 11.2 11.9 10.3 14.3 9.5 Wage per man-hour 11.1 11.2 10.2 6.5 Unit labor costs 10.3 13.0 11.3

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General government deficit (percent of (GNP)							
Total	-4.1	-3.5	-2.3	-3.4				
Domestic	-7.4	-5.2	-3.3	-4.4				
Monetary indicators								
Change in M1	22.5	23.7	20.6	8.4	35.8	27.8	5.0	16.3
Change in M2	25.2	37.7	32.8	35.2	29.1	31.3	38.1	34.0
Expected inflation: Gross	9.6	9.1	12.9	10.8				
Net	10.8	10.8	14.7	12.5				
Interest rate								
Bank credit	19.9	16.4	17.4	20.2				
Long term ^g	2.3	2.8	2.9	4.1				
Unemployment rate	11.2	10.0	7.8	6.3				
Change in exchange rates								
Midpoint rate	9.4	11.9	7.5	6.5	12.1	9.3	6.0	6.8
Currency basket	10.2	12.1	7.8	4.6	14.9	8.0	5.4	5.8
Dollar	7. 9	15.1	6.4	0.0	16.9	10.1	1.8	3.1
 ^a Change from fourth quarter of preceding year to ^b Foreign trade data at effective exchange rate, inc ^c Excluding fuel and diamonds. ^d Excluding diamonds and capital services. ^e National accounts data. ^t Excluding direct defense imports. ^g Real gross yield to maturity on 5-year governm SOLECE: Based on Central Bureau of Statistics data 	fourth quarter cluding tariffs. nent bonds.	r of current	year.					

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1994, the government could have been expected to try to minimize the ensuing damage. Instead, it increased employment in the public services by 4.4 percent in 1995, despite the decision at the beginning of the year to reduce its labor force from the peak level it had reached.

In 1995, for the first time since the introduction of the Budget Deficit Reduction Law in 1992, the actual deficit was higher (3.45 percent of GDP) than that prescribed by law (2.75 percent of GDP). In the context of the supplementary budget submitted by the government at the end of 1994 and the exceptional public-sector wage increases, the failure to meet the budget deficit target was regarded as an indication that budgetary discipline had become lax.

The steep rise in public-sector wages led to a 16 percent increase in the price of publicsector domestic consumption (Table 5.7)—double the rate at which business-sector product grew. This sharp rise accounted for the continued wide gap in 1995 between the rates at which GDP and business-sector product prices increased (Table 3.1).

In contrast to the inflationary effect of the government's macroeconomic policy in 1995, in the microeconomic sphere it acted to bring the inflation rate down into the target range. In housing, Israel was able to reap the benefit of the accelerated sale of land for construction initiated by the government in the second half of 1994, and in the first half of 1995 the number of building starts on this land soared. As regards exposure to exports, in accordance with long-term plans, the government completed the fifth stage of the liberalization of imports from third countries and completely removed tariffs on imports from the US. It also managed to restrict the rise in prices of goods it controls or supervises to 8.5 percent in 1995 (10.9 percent in 1994), reflecting a 7.1 rise in the prices of controlled goods and of 12.5 percent in those of supervised goods.

Cost variables

Wages: Unit labor costs constitute an important indicator of cost pressures on wages in the business sector. The rate at which these rose slowed in 1995—6.5 percent compared with 11.3 percent in 1994. This reflects a lower rate of increase of the hourly wage (down from 10.2 percent in 1994 to 9.5 percent in 1995) and higher productivity.

The average wage per employee post rose by 12.2 percent in 1995 (15.2 percent in 1994). This was mainly because the average public-sector wage increased more slowly—down from 23.6 percent in 1994 to 16.9 percent in 1995. There was also some moderation of the rate at which business-sector wages rose in 1995, from 11.9 percent in 1994 to 10.3 percent in 1995. Adjusted for the rise in the CPI, real wages rose by some 5.6 percent in the public sector in 1995, and by 0.2 percent in the business sector.

The moderate increases in business-sector wages indicate that the generous publicsector wage hikes were not rolled over to the business sector, despite the relatively long period of time that has elapsed since the public-sector wage agreements were signed. In view of the continued expansion of business-sector employment and the steep fall in the average unemployment rate in 1995, this indicates that there has been a significant weakening of the traditional inter-sectoral link regarding wage increases. This appears to be due—at least in part—to the high interest rate and the slowing of exchange-rate appreciation, which enabled the business sector to withstand wage demands.



In the principal industries, employees obtained nominal wage increases (18.5 percent) that exceeded those in the public sector only in agriculture, forestry, and fishing. The wages of employees in electricity and water also rose sharply (16.9), while in construction wages increased by only 9.8 percent—the lowest hike since 1992.

Other costs: In NIS terms, the prices of imported intermediates (excluding fuel and diamonds) rose by a steep 14 percent in 1995, after two years in which they rose by a uniform 9 percent (Table 3.5). Fuel prices rose by 10.9 percent, after increasing far more moderately in 1993 and 1994 (3.8 and 2.1 percent respectively).

In the wake of the tight monetary policy adopted in 1995, interest on nondirected local-currency credit rose, reaching an average of 20.2 percent—almost 3 percentage points higher than the 1994 average. Nonetheless, the rate at which the cost of actual financing in the business sector increased appears to have been below this, because of the expansion of short-term credit denominated in and indexed to foreign currency.

3. THE DEVELOPMENT OF PRICES

Housing

The index of housing prices rose by 13.6 percent in 1995—10 percentage points less than in 1994 (Table 3.6 and Figure 3.6). Compared with the CPI excluding housing, the price of housing rose by a real 6.7 percent in 1995, compared with 10 percent in 1994. This relative increase contributed 1.6 percentage points more to the CPI in 1995 than the rate derived from the actual share of housing in it (some 21 percent).

Table 3.6						
Principal Compo	nents of Housi	ng Service	s in CPI, 199	2-95		
					(annual cha	nge, percent)
	CPI (1)	Index of housing services ^b (2)	Prices of owner- occupied apartments (3)	Index of rents (4)	Other housing expenses (5)	Index of construc- tion inputs (6)
During period ^a						
1992	9.4	5.4	3.4	20.8	5.5	8.7
1993	11.2	23.7	25.6	10.5	26.2	7.9
1994	14.5	23.6	27.8	4.4	21.4	11.5
1995	8.1	13.6	14.9	7.4	8.6	8.9
Annual average						
1992	11.9	11.2	10.0	18.6	13.0	10.9
1993	10.9	19.3	19.8	16.4	18.3	8.3
1994	12.3	23.6	26.7	8.3	22.9	9.1
1995	10.0	14.3	16.2	4.1	10.7	11.3
Weight in CPI	(1,000.0)	(207.7)	(165.2)	(33.0)	(9.5)	
^a Change from fou	irth quarter of pre-	ceding year to	o fourth quarter (3) (4) and	r of current	year.	

SOURCE: Based on Central Bureau of Statistics data.

The slower rate at which housing prices rose in 1995 was reflected mainly in the principal component of the housing price index—that of owner-occupied homes—which rose by 14.9 percent in 1995, compared with 27.8 percent in 1994. The real price increase of owner-occupied homes was 6.3 percent in 1995, amounting to only 55 percent of the real increase in this item in 1994. This was due to both the rapid expansion of the housing supply in 1995 and a contraction of excess housing demand, although the faster rise in apartment prices than in the overall CPI indicates that the latter still persists.

Construction expanded substantially in 1995, with a total of 63,000 building starts up by 44 percent from 1994. Foremost among the factors which contributed to the expansion of supply in 1995 was the accelerated sale of land for construction by the Israel Lands Authority and the Ministry of Construction and Housing in the latter half of 1994. At the same time, construction costs rose slowly: the real wage in the construction industry did not change significantly in 1995 (after rising by 4.4 percent in 1994) apparently because of the substantial increase in the number of foreign workers, and the cost of construction inputs (which incorporates wages) rose by only 8.9 percent in 1995, compared with 11.5 percent in 1994. In addition, the convergence of total credit to the construction industry to the level at which the banks are required to make provision for loan losses, as well as the higher cost of construction finance following the rise in long-term interest rates, both appear to have contributed to contractors' readiness to moderate the rate of price increases in order to expand sales and improve their liquidity.



The demand for apartments appears to have shrunk in 1995 in comparison with 1994, both for portfolio considerations and to meet housing needs. The latter is indicated by the lower number of mortgages taken up by eligible persons. The decline in portfolio demand for apartments is a result of the higher risk and lower expected rate of return in comparison with alternative channels. This is because prices of owner-occupied homes peaked in 1994, and the cost of financing apartment purchases rose in the wake of the increase in the yield on long bonds.

Since most apartment prices in Israel are denominated in dollars, the low dollar exchange rate in 1995 may also have contributed to the slower rise in apartment prices, even though in the past there has been only a very tenuous link between housing prices and the exchange rate in the long run.

In view of the rapid erosion of real rents in 1994, these could have been expected to increase in 1995. They rose by only 7.4 percent, however, remaining almost unchanged in real terms since the end of 1994.

Fruit and vegetables

Prices of fruit and vegetables, which fell by 24.6 percent during the year, constituted the most marked trend change from 1994 (Figure 3.7). This is the steepest nominal rate of decline ever recorded in any CPI item. Most of this decline occurred in the first half of 1995, due principally to the rapid expansion of the supply of vegetables, after Israeli farmers' fears that the market would be flooded by imported vegetables from the Gaza Strip proved to be unfounded. In the first quarter of 1995 the price of fresh vegetables fell by more than 42 percent, compared with a 64 percent increase in the last quarter of 1994. The price of fruit, on the other hand, remained the same at the end of the first quarter of 1995 as at the end of 1994. In mid-1995 fruit and vegetable prices began to climb again, at an annual rate of 16 percent. Altogether, fruit and vegetable prices rose by a total of 17 percent (in nominal terms) in 1994–95, equivalent to a real decline of 6 percent.

