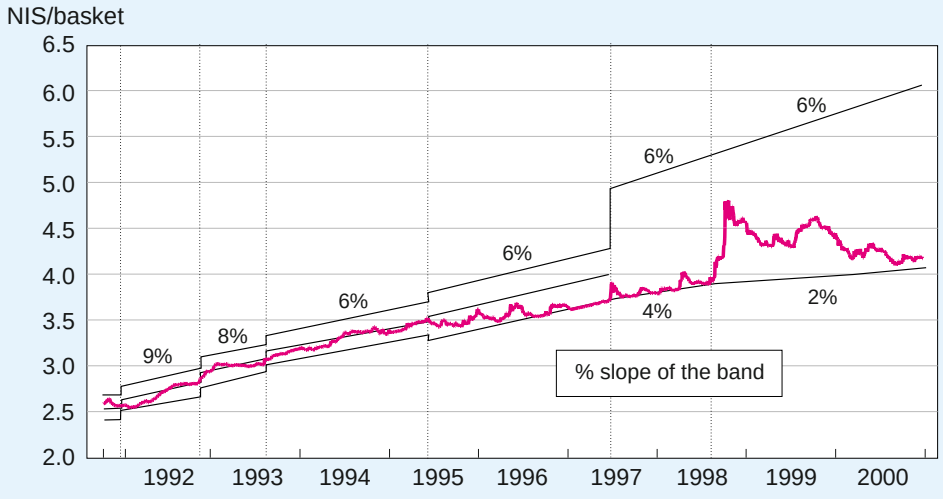
Part 2
Developments in the Foreign Currency Market in 2000

1. EXCHANGE RATES[1]

In 2000 the NIS strengthened by 5.5 percent against the currency basket, and by 2.7 percent against the dollar.

From the beginning of the year until the end of December the NIS (New Israeli Sheqel) strengthened against the currency basket by 5.5 percent, and against the dollar by 2.7 percent. The difference reflects the strengthening of the dollar against most other currencies on world markets. Against the euro the NIS appreciated by 9.9 percent. The NIS appreciated against the currency basket over the course of the year, with the exception of the April-May period, narrowing its distance from the lower limit of the

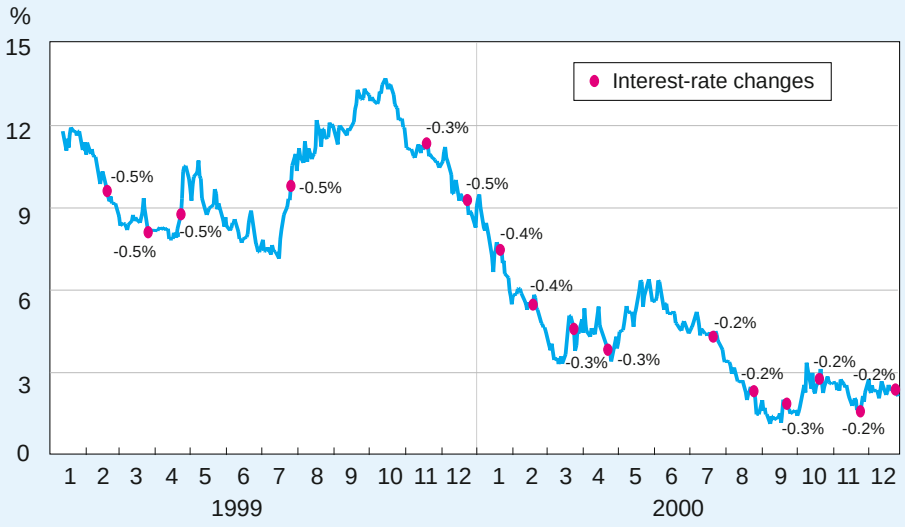
Figure 2.1
The NIS Exchange Rate against the Currency Basket and the Exchange-Rate Band, October 1991–December 2000



SOURCE: Bank of Israel.

[1] Exchange rates quoted in this chapter are representative rates (see Appendix 2.1).

Figure 2.2
Distance of the Currency Basket from the Lower Limit of the Exchange-Rate Band, 1999–2000



SOURCE: Bank of Israel.

exchange-rate band from 8.8 percent to 2.1 percent (Figures 2.1 and 2.2).[2] The band widened from 35.5 percent at the beginning of the year to 39.2 percent at the end, the result of the slopes of the upper and lower limits remaining unchanged as in 1999—6 percent and 2 percent respectively.[3]

Capital imports on an unprecedented scale, which were related to investment in the high-tech sector, supported the NIS during the year.

During 2000 the Israeli currency market was characterized by low volatility, continuing the trend of 1999. External events, which weakened the NIS in previous years, exerted only minor influence during 2000. This development reflected the unprecedented inflow of foreign capital (invested primarily in the technology sector), the underlying strength of Israel's economy, and the high degree of confidence which the market has in the Bank of Israel's monetary policy, aimed at achieving the inflation target set by the government.

Capital imports and the development of the NIS in January–August reflected the path followed by the Nasdaq.

During the first quarter of the year, the NIS strengthened markedly, reaching a high of 4.1627 against the currency basket and 3.970 against the dollar in mid-March. The primary reason for this development was the strength of the technology sector on the world's equity markets, as reflected in the US Nasdaq. This drew foreign capital to Israel, which was subsequently exchanged into local currency, thereby strengthening the NIS.

Unlike the more traditional and blue-chip stock markets, which peaked in mid-January and then fell to yearly lows by mid-March, the Nasdaq continued climbing until early March. Israeli high-tech companies took this opportunity to raise new capital abroad—

[2] A fall in the exchange rate (i.e., a move towards the lower limit of the band) means appreciation, and a rise in the exchange rate means depreciation of the NIS.

[3] The width of the crawling band and the distance of the exchange rate from the upper and lower limits are calculated in terms of the average of the upper and lower limits of the band.

through both equity and fixed-income issues—the proceeds of which were then repatriated, at least in part, to Israel. This development was particularly pronounced in early March. In addition, the rapid appreciation of the technology sector had a knock-on effect in Israel, supporting the NIS by increasing the level of optimism in the economy in which this sector plays a central role.

The NIS strengthened until mid-March, following the trend of the Nasdaq.

Against this background foreign direct investment in Israel and in the domestic capital markets increased during the first quarter, supplementing those funds raised abroad through new issuance. Note that foreign investment banks recommended investment in Israel, in the technology sector as well as in fixed-income products and other more traditional areas of the economy, due to the country's positive economic fundamentals.

Additional factors supporting the NIS during the first quarter included progress in the peace process with Syria, disagreements regarding the elimination of the lower limit of the exchange-rate regime, and the positive interest-rate differential between Israel and other global economies.

The second quarter was marked by a reversal in the trend of appreciation of the NIS. The NIS began depreciating in late March and reached its weakest level of the year (highest exchange rate) against the dollar in late May at a rate of 4.198. Against the basket, the NIS weakened to 4.3339 (6.41 percent above the lower limit of the band) during this period. This level was slightly stronger than its weakest level of 4.4462 (9.49 percent above the lower limit of the band) at the beginning of the year, as explained by the strengthening of the dollar on the world's markets, as discussed above.

The NIS weakened till end-May, alongside the fall in the Nasdaq.

The catalyst for the reversal was undoubtedly the decline in the Nasdaq, which until then had defied the downward trend of its more traditional equity-market counterparts. Israeli companies postponed new issues scheduled for April and May, reducing the prospect for new capital inflows and eliminating support for the NIS. The positive market sentiment which had characterized most of the first quarter was shaken.

Two domestic matters also served to weaken the NIS during this period: first, the recommendations of the Ben-Bassat commission on tax reform, which included steps aimed at eliminating the favorable tax treatment given to NIS-based investments over foreign-currency-based investments. The anticipated elimination of this distortion may have encouraged greater investment abroad at the expense of the domestic market. The second was concern regarding the stability of the government.

At the end of May, the NIS again reversed its trend. There was renewed appreciation of the NIS, which continued during *the third quarter*. The NIS strengthened to 4.008 against the dollar in late August and 4.0972 against the basket (1.14 percent above the lower limit of the band) in early September, trading near these levels throughout the month of September. The turnabout in the NIS can be traced, again, to the performance of the Nasdaq, which reversed its decline at the end of May, increasing in value until the end of August. Israeli companies renewed financing abroad, increasing the flow of foreign capital to Israel, albeit not on the same scale as that witnessed earlier in the year.

The NIS strengthened again until the beginning of September, another change which can be traced to the performance of the Nasdaq.

Additional factors which supported the NIS during this period include a forecast slowdown in the contraction of the interest-rate differential between the US and Israel and doubts regarding the adoption of the recommendations of the Ben-Bassat

Commission. Surprisingly, the disintegration of the Prime Minister's coalition and the failure of the Camp David summit did not have a major negative impact on the NIS. The increase in Israel's rating on foreign-currency debt from A3 to A2 by Moody's corporation affected neither the NIS nor the spreads at which Israeli debt was traded, apparently due to the fact that it was already discounted in the market.

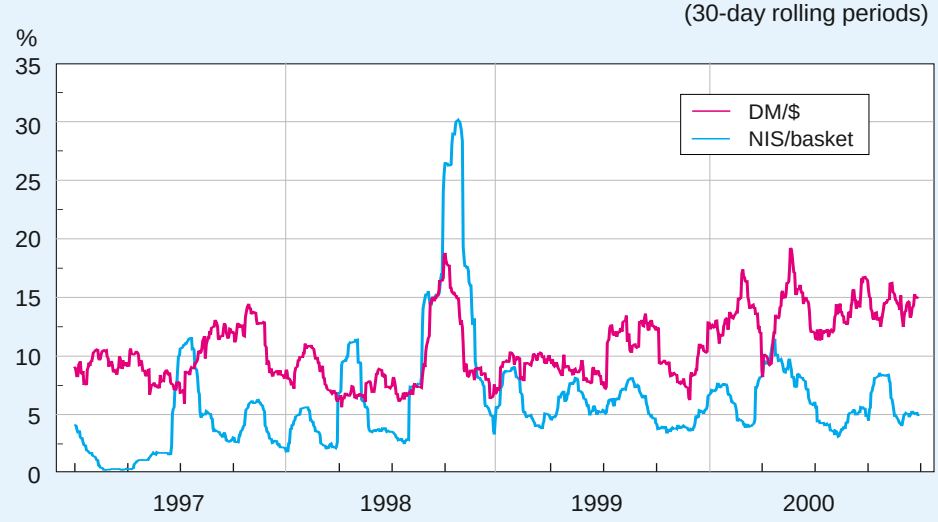
In the *last quarter of the year* the outbreak of the Palestinian *intifada* and the deterioration in the peace process further weakened the government, culminating in the prospect of early Knesset elections and in the Prime Minister's resignation. Whereas this scenario would have shaken the market considerably in previous years, the relative strength of the NIS during this period is noteworthy. The NIS weakened during the first three weeks of October, reaching 4.215 against the currency basket (3.36 percent above the lower limit of the band) and 4.159 against the dollar, after which it strengthened again. Note that this level was still lower (i.e. a stronger NIS) than that reached in late May. In addition, renewed selling on the Nasdaq—which began in September and continued until year-end, amounting to a 39 percent decline for the year—and the financial crisis in Turkey during the final weeks of the year, had little impact on the NIS.

In the last quarter the NIS stabilized, despite heightened uncertainty. Three factors contributed to this stability: the credibility of the Bank of Israel's monetary policy, the Bank's policy of non-intervention in the markets, and the fundamental strength of the Israeli economy.

The remarkable show of strength by the NIS during the final quarter of the year can be explained by three factors: the credibility of the Bank of Israel's policy for achieving the inflation target, the Bank's policy of non-intervention in the markets, and the fundamental strength of the Israeli economy. We expand on these factors below.

In recent years the Bank of Israel's decisive action in preempting price rises which threaten a deviation from the inflation target has been a key factor supporting the NIS. Developments at the end of 1998 and the beginning of 1999 illustrate this point. At that time, the Bank tightened monetary policy in order to return inflation, which had strayed

Figure 2.3
Standard Deviation of Changes in the Exchange Rate, 1997–2000
(30-day rolling periods)



SOURCE: Bank of Israel.

Table 2.1
Volatility of the NIS against the Currency Basket, 1993-2000

(daily average)

	Volatily of NIS/basket (%)	Intra-day volatility of the NIS/basket in agorot
1993	2.08	–
1994	2.79	1.26*
1995	4.13	1.53
1996	5.18	1.39
1997	3.48	0.80
1998	8.95	1.62
1999	5.75	1.31
2000	6.36	1.29

* July-December 1994.

higher, to a level consistent with the target. As a result of this policy move the NIS appreciated significantly. In other words, the nominal depreciation of the NIS, which occurred in the last quarter of 1998, was followed by nominal appreciation of the currency in 1999 without the need for market intervention by the Bank.

The Bank of Israel has been operating a policy of non-intervention in the foreign exchange market for the last three and a half years, allowing market forces to determine the appropriate level of the NIS, within the confines of the exchange-rate band. As a result, the market's financial sector operates very conservatively, hedging foreign-currency exposure almost immediately. Speculators—those players who react quickly to new market information, betting on the market's future direction and thereby increasing volatility—play only a minor role in the Israeli market, in contrast to the major foreign currency markets around the world. This may explain why market players remained on the sidelines, reacting only minimally to the domestic political and international events of the time.

In addition, it seems that market players preferred to focus on the underlying strength of the Israeli economy during this period, rather than on political instability. The economy was experiencing high economic growth coupled with negligible inflation.

The volatility[4] *of the exchange rate* of the NIS against the currency basket in 2000 was 6.4 percent, on average, 0.6 percent higher than its level in 1999 (see Figure 2.3). The increase in volatility over the previous year can be explained by the April-May period when volatility rose to an average of 9.6 percent, reaching 11.5 percent on a single occasion in May, and by the period from mid-October to mid-November when volatility rose above 8 percent. The NIS was less volatile against the US dollar, trading at 5.1 percent in 2000 versus 4.6 percent in 1999.

The volatility of the NIS/currency basket exchange rate rose slightly in the last few years; in 2000 it was 6.4 percent.

[4] The volatility of the exchange rate is defined as the standard deviation of exchange-rate changes during the previous thirty days. The standard deviation is a statistical measure of the distribution of data around its mean, which is often used to measure the degree of exposure to uncertainty.

Table 2.2
Volatility and Spread of the Exchange Rate of Various Currencies against the Dollar

(percent)

	Volatility, per period				Interbank bid-offer spread		
	1998				%, estimated		
	Jan-July	Aug-Dec	1999	2000	Mar 2000	Oct 2000	Dec 2000
NIS/dollar	**4.84**	**13.40**	**4.68**	**5.13**	**0.103**	**0.078**	**0.062**
NIS/basket	**4.84**	**14.71**	**5.75**	**6.36**	**–**	**–**	**–**
Canadian dollar	4.53	7.97	6.04	5.39	0.041	0.033	0.034
S. African rand	10.49	21.69	9.28	9.78	0.046	0.069	0.076
Swedish krona	9.59	13.49	9.37	12.28	0.035	0.072	0.058
Norwegian krona	9.30	13.66	9.40	10.99	0.036	0.055	0.059
German mark/euro	7.89	10.99	9.66	13.76	0.039	0.045	0.033
Greek drachma	14.15	11.32	9.71	12.03	0.058	0.052	–
Czech koruna	12.75	14.52	10.03	11.86	0.106	0.099	0.080
New Zealand dollar	13.51	13.19	10.56	13.30	0.100	0.081	0.136

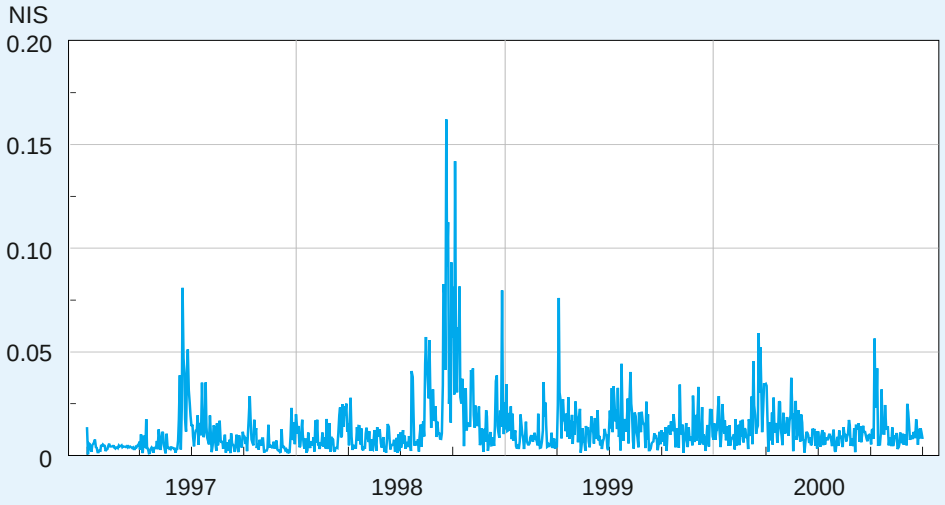
In a period of calm the volatility of the NIS is lower than that of other comparable currencies.

The exchange rate's volatility has increased overall in the last few years as a result of the move to bilateral trading and the Bank of Israel's non-intervention policy, as can be seen in Table 2.1. Nevertheless, in a period of calm, the NIS/$ exchange rate is less volatile than that of other currencies comparable to it (see Table 2.2). For example, the average volatility of the NIS/$ exchange rate during 2000 was 5.1 percent, while the average volatility of the Czech koruna/$ and the South African rand/$ exchange rates were 11.9 percent and 9.8 percent respectively.

There were periods in 1998–99 when some foreign-exchange markets were exceptionally volatile, due to various crises, such as that in East Asia, Russia's debt default, the collapse of the American hedge fund LTCM, and the crisis in South America. Between August and October 1998, when the market reacted to the crisis in Russia and that of the LTCM hedge fund, the volatility of the NIS rose more than did that of other comparable currencies. The standard deviation of the NIS/$ exchange rate, however, exceeded 15 percent on only 33 trading days during 1998-99, in comparison with the South African rand/$ rate, 140 days, and the Czech koruna/$ rate, 68 days (the analysis covered 489 trading days). Three factors may explain this phenomenon: firstly, the NIS is traded mainly on the domestic market, while currencies like the rand and the koruna are subject to more international trade; secondly, the rand and the koruna are traded under exchange-rate regimes different from that of the NIS, without an exchange-rate band; and finally, the central banks of both countries intervene in their foreign currency markets, and not infrequently, while the Bank of Israel has not intervened in the market in three and a half years.

The intra-day volatility of the exchange rate, defined as the difference between the lowest and the highest exchange rates recorded in interbank trading on each day, was stable for most of the year, and slightly lower than in 1999. With very few exceptions,

Figure 2.4
Difference between the Highest and the Lowest Exchange Rates, Daily, 1997–2000



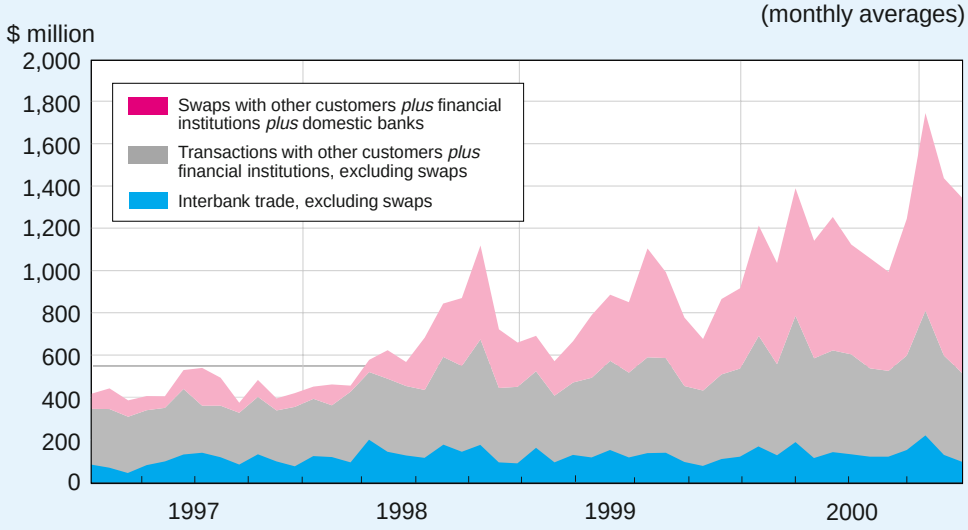
SOURCE: Bank of Israel.

the range did not exceed two agorot. As the NIS weakened at the end of March and the beginning of April, the range reached more than 3 agorot on nine days, twice exceeding 5 agorot. On May 24 the range widened to 3.7 agorot as both the NIS and the Nasdaq reversed their declining trends. In October the range rose above 3 agorot on three separate occasions in response to domestic unrest. The highest range for the year was 5.9 agorot, 2 agorot lower than the highest level for 1999 (Figure 2.4).

Interestingly, *the bid-offer spread* of the NIS/dollar exchange rate as quoted by the broker (see below) and expressed in percentage terms—0.062 percent in December—is wider than that of other currencies (see Table 2.2). This is true not only of liquid currency pairs such as dollar/yen and euro/dollar, but also of less liquid currency pairs such as the Greek drachma/dollar. Having said that, there are currency pairs similar to the NIS/dollar, such as the dollar/Czech koruna and New Zealand dollar/dollar, which trade at similar bid–offer spreads.

Since June 1997 the Bank of Israel has not intervened in the foreign currency market, with the exception of six days around the end of 1997. Even in October 1998, when the NIS depreciated by 13.4 percent against the currency basket, rising to 19.8 percent above the lower limit of the band, the Bank did not intervene. The Bank of Israel's policy of non-intervention in the foreign currency market, within the limits of the exchange-rate band, is based on experience gained from those periods in which it did intervene as well as on the experience of other central banks. This experience shows that intervention is rarely effective. Moreover, it disrupts both the internalization of the exchange-rate risk inherent in foreign-currency activity and the balancing effect that the widening of the bid–offer spread has (at times of volatile trading) on the volume of trade.

Figure 2.5
Daily Turnover in the Foreign-Currency Market, 1997–2000



SOURCE: Bank of Israel.

2. TRADE IN THE DOLLAR/NIS MARKET

Daily trading turnover reached $ 1.25 billion in 2000, a rise of 54 percent from the level in 1999.

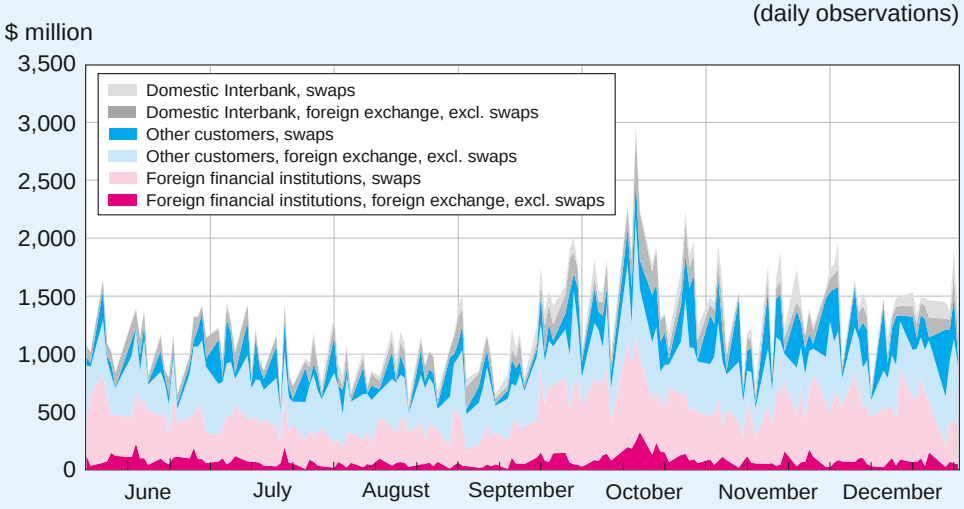
As a result of the advances in Israel's currency market during the last few years—the liberalization of the markets, the transition to bilateral trading, and the non-intervention policy of the Bank of Israel—the market has grown rapidly and become more efficient. The average daily turnover reached $ 1.25 billion in 2000, a 54 percent rise over the previous year. The highest level of the year, $ 1.7 billion, was reached in October when the market was particularly nervous due to the political and security situation (Figure 2.5).

Much of the increase in turnover was due to an increase in swap transactions.

Much of the increase in turnover was due to an increase in swap transactions, which reached $ 627 million in 2000 versus $ 317 million in 1999, a 98 percent increase. A swap is a combination of two transactions—a foreign-exchange trade today, i.e., spot, and a forward foreign-exchange trade in the opposite direction. For example, one party sells NIS to a second party today in exchange for dollars. Simultaneously, the first party enters an obligation today to buy back the NIS from his counterparty, in exchange for dollars, at an exchange rate agreed upon at the outset (forward foreign-exchange trade). One side of the transaction is usually a commercial bank, a market maker. The other side can be a corporation or other financial concern that wants to hedge against the exchange-rate risk to which it would be exposed if it executed only one side of the swap. Swap transactions affect trade volume, but not the level of exchange rates.

The increased usage of swaps to hedge foreign-currency exposure was also expressed by the growth in trade between banks and their customers, which reached an average of $ 1.1 billion per day in 2000 versus $ 731 in 1999. Net of swap transactions, it

Figure 2.6
Daily Turnover in the Foreign-Currency Market, June 2000–December 2000
(daily observations)



SOURCE: Bank of Israel.

reached $ 501 million in 2000 versus $ 412 million in 1999. These numbers reflect the rising share of swap transactions within total customer trades: in 2000 swaps constituted 54 percent of customer trades, up from 44 percent in 1999 and 34 percent in 1998.

Table 2.3
Daily Turnover in Various Countries–Local Currency against Foreign Currency, April 1998

(daily average)

	US$ billion
Total turnover worldwide	**919.9**
United States	315.9
Japan	124.0
England	114.8
Germany	62.1
Canada	25.9
South Africa	7.3
Sweden	6.3
Greece	5.4
Norway	5.4
New Zealand	4.9
Czech Republic	4.2
Israel–1998	**0.6**
Israel–2000	**1.2**

SOURCE: BIS Survey, May 1999, and Bank of Israel.

The rise in swaps reflects increased activity by foreign investors in the Israeli economy.

The growth in trade and in swap transactions also reflects the increased activity of foreign investors in the Israeli economy and, in particular, the involvement of foreign financial institutions in the Israeli currency market, on their own behalf and on behalf of their customers. This development is an outcome of the liberalization of the foreign currency market and the removal of all the restrictions on trading in foreign currency. Swap transactions constituted a high proportion of this activity—84 percent for the

period June to December 2000—enabling foreign investors to access the local capital markets without exposure to the NIS. Swaps, in comparison, constituted only 31 percent of other customers' trades. The total level of customer activity was roughly equal for the two sectors—$ 509 million and $ 591 million per day, on average, for foreign financial institutions and for other customers, respectively (Figure 2.6).

Despite the increase in trading in NIS, it remains small relative to that in other currencies.

In spite of the growth in daily turnover in the last few years, the turnover in NIS is still very small in comparison with the currencies of other countries (see Table 2.3). Understandably, the turnover in NIS is negligible in comparison with the currencies of large global economies such as the US and UK, whose average daily turnover reached $ 315.9 billion and $ 114.8 billion respectively, in 1998. Note, however, that the turnover in NIS is also significantly smaller than those in currencies of countries which are similar to Israel in terms of their development, such as Greece.

3. OTHER MARKET DEVELOPMENTS

The opening of local branch offices of foreign banks has begun to impact on the market recently, increasing its depth and efficiency. Citibank opened such an office this year and began operating as a market maker in the local foreign-exchange market. Other foreign banks are at varying stages of readiness to open local branch offices.

In 1999, the Tel Aviv Interbank Offered Rate (Telbor) was launched by "Forex Israel, Financial Markets Organization." Forex Israel is a member of the international Forex organization. The Telbor rate provides a standard for determining short-term NIS interest rates. These rates, which are displayed on Reuters, are derived from data on interest rates for different periods, which the commercial banks also display on Reuters. The Telbor rates should hasten the development of the derivatives market (e.g., the interest-rate swaps market) and strengthen the link between the money markets and the foreign currency market—a link which is vital for the continued improvement of the money and capital markets.

Finally, a currency broker has operated in the interbank market since November 1996. As in other international currency markets, the broker plays an important role in interbank trading, increasing trading efficiency and reducing transaction costs, as reflected *inter alia* by the narrowing of the bid–offer spread. This spread is generally less than half an agora, although it can increase to between 2 and 3 agorot in periods of heightened uncertainty. In extraordinary situations, such as that in October 1998, it has risen to about 10 agorot. During 2000, the spread did not exceed 6 agorot. The spreads which banks display on Reuters are usually higher than those at which they perform transactions in the interbank market. The actual spread is normally closer to that quoted by the broker.

APPENDIX 2.1: REPRESENTATIVE RATES[5]

Representative rates give the exchange rates of foreign currencies and the currency basket in terms of NIS. The representative rate of any currency is an indicator of the exchange rate prevailing in the market;[6] it is based on an average of buying and selling prices published by banks, and does not necessarily reflect rates at which transactions were carried out. The rates have no official validity, are not legally binding, and are not published in the Official Gazette. They are used mainly for valuations and in contracts. Parties to a foreign-currency-indexed business transaction may carry out the transaction at any exchange rate agreed between them. The representative rate is binding for such a transaction only if explicitly stipulated in advance by the parties.

Several other Western countries, which have bilateral foreign-currency trading systems, also publish representative exchange rates. The United States Federal Reserve Bank publishes the mid-rate of interbank trade in New York twice a day. The rate appears on Reuters screen 1FED. The Bank of England publishes a mid-rate, based on its own calculations, daily, at 11:00 a.m., on Reuters screen BOE/SAF.

The Bank of Israel calculates representative exchange rates once a day on foreign-currency business days only, and makes them available to the general public as a purely informational service. There are no representative rates on Saturdays, Sundays, Israeli holidays, Christmas Day, New Year's Day and Easter, when foreign-exchange markets are closed in most countries.[7] There may, of course, be other occasions when representative rates cannot be published due to lack of data or because there has been no trade in foreign currency, or for other reasons.

Information on the new rates of exchange are normally available in the afternoon (see below). The time is not fixed, however, and the rates may be calculated and made available to the public at other times. It is therefore advisable for the parties to a transaction linked to the representative rate to stipulate in advance what the relevant rate is to be: for example, the one published on the date of the transaction, the latest published rate before the date on which transaction is carried out, or the rate published on a certain date before or after the date of the transaction.

Until May 23, 1990, the representative rate of the US dollar on a certain date was calculated as the average of the commercial banks' quoted buying and selling rates (transfers and checks) as reported by the banks to the Bank of Israel. As of May 24, 1990, when electronic trading in US dollars against NIS between the Bank of Israel

[5] This information is current at the time of publication. It does not replace any law, regulation, or directive. Additional details and explanations may be obtained from the General Information Center, Foreign Currency Department, Bank of Israel, Tel. 02-655-2321.

[6] The representative rate of a foreign currency is not necessarily identical with any of its going exchange rates, e.g., rates quoted by commercial banks to their customers, buying and selling rates of banknotes, checks and transfers, and interbank rates.

[7] Until July 31, 1986 no representative rate was published for the currency of a country on its national holidays.

and the authorized dealer banks was introduced, and until multilateral trading was canceled, the representative rate for a given day was the rate at which daily trading closed. Multilateral trading between the banks and the Bank of Israel came to an end on April 3, 1995, and all trading has henceforth been on a continuous bilateral basis.[8] The system of determining the representative rate was adjusted at the same time, and the representative rate of the NIS against the US dollar for a specific day is the average rate of bilateral interbank trading close to the end of trading hours in NIS, which are set by the Supervisor of Banks. The average rate is calculated on the basis of a sampling of exchange rates published by the banks on the Reuters screens, taken at a random moment between 14.15 and 15.15 (or between 11.15 and 12.15 on Fridays and holiday eves). The representative exchange rate is published soon after 15.15 (or soon after 12.15 on Fridays and holiday eves). The representative rate is calculated from the average of the banks sampled, and excludes values which deviate from the sample average by more than two standard deviations. In exceptional cases, when the calculated exchange rate does not reflect actual rates prevailing in the market, discretion may be exercised in determining the representative rate.

The representative rates of the NIS against other currencies are based on the representative rate of the US dollar and the exchange rates of the relevant currencies against the US dollar on the international money markets at the moment the representative rate is determined. Consequently, the relationship between the various representative rates reflects the relationship between spot exchange rates abroad at the time they are determined.

On January 4, 1999, with the introduction of the euro currency in the European Monetary Union (EMU), the Bank of Israel began to publish a representative exchange rate against the euro instead of against the ECU (European Currency Unit). The Bank also continues to publish exchange rates against the currencies of the EMU member countries.[9]

APPENDIX 2.2: THE CURRENCY BASKET

The currency basket was introduced on July 19, 1976. The composition of the basket was based on the shares of five currencies—US dollar, German mark, Pound sterling, French franc, and Dutch guilder—in Israel's goods exports. At that time creeping devaluations of the Israeli pound against the currency basket were carried out. The regime of the exchange rate against the basket continued until the end of October 1977, when it was changed to a floating exchange-rate regime.

[8] For the transition to the continuous bilateral trading system, see the 1994 issue of this publication, pp.xv-xviii.

[9] Note that there may be differences between exchange rates calculated (in NIS) for the currencies of the EMU member countries via the euro representative rate, and their representative rates as published by the Bank of Israel. For a detailed explanation of this difference, see the Press Release dated September 15, 1998.

Table A2.2.1
Weight of Currencies in the Basket

(percent)

Currency basket	Date	US$	DM	£	FFr	¥	€
When determining composition							
1986	01.08.86	60.0	20.0	10.0	5.0	5.0	
1995	05.06.95	54.8	24.2	8.3	5.6	7.1	
1996	30.04.96	60.3	21.0	8.0	5.1	5.6	
2000	02.05.00	64.8		6.8		6.4	22.0
At year end							
	31.12.96	60.3	20.7	9.0	5.0	5.0	
	31.12.97	63.0	18.7	9.1	4.6	4.7	
	31.12.98	62.0	19.7	8.2	4.8	5.3	
	31.12.99	63.4	–	9.0	–	6.0	21.6
	31.12.00	64.9	–	6.5	–	6.1	22.5

In July 1985, with the start of the economic stabilization program, a regime of a fixed exchange rate against the US dollar was introduced.

A new currency basket was introduced on August 1, 1986. The currencies comprising it and their weights (see Table A2.2.1) reflect their share in Israel's foreign trade of goods and services (imports and exports, excluding diamonds). Since the inception of the basket, the parameters of the exchange-rate regime (today, the exchange-rate band) have been set in terms of the basket rather than in terms of a specific currency.

The number of units of each currency in the basket is determined according to its share in trade during the previous calendar year and to international cross rates at the time the basket's composition is fixed. The number of units of each currency in the basket is constant, but the weight of each currency can change daily according to changes in cross rates. For example, when the US dollar gains strength, its share in the basket rises, and vice versa.

Since the original composition of the basket was determined, the Bank of Israel has periodically checked the composition of trade in the previous calendar year, and compared it to the average composition of the basket in the same period. Until the beginning of 1995 only slight differences between the two were found, so that the composition of the basket was not changed till then, other than the continuous daily changes in weights arising from changes in cross rates. The review carried out in 1995, based on trade figures for 1994, revealed that the weight of the US dollar in the basket was 3.2 percentage points lower than its share in foreign trade. It was therefore decided on June 5, 1995 to increase the US dollar's weight in the basket by a similar amount, with corresponding reductions in the weights of the other currencies in the basket. In discussions between the Ministry of Finance and the Bank of Israel it was decided that each year the final trade figures for the previous year would be reviewed, and if these showed a difference

Table A2.2.2
Units of Each Currency in the Basket

Currency basket	US$	DM	£	FFr	¥	€
1986	0.6000	0.4177	0.0670	0.3394	7.7000	
1995	0.6732	0.3964	0.0604	0.3222	7.0106	
1996	0.6741	0.3588	0.0589	0.2933	6.5437	
1996 (euro)	0.6741	–	0.0589	–	6.5437	0.2282
2000	0.6698	–	0.0453	–	7.2411	0.2493

of two percentage points or more between a currency's weight in the basket and its share of trade, the composition of the basket would be amended accordingly.

Following the above decision, on April 30, 1996 the weight of the dollar was increased by 3.3 percentage points, and those of the other currencies reduced accordingly. The review of the trade figures carried out in April 1997, April 1998 and April 1999 (i.e., of trade in 1996, 1997, and 1998) showed no significant differences between the compositions of the basket and of the trade, so that no changes were made to the number of currency units in the basket for these years. In a similar review undertaken in April 2000, the pound sterling's share in the currency basket was reduced by 2.1 percentage points. The weights of the other currencies were adjusted accordingly.

On January 4, 1999, due to the introduction of the euro in the European Monetary Union, a change was made to the composition of the currency basket. The euro replaced the German mark and the French franc. This change was purely technical and had no effect on the value of the currency basket.

As pointed out earlier, note that the relative shares of currencies in the basket change on every trading day in accordance with changes in their exchange rates, but the number of units of the currencies composing the basket remain as shown in Table A2.2.2.

APPENDIX 2.3: THE EXCHANGE-RATE BAND

On January 3, 1989 the Bank of Israel, in consultation with the Treasury, changed the policy regarding the determination of the exchange rate against the currency basket. Instead of an exchange rate held constant over a period of time and adjusted from time to time, the rate was allowed to fluctuate within a band with limits 3 percent above and below the midpoint rate. The fluctuation span around the midpoint allowed expression to supply and demand for foreign exchange. Every few months the midpoint was adjusted (devaluation). On March 1, 1990, the limits were extended to ±5 percent.

On December 17, 1991, another change was introduced to the regime. Under the new system, there is a gradual, constant, and predetermined adjustment to both the

Table A2.3.1
Changes in the Exchange-Rate Band of the Currency Basket

Date of change	Change	Currency basket			US$	
		Mid-point	Repre-sentative rate	Change from previous day	Repre-sentative rate	Change from previous day
		(NIS)	(NIS)	(percent)	(NIS)	(percent)
03.01.89	**Band introduced**					
03.01.89	Midpoint raised by 13%;[a] limits ±3%	1.9480	1.9479			
23.06.89	Midpoint raised by 6%	2.0649	2.0639	4.3	2.0175	4.4
01.03.90	Midpoint raised by 6% Band widened to ±5%	2.1888	2.0941	–0.1	1.9626	0.2
10.09.90	Midpoint raised by 10%	2.4077	2.3086	2.4	2.0800	2.8
11.03.91	Midpoint raised by 6%	2.5522	2.4252	5.8	2.1920	6.7
17.12.91	**Introduction of crawling band**					
17.12.91	Midpoint raised by 3% Slope of band 9%	2.6288	2.5647	0.1	2.3100	0.1
09.11.92	Midpoint raised by 3% Slope reduced to 8%	2.9251	2.8707	0.3	2.6350	0.6
26.07.93	Midpoint raised by 2% Slope reduced to 6%	3.1511	3.0709	1.9	2.8650	2.1
31.05.95	Midpoint raised by 0.8% Band widened to ±7% No change to slope	3.5372	3.5200	0.4	3.0050	0.3
18.06.97	Gradual widening of the band to reach ±15% by year end Slope of lower limit 4%[b] Slope of upper limit 6%[b]	3.7072[c] 4.9213[c]	3.7155	0.2	3.4200	0.1
07.08.98	Slope of lower limit 2% Slope of upper limit 6%	3.8760[c] 5.2583[c]	3.9661	1.7	3.7160	1.8

[a] Including a rise of 5% on 27.12.88.
[b] Without any time limit.
[c] Upper and lower rates of the band. Since 18.06.97, exchange-rate policy relates to the limits of the exchange-rate band, and not to the midpoint rate. The midpoint rate is now used by the Foreign Currency Department for statistical purposes only and does not have any implication for the exchange-rate regime.

midpoint rate and the band. The midpoint rate rises daily at a fixed pace, so that its cumulative annual rise is constant and known in advance (as are those of the upper and lower limits of the band). The band slopes upwards—hence it is known as the crawling band. With the move to a crawling band, the band's width remained at ±5 percent until May 31, 1995, when it was widened to ±7 percent. On June 18, 1997, the band was

widened further, to ±15 percent. Over the years the slope of the band has also changed. When it was first established, the slope was 9 percent. The slope was changed to 8 percent and then to 6 percent on November 9, 1992, and on July 26, 1993, respectively. On June 18, 1997, the slope of the lower limit of the band was reduced to 4 percent, while the slope of the upper limit remained unchanged at 6 percent. On August 7, 1998, the slope of the lower limit was further reduced to 2 percent.

The purpose of the crawling band was to indicate a predetermined path for the development of the exchange rate, and thereby to reduce economic uncertainty. The system was also intended to lower the probability of speculative capital flows, which had occurred in the past whenever there were expectations of a relatively large one-time realignment of the horizontal band. Such adjustments were made from time to time on account of the difference between the rate of inflation in Israel and those in Israel's trading partners. These adjustments were accompanied by wide fluctuations in interest rates.

The slope of the band was derived from the difference between Israel's inflation target for the following year as set by the government, and predicted inflation abroad. In the last few years, however, the practice has changed such that only the slope of the lower limit of the band has been reduced, whenever possible, while the upper limit has remained unchanged, at a steeper slope than the lower limit. As a result, the band is gradually becoming wider—its width was 39.2 percent at the end of 2000 (based on the average of the two limits).

APPENDIX 2.4: FOREIGN-EXCHANGE POLICY 1948–1988

Israel's currency was changed from the Israeli pound to the sheqel in 1980, and from the sheqel to the new sheqel (NIS) in 1985. One sheqel was equal to ten pounds, and one new sheqel to 1,000 sheqalim. The sheqel entered circulation on February 24, 1980, and from September 30, 1980, prices and exchange rates were quoted in sheqalim; from March 31, 1984 the pound ceased to be legal tender. The new sheqel went into circulation on September 4, 1985, and since January 1, 1986, prices and exchange rates have been quoted in new sheqalim; on September 4, 1986, the sheqel ceased to be legal tender.

After the establishment of the State of Israel its currency continued to be linked to the pound sterling, as it had been during the British Mandate, but in practice exchange rates were also quoted in US dollars. From January 1954 the new official rate of the Israeli pound was quoted in US dollars and not in pounds sterling.

From the establishment of the State until October 1977 exchange rates were official. Until August 1975 the rate was constant, with a devaluation occurring only once in several years. From August 1975 to October 1977 there were more frequent devaluations ("creeping devaluation"). At the beginning of this period the Israeli pound was still linked to the US dollar, but from July 1976 to October 1977 it was linked to a basket of five currencies.

Since the start of currency liberalization in October 1977, there have been no legally binding exchange rates in foreign-currency transactions. Representative exchange rates of foreign currencies are published daily by the Bank of Israel (see Appendix 2.1).

With the introduction of the economic stabilization program in July 1985, the regime became a fixed exchange rate against the US dollar, and from August 1, 1986, against a new currency basket (see Appendix 2.2). In this regime the stable level of the exchange rate was adjusted from time to time.

On January 3, 1989, the Bank of Israel changed its policy regarding the determination of the exchange rate against the currency basket (see Appendix 2.3).

See Appendix 2.5 on the following page for details of changes in the US dollar and currency-basket exchange rates.

Appendix 2.5
Changes in Exchange Rates against the US$ and the Currency Basket
a. Until October 1977—official rates[a]

Date of devaluation	US$ rate		Currency-basket rate	
	Israeli pound			
05.05.48	0.250			
19.09.49[b]	0.357			
01.01.54	1.80			
10.02.62	3.00	Par		Fixed rate[c]
09.11.67	3.50	value		
22.08.71	4.20			
10.11.74	6.00			
18.06.75	6.12			
05.08.75	6.24			
09.09.75	6.36			
28.09.75	7.00			
24.11.75	7.10			
04.01.76	7.24	Buying		
11.02.76	7.38	rate		
15.03.76	7.52			
19.04.76	7.67			
20.05.76	7.82			
24.06.76	7.97		Israeli pound	
19.07.76			8.12	
25.08.76			8.25	
29.09.76			8.40	
01.11.76			8.56	
24.11.76			8.73	Creeping
24.12.76			8.90	devaluations
17.01.77			9.07	
02.03.77			9.25	
21.03.77			9.42	
25.05.77			9.60	
04.07.77			9.79	
18.07.77			9.98	
01.08.77			10.17	
17.08.77			10.37	
20.09.77			10.57	
17.10.77			10.78	

[a] The exchange rates in Part A of the table are official rates, i.e., rates officially declared by the government. In addition to these, formal exchange rates are given for the period to 10.02.62; these rates applied to direct foreign-currency transactions and were binding. (On the difference between official and formal exchange rates see Michael Michaely, Israeli Exchange-Rate System, Jerusalem, Falk Institute, 1968.)

05.1948–09.1949	For hard currencies	0.333
05.1952–01.1954	For most commodities	0.714 and 1.00
	For non-profit institutions	1.00
01.1954–08.1954	For most commodities	1.00
	For non-profit institutions	1.30
08.1954–10.1955	For non-profit institutions	1.30
10.1955–04.1958	For non-profit institutions	1.50

[b] The change in the Israeli pound/dollar rate in September 1949 was derived from the reduction of the pound sterling—from £ 0.250 to £ 0.357 to the dollar.

[c] With one-time adjustments.

SOURCE: 15.05.1948–19.11.1967: Central Bureau of Statistics.
22.08.1971–17.10.1977: The Official Gazette.

Appendix 2.5 (cont.)
b. October 1977–January 1989, representative rates[a]

Date of devaluation	US$ rate: Rate of devaluation		US$ rate: Rate	Currency-basket rate: Rate of devaluation		Currency-basket rate: Rate	
	(%)			(%)			
			Israeli pound				
31.10.77	47.2		15.2500				
			Sheqel				
10.08.83	7.2		56.9804				Floating rate
10.10.83	5.5	23.0[b]	69.2697				
11.10.83	16.5		80.7296				
17.09.84	8.7		395.7900				
01.07.85	18.8		1,500.0000				
			NIS			NIS	
01.08.86[c]			1.4923			1.4923	
13.01.87	9.7		1.6400	10.1		1.6803	Fixed rate[e]
27.12.88	5.1	13.0[b]	1.6800	5.0	13.4[b]	1.8038	
03.01.89[d]	7.2		1.8065	8.0		1.9479	

[a] The representative rate, calculated by the Bank of Israel from October 1977, was intended to reflect rates in the foreign-currency market, and was not an official rate.
[b] At these times the devaluation was spread over several days. The figures shown are the total devaluations during the periods in question.
[c] On this date a new 5-currency basket was introduced (see Appendix 2.2).
[d] For data relating to the period after this date, see Table A2.3.1 in Appendix 2.3.
[e] With one-time adjustments.
SOURCE: 31.10.1977–03.01.1989: Bank of Israel circulars.