Bank of Israel

Foreign Exchange Activity Department

Assets and Liabilities Unit

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Fifty Years of External Finance via State of Israel Non-Negotiable Bonds

The Government of Israel borrows abroad via a number of channels. One of the most important channels employed for this purpose is the Israel Bonds organization, which aims to support the State of Israel. The organization was established in 1951 and is officially called the Development Corporation for Israel (DCI). The organization's principal objective is to raise foreign exchange for Israel from Jews abroad (as individuals and communities) by means of non-negotiable bonds (henceforth referred to here as Bonds). Apart from serving as a stable source of overseas borrowing, Bonds fulfill an important role in maintaining ties with Diaspora Jewry and in the diversification of borrowing sources, especially during periods when the government has difficulty in borrowing from other external sources.

This form of external borrowing is unique to the State of Israel, and derives mainly from the ability to persuade Jews abroad to invest in Israel. Israel Bonds emphasizes to worldwide Jewish communities the need to contribute to the economic wellbeing and to the security of the State of Israel. Annual borrowing policy is defined by the Ministry of Finance in accordance with the government's foreign exchange requirements. In order to adhere to its annual borrowing target, the Finance Ministry periodically sets the interest rates on the different types of Bonds, and thereby influences the pace of sales during the course of the year.

The Israeli economy has undergone many changes over the last fifty years in which Israel Bonds has been operating. In the 1990s, the government diversified its sources of finance. From the beginning of the 1950s and until the mid-1970s, Bonds were the main source of external borrowing. From the mid-1970s to the mid-1980s, US government loans were the main source of borrowing for the Israeli government. During 1998 and 1989 and the years 1993-1998, negotiable bonds guaranteed by the US government were the principal source. Since 1999, after these US guaranteed bonds were issued, Bonds became again the main source of external borrowing. From 2003 and until 2005, new negotiable bonds guaranteed by the US government are expected to be the principal component of the government's external borrowing. Despite the diverse forms of government borrowing, Israel Bonds has not ceased raising foreign currency for the Israeli government from the earliest years of the State and until today; hence the organization's importance.

Purpose of this study

The purpose of this paper is to describe the activity of Israel Bonds during the last fifty years and to summarize the changes that have occurred in the financial instruments that the organization offers from the aspects of quantity, bond type and cost of borrowing.

Bond developments

The government's outstanding external debt totaled around $30 billion in December 2003, with Bonds accounting for $10 billion.[1] The proportion of Bonds to the government's outstanding external debt rose from 21 percent at the beginning of the 1980s to 34 percent in 2003 (Figure 1). Since 1951 borrowing via Israel Bonds totaled $24 billion and redemptions amounted to $15 billion. The government expended $9.5 billion in Bond interest payments (Table 1).

[1] Including interest accrued on zero coupon and savings type bonds, and the liability accrued for bonds that have reached maturity but have not been redeemed by purchasers.

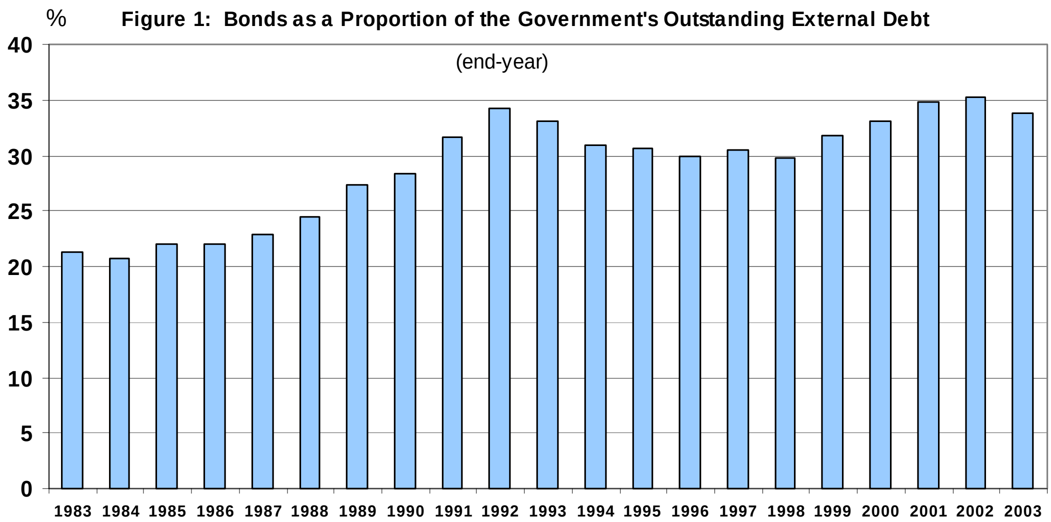


Table 1: Total Bond Sales and Redemptions

$ million

	Sales	Redemptions	Net Sales	Interest Payments	Sales Net of Debt Service
	(1)	(2)	(3=1-2)	(4)	(5=3-4)
1951-1959	419	79	340	56	284
1960-1969	1,107	608	499	192	307
1970-1979	3,217	1,373	1,844	729	1,115
1980-1989	5,156	3,213	1,943	2,069	-126
1990-1999	9,304	5,801	3,502	4,360	-858
2000-2003	4,808	3,787	1,022	2,122	-1,100
Total	**24,011**	**14,862**	**9,149**	**9,527**	**-378**

Bonds sales (Tables 1 and 2 and Figure 2)

An analysis of Bond sales shows a quantitative increase from decade to decade. Total sales during the 1980s were 60 percent higher than in the 1970s, and total sales in the 1990s were 80 percent higher than in the 1980s. This trend in sales has continued during the 2000s, from average annual sales of $930 million in the 1990s to $1,200 million in the initial years of the 2000s. Since 2002 worldwide Jewry has displayed a great desire to help Israel as a result of security-related developments in Israel and in the wake of the September 2001 terror attacks in the USA. In 2003, sales of Bonds peaked at $1.5 billion.

Table 2: Average Yearly Bond Sales and Redemptions

$ million

	Sales	Redemptions	Net Sales	Interest Payments	Sales Net of Debt Service
	(1)	(2)	(3=1-2)	(4)	(5=3-4)
1951-1959	42	8	34	6	28
1960-1969	111	61	50	19	31
1970-1979	322	137	184	73	111
1980-1989	516	321	194	207	-13
1990-1999	930	580	350	436	-86
2000-2003	1,202	947	255	530	-275

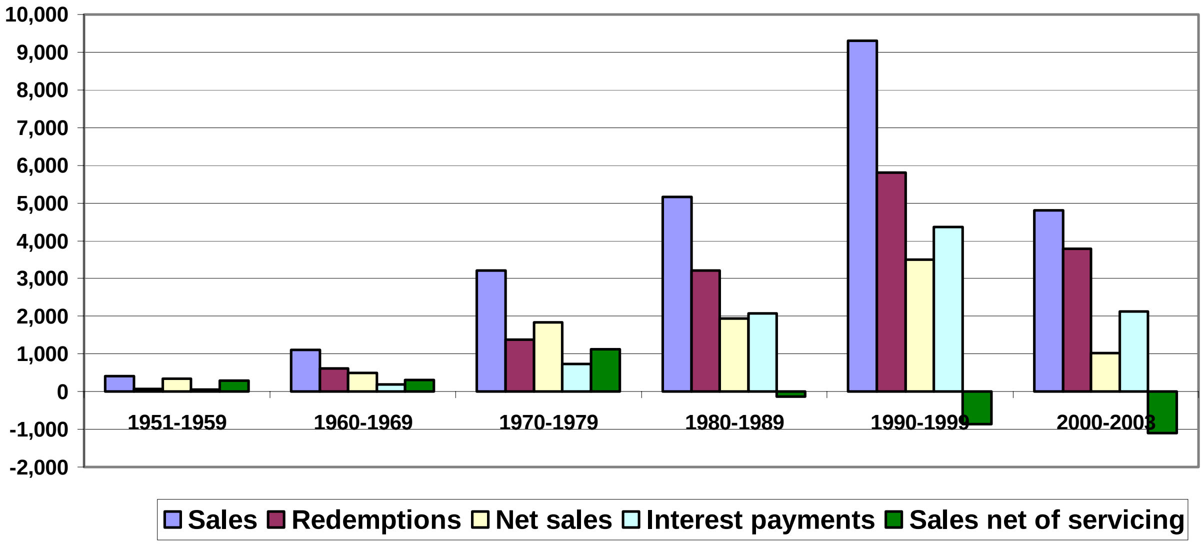
Since the rate of growth in sales exceeded that of redemptions, **net sales** (sales less redemptions) were positive. Net sales averaged $190 million a year in the 1970s and 1980s, and rose to $350 million in the 1990s. Cumulative net sales since the establishment of Israel Bonds reflect the outstanding Bond liability, which reached $9.1 billion in December 2003.[2]

The government's cumulative Bond debt servicing (principal and interest) up to the end of 2003 exceeded total sales by $0.4 billion. Total issues of Bonds – $24 billion – served as a source of debt servicing, with $15 billion going to repayment of principal and $9.5 billion for interest payments. A decade-by-decade analysis shows that the foreign exchange surplus remaining with the government, that is sales less redemptions and interest payments, was positive during the first three

[2] This balance reflects sales less redemptions, and does not include interest accrued on zero and savings type bonds, and the liability accrued for bonds that have reached maturity but have not been redeemed by purchasers.

decades but negative from the 1980s. The government paid $860 million dollars more in interest payments than its net sales during the 1990s, and $1.1 billion more in the four years 2000-2003. The growth in interest payments from the 1980s was caused by a number of concurrent developments: the increase in Bond balances resulting from the rise in annual sales, the gradual move to market interest rates and the rise in USD interest rates from the end of the 1970s, affecting interest payments on both Notes (see section on Bond types) and fixed-rate long-term Bonds.

Figure 2: Bond Sales, Redemptions, and Interest Payments
($ million)

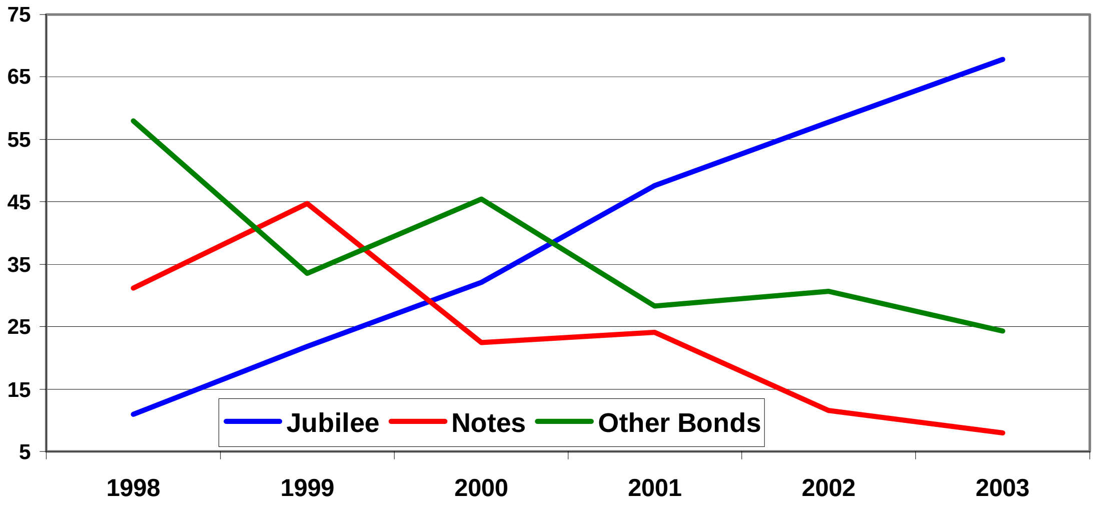


Sales during recent years

As a result of the steep decline in short-term interest rates during the years 2002 and 2003, Libor-based Bonds became less attractive while demand for fixed-rate Bonds increased.

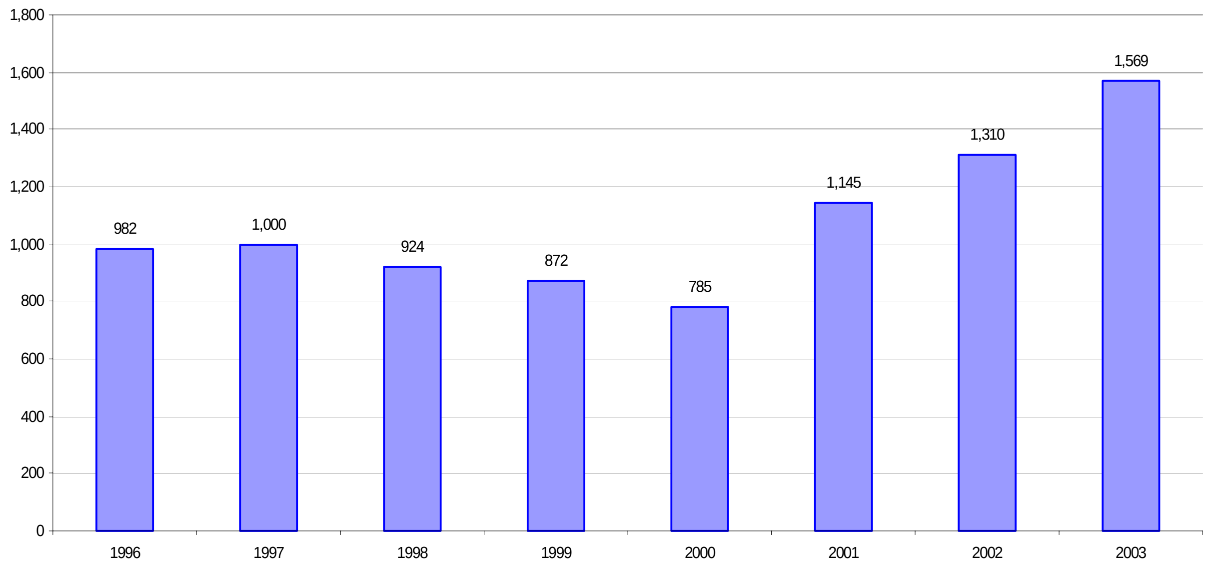
From 2001 most of the Bonds issued were fixed-rate. The proportion of Jubilee fixed-rate Bonds (see section on Bond types) rose from 10 percent of total Bond sales at the beginning of 1998 to 70 percent at the end of 2003. Concurrently, sales of Notes and floating-rate Bonds decreased (Figure 3). From 2000, all Notes sold have been Libor-based.

Figure 3: Distribution of Annual Bond Sales, by Type
($ million)



In 2003 a record $1.5 billion of Bonds were sold, as compared to $1.3 and $1.1 billion in 2002 and 2001, respectively.

Figure 4: Total Bond Sales
($ million)

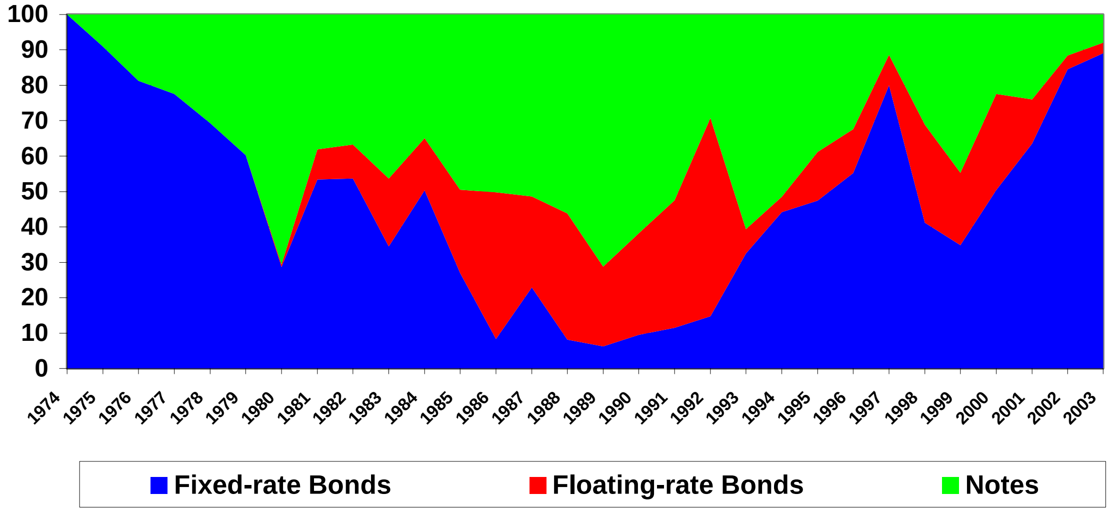


Bond types

Israel Bonds markets a number of non-negotiable Bonds that differ in several variables: maturity, type of interest (fixed or floating rate), interest calculation equation, minimum Bond amount, and early repayment terms. The data show that the utilization of the opportunity for early redemption is minimal, and nearly all the Bonds are redeemed at their final redemption date.

The range of offerings has changed over the years, and each Bond has been directed at a different target clientele: individuals, communities and financial entities.

Figure 5: Proportion of Bond Sales, by Type of Bond
(percentage)



Fixed-rate Bonds – These Bonds were the first that Israel Bonds marketed and were sold in relatively small amounts relative to other Bonds, at fixed-rate interest and for periods of between 10 and 20 years, although most were sold for periods of between 10 and 15 years. These Bonds can be redeemed early for the purpose of investment in Israel, donation to a non-profit organization or NIS expenditure in Israel. The data show that early redemptions were minimal. Until the end of the 1980s interest of approximately 4 percent was paid, without reference to changes in the USD interest rate. From 1990 a fixed rate of interest was set in accordance with market interest rates (see analysis of debt cost below). Two types of Bonds were offered: Bonds on which interest was paid periodically, and Bonds on which interest was paid only at the Bond's redemption date (savings). In 1993 10-year Bonds at the market interest rate were sold, in two tranches: EDI (Economic Development Issue), which paid interest once every six months and in which the minimum amount sold was $25,000; and zero coupon Bonds, on which interest was paid together with the principal at maturity and that were sold for a minimum amount of $6,000.

In 1998, the fiftieth anniversary of the establishment of the State of Israel, Israel Bonds began to issue two tranches of Bonds called Jubilee, issued for 5 years and 10 years. The minimum amount sold is $25,000 and fixed-rate interest is paid on the Bonds once every six months. In addition to these Bonds, Bonds are issued in Canada in Canadian dollars, although the total amount issued is relatively small at 2.5 percent of the balance of Israel Bonds (as of end-2003).

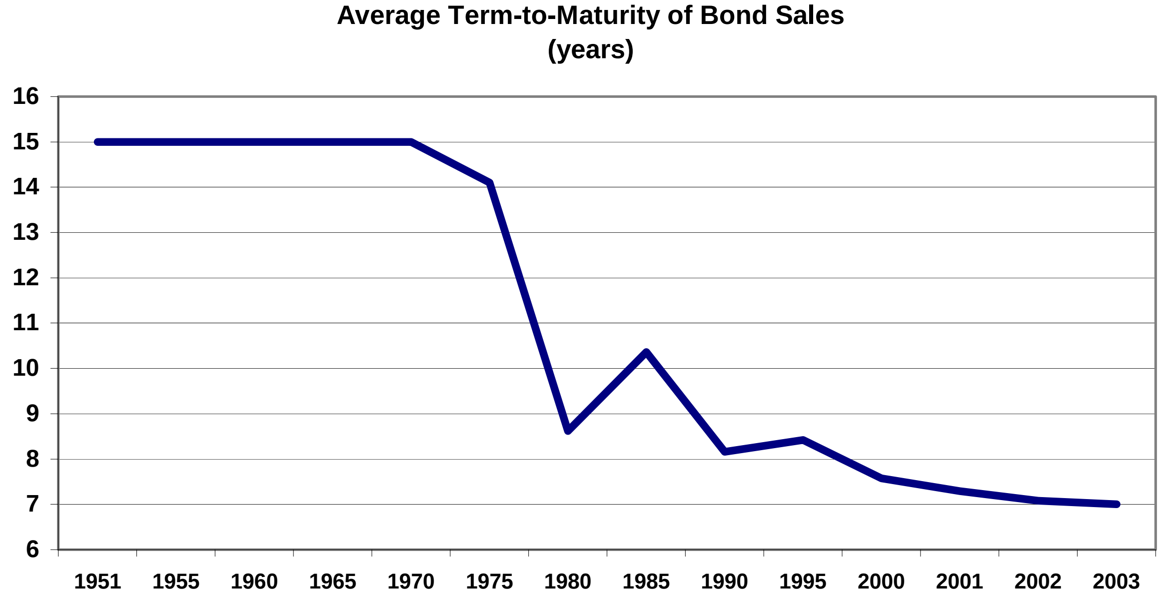
Notes – In the mid-1970s Israel Bonds decided to target an additional population: small banks and financial companies in the USA. Notes at amounts of $150,000, $250,000 and $1,000,000 were offered to these entities for periods of 10, 7 and 5 years respectively. A Prime-based commercial rate of interest was set for these Bonds in order to encourage their purchase. Apart from these Bonds, Notes were also issued in the UK (in Sterling) and in Germany (in DM), but the amount issued was small. Over the years Israel Bonds changed its policy and began to re-target Jewish communities rather than banks and financial entities. At the same time, the minimum amount of the Notes was reduced to $100,000 and $150,000 and the term to maturity was set at 5 and 7 years.

Floating-rate Bonds – These Bonds were first issued in 1980 and were sold until 1999. This type of Bond constituted a mid-way group between the two previous types of Bonds from the aspect of minimum amount, interest rate and term to maturity. The first such Bonds were called VRI (Variable Rate Issue) and IVRI (Individual Rate Issue)

In 1980 the minimum amount per Bond was set at $25,000 and in December 1986 Bonds in the amount of $5,000 were also issued. The terms-to-maturity were 10 and 12 years. The interest rate on these Bonds was calculated on the basis of the Prime rate, according to the equation: base rate plus half the difference between this rate and the Prime rate. In 1980 the base rate was 7.5 percent and over the years, as the long-term USD interest rate fell, the base rate was cut to 6 percent and to 5 percent. In 1993 the sale of FRI (Floating Rate Issue) Bonds began. The interest paid on these Bonds was Prime minus 0.75 percent. The difference between these and the previous Bonds was that the minimum amount was only $5,000 and the term to maturity was 10 years. Over the years the interest rate was reduced to Prime minus 1.75 percent. The interest calculation equation on the Bonds was generally similar to that for Notes. The difference between them was that the minimum amount of the FRI Bonds was less and the term to maturity was longer. These Bonds were sold until the end of 2002. Concurrently, from the end of 1999, the sale of LFRI (Libor Floating Rate Issue) 10-year Bonds began. The interest paid on these Bonds is calculated on the basis of the Libor rate plus an increment. Most of the Bonds are sold at an increment of 0.75 percent.

The Bonds' term to maturity

The average term to maturity of the Bonds (including Notes) was reduced over the years (Figure 6). Until 1970 most of the Bonds were issued for 15 years. In the 1970s Israel Bonds began to diversify the types of Bonds and offered Bonds for shorter periods. The issue of Notes for 5, 7 and 10 years began, with the result that the average term to maturity decreased. During recent years Bonds have been sold for periods of between 5 and 15 years. The average term to maturity decreased to 7 years in 2003. Buyer preference was the main reason for the decrease in the average term to maturity. While in the past it was possible to issue Bonds for longer terms, buyers now prefer shorter terms-to-maturity.



<u>Factors affecting the interest rate on Bonds</u>

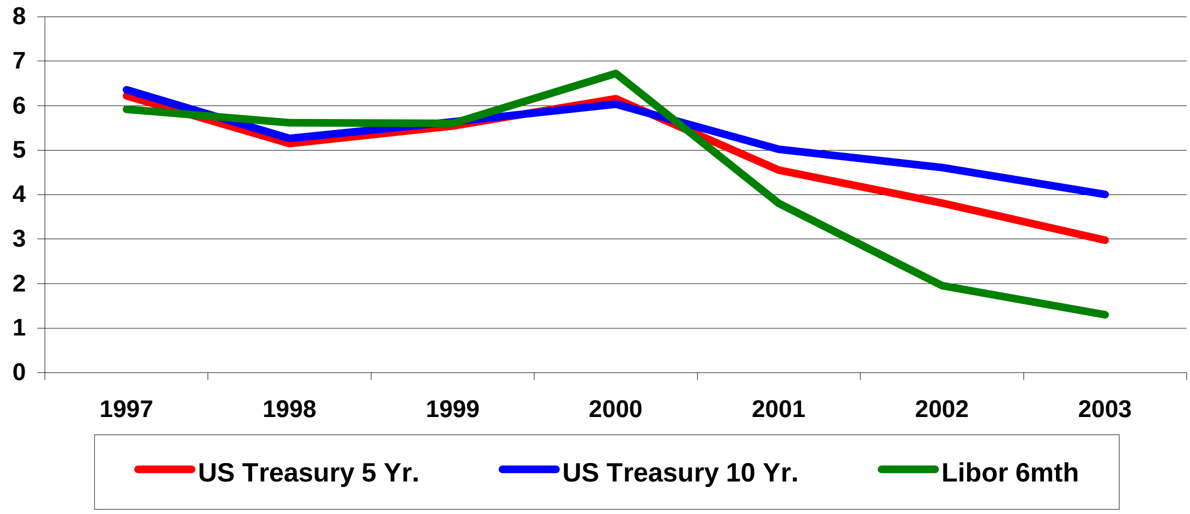
The Finance Ministry's objectives in issuing the Bonds were to increase total sales while reducing the cost of this debt. Interest rate policy was based on a number of variables: the amount of the annual issues planned in accordance with the government's foreign exchange requirements, US government Treasury Note rates, short-term USD rates, the government's ability to borrow from alternative sources, and purchaser population.

<u>Amount issued</u> – Over the years Israel Bonds endeavored to increase the amounts issued in accordance with the government's foreign exchange borrowing policy. In order to increase the amount, it was necessary to provide an "encouragement premium" in the form of an incremental interest rate.

<u>The level of USD interest rates</u> - The interest rate on 10-year US government Treasury Notes gradually increased from 3 percent at the beginning of the 1950s to 14 percent in 1981, and gradually fell from 1982 to 4 percent in 2003 (Figures 7 and 9). The trend in the short-term interest rate was similar and in 2003 the Libor rate reached the low level of 1 percent. During recent years a closer correlation has existed between the level of the dollar interest rate in the USA and the interest rate set on the Bonds. Since the spread (above US Treasuries) on fixed-rate Bonds is implied in the interest rate that is set, the Finance Ministry can increase the spreads when the long-term interest rate is low and *vice versa*. But with Bonds paying a Libor-based interest rate, despite

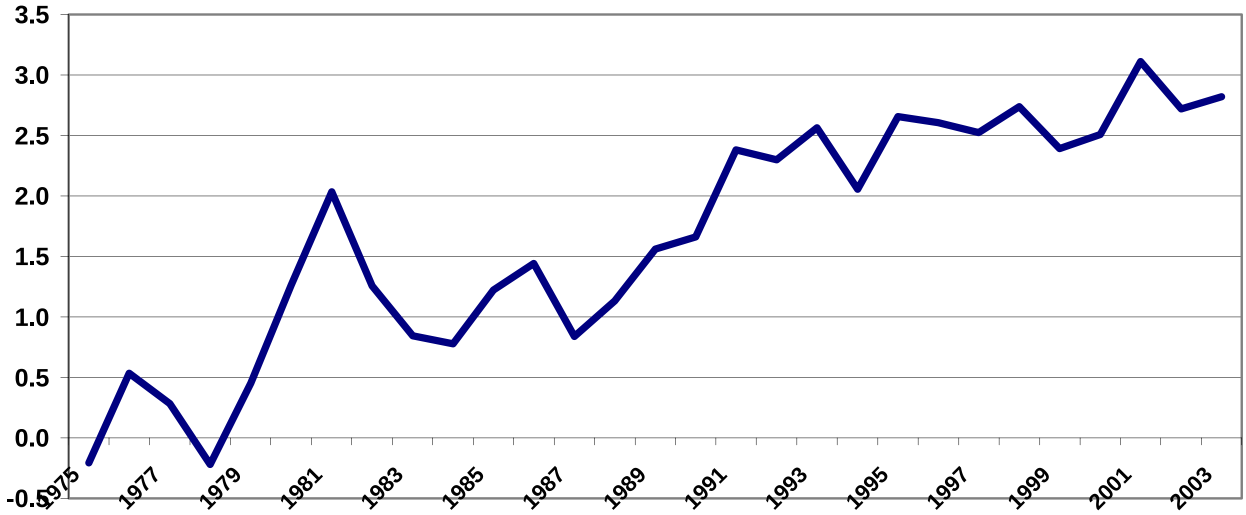
the decline in the Libor rate during recent years the Finance Ministry has not compensated buyers by raising the spread above the Libor rate, apparently because this spread constitutes a benchmark for credit it may choose to take from the international banking system.

Figure 7: Developments in International USD Interest Rates
(annual averages)



<u>The spread between the US Prime interest rate and the Libor interest rate (Figure 8)</u> – Until the end of the 1970s the Prime rate was only slightly higher than the 6-month Libor interest rate. During the 1980s the spread between the Prime rate and the Libor rate increased to an average of 1.1 percentage points. The decline in USD interest rates continued and the spread between the Prime rate and the Libor rate averaged 2.6 percentage points during the 1990s and until the present.

Figure 8: Spread of US Prime Rate Over the 6 Month Libor Rate
(annual averages, percent)



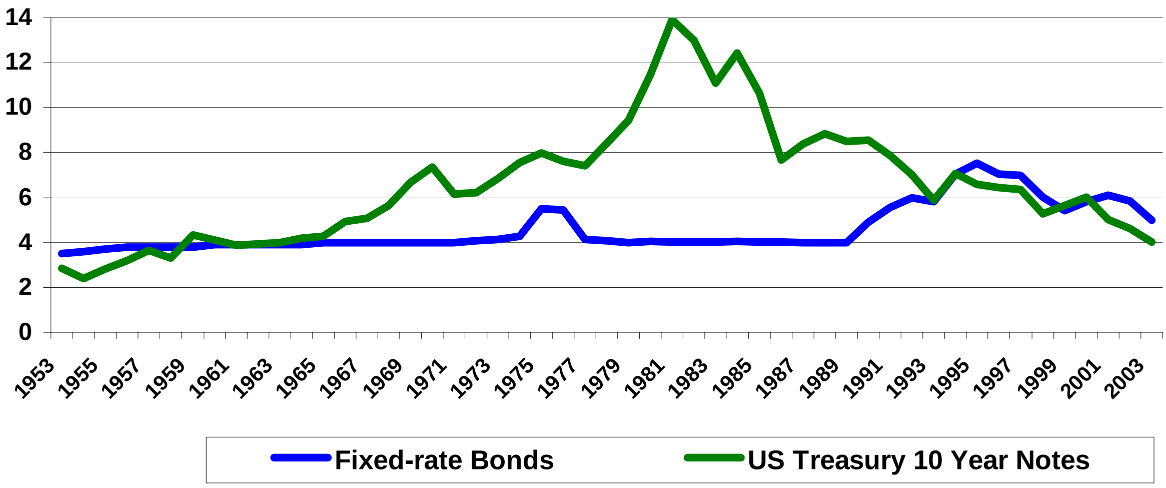
Alternative borrowing sources – Since the end of the 1990s the Finance Ministry has developed alternative sources of external borrowing, such as negotiable bonds guaranteed by the US government, non-guaranteed negotiable bonds and loans from banks. There is a relationship between the interest rates that are set from time to time on the Bonds, and the interest rates prevailing in the secondary and primary market in respect of other borrowing sources. If potential buyers are offered a low return, part of them will prefer to purchase Israeli government USD bonds issued in the open market, which bear higher yields than the Bonds, particularly when it is considered that the latter are non-negotiable. However, if the spread above the Libor rate is raised on Bonds paying Libor-based floating-rate interest, banks abroad will demand a higher spread from the Israeli government on loans claiming that the Bonds themselves offer a higher spread.

Purchasing population – The purchasing population has changed since Israel Bonds was established. During the organization's first 25 years it targeted Jews alone, most of whom had direct or indirect (family) contact with the Holocaust in Europe. They regarded the purchase of Bonds as a form of contribution to the State of Israel, and were therefore content to obtain a lower rate of return than the market interest rate. In the mid-1970s Israel Bonds addressed an additional buyer population: small banks and financial companies in the USA. These entities were offered a commercial interest rate based on the Prime rate. From the beginning of the 1980s Prime-based Bonds were also issued to individuals and communities that demanded an interest rate closer to the market rate. Since the 1990s Israel Bonds has endeavored to market Bonds to the next generation, and has gradually reduced its marketing efforts among financial entities. The next generation is prepared to buy these Bonds at an interest rate close to the market rate.

As a result of these developments, the interest rate paid on the Bonds has changed, as follows:

Fixed-rate Bonds – Up to the end of the 1980s interest at the rate of approximately 4 percent was paid, without reference to changes in the USD interest rate. Until 1958 the USD interest rate was lower than the rate on these Bonds. The USD interest rate began to rise in 1959, peaked in 1981, and then fell in a trend that continued until 2003. In 1990 Israel Bonds began to gradually raise the fixed-rate interest in the direction of market interest rates. As a result of the decline in the USD interest rate and the rise in the Bond fixed interest rate, these interest rates converged in 1993, since when the trend in both has been similar. For most of this time, after 1993, the fixed interest rate on the Bonds has been higher than the USD interest rate (Figure 9).

Figure 9: Fixed-Rate Bond and 10-Year US Treasury Note Interest Rates (annual averages, percent)

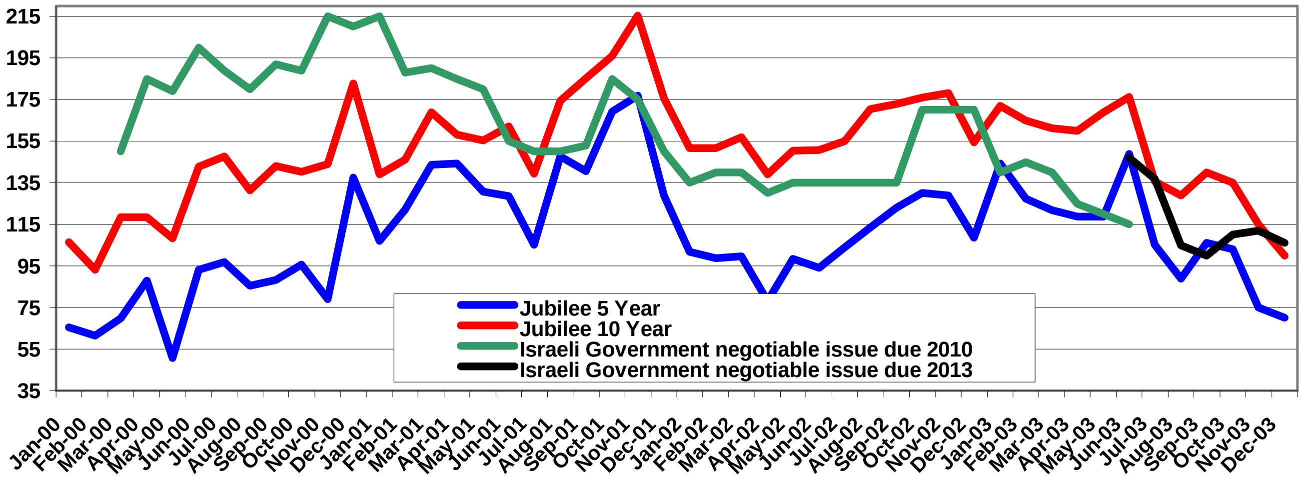


In 1998, the fiftieth anniversary of the establishment of the State of Israel, Israel Bonds began to issue two series called Jubilee, on which fixed-rate interest is paid twice a year. One series is issued for 5 years and the other for 10 years. The interest rate is determined on the basis of the rate on 5 and 10-year US Treasury Notes plus a spread. In order to examine the interest rate paid on these Bonds, a comparison should be made between the spread on Jubilee Bonds over and above the return on US Treasury Notes and the similar spread on negotiable Israeli government bonds in the secondary market (Figure 10). Until the end of 1990, the spread on Jubilee Bonds over and above the yield on Treasury Notes was 0.7 percentage points on 5-year Bonds and 1.0 percentage points on 10-year Bonds. From 2000 the spreads on Jubilee Bonds began to increase. The spread on 10-year Jubilee Bonds rose from 1 percentage point at the beginning of that year to an average of 1.5 percentage points in 2003. The spread on 5-year Jubilee Bonds rose from 0.7 percentage points at the beginning of 2000 to an average of 1.1 percentage points in 2003. A comparison of the spread on 10-year Jubilee Bonds with the spread on Israeli government negotiable USD bonds due in 2010 shows that the spread on Jubilee Bonds was lower than the spread on Israeli government bonds until mid-2001, and higher from the second half of 2001. In addition, from the end of 2001 to the middle of 2003 the trend of the spread on 10-year Jubilee Bonds was the same as that on Israeli government bonds due for maturity in 2010 and higher by an average of 30 basis points (100 b.p.= 1 percent).

In June 2003 the Israeli government issued a new 10-year negotiable USD bond. In the second half of 2003, the average spread on 10-year Jubilee Bonds over and above this bond was only 15 basis points, and in December 2003 was even lower

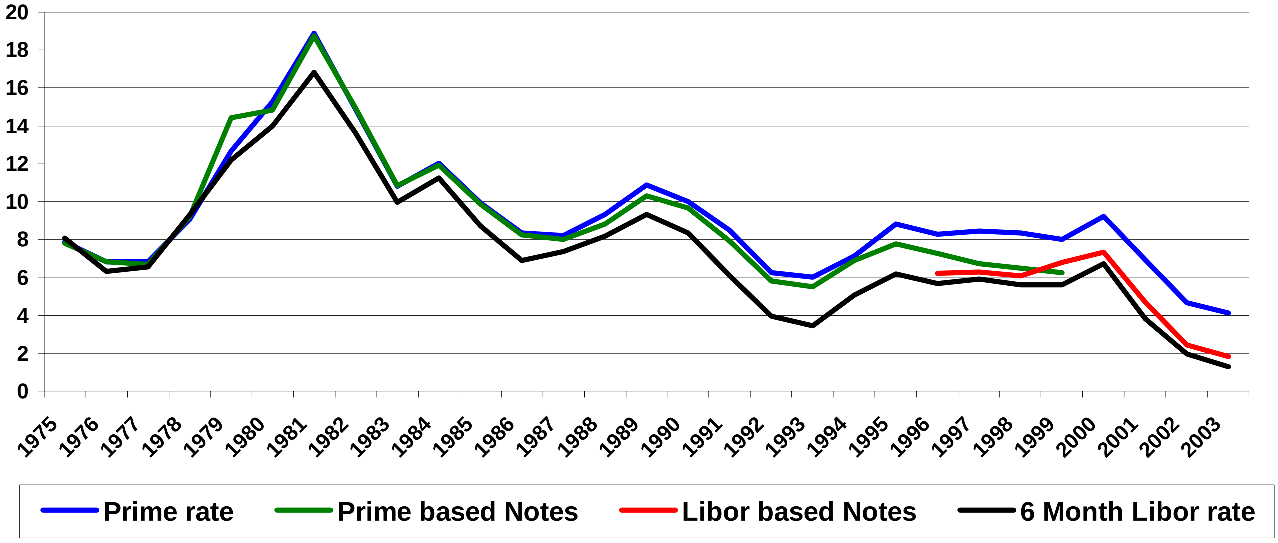
Figure 10: Spread Above Treasury Notes of 5 and 10 Year Jubilee Bonds Compared to this Spread for Israel's Negotiable Issues

(monthly averages, basis points)



Notes - In the mid-1970s Israel Bonds decided to address an additional population: small banks and financial companies in the USA. These entities were offered Notes in large amounts of $150,000, $250,000 and $1,000,000 for periods of 10, 7 and 5 years respectively. In order to encourage the purchase of these Bonds, a Prime-based commercial interest rate was set on them. As a result of the decline in the short-term USD interest rate and the increase in the spread between the Prime rate and the Libor rate (Figure 8), the interest rate on the Notes was reduced to Prime minus 0.5 percent in 1998 and to Prime minus 0.75 percent in 1994. In 1996 the interest rate was cut three times: to Prime minus 1.25 percent, to Prime minus 1.5 percent and to Prime minus 1.75 percent (Figure 11). These Bonds were marketed until 1999. Their interest rate was particularly attractive because it was changed every six months when the coupon was paid, with the result that buyers did not incur interest-rate risk. The advantage of this interest rate for the purchasers, as compared to the Libor rate, was that the Prime rate is adjusted from time to time, while the Libor rate is adjusted on an ongoing basis. In periods when the short-term interest rate is falling, the Prime rate lags behind the Libor rate, to the benefit of those holding the Bonds. The Notes were therefore attractive, sales of them increased every year, and their proportion to total Bond sales rose. This process continued until 1994.

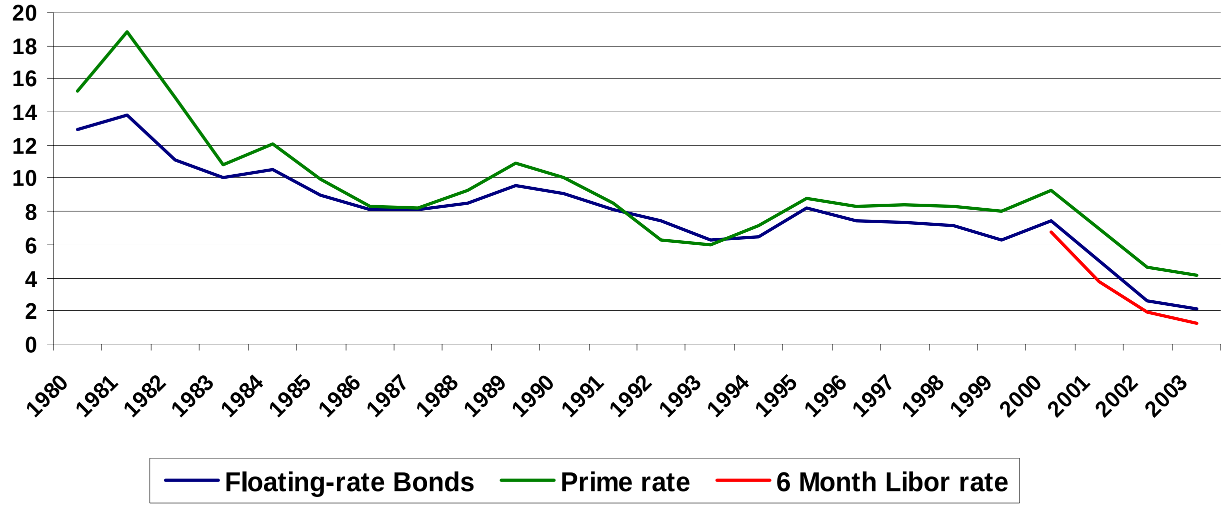
Figure 11: Bond Note Interest Rates as Compared to Prime and Libor Rates (annual averages, percent)



The Finance Ministry was aware of this trend and took action to reduce the interest rate on Notes. Their policy was to reduce the interest rate while giving preference to non-financial entities. Subsequently, the basis was changed and Notes were sold on the basis of the Libor rate with an increment of 0.4 percent to 1.0 percent. The different spreads being for different Note tranches, each with its minimum amount and target population. Over the years, Israel Bonds changed its Note marketing policy and began to re-target Jewish populations rather than banks. Accordingly, two types of Bonds were offered: non-banking entities were sold Bonds at a minimum amount of $100,000 at Libor plus 0.6 percent for a period of 5 years, while banks were sold Bonds at a minimum amount of $150,000 at Libor plus 0.4 percent for a period of 7 years. The steep decline in short-term interest rates during the years 2002 and 2003 made the Notes, which are Libor-based, less attractive. As a result, sales of these Bonds decreased and Bond purchasers preferred to buy fixed-rate Bonds.

Floating-rate Bonds - The interest rate on these Bonds was based on the equation: a basic rate plus half the difference between this rate and the Prime rate. Sales of the Bonds began in 1980 and the basic rate set for them was 7.5 percent. Under this equation, the interest rate on the Bonds in 1980 averaged 13 percent, 1.5 percentage points more than that on 10-year US Treasury Notes (Figure 12).

Figure 12: Floating-Rate Bond Rates Compared to Prime and Libor Rates (annual averages, percent)



In 1981 interest rates in the USA peaked while from 1982 a general downtrend in interest rates was recorded, and this trend continued to the present (2003). Israel Bonds changed the basic rate in accordance with the interest rate adjustments in the USA. In 1993 the basic rate approached the USD interest rate, with the result that the interest-rate equation became ineffective. The organization therefore began to issue other FRI type Bonds on which the interest rate was calculated on the basis of Prime minus 0.75 percent. Since the downturn in interest rates in the USA continued and the spread between the Prime rate and the Libor rate increased, the interest rate on the Bonds was reduced in a manner similar to that on the Notes. The rate was cut twice: in May 1996 to Prime minus 1.5 percent and in August 1998 to Prime minus 1.75 percent. The latter type of Bond was sold until December 2002. Israel Bonds 's policy was to move from a Prime basis to a Libor basis. In October 1999 the organization began to sell (concurrently) 10-year LFRI type Bonds to non-banking entities. The interest rate on these Bonds was based on the Libor rate plus an increment. Most of the Bonds were sold at an increment of 0.75 percentage points. Following the large decrease in short-term interest rates in 2002 and 2003, these Bonds, Libor based, became less attractive. As a result, sales of these Bonds decreased and buyers began to favor fixed-rate Bonds.

Summary

Israel Bonds has been operating for over fifty years, mainly among individuals and Jewish communities abroad. The organization is extremely important for the State of Israel as a source of external financing, particularly in periods when the government has difficulty in raising foreign exchange from external sources. Since its inception, Israel Bonds has raised $24 billion for the Israeli government, repaid $15 billion, and paid another $9.5 billion in interest. In 2003 Israel Bonds raised a record amount of $1.5 billion, while redemptions in the last four years amounted to two thirds of the redemptions of the entire previous decade. Cumulative interest payments up to the end of 2003 exceeded net sales (the Bond balance) by 0.4 billion dollars.

Annual sales increases over the years, was accompanied by increasingly market dictated pricing. Until the end of the 1980s a fixed interest rate of 4 percent was paid to individuals, unconnected to USD interest rates or changes in them. During the 1990s, especially after the introduction and development of additional sources for the government's external borrowing, the pricing of the Bonds began to match the yields on the government's other borrowing instruments. Today, the yield on Bonds is close to the yield on negotiable Israeli government USD bonds. The interest rate on Notes was lowered and its basis was changed from Prime to Libor. However, the interest rate on fixed-rate Bonds gradually increased and is now based on two parameters: the nominal interest rate on US Treasury Notes and the spread (above US Treasuries) on Israeli government negotiable USD bonds.

Israel Bonds is unique to the State of Israel and no other country has a similar organization. During recent years, when the Israeli government had difficulty in borrowing large amounts of money abroad, Israel Bonds proved itself as an organization that reacts rapidly to an increase in the government's foreign exchange requirements. The target population for the Bonds has changed over the years. During the initial years of the State, the organization operated among Jews, principally in the USA, who had a direct or indirect connection with the Holocaust in Europe. Today, the majority of Bond sales are directed at the next generation, whose considerations are based largely on the financial return that they are offered.

Appendix 1: Bond Sales and Redemptions

Year	Sales	Redemptions	Net Sales	Interest	Sales Net of Debt Service
	$ million				
	(1)	(2)	(3=1-2)	(4)	(5=3-4)
1951	60		60		60
1952	44	1	43	2	41
1953	36	2	34	4	30
1954	38	12	26	5	21
1955	39	10	29	6	23
1956	49	6	43	7	36
1957	50	9	41	9	32
1958	47	17	30	11	19
1959	54	22	32	12	20
1960	55	30	25	13	12
1961	59	31	28	14	14
1962	62	33	29	15	14
1963	73	56	17	16	1
1964	92	74	18	17	1
1965	93	66	27	19	8
1966	115	113	2	21	-19
1967	217	57	160	20	140
1968	169	105	64	27	37
1969	171	43	128	30	98
1970	215	35	180	34	146
1971	265	56	209	40	169
1972	279	109	170	48	122
1973	473	105	368	56	312
1974	305	141	164	73	91
1975	288	129	159	76	83
1976	317	165	152	83	69
1977	314	233	81	90	-9
1978	381	200	181	101	80
1979	379	200	179	128	51
1980	267	177	90	149	-59
1981	461	376	85	210	-125
1982	522	372	150	201	-51
1983	441	313	128	170	-43
1984	461	302	159	190	-31
1985	513	300	213	194	19
1986	598	355	243	202	41
1987	594	447	147	208	-61
1988	576	373	204	242	-39
1989	723	198	525	302	223
1990	660	437	223	343	-120
1991	880	460	420	357	63
1992	1,102	467	635	387	248
1993	1,011	649	363	383	-20
1994	977	733	244	419	-175
1995	896	651	245	484	-240
1996	982	752	230	493	-263
1997	1,000	554	446	522	-76
1998	924	828	96	493	-398
1999	872	271	602	479	122
2000	785	556	229	595	-366
2001	1,145	903	243	613	-370
2002	1,310	1,108	201	423	-221
2003	1,569	1,220	349	491	-142
Total	**24,011**	**14,862**	**9,149**	**9,527**	**-378**

Years/Decades	Sales	Redemptions	Net Sales	Interest	Sales Net of Debt Service
1951-1959	419	79	340	56	284
1960-1969	1,107	608	499	192	307
1970-1979	3,217	1,373	1,844	729	1,115
1980-1989	5,156	3,213	1,943	2,069	-126
1990-1999	9,304	5,801	3,502	4,360	-858
2000-2003	4,808	3,787	1,022	2,122	-1,100
Total	**24,011**	**14,862**	**9,149**	**9,527**	**-378**

Appendix 2: Bond Sales and Redemptions, by Bond Type

$ million

	Sales				Redemptions				Net Sales			
Year	Fixed-Rate	Floating-Rate	Notes	Total	Fixed-Rate	Floating-Rate	Notes	Total	Fixed-Rate	Floating-Rate	Notes	Total
1951	60			60					60			60
1952	44			44	1			1	43			43
1953	36			36	2			2	34			34
1954	38			38	12			12	26			26
1955	39			39	10			10	29			29
1956	49			49	6			6	43			43
1957	50			50	9			9	41			41
1958	47			47	17			17	30			30
1959	54			54	22			22	32			32
1960	55			55	30			30	25			25
1961	59			59	31			31	28			28
1962	62			62	33			33	29			29
1963	73			73	56			56	17			17
1964	92			92	74			74	18			18
1965	93			93	66			66	27			27
1966	115			115	113			113	2			2
1967	217			217	57			57	160			160
1968	169			169	105			105	64			64
1969	171			171	43			43	128			128
1970	215			215	35			35	180			180
1971	265			265	56			56	209			209
1972	279			279	109			109	170			170
1973	473			473	105			105	368			368
1974	305			305	141			141	164			164
1975	262		26	288	129			129	133		26	159
1976	258		60	317	165			165	93		60	152
1977	244		71	314	233			233	11		71	81
1978	264		117	381	200			200	64		117	181
1979	228		151	379	200			200	28		151	179
1980	77	2	189	268	157		20	177	-80	2	169	91
1981	246	39	176	461	320		57	377	-74	39	119	84
1982	280	50	192	522	308		65	373	-28	50	127	149
1983	152	84	204	440	214		99	313	-62	84	105	127
1984	232	68	161	461	202		100	302	30	68	61	159
1985	138	121	253	512	160		140	300	-22	121	113	212
1986	50	248	300	598	184		171	355	-134	248	129	243
1987	136	153	305	594	238		208	446	-102	153	97	148
1988	47	206	324	577	207		166	373	-160	206	158	204
1989	45	163	515	723	30		168	198	15	163	347	525
1990	63	189	408	660	170	19	248	437	-107	170	160	223
1991	101	317	461	879	182	21	257	460	-81	296	204	419
1992	163	617	322	1,102	162	70	234	466	1	547	88	636
1993	328	70	612	1,010	267	54	326	647	61	16	286	363
1994	432	42	503	977	173	89	471	733	259	-47	32	244
1995	425	123	348	896	91	176	384	651	334	-53	-36	245
1996	542	122	318	982	174	77	501	752	368	45	-183	230
1997	800	86	114	1,000	102	67	385	554	698	19	-271	446
1998	381	255	288	924	77	89	662	828	304	166	-374	96
1999	304	178	390	872	71	123	77	271	233	55	313	601
2000	396	213	176	785	187	236	135	558	209	-23	41	227
2001	727	143	275	1,145	198	181	525	904	529	-38	-250	241
2002	1,107	51	152	1,310	313	424	371	1,108	794	-373	-219	202
2003	1,404	45	120	1,569	410	511	298	1,219	994	-466	-178	350
Total	**12,894**	**3,585**	**7,530**	**24,009**	**6,657**	**2,137**	**6,068**	**14,862**	**6,237**	**1,448**	**1,462**	**9,147**
Years/Decades												
1951-1959	419			419	79			79	340			340
1960-1969	1,107			1,107	608			608	499			499
1970-1979	2,793		424	3,217	1,373			1,373	1,420		424	1,844
1980-1989	1,403	1,134	2,619	5,156	2,020		1,194	3,214	-617	1,134	1,425	1,942
1990-1999	3,539	1,999	3,764	9,302	1,469	785	3,545	5,799	2,070	1,214	219	3,503
2000-2003	3,634	452	723	4,809	1,108	1,352	1,329	3,789	2,526	-900	-606	1,020
Total	**12,894**	**3,585**	**7,530**	**24,009**	**6,657**	**2,137**	**6,068**	**14,862**	**6,237**	**1,448**	**1,462**	**9,147**

Appendix 3: Bond Balances by Bond Type

$ million

Year	Fixed-Rate	Floating-Rate	Notes	Total[1]
1951	60			60
1952	103			103
1953	137			137
1954	163			163
1955	192			192
1956	235			235
1957	277			277
1958	307			307
1959	339			339
1960	364			364
1961	392			392
1962	421			421
1963	438			438
1964	456			456
1965	483			483
1966	486			486
1967	645			645
1968	710			710
1969	838			838
1970	1,018			1,018
1971	1,227			1,227
1972	1,397			1,397
1973	1,765			1,765
1974	1,929			1,929
1975	2,062		26	2,088
1976	2,155		86	2,240
1977	2,166		156	2,322
1978	2,230		273	2,503
1979	2,258		424	2,682
1980	2,178	2	593	2,773
1981	2,104	41	712	2,857
1982	2,076	91	839	3,006
1983	2,014	175	944	3,133
1984	2,044	243	1,005	3,292
1985	2,022	364	1,118	3,504
1986	1,888	612	1,247	3,747
1987	1,786	765	1,344	3,895
1988	1,626	971	1,502	4,099
1989	1,641	1,134	1,849	4,624
1990	1,534	1,304	2,009	4,847
1991	1,453	1,600	2,213	5,266
1992	1,454	2,147	2,301	5,902
1993	1,515	2,163	2,587	6,265
1994	1,774	2,116	2,619	6,509
1995	2,108	2,063	2,583	6,754
1996	2,476	2,108	2,400	6,984
1997	3,174	2,127	2,129	7,430
1998	3,478	2,293	1,755	7,526
1999	3,711	2,348	2,068	8,127
2000	3,920	2,325	2,109	8,354
2001	4,449	2,287	1,859	8,595
2002	5,243	1,914	1,640	8,797
2003	6,237	1,448	1,462	9,147

[1]Does not include accrued interest and unredeemed bonds.