## Chapter 7 The Balance of Payments

- The current-account surplus amounted to \$1.6 billion in 2008, compared with \$4.5 billion in 2007.
- The development of the current account changed sharply during the year. In the first three quarters imports and exports continued to expand, but there was a turnaround in 2008:IV, as the real economic crisis worsened globally: exports and imports fell by about 10 percent (in dollar terms) from their average in the first three quarters of the year.
- The global economic crisis was exacerbated in 2008:IV and led to a \$1.2 billion fall in exports (excluding seasonal goods, aircraft, and diamonds); on the other hand, there was a \$1 billion decline in expenditure on imported fuel (compared with the average in the first three quarters of the year).
- There was marked nominal and real local-currency appreciation in 2008 (relative to Israel's trading partners), despite the moderation of economic activity in Israel. This reason for this exceptional development, involving the strengthening of the NIS alongside the moderation of economic activity, was that the global economic crisis affected Israel's economy to a lesser extent than it did other countries, giving rise to heightened net capital inflow in the first three quarters of the year.
- Against the backdrop of the global economic crisis, (gross) capital flows in the trading portfolios abroad of residents and in Israel of nonresidents diminished appreciably this year—in contrast with the long-term trends. Direct capital flows into and out of Israel have not yet been affected by the crisis, however.
- This year the Bank of Israel greatly increased its foreign reserves, and this improved the economy's resilience at the time of the global economic crisis. An international comparison of reserves in 2007 shows that their level in Israel is not exceptional relative to countries with a similar risk level.

#### 1. MAIN DEVELOPMENTS

The developments in Israel's balance of payments were overshadowed by the global crisis this year. The crisis, which began in the financial sphere, deteriorated greatly in September and rapidly impacted on the real economy (see Chapter 4). The global crisis was expressed sooner or later in almost every item of the balance of payments. Its effects on the capital account were evident already at the beginning of the year: at first there was a decline in capital flows in the trading portfolio abroad of Israelis and in Israel of residents, issues abroad by Israeli firms ceased almost completely (with one exception), and the extent of credit extended to residents by nonresidents plunged. In 2008:III, as the financial crisis worsened, there were extensive sales in the trading portfolio in Israel of nonresidents and abroad of residents. At the same time, apprehensions regarding the stability of foreign banks soared, leading to large-scale sales of residents' deposits in foreign banks. The global crisis affected real economic activity in 2008:IV, and Israel's exports plummeted in the wake of the steep drop in global demand. Nevertheless, the crisis led to an improvement in Israel's terms of trade: the sharp fall in the price of fuel and basic products which Israel imports improved the current account in 2008:IV.

The exacerbation of the crisis in 2008:IV led to a steep decline in global demand for Israel's exports, with a 35 percent fall in exports (annual rate), after accelerated growth till then. However, the effect of the crisis on exports was evident throughout 2008, with a marked slowing of the growth rate of exports, excluding chemicals and medicines, during the year, and a steep drop in 2008:IV. The slowing of exports (excluding chemicals and medicines) in the first three quarters of 2008 reflected the global economic slowdown during the year, the fact that Israel had been close to full employment,<sup>1</sup> and local-currency appreciation. Despite the slowdown, imports grew markedly in quantitative terms, and the effect on them of the slump became evident only at the end of the year. Soaring fuel prices in the last two years made a notable contribution to reducing the current-account surplus in that period. Had it not been for the dramatic rise in spending on imported fuel in the first three quarters of the year it is reasonable to assume that the current-account surplus would not have been reduced, and would even have risen.

The reason for the strengthening of the NIS in 2008, against the backdrop of the moderation of economic activity (and the slowing of exports)—in itself an unusual occurrence—was that the effect of the global economic crisis in Israel was less severe than it was in other developed countries. The exchange rate is a relative index, reflecting not only present conditions but also future expectations. The overriding assessment in the capital and money markets for most of the period was that the effect of the global economic crisis in Israel was in other western economic crisis in Israel would be more moderate than it was in other western economics. The assessment was that the rise in GDP in some western

<sup>1</sup> The low unemployment rate indicates that the impediment to the expansion of production in Israel in the first part of the year was on the supply side.

The severe effects of the global crisis on the capital account were very evident in 2008, and in the fourth quarter they also affected the current account.

The exacerbation of the crisis in 2008:IV led to both a steep decline in demand for Israel's exports, and to a reduction in import prices.

The NIS strengthened in 2008 because the effect of the global economic crisis on Israel's economy was less severe than it was on other advanced economies.

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economies was led by low interest rates and innovative financial instruments, which caused the real-estate bubble, zero private savings, and current-account deficits. In Israel, on the other hand, the expansion of GDP expressed a process of sustainable growth: the bank credit market was conservative, activity in the real-estate market was moderate, private saving was reasonable, and there was a surplus in the current account. The optimistic appraisals regarding Israel's economic vulnerability were reflected in share-price indices: while these declined considerably during the year, their yields exceeded those on share-price indices in the developed countries. As stated, the optimistic assessments led to the strengthening of the NIS.

The optimistic assessments regarding the state of Israel's economy were also expressed in capital inflow: foreign investors continued the inflow into Israel in 2008:I, while residents repatriated some of their investments abroad because of their apprehensions with regard to the crisis. In view of the marked capital inflow and the strengthening of the NIS, and also as a result of the low level of foreign reserves relative to the foreign debt and the needs of the economy,<sup>2</sup> the Bank of Israel announced its intention of buying extremely large amounts of foreign currency. The capital inflow continued in Q2 and Q3 in the shadow of fears that foreign banks would collapse. In the middle of Q3 the global crisis was exacerbated and there was a switch in investors' expectations and in capital flows: foreign investors began to sell large amounts of their investments in Israel. This trend was particularly evident in October, after which the effective NIS exchange rate and the yields on the Tel Aviv Stock Exchange (TASE) weakened relative to other currencies and stock markets. This weakness reflected the decline in optimism regarding Israel's future-inter alia, because of apprehensions regarding the stability of Israeli firms operating abroad, and the sharp drop in exports in 2008:IV.

Another channel through which the crisis abroad reached Israel was the erosion of the value of residents' assets abroad. This channel functioned moderately because (on average) residents acted cautiously with regard to their foreign investments: they sold capital assets (shares) to nonresidents, replacing them with foreign debt assets (bonds) whose risk level is generally lower. This circumspection paid off in 2008: losses incurred by Israeli investors as a result of their investments abroad were lower than those of foreign investors in Israel, even though the riskiness of foreign debt assets investors, together with the current-account surplus, has led to the decline in Israel's foreign debt in recent years, thereby serving to lower the risk of a financial crisis.

Israel's net external short-term debt, which is one of the salient indices of the ability to cope with liquidity constraints, declined in 2008. This improvement stemmed from the marked rise in the Bank of Israel's foreign reserves. The expansion of the reserves increases a central bank's freedom to operate during a crisis (e.g., if the banking system

In the last few years Israelis sold capital assets (shares) to nonresidents, replacing them with foreign debt assets (bonds). This reduced Israel's foreign debt thereby lowering the risk of a financial crisis.

<sup>&</sup>lt;sup>2</sup> The definition of the desired level of foreign reserves is derived from their possible uses by the government and the Bank of Israel (see Investing the Foreign Reserves, Report for 2007, Foreign Currency Department, Bank of Israel [Hebrew]).

Table 7.1			
The Balance	of Payments,	1996-2	2008

				(\$	billion)
	1996-2000	2001-2002	2003-2006	2007	2008
(1) The current account	-2.7	-1.6	3.5	4.2	1.6
The trade balance	-3.9	-3.2	-0.2	-2.6	-3.8
The goods account	-5.2	-4.4	-3.6	-5.9	-7.7
Goods exports	24.6	27.5	37.3	50.1	56.6
Goods imports	-29.7	-31.9	-41.0	-55.9	-64.3
The services account	1.2	1.1	3.4	3.3	3.9
Services exports	11.1	12.5	16.6	21.1	23.8
Services imports	-9.9	-11.4	-13.2	-17.8	-19.9
The income account	-5.0	-5.1	-2.8	-0.5	-3.2
Net investment income <sup>a</sup>	-2.4	-2.3	-0.8	1.7	-0.2
Residents' income	2.3	2.4	4.6	10.3	7.7
Nonresidents' income	-4.8	-4.8	-5.5	-8.6	-7.9
Compensation of employees	-2.6	-2.7	-2.0	-2.2	-3.0
of which to foreign workers	-1.9	-2.6	-2.0	-2.2	-2.7
to Palestinians	-0.8	-0.3	-0.3	-0.6	-0.9
Current transfers	6.2	6.7	6.5	7.3	8.6
(2) The capital account, net	0.6	0.5	0.7	0.8	1.1
(3) The financial account <sup>b</sup>	2.6	0.4	-6.2	-2.3	-5.3
Direct investments, net	1.5	2.2	0.3	3.2	2.8
Israelis' investments abroad	-1.4	-0.8	-6.1	-6.8	-7.7
Nonresidents' investments in Israel	2.9	3.0	6.4	10.0	10.5
Portfolio investments	2.6	-0.9	-0.4	-2.5	-1.4
Israelis' investments abroad	-0.9	-1.9	-5.5	-3.9	-1.7
Nonresidents' investments in Israel	3.4	1.1	5.2	1.4	0.3
Other investments, net	1.7	-1.4	-5.2	-4.7	7.6
Government	0.0	-0.1	0.1	-0.5	-1.5
Banks	1.1	0.7	-4.3	1.9	7.1
Other sectors	0.6	-2.0	-0.9	-6.0	2.0
Financial derivatives	0.1	0.0	0.0	0.0	-0.2
Change in the foreign exchange					
reserves <sup>c</sup>	-3.3	0.4	-0.9	1.7	-14.2
(4) Statistical discrepancies	-0.5	0.7	2.0	-2.7	2.6

<sup>a</sup> Including interest payments and receipts on loans, deposits and bonds, dividends, and undistributed profits.

<sup>b</sup> A negative sign indicates capital outflow.

<sup>c</sup> A negative sign indicates a rise in the level of the reserves.

SOURCE: Central Bureau of Statistics.

needs help), and thus minimizes the risk that a crisis will develop or be aggravated. An international comparison shows that Israel's foreign reserves are not unusual in comparison with those of countries with a similar risk level (see Box 7.2).

Despite the grave global economic crisis, the flow into Israel of direct foreign investment and of investment abroad by residents did not abate in 2008. The relative stability of direct investment in 2008 may be because it is coordinated with real economic activity, which declined only at the end of the year, rather than with financial activity, as well as because some transactions recorded in 2008 had been signed in 2007.

Israel has a marked comparative advantage in technology and human capital, as is particularly evident in the large share of electronics exports in its total exports. A comparison of the share of electronics in the total exports of Israel and the OECD countries shows that Israel is second only to Ireland in this respect (Box 7.1), and has managed to hold onto this leading position since the 1990s. Additional evidence for Israel's comparative advantage in technology and human capital is the fact that this is particularly in evidence in exports of high-tech services, since these require greater intensity of human capital and R&D than high-tech products.

## 2. THE CURRENT ACCOUNT

## a. Main developments

The surplus on current account contracted severely in 2008 and came to \$1.6 billion, 1 percent of GDP (Table 7.1). Developments in the current account and the factors that caused them were so different between the first three quarters and the fourth one, when the financial crisis spread to the real economy, that the year cannot be examined en bloc; instead, developments during the year need to be studied. The deterioration of the current account in the first three quarters traces to two factors: an upturn in the civilian trade deficit, prompted by rising world prices and the worsening of Israel's terms of trade, and the deficit on income account, given the decrease in world interest rates. Some of these deficit increases were offset by an upturn in the surplus on transfer account. In Q4, when the world crisis took a strong turn for the worse, the resulting slump in world demand affected Israel's exports. However, two factors—a steep decrease in fuel prices, which translated into an improvement in Israel's terms of trade, and expectations of ill effects of the crisis for the domestic market—caused imports to decrease at a faster rate than exports did, allowing the civilian trade deficit to fall and the current-account surplus to rise.

The crisis is expected to affect Israel severely due to prognoses of a steep decline in global trade, given the large share of exports in Israel's GDP and the contribution of exports to growth in recent years. In the past, a 1 percent decline in foreign demand caused Israeli exports to contract by 1.5 percent.<sup>3</sup> However, the economy's favorable point of departure and positive developments expected in 2009 may slightly soften the blow to the economy as the crisis intensifies. The point of departure is manifested, among other things, in the large current-account surplus, occasioned by massive export growth in recent years, and the narrowing of the output gap,<sup>4</sup> reflected in real appreciation among other ways. The increase in exports traces partly to the upturn in Israel is second only to Ireland with regard to its comparative advantage in high-tech and human-capitalintensive exports, and has managed to hold onto this leading position since the 1990s.

The surplus on current account contracted severely in 2008 and came to \$1.6 billion, 1 percent of GDP

The crisis is expected to affect Israel severely. However, the economy's favorable point of departure and positive developments expected in 2009 may slightly soften the blow to the economy as the crisis intensifies.

<sup>&</sup>lt;sup>3</sup> See 2007 Bank of Israel Annual Report, Box 7.1.

<sup>&</sup>lt;sup>4</sup> See Chapter 2, GDP, Uses, and the Principal Industries.

total global trade but is also fueled by faster growth in demand for products in which the Israeli economy specializes (those whose share of Israel's exports is on average larger than the average share of those products in world trade), allowing Israel's share in global trade to grow. It is premature, of course, to say whether the downturn in trade will affect all product groups equally, but the global-trade data available at the present writing show that the products in which Israel specializes , i.e., high-tech products, are not suffering from a bias, unlike the crisis at the beginning of the current decade. Assuming that demand for these products remains relatively strong—or declines at a relatively gentle pace—the Israeli economy will be less severely affected than other economies. Notably, the developments expected in 2009 include an improvement in terms of trade due to the decrease in, and the effect of the world recession on, fuel prices, and the opening of a new Intel plant, which is expected to boost exports by \$2 billion.

The review year was noted for steep real appreciation as reflected in all conventional indices. After depreciation in 2000–05, appreciation began in 2006 as the output gap verged on elimination and demand for Israeli goods increased, causing cost per unit of GDP to rise. Accordingly, prices rose more quickly in Israel than in the country's trade partners. Capital inflow contributed to the real appreciation as concern about the global crisis intensified, because Israel was perceived as a safer place than others. (For details, see the Financial Account section of this chapter.) This flow accelerated the pace of nominal appreciation and led to real appreciation in view of price inelasticity and a lag in the market's response to changes in the nominal exchange rate. In Q4, the appreciation trend was arrested as the decline in global demand and the Bank of Israel's intervention in the foreign-currency market brought on nominal depreciation and, in turn, real depreciation.

## b. The trade balance

The trade deficit was \$3.8 billion, \$1.2 million greater than in 2007. Since most defense imports are paid for by the United States Government, this section of the Report focuses on developments in the civilian trade balance and its components, the goods account and the services account. The civilian trade deficit in 2008 was \$8.5 billion. The deficit on civilian goods account (excluding ships, aircraft, and diamonds) increased to \$12.6 billion (Table 7.2). Most of the increase in this deficit over the past two years traces to a massive upturn in the value of civilian imports, occasioned largely by the worsening of the terms of trade (a price effect) plus the real currency appreciation (a quantity effect).<sup>5</sup> The crisis, which gathered momentum toward year's end, drove world prices down and dampened Israel's quantity imports in view of expectations of adverse domestic economic effects. Consequently, the pace of decline was greater in imports than in exports, causing the deficit on civilian goods account

The review year was noted for steep real appreciation, as reflected in all conventional indices.

The civilian trade deficit in 2008 was \$8.5 billion. Most of the increase in the past two years traces to a massive upturn in the value of civilian imports, occasioned largely by the worsening of the terms of trade.

<sup>&</sup>lt;sup>5</sup> The short-term elasticity of imports to the real exchange rate is greater than the short-term elasticity of exports due to the composition of Israel's trade. For details, see Y. Lavi and A. Friedman (2006), "Real Exchange Rate and Israel's Foreign Trade," Bank of Israel Review 76 (in Hebrew).

to narrow. In contrast, the services account had a surplus of \$4 billion. This surplus has been growing since the mid-1990s due to rising global demand for services in which the Israeli economy specializes, mainly in high-tech (R&D, computerization, and ICT).

The Civilian Trade Balance, 2001–08								
				(sease	onally	adjuste	ed, \$ bi	llion)
						20	08	
	2001-02	2003-06	2007	2008	Ι	II	III	IV
Goods and services								
Trade balance	-3.4	-2.0	-5.1	-8.5	-1.6	-2.5	-3.1	-1.2
Exports	31.9	41.9	56.3	66.5	16.9	16.8	17.0	15.8
Imports	35.2	43.9	61.4	75.0	18.5	19.3	20.2	17.0
Civilian goods accoun	t (excluding s	hips, aircraf	t and dia	monds)				
Goods balance	-4.5	-5.4	-8.1	-12.6	-3.1	-3.4	-3.8	-2.4
Exports	19.4	25.3	35.4	42.8	10.5	11.0	11.2	10.0
Imports	23.9	30.7	43.5	55.4	13.6	14.4	15.0	12.3
Services account								
Services balance	1.2	3.4	3.3	4.1	1.4	0.9	0.6	1.2
Exports	12.5	16.6	21.1	23.7	6.4	5.8	5.8	5.8
Imports	11.3	13.1	17.8	19.7	4.9	4.9	5.1	4.6
SOURCE: Central Burea	u of statistics							

## Table 7.2

to the deficit.

## SOURCE: Central Bureau of statistics Developments in the civilian goods account may be separated into price effects and quantity effects. Since Israel imports more than it exports, identical increases in export prices and import prices widen the deficit on civilian goods account. Assuming that the world increase in prices was 15.5 percent in the review year,<sup>6</sup> this factor accounted for about \$1 billion of the increase in the deficit (Table 7.3, Part A). Importantly, this estimate is accurate to the near term but does not take into account the response of quantities to price developments, which usually takes place to a longer term. Apart from the overall price increase, import prices rose more quickly than export prices in 2008; the resulting deterioration in Israel's terms of trade added another \$2.5 billion

Import prices rose more quickly than export prices in 2008; the resulting deterioration in Israel's terms of trade added \$2.5 billion to the deficit.

<sup>&</sup>lt;sup>6</sup> This premise is based on the average rate of increase of Israel's exports and import prices, weighted by exports and imports in total trade in 2007. For a comparison, a similar calculation was performed on the basis of WEO data. In 2008, according to the WEO, world prices of goods (excluding fuel) increased by 13.5 percent and fuel prices by 50 percent. Since Israel's fuel imports in 2007 accounted for about 10 percent of its trade, the price increase relevant for Israel was around 16 percent.

The rapid growth of the trade deficit in 2007– 2008 was caused by the increase in fuel prices, which caused the terms of trade to deteriorate badly. Net of fuel prices, the terms of trade improved in 2008 relative to 2007. The rapid growth of the trade deficit in 2007–08 was abetted by the increase in fuel prices, which caused the terms of trade to deteriorate badly. Net of fuel prices, the terms of trade improved in 2008 relative to 2007. The changes in fuel prices had such a powerful effect because Israel does not produce fuel and its demand for fuel is inelastic. After two years of rapid increases, fuel prices plummeted by 75 percent in late 2008 and then leveled off. Since the preceding dramatic upturn in prices proved temporary, its impact should be assessed by examining developments in the civilian trade balance, net of fuel. Over the past decade, quantity imports of fuel increased at a relatively stable annual rate of 3.5 percent (Figure 7.1), trailing the growth rate of product, evidently due to technological improvements. During that time, changes in the total value of Israel's fuel imports were dictated by changes in price.

#### Table 7.3

## The Effects of the Terms of Trade on the Civilian Trade Account (excluding Ships, Aircraft and Diamonds), 1996–2008

						(\$ million)
	Total change in civilian trade balance <sup>a</sup>	Global price change	Terms of trade	Volume change	Terms of trade excluding fuel	Contribution of fuel to the terms of trade
1996-2000	118	63	-105	-1,555	39	-144
2001-2002	380	61	-44	-229	-154	110
2003	201	-240	-780	817	-579	-201
2004	-990	-268	-928	329	-352	-577
2005	-1,408	-249	-983	-126	330	-1,314
2006	796	-273	-583	1,629	269	-852
2007	-2,278	-359	-1,004	-745	-565	-439
2008	-4,499	-1,020	-2,529	-606	252	-2,781

<sup>a</sup> The total change incorporates the price change and the volume change and is the multiple of the two. The price changes are shown in the table.

SOURCE: Based on Central Bureau of Statistics data.

Due to the inelasticity of fuel demand, the pass-through of fuel prices to the civilian trade balance was stronger than that of the prices of products in which demand elasticity was greater. Figure 7.2 shows Israel's terms of trade including and excluding fuel. Thus, fuel imports account for 6.5 percent of trade and exports of fuel and distillates account for about 1 percent. Since Israel is a net importer of fuel, fuel prices enter the terms of trade in the denominator. To illustrate the relation between terms of trade and fuel prices, Figure 7.2 also presents a series of the inverse of fuel prices that shows the close correspondence of terms of trade and fuel prices. The trade data net of fuel elicit a more stable long-term index and, in 2008, show an improvement in Israel's terms of trade that added \$250 million to the civilian trade surplus. According to this estimate,



SOURCE: Based on Central Bureau of Statistics and IMF data.

the cost of the deterioration in terms of trade originating in developments in fuel prices was \$2.7 billion in 2008 (Table 7.3, Part B). The IMF outlook for 2009<sup>7</sup> foresees a 50 percent decrease in fuel prices relative to 2008. If all other factors remain constant, this will enhance Israel's terms of trade perceptibly and improve the civilian trade balance by \$4 billion.

The currency composition of Israel's trade also helped to translate external developments into the deterioration of terms of trade, but this effect was secondary to the developments mentioned above. In the review year, the USD lost ground to the euro and, since the USD commands a larger weight in Israel's exports than in its imports, the depreciation had a deleterious effect on Israel's terms of trade. The extent of the effect of USD-EUR cross-currency exchange rates was about \$300 million in 2008. Notably, in the last few months of the year the USD gained on the rest of the world's currencies while whereas the NIS lost ground to them, against the background of the Bank of Israel's intervention in the foreign-currency market and the market's response to it.<sup>8</sup>

The current-account surplus reflects the disparity between saving and investment. The narrowing of the surplus in 2008 expresses a 2 percent decrease in the national savings rate (share of savings in total national income) and a 1 percent decline in the investment rate. The decrease in the national saving rate was powered by a downturn in public The IMF outlook for 2009 foresees a 50 percent decrease in fuel prices relative to 2008. If all other factors remain constant, this will enhance Israel's terms of trade perceptibly and improve the civilian trade balance by \$4 billion.

<sup>7</sup> World Economic Outlook, Update, January 2009.

<sup>&</sup>lt;sup>8</sup> Yinon Gamrasni, Daniel Nathan, and Roi Stein (2008), "Examination of the Effect of the Intervention in the Foreign-Currency Market," Bank of Israel, internal paper (in Hebrew).

saving, occasioned by a decrease in tax revenue, partly offset by a gentle increase in private saving reflecting the negative relation between public and private saving<sup>9</sup> and expectations of the impact of the crisis on the economy. The downturn in public saving in 2008 augurs the reversal of the trend. Thus, after the upturn in public saving since the end of the previous recession (2004) allowed the national savings rate to rise for several years, the decline in public saving in 2008 left Israel with a national savings rate that resembled the norm among developed countries.

## c. Exports

The volume of goods and services exports grew by 7.7 percent overall and, excluding diamonds, by 10.5 percent (Table 7.4). In quarters 1–3, nondiamond exports expanded at a brisk 20 percent rate relative to 2007, whereas in Q4, as the financial crisis spilled into the real markets, they contracted at a 30 percent annualized pace.

## Table 7.4

	2008		Volu	Volume change (p		(percent)	
	Composition		2001-	2003-			
	(percent)	\$ billion	2002	2006	2007	2008	
Goods and services	100	80.4	-6.5	8.4	8.4	5.1	
Goods and services excluding							
diamonds	88	70.8	-8.1	10.2	9.0	9.0	
Manufacturing exports (excluding							
diamonds) <sup>a</sup>	50	40.1	-5.2	9.3	12.2	7.1	
High-tech industries	21	17.2	-10.2	13.2	10.3	8.1	
Medium high-tech industries	16	12.6	1.6	3.4	19.6	5.6	
Medium low-tech industries	10	8.0	-0.1	8.7	10.6	8.7	
Low-tech industries	3	2.3	-2.7	2.9	-1.2	-2.6	
Diamond exports	12	9.6	2.0	-1.2	3.6	-25.0	
Services exports	30	23.8	-10.4	11.8	7.5	11.8	
of which Tourist services <sup>b</sup>	3	2.7	-47.8	16.1	8.2	33.8	
Other services <sup>c</sup>	18	14.8	-3.4	12.7	4.8	7.3	

<sup>a</sup> Foreign trade data. These data are not consistent with the balance of payments data because in this table they do not include exports to the Palestinian Autonomy and also because of statistical adjustments.

<sup>b</sup> After deducting expenditure in Israel by foreign workers.

<sup>c</sup> According to balance of payments definitions, excluding insurance services and transportation services.

SOURCE: Central Bureau of Statistics.

The decrease in Q4 occurred at all levels of technology intensity and corresponded to the slump in world demand. Figure 7.3 illustrates this and shows the rapid increase in exports of high-tech and mixed high-tech industries in the first part of the year, corresponding to be continued growth of imports by Israel's main trade partners. In

<sup>9</sup> This relation is described in detail in Chapter 2.

In quarters 1–3, nondiamond exports expanded at a brisk 20 percent rate relative to 2007; in Q4, as the financial crisis spilled into real markets, they fell at a 30 percent annualized pace. The decrease in Q4 occurred at all levels of technology intensity and corresponded to the slump in world demand. Q4, U.S. and European manufacturing imports fell by 24 percent (quarterly rate) and Israel's exports to these countries slumped in response.



Exports of services increased by 15 percent, powered by tourism and other services, which expanded by 24 percent and 11 percent, respectively. In recent years, total exports of tourism services have been converging toward levels that were common preceding the onset of the intifada in 2000, because even though the number of inbound tourists has increased since then, spending per tourist has declined. The increase in exports of other services traces to services classified as technology-intensive, which account for more than half of Israel's services exports: R&D services (26 percent of total service exports), computer and IT services (27 percent), and communication services (3 percent). About half of exports of services classified as high-tech are destined for the United States and about one-fourth are destined to Europe, two markets badly

About half of exports of technology-intensive services are destined for the United States and about one-fourth are destined to Europe, two markets badly affected by the crisis. Even so, Israel's services exports did not decrease significantly in Q4. affected by the crisis. Even so, Israel's services exports did not decrease significantly in Q4.

The export growth in the first part of the year stems from the growth in global trade and the upturn in Israel's share in it. Each element in this increase may be separated into price and quantity components, it being assumed that the ability of quantity to respond to price is limited in the short term. Figure 7.4, showing the contribution of each component to the total increase in Israel's exports in recent years, demonstrates that both components had upward effects on exports in 2008.<sup>10</sup> The increase in world demand that the Israeli economy can exploit, calculated as the increase in world imports weighted by Israel's trade partners in 2007, induced a 12.6 percent upturn in Israeli exports in the review year—a 4.5 percent quantity increase and an 8.1 percent price increase. The export growth surpassed the rate of increase in world demand, largely because the quantity increase in exports exceeded the growth rate of global trade. Thus, export growth in 2008 gave Israel a larger share in global trade. Another salient development in 2008 was the contribution of the increase in world commodity prices to the total increase in Israeli exports beyond the upturn in world trade. This happened due to an increase in the prices of goods in which the proportion of Israeli exports exceeds the proportion in world trade-foremost petrochemical products.

Israel's penetration of international markets grew in the past three years, as the increase in demand for goods in which the Israeli economy specializes surpassed the average increase in world demand. In much the same way, the crisis at the beginning of this decade caused more harm to Israel's exports than the world average because it occurred in a domain in which the Israeli economy specializes. This specialization, leading to differences in trend between Israeli trade and world trade, may be good or bad for the Israeli economy when a global crisis erupts. Thus, if the rapid increase in Israel's exports in the past three years reflected a convergence of the global economy to an equilibrium in which the share in global consumption of products in which Israel specializes surpasses the current rate, we would expect the Israeli economy to absorb less of a blow than the world economy. If, however, the world economy was already in equilibrium when the increase in demand for Israeli products took place, and if the increase in exports originated in high elasticity of demand for Israel's export products relative to world income, then the foreseen decrease in income as world crisis worsens may reduce Israeli exports at a faster pace than the contraction of world trade.

The accelerated growth of Israeli exports in the past three years signaled an improvement in Israel's competitiveness and was a leading factor in real appreciation during this time. The causal relationship in the opposite direction, the effect of the real appreciation on exports, was weaker in the short term for reasons including the specialization of the Israeli economy in high-tech-intensive goods and services,<sup>11</sup> which are less sensitive to the real exchange rate. The appreciation had little effect

<sup>11</sup> See Box 7.1.

Israel's penetration of international markets grew in the past three years, as the increase in demand for goods in which the Israeli economy specializes surpassed the average increase in world demand.

The accelerated growth of Israeli exports in the past three years signaled an improvement in Israel's competitiveness and was a leading factor in real appreciation during this time.

<sup>&</sup>lt;sup>10</sup> The 2008 data are based on the first period of the year and the IMF outlook.



on these industries because they are highly profitable and many of their enterprises belong to multinational firms.<sup>12</sup> It was more harmful to traditional industries.

Export growth in 2008, as in 2007 but unlike previous years, was led by a 30 percent increase in the exports of mixed-tech industries, particularly petrochemicals and pharmaceuticals. Apart from these industries, the trend data point to flat performance in Q3, in view of the narrowing of the output gap and full employment,<sup>13</sup> and a dramatic decrease in Q4, as the crisis escalated. The steep increase in the exports of these goods in the first part of the year traces to an upturn in the prices of mixed industries'

<sup>&</sup>lt;sup>12</sup> See Y. Sofer (2005), "Measuring Israel's Real Exchange Rate and Its Effects on Exports and Imports," Issues in Foreign Currency (in Hebrew).[כן]?]

<sup>&</sup>lt;sup>13</sup> See the Labor Market chapter.

products, and in Israel it offset some of the damage caused by the steep nominal appreciation and the increase in raw-materials prices<sup>14</sup> on exporters' profitability.

The combination of rapid growth in mixed-technology exports, foremost petrochemicals, as against stable growth in high-tech exports led to the recomposition of Israeli exports. Until 2006, the increase in high-tech exports had been the main engine of export and GDP growth; in the past two years, the growth rate of high-tech exports has been slowing and has been overtaken by that of the mixed-technology industries. While high-tech exports still command the largest share, meaning that they still figure importantly in total export growth, the accelerated increase in mixedtechnology exports has reduced its weight. The strong share of Israeli high-tech exports relative to the average share of high-tech in world exports reflects Israel's comparative advantage in the high-tech field. (See Box 7.1.) The OECD and economists around the world term the relation between the rates the "revealed comparative advantage." To examine how Israel's comparative advantage in high-tech manufacturing and services has been developing, an index comparing the share of exports of these goods and services in total Israeli exports with the OECD average has been calculated. The results of the index for 1995–2006 are presented in Box 7.1. Initial data on world trade in 2007-2008 show that this index has been relatively stable in the case of Israel even though the share of high-tech in its exports has been falling, since the OECD countries recorded a similar decrease.

of Israeli high-tech exports relative to the average share of high-tech in world exports reflects Israel's comparative advantage in the high-tech field.

The strong share

#### Box 7.1

# Israel's revealed comparative advantage in the export of high-tech goods and services

Israel's economy is considered to have a comparative advantage in the export of high-tech goods. This box presents an index which measures this and makes it possible to examine it over time, while distinguishing between the export of goods and of services. According to the index, Israel's comparative advantage in the high-tech sphere puts it in second place after Ireland among the OECD countries. An examination of the index over time shows that Israel has maintained its leading position since the 1990s, as have most of the developed countries. Israel's comparative advantage in the export of high-tech services is greater than it is in the export of high-tech goods, apparently due to the greater share of human capital (the indicator here is the return to labor) required for the production of services than goods.

<sup>&</sup>lt;sup>14</sup> For a survey of the damage to exporters' profitability, see Bank of Israel, insert, [] Recent Economic Developments 122, May–August 2008.

## **Revealed comparative advantage index**

Manufacturing in Israel is biased towards high-tech. This is expressed in various parameters, such as investment in Israel and production there by international high-tech companies,<sup>1</sup> the economic growth of recent years, which was led by the export of advanced technology but also caused Israel's economy to be over-exposed at the beginning of the decade to the crisis which originated in the high-tech industry. Till now there has not been a uniform and symmetric index of this comparative advantage which makes it possible to examine Israel's international ranking and its development over time with regard to this comparative advantage, or to assess the effect of government policy on it. The accepted method of quantifying a comparative advantage elsewhere in the world was first proposed by Bela Balassa (1965), and is currently used by the OECD to examine comparative advantage with respect to specific products. The index, which is published on the OECD website and is known as the Revealed Comparative Advantage Index, examines the ratio between the share of the product in a country's exports and its average share in the exports of the OECD countries. A value higher than one indicates a country's revealed comparative advantage, while a value of less than one indicates a revealed comparative disadvantage.

Below we use the index to examine whether the share of exports of high-tech products in Israel's total exports is indeed higher than the OECD average, as well as reviewing the development of the index over time.<sup>2</sup> For the purposes of the examination, we examined export figures for the OECD countries and Israel to a six-figure level.<sup>3</sup> Each product was classified by intensity category (high-tech, mixed high-tech, mixed traditional, and traditional) in accordance with the OECD's definitions.<sup>4</sup> Goods were classified by category on the basis of the share of expenditure on R&D in each product's total value added (or total output). Services were classified by category on the basis of the Eurostat organization's

<sup>4</sup> Classification of Manufacturing Industries Based on Technology, OECD Science, Technology and Industry Scoreboard, Towards a Knowledge-Based Economy, Science and Innovation, OECD 2001, annex 1, pp. 137–140.

<sup>&</sup>lt;sup>1</sup> An example of this is the world's largest manufacturer of processors, which established its first plant outside the US in Israel and next year is expected to transfer much of the production of its latest processor to Israel.

<sup>&</sup>lt;sup>2</sup> The CBS (Central Bureau of Statistics) publishes figures for Israel's exports according to technological intensity. The current investigation uses UN data in order to be able to classify items by their intensity to a greater resolution and on the basis of uniform data for all countries. Note that on the basis of the CBS figures Israel's comparative advantage is greater, but this does not alter its ranking.

<sup>&</sup>lt;sup>3</sup> e classification was made using the HS96 method. The trade data were taken from the UN's database of traded goods, UN COMTRADE ONLINE, the UN's figures on traded services, UN SERVICETRADE ONLINE, and the OECD's figures on traded services.

publication.<sup>5</sup> The services which were classified as knowledge-intensive were R&D services, information technology services, and communications services. The goods and services were then organized by intensity, and the share of each intensity group in a country's total exports was calculated. The ratio between this share and the average for the OECD countries in 2001 and 2006 is shown in Figure 1, and the ranking of the countries is given on the basis of their revealed comparative advantage in exports of high-tech products in 2006.

Israel is ranked second, after Ireland, among the OECD countries, and the share of exports classified as high-tech in its total exports is double the average in the developed countries. Despite a certain correlation66 between the standard of living in a country and its leading position in the high-tech sphere, this relation is not one-to-one: there are countries with relatively high per capita GDP which are in the lower part of the scale (Switzerland, Norway) and countries with relatively low per capita GDP which are in the upper part (Hungary, Korea). It can be seen that Israel has improved its position in hightech exports. This means that the share of high-tech exports grew more quickly in Israel than in the developed countries. The gap between Ireland, which is in first place, and the other countries has narrowed in the last ten years, but it is still the leader in the field.



<sup>5</sup> High-Tech Knowledge-Intensive Services, issue no. 18/2008, Statistics in Focus, Eurostat.

<sup>6</sup> The correlation was examined and found not to be significant.

## High-tech goods and knowledge-intensive services

The index below makes no distinction between high-tech goods and services. This distinction is needed because of the different production processes in these fields, especially with reference to goods and services which are defined as high-tech. An examination of the composition of inputs, as shown in Figure 2, reveals that there is a

larger share of (imported) traded inputs in the production process of high-tech goods (electronic components and electronic communications equipment) than in the parallel process of the production of high-tech services (software and research). By contrast, the return to labor in the production of hightech services is greater than it is in the production of high-tech goods. Since imported intermediates are more tradable than labor and human capital, we would expect to find greater specialization in the production of high-tech services and larger differences between countries, because that production process is more tradable than it is



with regard to goods. Furthermore, we would expect to find a higher correlation between the revealed comparative advantage in exports of high-tech services and the standard of living (measured here as per capita GDP).

The figures below show indices for goods and services separately. A separate examination of the revealed comparative advantage does in fact show that there are greater differences between countries in the production of services than of goods. In addition, the correlation between a comparative advantage in high-tech services and a country's standard of living was found to be significant, while that between a comparative advantage in high-tech goods and the standard of living was not. Another interesting development concerns the decline in the comparative advantage of Israel and Ireland in the production of high-tech services,<sup>7</sup> as those countries were the leaders in the field throughout the period examined. Israel's decline is connected with the rise in the share of tourism

<sup>7</sup> The dramatic decline in Ireland occurred in 2003, with the rise of the Netherlands; since then the index has remained fairly stable.



exports in total services exports, after this had fallen drastically in the wake of the Intifada at the start of the decade. After taking this factor into account, there is considerable stability in the comparative advantage of exports of high-tech services. Exports of start-ups are recorded in Israel as exports of R&D services; note that even after exports are eliminated from the data for Israel<sup>8</sup> its comparative advantage in the high-tech sphere persists.

<sup>8</sup> We do not have data for exports of start-ups elsewhere.

## d. Imports

The volume of goods imports (excluding ships, aircraft, diamonds, and fuel) increased on annual average by 6.5 percent relative to 2007 (Table 7.5). In the first three quarters of the review year, in contrast, imports were constant at the high level of the end of the previous year but slumped at year's end as the crisis worsened. Several factors underlay import developments during the year. The decline in current income and its aftermath, detriment to the public's portfolio of financial assets, slowed the growth rate of imports relative to the previous year. However, the increase in domestic prices relative to import prices (Table 7.6), the reflection of which may also be seen in the real appreciation, prompted consumers to shift from domestic products to imports (a substitution effect),<sup>15</sup> keeping the level of imports high. The substitution effect was also evident in 2007, but since the specter of the crisis was less evident then, the growth rate of imports was higher. Given the opacity of the implications of the crisis, import quantity did not contract until in Q4, when the worsening of the crisis induced a 15 percent decrease in total imports of goods and services. Although the retreat of world commodities prices from their peak began back in Q3, the quantity decrease in Israel's imports of goods did not take place until the end of Q4, as stated.

The volume of goods imports (excluding ships, aircraft, diamonds, and fuel) increased on annual average by 7 percent relative to 2007. In the first three quarters of the year, in contrast, imports were constant at the high level of the end of the previous year but slumped at year's end as the crisis worsened.

#### Table 7.5

Goods and Services Imp	orts, 2000–08	8				
	200	8	Vol	t)		
	Composition		2001-	2003-		
	(percent)	\$ billion	2002	2006	2007	2008
Goods and services	100.0	84.2	-3.2	4.4	11.7	4.1
Goods and services						
excluding diamonds	89.5	75.4	-4.0	5.1	13.6	6.6
Goods	76.4	64.3	-3.2	3.5	9.6	1.3
1. Goods (excluding fuel						
and diamonds)	50.6	42.6	-4.9	4.8	12.8	5.0
Consumer goods	9.6	8.1	-1.3	3.7	20.9	9.5
of which Nondurables	5.9	4.9	5.0	4.7	13.2	12.5
Durables	3.8	3.2	-9.0	2.2	33.7	4.9
Production inputs <sup>a</sup>	28.6	24.1	-6.3	4.4	6.5	2.0
Investment goods	12.5	10.6	-3.6	4.5	25.1	11.7
2. Fuel	15.3	12.8	-1.0	1.3	5.5	1.2
3. Diamonds	10.5	8.8	2.1	0.2	-1.2	-15.5
Services <sup>b</sup>	23.6	19.9	-3.2	6.7	16.9	10.7

<sup>a</sup> Excluding fuel and diamonds.

<sup>b</sup> According to balance of payments definitions, excluding insurance services and transportation services.

SOURCE: Central Bureau of Statistics.

<sup>15</sup> Assuming that the increase in domestic prices surpassed that of prices abroad and was also reflected in individuals' wages, import consumption was also pushed upward abetted y an income effect.

The increase in imports in 2008 relative to 2007 was powered by currentconsumption and investment goods and originated in the decrease in their relative prices. Imports of production intermediates evinced less price-elasticity. The growth in imports of consumer durables slowed in 2008 even though the relative prices of these products came down. This is because their elasticity to income, which contracted due to the crisis, surpassed that of current-consumption goods. The slowdown in imports of durables began when expectations of a crisis built up, i.e., even before the crisis began.

Change in the Relative Price of Goo	ds Imports, 20	01–08		(percent)
	2001-2002	2003-2006	2007	2008
Imported consumer goods prices relative to the CPI	3.0	0.9	-7.8	-8.7
Imported non-durable goods prices relative to the CPI	1.6	1.2	-6.7	-7.5
Imported durable goods prices relative to the CPI	4.5	0.7	-9.8	-9.8
Imported investment goods prices relative to the GDP deflator	5.2	-1.3	-4.2	-12.0
Imported raw materials prices (excl. fuel and diamonds) relative to the GDP deflator	4.3	-1.6	0.6	-5.1
Imported raw materials prices (excl. fuel and diamonds) relative to export prices	-0.3	21.1	-4.0	-1.5
Fuel prices relative to the GDP deflator	-0.3	-2.2	4.4	23.5

The growth rate of production intermediates imports slowed relative to the pace in the recent years of economic growth even though relative prices declined, due to the influence of the general economic slowdown. The growth rate of this component has been relatively stable over the years. This reflects the elasticity of intermediates imports to price developments, partly due to the lack of domestic substitutes but also because a large share of production intermediates is used in manufacturing for export<sup>16</sup> and a change in world prices also affects export revenue. The fact that raw-materials prices rose more slowly than export prices reflects an improvement in Israel's terms of trade (excluding fuel).

<sup>16</sup> Imports account for 34 percent of total production intermediates in manufacturing.

#### e. The income account and unilateral transfers

After two years in balance, the income account recorded a \$3.2 billion deficit due to an increase in net labor-wage payments, reflecting the increase in the number of foreign workers, and a \$2 billion decline in net revenues from Israelis' investments abroad. The latter deterioration was affected by the financial crisis and the incomedampening effect of falling interest rates abroad (Figure 7.5). A large share of Israel residents' investments in foreign assets is in vehicles that pay short- and medium-term interest. In contrast, a rather large proportion of nonresident investments in Israel is in government bonds that pay long-term interest. Therefore, residents' net investment

income is more sensitive to changes in short-term interest. Since the economic crisis led to a decrease in interest rates in 2008, residents' income declined more than payments to nonresidents did, causing net capital income to decline.

The surplus on current-transfer account increased by \$1.3 billion, offsetting some of the developments in the trade balance and the income account. Media reportage indicates that the massive fraud that took place in the American capital market toward year's end, coupled with the crisis itself, has halted the inflow of transfers to individuals in Israel. Transfers to individuals stood at \$4.5 billion—35 percent of total current receipts on this account.



## 3. THE FINANCIAL ACCOUNT

## a. Main developments

The global financial crisis has left its mark on the financial account: the flow of foreign investments into Israel declined, as did the flow of residents' investments abroad—in contrast with the long-term trends led by liberalization and globalization. Particularly prominent this year were the sales of foreign securities (portfolio) by residents and of Israeli securities held by nonresidents in 2008:I and 2008:III, when the global financial crisis intensified. However, the flow of foreign direct investment (FDI) and of investment abroad by residents did not abate in 2008. An examination of FDI in Israel and elsewhere in the last ten years shows that this is influenced to a great extent by the business cycle, so that its development in Israel in 2008 was a

The global crisis resulted in a reduction in the flow of portfolio investment into and from Israel, but the flow of direct investment remained stable. pleasant surprise. The relative stability of direct investment in 2008 may be because it is coordinated with real economic activity, which declined only at the end of the year, rather than with financial activity, as well as because of a certain lag in the recording of transactions. Because direct investments are recorded on a cash basis, some of the transactions recorded in 2008 had been signed in 2007.<sup>17</sup>

The net balance in the trading portfolio indicates that there was considerable net capital inflow in 2008:I, diminishing in 2008:II, and becoming net capital outflow in 2008:III. To some extent this reflected a shift in investors' assessments regarding the effect of the global economic crisis on Israel. The view that prevailed at the beginning of the year was that, like the emerging economies, Israel was immune to the global crisis, but this began to fade at the end of the year. The change was expressed not only in net capital flows but also in the effective local-currency exchange rate and in Israel's share-price index: the optimistic assessments that prevailed in the first half of 2008 served to strengthen the NIS and increase the share-price index over those of the developed countries (with a steep drop in both of them); at the end of 2008 apprehensions that Israel's economy would be adversely affected by the global crisis grew, and this served to cause local-currency depreciation and depress the share-price index relative to the share-price indices of the developed countries.

The Bank of Israel's decision to increase its foreign reserves, against the backdrop of local-currency appreciation and apprehensions regarding the negative effects of the global crisis on Israel's economy, served to bolster financial stability and cause local-currency depreciation. An international comparison of central banks' foreign reserves shows that Israel's reserves at the end of 2007 were not particularly high relative to those of countries similar to Israel as regards their risk level. The increase in the Bank of Israel's foreign reserves in 2008 led to the marked expansion of Israel's short-term debt-assets surplus, thereby improving the economy's ability to cope with the liquidity difficulties which could arise during a crisis.

#### b. Capital flows in the context of the global economic crisis

Developments in the capital markets until September-October reflected the expectations of investors—whether residents or nonresidents—that the effect of the global economic crisis on Israel would be relatively moderate. This assessment was reflected by the strengthening of both the nominal and the real exchange rates as well as of the share-price indices: the nominal and effective NIS exchange rate—vis-à-vis the currency basket of Israel's trading partners—rose by 11 percent in the first half of 2008; the real NIS exchange rate also strengthened against the currencies of Israel's trading partners.<sup>18</sup> The share-price indices attained significant excess returns relative

The view that like other emerging economies Israel was immune to the global crisis was expressed in an increase in net capital inflow in the first half of the year, the strengthening of the shekel, and a greater increase in the share price index than in the advanced economies.

> Developments in the capital markets until September-October reflected investors' expectations that the effect of the global economic crisis on Israel would be relatively moderate.

<sup>&</sup>lt;sup>17</sup> There is considerable inter-year variance in the extent of direct investment because it is affected by a small number of large transactions (primarily in 2006), consequently, the correlation between them and economic developments is not large.

<sup>&</sup>lt;sup>18</sup> See Box 2.2, which explains the shifts in the real exchange rate in the long and short terms. Most of the strengthening of the real exchange rate in 2008 is explained by past and present economic developments in Israel, and in part by expected future changes.

to the share-price indices of the developed countries, and some excess return relative to the emerging economies, which were also initially perceived as being relatively impervious to the economic crisis. Israel's share price indices earned excess returns relative to those of the advanced economies, and even relative to those of emerging markets.



Figure 7.6 shows the development of the TASE Blue-Chip Index of the 25 leading shares relative to those of the developed and emerging economies. We estimated the differential between the actual and expected change in the TASE Blue-Chip Index. The forecast change was estimated by the statistical relations (log regressions) between the TASE Blue-Chip Index and the share-price indices of the developed and emerging economies. We found that the performance of the TASE Blue-Chip Index from 2007 until the end of 2008 was better than that predicted on the basis of the development of the share-price indices of the developed economies, as well as on the basis of the correlation between it and the TASE Blue-Chip Index in the past. This phenomenon is not unique to Israel; it was observed at the same time in the share-price index of the emerging economies has shown considerable excess return relative to that of the developed countries which, as is known, were at the center of the crisis. Israel's share-price index and that of the emerging economies have developed at a similar rate in the last ten years, but between May and October 2008 the performance of

Israel's share-price index was better even than that of the emerging economies; since October Israel's share-price index has plummeted, and at the end of 2008 it converged with that of the developed countries. (The cumulative deviation of Israel's share-price index returned to its average level, around zero.) The deviation of Israel's share-price index from the other two indices (henceforth excess return) is exceptional in intensity relative to the deviations of the last decade.

The financial account indicates that the flow of investment in Israel by nonresidents persisted in the first half of the year, declining at the same time in the emerging economies.<sup>19</sup> These developments, alongside the excess return on Israel's share-price indices and the strengthening of the NIS, indicate that foreign and Israeli investors regarded Israel's economy as being relatively resistant to the effect of the global crisis. The activity of investors was motivated by the assumption that Israel's financial system was cautious and conservative, and that the banking system was closely supervised (and hence was not exposed to assets which turned out to be toxic); investor confidence in Israel contributed to the rapid expansion of GDP and exports in the first half of the year, the current account surplus, the low fiscal deficit, and the low likelihood of a real-estate bubble.

Since October there has been a change in investors' expectations, which have become more negative, as is indicated by the decline in excess return on the TASE Blue-Chip Index relative to indices in the developed and emerging economies, as well as by 5 percent local-currency depreciation vis-à-vis the weighted exchange rate of Israel's trading partners (October over December).<sup>20</sup> Another prominent feature, which began already in July, was the substantial sale of securities traded in Israel by foreign investors<sup>21</sup> (Figure 7.7), which meant that residents bought them from nonresidents.<sup>22</sup> Note that this development does not necessarily stem from the decline in expectations regarding domestic economic developments, because residents also revised their expectations due to the deterioration in the global economy. Hence, nonresidents probably had difficulties finding resident buyers for their assets. Another possible explanation for the purchases by residents from nonresidents is the tendency of resident investors at a time of crisis to invest a large part of their capital in their domestic markets (the home bias, which characterizes investors everywhere). A slightly different explanation for this phenomenon is the combination of the more severe liquidity constraint of nonresident investors than of resident ones, which led the former to sell assets wherever they could, on the one hand, and the tendency of resident investors with liquid assets to invest a large part of them in the domestic economy,

<sup>19</sup> Except for April and May, when the crisis abated and foreign investment in emerging economies rose.

 $^{20}$  The interest-rate reduction could explain some of the depreciation, but not the decline in excess return on the TASE Blue-Chip Index.

<sup>21</sup> When the effect of the large \$3.1 billion transaction by an Israeli drugs company with a foreign company (in December), which was recorded as investment in the securities portfolio in Israel of nonresidents, is disregarded.

<sup>22</sup> Excess return on the stock market peaked in the second half of October and has declined since then. Sales of shares by nonresidents began in July and peaked in October.

The substantial realization of foreign investments in the first half of the year does not indicate a lowering of expectations regarding the development of Israel's economy. on the other.<sup>23</sup> The rise in shares held in the TASE by residents did not really reflect the wishes of individuals but rather that of some institutional investors, among them the pension funds, to utilize the crisis, which brought share prices down, to increase their share holdings. Be that as it may, the result of the sales by nonresidents was the interruption—which may be temporary—of the upward trend in the diversification of risk. Note that in spite of the crisis the upward trend in the diversification of risk is a welcome development, which enables the economy to specialize in the production of goods in which it has a comparative advantage, and reduces its vulnerability to domestic shocks.



An examination of residents' investments in the securities portfolio abroad reveals that the established pension funds<sup>24</sup> increased their share holdings throughout the year, doing so to a far greater extent than in the past. Thus, for example, in 2008:III, when the crisis worsened, these funds bought foreign securities in the amount of \$0.9 billion (60 percent more than their total purchases in 2007 as a whole). On the other hand, households sold shares and bonds, mainly when the crisis in the markets deteriorated

<sup>23</sup> Because of the global liquidity crisis Israelis benefited from improved liquidity (relative to nonresidents), and hence may be expected to expand their investments not only in Israel but also in other countries. In effect, they bought shares and other assets primarily in Israel, because of the home bias, so that their share in the domestic capital market grew.

 $^{24}$  The institutional entities are the pension funds, the provident funds, advanced study funds, and profit-sharing insurance schemes. Most of the purchases were by the established and new pension funds, which increased their share holdings by \$1.5 billion and \$0.3 billion respectively.

Institutional investors regarded the global crisis as an opportunity and increased their holdings of shares abroad when the risk premium rose sharply.

Due to concern over foreign banks' stability, Israeli banks withdrew deposits in them.

The global economic crisis almost completely dried up the borrowing and credit channels abroad of Israeli firms. (in 2008:I and 2008:III). The institutional entities regarded the global crisis as an opportunity and increased their holdings of shares abroad when the risk premium rose sharply. This behavior is not consistent with the preferences of savers in the established funds as their average age is high and this requires their representatives to act with particular prudence. Similar behavior by institutional entities also apparently underlies the significant rise in the share of residents' investments in the TASE (and the decline in it of the share of nonresidents' investments). In other words, when the crisis was exacerbated (primarily in October) nonresidents sold shares (to the amount of \$2 billion) and residents bought them.

An exceptional phenomenon evident in 2008 in the shadow of the global financial crisis was the marked repatriation of capital by residents under the rubric of 'other investments.' This derived largely from withdrawals by Israeli banks of deposits abroad to the amount of \$5 billion in 2008:II and 2008:III (and continued in October and November). The withdrawal of deposits by banks reflected mainly the desire to reduce their exposure to foreign banks, which were found at the time of the crisis to be risky. The deposits of Israeli banks abroad have swelled in the last ten years (while the foreign currency deposits of the public remained virtually unchanged) because the fall in the public's demand for foreign-currency credit created a surplus of foreign currency sources in Israeli banks, and they preferred to invest this abroad.<sup>25</sup> The banks' extensive capital imports in 2008 also reflected the desire of the nonbanking private sector to sell its foreign-currency deposits (capital inflow), as well as the need to increase the banks' deposits in the Bank of Israeli in order to safeguard the new interbank clearing system in which payments are cleared in real time (rtgs).

The global economic crisis almost completely dried up the borrowing channels abroad of Israeli firms, and led to the contraction of credit. In 2008 there was only one share issue abroad by an Israeli company (in 2008:IV by a large drugs company), and only one corporate bonds issue<sup>26</sup> (albeit an extremely large one, by the Israel Electric Company). In 2008:III the upward trend in credit extended by foreign suppliers to residents and by residents to nonresidents ceased, in view of the increasing lack of confidence in the markets regarding payback ability and firms' difficulties in obtaining credit. This year, in contrast with the past, Israel's economy reduced the extent of net credit it took abroad: credit extended by residents to nonresidents rose more than the total amount of credit taken by residents from nonresidents. This was especially evident in 2008:I, while in 2008:III Israel once again increased its net credit from abroad—indicating that the credit squeeze had not bypassed the Israeli economy.<sup>27</sup>

<sup>&</sup>lt;sup>25</sup> The joint balance sheet of the banking corporations shows that from 2002 to 2006 there was a 33 percentage-point rise in the share of deposits in foreign banks in foreign-currency assets, from \$15 billion to \$73 billion. Concurrently, the share of foreign-currency credit to the public in total foreign-currency assets declined by about 30 percentage points.

<sup>&</sup>lt;sup>26</sup> The government did not need to borrow extensively this year, and preferred to raise funds solely via Israel Bonds rather than on the capital market abroad.

<sup>&</sup>lt;sup>27</sup> For an account of the global financial crisis, the ways it affected Israel's economy, and firms' credit difficulties, see Chapter 4 of this report.

## Table 7.7

### Portfolio and Other Investments, 2007 and 2008

				2	008	
	2007	2008	Ι	II	II	IV
Nonresidents' investment in Israel						
Portfolio investment	1,434	215	164	526	-1,155	680
Share capital abroad	2,096	2,978	182	-366	446	2,716
of which IPOs of Israeli shares abroad	1,349	3,338	189	-23	215	2,956
Share capital on TASE <sup>a</sup>	1,453	-1,597	475	746	-1,244	-1,574
Tradable government bonds abroad	-961	-723	-162	-125	-178	-258
of which Issues abroad of government bonds	-1,277	-683	-145	-199	-143	-197
Tradable corporate bonds abroad	-600	998	165	868	-33	-2
of which Issues of corporate bonds abroad	-808	1,071	180	917	-8	-18
Tradable government bonds and makam on TASE <sup>a</sup>	-570	-1,450	-494	-609	-141	-206
Tradable corporate bonds on TASE <sup>a</sup>	16	9	-2	12	-5	4
Other investments in Israel	3,279	-2,331	144	-662	417	-2,229
Nonresidents' deposits	800	-325	4	-266	-62	-1
Deposits of nonresident banks	245	201	-203	-183	289	298
Loans	507	-703	-7	-486	217	-426
Suppliers' credit	1,727	-1,504	350	272	-27	-2,100
Israelis' investments abroad						
Portfolio investment	3,926	1,687	-683	1,371	-176	1,175
Share capital	2,141	1,440	-350	973	419	398
Tradable bonds	1,785	247	-333	398	-595	777
Other investments abroad	8,084	-9,820	2,055	345	-3,883	-8,338
Israelis' deposits abroad	3,715	1	-1,195	1,687	139	-631
Deposits of Israeli banks	-934	-8,919	1,775	-2,255	-3,224	-5,215
Loans	644	2,186	946	406	249	586
Customers' credit	3,284	-3,100	256	394	-1,122	-2,628
Other assets	1,374	12	272	114	75	-449
Reserve assets	-1,678	14,172	210	2,185	5,368	6,410
Derivatives	-20	164	88	-21	38	60

<sup>a</sup> Tel Aviv Stock Exchange.

SOURCE: Based on Central Bureau of Statistics data.

Two more elements, which always have a significant effect on the financial account, are interest-rate differentials and the current account on the balance of payments. In 2008 local-currency interest varied from the low dollar interest rate to the higher euro interest rate. At the beginning and end of the year local-currency interest tended to approach the lower dollar interest rate, and in the middle of the year it was closer to that in the eurozone (see discussion in Chapter 3 of this report, as well as Figure

3.1). Because the interest-rate differentials were neither marked nor protracted (relative to the risk differentials), their effect on the exchange rate and on capital inflow was relatively small. On the current account, the decline in the surplus reduced nonresidents' demand to invest in Israel, on the one hand, while the crisis increased investors' perception of the importance of the existence of the surplus, and this acted to increase the demand to invest in Israel, on the other (see Box 2.2).

#### c. The increase in the Bank of Israel's foreign-currency reserves

The foreign-currency reserves stood at \$41 billion at the end of December 2008, up by \$13 billion over the end of 2007, primarily as a result of foreign-currency purchases to the amount of \$12 billion. The rise in the foreign-currency reserves raises two main questions regarding its effect on the exchange rate and the optimum size of the reserves. The decision to expand the foreign-currency reserves was based on a wide-ranging examination, which revealed that the level of the reserves was low in relation to their possible uses by the government and the Bank of Israel, as well as in relation to several additional accepted criteria, among them the rise in the foreign debt, the level of imports, the level of GDP, and the money supply.<sup>28</sup>

The rise in the foreign-currency reserves increases the economy's short-term assets, which are liquid and have a low interest rate, but require a concomitant increase in long-term commitments, which represent a higher cost to the economy. Maintaining a high level of liquidity reduces the risk of a domestic financial crisis, and at a period of a global liquidity crisis and a crisis of confidence in the capital markets it makes sense to increase the level of liquidity. By contrast, increasing liquidity (via the foreign-currency reserves) constitutes a real economic burden as the interest on a safe short-term asset is lower than the cost of raising long-term sources. Note, however, that as the reserves rise, the economy becomes more immune to a financial crisis, in which case the cost of raising funds from long-term sources will not increase, and may even decline.

The effect of the Bank of Israel's extensive foreign currency purchases on the NIS exchange rate acted primarily through the signaling channel rather than directly. Given the floating exchange-rate regime, the NIS is determined by the differential between the interest on it (which is set by the Bank of Israel) and the interest rates on foreign currencies (mainly the dollar and the euro), as well as by the differential between the risk rates of the NIS and those currencies.<sup>29</sup> The foreign-currency purchases did not affect the interest-rate differentials, at least not immediately, and their influence on the risk premium of the NIS is not clear. On the one hand, a rise in the foreign-currency reserves is accompanied by an increase in the local-currency assets in the hands of the public, increasing its losses if there is depreciation (and hence causes the risk premium

An increase in the foreign currency reserves provides some protection against the financial crisis, but at the cost of some increase in the burden of interest paid abroad.

<sup>&</sup>lt;sup>28</sup> See detailed explanation in reports of the Bank of Israel's Foreign Currency Department for 2005 and 2007.

<sup>&</sup>lt;sup>29</sup> In order to simplify matters, we assumed that the increase in foreign currency is neutralized and does not affect the money supply, and that it has no influence on the composition of the public's portfolio.

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to rise); on the other, the foreign-currency reserves increase the central bank's scope to act if there is a financial crisis,<sup>30</sup> thereby reducing the risk of depreciation (and actions to reduce the risk premium). Another possible effect on the exchange rate is via a signal regarding the future interest rate: an increase in the reserves can indicate the Bank of Israel's dissatisfaction with the exchange rate and its desire to reduce the interest rate in the future, and if the public's expectations for the future interest rate are revised this could immediately weaken the local currency. Consequently, one way of assessing whether the increase in the foreign reserves served as a signal is to examine the immediate response of the exchange rate to the Bank of Israel's announcement of its intention to increase the reserves.<sup>31</sup> A study of this kind, which was undertaken in the Bank of Israel's Research Department,<sup>32</sup> found that the signaling channel did in fact function: there was immediate local-currency depreciation in those instances where the Bank of Israel acted in 2008, or announced that it had acted, in the foreign-currency market.

The Bank of Israel's extensive foreign currency purchases served to depreciate the shekel primarily through the signaling channel.

## Box 7.2

## The Bank of Israel's ioreign-currency reserves: an international comparison

Israel's foreign-currency reserves at the end of 2008 amounted to 20.5 percent of its GDP. An international comparison of this ratio in 2007 shows that it is far higher in Israel than in the developed countries, but lower than in emerging markets and poor countries (at the end of 2008). Countries with a particularly low ratio of foreign reserves include most of the eurozone countries,<sup>1</sup> which are exempt from the need to protect an independent currency, and countries, such as Canada and Australia,<sup>2</sup> which have their own currencies and are characterized by stability and high per capita GDP. From this it may be inferred that the need for foreign reserves increases alongside the rise in a country's risk level, and that

<sup>1</sup> The countries with a low foreign reserves ratio include Germany, France, Italy, Spain, the Netherlands, Belgium, Austria, Finland, Greece, Ireland, and Portugal. During a crisis these countries can resort to the foreign reserves of the European Central Bank.

 $^2$  Australia and New Zealand, which used to have low foreign reserve levels, were obliged to ask the IMF for a loan in order to cope with the marked increase in capital outflow.

<sup>30</sup> For example, aid to a bank that is in difficulties could require an injection of foreign currency.
<sup>31</sup> The response of the exchange rate to the actions of the Bank of Israel which preceded the

announcement was also examined.

<sup>&</sup>lt;sup>32</sup> Yinon Gamarsany, Daniel Nathan, and Roi Stein (2008), "An Examination of the Effect of Intervention on the Foreign-Currency Market," internal Bank of Israel paper (Hebrew). The study found that the foreign-currency purchases had a significant effect on local-currency depreciation via the balance-sheet effect and the signaling channel.

the current level of the reserves is reasonable, provided that the level of Israel's risk is similar to that of the emerging markets. Israel's economy is characterized, on the one hand, by high per capita GDP, current-account surplus, the а absence of (net) foreign debt, and a floating exchange rate, and these reduce its risk level. On the other hand, it has unique risk factors, headed by its delicate security situation, a high concentration of exports in the high-tech industry, and the low level of tradability (and liquidity) of the NIS. The financial crisis could also increase its risk, if the exposure of the banking system to the crisis is found to be greater than originally thought.

In order to compare the risk factors of Israel's economy with those of other countries, as well as to examine the hypothesis that



there is a correlation between a country's risk level and the level of its reserves, we used a uniform index of risk for various economies-the risk premium of the bonds of various countries, CDS, which measures the risk that a debt will not be repaid. The sample included 31 countries, some with a low risk level, others with a high one. The group of safe countries included Japan, Germany, France, the Czech Republic, Spain, Italy, Portugal, Greece, Croatia, Poland, Chile, Malaysia, Singapore, Bulgaria and Hungary. The countries with a high level of risk were Russia, Ukraine, Kazakhstan, Serbia, Slovakia, Roumania, Brazil, Argentina, Panama, Indonesia, Turkey, Egypt, Lebanon, Morocco, Tunisia, and South Africa. We found that the ratio of foreign reserves to total imports in the group of risky countries was far higher than it was in the safe countries, even though the differential between the two groups with regard to the ratio of reserves to GDP was quite small (Figure 2). Another finding was that the level of the foreign reserves in countries with a floating exchange-rate regime was not lower than that of countries with a fixed exchange rate. This result should be treated with caution, as the number of countries with a fixed exchange rate in the sample was very small,<sup>3</sup> and also because it is generally known that the adoption of a floating exchange rate greatly reduces the chances of using the foreign reserves.

The international comparison shows that the extent of Israel's foreign reserves at the end of 2008 was not exceptional in comparison with countries with a similar risk level.<sup>4</sup> The extent of Israel's reserves was 25 percent higher than the average of the safe countries, but its risk level (according to the CDS index) (23) was higher than the average of these countries (16) and near to their upper limit (29). The extent of Israel's reserves (in import terms) is far lower than that of the risky countries, as is the case with its risk level.<sup>5</sup>



<sup>3</sup> The Czech Republic, Croatia, Russia, Kazakhstan, Indonesia, and Malaysia.

<sup>4</sup> See The Investment of the Foreign-Currency Reserves, Report for 2007, Foreign Currency Department, Bank of Israel (Hebrew). The document details the considerations for increasing Israel's foreign-currency reserves and finds that the reserves are low in comparison with both other countries and the needs (of the government and the Bank of Israel), as well as with the benefit derived from the ratio of the reserves to the debt, the money supply, and GDP.

 $^{5}$  The average risk index of the risky countries is 126.64 (and the median in 87.8), and the range is from 37.4 to 433.6.

## d. Direct investments

Foreign direct investment in Israel and investment abroad by residents continued in 2008, and even swelled in 2008:III, when the financial crisis worsened. The extent of FDI in Israel is in line with its level in the world, which follows real global business cycles<sup>33</sup> (Figure 7.8). Thus, the fact that direct investment in Israel did not decline this year comes as a pleasant surprise. There was one exceptionally large transaction this year, in 2008:IV, but even without it there was no notable decline in direct investment. The relative stability of FDI in Israel in 2008 may be due to the fact that it is in line with real economic activity (which was affected only in 2008:IV) rather than with financial activity. This is because in many instances these investments are made out of long-term considerations between a holding company and a subsidiary, and are less affected by market fluctuations.



The stability of FDI could also reflect a lag in the timing of recording, which is done on a cash basis, so that some of the transactions that were recorded in 2008 were signed in 2007. Be that as it may, it is almost certain that the effect of the crisis has not bypassed direct investment.<sup>34</sup>

From the detailed reports submitted by the banks to the Bank of Israel it is possible to learn about the by-industry distribution of FDI in Israel as well as its concentration (the distribution is calculated without the large transaction of an Israeli drugs company). The by-industry distribution of direct investments in 2008 and in previous years is biased towards the high-tech industry, and in this it bears a greater resemblance to the composition of exports than to the composition of production. In 2008 about half the investments were in the high-tech industry, 20 percent were in the traditional industries, 20 percent in chemicals and metals, and 10 percent in the traditional services. The relatively high rate of investments in the traditional industries this year stemmed from the purchase of a large traditional industry. Concentration

The by-industry distribution of direct investments in 2008 and in previous years was biased towards the high-tech industries.

Direct investment, which in the past reacted to real global business cycles, did not fall in 2008.

<sup>&</sup>lt;sup>33</sup> In contrast with the past, press reports do not indicate expectations that specific Israeli companies will be bought by foreign investors in 2009.

<sup>&</sup>lt;sup>34</sup> The exceptional direct investments in Israel in 2006 can be explained by two very large transactions made that year: in Teva and IVAX, and the sale of Yashkar.

was lower in 2008 than in previous years: the largest transaction constituted about 10 percent of total direct investments (a transaction that was signed in 2007), and the 12 major transactions accounted for about 50 percent. The vast majority of FDI in 2008, as in the previous two years, was in companies that are not traded on the stock exchange.

There are several types of FDI: at one extreme there are transactions in which ownership is transferred from residents to nonresidents, and whose effect on the accumulation of capital in Israel is small; these transactions accounted for 70 percent of direct investments in the last two years (which is also their average share in the last ten years). At the other extreme are investments which have a direct effect on the accumulation of capital: these are headed by investments in new projects, and include investments in start-ups, in accrued profits, and in private issues. An outstanding example of a new project which matured this year is the establishment of the Intel plant in Kiryat Gat.<sup>35</sup> This project increased Israel's capital stock and incorporates unique know-how which contributes to Israel's ability to produce. By contrast, most direct investments are purchases (in full or in part) of Israeli firms, and are not expressed in a direct increase in the accumulation of capital, and sometimes even involve the transfer of unique know-how developed by the Israeli firm into the hands of the foreign buyers (especially when start-ups are purchased). But foreign investments of this kind also embody considerable advantages: they open up new marketing and financing channels to the purchased companies, and make it possible to incorporate new organizational and managerial abilities; thus, investments which involve the transfer of ownership of know-how are also considered to contribute to the development of the economy.<sup>36</sup>

Direct investments help to increase productivity and capital stock, and thereby contribute to the expansion of productive capacity.

				200	)8	
	2007	2008	Ι	II	II	IV
Direct investment in Israel	9,961	10,542	2,729	3,050	2,921	1842
of which Land	1,566	1,302	369	352	324	257
Start-up companies	529	1,149	330	335	484	413
Israelis' direct investment abroad	6,782	7,719	1,489	1,000	1,525	3,706
of which Via banks in Israel	2,932	5,551	611	271	906	3,763
Share capital	4,759	7,613	1,655	1,140	690	4,128
Equity holders' loans	2,024	107	-166	-140	835	-422

## Table 7.8

<sup>35</sup> The investment in the new plant amounted to \$3.5 billion.

<sup>36</sup> With the exception of instances in which most of the acquired company's activity is taken out of Israel.

Foreign investments in start-ups expanded markedly in 2008, but there was a decline in the share of investment in seed companies. Foreign investments in start-ups expanded markedly in 2008, reaching \$1.6 billion, and there was a notable increase between the two halves of the year. IVC, which reports on venture capital raised by Israeli firms from foreign and domestic investors, reports record levels of such capital raised by high-tech companies. However, alongside the rise in venture capital investment, there was a noteworthy decline in the share of investment in seed companies—down from 11 percent in 2007 to only 4 percent—in the context of the expected crisis.

The flow of foreign investment in real estate dipped in 2008 from 2007 (Table 2), but its level remained high—\$1.3 billion. The overall amount reflects a large number of relatively small transactions by home-buyers in Israel, and does not involve purchases by real-estate companies: transactions of up to \$2 million accounted for 56 percent of total direct investment in real estate, and transactions of up to \$12 million accounted for 90 percent.

An examination of the flow of direct investment abroad by residents shows that this continued almost unabated, despite the global crisis. A closer examination of the large transactions reported to the Bank of Israel shows that 42 percent of them were in the advanced industries, and that investments to almost the same extent were in realestate companies (and in real-estate projects).

## e. Foreign assets and liabilities and the foreign debt

Israel's assets and liabilities indicate that total foreign assets are greater than total foreign liabilities—meaning that Israel has a net foreign asset position, which amounts to \$7 billion (5 percent of GDP). Israel's net foreign debt is also negative; the net foreign debt is the difference between Israel's assets and liabilities abroad in debt instruments only (bonds and loans). In addition to the net foreign debt, net foreign liabilities also include liabilities in net capital assets (shares), i.e., the difference between nonresidents' capital assets in Israel and residents' capital assets abroad. Israel's net foreign liabilities have contracted in recent years as a result of the current-account surplus, the rapid expansion of GDP (which contributed to the decline as a ratio of GNP), and the revaluation of the assets and liabilities.

Against the backdrop of the financial crisis and the marked contraction in the value of shares and bonds, the conservatism of Israel's international investment position on the eve of the crisis (at the end of 2007) is remarkable. This conservatism is evident in the fact that residents' holdings of shares abroad are \$57 billion less than nonresidents' holdings of shares in Israel;<sup>37</sup> in bond holdings, whose risk level is intermediate,<sup>38</sup> there is almost parity between residents' holdings abroad and those in Israel of nonresidents, while in the safest assets—deposits in banks and reserve assets—there is a large \$47 billion surplus of residents' holdings abroad over those in Israel of

Israel's net foreign debt is negative: in debt instruments, Israel's total assets abroad exceed its total liabilities to abroad.

<sup>&</sup>lt;sup>37</sup> The lower extent of shares held by residents is particularly apparent in portfolio investment, although it is also low in direct investment.

<sup>&</sup>lt;sup>38</sup> Bonds held abroad by residents attained a negative yield of 8 percent in 2008, a far lower decline than that of the share-price indices.

	(end-of-year balance, NIS billion)				
2006	2007	2008			
167.2	191.5	191.2			
120.1	132.1	131.6			
39.8	48.5	54.6			
37.1	44.7	35.7			
60.8	69.5	58.3			
29.5	28.8	42.7			
174.4	202.4	184.4			
86.7	89.1	85.3			
49.4	55.7	56.9			
70.5	87.6	71.6			
54.5	59.1	55.8			
7.1	10.8	-6.8			
-33.5	-43.0	-46.3			
	2006 167.2 120.1 39.8 37.1 60.8 29.5 174.4 86.7 49.4 70.5 54.5 7.1 -33.5	2006     2007       167.2     191.5       120.1     132.1       39.8     48.5       37.1     44.7       60.8     69.5       29.5     28.8       174.4     202.4       86.7     89.1       49.4     55.7       70.5     87.6       54.5     59.1       7.1     10.8       -33.5     -43.0			

Table 7.9Israel's International Investment Position, 2006–08

nonresidents. Removing the restrictions on capital flows by residents led them not only to diversify risk—namely, to replace one risky asset with another<sup>39</sup>—but also to draw down their holdings of risky assets (while forgoing yield). This is reflected in the fact that residents have extensive net debt instruments. This phenomenon, which is better known as the contraction of the foreign debt,<sup>40</sup> reduces the risk of a domestic financial crisis, and is taken into account in the country's credit rating. This means that replacing capital assets with debt assets had an effect not only on the risk and yield of the investors themselves but also, externally, on reducing Israel's risk premium, and consequently on lowering the interest rate.

Israel's external debt declined in 2008, and its net debt assets rose. An examination of the distribution of debt assets shows that there was a rise in the surplus of the public sector and a decline in that of the banking sector. This was the result of foreigncurrency purchases by the Bank of Israel and the diversion of bank sources from deposits in foreign banks to deposits in the Bank of Israel. While the marked debt asset surplus (\$30 billion) of the nonbanking private sector is an indicator of the robustness of the business sector, the general surplus does not tell us much about the probability that borrowers in Israel will be unable to repay their debts. As is known, this probability rose, and this was reflected by the steep increase in the yield on corporate The contraction of the net foreign debt reduces the risk of a domestic financial crisis and the sovereign risk premium.

The marked debt asset surplus of the nonbanking private sector is an indicator of the robustness of the business sector overall, but does not reveal much about the probability of borrowers becoming insolvent.

<sup>&</sup>lt;sup>39</sup> The diversification of risk makes it possible to reduce risk without lowering yield: replacing one risky asset with another reduces the risk in the asset portfolio to the extent that the correlation between the additional asset and the portfolio is lower than that between the previous asset and the portfolio.

<sup>&</sup>lt;sup>40</sup> The gross index is accepted more widely than the net one in international comparisons.

bond indices. Particularly noteworthy is the sharp rise in the surplus net debt assets of the economy as a whole in the short run (up to one year), as this constitutes an important index of the ability to cope with liquidity constraints. This rise, which was the result of the notable increase in the foreigncurrency reserves, was partly offset by the banking sector, which withdrew deposits in banks abroad; it was also due to the lack of change in the nonfinancial private sector (nFigure).

An examination of the yield on shares in the **securities portfolio**<sup>41</sup> reveals the intensity of the crisis: the value of residents' shares abroad fell by 41 percent, in line with the global fall in share-price indices, while the value of nonresidents' shares in Israel dipped by 27 percent. The decline in the value of



nonresidents' shares in Israel was relatively mild because most of their investments are concentrated in a small number of firms, whose value dropped only moderately in relation to the general share-price index in 2008. The accrued yield of nonresidents in the long run is very similar to that of the TASE Blue-Chip Index (top 25 shares).

<sup>41</sup> We do not have complete data about the yield on direct investments in share capital.

The value of residents' shares abroad fell steeply, in line with the global fall in shareprice indices.

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