Chapter 7
The Balance of Payments

- Israel's current account was balanced in 2011. This followed two years of large surpluses of $6–7 billion a year and smaller surpluses since 2003.
- Marked growth in the purchases of durable goods and in investment—uses which are primarily based on imports—was due to rapid growth in demand and the economy's approach to full employment.
- The rapid rise in the price of fuel and other commodities increased expenditure on the import of goods by $3.6 billion relative to 2010.
- The economic crisis in Europe slowed the growth of Israeli exports during the last third of the year. Europe is the destination for one-third of Israeli exports while European exports, which are expected to benefit from the depreciation of the euro, are the main competition for Israeli exports to the US and other markets.
- Israel's exports to its trading partners lagged behind imports somewhat this year, which should be viewed against the background of the real appreciation in previous years.
- The discovery of gas reservoirs has until now led to an increase in investment in the natural gas industry, which has widened the deficit in the current account; however, in coming years it will lead to a significant improvement.
- The appreciation of the shekel during the first half of the year, in spite of the growing geopolitical uncertainty, the imposition of restrictions on short-term capital flows and the large decline in the surplus of the current account, were the result of the interest gap between Israel and the advanced economies and the rapid growth in Israel.
- The growing fear of a debt crisis in Europe in mid-year led to a turnaround in short-term capital flows and a prolonged depreciation. This was part of the general flow of capital to countries that are considered to be safe havens, which led to the depreciation of currencies world wide against the dollar and the yen.
- The asset surplus of the economy relative to the rest of the world and its composition contribute to the resilience of the economy during periods of crisis.

Table 7.1
The Balance of Payments, Main Indicators, 2003–11

				2011	
	2003-2008	2009	2010	First half	Second half
	(Rate of change in dollars, in annual terms)				
Goods exports	14	-20	21	12	23	-3
World trade in goods	17	-23	22	18	20	9
Services exports	13	-10	13	11	12	5
Goods and services imports	14	-25	21	21	39	0
	(Rate of change, in annual terms)				
Terms of trade	-1	10	-4	-7	-6	-9
Prices of energy products	28	-38	25	39	80	6
Real exchange rate	1	-2	5	3	5	-5
	(Real rate of change, in annual terms)				
Goods exports	8	-13	17	4	9	-6
World trade in goods	9	-13	15	15	19	24
Services exports	11	-13	6	8	10	2
Goods and services imports	7	-14	11	10	18	-4
	($ billion)				
The current account	3.4	7.0	6.3	0.2	1.0	-0.8
Goods and services balance	-1	5	4	-2	-1	-1
Net revenue account	-3	-5	-6	-6	-3	-3
Net current transfers	7	7	8	9	4	4
Capital account	0.8	0.9	1.0	1.2	0.6	0.6
Financial account	-4.7	-11.2	-10.2	-3.8	0.9	-4.7
Net direct investments	1	3	-3	8	2	6
Net investment in securities (excl. *makam*)	0	-7	-9	-2	0	-2
Other net investmnent + *makam* + derivatives	-2	10	14	-6	3	-9
Change in foreign exchange reserves	-3	-17	-12	-5	-4	0
Statistical discrepancies	0.6	3.3	2.9	2.4	-1.0	-2.0

SOURCE: Central Bureau of Statistics and IFS.

1. MAIN DEVELOPMENTS

In 2011, there was a marked decrease in the surplus of Israel's current account.

There was a significant reduction in Israel's current account surplus in 2011, which led to a balanced current account, following uninterrupted annual surpluses since 2003. The economy's total exports fell short of its imports by $2.1 billion, following two years of an export surplus amounting to about $4.5 billion per year. The steep rise in the prices of imported commodities during the second half of 2010 and the beginning of 2011 contributed about $3.6 billion to the growth in the deficit this year. The boom in the local economy during the first half of the year led to a marked increase in investment in machinery and equipment and the purchase of durable goods, uses that are import intensive. Also contributing to the increase in the deficit was the fear of a crisis in Europe, which dampened global trade and the demand for Israeli exports.

The recession in the advanced economies worked to reduce the surplus in the current accounts of countries that were not affected by the crisis, including Israel.

The decline in the current account surplus was the result of the deep recession in the advanced economies, which responded with highly expansionary monetary policies. Although this has not yet pulled them out of recession, the expansionary effect on the other open economies, including that of Israel, has been very evident. The slowdown in the advanced economies has increased their unemployment rates and output gaps, and has worked to shift some of the global production of tradable goods to their economies. This shift could have occurred slowly, through the erosion of nominal wages in the countries experiencing the crisis; however, the reduction in interest rates in the advanced economies led to a rapid acceleration of the process. Thus, the reduction in interest rates in the advanced economies increased the flow of capital to countries that had not been affected by the crisis, which forced them to reduce their interest rates. The reduction in the interest rates in countries that were not affected by the crisis intensified the increase in demand in those countries for both imported and domestically produced goods. The growth in demand for imports directly strengthened the demand for commodities produced in countries affected by the crisis, while the increase in demand for non-tradable goods in the countries unaffected by the crisis led to an increase in the profitability of non-tradable goods sectors and an expansion of their activity. This occurred at the expense of the tradable goods industries, which experienced a drop in exports (to, among others, the countries affected by the crisis) and in the production of import substitutes. The low interest rates in advanced economies thus eroded the profitability of producers in the tradable goods sector of countries not affected by the crisis, relative to their competitors in countries that were affected and producers in the non-tradable goods sector in their own countries. This therefore contributed to expanded activity in the tradable goods sectors of countries that were affected by the crisis.

The low rates of interest in the advanced economies contributed to the real appreciation of the currencies of other countries that allow free capital movements, including Israel.

The severe recession in the advanced economies contributed to a real depreciation of their currencies and an increase in their current account surpluses, as well as a real appreciation and reduced current account surpluses in their trading partners, including Israel. This occurred through the mechanism of the interest rate and capital flows: the low interest rates in the advanced economies led to a major increase in total short-term foreign investment that flowed into Israel in 2010 and during the first half of 2011.

The flow of foreign capital led to nominal appreciation of the shekel, which made imported goods cheaper (in shekel terms) and raised the production costs of producers in the tradable goods sector in Israel relative to their competitors in other countries (in terms of foreign currencies). This accelerated the growth of imports, restrained the growth of exports and increased the deficit in the goods and services account. The low interest rates in the advanced economies also prevented earlier and more rapid hikes in the interest rate in Israel, out of fear that this would lead to even greater appreciation and would further worsen the situation of exporters and producers of import substitutes. The low interest rate in Israel stimulated local demand and raised the utilization rate of factors of production (labor and capital). The utilization of the factors of production rose during the first half of the year and reached a level (of full employment) at which their prices had to rise.

However, the transmission mechanism described above from monetary policy abroad to the Israeli economy weakened during the second half of the year. Essentially, the increase in the economy's risk premium due to the regional geopolitical events on the one hand and the restrictions placed on short-term foreign investors on the other reduced the effective interest rate gaps already during the first half of the year. This was particularly evident in the slower pace of the appreciation. Later on, as concerns grew regarding a debt crisis in Europe, net short-term flows of capital into the economy halted completely and there was even pressure for the outflow of capital. This led to an appreciation of the shekel against the dollar, which also led to the halt in foreign currency purchases by the Bank of Israel. A similar development occurred simultaneously in the emerging economies, the result of the massive flight of investors to more secure bonds, primarily those of the US, Japan and Switzerland, which are considered to be safe havens. The flight to the dollar and the appreciation of the shekel also occurred in the previous crisis (from June 2008 until March 2009), although the depreciation of the shekel against the dollar was only temporary and eventually was dominated by the forces of appreciation, which were the result of the relatively rapid recovery of Israel from the crisis and the interest rate gaps that had developed.

The fear of a debt crisis in Europe led to a halt in the net flow of short-term capital into the economy and even to pressure for a capital outflow; this pressure led to a depreciation of the shekel.

The economy's balance of assets and liabilities with the rest of the world was in good shape relative to other countries and the chance of the European crisis infecting the economy was quite low. Thus, Israel had a surplus in assets over liabilities and its gross external debt was relatively low. In addition, the composition of liabilities was solid, with most liabilities in the form of equity instruments (such as the investment of foreigners in shares) and only a small portion in debt instruments (bonds and loans), most of which are denominated in shekel and therefore are not exposed to foreign currency risk. The high level of foreign currency reserves has also contributed to stability. A particularly important contribution is due to the balance (and even surplus) in the current account, which is even expected to improve due to the replacement of energy imports with local natural gas (from mid-2013).

Israel's current account is balanced and even had a small surplus; its external debt is low relative to other countries; its foreign currency reserves are high; and its natural gas reserves are significant. All these factors are contributing to the stability of the economy.

2. THE GOODS AND SERVICES ACCOUNT

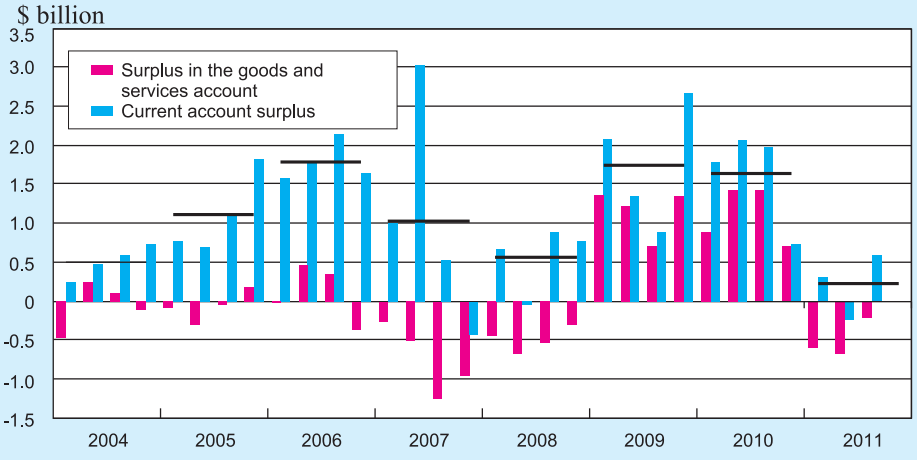
a. Main developments

The decline in the surplus of the goods and services account was a result of cyclical factors: a boom in the local economy alongside recession among Israel's main trading partners and increased prices of imported commodities, especially oil.

The goods and services account, which is the major component of the current account, was balanced this year, following surpluses of over $4 billion in each of the previous two years. This development does not herald a return to large deficits, since it is primarily the outcome of cyclical factors, i.e., the boom in the local economy alongside the economic slowdown among Israel's main trading partners. In addition, and in contrast to the past, the deepening of the global crisis was not accompanied by a significant drop in the prices of oil and other commodities. Indeed, their prices rose significantly, leading to a large decline in the goods and services account. The slowdown in Europe directly affected demand for Israel's goods export and intensified competition with European exporters, who are the main competitors of Israeli exporters in the global market. At the same time, the prolonged growth of the local economy increased the demand for imported goods. In addition, the close-to-zero real interest rate and the approach of the economy to full employment had a particularly large effect on uses that are sensitive to the business cycle, i.e., investment and the consumption of durables, which are for the most part imported. Although the raising of the Bank of Israel interest rate during the year led to an increase in the local real interest rate and to a cooling off of the economy, it also led to lower shekel prices for imported goods.

Terms of trade: During the period from mid-2010 until early 2011, there were large increases in the global prices of commodities, and of fuel in particular, which should be viewed against the background of the global economic recovery and the instability among some of the oil exporters. The prices of energy, which constitute

Figure 7.1
The Current Account Surplus and the Surplus in the Goods and Services Account, 2004-11
(seasonally adjusted)

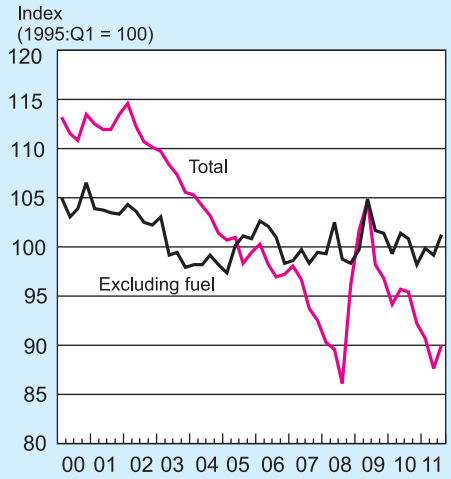


SOURCE: Central Bureau of Statistics.

The prices of energy products, which account for one-fifth of Israel's imports, rose by 50 percent within one year and significantly widened the deficit in the goods account.

one-fifth of Israel's imports (not including diamonds), have increased by 50 percent (in dollar terms) in the space of only one year, and the prices of other raw materials (excluding diamonds and energy), which comprise close to half of Israel's imports, grew by 13 percent. The prices of imported goods as a whole grew by no less than 18 percent (the second quarter of 2011 relative to the same quarter in 2010). During the second half of the year, as global growth slowed, the prices of commodities stabilized and even fell somewhat, apart from energy prices (in current dollars), and the drop in prices intensified during the last quarter of the year. The price of fuel fell during the third quarter of the year, but rose again in the fourth quarter, following the increased tension in the Middle East. The rise in global commodity prices relative to the previous year also increased export revenues, primarily from chemical and fertilizer products produced in Israel, but since the weight of commodities is much larger in imports than in exports, the rise in their prices was manifested in a significant deterioration of the terms of trade (the ratio of export prices to import prices). For the year as a whole, the terms of trade worsened by 3.8 percent and as a result the deficit in Israel's goods account grew by about $3.6 billion.[1] The worsening of the terms of trade explains one-half of the increase in the deficit of the goods account in 2011 as a whole and 45 percent of its increase in the first half of the year (relative to the average for 2010).[2]

Figure 7.2
Index of Israel's Terms of Trade[a]
(excluding ships, aircraft and diamonds)



[a] Ratio of import prices to export prices.
SOURCE: Central Bureau of Statistics.

Real appreciation in recent years[3] and the business cycle: Another factor that has affected the deficit this year was the prolonged real appreciation in recent years. Two indices of the real exchange rate, i.e., the cost of the consumption basket in Israel

[1] This assumes that the increase in import prices did not reduce the quantity of imports. This is a fairly reasonable assumption since the main price increases were for energy and food, whose demands are inelastic (over a one-year horizon).

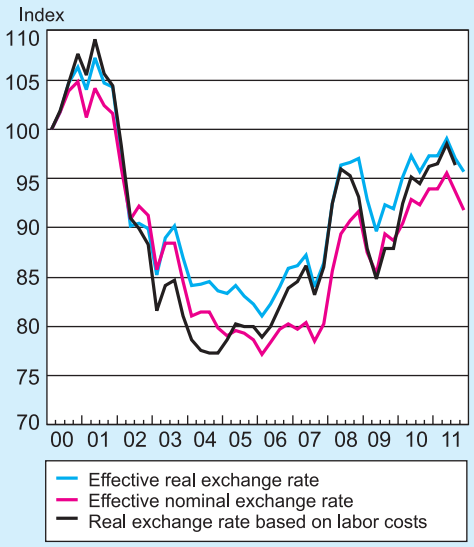
[2] Another factor that contributed to the deterioration in the terms of trade during the first half of the year and its improvement during the second was the trend of the euro/dollar exchange rate. The euro strengthened during the first half of the year and weakened during the second. Since Israel has an import surplus with the euro bloc and an export surplus with the US, the weakening of the euro lowers the prices of Israel's imports and improves its terms of trade.

[3] The balance of payments and the exchange rate influence one another simultaneously. The analysis here assumes that the goods and services account reacts with a lag to changes in the exchange rate since production processes in the export industries take time and price rigidities delay the adjustment in the prices of import goods.

relative to other countries (in a common currency) and unit labor cost in Israel relative to other countries, show a significant increase since 2007 (17 percent according to the former index and 21 percent according to the latter). The rapid increase in unit labor cost in Israel (beyond the rate of increase among its trading partners) shows that the appreciation reflects increased production costs in Israel relative to Europe and the US (and not just an increase in the price of the basket of consumption goods due to housing prices). The real appreciation was partly due to the difference between Israel and its trading partners in the progress of the business cycle. Thus, high unemployment in Europe and the US worked to erode wages there, and as a result wages in Israel rose relative to those of its main trading partners. The rate of growth in wages (and other production costs) increased relative to Israel's trading partners as a result of the nominal shekel appreciation (the increase in wages and prices in Israel in shekel terms was relatively moderate). Therefore, the nominal appreciation raised wage costs in Israel significantly relative to its trading partners (in terms of foreign currency) and real factors, including the high rate of employment in Israel and the high rate of unemployment in its trading partners, provided support for a new level of the real exchange rate and fixed it in that vicinity, at least for now. Another factor that has contributed to shekel appreciation during this period was the relatively depreciated level of the shekel at the beginning of the period (during the years 2006–07).

In recent years, production costs have increased in Israel, particularly the cost of labor, relative to its trading partners (in terms of foreign currency), which in itself reduces the competitiveness of Israeli producers.

Figure 7.3
Indices of the Effective Real Exchange Rate, the Effective Nominal Exchange Rate, and the Real Exchange Rate Based on Labor Costs,[a] 2000-11 (January 2000 = 100)



[a] A rise in the indices signifies shekel appreciation.
SOURCE: Based on IFS data.

A study carried out in the Bank of Israel found that the level of the real exchange rate in 2011 was consistent with the gap in per capita growth rates between Israel and the US, which serves as an indicator of the trend in productivity (see the discussion in Section 6 and Figure 7.20). However, the growth in per capita GDP in Israel relative to its trading partners does not reflect productivity factors alone, but also cyclical factors, since the rate of unemployment in the US and Europe are currently much higher than that in Israel. In real time, it is difficult to differentiate between cyclical transitory growth in demand and a long-term improvement in productive capacity, i.e., growth in productivity. Only when the business cycles of Israel and the advanced economies are synchronized is it clear whether rapid growth in Israel

The large increase in productivity in Israel relative to the US improved the competitiveness of Israeli producers and offset the effect of increased production costs (the effect of the appreciation) on their profitability.

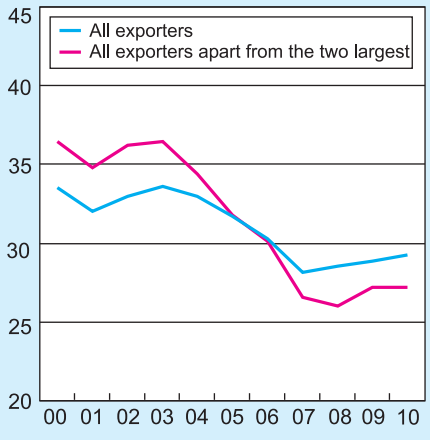
reflects convergence of the level of per capita GDP to that in the advanced economies, which by its nature is accompanied by appreciation of the shekel. If the real exchange rate becomes fixed at its present level without being supported by a parallel increase in the productivity of production in Israel relative to its trading partners, tradable goods that are produced in Israel will be displaced by foreign products and the deficit in the goods and services account will widen.

The unit labor cost in the high-tech industries, which are Israel's main export industries, rose significantly relative to Israel's trading partners.

Unit labor cost has also increased relative to Israel's main trading partners (in terms of foreign currency) in export-oriented industries. Most Israeli exports originate in the high-tech industries, in which labor contracts are flexible. In theory, these industries can avoid the effect of a nominal appreciation with relative ease (through the erosion of the nominal wage) without losing workers, since the salaries in these industries (which is the main component in their production costs) are much higher than in other industries (and the alternative wages for workers with a high level of human capital is lower in the non-tradable goods sector). An examination of the trends in the nominal wage per employee post in the electronics, software and R&D industries (which are the main export industries) shows that it has only eroded to a small extent. Thus, between 2006 and 2010 the rise in wages in these industries lagged by 4 percent behind overall wages in the economy. However, this erosion was far more moderate relative to the appreciation in terms of unit labor cost (21 percent since 2006) and therefore the cost per labor unit in the main export industries went up significantly relative to Israel's trading partners (an increase of 17 percent since 2006).

The real appreciation therefore worked to increase production costs, although it is possible that the improvements in the productivity of production and the rolling over of cost increases to consumers abroad offset its effect on profitability. An examination of the profitability of publicly traded export companies that publish financial statements[4] shows that in most cases their gross rate of profit did indeed drop during the period 2006 to 2011 relative to the previous six years. Nonetheless, the rate of profitability in the export sector as a whole has not fallen to a great extent, thanks to the increased profitability of the largest two export companies (Teva and Israel Chemicals), whose profits are largely earned abroad and which

Figure 7.4
Gross Profitability of Exporting Companies, 2000-11



SOURCE: Bank of Israel.

[4] See: "Trends in the profitability of exporters and non-exporters," Recent Economic Developments 131, May to August 2010, 33–35.

are not subject to fluctuations in the exchange rate of the shekel. The fact that the largest exporters successfully dealt with the increased production costs in Israel was therefore the main reason for the continued growth in Israeli exports. A similar picture is obtained from the trend in the export of goods itself during the previous two years (2009 and 2010), which grew at a rate similar to and even faster than the global trade in goods, although this was due to two main events: the opening of Intel's new factory in Kiryat Gat for the production of electronic components and the marketing of non-generic pharmaceuticals by Teva, which together boosted exports by $4.1 billion (2010 relative to 2008; the total exports of the rest of the manufacturing industries increased by only one billion dollars and even this was eroded in real terms). It can be assumed that the exchange rate had an adverse effect on most companies although it did not have much effect on exports as a whole during the previous two years since the large exporters (who are responsible for the majority of exports and which include Teva, Intel and Israel Chemicals) successfully found ways to increase efficiency.[5] However, the influence of the appreciation on profitability is accumulating and this year it may be having a significant impact in slowing the rate of growth in total exports.

Total exports and the rate of profitability of the large exporters (Teva, Israel Chemicals and Intel) did not decline this year, despite the increased production costs in Israel.

Meanwhile, real appreciation is working to increase the import intensity of the various uses. Thus, between 2006 and 2011, private consumption and GDP grew by real rates of 22 percent, while the import of goods for current consumption and the total import of consumer goods jumped by 46 and 59 percent, respectively. Investment in imported equipment and machinery almost doubled, while the growth in investment in locally produced equipment and machinery was negligible. Finally, the 20 percent growth in the import of raw materials exceeded the 14 percent increase in the Index of Manufacturing Output. These developments were exceptional compared with those in first half of the previous decade when import intensity in the various uses rose at a more moderate rate.[6]

The import intensity of the various uses has grown at a rapid pace in the last five years.

The activity in the **natural gas industry** this year increased the deficit in the current account, as a result of the large investments in the development of the gas fields and the frantic pace of investment in the effort to discover new gas reservoirs (before licenses run out in 2014). An additional contribution to the increase in the deficit of the goods and services account this year was a result of the declining production of the only operating Israeli gas field[7] (Yam Tethys) and the repeated sabotage of the gas pipeline from Egypt, which made it necessary to increase the use of more expensive diesel fuel and coal (whose cost is lower than gas but which must be imported). The use of

The activity in the natural gas industry increased the deficit in the current account. However, the flow of gas from the Tamar reservoir is expected to begin already in 2013 and the contribution of the natural gas discovery to improving the goods and services account will gradually increase in importance.

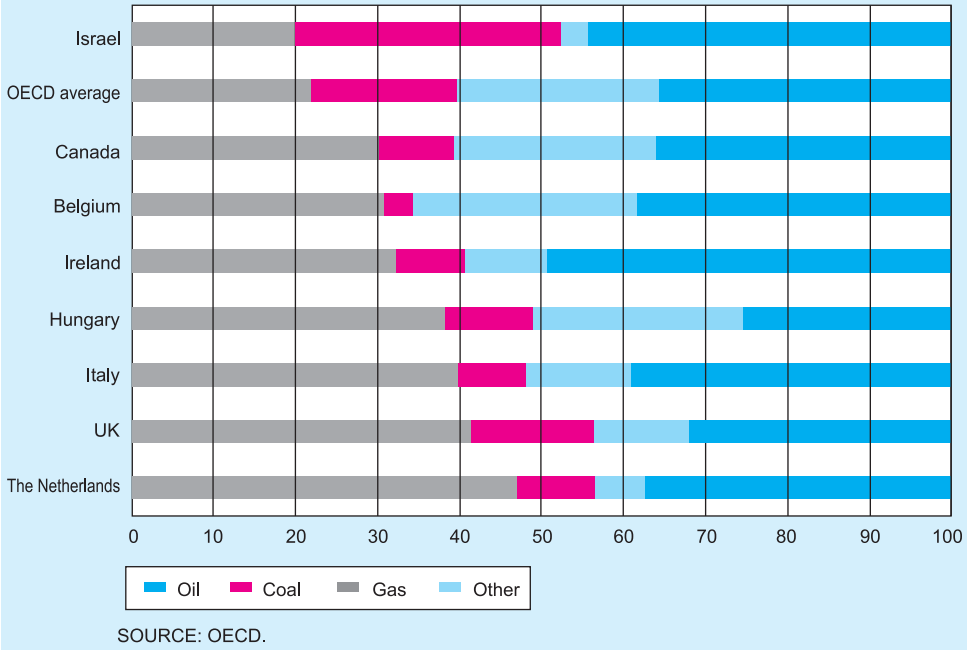
[5] One possible reason for the growth in exports despite the appreciation is related to the specialization in R&D-intensive products, which have relatively high profit margins (and costs will primarily affect development and production processes in the next generation of products). Since they are by nature unique, their demand is less sensitive to price increases.

[6] The rate of investment in imported equipment and machinery within total investment was fairly stable at 67 percent during the first half of the previous decade, before it rose to 77 percent during the last five years (average for 2007–11).

[7] The drop in the output of Yam Tethys began at the end of 2011 and its effect on increasing the expenditure on energy imports will be felt primarily in 2012.

diesel fuel raised the deficit by about $130 million,[8] an amount which is expected to grow in 2012. However, it is expected that natural gas will begin flowing from the Tamar reservoir to electricity producers already in 2013 and the contribution of the gas discoveries to the improvement in the goods and services account will gradually increase as the investments in the gas fields begin to bear fruit.[9]

Figure 7.5
Energy Sources of Israel and of OECD Countries that Use Natural GasIntensively, 2010
(percent of total energy)



SOURCE: OECD.

The large gas fields in the Mediterranean will, for the foreseeable future, be contributing to the resilience of the economy with respect to a crisis brought on by a deficit in the current account. Currently, Israel's balance of payments is exposed to large fluctuations in the expenditure on imported fuels, which accounts for a significant proportion of total imports (15 percent in 2011), and energy prices are highly volatile. The discovery of natural gas will reduce Israel's dependence on imported fuels and in

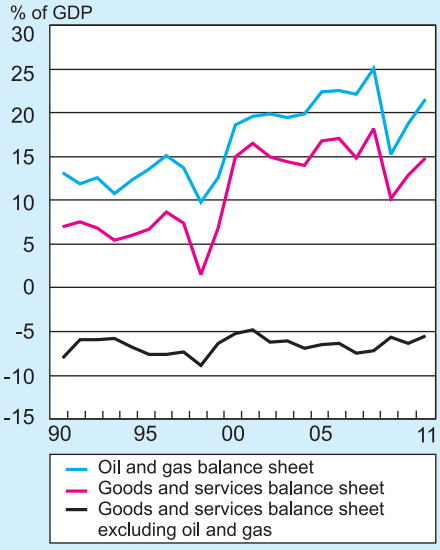
[8] According to the data of the Fuel and Gas Authority, the use of natural gas for the production of electricity fell by 7 percent in 2011, which is equivalent to 1,440 million kilowatt hours (Israel Electric Corporation Report 2010). According to our estimate, the production of electricity at this level using diesel fuel alone will require the importing of fuel oil in the amount of about $200 million. This is on the assumption that the cost of refinement is one-quarter of the cost of diesel fuel at the gate of the refinery. Production of a similar amount of electricity using natural gas involves an import expenditure in the amount of $70 million and therefore the cost of substitution is $130 million. (The cost of substitution for the Israel Electric Corporation is higher since the excise tax accounts for one-half of the price of diesel fuel and because it bears the cost of refinement.)

[9] It is expected that the development of a small gas reservoir off the coast of Gaza will be completed even before then (in 2012).

particular will reduce the risk in the event of instability in the Middle East (which is of course liable to harm Israel in various ways apart from the increase in the price of oil). The natural gas discovery is an important factor in reducing the deficit in the import of goods and services but it also requires a prudent government policy in order to prevent a crisis in the more distant future when the reservoirs have been depleted. The degree to which the current account improves in coming years is dependent on the size of the reservoirs that are discovered, the pace at which they are exploited, the timing of the flow of tax revenues, etc. About 40 percent of the electricity in Israel during 2010 was produced using natural gas and the reservoirs that have so far been discovered (Tamar and Leviathan) have the potential to supply at the current level for the next 100 years or more and to reduce the import of coal by $2.5 billion (in 2010 prices) annually. However, the exploitation of the natural gas reservoirs is expected to be far more intensive, a hint of which can be seen in the proportion of natural gas within total sources of energy in some of the advanced economies (such as Britain, Italy and Hungary), which is double that of Israel. The discovery of natural gas is expected to help pave the way for private electricity producers and will increase the use of natural gas in the production of electricity[10] and in transportation (directly in gas-powered public transportation and indirectly through the increased use of electric cars). Indeed, according to the Ministry of Infrastructure's forecast, the total use of natural gas is expected to double during the next decade. In addition, Israel is likely to become an exporter of liquefied natural gas[11] or electricity, which is liable to deplete the reservoirs at an even faster rate and will lead to rapid though short-lived growth in revenues to the economy. The more intensely the natural gas is exploited, the more important it becomes to implement the government decision to create a sovereign wealth fund that will spread the use of the tax revenues over

The intensity of exploitation of the natural gas reservoirs is expected to increase significantly and the export of natural gas is also possible. This is likely to bring about a large though short-lived increase in the economy's foreign currency revenues.

Figure 7.6
Norway's Goods and Services Balance Sheet, 1990-2011



SOURCE: Statistics Norway.

[10] Sixty-one percent of the Israel Electric Corporation's production of electricity is based on coal. The availability of natural gas is expected to reduce the competitive advantage of coal-fired power plants (whose cost to build is higher but whose operating costs are lower), to partially displace the production of electricity from coal and to increase the competition from small electricity producers.

[11] An agreement was recently signed to examine the feasibility of building a marine infrastructure for the export of liquefied natural gas from Tamar in an amount equal to half of Israel's current consumption of natural gas (3–4.5 BCM per year). It is estimated that such an infrastructure will take five years to build.

many years, in order to benefit future generations as well. Such a fund will improve the current account, but its primary importance will be in protecting the tradable goods industries and preventing overreliance on the natural gas reservoirs to finance the deficit in the goods and services account. The fear is that when the reservoirs are depleted, the economy will be overly dependent on imports, the export industry will be underdeveloped and not sufficiently competitive and the deficit in the current account will expand to dangerous levels (known as the Dutch disease). Norway, which possesses very large sources of natural gas, is a well-known example of a country that has created a sovereign wealth fund and has successfully avoided overreliance on its natural resources. Most of its surplus revenues from natural gas are invested abroad and the goods and services account (apart from the energy sector) is kept at a steady level. Despite the increased surplus of its oil and gas sector during the 2000s, Norway did not expand the deficit in its goods and services account, apart from energy.

During the first three quarters of 2011, there was a major increase in all components of the import of goods, i.e,,. capital goods, consumption goods and raw materials.

Imports of goods and services: In 2011, there was rapid growth in the import of goods although a downward trend appeared in the fourth quarter. The total import of goods (apart from energy) rose this year at a real rate of 14 percent, which included a 40 percent jump in the import of capital goods and particularly rapid growth (8 percent) in the import of consumption goods. The 7 percent growth in the import of raw materials was also much faster than the increase in the Index of Manufacturing Output, which rose by 2 percent. During the first half of the year, there was also a change in the trend of goods imports. The rapid rise in imports during the first half of the year and the decline during the fourth quarter were much more pronounced than for GDP and uses. This reflects, among other things, the sensitivity of import-intensive uses, i.e., investment and the consumption of durables, to the business cycle.

The rapid increase in the import of capital goods during the first half of the year was a result of the investment in the Intel factory and in the natural gas drilling, as well as the general boom in the economy.

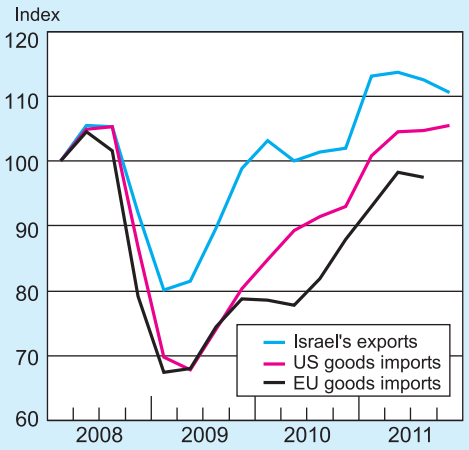
The rapid growth in the import of goods in general and of capital goods in particular during the first half of the year is evidence of the boom in local demand, against the background of the economy's approach to full employment and the full utilization of production capacity. Although the exceptionally large increase in the import of capital goods was primarily the result of the trends in only three industries, i.e., electronic components (the upgrade of the Intel factory in Kiryat Gat), mining and quarrying (the discovery of natural gas) and the oil refining sub-industry, which increased their import of capital goods five-fold, investment in the other manufacturing industries also grew at fairly high rates during the first half of the year. The pressure of demand in the economy, the low interest rate and the real appreciation were reflected in rapid growth in the import of electrical appliances, furniture and clothing. The growth in the import of consumption goods would have been even larger if the purchase of vehicles had not already peaked in the previous year. The third quarter of the year saw a change in trend, as already mentioned, and imports in real terms declined. This was mainly reflected in the import of consumption goods while the import of capital goods remained at its high level.

The change in the trend of imports occurred as fears increased of a serious crisis in Europe and its effects on the world economy, which were manifested in sharp price

declines in the capital markets of Europe and the US at the end of July. The previous crisis was also accompanied by declines in the capital markets and a decrease in Israel's imports, although the decline at the beginning of that crisis was much steeper (8.3 percent, which is the rate of change during the last quarter of 2008 and the first quarter of 2009 relative to the previous six months) as compared to only one percent during the second half of 2011. The fall in global trade (in real terms) and in the prices of goods was also steeper, even though the decline in share prices world wide was quite similar in magnitude.[12] Thus, there was concern that an additional deterioration in the situation would lead to a steep decline in global trade, and also Israel's foreign trade.

The decline in global trade and in the prices of commodities in the previous crisis was larger than the current decline, even though the fall in share prices world wide was similar in magnitude on the two occasions.

Figure 7.7
Israel's Exports Relative to the Goods Imports of the EU and the US, Nominal Indices, 200811



SOURCE: Central Bureau of Statistics and the OECD.

Israel's exports of goods and services[13] grew at a rate similar to that of the imports of its main trading partners. Thus, during the first three quarters of the year, it increased relative to the same period during the previous year at a rate of 6.5 percent in real terms while the imports of the EU and the US grew by 5.5 percent. Nonetheless, the low growth in Israeli exports cannot be attributed solely to changes in global demand, since the export of goods from the US and the EU countries grew by 8 percent this year (compared with an increase of only 4 percent in Israel's goods exports). This is explained by the fact that the US and the EU were more successful in exploiting the growth in demand in the emerging markets and their exports to those countries increased significantly. The lag in Israel's goods exports behind that of the US and the EU was also reflected in the nominal rate of increase (a 12 percent increase compared with 17 and 20 percent, respectively, in dollar terms). Some of this difference is explained by the composition of Israel's exports, which are high-tech-intensive. Thus, the large increase in commodity prices during the first half of the year had almost no effect on the prices of high-tech goods though it raised the prices of traditional goods.

Israel's export of goods grew at a slower rate than that of the US and the EU, which more successfully exploited the increased demand in the emerging market economies.

There was a notably large drop in exports to the US this year (2 percent in current dollar terms). Thus, the US share of Israel's goods exports fell by 2.7 percentage points to 25 percent while the shares of the EU, China and Turkey grew. The source of the decline in the US share was in chemical products and airplanes (Table 7.3). The share of electronic goods in Israel's exports to the US did not decline this year

In recent years, there has been a sizable reduction in the shares of the US and the EU in Israel's export of goods in all categories, apart from chemical and pharmaceutical products.

[12] During the fourth quarter of 2008, the Dow Jones average declined by 19 percent, as compared to a decline of 13 percent during the third quarter of 2009, and the extent of declines in Europe was no less than during the current crisis.

[13] All the data relate to exports excluding diamonds.

though this followed a significant drop in previous years. The increase in the weight of exports to the EU was particularly large this year, despite the economic crisis there. However, in recent years, the shares of the US and the EU in Israel's exports have shrunk considerably, apart from in the case of chemical products.

The rapid growth in exports to China and Turkey continued this year, but exports to India declined.

The export to non-EU European countries grew at a high rate, primarily due to the 41 percent jump in exports to Turkey, which was part of the sharp rise (37 percent) in Turkey's total imports from all countries. (Seventy-five percent of the increase in Israeli exports involved chemical products.) China's total imports grew this year by 27 percent while Israel's exports to China grew by 31 percent, after having doubled last year. Israel's exports to other Asian countries grew at a rate similar to its total exports, after having grown by 40 percent last year. Since 2007, the growth in Israel's exports to Asia, and in particular to China, has been more rapid than the export of other countries to Asia, although the share of Israeli exports in China's total imports and those of Asia is still lower than Israel's share of US and EU imports. The growth in exports to China this year and in previous years was primarily the result of two large categories of Israeli export goods: chemical products and electronic products (machines, electric equipment and audiovisual equipment and parts).

India's total imports grew this year by 27 percent but Israel's exports to India fell by 20 percent, though they had grown significantly in previous years. The share of India in Israel's total exports has doubled in the past four years, reaching a level of 4 percent; however, this year its share fell to 3 percent.

Table 7.2
Israel's Exports by Target Markets, and the Exposure of Israel's Exports to Those Destinations, 2007–11

(share of total goods exports)

	EU	US	Asia, excl. Japan	*of which:* China	Other destinations
2007	34.8	28.1	13.3	2.9	23.8
2008	33.1	27.9	14.3	3.1	24.7
2009	29.2	32.8	15.0	2.9	23.0
2010	30.1	27.7	18.5	4.9	23.7
2011	31.9	26.0	17.1	5.7	25.1
			(Exposure index[a])		
2007	1.9	1.5	0.5	0.4	0.9
2010	1.8	1.7	0.6	0.5	0.9
2011	2.0	1.6	0.5	0.5	1.0

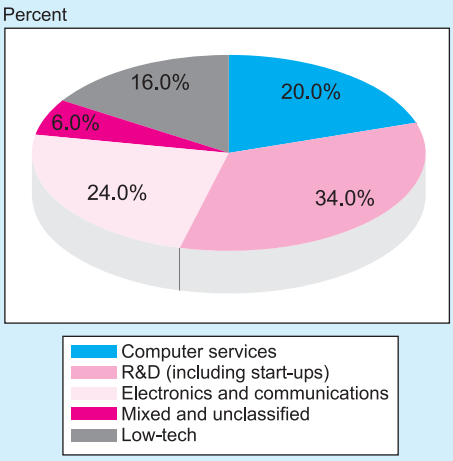
[a] The exposure index is the ratio of the share of that destination in Israel's exports to its share of global exports

SOURCE: Central Bureau of Statistics and WTO.

The export of high-tech services was characterized by particularly high growth this year (17 percent in dollar terms). The exports of the computer services industry, which is the largest of the service industries and one of the largest export industries

in the economy, rose at an exceptionally high rate of 35 percent. In contrast, the exports of the second-largest export industry, i.e., the R&D industry, fell this year by 5 percent, after having grown rapidly during the period 2006–09. The export of high-tech services is included in the export of business services and accounts for 62 percent of that category. The rest (most of which is not classified) is comprised of other knowledge-intensive services, such as legal services, banking services, security services, etc. The total export of business services grew this year by 15 percent in real terms and this accounted for most of the growth in the export of goods and services (85 percent). The contribution of this industry to the growth in the value added of exports was in fact even larger since the proportion of value added in the export of business services is much higher than for manufacturing exports (84 percent versus 52 percent), in which the production process requires imported inputs.[14] The success of the industry this year is particularly evident from its export destinations. Thus, one-half is destined for the US and one-third for Europe (one-quarter goes to the EU; 2009 data). The relatively high exposure to the European market has been problematic for this industry and in addition the US is still in a recession. Thus, US imports of other services grew by only 5 percent this year (in current dollar prices) and the Tech Pulse Index, which measures activity in the high-tech industry in the US, grew at a similar rate.

Figure 7.8
Composition of Israel's Business Services,[a] 2007-11



[a] High-tech exports (computer services, R&D, electronics and communications) constitute 64 percent of Israel's business services exports.
SOURCE: Based on Central Bureau of Statistics data.

The export of business services grew significantly this year, thanks to the rapid increase in the export of high-tech services, primarily computer services.

The revenues from the export of tourism services grew only somewhat this year (2 percent in dollar terms and 0.6 percent at constant prices, according to National Accounts data). The number of incoming tourists fell somewhat but this was the result of an increase in tourists arriving by air at the expense of day visitors arriving by land, which dropped considerably (partly due to a decline in tourism from Egypt). The change in the mix contributed to an increase in the number of tourist bed nights in hotels (4 percent), which reached a level similar to its peak in 2008. The exposure of the tourism industry to the crisis in the advanced economies is no less than in other industries, with 82 percent of tourists originating from Europe and the US. Furthermore, one-quarter of the tourists coming to Israel arrive from France, Britain and countries in which the economic crisis has hit even harder (Italy, Spain, Portugal, Ireland and Greece). The flow of tourism also affects total revenues from the export

The number of nights stayed by tourists in hotels reached the record level of 2008, even though the majority of the tourists arriving in Israel originated from countries that were particularly affected by the economic crisis.

[14] See: "An estimate of the value added of exports," Recent Economic Developments 129, September to December, 2010, p. 24–27.

Table 7.3
The Share of Israel's Goods Exports to the US, the EU, and Emerging Markets, Selected Groups of Goods, 2007–11
(percent)

	Share of total exports	Exports to the US as share of total exports of groups of goods			Exports to the EU as share of total exports of groups of goods			Exports to China, India, and Turkey as share of total exports of groups of goods		
	2010	2007-2009	2010	2011	2007-2009	2010	2011	2007-2009	2010	2011
Chemicals and related products	35	34	38	32	33	32	36	10.5	11.5	13.7
Machinery, electrical equipment, audio/visual equipment and parts	28	26	22	22	30	26	26	9.3	13.1	13.2
Optical, photographic, medical, measuring and inspecting instruments and tools	8	35	31	32	26	21	23	8.2	11.4	10.6
Simple metals and items made from them	5	28	29	25	38	30	33	13.1	19.0	14.7
Vehicles, planes and boats, and transport equipment	5	17	16	3	8	5	4	1.1	5.4	2.3
Total, excl. diamonds	**100**	**28**	**28**	**25**	**34**	**30**	**32**	**8.8**	**11.2**	**11.8**

SOURCE: Central Bureau of Statistics.

of transportation services, which includes revenues from services provided by Israeli airline companies and the local airports to foreign residents.

Sixty-two percent of total revenues from the export of transportation services is earned from the transport of cargo between foreign ports, primarily by Zim, the Israeli shipping company.[15] The revenues from this activity grew this year by only 3 percent, despite the major rise in the price of fuels that increased costs significantly (and which necessitated an even larger increase in revenues through, for example, the updating of prices). However, the global shipping industry experienced an erosion of profitability this year, due to the significant number of new cargo ships launched world wide (including giant ships that enjoy economies of scale and which increased the level of competition) and the slowdown in global trade, as well as the increased cost of fuel, as mentioned.

The slowed growth in high-tech exports, against the background of high rates of employment, might have indicated the existence of supply constraints, especially in the high-tech industries which require skilled workers. However, the number of employee posts in the electronic and R&D industries increased at a high rate this year (5 percent). The lack of a severe supply constraint was also evident from the economy's export of goods in 2011, which exceeded its volume prior to the previous crisis by only 3 percent, in spite of the fact that during the last three years, manpower, physical capital, R&D capital and productivity probably all grew.

b. The crisis in Europe and its effect on Israeli exports

The prolonged economic crisis in Europe grew worse during the second half of the year and it also constitutes a threat to Israeli exports. Europe is an important market for Israeli exports, even though its importance in the global economy and in world trade is declining. The free trade agreements and the similarity in the levels of economic development have contributed to the creation of extensive trade relations with European countries. In addition, the fact that the trade relations between Israel and the nearby Arab countries are limited has increased the relative importance of Europe in Israel's foreign trade. As a result, Israeli exports are exposed to the effects of the crisis in the EU more than those of other non-European countries. Thus, 27 percent of Israel's exports of goods are destined for the EU as compared to only 17 percent of the total export of goods from non-EU countries (a weighted average). Israel's total export of goods and services to the EU is equivalent to 9 percent of its GDP. Although these exports also include, apart from local output, raw materials that were imported into Israel, the rate of value added implicit in the export of goods and services to the EU (apart from transportation and tourism services) is high (6–7 percent of GDP) even without these imports. The slowdown in the European economy is expected to affect the chemical industries in particular (apart from pharmaceuticals) and the export of plastic products, half of which is destined for the EU. This is also

Israel's total export of goods and services to the EU was equal to 9 percent of its GDP; the value added of these exports is equivalent to 6–7 percent of GDP.

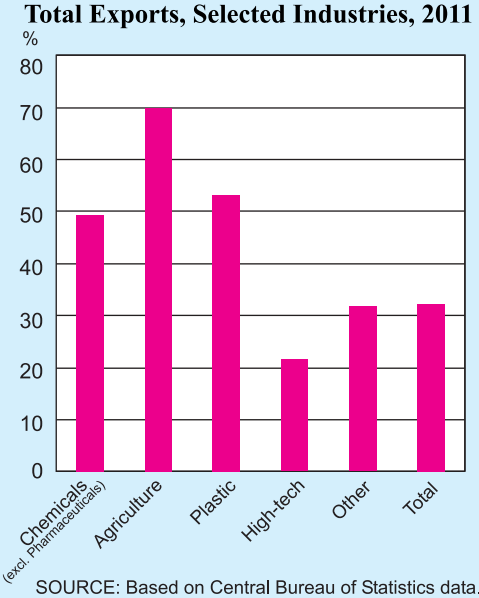
[15] The company reported a loss during the first three quarters of the year.

true of agricultural exports since there are almost no alternative export markets for fresh high-quality produce.

The proportion of Israel's exports to the five countries in crisis (Italy, Spain, Greece, Portugal and Ireland) within its total exports fell from 5.1 percent in 2009 to only 4 percent in 2011.

The crisis in the EU is currently centered on the five countries whose situation is particularly precarious, i.e., Italy, Spain, Greece, Portugal and Ireland. However, the direct exposure of Israeli exports to these countries is not large—amounting to only about 4 percent of total Israeli exports—although the drop in exports to these countries in the last two years has reduced Israeli exports by one percent since their weight in total exports reached 5.1 percent in 2009 (the main decline was in exports to Spain and Greece). The figures for the crisis countries show a precipitous decline in Greece's total imports (by 16 percent) and a significant slowing in the growth of imports of Portugal, Ireland and Spain (by 11, 12 and 13 percent, respectively) relative to the imports of EU countries (20 percent). The trend in the imports of Italy, which is the largest and most important of these five countries, was no different than that of the other EU countries.

Figure 7.9
Israel's Exports to the EU as Share of Total Exports, Selected Industries, 2011



SOURCE: Based on Central Bureau of Statistics data.

The economic crisis is reducing aggregate demand in all the euro bloc countries and the EU, including the demand for Israeli exports. The determined measures taken to improve the competitiveness of the EU producers and the depreciation of the euro are working to shift demand from goods produced outside the EU to goods produced within it and they are also expected to increase the competition from euro bloc exporters in non-EU markets such as the US market. The increase in the level of competition is liable to be a problem for Israeli exporters, since the composition by industry of Israeli exports is very similar to that of the European countries.

The market share of European exporters in the US market is particularly high in Israel's main export industries.

The figures for US imports show that the weights of the twenty-seven EU countries together with the EFTA countries (Switzerland, Norway and Iceland) account for only 21 percent of the total; however the European countries account for a much higher share of US imports in the industries which constitute Israel's main exporting industries. Thus, the EU share of US imports of pharmaceuticals and medical equipment—Israel's main exporting industry to the US— is 75 percent, and in medical and scientific equipment and military equipment, two other important Israeli export industries, the EU accounts for close to 50 percent. When weighting the European share in the various industries according to their weights in Israel's exports to the US

Table 7.4

Selected Countries' Share of US Imports Weighted by Per-Industry Share of Israel's Exports to the US, 2011

(percent)

	Share of US imports	Share of US imports weighted by per-industry share of Israel's exports to the US
EU	20	41
China	23	13
Canada	14	11
Mexico	13	7
Japan	8	6
Germany	5	8
S. Korea	3	2
UK	3	7
France	2	6
EFTA	1	4

SOURCE: Central Bureau of Statistics, US Census Bureau.

(and not within US imports),[16] the market share of the EU countries together with the EFTA countries within US imports increases to 44 percent (from 21 percent), which indicates the relative weight of Europe as a competitor to Israeli exports. The relative weight of other countries, such as China, Canada and Japan, are much lower than their weights in US imports.[17] A different analysis of global trade data shows that the EU countries are not only the main competitors to Israeli exporters in the US, which is Israel's most important target market, but also in other areas of the world. Thus, the difference between the weight of each industry in Israel's exports relative to its weight in the exports of selected countries[18] reveals that the difference is lower relative to Western European countries (Switzerland, Britain, Ireland, Spain and France) and much higher relative to the large exporters to the US (including Canada, Japan and South Korea, which are all advanced economies). Therefore, the similarity between Israel's export industries and those of European countries is greater than their similarity to the export industries of the other large exporters to the US.

We now consider how past fluctuations in the real exchange rates of European currencies influenced Israel's total exports to the US and to Europe. The depreciation of

[16] According to the figures for US imports, which include a breakdown into 138 import categories.

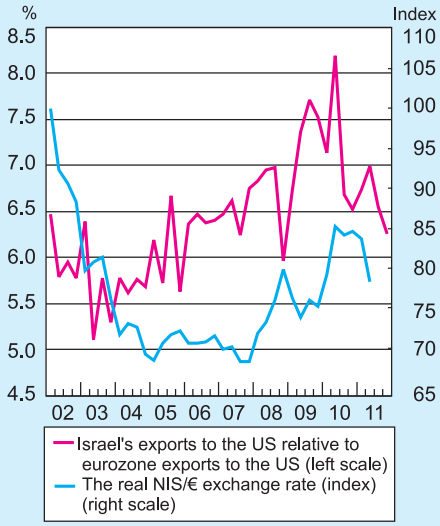
[17] The share of China in US imports is 22 percent but the weighted share according to Israel's' export industries is only 13 percent; the joint share of Canada and Japan according to this weighting declines from 22 to 17 percent.

[18] The index is calculated according to the export weight of each industry. The data break down the exports of each country into 138 industries: the weight of exports (to the US) of industry j in the total exports of country i (to the US) less the weight of that industry in Israeli exports (to the US) squared, i.e., $(Xj,i-Xj,Israel)^2$.

The depreciation of European currencies relative to the shekel during the previous decade did not bring about a drop in the market share of Israeli exporters in favor of European exporters.

European currencies relative to the shekel made European products cheaper relative to Israeli ones and this could be expected to have resulted in an increase in US imports from Europe and a decrease in US imports from Israel. Figure 7.10 presents the ratio between Israel's exports to the US and European exports to the US and the exchange rate of the shekel relative to European currencies (a weighted average according to the volume of their exports to the US). During the period between early 2008 and mid-2010, during which the shekel appreciated in real terms against the European currencies, Israel's exports to the US in fact grew at a relatively high rate (some of which was the result of the opening of the Intel factory in 2009 and the growth in the export of pharmaceuticals). From 2002 to 2004, during which the shekel depreciated, due to the second intifada and the collapse of the Nasdaq index in the US, Israel's relative market share did not grow at all. Thus, it is possible to conclude that the depreciation of the European currencies relative to the shekel did not in the past bring about a drop in the market share of Israeli exporters in favor of European exporters and this is certainly true in the immediate run. A possible explanation is that Israeli exports are R&D intensive and are characterized by differentiated products.

Figure 7.10
Competition in the US Market: the NIS/€ Exchange Rate, and Israel's Market Share Compared with that of the Eurozone, 2002-11



SOURCE: US Census Bureau and IFS.

Box 7.1
The human capital intensity of exports

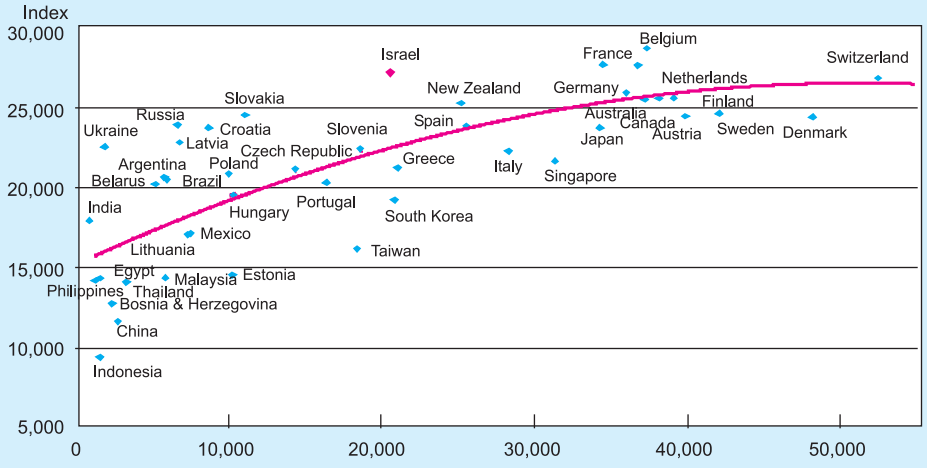
The composition of Israeli exports is similar to that of the very advanced economies and also to that of countries whose per capita GDP is much higher than Israel's. In order to quantify this observation, detailed data for US imports were used to create an index that characterizes the various industries according to the level of development of the exporting country. The index represents the human capital and technological intensity of each industry. It is calculated in two stages: first, each industry is characterized according to the per capita GDP of the exporting countries that export in that industry. (Per capita GDP is used as an indicator of the level of the country's development and its human capital.) For example, the pharmaceutical industry is characterized by a very high per capita

GDP ($36,000 per capita) since the US imports of pharmaceuticals originate in countries with very high per capita GDP. The per capita GDP that characterizes the pharmaceutical industry is calculated as a weighted average of the per capita GDP of the countries that export pharmaceuticals to the US. (The weighting is according to the proportion of the exporter in US imports of pharmaceuticals.) The index provides an indicator of the similarity between the level of development required to export pharmaceuticals to that required for the export of airplanes for military use (which is characterized by per capita GDP of $33,000) and the distance between them and the level of development required for the export of clothing products ($3,000), which is unskilled-labor-intensive. In the second stage, the index characterizes each country according to the composition of its exports by industry (using the values for the level of development obtained for each industry). For example, for a country whose exports are one-half pharmaceuticals and one-half military aircraft, the index will receive a high value ($34,500) while a country whose exports are one-half military aircraft and one-half clothing will receive a lower value ($19,500).

The index ranks Israel as fifth among all the countries and it receives a higher ranking than much more advanced economies (measured by per capita GDP), such as Germany, Japan and Sweden, whose exports are hi-tech intensive, but also exports from industries in which the developing countries are predominant, such as the automotive industry, which also can be found in Mexico and South Africa. Thus, a high ranking according to this index (i.e., higher than its ranking according to per capita GDP) can in fact indicate an inability to compete against developing countries in traditional industries and the abandonment of those industries due to the increasing competition from developing countries. We choose to interpret Israel's high index primarily as a sign of strength, since the weight of exports in Israel's GDP is high by international standards, while countries that have trouble competing in world markets are usually characterized by a relatively small export sector and a deficit in their current account. Furthermore, during the past decade, Israel's market share in US imports has grown (by 25 percent), in parallel to the sharp increase in the technological intensity of its exports (from $23,000 in 2002 to $27,000 in 2010) while the average index of all other countries did not rise.

The fact that the composition of Israel's exports is similar to that of more developed countries is a sign of what is known as the dual economy. In such an economy, there is a technology-intensive sector which is the source of most of the added value in Israeli exports (and for 45 percent of its volume) alongside a traditional sector that has difficulty competing in the international market. (Most of the non-technological exports are from mining and processing of natural resources, tourism and shipping.) The hi-tech sector is characterized by a very high level of productivity and compensates its workers with salaries that are at least twice the average in the business sector. However, its proportion of employment is relatively

Figure 1
Index of Technological Intensity of Exports and Per Capita GDP, Selected Countries, 2010



SOURCE: Based on US Census Bureau and USDA ERS (Economic Research Service) data.

small (10 percent of workers in the business sector). It includes, among other things, R&D centers of leading foreign companies, innovative start-up companies, advanced software services, pharmaceutical and medical equipment companies and large parts of the defense industry and the electronics industry. The non-technological sector employs most of the workers in the economy but it invests little in R&D, most of its output is destined for the local market and its workers have a relatively low level of education and earn low salaries.

Israeli exports are largely concentrated in a small number of industries, which is apparently the direct result of the nature of activity in the hi-tech industries. A precise analysis, which is based on data for US imports according to country and industry, indicates that industrial concentration of Israeli exports is higher than in most other countries. This is particularly so when account is taken of the volume of exports since there is a clear negative correlation between the level of concentration and the volume of exports. Thus, among 19 countries whose volume of exports to the US exceeds that of Israel, only Ireland has a higher level of concentration than Israel and in one half of the other 30 exporters (all of which have a lower volume of exports than Israel) the level of concentration is lower than that in Israel. Israeli exports to the US are considered to be concentrated both because one-third originates in only one industry (the pharmaceutical and medical equipment industry) and because this industry accounts for only 5 percent of total US imports (since the index attributes higher concentration to an economy that relies on an industry whose weight in international trade is small).[11] It is reasonable to assume that such specialization

[1] The index calculates the difference between the weight of the industry in the country's exports and its weight in total US imports, and sums the squared differences.

is a condition for the success of the technological sector and therefore the connection between technology-intensive exports and the high concentration of exports—as can also be found in Ireland—is not a coincidence. In general, overreliance on a small number of industries or products increases the volatility in the volume of exports and therefore is also risky for the economy. However, an international comparison indicates that the volatility in the volume of Israel's export of goods during the last decade was low relative to that of other countries. (This may be because the prices of hi-tech products are relatively stable in view of the fact they contain only a small component of commodities, whose prices are more volatile.)

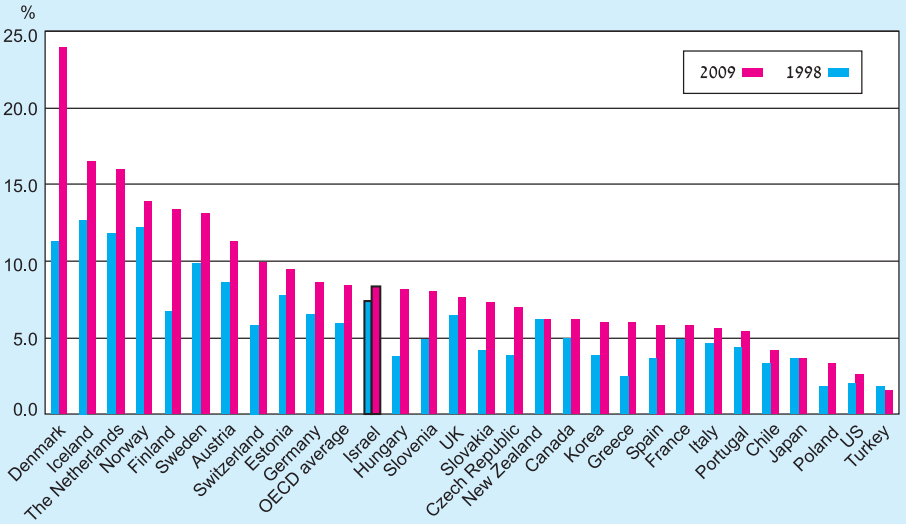
c. The import of services: an international comparison

Despite the revolution in information technology, the scope of international trade in business services is still small in size.

The IT revolution of the last two decades created the potential for a significant change in the scope of international trade in services, which were considered until recently to be non-tradables. The Israeli economy is able to benefit from its exposure to the import of services, particularly those for which there is a low level of local competition due to the economies of scale in production and other entry barriers (such as insurance services and financial services). In addition, the signing of international trade agreements in services has the potential to increase Israeli exports since Israel's relative advantage in R&D services can strengthen its competitiveness in a variety of human-capital-intensive business services (medical, legal, etc.) and thus increase productivity. However, although the trend in the import of services by advanced economies during the last decade shows relatively rapid growth, there has not been a radical change. The volume of imported business series relative to the GDP of the advanced economies still remains small. Even in the EU countries, the volume of trade in services is not high despite the lack of trade barriers and the fact that regulation, which is increasingly determined on the level of the EU, is not overly burdensome. The signing of liberal agreements, the removal of regulatory barriers and the modification of the tax system would increase Israel's trade in services; however, there are more significant barriers, such as language and the fact that many services are produced by the government, thus limiting the possibilities for international trade. Thus, for example, the possibility of international trade in educational and medical services between the EU countries is limited since most of the demand is met with public goods provided by the governments.

The signing of liberal trade agreements, the removal of regulatory barriers and the modification of the tax system would enable the economy to benefit from the trade in services to a greater extent.

Figure 7.11
Share of Services Imports in GDP in OECD Countries, 1998 and 2009



SOURCE: OECD (excluding Australia, Ireland, Belgium, Luxembourg and Mexico).

Table 7.5
Distribution of Services Imports of Advanced Economies and Israel in 2009, and the Change from 1998 and 2005

	Advanced economies[a]			Israel	
	Distribution of services imports, 2009 (percent)	Change from 2005 (percentage points)	Change from 2008 (percentage points)	Distribution of services imports, 2009 (percent)	Change from 2005 (percentage points)
Tourism	24.6	-2.0	-3.9	17.0	-4.1
Transport	24.4	-3.5	-1.8	31.7	-2.7
Royalties	8.1	1.1	2.5	3.9	-0.6
I.T. services	3.6	0.8	1.5	3.1	0.6
Insurance	3.3	0.4	0.8	2.3	-0.7
Communications	3.1	0.4	0.4	2.2	0.6
Financial services[b]	3.1	0.2	0.3	--	--
Other	29.9	2.5	0.1	39.8	6.8
	(Share of services imports)				
In GDP	8.5	0.4	2.6	8.3	-0.1
In current account	17.7	1.6	0.7	22.9	2.0

[a] Countries included: Austria, Canada, Chile, the Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Turkey, UK and US.

[b] Israel's imports of financial services are included in "Other".

SOURCE: OECD.

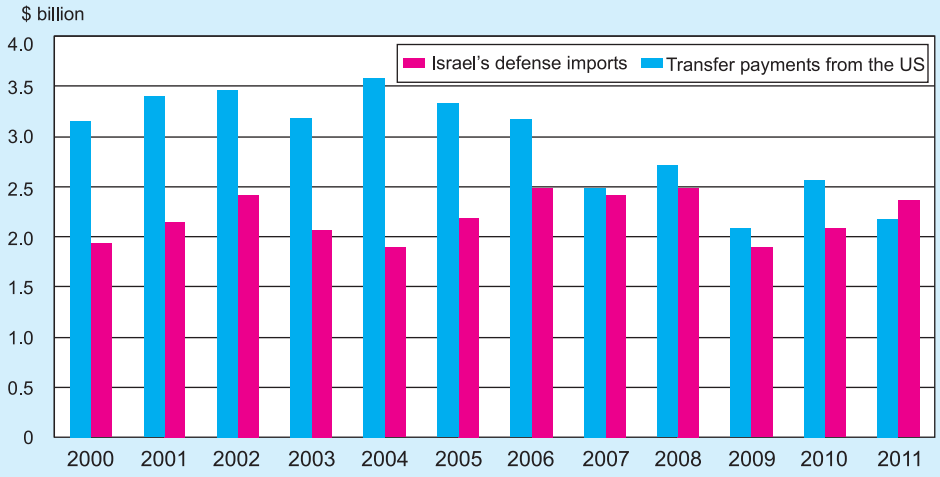
During the last decade, the total import of services relative to GDP in the advanced economies and in Israel has risen although the increase in Israel was more moderate.

The volume of services imported by the advanced economies totaled 8.5 percent of GDP, half of which was composed of imported transportation and tourism services and half of which was business and other services. The weight of imported services in Israel's GDP is similar to that of the advanced economies; half of that is composed of tourism and transportation services, as in the advanced economies. The main difference between Israel and the advanced economies is in the rate of growth in imported services during the past decade. Thus, while in Israel growth in imported services has been similar to that in GDP, they have grown much faster (than GDP) in the advanced economies (Figure 7.11). The composition of imported services in the advanced economies has changed considerably in the past decade: the weight of imported transportation and tourism services in total imported services has fallen from 55 to 49 percent while the weight of other services has risen. There has been relatively high growth in the weight of industries related directly to the computer communication revolution and of computerization services and royalties (including those paid for the use of software), while the international trade in banking, insurance and communication services has not yet fully exploited the potential of the technological revolution (their total weights within imported services has grown from 7.5 to 9 percent but their weight in GDP is less than one percent). The weight of imported transportation and tourism services has fallen in Israel as well, while there has been an increase in other services, which include computerization services and royalties. However, there has been no real growth in insurance and communication services. (Detailed data for Israel exist only since 1994 and they do not include information on the import of financial services.)

3. THE INCOME ACCOUNT AND CURRENT TRANSFERS ACCOUNT

In addition to the goods and services account, the current account of the economy is also made up of the income account and the current transfers account. There were no major changes in these accounts, apart from a decline in the income of foreigners from their direct investments in Israel during the third quarter and an increase in transfers from the US government for the financing of missile defense systems. In 2007, the US government committed itself to providing assistance to the Israeli government for its defense needs in the amount of $30 billion over a period of 10 years (from 2009 to 2018). Seventy-four percent of the aid must be used for purchases in the US, and the balance can be converted into shekels for defense acquisitions in Israel. In 2011, the US assistance budget stood at $2.8 billion. Although this amount has remained more or less unchanged since 1998, it is currently defined exclusively as defense assistance while previously 40 percent was defined as civilian assistance. Therefore, the correlation between current transfers from the US government and defense imports has increased.

Figure 7.12
Transfer Payments from the US to Israel and Israel's Defense Imports, 2000-11



SOURCE: Central Bureau of Statistics.

The income of Israelis from interest and dividends on their investments abroad was lower than the parallel income of foreigners from their investments in Israel.

Income from interest and dividends in the income account: The value of assets abroad owned by Israeli residents exceeded the assets of foreign residents in Israel (by 7 percent at the beginning of 2011); however, the income of Israelis from their investments abroad was 30 percent less than the income earned by foreign residents on their investments in Israel. About one-third of the gap is the result of the different composition of the two portfolios: a high proportion of the investments of Israeli residents is held in safe and liquid assets, which accordingly produce low yields, while the weight of these types of assets in the portfolio of foreign residents in Israel is relatively low. The rest of the gap reflects the higher income produced from the investments of foreign residents in its various forms: The direct investments of foreigners produced particularly large dividends, in exchange for the knowledge that foreign firms bring with them to Israel, and in addition foreign residents enjoy relatively high interest rates on their investments in bonds, apparently to compensate for risk.

The total return earned by foreigners on their investments in Israel was negative this year due to the drop in share prices in Israel.

However, the income from interest and dividends presents only a partial picture; a more complete picture is obtained by examining total return, which includes capital gains and exchange rate differences that are not included in the income account. Thus, the total return received by foreigners was negative this year, due to heavy capital losses,[19] while the total return for Israeli investors on assets abroad was much higher. The foreign portfolio of Israeli residents is safe relative to that of foreign residents in Israel and therefore during 2011, when share prices fell in Israel and abroad, the total return received by foreign residents was lower than that received by Israeli residents.

[19] The majority of the investment of foreign residents in Israel are concentrated in five companies: Teva, Checkpoint, Israel Chemicals, Bank Leumi and Bank Hapoalim.

Table 7.6
Allocation of Israelis' Assets Portfolio Abroad and of Nonresidents' Assets in Israel at end of 2010, Return from Interest and Dividends in Income Account, and Total Return for 2011

	Israelis' investments abroad			Nonresidents' investments in Israel		
			(percent)			
	Share of portfolio	Return from interest and dividends[a]	Total return[b]	Share of portfolio	Return from interest and dividends[a]	Total return[b]
Direct investments	26	5.4	4.5	31	6.7	2.2
Shares in the securities portfolio	14	1.7	-10.8	28	1.1	-20.9
Bonds in the securities portfolio	11	2.6	2.9	15	4.4	3.0
Other investments and reserve	49	1.2	1.6	26	1.7	1.5
Total	100	2.6	0.8	100	3.5	-4.5
						($ billion)
Total	250	6.4	-4.3	251	8.7	-19.3

[a] Including accrued interest and undistributed profits.

[b] Including capital gains, exchange rate differentials, accrued interest and undistributed profits.

SOURCE: Based on Central Bureau of Statistics data.

4. THE FINANCIAL ACCOUNT

There was a significant difference in the behavior of the financial account between the two halves of the year: During the first half, the flow of short-term foreign investment into the economy continued, although at a slower pace, while during the second half pressure appeared for the outflow of foreign investment.

The financial account, which presents the capital flows between Israel and abroad, showed significantly different trends during the two halves of 2011. Thus, during the first half of the year, the economy's financing needs grew due to the shrinking of the surplus in the current account, and in addition short-term investment in the economy became less attractive to foreign investors, due to the increase in the economy's risk premium and the restrictions placed on the import of short-term capital. Nonetheless, the shekel depreciated during this period. Thus, following a fairly large depreciation against the background of the revolution in Egypt at the beginning of the year, the exchange rate (relative to the basket of currencies) returned at mid-year to its level at the end of 2010. The renewed strengthening of the shekel was the result of the continuing flow of foreign direct investment into the economy, while the flow of short-term investment, which is sensitive to moves in the risk premium, recorded only a moderate decline. During the second quarter, total foreign investment by Israeli residents fell significantly, which was almost totally due to the assets in the portfolios of institutional investors (primarily due to selling by the insurance companies). The reason for this decline is not completely clear, but together with the slowed accumulation of foreign currency reserves by the Bank of Israel it contributed to the renewed appreciation of the shekel.

During the second half of the year, as a result of growing fears of a debt crisis in Europe and other factors (such as the termination of quantitative expansion in the US and the increased uncertainty in our region), there was a trend change in short-

During the second half of the year, as fears of a debt crisis in Europe increased and geopolitical uncertainty mounted, there was a switch in the direction of capital movements and pressure appeared for a capital outflow.

term capital flows: the inflow of capital halted completely and pressure even appeared for a capital outflow. As a result, the shekel depreciated (which led to a halt in the purchases of foreign currency by the Bank of Israel). Apart from this, the growing fear of a global crisis led to a sharp drop in investment by foreign residents in securities in Israel and also in the investment by Israeli residents abroad. The decline in the investment by Israelis in their portfolio of securities abroad was offset somewhat by the activity of institutional investors, who took advantage of the drop in prices in world capital markets and the depreciation of the shekel in order to increase their holdings abroad. Direct investments hardly declined during the second half of the year, since shocks to the global economy generally affect them only with a lag. During the last eighteen months, the level of direct investment in the economy was quite high; therefore it appears that the trend of real appreciation did not lower the attractiveness of the economy as a destination for foreign investment to any major extent, even though the appreciation increased the price of investment for foreign residents.

a. The financial account during the first half of the year

At the beginning of the year, the Bank of Israel imposed restrictions on the import of short-term capital, which were intended to moderate its flow into the economy.

The raising of the Bank of Israel rate of interest during 2010, which followed the rapid recovery of the economy from the recession and the fear of an acceleration in inflation, led to a widening of the interest rate gap with advanced economies which were still in recession and to a significant increase in the demand by foreign investors for short-term interest-bearing assets in Israel. At first, the Bank of Israel worked to moderate the effect of short-term capital flows on the exchange rate by significantly increasing the foreign exchange reserves. Its goal was that the main part of the burden of restraining inflation would not fall on the tradable goods sector (the export and import substitutes sector), which is the main source of growth in the economy. However, since the effectiveness of the foreign currency purchases was limited[20] (since a depreciation of the exchange rate increases the profitability of capital imports)[21], the Bank of Israel imposed specific restrictions on the import of short-term capital (primarily *makam*). These restrictions[22] were intended to enable the Bank of Israel to raise the interest rate without causing excessive shekel appreciation, and thus to restrain inflation while minimizing the adverse effect on the tradable goods sector.

[20] Sorezcky (2010) found that the purchase of foreign currency by the Bank of Israel led at first to a sharp depreciation of the exchange rate, which was gradually eroded until it disappeared completely after between nine and twelve months. A. Sorezcky, "Did the Bank of Israel affect the exchange rate?" Bank of Israel, Research Department, Discussion Paper Series 2010.10.

[21] The restrictions on capital movements make it possible to reduce the cost of sterilizing capital flows into the economy.

[22] The restrictions included a reporting requirement (December 2010) and a liquidity requirement of 10 percent on the transaction of foreign residents in makam and short-term government bonds (and also on futures and swap transactions that are used to exploit the interest rate gap (January 2011)). In addition, the tax exemption for foreign residents on capital gains from government bonds with maturity of less than one year was cancelled (July), as was the tax exemption on interest income on those same securities (November).

Table 7.7
The Financial Account, 2010 and 2011

(original data, $ billion)

	2010		2011	
	First half	Second half	First half	Second half
Israelis' investments abroad	13.7	14.1	10.8	1.1
Direct investments	2.3	5.7	2.2	1.8
Investments in tradable securities	5.2	3.7	1.0	-2.0
Other investments	0.2	-1.1	3.3	0.3
Foreign exchange reserves	6.0	5.8	4.3	1.0
Nonresidents' investments in Israel	7.0	10.6	11.1	-0.6
Direct investments	1.1	4.1	3.8	4.7
Investments in tradable securities excluding *makam* and government bonds	-0.6	-0.2	1.3	-2.7
Investments in tradable securities, *makam* and government bonds	4.9	4.9	1.2	-0.6
Other[a]	1.5	1.9	4.8	-1.9
Net financial movements (net investments abroad)	6.7	3.5	-0.3	1.7
Direct investments	1.2	1.6	-1.5	-2.8
Financial investments in tradable securities except for *makam* and government bonds	5.7	3.9	-0.3	0.7
Other investments and investments in *makam* and government bonds	-6.2	-7.9	-2.8	2.8
Foreign exchange reserves	6.0	5.8	4.3	1.0

[a] Includes loans, cash and deposits, and commercial credit.

SOURCE: Central Bureau of Statistics.

The restrictions on capital movements and the increase in the economy's risk premium reduced the inflow of short-term foreign investment.

The restrictions on short-term capital flows that were imposed in January 2011 halted the accelerated increase of foreign investment in securities issued by the Bank of Israel (*makam*) almost entirely, but its success in halting short-term capital flows was more limited. Total short-term flows (i.e., *makam*, government bonds and deposits in Israeli banks) dropped from $3 billion per quarter in 2010 to $2.2 billion in 2011:Q1 and to $1.7 billion in 2011:Q2. In addition to the restrictions placed on capital flows, the drop in short-term investment in Israel was also the result of the economy's increased risk premium as a result of the revolution in Egypt in early 2011 (which also affected the rest of the foreign investment flowing into the economy, apart from direct investment). The major effect of the increased risk premium on short-term investments was in fact evident in the short-term investments held by Israelis abroad. Thus, in contrast to the last two years, during which Israeli residents

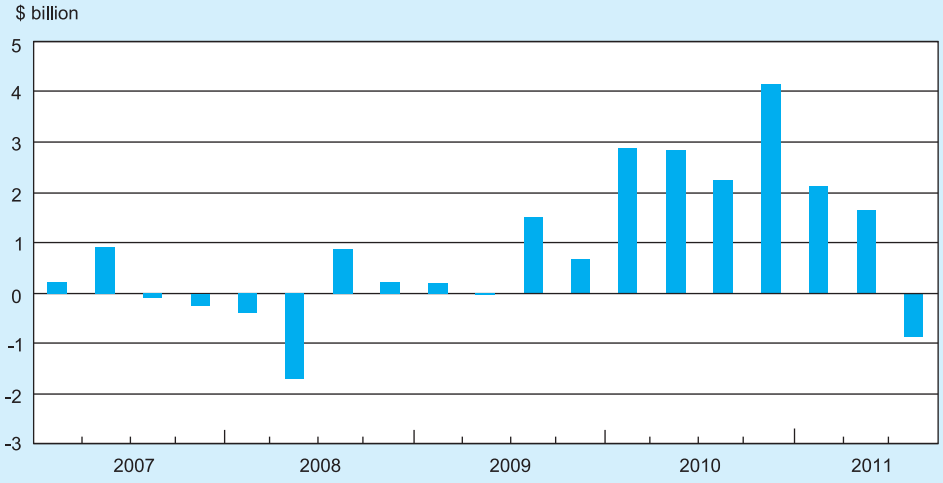
and banks reduced their deposits in foreign banks on a large scale ($3 billion per year), they increased their deposits during the first half of 2011 (by $1.6 billion), even though the interest rate gaps during the first half of the year were higher than during the previous two years.

During the first half of the year, there was a reduction in the flow of foreign investment into Israel through channels that are not driven by the interest rate gap.

During the first half of the year, the other types of foreign investment (which are not affected by interest rate gaps) did not increase. Thus, total direct foreign investment in Israel during these six months was similar to its level during the first half of 2011 and also to the average for the previous three years. In addition, the scope of foreign investment in the portfolio of securities on the Tel Aviv Stock Exchange (apart from *makam* and government bonds) was negligible. Although total foreign investment in the portfolio of securities in Israel (including also the investment by foreigners in Israeli companies publicly traded abroad) was higher than during the first quarter of 2010 and higher than the average for previous years, this increase was only temporary, reflecting the particularly large investment by foreigners in the share capital of Israeli companies traded on stock exchanges abroad (in the amount of $1.2 billion during the second quarter). Already in the following quarter foreign residents sold investments on a much larger scale in this category ($1.8 billion during the third quarter).

The investment of Israelis abroad fell significantly during the first half of the year relative to the previous year.

Figure 7.13
Nonresidents' Short-Term Investments in Israel,[a] 2007-11

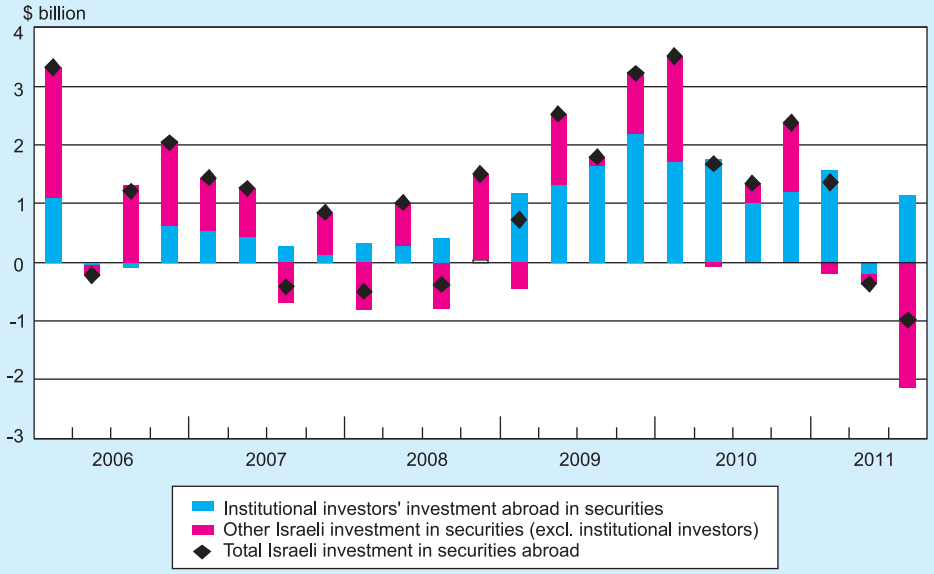


[a] Including nonresidents' deposits in Israeli banks, and nonresidents' purchases of tradable government bonds and *makam*.
SOURCE: Central Bureau of Statistics.

The total investments of Israelis abroad fell significantly during the first half of the year relative to the previous year. The drop in direct investment was the result of an exceptionally large one-time transaction during the third quarter of last year[23] and apart from that the level of direct investment was similar to its levels in the past. A larger decline was observed in the investment of Israelis in securities abroad. Ninety

[23] In which the Israeli company Teva acquired the German company Ratiopharm for $5 billion.

Figure 7.14
Israelis' Investments Abroad in Securities, Institutions and Other, 2006-11



SOURCE: Based on Central Bureau of Statistics data.

percent of the of the total investment by Israelis during the last three years can be attributed to institutional investors and the proportion of investment abroad in their total assets has grown continuously during the last decade (from one half of a percent in 2001 to 14 percent this year). However, there was a turnaround during the second quarter of the year and investment abroad by institutional investors fell significantly (Figure 7.14). This can be attributed primarily to the activity of insurance companies which doubled their investments abroad during the previous years (from 15.2 percent in January 2009 to 30.5 percent in January of this year) and it is possible this year that they reached saturation. Another possible explanation is the increased cost of protecting their investments from fluctuations in the exchange rate. During the last three years, institutional investors have increased their investments in shares to a large extent, almost without

Figure 7.15
Institutional Investors' Investment Flow in Securities Abroad and their Exposure to Foreign Currency, 2005-11

SOURCE: Based on Central Bureau of Statistics data.

increasing their total foreign currency exposure. They accomplished this through the use of futures contracts, which protected them from an appreciation and eroded the value of their assets in shekel terms. The futures contracts were signed with foreign short-term investors (usually through the intermediation of the banks) who wished to protect themselves from a depreciation which would erode the value of their assets in foreign currency terms. It is possible that the slower flow of imported short-term capital from foreign investors this year limited the ability of institutional investors to continue protecting themselves from an appreciation and that this is the reason for the slowdown in their investment abroad. In any case, the total protection acquired by institutional investors did not increase this year, for the first time in three years, and their level of exposure to the exchange rate rose (Figure 7.15).

b. The financial account during the second half of the year in the shadow of the debt crisis in Europe

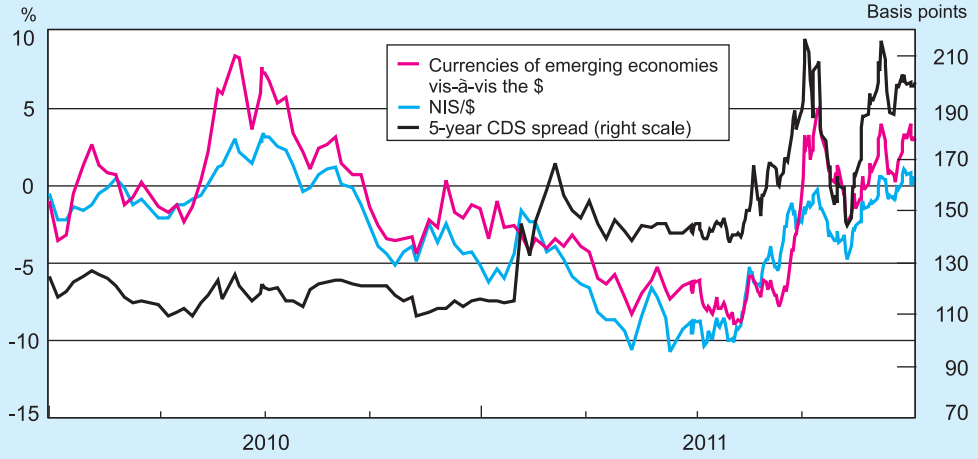
The increased fear of a global crisis was accompanied by heavy sales by foreign residents of their investments in Israel and by Israelis of their investments abroad, as well as by a large depreciation of the shekel against the dollar.

The financial account during the second half of the year was primarily influenced by increasing fears of default in a number of countries in the euro bloc, a situation that would constitute a shock to the entire global economy. As in the past, the increased fears of a global crisis were accompanied by large-scale sales of investments by foreigners in Israel and by Israelis abroad and a large depreciation of the shekel against the dollar. The strengthening of the dollar relative to the shekel and to most other currencies as well (Figure 7.16) reflects the flow of capital to countries that are considered to be safe havens, in particular the US, which is characteristic of crises. Thus, during the third quarter, as fears of a global crisis increased, there was an exceptionally large jump in total holdings of foreigners in US short-term bonds.[24] As a result, the dollar strengthened during the last five months of the year by 14 percent relative to the currencies of the developing countries, by 11 percent relative to the shekel, and by 8 percent, on average, relative to the currencies of the advanced economies. The size of the depreciation relative to the shekel was also affected by the composition of the portfolio of assets held by foreigners in Israel and that held by Israelis abroad. Most of Israel's investments abroad are held by interested parties (direct investment), institutional investors and the Bank of Israel (foreign exchange reserve), who are not in a hurry to sell off assets during periods of increased uncertainty. In contrast, the composition of foreigners' assets in Israel includes a relatively large proportion of short-term investments, which are sensitive to the level of the risk premium and other factors that have worked to slow the import of short-term capital and even accelerated its outflow, such as the termination of quantitative easing in the US (in June) and two reductions in the Bank of Israel rate of interest (in October and December). These factors had an effect on the flow of capital and thus brought about a depreciation of the shekel during the second half of the year.[25]

[24] A fourfold increase relative to the average increase during the previous six quarters.

[25] The appreciation of the shekel occurred in parallel to the sharp drop in share prices in the US and the jump in uncertainty there (as measured by the VIX index).

Figure 7.16
The NIS and Currencies of the Emerging Market Economies vis-à-vis the US$ – Cumulative Depreciation[a] and Estimate of Israel's Sovereign Risk Premium (5-Year CDS spread), 2010-11



[a] The cumulative change of the currencies of the emerging market economies is calculated by means of an index which is the simple arithmetic mean of the Turkish lira, Chilean peso, Brazilian real, Mexican peso, Argentine peso, Czech koruna, Hungarian forint, Polish zloty, South African rand, and the Indian rupee.
SOURCE: Bank of Israel.

During the third quarter, the total investment by Israelis abroad and by foreign residents in Israel dropped to negligible levels, in contrast to levels of $5 billion or more per quarter in previous years. With respect to (net) investments in Israel (other than direct investments), foreign residents sold a total of $4.6 billion, which is much higher than at the peak of the previous crisis. Foreign investors sold close to one billion dollars in short-term investment vehicles (deposits, *makam*, etc.). They also sold shares traded on the Tel Aviv Stock Exchange, particularly Israeli shares traded abroad ($1.7 billion) although this followed particularly large investment in this category of assets during the second quarter. Meanwhile, Israelis sold investments abroad (apart from direct investments and reserve assets) in the amount of one billion dollars. This occurred mainly in the investments of households in securities, while institutional investors went against the trend by taking advantage of the worldwide drop in share prices to increase their investments in securities abroad. Unlike during the previous crisis, this time Israeli did not withdraw deposits held with foreign banks.

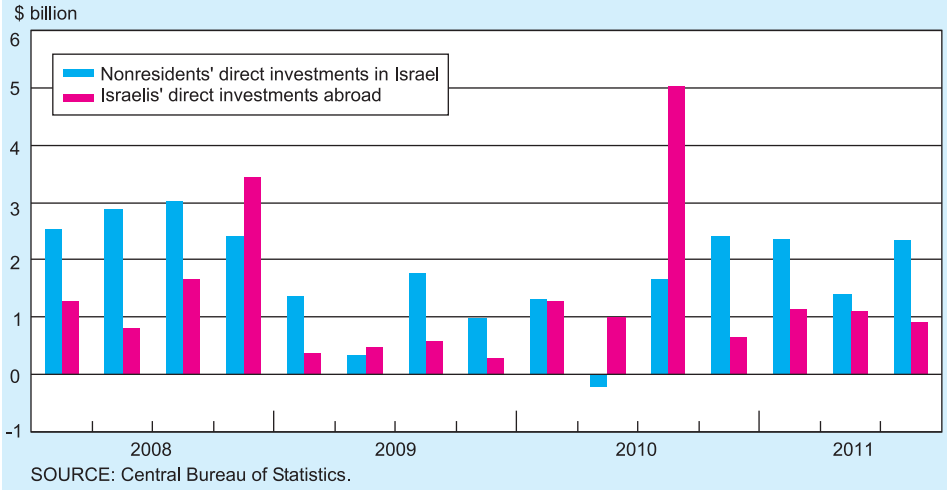
The sales of foreign investments in Israel, apart from direct investment, were at a higher level than at the peak of the previous crisis.

The growing fears of a financial crisis did not affect direct investment flows. The direct investment by foreigners in Israel and by Israelis abroad was similar to the average for the three previous quarters and even somewhat higher. In the previous crisis, direct investment in Israel and worldwide reacted with a lag of between six and twelve months relative to investments in the portfolio of securities, which reacted immediately. This is primarily because it takes time for new direct investments to mature and even direct transactions for the transfer of ownership require a relatively long period of time of incubation. Thus, for example, a direct investment transaction

The growing fears of a financial crisis were hardly felt in the flow of direct investment, apart from a drop in the direct investment of Israelis abroad during the last quarter of the year.

was recorded during the fourth quarter of 2011 that was the result of a deal signed a full year earlier. (This was a particularly large deal in which the Chinese company ChemChina acquired the Agan Machteshim company from Koor.) An additional reason for the lagged response of direct investment to crises is that in periods of increased uncertainty companies reduce the distribution of profits and since undistributed profits are a not insignificant part of direct investment, they are contributing, at the moment, to stability in direct investment, which was also observed in the present crisis (in the third quarter of 2011).

Figure 7.17
Nonresidents' Direct Investments in Israel, and Israelis' Direct Investments Abroad, 2008-11



SOURCE: Central Bureau of Statistics.

Two-thirds of the direct investments in Israel are concentrated in the hi-tech industries.

The composition of total direct investments: Two-thirds of total direct investment in Israel is concentrated in the high-tech industries, which includes $10 billion in the research and development industry (R&D centers of foreign companies) and the electronic components industry, and $4 billion in the computer services industry. Among industries other than high-tech, the largest investment (of $5.5 billion) is to be found in the metals industry, which is similar to the high-tech industries in that it uses advanced technology and produces mainly for export. A portion of the direct investments in Israel is located in local industries, mainly financial institutions ($10 billion, which consists primarily of investment houses and insurance companies), the commerce industry ($1.8 billion) and the food industry (about $1.5 billion). Another industry invested in by foreigners is chemicals (about $1.5 billion); the investment in this industry grew significantly in 2011 with the acquisition of the Agan Machteshim company.

Table 7.8
Foreign direct investment inflows and balances, by technological intensity, 2010

	Investments (inflows) in 2010		Balances (value) at end of 2010	
	$ million	Percent	$ million	Percent
High technology industries	1,773	32	11.7	19
Medium-high technology industries	105	2	1.3	2
Medium-low technology industries	303	5	7.0	12
Low technology industries	129	2	1.6	3
Computerization and R&D	1,765	32	14.2	24
Trade, services, and other industries	1,323	24	15.8	26
Uncategorized	189	3	8.8	15
Total	5,587	100	60.3	100

SOURCE: Central Bureau of Statistics.

5. ISRAEL'S EXTERNAL DEBT AND ITS IMPLICIT RISK

The balance of payments and balance of assets and liabilities is a focus of particular interest since their deterioration can lead to an economic crisis. Although the probability of an economic crisis is dependent on many factors, including the government deficit, the rate of growth, etc., one of the most important indicators is related to the level and rate of change in the economy's liabilities with respect to other countries. The IMF recently carried out a study of sixty-two economic crises that have occurred since 1970 and found that a level of net external liabilities (liabilities less assets) that constitutes more than 40–50 percent of GDP significantly increases the probability of a crisis and that in crises that have occurred in the last four years the critical value was higher (at around 60 percent of GDP). In 2007, the average surplus liabilities of the advanced economies stood at 22 percent (apart from Iceland), while Israel's liabilities were at a much lower level. Essentially, Israel has a current asset surplus in the amount of 15 percent of GDP, which is composed of equity instruments (shares and direct investments) and debt instruments (bonds, loans, etc.). The effect of the latter on the probability of a crisis was found to be much larger than that of the former. Since Israel has a significant surplus of assets in debt instruments (25 percent of GDP), it is quite resistant to crises. Israel's high level of foreign reserves and the balance in its current account also reduce the probability of a crisis, since it was found that high levels of foreign exchange reserves relative to GDP and a surplus in the current account reinforce stability. Another risk factor whose influence was examined in the IMF study is the economy's level of gross liabilities. It is generally assumed that an increase in liabilities increases risk to the economy. This is considered to be true even if accompanied by an increase in assets, since the assets do not necessarily belong to the debtors. A comparison with the advanced economies indicates that Israel's gross

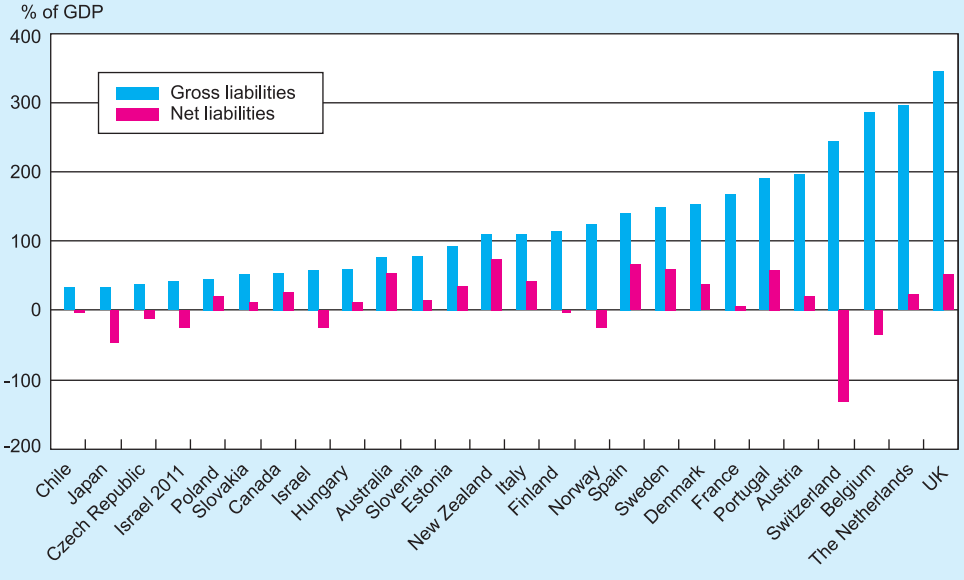
Israel has a significant surplus of assets in debt instruments, its foreign currency reserves are at a high level and its current account is balanced; thus, it has a high level of resistance to crises.

The improvement in the economy's balance of assets and liabilities with other countries was made possible by the accumulated surpluses in the current account in previous years.

debt is relatively low, and therefore is not a risk factor (Figure 7.18). The comparison was carried out using data for 2006 since the crisis that began after that worsened the situation of many of the countries (in addition, Iceland and Ireland which already had high levels of debt were omitted from the sample).

Improvement in the balance of assets and liabilities with the rest of the world in recent years improved the resistance of the economy to negative shocks from abroad. This improvement was primarily the result of accumulated surpluses in the current account, which moved the economy from a surplus of liabilities at the end of 2006 ($13 billion) to a large surplus of assets in mid-2011 ($34 billion). The increase in total net assets was used almost entirely to reduce the economy's net debt and the composition of the balance of assets and liabilities also became more resistant to a financial crisis. This, despite the fact that the gross debt to other countries, which is the riskiest component of the balance of assets and liabilities, grew by $14 billion during the last four years and most of that growth was in debt with maturity of less than one year (which is the riskiest component of the debt). In other countries, a rapid sale of foreign investments is liable to result in a sharp depreciation which may undermine the repayment ability of some firms and thus lead to a financial crisis. This is not the situation, however, in Israel since most of the increase in its gross debt occurred in the public sector (not in the debt of firms) and it was reinforced by a much larger increase in assets (Bank of Israel reserves), such that the net debt of the public sector did not grow. Essentially the rapid sale of foreign investments and a depreciation will lead to a gain rather than a loss, since the debt of the public sector is in shekel while its assets are in foreign currency.

Figure 7.18
The Share of Foreign Liabilities via Debt Instruments in GDP (Foreign Debt), an International Comparison, 2006 and Israel 2011



SOURCE: Based on OECD Balance of Payments Statistics data.

Table 7.9
Israel's Assets and Liabilities vis-à-vis Abroad (International Investment Position - IIP) in Debt and Capital Instruments, 2009–11

(end-of-period balances, $ billion)

	2009	2010	2011
Total assets	220	251	256
of which: Debt instruments[a]	147	161	159
Capital instruments	73	90	97
Total liabilities	214	234	223
of which: Debt instruments[a]	93	106	102
Capital instruments	120	128	121
Net liabilities	-7	-17	-34
of which: Net debt instruments	-54	-55	-57

[a] Debt instruments include some direct investments (equity holders' loans) and portolio investments (bonds), and other investments (excluding other assets) and the foreign exchange reserves.

SOURCE: Bank of Israel.

6. CAPITAL FLOWS AND THEIR EFFECT ON THE REAL EXCHANGE RATE

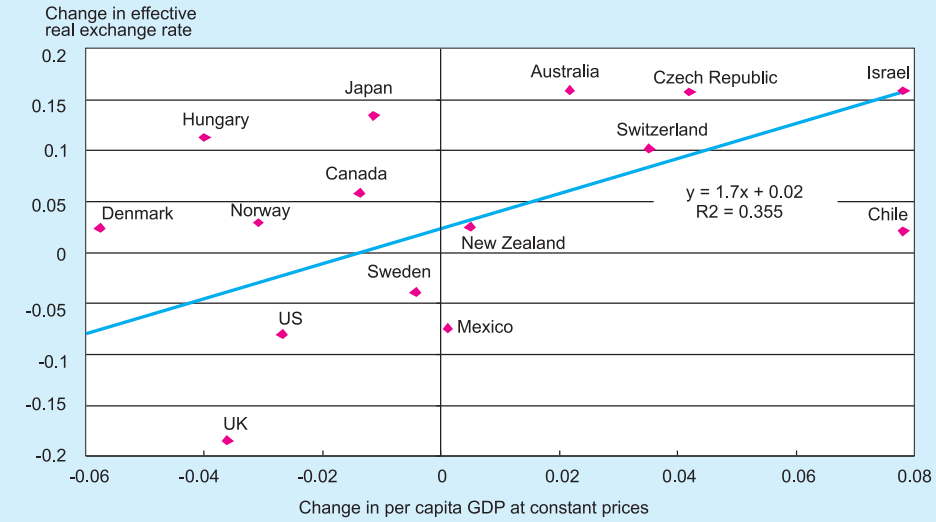
The real appreciation of the shekel in recent years is consistent with the rapid growth in per capita GDP in Israel and other fundamentals of the economy.

The real appreciation in the shekel in recent years is consistent with the accelerated growth in per capita GDP in Israel (relative to that in the US), the terms of trade and the weight of the government in GDP, whose influence on the real exchange rate has been found to be statistically significant. Although the real appreciation was a result of the nominal appreciation, which was driven by large-scale short-term capital movements entering the economy (an inflow of investments from foreigners and repatriated investments of Israelis), the capital flows and the nominal appreciation apparently played a role in the adjustment of the economy's prices relative to those in other countries in accordance with the real forces. This differs from what has occurred in the past in other countries, in which capital flows led to excessive appreciation, which distorted relative prices and harmed economic growth.

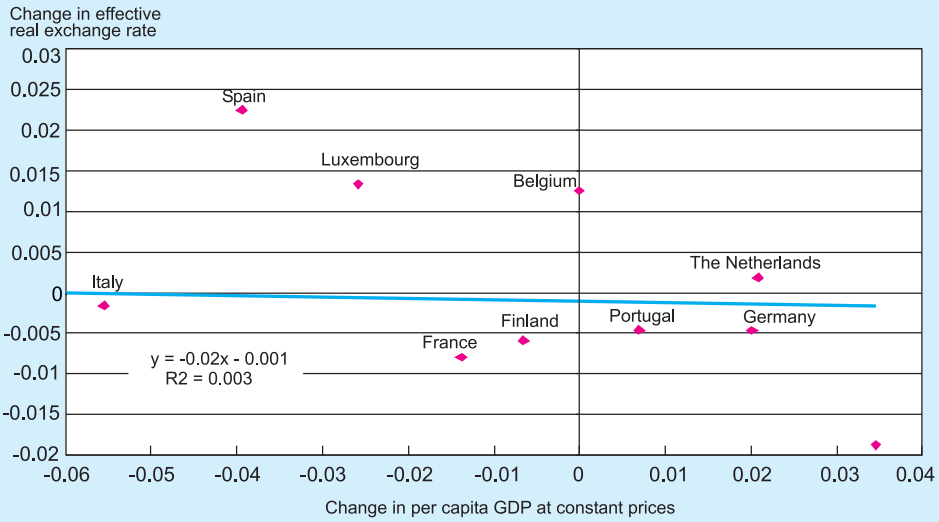
Countries with their own currency show a clear correlation between growth and a real appreciation: growth, whether as a result of an increase in productivity or of cyclical growth in local demand, led to increased prices of non-tradable goods and an appreciation.

A comparison of the trends in the real exchange rate and rates of growth among the euro bloc countries with their common currency with those of countries with independent currencies provides support for the hypothesis that the nominal exchange rate has a large effect on the real exchange rate. This is because in euro countries the trend in the real exchange rate is quite uniform, despite the large variance in rates of growth, and in contrast to what one would expect the prices of non-tradable goods in the euro countries with positive growth did not increase and the prices in countries with negative growth did not decline. This is evidence of the rigidity of prices and wages in economies that do not have an independent currency. In contrast, countries with their own currencies have a clear correlation between growth and real appreciation. Thus, whether it is a result of an increase in productivity or a cyclical increase in local demand, growth led to increased prices of non-tradable goods and appreciation.

Figure 7.19
The Change in the Effective Real Exchange Rate[a] Relative to Per Capita GDP Growth in Countries with Independent Exchange Rates, 2006-10



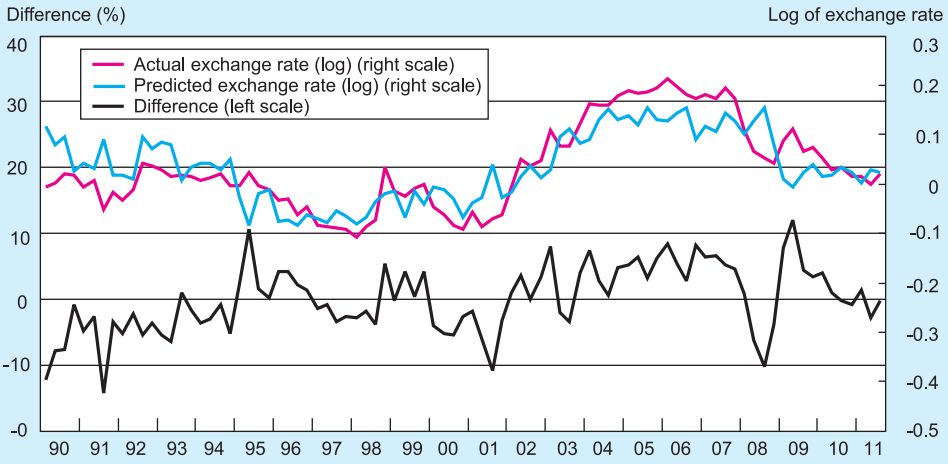
The Change in the Effective Real Exchange Ratea Relative to Per Capita GDP Growth in Countries without Independent Exchange Rates, 2006-10



[a] Locations above the zero axis represent currency appreciation, and those below the zero axis, depreciation.
SOURCE: OECD and IMF IFS (International Financial Statistics).

Israel's real exchange rate appreciated markedly during the period 2006–10. An appreciation of that magnitude was observed in only two other advanced economies: Australia, which enjoyed a major improvement in its terms of trade, and the Czech Republic (Figure 7.19). However, the graph shows that the magnitude of the appreciation in Israel during this period was consistent with the growth of the economy. A similar result is obtained when one examines the magnitude of the

Figure 7.20
Actual Effective Real Exchange Rate and the Predicted Rate and The Difference between Them, 1990-2011



SOURCE: Central Bureau of Statistics and US Federal Reserve Bank.

shekel's appreciation relative to the dollar during the period 1990–2011. The real appreciation of the shekel in recent years was in line with that derived from the rapid growth of per capital GDP in Israel (relative to that in the US), the terms of trade and the weight of the government in GDP, whose effect on the real exchange rate has been found to be statistically significant. Furthermore, the Israeli economy shows few of the characteristics that are evidence of an excessive appreciation. Thus, its current account is balanced without a deficit, direct long-term investment has not abated and there is no pressure for a decrease in wages (relative to its trading partners). The trend of real appreciation was, as mentioned, primarily the result of a nominal appreciation and capital flows. Thus, although capital flows and the foreign currency market are known to be very volatile and sensitive to short-term investment flows, and at times their behavior ignores long-term factors, in this case it appears that the activity in the markets in general is contributing to the adjustment of the real exchange rate to the economy's situation rather than hindering it (except during specific periods in which the intervention of the Bank of Israel is required). Furthermore, nominal appreciation itself plays a role in the adjustment of the economy's prices relative to other countries. Evidence of this can be found in the euro bloc countries, which do not have independent currencies and where the real exchange rate does not adjust itself at all to economic developments.

The characteristics that indicate the development of an excessive appreciation of the exchange rate do not exist in Israel: the current account is balanced and not in deficit and direct long-term investment continues unabated.

During the second half of 2011, as fears of a debt crisis in Europe increased, Israel's short-term capital flows switched direction and the shekel depreciated. This was a result of investors "fleeing" to the bonds of countries that are considered to be safe havens. The flight to the dollar and the depreciation of the shekel were also observed in the previous crisis (from June 2008 until March 2009); however, in that case, the

appreciation of the dollar relative to the currencies of the developing countries was only transitory, and at the end of the day the forces for depreciation (which were the result of the massive deficit in the US balance of payments) dominated. It can be assumed that also in the second half of the year, there was no correlation between real forces that were creating pressure for a large depreciation of the euro relative to other currencies (including the shekel) and the nominal exchange rate of the euro, which remained stable relative to the shekel and the currencies of the developing countries. (The euro-shekel exchange rate at the end of 2011 was identical to that on July 1, 2011.) It is possible that, as in the previous crisis, real forces that are pushing for a depreciation of the euro will dominate and that short-term capital will again begin flowing into Israel, and that these two forces will erode the real depreciation of the shekel that occurred during the second half of the year. This, despite the fact that this time there are stronger forces working towards a real depreciation, including an decrease in Israel's goods and services account surplus, a drop in the profitability among most of the export companies, increased competition with European producers, and even the first signs of an economic recovery in the US, which is liable to provide support for real depreciation of the shekel against the dollar.

The depreciation of the shekel, against the background of the crisis in the euro bloc and the economy's increased risk premium, is likely to continue, in view of the increase in Israel's goods and services account deficit and the beginnings of a recovery in the US economy.