

## *Chapter 7:*

# *The Balance of Payments: Fundamental Factors Underlying Israel's Current Account Surplus*

- Israel's current account surplus over the last decade has been greater than that of the vast majority of OECD countries. In 2010–16, the surplus was a yearly average of 3.2 percent of GDP, compared with an average 1.2 percent of GDP in OECD countries.
- Since the 1980s, Israel's economy has gone from a situation typical of developing economies in which national saving is far less than domestic investment, to a situation typical of advanced economies in which national saving is greater than domestic investment.
- Israel's savings rate is similar to that of OECD countries, but considering the higher dependency rate of the Israeli population, the savings rate would be expected to have been lower.
- The increase in the savings rate in Israel in relation to the OECD countries was caused by the transfer of public sector workers from a defined benefit pension to a defined contribution pension, the introduction of a mandatory pension for all employees, and the reduction in scope of public social insurance. The effect on savings of the switchover to a defined contribution pension is temporary but will only dissipate when the transfer of all workers and retirees to a defined contribution pension is completed.
- Most of the increase in savings in Israel has become a surplus in the current account, i.e., foreign investment, and not domestic investment. This trend was made possible by the removal of restrictions on capital outflows which allowed institutional investors (pension, provident and insurance) to increase their investment abroad.
- Israel's domestic investment in the last decade was lower by 3 percent of GDP than the average in the OECD countries. This, despite the rapid rate of population increase in Israel which mandates greater investment. The difference was the result of lower investment in nonresidential construction, i.e., in transport infrastructures, industrial buildings, hotels, hospitals, etc.
- Investments in Israel have an average yield greater than that of an investment in mature and advanced economies: the portion of return on capital in Israeli GDP is relatively greater than those economies even though Israel's capital stock (in relation to GDP) is lower.
- The continued current account surplus has contributed greatly to the economy's financial stability and the improvement in its credit rating. The surplus assets of the public sector vis-à-vis abroad reached an adequate level.
- The public sector would do well to increase domestic investment in infrastructure projects—such as those likely to provide an adequate economic yield. Investment in infrastructure is expected to improve the private sector's return on capital and increase private investment in the economy.

## 1. Background and main issues

Israel has moved from a situation typical of developing economies, with domestic investment far greater than national saving, to a situation typical of mature and advanced economies.

The Israeli economy has gone from persistent deficit in the current account to persistent surplus: in 34 of the 38 years 1965–2002 Israel was in deficit and the average annual deficit was 4.3 percent of GDP. In contrast, in each of the years from 2004 to 2016 Israel had an annual surplus, and the average annual surplus was 3.3 percent of GDP compared with a deficit of 0.3 percent of GDP in the OECD countries. Since the current account deficit is equal to the difference between domestic investment and national savings, Israel has gone from a situation in which domestic investment is far greater than national saving, a situation typical of developing economies, to a situation typical of mature and advanced economies in which national investment is less than national saving. This is despite the fact that there is still a notable gap between Israel and the most advanced economies in terms of per capita GDP, a gap that should be reduced. The following discussion will examine the long-term factors in the transition of the Israeli economy from current account deficit to surplus.

Israel's surplus in the last decade is relatively high compared with similar countries.

Israel's surplus in the last decade (3 percent of GDP) is relatively higher than other countries in the world and the OECD countries. Only 22 of the 103 countries for which we have data (and excluding the sub-Saharan countries) had a greater surplus. Studies have shown that countries with a large current account surplus typically have extensive revenues from the export of natural resources, high per capita GDP and a high share of population at working age (low dependency rate). Of the 22 countries with a surplus greater than 3 percent of GDP (annual average for 2005–14), 12 are prominent exporters of natural resources<sup>1</sup>, and 8 other countries are characterized by an especially high per capita GDP.<sup>2</sup> Israel has no exceptional natural resources revenues; it has a low share of population at working age in comparison with advanced economies, and its per capita GDP is not exceptional in comparison with the other member countries of the OECD. In light of these, Israel's large surplus is exceptional.

Israel's large current account surplus compared with similar countries reflects a low investment rate alongside a high national savings rate.

In comparison with OECD countries, Israel's large current account surplus in the last decade reflects a low investment rate alongside a national savings rate that is around the average. The lower investment in Israel reflects low investment in nonresidential construction (infrastructure, industrial and commercial buildings, public buildings, offices, hotels, etc.) whereas in other components of investment (residential construction, machinery and equipment, vehicles, etc.) it is similar to the average in the OECD. However, considering the rapid increase in population and the lower per capita GDP in Israel, the share of investment in its GDP ought to have been higher. The low investment in nonresidential construction reflects first and foremost lower public investment, especially in transportation infrastructure. Other factors likely to explain the low investment in nonresidential construction in Israel are

<sup>1</sup> Azerbaijan, Bolivia, Iraq, Kuwait, Libya, Oman, Norway, Russia, Saudi Arabia, Venezuela, as well as Algeria and Bahrain.

<sup>2</sup> Denmark, Germany, Hong Kong, Malaysia, the Netherlands, Singapore, Sweden, and Switzerland. Japan, Korea and Austria also have relatively high current account surpluses, but lower than those of Israel. The current account surpluses of China and the Philippines are greater than Israel's—even though their per capita GDP is lower, and they do not have high revenues from the export of natural resources; the Philippines has substantial revenues from the export of labor services.

the security risk, which weighs down on investments in hotels and tourism projects, Israel's relative disadvantage in low technology industries, which contributed to a decline in investment in industrial buildings in the last two decades, and the heavy bureaucratic burden on contractors, as reflected in Israel's low ranking in Doing Business indices. Underinvestment in public infrastructures and the bureaucratic burden almost certainly also dampen private non-construction investment in Israel.

The savings rate in Israel is similar to the rate in advanced economies.<sup>3</sup> An important factor affecting the savings is the percentage of the population aged 15 to 64 in the overall population; these ages are the workers and the savers, and the greater their share the greater the savings rate in the economy. The share of the population in Israel in the prime working ages (62 percent) is considerably lower than the OECD countries (67 percent) and therefore savings in Israel would be expected to be lower than in the OECD countries.<sup>4</sup> The explanation for savings in Israel being relatively higher can be found in the pension arrangements, and more precisely—in the change in the pension arrangements in the last decade: following the transfer of new public sector workers from a defined benefit pension to a defined contribution pension (since 2002) and the application of mandatory (defined contribution) pension arrangements on all workers in the economy (gradually, since 2008), the share of contribution set aside for retirement of workers in Israel in the last decade rose from 1.6 percent to 2.9 percent of GDP,<sup>5</sup> and contributed to the increase in national saving. Other factors that contributed to the relative increase in the savings rate in Israel were the reduction in transfer payments, reflecting the shrinking of the social security net in Israel compared with its expansion in the OECD countries, and the increase in the share of capital in Israel's GDP characterized by a high savings rate (in relation to the savings rate on the share of labor in GDP).

Israel's current account surplus is primarily a result of public policy: the restraint that the government imposed on itself in financing and carrying out public investments is the main reason for the low investment level in Israel in an international comparison (though the bureaucratic burden also had a part in it). Another contribution was from public policy concerning pensions: the implementation of a mandatory defined contribution pension fund led to an increase in national savings. Liberalization in capital flows allowed institutional investors (pension funds, provident funds and advanced study funds) to shift a notable part of saving into investments abroad,<sup>6</sup>

Israel's current account surplus is primarily a result of public policy—restraint in public investments and imposing mandatory contributions to defined contribution pensions.

<sup>3</sup> Since the global financial crisis, the average saving rate in the OECD countries has fallen to 22.4 percent of GDP (2008–14), compared with 23.1 percent in the years before the crisis (1991–2006).

<sup>4</sup> The percentage of the population aged 20–65 of the total population in Israel in 2013 (53.5 percent) was lower than the OECD average (59.8 percent).

<sup>5</sup> Of the OECD countries, only Korea had a greater increase (from 0.1 percent to 3.2 percent of GDP). A similar increase to that in Israel was in New Zealand (from 1.3 percent to 2.7 percent) and in Switzerland (from 6.9 percent to 8.4 percent of GDP).

<sup>6</sup> Around one quarter of the assets of institutional investors are foreign assets (at the end of 2015) compared to one percent in 2002. The shifting of savings into foreign investment was also contributed to by an increase in the Bank of Israel's foreign exchange reserves abroad by about \$70 billion during the last decade.

and thus the increase in national saving is not becoming an increase in domestic investment but a current account surplus. It is important to clarify that the openness of the market to capital flows and the relatively high savings rate in Israel are advantages that are to be maintained. In contrast, the relatively low investment, particularly in infrastructure, is denying the economy its growth potential, and it should be increased.

Israel succeeded in developing a comparative advantage for itself in technology-, skills- and education-intensive industries in which wages and profitability are high, and avoided the strong competition in labor intensive industries.

The current discussion will focus on an analysis of the current account surplus as the difference between savings and investment, but the current account surplus also reflects the difference between exports and imports.<sup>7</sup> From the perspective of exports and imports, the transition from deficit to surplus can be attributed to a successful structural change in the export sector: Israel succeeded in developing a comparative advantage for itself in technology and skills-intensive industries and avoided the strong competition in labor intensive industries against the background of the accelerated increase in exports from China and other developing countries. Israel's export profile today is similar to that of the most advanced Western European economies and is based on the export of software, pharmaceuticals and other high-technology products. Although Israeli export employs only 10 percent of the total employed in the economy,<sup>8</sup> these workers have very high productivity and this allows the economy to fund total imports and even leaves a current account surplus, as previously noted. But the percentage of imports in Israel's GDP is still low relative to the advanced economies in Western Europe. Reducing tariffs and barriers to trade will allow imports to increase, with exports increasing in their wake.<sup>9</sup> Since productivity in the export sector is high, increasing exports will allow productivity and the standard of living to rise. Among the steps taken recently with the aim of increasing imports and improving productivity are permits given to six foreign companies to operate in the residential construction branch which typically has low productivity, the increase in the activities of foreign companies in the infrastructure construction and operation sector (seaports and railways), and the open skies reform in the airline services sector.

## 2. Israel's balance of payments problem in past decades

In the past, the high structural deficit in the current account of the balance of payments was one of the economy's most severe fundamental problems.

Israel's large current account deficit in the 1960s and 1970s reflected an ambitious attempt by the young and undeveloped economy to achieve several objectives simultaneously—accelerated economic development, the provision of generous welfare services, and the formation of a large and modern army. This resulted in a high level (relative to GDP) of investment, domestic public consumption, and defense imports (Table 7.1). In those same years the economy enjoyed generous transfer payments from abroad which accounted for 10 percent of the economy's total sources,

<sup>7</sup> More precisely: apart from exports and imports, the current account also includes the unilateral transfers and the net income from production factors.

<sup>8</sup> The share of employees in companies with more than 25 percent export sales out of total employees in the economy.

<sup>9</sup> The increase in imports is expected to lead to continued depreciation of the real exchange rate; the depreciation will increase export profitability and allow exports to increase.

private consumption was restrained, and the economy managed to fund the high current account deficits due to the accelerated growth of GDP, which moderated the increase in the debt to GDP ratio, and due to relatively low-interest loans from world Jewry and from the US.

Since the Yom Kippur War (1973) the accelerated growth of GDP has halted and it has become more urgent to cut the deficit: “After the world oil crisis and the steep jump in defense spending in the wake of the Yom Kippur War, economic policy makers were confronted with the urgent need to pare the current deficit to manageable proportions” (Bank of Israel Annual Report for 1978, Chapter 1). And in 1976 and 1977 public consumption and investment did decline a cumulative 20 percent in real terms. The severe restraint led to a reduction in the current account deficit but also to an economic recession and social protest, and the recovery of economic activity in 1978–79 was accompanied by a renewed increase in the current account deficit. The dilemma between the need to cut the large current account deficit and the desire to avoid economic recession continued to vex the economy into the first half of the eighties. This was against the background of balance of payments crises that erupted in those years in developing countries: “More than once in the past Israel was ranked, from the standpoint of external debt, close to the South American and other developing countries, some of which are now in the throes of a financial crisis” (Bank of Israel Annual Report for 1982, Chapter 7). The historical memory of the current account deficit problem continued to haunt the economy well after the deficit had fallen to reasonable levels and had even become a small surplus.

The continued large deficit in the current account was liable to cause a sudden and severe financial crisis; and reducing the deficit led the economy to recession and unemployment.

**Table 7.1**  
**National saving, gross domestic investment and the current account of the balance of payments, 1965-2016, (percentage of economy's total revenues)<sup>a</sup>**

	Current account	National saving	Private saving	Public saving	Domestic public consumption	Domestic investment	Civilian import surplus	Defense imports
1965-1979	-19.5	7	22	-15	27	26	12	9
1980-1984	-4.3	16	26	-10	28	21	6	7
1985-1989	0.6	17	18	-1	23	17	3	5
1990-1996	-2.9	20	21	-1	23	23	7	2
1997-2004	-0.7	21	21	0	24	22	4	2
2005-2016	3.2	23	22	1	21	20	-1	1

<sup>a</sup> Economy's revenue=GNP (using official exchange rate) plus net transfers from abroad to individuals, plus transfers from abroad to the public sector less (net) interest payments to abroad.

Reducing government expenditure, including decreased public investment and government subsidy of private investment, reduced the current account deficit.

An important step taken in the 1980s which contributed to the reduction in the structural current account deficit was the reduction in directed and subsidized credit allocated to government-preferred private investment, a subsidy that reached 10 percent of GDP.<sup>10</sup> Against the background of the reduction in investment subsidies, investment in GDP dropped a level—from 27 percent of GDP in 1978–79 to only 22 percent of GDP in 1980—and since then it has settled at levels standard in advanced economies. The Stabilization Plan put into effect in 1985 was considered a watershed in the development of Israel’s current account. In that year, the national unity government, which was based on an especially large majority in the Knesset, decided to introduce a comprehensive reform of the economy and the country’s budget: domestic public consumption decreased a level (from 28 percent to 23 percent of the economy’s total sources) and has stabilized since then at a standard level for an advanced economy. Defense imports and defense consumption were also forced to converge into a path of decrease, and in the 1990s stabilized at levels far lower than previously.<sup>11</sup> The phenomenon of correlated deficits, connecting a reduction in the government deficit to a reduction in the current account deficit seems almost obvious, since national saving is simply the sum of private saving and public saving (and national saving less investment is the current account balance). However, private saving tends to offset the changes in public saving.<sup>12</sup> Such a phenomenon did occur in 1985: the share of private consumption in GDP increased from 50 percent in 1981–84 to 54 percent in 1985–89. However, the Stabilization Plan made an important contribution to the reduction of the structural current account deficit and increase of national savings. Another contribution was from the steep reduction in world petroleum prices (1985–86), and the previously mentioned reduction in the share of investment in GDP.

### 3. Factors affecting the current account surplus

Chinn and Prasad (2003)<sup>13</sup> examined the factors affecting the current account surplus based on a sample of 89 countries, of which 18 were advanced economies, and found that the current account surplus (as a percentage of GDP) is greater in petroleum

The current account surplus is greater in petroleum exporting countries, countries which have a larger surplus in the government budget, and countries with a low dependency ratio.

<sup>10</sup> The credit benefits for local manufacturing (including credit given in previous years), which was 8 percent of GDP in 1975–77, were gradually withdrawn from 1979 to only 4 percent of GDP in 1982 (Bank of Israel Annual Report 2002, Table 5.7).

<sup>11</sup> “The relative size of the public sector in Israel before 1985 was the highest in the world, while now it is close to the standard for European countries. The reduction in the relative size of the government was achieved especially by reducing defense expenditure” – from an article by Joseph Zeira and Michel Strawczynski, “The reduction in the relative size of the government in Israel after 1985”, in the book “From Government Intervention to Market Economy” (ed. Avi Ben-Bassat).

<sup>12</sup> For example, when the government increases public saving (e.g., reduces a subsidy on basic products), citizens will expect a future reduction in taxes, and therefore will allow themselves to consume a more expensive basket of products and will reduce private saving.

<sup>13</sup> M.D. Chinn and E.S. Prasad (2003). “Medium-Term Determinants of Current Accounts in Industrial and Developing Countries: an Empirical Exploration”, *Journal of International Economics* 59.1, pp. 47–76.

exporting countries, in countries which have a larger surplus in the government budget, and in economies with a large net value of assets abroad (in GDP terms).<sup>14</sup> The current account surplus of developing countries is affected by three additional factors: the ratio of the working-age population (ages 15–64) to the young population (up to 15 years old); the ratio of M2 (money supply) to GDP; and the openness to international trade.<sup>15</sup> An analysis of sectional data shows that countries with a higher per capita GDP have a greater current account surplus. Other variables examined in the study and not found to be statistically significant were the economy's rate of growth, restriction on international capital flows, and fluctuations in terms of trade. A similar study<sup>16</sup> focused on 21 developed countries in the years 1971–93 and found that the size of the current account surplus can be explained by the level of openness of the economy and its age group structure: higher per capita GDP, higher capital stock per worker, and a higher proportion of working-age population lead to a larger current account surplus. Monitoring of the current account surplus over time indicates that the government budget surplus has a long-term (as well as short-term) effect on the current account surplus, while the real exchange rate, business cycle, and terms of trade have only a short-term effect on the surplus.

This chapter also examines the factors affecting the current account surplus (for the years 1970 to 2014) in 33 countries with per capita GDP of \$20,000 or more (at 2010 prices), and in 145 countries classified by the World Bank as having medium-high per capita GDP (Table 7.2). We chose explanatory variables with a statistically significant effect on the current account surplus in previous studies: per capita GDP level, natural resources revenues (in terms of GDP), the proportion of the population that is not working age (ages 0-15 and 65 and older), the fertility rate (number of children per woman), and the life expectancy; in addition to these, we included dummy variables for each of the years. For most of the explanatory variables, a statistically significant effect was found in the expected direction: the current account surplus increased in line with the increase in per capita GDP and in natural resources revenues, as well as with a drop in the fertility rate. The estimate also included three dummy variables for Israel for 2001–05, for 2006–10, and for 2011–14, allowing the quantifying of the difference between Israel's actual current account surplus and the expected surplus according to the estimate for those years. The difference found with respect to the 33 countries with per capita GDP of \$20,000 or more was large and significant (around 5

Israel's current account surplus in the past decade is much greater than in economies similar to it in per capita GDP, natural-resources revenues, and demographic variables.

<sup>14</sup> It should be clarified that the accumulation of assets is in effect the result of previous current account surpluses.

<sup>15</sup> In the opinion of the study authors, an increase in the ratio of money supply to GDP is an indicator of the depth of the financial system, and a deep financial system contributes to an increase in household savings. Another finding is that greater openness to international trade correlates with a smaller current account surplus in developing economies.

<sup>16</sup> G. Debelle and H. Faruquee (1966). "What Determines the Current Account? A Cross Sectional and Panel Approach", IMF Working Paper No. 96/58.

**Table 7.2****Factors explaining the current account surplus (as a share of GDP), share of savings in GDP, and share of investment in GDP, panel estimation 1970-2014**

	Countries with per capita GDP greater than \$20,000 (2010 prices)			Countries with medium-high and high per capita GDP per World Bank classification		
	Current account surplus	Share of savings in GDP	Share of investment in GDP	Current account surplus	Share of savings in GDP	Share of investment in GDP
GDP per capita (fixed prices, '000 dollars, 2010)	0.221***	0.210***	-0.033***	0.315***	0.189***	-0.191***
Share of revenues from natural resources in GDP	0.581***	0.625***	-0.173***	0.290***	0.374***	-0.064***
Share of young population (ages 0-14)	0.146	-0.594***	-0.297***	-0.273***	-0.527***	-0.078
Share of older population (ages 65+)	0.078	-0.516***	-0.280***	-0.117***	-1.213***	-0.159*
Life expectancy	-0.749***	-0.286	0.590***	-0.117***	0.467***	0.396***
Fertility rate - number of children per woman	-4.874***	-1.372**	0.253***	-0.746***	0.349	0.958***
Share of saving in GDP	--	--	0.263***	--	--	0.317***
Israel 2001–05	4.63**	2.98*	-3.96**	3.12	3.45	-3.96
Israel 2006–10	7.00***	4.41**	-6.43***	5.92*	4.33	-6.72***
Israel 2011–14	4.93**	6.56***	-3.99**	5.96*	6.54*	-5.69**
Dummy variables for years	+	+	+	+	+	+
Number of countries	33	33	33	145	145	145
Number of observations	833	833	883	4,392	4,158	4,152
R-squared overall	0.511	0.488	0.405	0.256	0.298	0.316

All the estimations include a constant and dummy variables for each year. Cells without asterisks indicate variables that do not have a statistically significant impact on the dependent variable. Three asterisks by a variable denote significance at the 1 percent level, two asterisks by a variable denote significance at the 5 percent level, and 1 asterisk by a variable denotes significance at the 10 percent level.



percent of GDP in 2011–14 but with a relatively large standard deviation of 2 percent of GDP).<sup>17</sup>

We wanted to examine if Israel's large current account surplus in comparison with other countries reflects a high savings rate or low investment rate. We did this with a separate estimate of the national savings rate and of the domestic investment rate. The estimates show that the national savings rate in GDP increases with an increase in per capita GDP and with an increase in the share of revenues from natural resources (meaning that the savings rate from natural resources revenues is large relative to the savings rate from other revenues). The national savings rate also depends on the demographic variables: it rises with an increase in the share of the working-age population and declines with an increase in the fertility rate. This is the expected result since the working-age population is the working and saving population, whereas the dependent population—senior citizens and children—is characterized by negative savings. Given the level of per capita GDP, natural resources revenues, and the demographic variables, Israel's savings rate is high compared with the other advanced economies. This difference increased over the last 15 years and reached a peak in 2011–14.

Share of domestic investment in GDP: The estimates indicate that the share of investment in GDP declines with an increase in per capita GDP and in natural resources revenues (recalled that increase in natural resources increases savings and the current account surplus but not investment), and rises with an increase in the fertility rate, the share of the working-age population, and the savings rate in the economy. The estimate shows that the investment rate in Israel is statistically significantly lower than standard in countries with similar demographic and economic characteristics. This difference peaked in 2006–10 and contracted in 2011–14. The forecasting quality of the investment rate model declined greatly when the savings rate was omitted (estimates that are not presented in Table 7.2), but even in these estimates it was found that the investment rate in Israel from 2001 to 2010 was significantly less than the standard in 33 countries with per capita GDP of \$20,000 or more and in 145 countries with medium-high and high per capita GDP.

When account is taken of the demographic characteristics, the natural resources revenues, and the per capita GDP, the savings rate in Israel in the last decade is found to be significantly higher than the global standard. A similar result was also obtained in the sensitivity tests conducted that are not presented here: The other estimates included additional explanatory variables, other estimation periods, etc. The result regarding the low investment rate in Israel was repeated in these sensitivity tests, but in some of the estimates the difference in investment was not statistically significant. Particularly in the last five years, during which there was a great increase

Given the level of per capita GDP, natural resources revenues, and demographic variables, Israel's savings rate is high compared with other advanced economies.

Israel's investment rate from 2001–10 was significantly less than the standard in countries with similar demographic and economic characteristics.

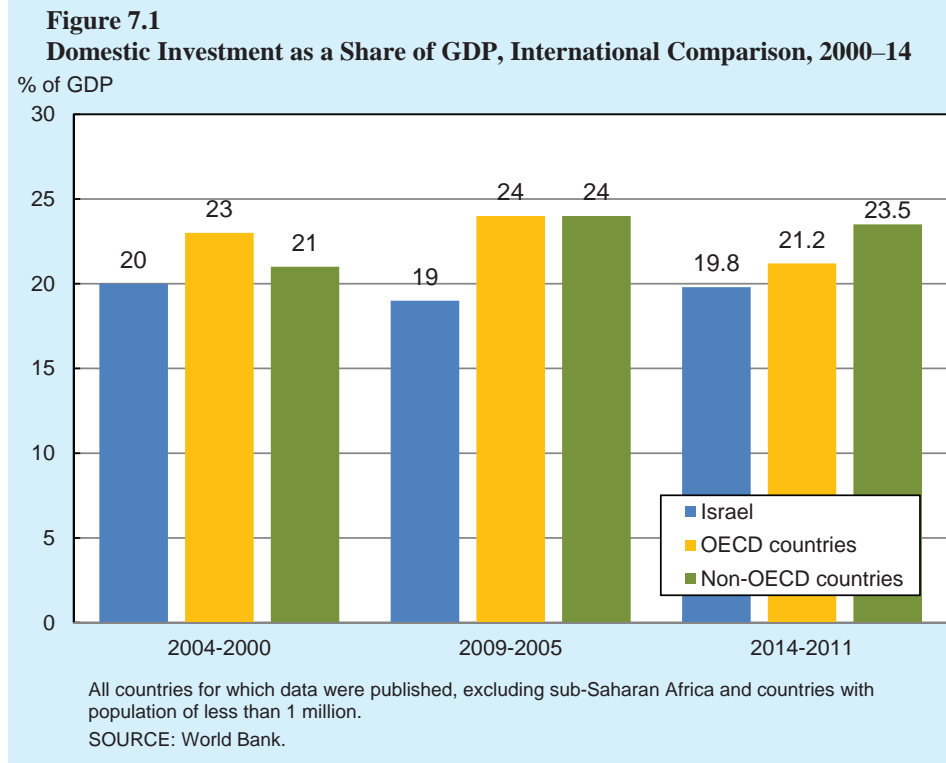
<sup>17</sup> Israel's current account surplus in the last decade was found to be significantly large even when we extended the sample to countries with per capita GDP of more than \$5,000. A similar result was also obtained in a 5-year panel (the multiannual 5-year average) in which the explanatory variables lagged by five years. Israel's current account surplus in the last decade was also found to be significantly large in cross-sectional data for a ten year period.

in investments in residential construction (and in the natural gas reserves), Israel has not been exceptional in its investment rate. It is important to clarify that the (precise) regression estimates for Israel should not be accorded too great significance, as there is a large standard deviation in them. These estimates are intended to convince that the differences in the savings rate and the investment rate between Israel and other advanced economies are not the result of the special demographic factors of the Israeli economy. In order to understand the size of the difference and its sources we will examine the level of Israel's investment and capital stock.

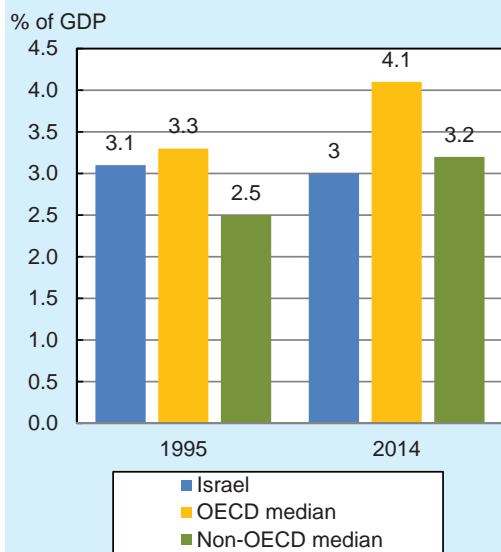
#### 4. Investment in Israel

In the past decade, Israel has been in the bottom quintile in terms of share of investment in GDP.

A simple international comparison indicates that the investment rate (as a percentage of GDP) in Israel in the last decade (2005–14) is lower than the standard in the advanced and developing economies (Figure 7.1); of 104 countries for which there is data on the investment rate (and excluding the sub-Saharan countries) only 20 had a lower investment rate than Israel. In the last decade some of the 20 countries have experienced a financial or political crisis (Greece, Iraq, Afghanistan, Egypt, Argentina, Bolivia and Portugal), and some are countries that grew at a disappointing rate (Italy, Kuwait, Trinidad and Tobago, Guatemala, and El Salvador). Of 33 OECD countries, Israel's investment rate was only higher than in Germany, the UK, Italy, Portugal, and Greece.



**Figure 7.2**  
**Capital Stock as a Share of GDP,**  
**International Comparison, 1995 and 2014**



The table includes all countries for which data were published, excluding sub-Saharan Africa and countries with a population less than 1 million.

SOURCE: Penn World Table.

Israel's capital stock (for 2014), which reflects the total investment made in the economy during previous periods and still used, is low in an international comparison (Figure 7.2). Israel's capital stock is equivalent to 3 times GDP whereas the median capital stock in the OECD countries is equivalent to 4.1 times GDP. In fact only two of the 33 OECD countries had lower capital inventory in relation to GDP—New Zealand and Poland. In the developing countries, the capital stock to GDP ratio is lower than in the OECD countries, but for most of them<sup>18</sup> the capital stock is greater than that of Israel (in terms of GDP). Israel's low capital stock reflects the low level of investment in the economy in the last two decades alongside rapid growth of the population and GDP. In 1995,

Israel's capital stock to GDP ratio is lower than 30 out of 33 OECD countries.

Israel's capital stock was similar to the median of OECD countries and considerably larger than the median of non-OECD member countries. Since then, the capital stock to GDP ratio has increased in most countries worldwide, but not in Israel.

The volume of private sector investment in the economy is affected by many factors: interest rates, the risk premium in the economy, the tax rates and tax benefits, the stability of the regime and the regulation, intellectual property protection, the quality and cost of the work force, etc. In comparison with other advanced economies, Israel is not exceptional with regard to interest rates, its credit rating, and the tax rates on companies and dividends.<sup>19</sup> The Encouragement of Capital Investments Law generously subsidizes investments in machinery and equipment in export firms and firms on the periphery, and the labor force in Israel is attractive to technology-oriented

Based on macro factors, the level of investment in Israel would have been expected to be similar to, or even greater than, other advanced economies, as the population growth rate in Israel is faster.

<sup>18</sup> Forty-one out of 72 countries, excluding OECD member countries, sub-Saharan countries, and countries with a population of less than 1 million.

<sup>19</sup> According to a State Revenue Administration report, the effective corporate tax rate in Israel in 2014 was precisely the (unweighted) average of the OECD countries—22.6 percent. It was also found that the high-technology industries (in services and manufacturing) pay a much reduced tax due to the Encouragement of Capital Investments Law, whereas the banking and construction industries pay tax at the statutory rate.

and innovation-oriented international companies.<sup>20</sup> Indeed, direct investments in 2005–14 reached 4 percent of GDP (annual average), compared with only 2 percent of GDP in OECD countries. The scope of investment in intangible assets as well is similar to the OECD average, which testifies to the protection of firms' intellectual property. In light of these, the level of investment in Israel would have been expected to be similar to, or even greater than, that of the other advanced economies, as the population growth rate in Israel is faster.

The investment rate in Israel is markedly lower in only one item—nonresidential construction, which includes transportation infrastructures and public buildings.

An examination of the components of fixed capital formation in Israel, the EU and the OECD (Figure 7.3) shows a similar scope of investment, in terms of GDP, in most of the items—residential construction, machinery and equipment<sup>21</sup> (excluding vehicles), vehicles and intangible assets. The investment rate in Israel is markedly lower in one item—in nonresidential construction, which includes nonresidential buildings and other construction work: transport infrastructure, schools, hospitals, hotels, industrial and commercial buildings, offices, etc. The share of nonresidential construction in Israel in the last decade (2005–14) is 3.9 percent of GDP compared with 5.5 percent of GDP in the 28 EU countries, and 7.2 percent of GDP in the OECD countries (excluding Chile, New Zealand, Turkey and Israel).

The OECD found that Israel's public capital stock (relative to potential GDP) was lower than that of all the OECD countries apart from Slovakia.

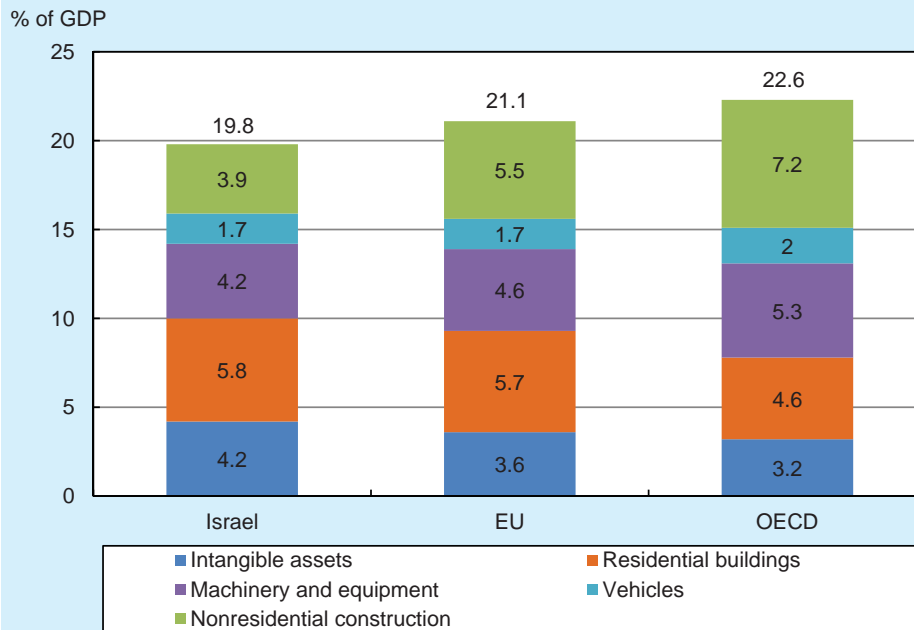
The OECD data make a further division of the total investments in the economy, by financing sector (firms, households, and the public sector). Israel stands out for its low share of investments financed by the public sector – 2.2 percent of GDP compared with 3.7 percent of GDP in the OECD countries, on average, for 2005 through 2014 (Figure 7.4). The investments financed by the public sector are mainly investments also included in the nonresidential construction item—transport infrastructures, schools, hospitals, etc. Consequently, a key factor in the explanation of the relatively low level of investment in nonresidential construction in Israel in the last decade in comparison with the OECD countries (a difference of 3.4 percent of GDP) is the low volume of investment of the public sector in Israel compared with those countries (a difference of 1.6 percent of GDP).<sup>22</sup> Research conducted at the end of 2016 in the OECD found that Israel's public capital stock (relative to potential GDP) was found

<sup>20</sup> It should be explained that an improvement in the quality of education and workers' skills will contribute to an increase in investments, GDP and productivity in the high-technology-intensive industries and in the economy as a whole. Israel's investment in education and human capital is low relative to other countries and this can also be seen in Israelis' poor results from an international perspective (Chapter 7B of Bank of Israel Annual Report 2013, pp. 174-181). The fact that Israel's export component is similar to that of the world's developed countries reflects a comparative, not necessarily absolute, advantage.

<sup>21</sup> Although the level of investment in machinery and equipment (excluding vehicles) in the last decade has been lower than the average in OECD countries, it is due to the especially high level of investment in this sector in Eastern European countries—Estonia, Hungary, Latvia, Slovenia, Slovakia, Poland, and the Czech Republic—7.3 percent of GDP, on average. The investment rate in machinery and equipment in Israel (4.3 percent of GDP) is similar to that of the advanced economies apart from the Eastern European countries (4.5 percent of GDP) and the average in European Union countries (4.6 percent of GDP). Note that the sectoral structure in Israel is weak in heavy industry and strong in R&D-intensive industries, therefore comparison with Eastern European countries is liable to be misleading.

<sup>22</sup> Investments financed by the public sector do not include government initiated projects financed by the private sector, such as Highway 6—the Yitzhak Rabin Trans-Israel Highway.

**Figure 7.3**  
**Fixed Capital Formation as a Share of GDP: Israel, EU, and OECD, 2005–14**



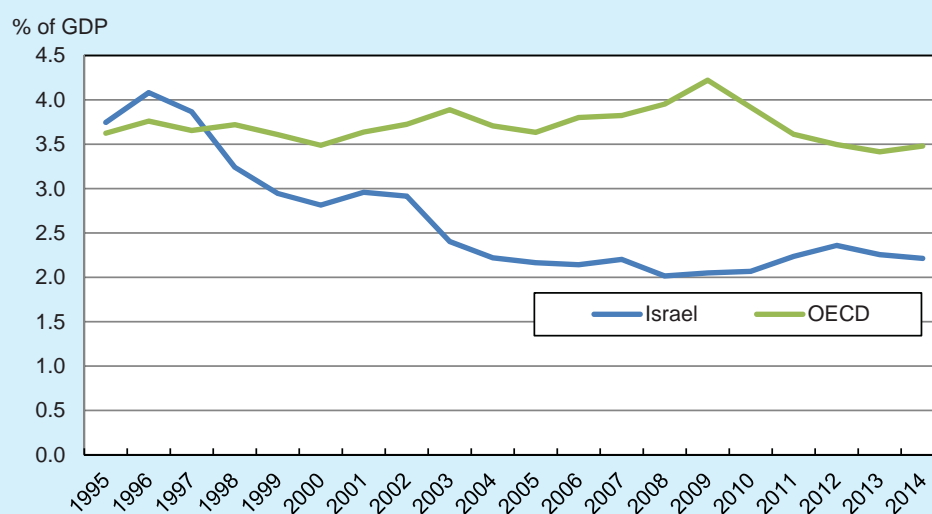
Data for OECD exclude Israel, Chile, New Zealand, and Turkey.  
 SOURCE: OECD data.

to be lower than that of all the OECD countries apart from Slovakia.<sup>23</sup> It is important to note that public investment in infrastructures supplements private investment.

An examination of the nonresidential construction data in Israel over the years reveals a considerable decline in the share of the construction of industrial buildings and of hotels (the volume of investment in hotel building declined from 0.4 percent of GDP in the second half of the 1990s to 0.1 percent of GDP in the last decade, and the amount of industrial buildings construction fell from 0.9 percent of GDP to 0.5 percent of GDP). This means that the private sector also contributed to the decline in nonresidential construction. Terror incidents and acts of violence are known to lead to great fluctuations in the number of tourists entering Israel and sharp fluctuations in the rate of return on capital in the hospitality sector, which deters investors in the sector; against this background, the number of rooms in hotels in Israel in the last decade has increased but at a tiny rate. The decline in construction of industrial buildings mirrors the decline in the share of industry in GDP in general and Israel's relative disadvantage in low technology manufacturing sectors, expressed as a downward trend in the share of their output in total manufacturing output.

<sup>23</sup> "Can an Increase in Public Investment Sustainability Lift Economic Growth?" (2016). OECD, Economics Department, Working Papers No. 1351.

**Figure 7.4**  
**Gross Investment by the Public Sector<sup>a</sup>, 1995–2014**



<sup>a</sup> The data in the figure refer to public investment as defined by the OECD, without capital flows. Including capital flows increases the share of investment in both the OECD and in Israel, and reduces the gap between Israel and the OECD by about 0.5 percent of GDP. There are several problems with a comparison that includes flow data and it even reduces the number of countries in the comparison group due to lack of data. SOURCE: OECD data.

Businesses in Israel are forced to invest a lot of time in interfaces with government bureaucracy, and this adversely impacts the rate of private-sector investment in nonresidential building.

One of the factors that might explain the relatively low investment rate of the private sector in nonresidential construction is the bureaucratic burden on contractors and business owners in Israel: Israel is ranked 52nd in the world in the ease of doing business index published by the World Bank, an index that is led by industrialized countries: of the 33 leading countries in the ranking, 26 of them are OECD countries and another four are developed economies in East Asia (Singapore, Hong Kong, Taiwan, and Malaysia). Israel's grades are especially low in comparison with the OECD countries: 30 of them are ahead of it and only four are behind it. Israel gets especially low grades in the ease of registering property, payment of taxes, enforcement of contracts, dealing with construction permits, and getting electricity. Private investment in buildings is different from private investment in machinery, equipment and vehicles in that it involves extensive contacts with government bureaucracy: businesses in Israel are forced to waste a lot of time in interfaces with government bureaucracy and this may be mostly damaging to investment in buildings.<sup>24</sup>

<sup>24</sup> In estimates we made, no significant statistical connection was found between countries' rating in the Doing Business index and the share of investment in GDP. However, the correlation between the two variables was in the expected direction: a low rating in the index corresponded with low investment (as a percentage of GDP).

Another factor that may have adversely impacted investment in the past is the low level of competition in the credit to small businesses sector.<sup>25</sup> “The credit market for small business is characterized by low competition relative to the big business segment since there is limited supply of nonbank credit available to it.”<sup>26</sup> The high price on credit to small businesses (bank spread) has reflected not only the risk of default but also the strong market power of the few lenders: since the number of potential lenders was small and every lender had copious information on its borrowers but little information on other potential borrowers, the level of competitiveness was low, the amount of credit was low, and the price of credit was high.<sup>27</sup> A GEM study that examined the state of small businesses in Israel relative to those operating in other countries (for 2013) found that the constraints in Israel are in the financial-financing area and in the area of government bureaucracy.<sup>28</sup> However, there has been a marked change since 2012: credit to small businesses has expanded rapidly against the background of a surplus of savings sources in the economy, regulatory changes that have limited bank credit to large businesses, and increased competition between the financial institutions. The “Periodic Report on the State of Small and Medium Businesses in Israel, 2016” found that “the differences in financing terms between small and medium business and large businesses have narrowed steadily since 2012”.

Research that examined the state of small businesses in Israel relative to those operating in other countries found that the constraints in Israel are in investment financing and in dealing with government bureaucracy.

## 5. Savings in Israel

National savings are made up of public sector, household and companies' savings. Public-sector savings in Israel are ostensibly quite stable (Table 7.1) and thus cannot explain the upward trend of the national savings rate in the 2000s. Actually, however, government saving has increased in the last few years: public sector workers hired in 2002 and thereafter<sup>29</sup> are responsible for their own pension savings through a defined contribution (funded) fund, and do not participate in the defined benefit arrangement (which is a pension arrangement with no contribution nor capital accumulation)—a change that saves the government heavy future expenses. According to the government accounting rules, anticipated future expenses involved in employing state workers with defined benefit pension is not recorded as an expense in the present but only in the future (when the benefits are actually paid to the retired state workers). Due

The switch of new public sector workers from a defined benefit pension plan to a defined contribution plan increased national savings.

<sup>25</sup> This is 23 percent of the banks' total commercial credit.

<sup>26</sup> Bank of Israel, *The Banking System in Israel*, 2015, p. 64.

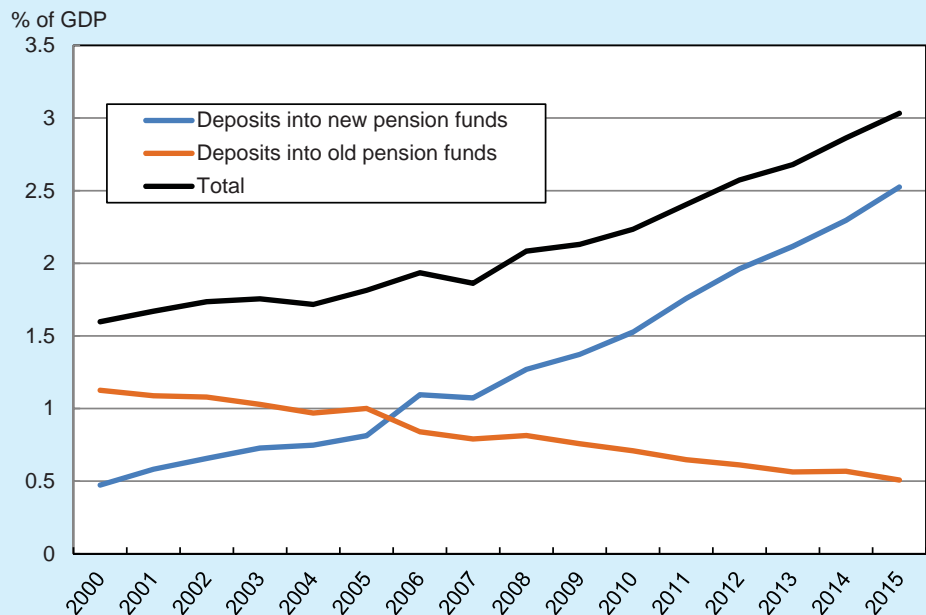
<sup>27</sup> “This sector (the small business sector) is profitable in comparison with the other business sectors and the return on assets in it is relatively high.” Bank of Israel, *The Banking System in Israel*, 2015, p. 64.

<sup>28</sup> According to the results of that research, the areas in which small businesses in Israel enjoy a comparative advantage are: “the system of culture and the social norms, the developed physical, professional and commercial infrastructures, and the area of advanced R&D in Israel, which allows for the implementation and assimilation of products.” (From the status report on small and medium businesses in Israel, 2013–14, the Ministry of Economy).

<sup>29</sup> The Law came into force in 2002 and was gradually applied to the various entities that make up the public sector.

to this recording method, the transition of new public sector workers from a defined benefit to a defined contribution pension is not reflected in an increase of recorded government saving, however, it increases national savings, and to an essential extent it also increases government saving.<sup>30</sup> Therefore, the transition of those public sector workers from a defined benefit plan in which there is no accumulation fund to a defined contribution pension where there is such a fund naturally involves a temporary but significant increase in the national savings rate.<sup>31</sup> The savings rate will return to normal levels once both public sector workers and public sector retirees are all contributors and beneficiaries of a defined contribution pension.

**Figure 7.5**  
**Deposits into Pension Funds<sup>a</sup> as a Share of GDP, 2000–15**



<sup>a</sup> Excluding allocations to the central pension fund of Israel Electric Corporation workers in 2005.  
SOURCE: Central Bureau of Statistics data.

The Mandatory Pension Law which went into force in 2008 acted to increase savings in the economy.

The Mandatory Pension Law which went into force in 2008 also leads to increased savings in the economy. The law makes it mandatory for every employee in the private sector and his or her employer to contribute to a pension fund at rates that have gradually increased until they recently reached the standard rates (6 percent for employee, 6.5 percent for employer and 6 percent for severance pay). It is reasonable to suppose that many of the workers who were obliged to contribute to pension

<sup>30</sup> On the assumption that the transfer from defined benefit pension to defined contribution pension is not accompanied by an increase in the salary of workers hired on an accumulative pension.

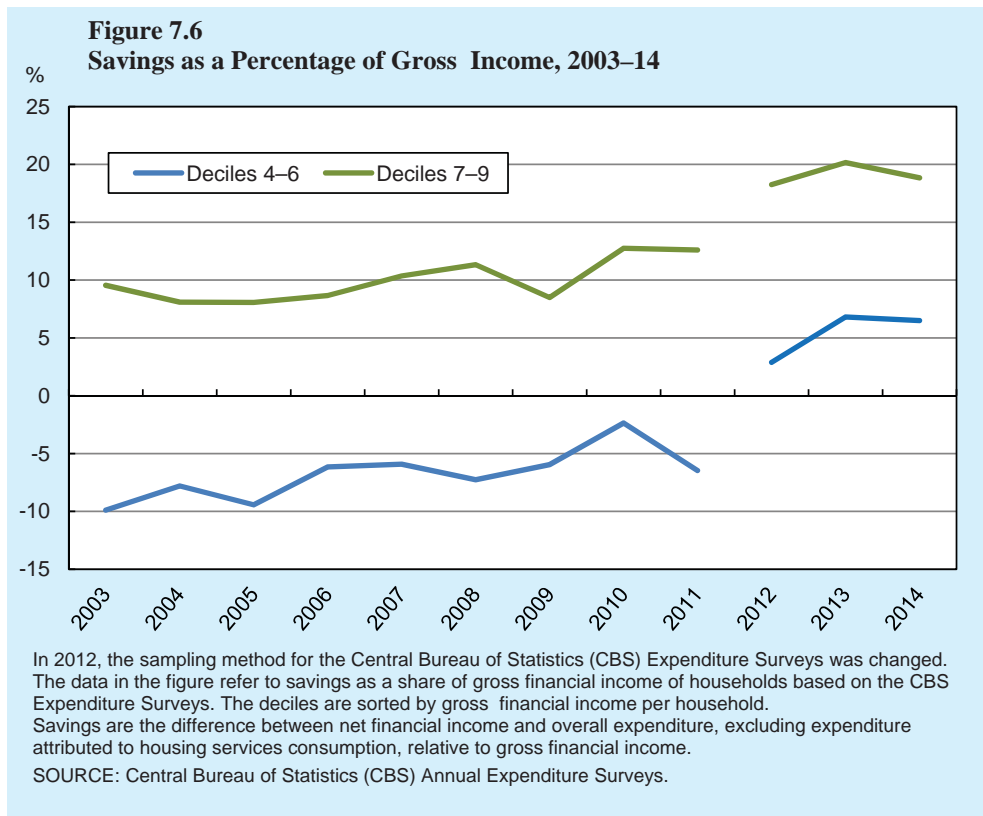
<sup>31</sup> The previous generation funded the pension of the generation that preceded it with pay as you go; the next generation will fund only its own pension in a funded account, while the transition generation will be forced to save in order to finance the pension fund for its own future pension payments and to finance, through taxes, recipients of the pay as you go pension of the previous generation.



savings responded by reducing the flow of their other savings (intended for when they retire or for interim purposes), but some of them almost certainly previously had such low savings rates as to make it impossible to fully offset it, since the Law was imposed mainly on the employers of low-salary workers who have difficulty with long-term saving. The mandatory pension therefore has a lasting effect on increasing the savings rate in the economy.

To examine the effect of the mandatory pension arrangement that has gradually gone into force since 2008, we will follow the development of the savings rate among low income employees before and after the Law went into effect, using Central Bureau of Statistics yearly Expenditure Surveys. Survey data indicate an increase in the savings rate of households after 2008: the savings rates in 2010 and 2011 were greater than those of 2003 to 2007. (In 2012 the sampling system was changed, and thus the data from that year forward are not comparable with the data of previous years.)<sup>32</sup> In the years following the extension of the pension arrangements, the savings rate increased by 4 percentage points in the high income deciles, most of whom had pension savings even before 2008, and in the intermediate deciles affected by the 2008 extension order. Since the private savings rate of those affected by the extension order

Employers' contributions to pensions contributed to increased national saving.



<sup>32</sup> Even when the sampling method is similar, households in the review change, so there is a great variance in the data.

(the low income deciles) did not increase in relation to that of the others (the higher income deciles), there is room to assess that workers' contributions to the mandatory pension did not increase private savings. However, the savings rate in the low income deciles also did not decline (in comparison with the other income deciles), and therefore the employers' contributions to the mandatory pension probably contributed to the increase in the private and national savings rate.<sup>33</sup> We should clarify that the incomes and savings of households include the workers' pension contributions but do not include the employer's pension contribution.

In summary, the participation of the new public sector workers in the defined contribution pension fund since 2002 and the gradual imposition of the Mandatory Pension Law since 2008 were reflected in an increase of 1.2 percent of GDP in the scope of contribution to the pension funds between 2001 and 2014. This is the upper limit of the contribution of the change in the pension arrangements to the increase in national savings in those years, since individuals almost certainly reacted by cutting their other savings.

The contraction of the scope of social insurance in Israel relative to other advanced economies acted to increase savings and the current-account surplus.

Another factor that increased the will to save in Israel is the cutback in government social insurance: the share of social support in Israel's GDP declined by one percentage point from 1995 to 2015 (from 17 percent to 16 percent of GDP), whereas its average in the OECD countries rose by 2.3 percentage points (from 18.8 percent to 21.1 percent of GDP) during the same period.<sup>34</sup> In reaction to the increase in life expectancy in Israel (as in many other countries), the Israeli government took active measures to increase the rate of contributions to pensions, such as raising the retirement age (and reform of the pension arrangements as previously stated) with the aim of guaranteeing workers a proper income on retirement. These measures are what contributed to the increase in national savings in Israel relative to other countries, most of which did not take such measures.<sup>35</sup>

The labor share in Israel's GDP decreased while the capital share increased, leading to an increase in savings. Although a similar phenomenon also occurred in other advanced economies, the increase in Israel was greater than in OECD countries. Whereas from 1995 to 2003 the share of capital in Israel's GDP was 1.5 percentage points lower than in the OECD countries, from 2004 to 2011 it was greater than in them by 0.8 percentage points (comparison with 29 OECD countries with consecutive data for 1995 until 2011). The savings rate from the capital share is greater than the savings rate from the labor share: according to a State Revenues Administration report, the ratio of distributed profits to total profits of companies in the economy was

<sup>33</sup> Even if the increase of the employer's share in the mandatory pension was entirely at the expense of the worker's salary, savings grew, since now the entire employer's share is apparently saved, whereas in the past the savings rate from it was similar to the average savings rate.

<sup>34</sup> This support includes financial support and support in kind.

<sup>35</sup> The increase in life expectancy acts to increase the savings rate of rational young people aspiring to ensure themselves a sufficient income for a longer retirement period, but at the same time acts to reduce the savings rate of retirees who have had a longer than expected life.

80 percent from 2012 to 2015,<sup>36</sup> and this is in effect the savings rate from companies' profits in Israel. Although we are not in possession of comparable data for most of the OECD countries, it can be assumed that the high rate of companies' saving in Israel is unexceptional: the rate of distributed profits from 2002 to 2012 was approximately 100 percent in France and Japan, around 75 percent in the United States, and around 60 percent in Germany and Italy.<sup>37</sup>

We note the large transfer payments that Israel receives from the US government, which contribute to the increase of the current account surplus. Israel's situation is unique not only because it receives considerable multi-annual aid from a foreign government but also because it is an importer of large quantities of armaments—which acts to reduce the current account balance. Since the flow of transfer payments from the United States and the flow of defense imports are similar in size, stable, and set off against each other, and each is unique to the Israeli economy – we did not take either into account.<sup>38</sup> It is however important to clarify that if defense aid would be cut, it is reasonable to suppose that Israel's current account surplus would be reduced since the need to import armaments is the result of the security threat.

In addition to the increase in the amount of savings, its composition also acted to increase the current account surplus. The liberalization of capital flows allowed institutional entities (pension funds, provident funds and advanced study funds) to shift a notable part of national savings into investments abroad. And indeed a quarter of the assets of the institutional entities is currently (end of 2016) invested abroad, compared with only one percent in 2002. In effect, the increase of workers' contributions to pension funds (from 1.7 percent of GDP in 2001 to 2.9 percent of GDP in 2014, as previously stated) was all channeled into investment abroad.<sup>39</sup> In addition, Israeli firms directed some of the profits accumulated in Israel into direct investments abroad (for the purchase of companies abroad or to set up enterprises there), and also the Bank of Israel has increased its investments abroad since 2008.

The large transfer payments that Israel receives from the US government contribute to increasing the current account surplus.

The growth of national saving in the past decade is not turning into growth of domestic investment but rather a surplus in the current account; this is against the background of liberalization of capital flows, which allowed Israeli residents to shift capital abroad.

<sup>36</sup> State Revenue Administration Report 2013–2014 Chapter 8, p. 185 (in Hebrew). The calculation is based on the fact that the actual revenues from corporate tax were almost ten times greater than revenues from tax on dividends, whereas according to the statutory tax rates and on the assumption that all the profits were distributed, the revenues from tax on dividends would be expected to be almost equal to the revenues from corporate tax. In 2015, the corporate tax rate was 26.5 percent and the tax rate on dividends was 32 percent (after deduction of corporate tax). According to Central Bureau of Statistics data, the ratio of non-distributed profits to total profits in foreign companies operating in Israel reached 78 percent in the last decade (2006–15).

<sup>37</sup> J.W. Gruber and S.B. Kamin (2015). “The Corporate Saving Glut in the Aftermath of the Global Financial Crisis”.

<sup>38</sup> In the last few years, part of the US grant was used to develop an anti-missile defense system in Israel. This aid did act to increase the current account surplus.

<sup>39</sup> Pension funds' assets abroad were 10 percent of GDP in 2015.

## 6. The current account surplus – discussion of its significance

Israel's saving rate being high compared with other advanced economies is an advantage that should be maintained.

As noted, the increase in national savings in the last decade was not accompanied by a matching increase in domestic investment but found expression in the current account surplus. This section discusses some of the significance of the phenomenon.

For the most part, a high savings rate is beneficial for an economy. The savings enable the public to accumulate assets abroad, thus reducing the probability of balance of payments crises. It also allows for increased investment in the economy, thus contributing to an increase in labor productivity (through the import of cutting edge manufacturing equipment). Savings also have an advantage at the level of the individual, as they allow a decent standard of living to be maintained in old age and allow the individual to smooth out consumption in view of fluctuations in current income. Although it is distinctly possible to coerce over-saving, which negatively impacts some individuals,<sup>40</sup> since most individuals are inclined to put aside too little for old age, mandatory saving is standard in many countries. To our understanding, the liberalization of capital flows also has very important advantages: the shift allows for optimal risk diversification, moderates the probability of asset over-pricing (phenomena we are especially witness to during periods of low interest rates) and increases reciprocal investments by foreign investors in Israel, which incorporate knowhow and high productivity.

Israel's investment rate being low relative to other advanced economies negatively impacts the economy and prevents it from realizing its growth potential.

In contrast, the fact that the investment rate in Israel is low relative to the other advanced economies negatively impacts the economy and prevents it from realizing its growth potential. Increasing investment in Israel will almost certainly give the economy a higher real return than investment abroad, since the direct return on capital in Israel is relatively high compared with the industrialized countries: the share of return on capital in GDP is high despite the fact that the capital stock (relative to GDP) is considerably lower than in the industrialized countries. Research conducted by the OECD found that increasing public investment will contribute to an increase in GDP and productivity in those OECD countries in which the stock of public capital is less than 60 percent of (potential) GDP. As Israel's capital stock is half of that, investment in infrastructure in Israel is expected to be very worthwhile.<sup>41</sup> That is on condition that the government succeeds in identifying worthwhile infrastructure projects supportive of growth. Increasing public investment will allow the economy to maintain both a high savings rate and a high level of economic activity. Another way to leverage the current account surplus to increase productivity in the economy is to reduce restrictions on imports, including on foreign companies seeking to operate in Israel in the areas of infrastructure construction, residential construction, financial services, aviation services, etc.

<sup>40</sup> For example, it is not desirable to force high pension contributions on young students with low incomes that are used mainly to fund the investment in studies (for fear of downward pressure on investment in human capital), or on those with low current incomes and many needs but with high future salaries (a low current standard of living relative to its expected level in the future).

<sup>41</sup> "Can an Increase in Public Investment Sustainability Lift Economic Growth?" (2016). OECD, Economics Department Working Papers No. 1351.

Based on the above analysis, Israel's current account surplus is mainly due to underinvestment in infrastructures and therefore it cannot accelerate growth in order to close the gap in standard of living relative to the most advanced economies. In fact such a large current account surplus is the domain of the richest countries and those enjoying an abundance of natural resources. This surplus is naturally attended by a real appreciation, which means an adverse impact on the exporting industries. The surplus in Israel is the result of basic forces, but those derive, as noted, from underinvestment in the economy and are not beneficial for its long-term growth. Without a meaningful change in government policy on investment in infrastructures, the negative impact to the economy's growth in comparison with other economies will lead to a decline in the savings rate, a reduction in the current account surplus, and a delay in closing the gap in standards of living between Israel and the most advanced economies.

The current account surplus can be leveraged to increase productivity in the economy by increasing government investment in physical infrastructures and by removing barriers to foreign companies looking to operate in Israel.

