## Chapter 6

# *The Public Sector and its Financing*

- In 2013, the government deficit declined to 3.2 percent of GDP, and was lower than the target set by the government and the deficit of the previous year. The cyclically adjusted deficit declined in 2013 by 1 percent of GDP. The debt-to-GDP ratio continued to decline in 2013.

- The government initiated a program that supported fiscal credibility and contributed to a decline in the interest rate on public debt. At the beginning of 2013, low revenues and the expenditure programs approved by the government in the past indicated that the deficit path in the next few years would be higher than 5 percent of GDP. Following the elections, the government adopted a fiscal consolidation program for 2013 and 2014, which included tax increases and a marked reduction in the growth of public expenditure, totaling about 3 percent of GDP.

- Government revenues in 2013 were higher than projected in the budget, mainly due to an increase in revenue from the sale of start-up companies and the release of trapped profits, which was greater than expected.

- Budget performance in 2013 was 97.8 percent. Most of the underperformance was in the "Miscellaneous expenses" item, while the budgets of the government ministries were fully spent.

- As a result of the change in the taxation framework on the purchase of private vehicles—tax rates increase as the pollution expelled by the vehicle model increases—the composition of vehicle purchases became more "green".

- Estimates indicate that improved engineering features on intercity roads have a strong and statistically significant impact on reducing the probability of traffic accidents.

- The errors in tax collection projections that have been included in the budget since 2004 do not indicate any methodic deviations in the projection—in contrast with the pronounced optimistic deviation of projections between 1992 and 2003—even excluding the effects of unexpected economic fluctuations.

- This year, imposing a general personal income tax return filing obligation was proposed, with the aim of reducing noncompliance with tax laws. A cost-benefit analysis indicates that it would be more efficient to institute a pre-filled personal tax return approach that is now customary in many countries, which is based on the use of information held by the authorities through appropriate computer systems.

## 1. MAIN DEVELOPMENTS AND INTERNATIONAL COMPARISON

The general government deficit declined by 0.7 percent of GDP in 2013, and the public debt-to-GDP ratio declined by a similar amount (Table 6.1). The deficit of the narrow government also declined by a similar amount, and was lower than the target of 4.65 percent of GDP[1], which was set in the 2013–2014 budget. As a result of the marked increase in the deficit in 2012 and at the beginning of 2013, and in view of expectations of a further increase in the coming years, the new government decided on a significant fiscal consolidation, which included tax increases in 2013, additional tax increases in 2014, and a reduction in the growth of expenditures in 2013 and 2014. This policy, together with greater than expected tax receipts, led to a decline in the deficit compared to 2012.

The general government deficit declined by 0.7 percent of GDP in 2013, as did public debt. The government employed a fiscal reduction program that included tax increases and a cut in the growth of public expenditures.

The deficit in 2012 was 3.9 percent of GDP—a deviation from the deficit target of 2 percent. During the second half of 2012, once it became clear that the deficit would exceed the target, the government decided to increase indirect tax rates immediately, income tax rates from January 2013, and the deficit target for 2013 from 1.5 percent of GDP to 3 percent. There was no budget for 2013 presented (or, obviously, approved) in 2012, and the State therefore operated during the first half of 2013 without any approved budget. Despite the measures taken in 2012, budgetary developments at the beginning of 2013 indicated a high likelihood that the government would also exceed the increased deficit target. Moreover, the government was faced with many expenditure programs that were adopted in previous years, the cost of which significantly exceeded the expenditure ceiling set in the expenditure rule. The combination of a high current deficit and decisions on further expenditures threatened to bring about a large and prolonged increase in the debt-to-GDP ratio to dangerous levels.

In reaction to these difficulties, the government enacted a broad fiscal consolidation program. This program included an immediate increase in indirect tax rates and a decision to increase direct tax rates from the beginning of 2014 (totaling about NIS 12 billion combined), and a marked reduction in the expenditure programs—by way of delaying or cancelling programs for 2013 and 2014, delaying planned rises in wage payments and an actual cut in the defense and child allowance budgets (for a total cancellation of planned expenditures totaling NIS 18 billion a year). In addition to these measures, it was decided to raise the deficit target for 2013 to 4.65 percent of GDP, and to exclude expenditures totaling NIS 6.5 billion in 2013 from the expenditure rule. The assessment was that the measures adopted by the government would be sufficient to halt the deterioration of the deficit and to shrink it to the level of 3 percent of GDP in 2014, alongside a return of the expenditure ceiling to the original path set in the expenditure rule. These actions contributed to strengthening capital markets' trust in Israel's economy and the government's budgetary control, and to narrowing the yield spreads between Israel and the other advanced economies. The importance of

The government enacted a fiscal reduction program of broad scope, both on the taxation side and on the expenditure side. The program succeeded in returning fiscal control and contributed to trust in the Israeli economy.

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[1] The target deficit for 2013 was NIS 45.6 billion, which is 4.65 percent of the GDP that had been projected for 2013. As a result of the update of the GDP by the Central Bureau of Statistics, which was published in August 2013, the target became 4.33 percent.

**Table 6.1**
**The main components of the general government's revenue and expenditure, 2007–13**

(percent of GDP)

| | Average 2000–2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| **Total public revenue** | **42.3** | **38.6** | **38.6** | **35.7** | **36.7** | **35.4** | **36.2** |
| Income from property | 1.3 | 1.0 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 |
| **Total taxes** | **34.4** | **31.9** | **29.7** | **30.5** | **30.7** | **29.5** | **30.3** |
|    Indirect taxes on domestic production | 12.1 | 11.5 | 11.4 | 11.8 | 11.7 | 11.2 | 11.8 |
|    Indirect taxes on civilian imports | 3.9 | 3.9 | 3.7 | 3.9 | 3.9 | 3.6 | 3.4 |
|    Direct taxes, fees and levies | 13.0 | 11.2 | 9.5 | 9.6 | 9.8 | 9.6 | 10.1 |
|    National Insurance Institute revenue | 5.5 | 5.3 | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 |
| Grants | 3.0 | 2.2 | 2.0 | 1.7 | 1.9 | 1.8 | 1.7 |
| Other[a] | 3.6 | 3.5 | 6.1 | 2.8 | 3.4 | 3.4 | 3.5 |
| **Total public expenditure** | **45.3** | **40.7** | **41.0** | **40.1** | **39.4** | **39.2** | **39.4** |
| Current expenditure | 41.8 | 37.2 | 37.5 | 37.0 | 36.3 | 36.1 | 35.9 |
|    Domestic civilian consumption | 17.6 | 16.9 | 17.0 | 17.1 | 17.2 | 17.1 | 17.2 |
|    Domestic defense consumption | 5.8 | 5.2 | 5.1 | 4.9 | 4.8 | 4.5 | 4.5 |
|    Defense imports | 1.7 | 1.2 | 1.0 | 1.0 | 1.0 | 1.1 | 1.0 |
|    Direct subsidies | 0.8 | 0.7 | 0.8 | 0.7 | 0.7 | 0.7 | 0.8 |
|    Transfer payments on current account | 10.9 | 9.7 | 10.1 | 9.9 | 9.9 | 9.9 | 9.7 |
|    Interest payments | 5.0 | 3.4 | 3.5 | 3.3 | 2.8 | 2.8 | 2.7 |
| Transfer payments on capital account[b] | 1.5 | 1.9 | 2.0 | 1.7 | 1.5 | 1.6 | 1.8 |
| Investments of general government | 2.0 | 1.6 | 1.5 | 1.5 | 1.6 | 1.5 | 1.6 |
| **Primary civilian expenditure** | **32.8** | **30.8** | **31.4** | **30.9** | **30.8** | **30.8** | **31.1** |
| **Total deficit of the general government** | **3.0** | **2.1** | **5.3** | **3.6** | **2.7** | **3.9** | **3.2** |
| Deficit using international definition[c] | 3.3 | 3.6 | 6.7 | 4.6 | 3.8 | 4.8 | 4.0 |
| Current deficit of the general government | 2.5 | 1.7 | 4.6 | 3.4 | 2.6 | 3.6 | 2.8 |
| Total cyclically adjusted deficit[d] | 1.6 | 3.2 | 4.7 | 3.9 | 3.8 | 4.9 | 3.7 |
| Total cyclically adjusted deficit using international definition[e] | 2.6 | 4.2 | 5.5 | 4.8 | 4.9 | 5.9 | 4.6 |
| Net public debt[f,g] | 76.5 | 65.3 | 67.0 | 64.9 | 64.1 | 63.0 | 62.6 |
| Gross public debt[f] | 86.8 | 72.9 | 75.3 | 71.5 | 69.7 | 68.2 | 67.4 |

[a] Includes transfer payments from the public on the current and capital accounts, imputed pensions, depreciation, capital transfers from abroad, and transfers from abroad to National Institutions and nonprofit organizations.

[b] Includes mortgage subsidies and transfers on the capital account to nonprofit organizations and businesses.

[c] The deficit in this item was brought in line with the accepted international definition by adding indexation differentials on indexed and unindexed shekel debt.

Indexation differentials need to be added in respect of unindexed debt because the CBS imputes a reduction of these differentials when reporting interest payments.

[d] Interest expenses are calculated assuming that the inflation rate during the year was 2 percent, and not according to the actual inflation rate.

[e] The deficit in this item was brought in line with the accepted international definition by adding indexation differentials on the indexed and unindexed shekel debt, assuming inflation of 2 percent.

[f] Excluding municipalities' debts to the government.

[g] Net public debt equals the gross public debt minus active loans minus government deposits with the Bank of Israel.

SOURCE: Based on Central Bureau of Statistics data.

**Figure 6.1**

**Fiscal Aggregates in Israel Compared to OECD Average[b],**

(percent of GDP, 2000–13)



Israel     OECD average
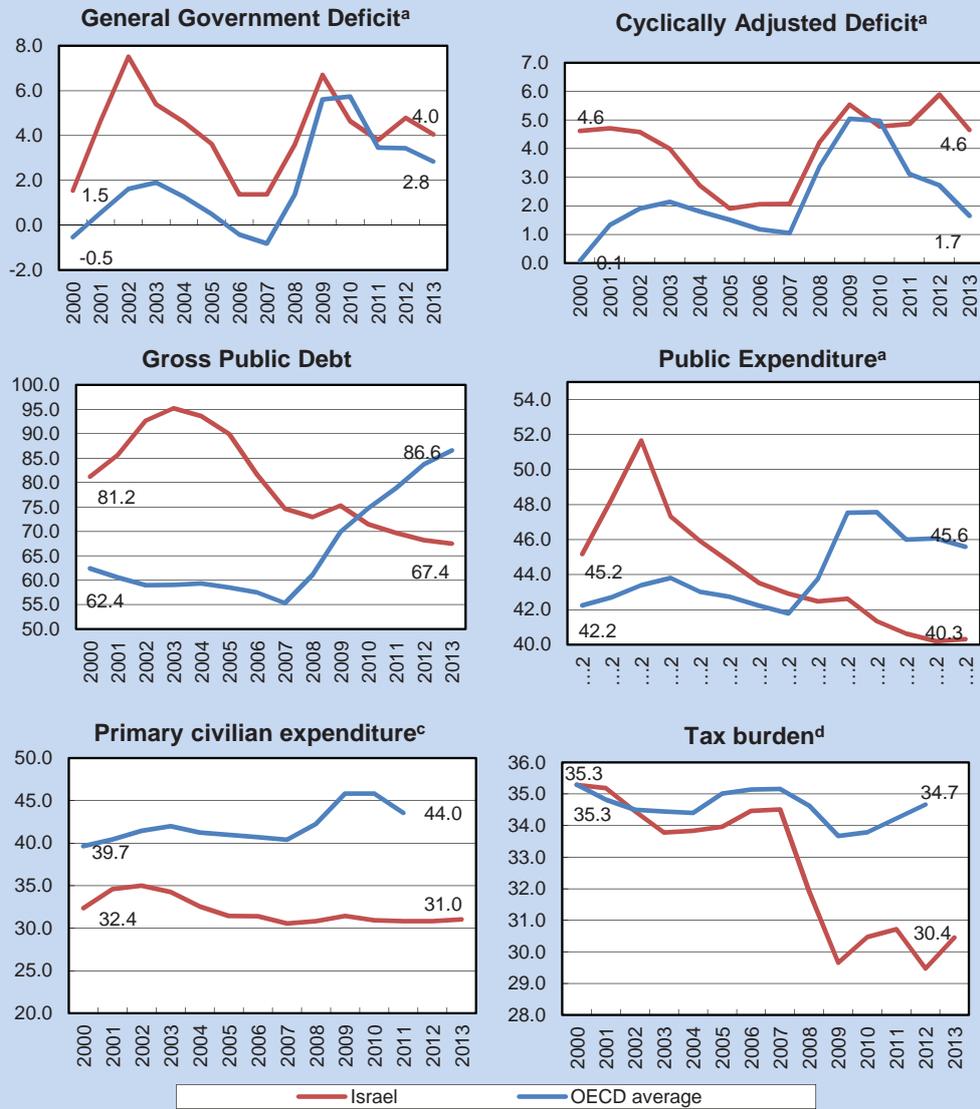
[a] Deficit and expenditure data for Israel are in line with the accepted international definition.

[b] Data for OECD countries are arithmetic means of all countriesregarding which there are data in the organization's systems.

[c] There are still no data for OECD countries for 2012 or 2013.

[d] There are still no data for OECD countries for 2013.

SOURCE: Based on OECD data, Central Bureau of Statistics, and OECD Revenue Statistics 2013.

returning fiscal control lies in the fact that the reduction of the deficit and the debt ratio reduces future interest payments and increases the government's ability to enact anti-cyclical policy during crisis periods. At the end of 2013, in view of the reduction in the deficit and the projection that the government would meet the deficit target in 2014, the government cancelled the plan to increase income taxes in 2014, and changed the fiscal rule for the years 2015 onward, such that it would reduce the growth in public expenditure in those years.

The government decided to base the deficit reduction path mainly on decreasing the share of expenditure in GDP. This decision involves challenges that must be dealt with by this policy, including the public's demand for higher quality public services. This demand is reflected in the fact that the government decided on programs, the costs of which in the coming years are much higher than the costs allowed by the expenditure ceiling that it adopted. Even now, the expenditures expected for 2015 are at least NIS 10 billion higher than the ceiling set by the new expenditure rule, and the need to cancel programs that have already been approved and anchored in law, in order to meet the expenditure rule for the coming years, will be a complex challenge. This is particularly true if the government also strives to avoid cancelling investments in areas where public expenditure is known to have a positive and long-term effect on economic growth—such as infrastructure and education—and which the private market does not make due to market failures.[2]

> Reducing the deficit by reducing expenditures involves challenges, including the public's demand for higher quality public services.

The alternative to reducing the growth of expenditures is increasing the tax burden. This type of policy also requires decisions that are not easy, regarding the distribution of the increased burden among various population groups and the negative impact to the disposable income of households and companies. As such, the advantage in reducing the size of government, meaning a reduction in public expenditure and the tax burden, is an increase in the disposable income of the country's citizens. The disadvantage in such a policy is that there is a possibility that the State's provision of public goods and public investments will be reduced. There are economic cost-benefit considerations in choosing between the alternatives: a policy that reduces public expenditure is preferable to the extent that: the public's demand for the goods that were cut was lower; the supply of the public products is less efficient; the supply of the goods that were cut involves fewer market failures and fewer externalities that are not internalized by the private market; the yield on public investment generates lower growth; and the yield on public investment is lower than the yield from reducing public debt. In addition, the decision on some of these issues depends on political reasons and preferences. As a rule, it is reasonable to assume that as the size of government shrinks, the positive contribution of the remaining expenditures increases, and there is widespread agreement in the economic literature that the more the tax burden increases, the greater the distortion caused by its marginal effects.[3]

> Shrinking the size of government increases the amount of disposable income among the citizens, but may reduce the supply of public products. This policy must be measured through economic cost-benefit considerations.

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[2]  A quantification of some of the positive effects of public investment in infrastructure appears in Box 6.2.

[3]  Alessina, Alberto, et al., "The Political Economy of Fiscal Adjustments", Brookings Papers on Economic Activity (1998), 197-266.

**International comparison**

An update by the Central Bureau of Statistics in August 2013 increased the estimate of nominal GDP for 2012 by 7 percent compared to the previous figure, and the estimates for the previous years by about 4 to 6 percent.[4] These increases were reflected in a decline in the ratio between the fiscal aggregates and GDP.[5] This change further emphasizes the fact that public expenditure in Israel, both overall and, particularly, civilian, is very low in relation to the OECD average[6] (Figure 6.1), and the relatively low public debt in Israel. The tax burden and public expenditure in Israel are among the lowest in the OECD, and the share of disposable income out of total income is higher. The scope of public services, investments in infrastructure, and government involvement in reducing inequality, are lower than the average levels among the other OECD countries.

A further limitation that makes it difficult to raise the level and scope of public services in Israel is the high expenditure on defense and interest payments. Despite the decline in defense expenditures as a share of GDP in Israel in the past decade (Table 6.1), the gap between these expenditures and the OECD average was 4.3 percent of GDP in 2011[7], which derives from the geopolitical situation in which Israel finds itself. Interest expenditures as a share of GDP[8] also declined during the same period, but the gap between them and the average of these expenses in the OECD remains large—2.2 percent of GDP in 2011. Some of this gap also derives from Israel's geopolitical situation. These gaps comprise half of the civilian expenditure gap between Israel and the OECD.

Table 6.2 presents a comparison between Israel and the OECD average, in 1995 and in 2011, of the expenditures on a number of main expenditure items. Public expenditure on education in relation to GDP in Israel is higher than the OECD average, but since the percentage of children in the Israeli population is much higher than in the OECD (Table 6.2), the expenditure per student in Israel is about 2/3 of the expenditure per student in the OECD.[9] Public healthcare expenditures in relation to GDP in Israel are lower than in the OECD. While one of the explanations for this is the relatively low percentage of the elderly in Israel, an assessment of healthcare expenses equivalized for the size of the population and the age composition also

*An update made by the Central Bureau of Statistics in 2013 raised the estimate of nominal GDP for recent years. The change emphasizes the fact that expenditures, debt, and the tax burden in Israel are lower than in other OECD countries.*

*Defense and interest expenditures in Israel are higher than in other OECD countries.*

*Compared to other OECD countries, Israel spends less on healthcare and on education in terms of expenditure per student.*

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[4]  Further details about the update to GDP are available in Box 2.2 of this report.

[5]  The only other OECD countries that updated their GDP calculations using the SNA 2008 method were the US, Australia, Canada, and Mexico.

[6]  The only advanced economy in which primary civilian expenditure is lower than Israel is South Korea. There are no data in the OECD system on this aggregate regarding Mexico, Chile or Turkey.

[7]  The comparison is based on 2011 data, because the OECD system does not contain more up-to-date data on this aggregate.

[8]  Israel's interest expenditures in this comparison are adjusted to the accepted international definition: interest expenditures according to the national accounts definition plus indexation differentials (on a cumulative basis) on the CPI-indexed shekel debt. Interest payments on the unindexed shekel debt are included without offsetting the inflation component, unlike in the National Accounts.

[9]  OECD: Education at a Glance.

shows that public expenditure on healthcare in Israel is low.[10] A comparison of the total education and healthcare expenses in relation to GDP shows that Israel is similar to the OECD average in this figure. Expenditures on transfer and support payments in relation to GDP in Israel are the lowest in the OECD even including the subsidy on pensions that is included in the interest rate on designated bonds, which is small (0.1 percent of GDP).[11]

**Table 6.2**
**Public expenditure on main items, and distribution of the population in Israel and the OECD, 1995 and 2011[a]**

| | Health | Education[c] | Defense | Health and education (total) | Transfer payments and subsidies | Housing | Total public expenditure | Dependency ratio: Young people (0–15)[b] | Dependency ratio: Elderly (65+)[b] | Overall dependency ratio[b] |
|---|---|---|---|---|---|---|---|---|---|---|
| | (percent of GDP) | | | | | | | (dependency ratio) | | |
| | 1995 | | | | | | | 1995 | | |
| OECD average | 5.9 | 5.7 | 2.0 | 11.7 | 17.8 | 1.3 | 51.6 | 29.1 | 21.7 | 50.7 |
| Israel | 5.4 | 7.4 | 8.5 | 12.8 | 10.6 | 1.7 | 50.3 | 48.5 | 15.6 | 64.2 |
| Israel's ranking in the OECD[c] | 13/19 | 2/19 | 1/19 | 8/19 | 19/19 | 3/19 | 12/19 | 1/19 | 18/19 | 1/19 |
| | 2011 | | | | | | | 2011 | | |
| OECD average | 6.9 | 5.7 | 1.4 | 12.6 | 18.2 | 0.7 | 48.8 | 25.5 | 24.8 | 50.2 |
| Israel | 5.2 | 7.0 | 6.2 | 12.1 | 10.9 | 0.4 | 42.1 | 45.5 | 16.3 | 61.8 |
| Israel's ranking in the OECD[c] | 17/19 | 2/19 | 1/19 | 12/19 | 19/19 | 17/19 | 17/19 | 1/19 | 18/19 | 1/19 |
| | Change | | | | | | | Change | | |
| OECD average | 1.0 | 0.0 | -0.5 | 0.9 | 0.4 | -0.6 | -2.8 | -3.7 | 3.2 | -0.5 |
| Israel | -0.2 | -0.4 | -2.3 | -0.7 | 0.3 | -1.3 | -8.2 | -3.0 | 0.7 | -2.4 |

[a] There are still no data that are more up-to-date on the OECD countries.

[b] The ratio between the supported population (young people and/or the elderly) and the working age population (15–64)

[c] Among the 19 OECD members for which there are data for all years between 1995 and 2011 (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden).

SOURCE: Based on OECD data.

[10] See "Health Expenditure in Israel—An International Comparison of Demographic Factors and Cost Structure", Recent Economic Developments 135, October 2012–March 2013.

[11] Details on this subsidy can be found in Footnote 37 of this chapter.

## 2. THE TOTAL DEFICIT AND THE CYCLICALLY ADJUSTED DEFICIT

The government deficit declined in 2013, and was significantly lower than the deficit target set in the 2013 budget. The budgetary surplus of the National Insurance Institute continued to decline, and reached 0.3 percent of GDP in 2013.

The total deficit of the general government[12] declined by 0.7 percent of GDP, to 3.2 percent of GDP (Table 6.1). This is a high deficit level, given the level of GDP and the low unemployment rate in the economy in recent years, and when compared to most other advanced economies. The government budget deficit (excluding the provision of credit) declined to 3.1 percent of GDP in 2013, compared to 3.9 percent of GDP in 2012. This deficit was significantly lower than the deficit target of 4.3 percent[13] set in the 2013 budget (Table 6.3) due to revenue that was NIS 5.7 billion greater than projected in the budget, alongside expenditures that were NIS 6.7 billion lower than originally budgeted (Table 6.4). The budgetary balance of the local authorities remained in surplus in 2013, similar to the situation in recent years. In contrast, the deficits of public nonprofit institutions (mainly the health funds and the universities) continued to increase, reaching 0.7 percent of GDP in 2013 (NIS 7 billion).[14] The budgetary surplus of the National Insurance Institute continued to decline, from an average of 1 percent of GDP between 2004 and 2009 to 0.3 percent of GDP in 2013. In recent years, a trend has developed whereby National Insurance Institute revenue does not cover its expenses. An examination shows that the pace of increase of National Insurance fees is similar to that of benefits, but government transfer payments to the National Insurance Institute are increasing at a slower pace.

The direct effect of fiscal policy on economic activity in 2013 was contractionary relative to the previous year.

The direct effect of fiscal policy on economic activity in 2013 was contractionary relative to the previous year.[15] This is reflected in the decline of the cyclically adjusted deficit[16] (Table 6.1) by 1 percent of GDP, returning it to its level of 2011. A

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[12] The general government includes the central government, national institutions, public nonprofit institutions, the National Insurance Institute, and the local authorities. (For details, see Table 6.A.9 (F.9(1)) in the Statistical Appendix). For further explanation, see Box 3.3 of the Bank of Israel Annual Report for 2001, the Research Department section.

[13] The target deficit for 2013 was NIS 45.6 billion, which was 4.65 percent of the GDP that was projected for 2013. As a result of the Central Bureau of Statistics' update in calculating the GDP, which was published in August 2013, the target is 4.33 percent of GDP.

[14] See "Budgeting in the Public Health System and Updating of the Budget for the Basket of Health Services", Recent Economic Developments 136, April–September 2013.

[15] Contractionary fiscal policy is policy that reduces public expenditures and/or raises taxes and causes the deficit to narrow.

[16] The cyclically adjusted deficit is calculated by comparing the deviation of the potential GDP in a given year to the average deviation from the potential GDP over time, which is about 2 percent. According to this calculation, the average cyclically adjusted deficit is of a similar size over time to the size of the regular deficit. Another assumption is that tax revenues increase over time in proportion with GDP, and that total expenditures and revenues excluding taxes are not sensitive to changes in GDP. The cyclically adjusted deficit is corrected for the effect of capital market developments on tax revenues. The cyclically adjusted deficit "corrects" GDP gaps, capital market deviations from the long-term trend and deviations of the interest rate from its long-term average. It also corrects real interest rate payment calculations prepared by the Central Bureau of Statistics, in accordance with the assumption that the inflation rate is 2 percent. The calculation does not necessarily present a structural deficit, meaning that not every change in the cyclically adjusted deficit reflects a change in government behavior. At the same time, some of the changes are structural changes in the economy that affect tax revenues or expenditures.

**Table 6.3**
**Central government deficit, revenue and expenditures, 2007–13**

(percent of GDP)

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| Total government deficit ceiling excluding credit granted | 2.9 | 1.6 | 6.0 | 5.5 | 3.0 | 2.0 | 4.3 |
| **Total actual government deficit excluding credit granted[a]** | **0.1** | **1.9** | **4.9** | **3.5** | **3.1** | **3.9** | **3.1** |
| Actual government domestic deficit | -1.3 | 0.5 | 3.5 | 2.4 | 2.0 | 2.9 | 2.2 |
| **Total net revenues[b]** | **31.1** | **28.4** | **25.3** | **25.8** | **25.8** | **24.8** | **25.6** |
| Taxes and imposts | 26.7 | 24.2 | 22.1 | 22.7 | 23.0 | 22.1 | 23.0 |
| Interest, profits, royalties, revenue from land sales | 0.9 | 0.9 | 0.7 | 0.6 | 0.4 | 0.4 | 0.5 |
| Loan from the National Insurance Institute (NII) | 2.0 | 2.0 | 1.6 | 1.4 | 1.5 | 1.4 | 1.3 |
| US government grants | 1.4 | 1.3 | 1.0 | 1.2 | 0.9 | 0.9 | 0.8 |
| **Total net expenditure[b]** | **31.1** | **30.4** | **30.2** | **29.3** | **28.9** | **28.7** | **28.7** |
| *of which*: Interest, repayment of principal to NII and credit subsidy | 5.7 | 5.2 | 5.1 | 4.9 | 4.8 | 4.7 | 4.6 |
| Net defense expenditure[c] | 7.7 | 7.5 | 7.1 | 7.0 | 6.5 | 6.2 | 6.2 |
| Total net primary civilian expenditure excluding defense | 17.8 | 17.7 | 18.0 | 17.3 | 17.6 | 17.8 | 18.0 |

[a] The aforementioned update to GDP only affects the actual deficit, and not the deficit ceilings listed above.

[b] Excluding credit granted by the government and excluding credit repaid to the government.

[c] Defense expenditure in this table is larger than defense consumption shown in Table 6.1 because the Central Bureau of Statistics records pensions and other payments by the defense establishment as transfer payments, while recording an imputation of compulsory service.

SOURCE: Based on the State Budget—Major Provisions of the Budget, Central Bureau of Statistics data, and State of Israel Financial Statements as of December 31, 2013.

marked portion of this decline can be identified as a decline in the structural deficit[17], since an increase in tax rates is one of the main reasons for the increase in revenue, which contributed to the decline in the deficit. Another part of the improvement in the deficit comes from one-time revenues—the collection of "trapped profits" and the sale of companies to nonresidents beyond the multi-year average—such that only a part of the decline in the cyclically adjusted deficit is structural. The level of the cyclically adjusted deficit in recent years, 3.5 percent to 5.0 percent of GDP, is high when compared internationally, and compared to the middle of the previous decade, and emphasizes the need for continued fiscal correction, in order to enable a continuation of the reduction of the debt-to-GDP ratio. It is important to emphasize

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[17] The change in the structural deficit is the change that derives from prolonged policy measures and from structural changes in the economy that affect tax receipts. (See: Mazar, Y., "Development of the Structural Deficit in Israel, 2000–12", Periodic Papers 2014.02, Bank of Israel Research Department (in Hebrew)).

that the calculations of this deficit are sensitive to the estimate of potential GDP[18] and to assumptions regarding the strength of the response of tax receipts and public expenditure to changes in the GDP.

**Table 6.4**
**Components of the deviation from the government's original budget for 2013**

(NIS billion, net, excluding credit, at current prices)

| | Actual performance in 2012 | 2013 | | |
| --- | --- | --- | --- | --- |
| | | Original budget | Performance | Deviation |
| **Deficit (-)** | **-39.0** | **-45.7** | **-33.2** | **12.4** |
| *of which*: Domestic deficit | -33.5 | -43.8 | -27.9 | 16.0 |
| Deficit abroad | -5.5 | -1.8 | -5.4 | -3.6 |
| **Revenue** | **246.6** | **263.4** | **269.1** | **5.7** |
| *of which*: Domestic revenue | 236.7 | 252.9 | 258.4 | 5.5 |
| Taxes[a] | 217.6 | 236.0 | 241.6 | 5.7 |
| Loan from National Insurance Institute | 14.0 | 14.6 | 14.2 | -0.4 |
| Other revenue[b] | 4.1 | 4.1 | 4.9 | 0.8 |
| Grants from US government | 8.9 | 8.7 | 8.4 | -0.3 |
| **Expenditure[a]** | **285.6** | **309.0** | **302.3** | **-6.7** |
| *of which*: Domestic expenditure[c] | 270.2 | 296.7 | 289.8 | -6.9 |
| Expenditure abroad[c] | 15.4 | 12.3 | 12.6 | 0.3 |
| Defense[d] | 62.0 | 62.1 | 65.0 | 2.9 |
| Interest, repayment of principal to National Insurance Institute, and credit subsidy | 46.9 | 49.3 | 48.0 | -1.4 |
| Civilian ministries and transfer payments excluding miscellaneous | 172.4 | 190.6 | 187.9 | -2.7 |
| Miscellaneous expenditures | 4.4 | 7.5 | 1.9 | -5.5 |

a Including VAT on defense imports.

b Revenue from iterest, royalties, dividends and other sources.

c There was an error in classification in 2013: NIS 3.5 billion of domestic expenditures were classified as expenditures abroad. The error has been corrected in this table.

d Including estimated transfers to defense from the economic reserve.

SOURCE: Based on the Accountant General's data on the performance of the 2013 budget.

[18] The calculation of the potential GDP here is based on the average growth of per capita GDP since 1973, which is 1.7 percent per year—a very stable rate over the past few decades, and similar to the trend in advanced economies. According to this calculation, GDP grew in 2013 by 0.3 percent less than the potential GDP. The GDP gap is calculated as the difference between the deviation of GDP from its potential level and its average deviation in past decades. According to this calculation, the GDP gap in 2013 was positive at 1 percent. This is assuming that GDP was equal to potential GDP in 1997. An analysis by per capita GDP at the main working ages leads to similar results. This calculation is different from the calculation in Chapter 2 of this report, since the emphasis there is on short-term potential GDP.

The structural deficit and the debt-to-GDP ratio reflect the fiscal space of the government of Israel.[19] Minimizing the structural deficit enables the government to continue reducing debt, thereby minimizing the burden of future interest expenses. In addition, it allows the government to respond to situations that require significant intervention, such as economic crises or security incidents, without endangering financial stability. Moreover, the existence of fiscal space serves as a signal to the markets regarding the economy's durability and its ability to respond to pressure, and therefore prevents various shocks from turning into prolonged crises, and reduces the risk premium of the economy. Thus, for instance, Brender and Ribon (2014)[20] find that a reduction of 1 percentage point in the debt-to-GDP ratio reduces the real yield on 10-year government bonds by 6–10 basis points.

Israel's fiscal space grew in 2013, as reflected in declines in the structural deficit and the debt-to-GDP ratio.

## 3. PUBLIC EXPENDITURE

Public expenditure increased in 2013 at a nominal rate of about 6.4 percent, similar to its rate of growth in 2012, and more rapidly than in the two previous years (Table 6.5). The share of public expenditure in GDP increased by 0.2 percent of GDP in 2013, its first increase since 2009. The growth rate of civilian consumption declined slightly in relation to previous years, but remained high. The growth rate of civilian wage costs was similar to that of nominal GDP, and the rate of growth in purchasing was slightly lower. Domestic security expenditures, including wage components, also increased this year, but at a slower rate than GDP, as was the case in all recent years.

From January to August, the government operated without an approved budget, and in accordance with the Basic Law: The State Economy, which allows expenditure of up to 1/12 of the previous year's budget each month (including the repayment of debts). Since debt repayments in 2012 totaled NIS 59 billion, compared with NIS 46.5 billion in 2013, it was possible until August 2013 to increase public expenditure excluding debt repayment by NIS 9 billion compared to 2012 without exceeding the restriction of 1/12 of the budget. An assessment of actual expenditure shows that the budget framework, with this restriction, was not fully utilized.

From January to August, the government operated without an approved budget, and limited by the rule of 1/12 of the 2012 budget. In practice, the government did not utilize the full budgetary framework of this limitation.

The defense budget for 2013 was set according to a new multi-year path that was decided upon when the 2013–2014 budget was approved, and was 2 percent less than the Brodet Committee framework according to which the defense budget had been

The 2013 budget set out a new multi-year path for the defense budget. At the end of 2013, the government decided upon an addition to the defense budget. At the beginning of 2014, the government decided to establish a committee with the objective of creating a new multi-year path for the defense budget.

[19] There are a number of definitions of fiscal space. Peter Heller, "Understanding Fiscal Space", IMF, 2005 defines it as "room in a government's budget that allows it to provide resources for a desired purpose without jeopardizing the sustainability of its financial position." Jonathan D. Ostry, Atish R. Ghosh, Jun I. Kim, and Mahvash S. Qureshi, "Fiscal Space", International Monetary Fund, Research Department, 2010, define it as "the difference between the current level of public debt and the debt limit implied by the country's historical record of fiscal adjustment."
[20] "The Effect of Fiscal and Monetary Policies and the Global Economy on Israeli Government Bonds' Real Yields—a Reexamination after a Decade", internal memorandum, Bank of Israel (in Hebrew).

**Table 6.5**
**Rates of nominal increase of public expenditure in Israel, 2007–13**

|  | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| **Total public expenditure** | **3.1** | **4.1** | **6.6** | **4.9** | **4.6** | **7.0** | **6.4** |
| *of which*: Interest payments | 3.2 | -16.7 | 7.6 | 2.1 | -9.2 | 6.4 | 3.3 |
| **Total primary expenditure** | **3.1** | **6.6** | **6.5** | **5.2** | **5.9** | **7.1** | **6.6** |
| *of which*: Current primary expenditure | 2.4 | 5.9 | 6.5 | 5.9 | 6.1 | 6.9 | 5.7 |
| Current primary civilian expenditure | 3.2 | 6.6 | 8.1 | 6.2 | 6.7 | 7.2 | 6.1 |
| Public consumption | 3.0 | 6.1 | 4.6 | 6.8 | 5.7 | 6.9 | 5.6 |
| Public consumption excluding defense imports | 4.6 | 7.4 | 5.8 | 6.6 | 5.7 | 6.3 | 6.0 |
| Civilian consumption | 5.0 | 7.5 | 6.3 | 7.5 | 7.0 | 7.3 | 5.9 |
| (Per-capita civilian consumption) | 3.2 | 5.6 | 4.4 | 5.5 | 5.1 | 5.4 | 3.9 |
| Wage expenditure | 3.5 | 6.8 | 4.2 | 8.3 | 7.4 | 7.7 | 6.7 |
| Purchases | 7.5 | 8.5 | 9.6 | 7.2 | 6.7 | 6.8 | 5.1 |
| Domestic defense consumption | 3.8 | 6.7 | 3.1 | 3.4 | 3.2 | 2.6 | 5.2 |
| Wage expenditure | 2.7 | 2.5 | 4.8 | 3.3 | 3.4 | 3.9 | 4.1 |
| Transfer payments on the domestic current account | 2.6 | 5.5 | 10.7 | 5.1 | 6.7 | 6.9 | 4.4 |
| (Per capita transfer payments on the domestic current account) | 0.8 | 3.6 | 8.8 | 3.2 | 4.8 | 5.0 | 2.4 |
| Investments of the general government | 9.7 | 10.6 | -0.2 | 4.3 | 13.5 | 2.7 | 14.4 |
| *of which*: Land transport infrastructure | 16.7 | 16.7 | 0.2 | 5.1 | -0.3 | 16.0 | 69.4 |
| Transfer payments on the capital account | 11.9 | 16.8 | 11.9 | -7.5 | -4.5 | 16.0 | 18.1 |
| Change in the CPI (annual average) | 0.5 | 4.6 | 3.3 | 2.7 | 3.5 | 1.7 | 1.5 |
| Change in the GDP deflator | 0.0 | 1.6 | 4.3 | 0.1 | 1.1 | 4.2 | 2.5 |
| Change in the public consumption price index | -0.2 | 3.2 | 1.5 | 3.4 | 3.1 | 3.5 | 2.3 |
| Change in nominal GDP | 6.8 | 6.4 | 5.8 | 7.0 | 6.7 | 7.5 | 6.0 |

SOURCE: Based on Central Bureau of Statistics data.

set since 2008.[21] Actual Ministry of Defense expenditures in recent years remained close to the Brodet framework.[22] Toward the end of 2013, the government decided

[21] According to the multi-year framework, the Defense Ministry's net budget for 2013 is NIS 52.5 billion, for 2014 it is NIS 51.0 billion, and for 2015 it is NIS 52.0 billion. Net security expenditure in relation to GDP will decline from 6.2 percent of GDP in 2013 to 5.5 percent of GDP in 2015, compared to 7.7 percent of GDP in 2007 (Table 6.3).
[22] See Table 6.8, Chapter 6, Bank of Israel Annual Report for 2011.

upon an addition to the defense budget that increased it by 5 percent.[23] According to the new multi-year path, the defense budget for 2014 is lower than the final budget for 2013, and 7 percent lower than its level for 2014 according to the Brodet framework. Despite the decision on the new path for the defense budget, the government decided at the beginning of 2014 to establish a committee that would create a multi-year path for the defense budget. The importance of a multi-year framework in this area stems from the multi-year structure of a significant portion of defense expenses and from the relative success of the Brodet framework as an anchor for the defense budget in recent years. The new committee will be able to set a path for defense expenditures

**Figure 6.2a**
**Civilian Expenditure and Defense and Interest Expenditures, 2000–13**
(as a percentage of public expenditure)



SOURCE: Bank of Israel.

for the coming years, based on a multi-year view of the economy's capabilities and the security challenges, and will be able to enable the government to plan for the intermediate and long terms, which will reflect balances between competing objectives.

Israel's defense budget is much larger than that of other advanced economies, and limits the possible growth of civilian expenditure. Moreover, disputes develop each year over the defense budget, which are reflected in a lower initial budget than the multi-year path and the provision of additions during the year. Despite this, defense expenditures as a percentage of GDP have declined in recent years. The reduction in defense expenditures has permitted some of the tax reductions and served to reduce debt. In 2013, the reduction in the ratio of defense expenditures to GDP continued, even though in the end there were additional transfers to the defense budget. This reduction was in line with the direction and size decided upon by the government in 2007, and with the direction in the defense expenditure path set by the current government, a path that declines until 2016.

The effects of the slowdown in growth of the defense budget and the decline in interest expenditures (by lowering the debt-to-GDP ratio) are presented in Figure 6.2a.

Israel's defense budget is much larger than that of other OECD economies. Despite this, defense expenditures as a percentage of GDP have declined in recent years.

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[23] Gross Ministry of Defense expenditures in 2013 were NIS 61.3 billion, compared with NIS 59.5 billion in the budget according to the Brodet framework (according to Bank of Israel calculations), a gap of NIS 1.8 billion. These expenditures include transfers of NIS 3.27 billion to the defense budget during the year, of which NIS 2.79 billion were as a result of government decision and NIS 0.3 billion were as a result of an agreement to vacate bases. Gross Ministry of Defense expenditures are net utilization of the Ministry of Defense budget, plus contingent income, minus the general reserve, and minus NIS 2.5 billion for budget fulfillment of the Released Soldiers Law, the Coordinator of Activities in the Territories, and emergency civilian expenditures which, being separate budgetary items, were not included in the Brodet framework. 64.967 + 5.900 – 2.500 – 7.055 = NIS 61.312 billion.

**Figure 6.2b**
**Distribution of Primary Civilian Expenditure by Main Expense Items, 2000–13**
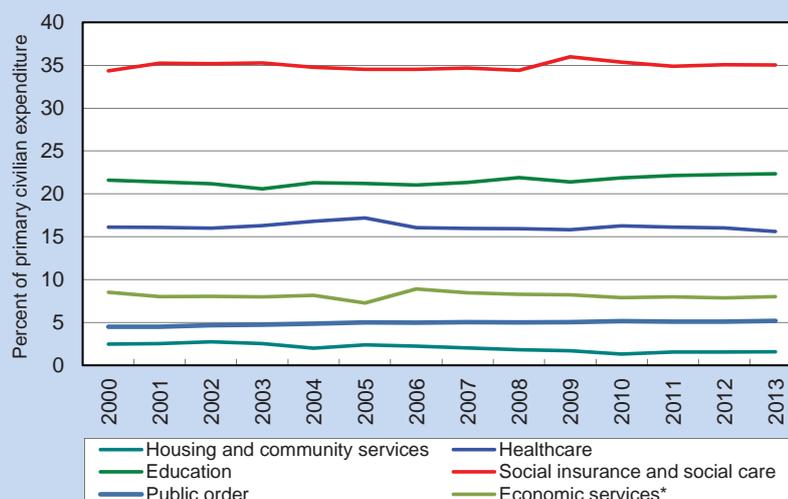


* Including transportation, communications, agriculture and energy.
SOURCE: Bank of Israel.

Primary civilian expenditure increased from about 70 percent of public expenditures in 2000 to about 80 percent in 2013. The distribution of civilian public expenditure among the main items during that period did not change.

Budget performance in 2013 was 97.8 percent. Most of the underperformance was in the "miscellaneous expenses" item.

Primary civilian expenditure increased from about 70 percent of public expenditures in 2000 to about 80 percent in 2013.[24] The distribution of civilian public expenditure among the main items during that period, which is presented in Figure 6.2b, shows that there were no significant changes in the order of priorities during that period.[25] This means that the changes that did take place over the years in the size of civilian expenditure were distributed proportionally among the main expenditure items and did not change the distribution of civilian expenditure.

Budget performance in 2013 was 97.8 percent, compared with an average of 99 percent in the years 2006–12. This performance is NIS 6.7 billion lower than the budget (Table 6.4) and similar to the expenditure ceiling according to the original rule—before the addition of the exception that was approved in the 2013 budget. Government ministries spent their budgets almost in full. Budget performance of the civilian ministries excluding the "miscellaneous" item was 98.6 percent, and budget performance at the Ministry of Defense was higher than the original budget due to the transfers at the end of the year. Most of the underperformance was in the "Miscellaneous expenses" item, which was budgeted at NIS 7.5 billion, while its performance was just NIS 1.9 billion. The reason for the underperformance in this item is unclear, since the uses planned for this item are not detailed in the budget that is presented to the public. There was significant underperformance in this item in

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[24] In 2000, primary civilian expenditure was 32.4 percent of GDP, and in 2013 it was 31 percent of GDP.

[25] A few relatively small and stable expenditure items were not included in this figure: general public services, culture and religion, and environmental quality.

previous years as well—37 percent in 2012, and 60 percent in 2011, while the item was increased from NIS 5.7 billion in 2011 to NIS 7.5 billion in 2013.


## 4. GOVERNMENT REVENUE

The general government's tax revenue (including receipts by the local authorities and the National Insurance Institute) totaled NIS 320.8 billion in 2013, an increase of 9.6 percent compared to the previous year. Government tax revenue increased in 2013 at a faster pace than projected in the budget, and reached NIS 241.6 billion, an increase of 11 percent compared to 2012, and NIS 5.7 billion higher than projected in the budget[26] (Table 6.4). Tax revenues excluding the effect of legislative changes and excluding one-time revenues increased by 4.8 percent in nominal terms. Most of the increase was in direct taxes.

Legislative changes increased net tax collection in 2013 by NIS 11.7 billion[27] in static calculations. The changes in direct taxes totaled NIS 4.6 billion, and included the release of trapped profits, the increase in the income tax rates for individuals by 1 percent for those earning between NIS 14,000 and NIS 42,000 a month, lowering the income threshold for the upper tax brackets[28], and imposing a 2 percent surtax on income over NIS 811,560 per year (which was delayed from 2012). The changes in indirect taxes totaled NIS 7.0 billion, and included raising the VAT to 18 percent, raising taxes on vehicles in accordance with their pollution rating (Box 6.1), raising the excise on fuels, raising taxes on tobacco, beer and alcohol, and reducing import taxes.

Tax revenues in 2013 were affected by two one-time components—the higher than average volume of sales of Israeli companies to nonresidents and the release of "trapped profits". This year, the Ministry of Finance reported one-time and exceptional revenues of NIS 3 billion, beyond the revenue from trapped profits. The definition of revenue as one-time is not clear and simple. For instance, the sale of a start-up company to a nonresident, and the resulting tax revenues, are considered one-time revenue, even though a number of such companies are sold each year. Based on past data, a path of expectations of "one-time" events such as the purchase of shares of a company through FDI (for instance, the purchase of the remaining "Iscar" shares) or the sale of a start-up company to a nonresident (such as the sale of WAZE) can be built. (For details, see the section on the financial account in the balance of payments in Chapter 4 of this report.) These data hint that a significant part of the "one-time" revenues this year are common, rather than exceptional.

Government tax revenue increased by 11 percent compared to last year.

Legislative changes increased net tax collection in 2013 by NIS 11.7 billion.

Tax revenues in 2013 were affected by two one-time components. One of them was the higher than average volume of sales of Israeli companies to nonresidents. Data indicate that some of these revenues are frequent, rather than exceptional.

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[26] A discussion of errors in tax revenue projections appears in Box 6.3 of this Chapter.

[27] In addition to these changes, the excise on fuel is updated, by law, three times per year, by the rate of increase in the Consumer Price Index since the last update.

[28] The tax threshold of the third tax bracket declined from NIS 173,160 per year to NIS 168,001, and the tax threshold of the fourth tax bracket declined from NIS 261,361 per year to NIS 240,001.

Revenue from the release of "trapped profits" in 2013 reached NIS 4.4 billion, NIS 1.4 billion beyond projections. This is one-time revenue.

Trapped profits are a result of tax benefits given to companies pursuant to the Encouragement of Capital Investments Law. The law sets out that companies that are eligible for the benefit pursuant to the law will receive a tax exemption on profits, unless they are distributed among the owners, in which case they will be required to pay corporate tax on the distributed profits. As a result of the law, many companies chose not to distribute profits, and preferred to "trap" them in the companies' possession. In 2012, the "Trapped Profits Law" was enacted. This law enabled companies to release trapped profits by paying corporate tax at a reduced rate (40 to 70 percent of the original tax rate that they would have paid at the time the profit was earned, but not less than 6 percent), and required them to invest half of the value of the tax benefit in Israel. As a result of the change in the law, which expired in November 2013, there was NIS 4.4 billion in revenue as a result of transactions to release about half of the trapped profits (NIS 60 billion out of NIS 122 billion), compared to projections of NIS 3 billion in the 2013 budget. Since this is a legislative change with temporary applicability, which has expired, there should be no expectation of additional revenue from this source in the next few years.

At the end of 2013, taxes that were expected to take effect at the beginning of 2014 were cancelled or changed. The income tax increase that was planned for 2014 was cancelled, and in order to finance the cancellation, the budgetary reserve was cut and the surplus budget in the interest item was reduced. Employers' share of National Insurance payments were raised by one-quarter of one percent instead of by one-half of one percent, and the increase of the other one-quarter of one percent was delayed to 2016.

### Tax trends in recent years

Many changes were made to the tax system in 2013, further to the frequent changes in tax rates in recent years.

As detailed above, many changes were made to the tax system in 2013, and more changes were planned for 2014, some of which were cancelled. This is further to the frequent changes in tax rates in recent years. Between 1999 and 2013, significant changes were made to all of the major taxes (VAT, income tax, National Insurance payments, and corporate tax). In addition, a path for the reduction of income taxes and corporate taxes was adopted during this period, and cancelled after being partially implemented, and a number of other tax changes were cancelled before becoming applicable (Figure 6.3).

The changes in taxation created a large amount of variance over time in the marginal income tax rate that Israeli citizens pay, and in their disposable income. Those with very low incomes were not affected at all by the changes in the income tax rates and brackets.

These changes created a large amount of variance over time, inter alia in the marginal income tax rate that Israeli citizens pay, and in their disposable income, and even more so in the tax rates that were set by law for the coming years. This variance is not uniform over the distribution of wages, as can be seen in Figure 6.4, but the reduction in the income tax rates had an effect on most workers. Those with very low incomes were not affected at all by the changes in the income tax rates and brackets, due to their lack of tax liability. With that, raising the threshold of income taxable in the second tax bracket from about NIS 2,500 a month to about NIS 5,000 a month (in 2013 prices) reduced the tax liability of some employees earning low salaries.

**Figure 6.3**
**Changes in the Main Tax Rates, 1999–2016**



SOURCE: Bank of Israel.
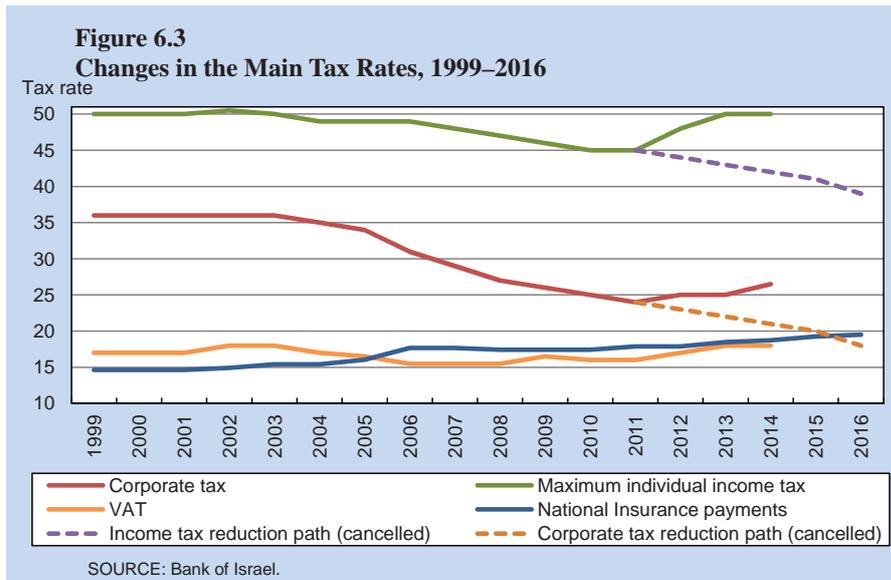
The marginal tax rate of those with incomes of about NIS 5,000 was increased and decreased, as well as the marginal tax rate of those with high incomes.

Figure 6.5 shows the effect of the changes made between 1999 and 2013 in direct taxes on the tax that an individual (male) actually pays. These changes significantly increased the disposable income of Israeli citizens from labor. According to the distribution of income from work in 2011, the disposable income of those earning up to NIS 3,700 a month (20 percent of workers) increased by 2.4 percent; the disposable income of those earning NIS 5,300 or more per month (63 percent of workers) increased by 10 percent or more; and the disposable income of those earning between NIS 16,000 and NIS 50,000 per month (12 percent of workers) increased by 15–20 percent. The increase in disposable income of those with incomes of up to NIS 3,700 a month derives only from a decline in the reduced rate of National Insurance payments, while the other workers also benefited from the decline in income tax rates. Some of those with low salaries also received an Earned Income Tax Credit at the end of the period.[29] (The effect of the tax system on inequality is discussed in Chapter 8 of this report.)

The changes in taxation significantly increased the disposable income of Israeli citizens from work. The disposable income of those with very low salaries increased by 2.4 percent, and the disposable income of those earning between NIS 16,000 and NIS 50,000 per month increased by 15–20 percent.

[29] Eligibility for the Earned Income Tax Credit is conditioned on wages and on the eligible person being a parent to children under age 18, or being aged 55 or above, as well as on the income of the spouse.

**Figure 6.4**
**Marginal Income Tax Bracket, by Real Monthly Wage in 2013 prices, 1999–2013**

Density of the working population (%)

Tax rate

Legend:
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- Density (right scale)

SOURCE: Bank of Israel.
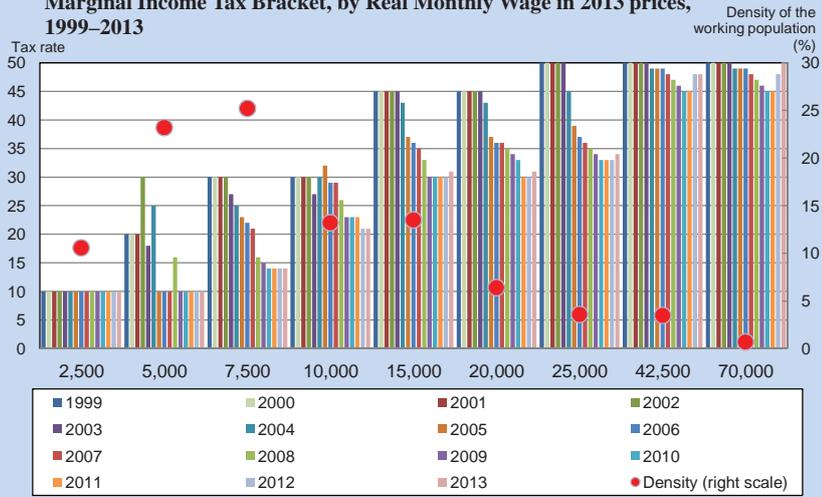
**Figure 6.5**
**Growth of Monthly Disposable Income Between 1999 and 2013, Following the Change in Direct Taxes, and its Distribution Among the Population[a]**

Percent growth in disposable income between 1999 and 2013

Distribution of income from work in 2011 (2013 prices, percent)

Each step represents 5 percent of workers.

By way of illustration, the disposable income of 50 percent of workers increased by 11 percent or more (given fixed gross real income).

**Gross income (NIS)**

— Distribution of income from work in 2011 (2013 prices)

- - - Growth in disposable income from 1999 to 2013

[a] The distribution of annual income in 2013 prices, after income tax, National Insurance payments, and credit points for a male.
SOURCE: Bank of Israel.

## 5. FISCAL POLICY

### a. The fiscal rule

At the end of 2013, the government decided to change the expenditure rule. This rule sets out the annual real growth of the State budget, and thereby the resources available to the government to expand public services or the supply of public goods. The new rule is comprised of the sum of the average population growth in the past three years and the quotient of dividing 50 by the current debt-to-GDP ratio.[30] The new rule means that the growth of public expenditure will be slower than according to the old rule, and its weight in GDP will continue to decline.

This expenditure rule is the fourth one to be set since 2004. One of the basic attributes presented in the literature as desirable in a fiscal rule is that it anchors long-term policy, contributing to its stability over time, and thereby to the ability of the government and the public to plan.[31] This is in contrast to annual budgets alone, under which Israel operated until 2004, and multi-year budgets that set expenditure targets for the term of a government. The fact that a fiscal rule has survived on average for less time than the average duration of a government in Israel—and that even in years when it was not changed, one-time additions were made to the ceiling set in the rule—makes it difficult for the rule to contribute to the stability of policy. There are two cases in which fiscal rules need to be changed. The first is when the rule does not reflect the government's preferences regarding the fiscal aggregates—preferences which may change over time due to elections and changes in government. The second is when the rule is not consistent with the deficit path or with the taxation path—paths which reflect government preferences. Due to the frequency of changes in Israel, the question arises as to whether there is a reason to declare long-term expenditure paths or, alternatively, to set, for instance, multi-year targets for the term of the government. It is clear that in practice, the expenditure rule in Israel acts as a multi-year budget and reflects the objectives of the government in office, and it should be evaluated as such.

### b. Frequent changes in fiscal policy and their effects

As mentioned above, the government raised the tax rates in the 2013–2014 budget, and at the end of 2013, it cancelled some of the tax changes that were set for the beginning of 2014. These changes join a large number of changes in tax rates in the past decade. The changes include not only increasing or lowering tax rates, but also creating long-term taxation paths and changing or cancelling them. Most of these changes were intended to correct past policy that required correction, and thereby contributed to fiscal stability. But this behavior also creates uncertainty regarding the

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[30] For example, the calculation for 2015 is: 1.83 (average growth of the population between 2011 and 2013) + (50/67.5) = 2.57. This is according to the adjustment of the growth rate to the gap between the price increases projected in the 2013 and 2014 budget and the actual price increases.

[31] Kopits, George and Symansky, Steven A. Fiscal Policy Rules. Vol. 162. International Monetary Fund, 1998.

performance of government decisions, and makes planning to employ people, to join the labor force or to invest more difficult.

According to the economic literature, frequent changes in the tax system may deter companies from making long-term investments, reduce tax revenue, and negatively impact citizens' well-being.[32] It has been found, for instance, that a shock that significantly increases uncertainty regarding future fiscal policy (fiscal volatility shock) may lower growth by about 0.15 percent.[33] This means that uncertainty regarding the future path of fiscal policy may negatively impact economic growth beyond the possible impact of the tax changes themselves. Uncertainty regarding the corporate tax rate may influence companies' decisions regarding where to locate their investments, among other things.

Even though there is an advantage to flexibility in the budget, and even though actual expenditure deviates from the budget in any budgeting process, the economic policy measures taken by the governments of Israel are characterized by a lack of stability, which is reflected in the conduct regarding the defense budget that was described above; in the number of government decisions that are not carried out at all; in setting future expenditure programs without examining whether they meet the fiscal rule and then cancelling them in order to reduce the deficit; in the free compulsory education law for children aged 3 and above, which was enacted in 1984 and the completion of the implementation of which was recently delayed yet again; in extending the operation of the Israel Electric Corporation in its current format, 17 years after the law concerning a change in the format of its operations was enacted; and in the systematic under-budgeting of the same budget items repeatedly over many years, and the transfer of funding to them from other items that are over-budgeted— also in a systematic fashion. All of these behaviors make it difficult for government ministries, businesses in the country, and citizens in general to conduct long-term economic planning.

### c. The government's expenditure programs for the coming years

At the end of 2013, the government decided, as noted, to change the expenditure rule to a more restrictive rule. The adjustment was made without specifying the adjustments that would be made in the government's expenditure programs in order to meet the more stringent rule, even though the cost of the programs approved by the government for 2015 is already more than NIS 10 billion higher than the new rule (Figure 6.6a). Moreover, the annual gap between the cost of the programs approved by the government for 2016 and 2017 and the new expenditure rule is twice the gap for 2015. As such, the government already does not have the ability to increase expenditures for the years 2015–2017 without cutting other expenditures, and without

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[32] J. Alm (1988), "Uncertain Tax Policies, Individual Behavior, and Welfare", American Economic Review, 78(1), 237–245.

[33] Fernández-Villaverde, Jesús, et al., "Fiscal Volatility Shocks and Economic Activity", NBER Working Paper No. 17317, National Bureau of Economic Research, 2011.

**Figure 6.6a**
**Path of the Share of Public Expenditure in GDP by Various Policy Scenarios, 2013–20**
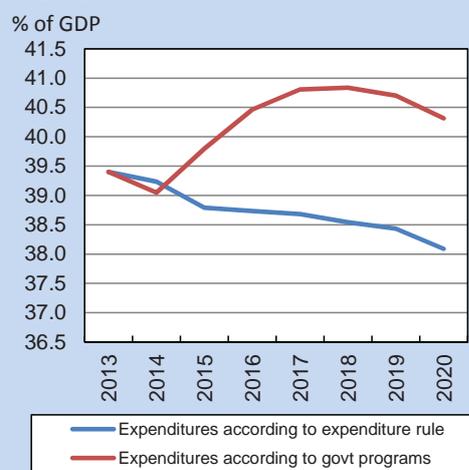


SOURCE: Bank of Israel.

**Figure 6.6b**
**Path of the Index of Per Capita Primary Civilian Expenditure, by Various Policy Scenarios, 2013–20**
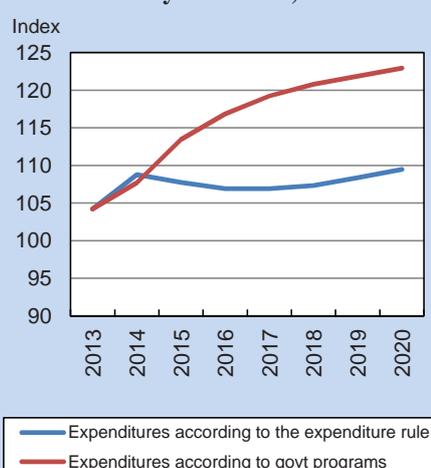


SOURCE: Bank of Israel.

exceeding the expenditure ceiling[34]. In addition, marked reductions will be required in the existing expenditure programs (Figure 6.6b). This need brings into stark relief the importance of planning future expenditures in accordance with the fiscal rules and of building an appropriate oversight mechanism that will ensure this, so as to prevent investment in the planning of expenditures that will only be cancelled in the future. In 2013, the government evaluated that an adjustment of NIS 18 billion would be required to meet the fiscal rule.

## 6. PUBLIC DEBT

The (gross) public debt to GDP ratio declined by 0.8 percentage points in 2013, to 67.4 percent. Similar to its development from 2010 to 2012, the decline in debt was supported by nominal growth rates that were higher than the government's (net) raising of capital. The strengthening of the shekel against other global currencies, and particularly against the dollar, contributed significantly to the decline in the debt-to-GDP ratio in 2013 (Table 6.6). With that, the effect of the nominal growth on debt was the lowest since 2003, because the growth rate was lower than in recent years (Table 6.5). Net raising of capital declined by just 0.4 percent of GDP compared to 2012, despite the decline in the deficit and stability in repayment of credit issued by the government to the public and in receipts from privatization. This is because surplus

The (gross) public debt to GDP ratio declined by 0.8 percentage points in 2013 to 67.4 percent.

[34] For a fiscal review, see: Assessment of the Fiscal Developments since the Budget was Approved, and Their Effect on the Expected Fiscal Path, Recent Economic Developments 136, April–September 2013.

**Table 6.6**
**Components of the increase in the gross public debt, 2009–13**

(percent of GDP)

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Debt at the end of the previous year | 72.9 | 75.3 | 71.5 | 69.7 | 68.2 |
| Nominal growth of GDP | -4.0 | -5.0 | -4.5 | -4.9 | -3.8 |
| Net capital inflow | 5.2 | 1.3 | 1.3 | 3.7 | 3.3 |
| *of which*: Government's cash deficit | 4.9 | 3.5 | 3.1 | 3.9 | 3.2 |
| Net repayment of credit by the public[a] | -0.7 | -0.7 | -0.6 | -0.4 | -0.4 |
| Privatization proceeds | -0.3 | -0.5 | -0.8 | -0.1 | -0.1 |
| Total change in government deposits in the banks[b] | 1.4 | -1.0 | -0.4 | 0.3 | 0.7 |
| Revaluation of the shekel-enominated indexed debt[c] | 1.4 | 0.9 | 0.7 | 0.5 | 0.5 |
| Revaluation of foreign currency-denominated debt | 0.0 | -0.6 | 0.7 | -0.2 | -0.6 |
| Adjustment to issuance costs | -0.5 | -0.2 | -0.2 | -0.3 | -0.3 |
| Remainder[d] | 0.2 | -0.3 | 0.1 | -0.3 | 0.1 |
| Debt at year end | 75.3 | 71.5 | 69.7 | 68.2 | 67.4 |

a Including the provision of credit and principal collection.

b Funding surplus.

c Effect of the increase in the Consumer Price Index during the year on indexed debt.

d As a result of roundings.

SOURCE: Bank of Israel.

raising of capital increased this year to 0.7 percent of GDP, inter alia because the low level of the deficit surprised the government.

The cost of financing government debt in Israel, which is measured by the burden of interest payments in relation to the level of debt, is high when compared internationally, and reflects the average debt risk as measured at the time it is issued. Even though the government debt to GDP ratio in Israel declined in recent years, and is lower than the average of the other OECD countries, interest payments (net) in relation to GDP—about 3.7 percent in 2013—are higher than the average in these countries (1.9 percent).[35]

The government deficit was financed through the issue of domestic bonds denominated in shekels, while net debt issuance in foreign currency was negative, similar to previous years. Total net issuance of domestic debt in 2013 was about NIS 38.8 billion, similar to its volume in 2012. Net issuance of nontradable debt in 2013 increased to NIS 10.5 billion, following negative net issuance between 2004 and 2011 (Figure 6.7). The transition to positive net issuance in nontradable bonds is explained by the fact that a large number of pension funds reached the point where designated

> The cost of financing government debt in Israel, which is measured by the burden of interest payments in relation to the level of debt, is high when compared internationally.

> Net issues of non-tradable debt increased in 2013, but the tradable bonds remained the government's main channel for raising funds.

[35] See the section on "International Comparison".

bonds comprise less than 30 percent of their holdings, which gave them the right to purchase these bonds. Increasing the net issuance of designated bonds contributed to a decline in the volume of net issuance of tradable bonds compared to 2012, but the tradable bonds remained the government's main channel for raising funds. With that, the trend of increase in the issuance of designated bonds is expected to continue in the coming years, as a result of the growth of the population and the growth of deposits in the pension funds. Due to the high interest rate paid on the designated bonds[36], their issuance while the global interest rate environment is low, as it is currently, is expensive for

**Figure 6.7**
**Net Issuance—Tradable and Nontradable Debt**



Source: Bank of Israel.

the government, and in practice, these bonds slightly subsidize the pension funds and insurance companies that manage life insurance policies with guaranteed yields.[37]
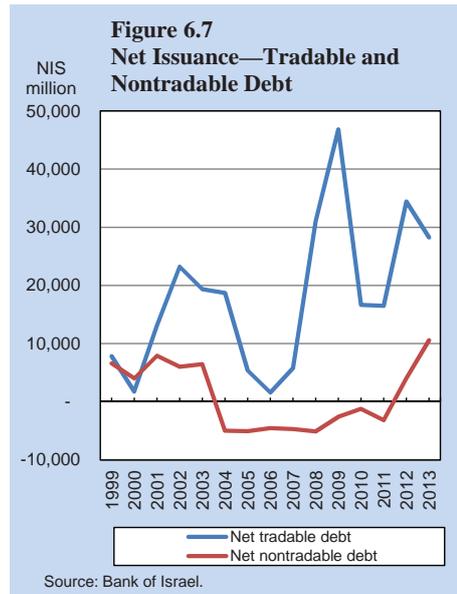
[36] "Arad" type designated bonds, issued since 1995, are 15-year bonds sold at par value that pay indexed interest of 4.8 percent. This is compared to the real yield on 15-year government bonds, which was 2.2 percent on average in 2013.

[37] The level of this subsidy in 2013, on the entire stock of designated bonds issued by the government and not yet redeemed, is estimated at NIS 1.3 billion, only about 5 percent of interest expenses. The subsidy is calculated as the product of the total value of nontradable bonds issued each year multiplied by the differential between the yield on these bonds and the real yield on 15-year tradable government bonds during the same year. Most of the subsidy was created in 2012 and 2013 as a result of the low interest rates in the markets and the quantity of nontradable bonds that were issued. In contrast, in previous years, the yields on designated bonds were, for the most part, similar to or lower than the yields on similar bonds in the market.

**Box 6.1**
**"Green" Taxation and Changes in Purchasing Patterns of Private Vehicles**

Travel in a private vehicle has negative external effects, chiefly air pollution and its attendant damage to health, and increased congestion on the roads with its attendant waste of time.[1] These effects are market failures, and one of the ways to correct these failures involves the taxation mechanism.

Since the effects are mainly connected with the use of vehicles and not with ownership of them, it would make sense to impose a differential tax on the use of vehicles by the level of pollution they cause (per liter of fuel). For example, different tax rates could be imposed on fuel by the amount of pollution caused by each model of vehicle. However, since it is difficult to apply differential tax rates on fuel for vehicles, there is logic in differential taxation on the purchase of the vehicles themselves, according to the amount of pollution they cause.

In recent years, Israel has thus changed the tax rates imposed on the purchase of vehicles in order to reflect the air pollution emissions. In 2009, the recommendations of an interministerial committee (with the participation of the Ministries of Finance, Transport and Road Safety, National Infrastructures, and Environmental Protection) to implement a "green" reform in the taxation of private vehicles came into effect.[2] In accordance with the recommendations, the average tax rate remained as it was, but a scale of



**Figure 1**
**Distribution of Air Pollution Levels and the Environmental Score of Passenger Vehicles (the line, right scale), Yearly Average by Purchase Month, 2008–12**
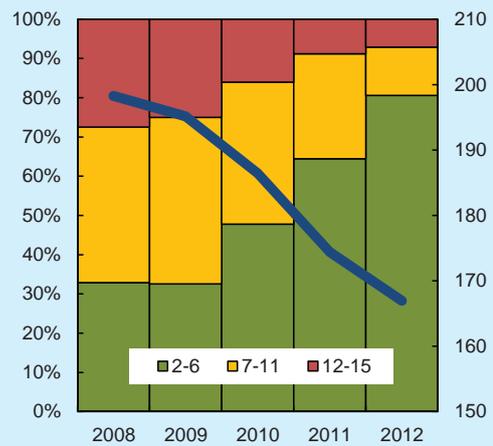
SOURCE: Based on Ministry of Transport and Israel Tax Authority Finance and Development Division data.

[1] Traffic accidents, meaning a driver colliding with other individuals or their property, also have external effects. Compulsory vehicle insurance partially incorporates these external effects.
[2] "The Report of the Interministerial Committee on 'Green' Taxation—Ministries of Finance, Transport and Road Safety, National Infrastructures, Environmental Protection," January 2008. In order to estimate the quantitative volume of the external effects, the committee used estimates made in 2001 in Europe concerning the costs of damage caused by vehicular emissions.

purchase tax rates was created based on 15 pollution ratings.[3] Within this framework, the base purchase-tax rate was raised from 72–75 percent to up to 90 percent, before a tax benefit appropriate to the level of pollution of each model.[4] The actual tax rates—after the benefit—ranged between 30 and 83 percent. As a result, the prices of less polluting vehicles were significantly lowered, while vehicles that pollute more became more expensive.[5]

Figure 1 indicates the change as a result of the reform: The average green grade of vehicles has improved consistently.[6]

It can be argued that the reduction in the average level of pollution of imported vehicles does not necessarily derive only from the reform in the tax rates imposed on them, since the increase in fuel prices—around the world and in Israel (Figure 2)—has increased motivation to purchase more fuel efficient and environmentally friendly vehicles. However, an examination of the changes in the average engine size of new vehicles since 2000[7] (Figure 2) shows that:

**Figure 2**
**Price of a Liter of Gasoline, Adjusted for the Consumer Price Index, (2000 = 100), and Average Engine Size of New Private Vehicles, in cc, 2000–13**

Index of Real prices

CC

SOURCE: Based on Central Bureau of Statistics.

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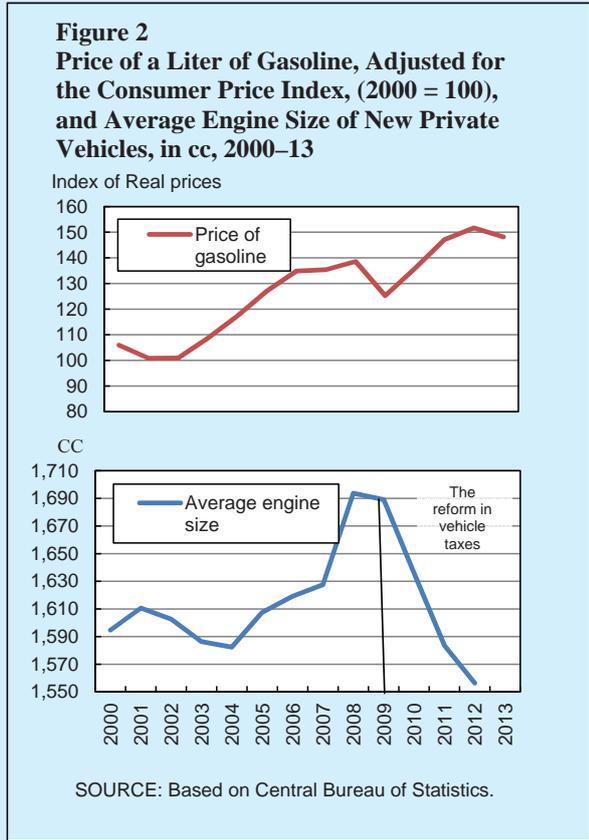
[3]  The scale was basically created by way of a monetary purchase tax credit, which increases with a decline in pollution levels.

[4]  Around 130 models—about 1/10 of total gasoline fueled private models imported in 2012—do not belong to the pollution grade that is appropriate for their engine size. More than 2/3 of them pollute less than expected, with the remaining 1/3 polluting more than expected. See: http://taxes.gov.il/About/Reforms/Documents/MisuiYarok2009/polutionMisuiyarok010813.xls

[5]  Pursuant to the Clean Air Law, 5768–2008, the pollution level of each vehicle appears in all advertisements for that vehicle.

[6]  Technically, the "green" grade declines with a decline in the pollution level of the vehicle.

[7]  Data on pollution ratings cannot be used here (as done in Figure 1), since they are only available from 2008 onward. However, there is a high correlation between engine size and the pollution ratings—74 percent in 2012.

- Between 2000 and 2008, the average engine size increased, even though the price of fuel increased during the same period; and

- From 2008 onwards the average engine size decreased consistently while fuel prices continued increasing apace.

It therefore seems that the "green" taxation reform on vehicle purchases, rather than fuel prices, is what explains the change in the composition of vehicles being purchased by individuals.

It can also be argued that the decline in average engine size since 2008 derives from the growth in the number of two-vehicle households, since it seems that the second vehicle in the household generally has a small engine. However, an examination of the rate of change in the number of households owning more than one vehicle between 2000 and 2012 shows that the growth is linear and does not change after 2008.[8]

In July 2013, with the help of a special report prepared by outside experts, the Ministry of Environmental Protection updated the green taxation rates on vehicles.[9] The update became necessary because since the reform was implemented, the composition of imported vehicles changed, as stated, and most of them are now included in the lower pollution ratings. As such, the differentiation between the pollution levels declined, and the effectiveness of the differential nature of the tax rates weakened as a means of "green" policy. It was therefore decided to "recalibrate" the tax levels so that they would again provide an incentive for people to purchase less-polluting vehicles.

However, the update also derives from another factor, namely the loss of tax revenue. Vehicle taxation does not derive solely from the desire to correct negative external effects, but also from fiscal needs, since taxation on the purchase of vehicles has a significant share in total tax revenues (7.2 percent of total tax revenues in 2012). A decline in its volume therefore made a fiscal response necessary, and such a response was made.[10]

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[8]  It is possible that in addition to the changes outlined, the import of new models with smaller and more efficient engines has also had an effect. Such a change should take place both due to exogenous technological improvements in vehicle engines, and due to the increase in demand for them, which enables importers to lower their prices. However, a quantitative analysis of the effect of this change on the average pollution rating, for instance by way of international comparison, exceeds the limits of the discussion.

[9]  Becker, N., G. Rosenthal and D. Gabay, "Calculation of the External Costs of Air Pollution from Transportation and Industry in Israel, Final Report," January 2012, Ministry of Environmental Protection (in Hebrew). A comprehensive outline of the Ministry of Environmental Protection's considerations and evaluations appears in Mironichev, N., and G. Paltzur, "Green Taxation Reform on Vehicles: The Use of Economic Tools to Improve the Environment," Draft, October 2013, Ministry of Environmental Protection.

[10] A discussion on the decline of tax revenues as a result of the tax reform on vehicles appears in Chapter 14 of the State Revenue Administration Report: http://ozar.mof.gov.il/hachnasot

Following the update, the distribution of vehicles by pollution rating (See Figure 3) is expected to approach the distribution that existed in 2009 when the reform came into force. To illustrate, the external pollution rating before the reform began was 8. It declined to 4 in the first half of 2013, and is now increasing (technically, due to the "recalibration") to 6. The average tax rate is, of course, increasing accordingly.

The "green" reform in tax rates indicates that clear economic incentives have a significant effect in the desired direction on consumer behavior, and even more so when the technological environment (the entry into the market of new, less polluting models) supports the change. The success of the reform may therefore serve as an argument for also implementing economic policy tools to reduce congestion on the roads—such as differential taxes on travel during peak hours vis-à-vis other hours. And so, at the beginning of 2013, the Ministries of Finance and Transport began a test, that will last about 3 years, with the aim of assessing how financial incentives affect travel habits.[11] The findings of the test are intended to assist a professional committee, appointed by the Ministers of Finance and Transportation, in proposing a new tax policy that will change travel habits and thereby reduce congestion on the roads.[12]

**Figure 3**
**Distribution of Vehicles Weighing up to 3.5 Tons (Passenger and Commercial) by Pollution Levels, and the Impact of the Formula Update on the Distribution**



SOURCE: Based on Ministry of Transport and Israel Tax Authority Finance and Development Division data.

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[11] http://goingreen.org.il/home

[12] See also: OECD Economic Surveys, Israel, December 2013, pp. 49-52. The report recommends action based on various considerations (including environmental considerations) in the following manner: Reducing tax rates on the purchase of vehicles and increasing taxes on the use of vehicles, by way of increasing taxes on vehicle fuels, expanding the use of toll lanes and imposing a crowding levy in the cities. The report also recommends continuing to deal more intensely with the tax benefit derived from the use of a company car.

**Box 6.2**

**The Effects of Road Infrastructure and Law Enforcement on Traffic Accidents on Intercity Roads in Israel[1]**

Traffic accidents claim the lives of many people and cause significant economic damage. Since 2000, there has been a decline of about 40 percent both in the number of accidents with casualties and in the number of fatalities in them: In 2012, there were more than 12,000 accidents with casualties, and 263 people were killed. During the same period, there was a sharp decline in the number of accidents and in the number of fatalities per kilometer traveled (Figure 1). Since a similar process has occurred in other advanced countries, Israel's position among them has remained almost unchanged—around the center of the ranking (Figure 2). The broad decline in the number of accidents and the number of fatalities can be attributed, inter alia, to an increase in vehicle safety levels and the use of safety features, as well as to an improvement in care of the casualties and in road infrastructure.



Figure 1
Number of Traffic Accidents with Casualties and Number of Fatalities in Them, per Billion Kilometers Traveled, 2000–12

Accidents (left scale)
Fatalities (right scale)
SOURCE: Based on Central Bureau of Statistics.

According to the Transportation Project Appraisal Procedure[2], the annual economic damage in Israel caused by accidents in 2008–10 was about NIS 15 billion (in 2012 prices)—about 2 percent of GDP. In 2012, the cost per fatality was about NIS 6.1 million, and the cost per critically injured person was about NIS 1.5 million.

This box assesses how road infrastructure and law enforcement contribute to a reduction in the number of accidents on intercity roads, based on a comprehensive database. The database includes (a) data on traffic accidents with casualties and

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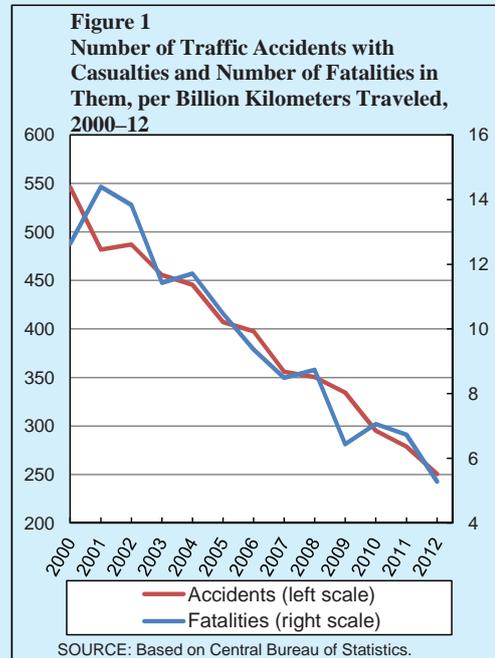
[1]  Based on Brown, L., Zussman, N. and Sharabany, R. (forthcoming), "The Causes of Traffic Accidents on Intercity Roads in Israel," Bank of Israel Research Department, Jerusalem.

[2]  The State of Israel (2012), *The Transportation Project Appraisal Procedure (Nohal Prat) 2012: Transportation Project Appraisal Guidelines*, Jerusalem.

**Figure 2**
**Number of Fatalities in Traffic Accidents, per Billion Kilometers Traveled, OECD Countries, 2011 Compared with 2000**
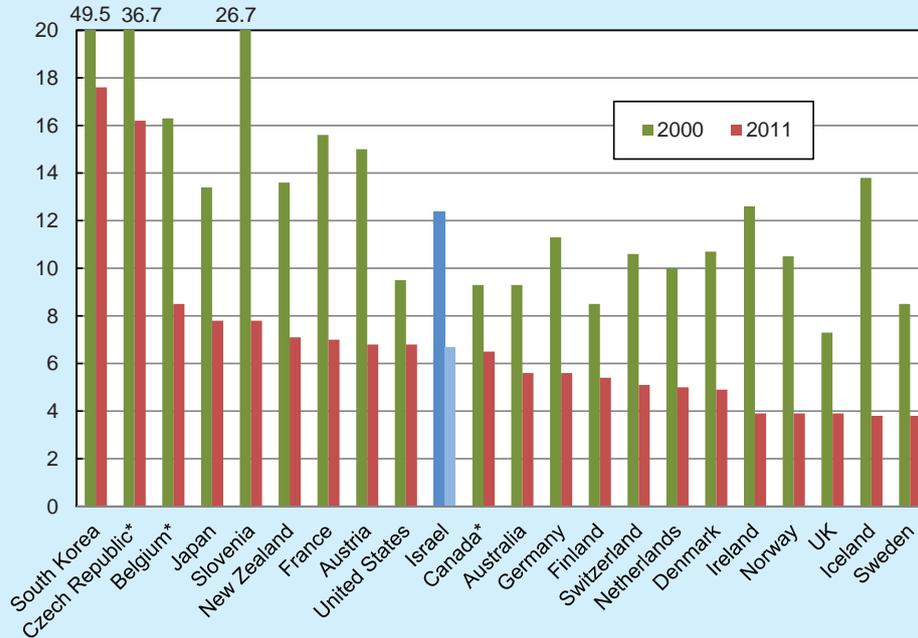


*Available data for these countries refer to 2010, not 2011.
SOURCE: Based on OECD (2013), Road Safety Annual Report 2013, International Road Traffic and Accident Database (IRTAD).

on traffic volume, obtained from the Central Bureau of Statistics[3]; (b) data on the engineering features of road segments, from the Israel National Roads Company (formerly the Public Works Department (Ma'atz))[4]; (c) data on investment in road infrastructure taken from the State budget books and the Accountant General's development plans; (d) data on traffic tickets issued by the Israel Police; and (e) weather data obtained from the meteorological stations throughout Israel. A complete analysis also requires data on the characteristics of drivers ("the human element") and of the vehicles on the road segment, but these are not available to us because the existing data are not of sufficiently high quality or sufficiently up-to-date.[5]

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[3]  The Central Bureau of Statistics measures traffic volume on road segments once every year or two, for a week. The study upon which the box is based estimate monthly traffic volume based on these data, after taking seasonality into account. Such an estimate is preferable to using raw data, as customary in many countries and in Israel, both due to the seasonality adjustment and due to the use of monthly (instead of yearly) frequency.

[4]  The analysis included about 570 intercity road segments.

[5]  A survey of travel habits has not been conducted since 1996–97.

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The analysis relates to the number of accidents with casualties that occurred each month on intercity road segments[6] in 2005–09. Several models were estimated, with independent variables including traffic volume and the length of the road segment, engineering features, law enforcement and more, while taking seasonality into account. The estimates were conducted by various methods—examining how the number of accidents on road segments changes over time (panel) as dependent on the explanatory variables—and they generated similar results.

It was found that, assuming that all other variables remain constant, the elasticity of accidents with respect to distance traveled is 0.92 (an increase of 1 percent in distance traveled leads to an increase of 0.92 percent in the number of accidents)—similar to findings around the world.[7]

Concerning engineering features, it was found that the addition of one meter to the paved shoulders reduces the number of accidents by about 15 percent; a physical divider between traffic lanes in opposite directions reduces the number of accidents by about 32 percent; and a sharp curve in a road increases the number by about 21 percent.[8] These findings are consistent with the results obtained around the world. It was also found that the engineering features in the Center region of the country are better than those in the periphery.

Road works increase the number of accidents by about 14 percent. The Transportation Project Appraisal Procedure does not explicitly relate to this in calculating the cost of an infrastructure project, which may cause an over-estimation of how worthwhile it is, in particular taking into account the fact that infrastructure works last for a prolonged period.

An assessment of the ranking of the standardized number of accidents per kilometer traveled—an index that reflects the probability of an accident—shows that among the road segments at the top of the ranking ("red roads"), there is a greater representation by secondary segments with less traffic (for example in the Golan Heights), and there is a lower representation of roads in the south of the country. All of the engineering features of these red roads are considerably inferior compared to the other road segments.

Law enforcement is measured by the number of automatic traffic tickets (speed cameras) and/or manual traffic tickets issued on a road segment in the

[6]  The analysis does not include accidents that occurred at junctions, since those intersections have unique engineering features compared to road segments. In addition, the analysis includes only Sundays to Thursdays, because travelers have different characteristics on Fridays and Saturdays due to the lower volume of distance traveled to the work place (commuting).

[7]  Elvik, R., Hoye, A., Vaa, T. and Sorensen, M. (2009), *The Handbook of Road Safety*, Emerald Group Publishing Limited, Second Edition, UK. Other findings from around the world which are mentioned below are also taken from the same source.

[8]  No significant effect was found for lane width, an outside guardrail, a sharp decline, or the maximum permitted speed.

present and the recent past; and on the basis of an approximation of police presence, calculated based on the number of hours during which manual traffic tickets were issued. Similar to other studies in the field, we do not have information on police activity that did not end in the issuing of a ticket. The impact of enforcement is identified by the extent to which the number of tickets in a road segment changes over time, compared to the average multi-year level of law enforcement. (This level is dependent on the basic risk characterizing the segment, as depicted in its fixed effect.)[9] As such, the estimate cannot indicate the impact of the country-wide level of enforcement. It has not been found that change in police enforcement has an impact on the number of accidents, similar to a previous study conducted in Israel.[10] The findings from around the world are mixed.

In summation, it was found that the probability of traffic accidents on intercity roads declines significantly due to a number of engineering features— including wide paved shoulders and a divider between opposing directions of traffic—and increases due to a sharp curve or road works. It was not found that change in police enforcement has an impact on the probability of accidents, but we cannot draw a conclusion from this on the effect of law enforcement level.

We further note in conclusion that it is important to establish a comprehensive national traffic accident database. Such a database will make it possible to study the causes of accidents and to formulate effective policy concerning them, as it will be able to assist, for example, in more efficient allocation of investments in infrastructure and police enforcement.

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[9] The method of identification is based on the assumption that police enforcement does not react in the short term to the number of accidents in a segment. To the extent that this assumption is not valid (there is an "endogeneity problem"), the results of the estimates will indicate that enforcement has a lesser impact on the number of accidents than was actually the case.

[10] Gafni, D. (2000), *An Econometric Analysis of Traffic Accidents in Israel*, PhD thesis, Hebrew University, Jerusalem.

**Box 6.3**
**Errors and Deviations in Projecting Tax Revenues in the State Budget**

The tax revenue projections included in the budget proposal serve as a main tool in constructing the budget. Errors in these projections may lead to a deviation from the government's deficit target, require corrective measures, or prevent optimal budget planning. This box analyzes the errors in tax revenue projections in Israel between 1992 and 2012, and examines how the projections were affected by two types of errors: first, errors derived from the basic difficulty in projecting surprising economic developments and in evaluating the effect of the developments on tax revenues; and second, errors derived from judgment decisions by those preparing the projections.

Figure 1 presents the errors[1] in the revenue projections that were included in the budget each year. The average annual projection deviated by 4.8 percent from actual tax collection (in absolute values)—an average error of 1.2 percent of GDP. An assessment of the average errors themselves (not in absolute values) indicates a tendency toward optimism in projections over the years:

**Figure 1**
**Tax Revenue Projection Errors (Percent of Total Actual Revenue), 1992-2012**
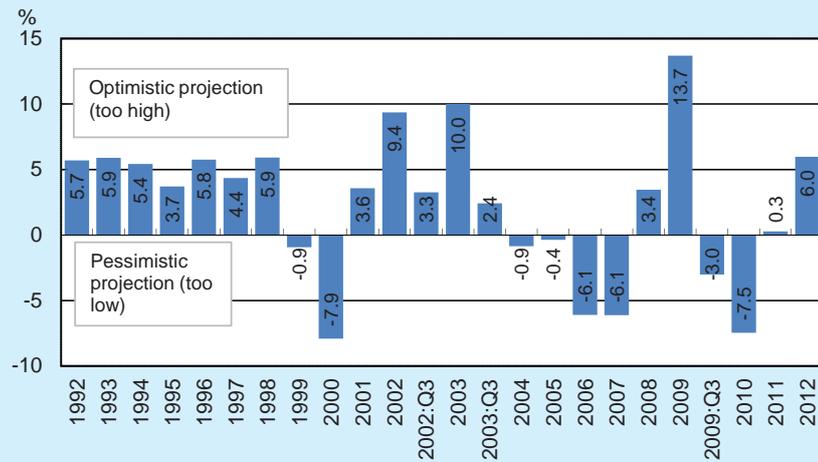


SOURCE: Based on Ministry of Finance and Central Bureau of Statistics.

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[1]  The error was calculated as the difference between the annual tax revenue projection (including legislative changes) and actual revenue. A positive value indicates a revenue projection that turned out to be optimistic compared to actual revenue, while a negative value indicates a projection that turned out to be pessimistic. Regarding the years 2002, 2003 and 2009, both the projection in the original budget that was presented to the Knesset as well as the projections that accompanied the budget or the programs that were submitted in mid-year were examined.

They were an average of 1.8 percent greater than actual revenues. With that, there is a marked difference between the period before 2003—during which the average projection was optimistic by 1 percent of GDP—and the period following 2003, when the average projection deviated slightly (by 0.2 percent of GDP) to the pessimistic side. There was no significant change in the size of the errors (in absolute values) between the two periods.

In order to assess how various factors influence the projection errors, we used data from 1992 to 2012, and estimated two regressions in which the dependent variable was the error in the tax revenue projection in a certain year[2] as a percentage of total actual revenue. We first estimated a regression in which the independent variables included external factors for the errors in projecting revenue: Among the independent variables, we included the error in world trade projections prepared by the International Monetary Fund each year[3]—a figure with tremendous impact on exports and growth in Israel. The estimate shows that errors in the IMF's projection are positively correlated with the (even larger) errors in the revenue projection in Israel. In addition, we included the rate of change in the NASDAQ stock market index compared to the multi-year average change of this index among the variables. The development of this index indicates general financial shocks, and particularly fluctuations in the activity of companies in the high technology field, which have a high share in Israel's GDP. However, the estimate also shows that an increase in the NASDAQ index beyond the multi-year average causes the projection to become (in retrospect) more pessimistic. Both the projection errors of the International Monetary Fund and the deviations of the NASDAQ index have a nonlinear effect on the errors in revenue projections, and large fluctuations of these factors are correlated with larger errors. Among the explanatory factors, sharp changes in the growth rate of the economy[4] were also taken into account, as well as revenues that were classified under the heading "one-time" because they derived (for the most part) from large transactions in the economy, and it was difficult to forecast their precise date.

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[2]   Revenue projections and actual revenue are annual data, but since in a number of cases, the projections changed with the passage of a new budget or special economic program in mid-year, the estimate makes use of quarterly data. For each quarter, these data outline the revenue in that year and the (full-year) projection that was valid during that quarter.

[3]   The projection error was calculated as the difference between the projection published by the IMF in the WEO review in April of the year preceding the projection year, and the actual growth of world trade based on the IMF's database. For projections prepared in mid-year, WEO projections from April of that year were used.

[4]   The regression included the square of the change in the growth rate of the economy, compared to the most recent yearly figure that was known at the time the projection was made (meaning, for most of the projections, compared to the growth rate two years previously).

The regression also included a fixed value and a dummy variable for the period from 2004 onwards. The coefficients of these variables basically estimate the projection errors that do not derive from the economic factors described above, and that may indicate deviations in the projection. The results of the estimate show that even when taking into account the economic fluctuations in each period, the years 1992 to 2003 are still characterized by a tendency toward optimism in revenue projections (at an average rate of about 5.7 percent of total revenues), while during the period from 2004 to 2012, the optimistic deviation disappeared and the estimated deviation is not significantly different from zero.[5] It is difficult to determine the source of this difference. It is likely that the implementation of a fiscal rule that limits government expenditure, starting in 2004, partially disconnected the expenditure side from the revenue side, thereby reducing the incentive for optimistic tax revenue projections. It is also possible that the severe crisis at the beginning of the 2000s and the optimistic projections prepared during that crisis left an impression on policy makers and led to more conservative revenue projections in the years following the crisis.

Second, we estimated a broad regression that explicitly assessed how a change in taxation and elections, as well as previous projection errors, affect projection errors. This was in order to assess all of the factors of errors and deviations in revenue projections together. Following a projection error for the previous year, the preparer of the projection may push the next projection toward the opposite direction in order to "compensate" for the error. Yet, at the same time, an error in one year may partially continue into the following year, since the revenue projection included in the budget is prepared in mid-year, and is based on an estimate of tax revenues during the current year. The results of the estimate show that an error of 1 percent in the projection in a certain year increases the error in the same direction in the following year (by 0.43 percentage points), such that if there is a corrective deviation, it is not full. Notwithstanding this effect, in the years in which an additional projection was made in mid-year, the new projection actually did remove one-third of the error in the previous projection (which was optimistic in practice).

A change in statutory taxes may lead to a deviation in tax revenue projections, if the preparer of the projection diverts it in order to justify the proposed change in taxation. However, the regression estimate does not provide evidence of such

[5] The differences between the two periods are also valid when assessing another specification of this regression, which does not include the acceleration of growth in the projection year among the variables, and therefore enables an assessment of the tax projection errors derived from mistaken (or deviating) growth forecasts as well.

a deviation, since a change in taxation in the projection year is not correlated, with statistical significance, with the error in the tax revenue projection.

Upcoming elections may encourage the sitting government to divert the projection in an optimistic direction in order to enable an expansion of expenditure and to prevent tax increases. Studies[6] conducted in other countries found such a diversion in government deficit projections. An estimate that we conducted did not find any statistically significant deviation in revenue projections that were prepared for an election year itself. However, we did find that when the projection of tax revenues is made immediately after elections, there is a statistically significant deviation of the projection in a pessimistic direction, at a rate of 2.1 percent of actual collection. This result may indicate an attempt by the professional echelon to use a more pessimistic revenue projection in order to maintain budgetary balance and halt political efforts toward fiscal expansion while putting together a coalition and preparing the budget following the elections.

[6]  See, for example: Pina, Alvaro and Venes, Nuno (2011), "The Political Economy of EDP Fiscal Forecasts: An Empirical Assessment", *European Journal of Political Economy* 27 (2011), 534-546.

**Box 6.4**

**Imposing a General Tax Return Filing Obligation in Israel as a Tool for Enhancing Compliance with Tax Laws**

Several professional committees have in the past recommended imposing a general tax return filing obligation in Israel. The motives for this include reducing noncompliance with tax laws, changing the tax system, and improving databases. The issue was also mentioned during the past year in the course of discussions on reducing noncompliance. In Israel, the tax return filing obligation (the requirement to file an annual return with tax authorities on income and expenses during the period) applies to companies and to self-employed individuals, while most employees and the rest of the population are exempt from filing a tax return.[1] A general tax return filing obligation would mean the expansion of the obligation to file an annual return by applying it to all employees. Currently, the employer reports employees' income, and makes

[1]  The existing law in Israel imposes a tax return filing obligation on all employees as well, however the Minister of Finance has exempted employees with an annual income of up to about NIS 640,000 from filing. With that, all data on employee income in the economy are in the possession of the tax authorities from Form 126 employer reports.

at-source deductions of the taxes imposed on the employee and transfers them to the Israel Tax Authority. This is the method generally used in about half of the OECD countries.[2] In the rest of the OECD countries—including the US, Canada, France, Denmark and Greece—the employee must file a return with the tax authorities at the end of each year.

The need for an employee reporting obligation derives from the structure of a country's tax system. In countries where taxation is integrated—meaning where the tax obligation is calculated based on the individual's total income, earned and unearned—the individual must file an annual return reporting all types of income. In Israel, in contrast, income from each source is taxed at a separate tax rate, which is independent of income from any other sources.[3] Thus, the tax rates on salary are not dependent on other income, and the tax amount is calculated and sent to the government by the employer. Unearned income is taxed at fixed rates that are generally not dependent on the amount of other income[4], and payment to the tax system is made at the time of the transaction or when the income is generated. The tax legislation system in Israel therefore enables the tax authorities to calculate the tax obligation and to make tax payments without the individual filing an integrated tax return. This box doesn't deal with the question of what the most preferred tax method is. But the implementation of the integrated method requires, as noted, the imposition of a general tax return filing obligation.

Another reason for filing an annual return in various countries, other than the use of the integrated taxation method, is the existence of individual benefits for employees in respect of various expenses which can only be deducted from taxable income by filing an annual return. In Israel, the benefits in respect of expenses connected with work are granted to employees through the employer, through the credit points system that gives employees the benefits without the need for filing expense documents (based on the employee's declaration on Form 101).

Expanding the tax return filing obligation in Israel to employees will make it possible to change the existing tax system. Among the possible changes are altering the progressiveness of the tax system by instituting integrated taxation; expanding the policy of supporting working parents by deducting from taxable

[2] A review of international experience is based on OECD publications regarding taxes: "Tax Administration in OECD and Selected Non-OECD Countries," Comparative Information Series, OECD, 2011; "Using Third Party Information Reports to Assist Taxpayers Meet Their Return Filing Obligations—Country Experiences with the Use of Pre-populated Personal Tax Returns," Forum on Tax Administration, Taxpayer Services Sub-group, OECD, 2006; and "Tax Administration in OECD Countries," Comparative Information Series, OECD 2004.

[3] Excluding surtax—an integrated tax that is imposed on people with high incomes; such people already have a reporting obligation.

[4] Excluding outliers who are already required to file a personal return.

income childcare expenses that are actually paid; increasing the efficiency of the Earned Income Tax Credit by adjusting the credit amount to family income; and increasing the encouragement of professional development by deducting from taxable income the precise costs of academic and professional studies. Other than the worthwhile discussion of whether such changes are desirable, it is clear that reporting on its own will not be sufficient to realize them. Appropriate resource allocation on the part of the Israel Tax Authority will be necessary in order to examine these forms and prevent various fraudulent activities that the complexity of the tax system will make possible.

Along with opening up new possibilities in the tax system, imposing a general tax return filing obligation will lead to additional costs, to individuals who are currently not required to file a tax return as well as to tax authorities. In the United States, for instance, tax authorities have calculated that the estimated time required for each assessed person to fill out a tax return was about 14 hours.[5] This is in addition to the time and resources devoted by the tax authorities to inputting the forms, only a tiny fraction of which are examined in the end. In order to reduce the expenses imposed on individuals, some countries that have instituted a general reporting obligation implement a "declarative reporting" method using a Pre-filled Tax Return, in which the tax authorities prepare the annual return on their own for each individual based on administrative data on that individual's income. For this purpose, these countries established a central database that includes all income data received on each individual from various entities in the economy (banks, insurance companies, investment houses, and so on). Based on the information in the database, an automatic calculation of each individual's tax bill is made, and the report is sent for the individual's approval. This method has been instituted in full or in part in about 13 OECD countries where there is a general reporting obligation (Figure 1).



**Figure 1**
**OECD Countries: Tax Filing Obligations for Employees and Use of Prefilled Returns**

5 http://www.irs.gov/pub/irs-soi/toder.pdf
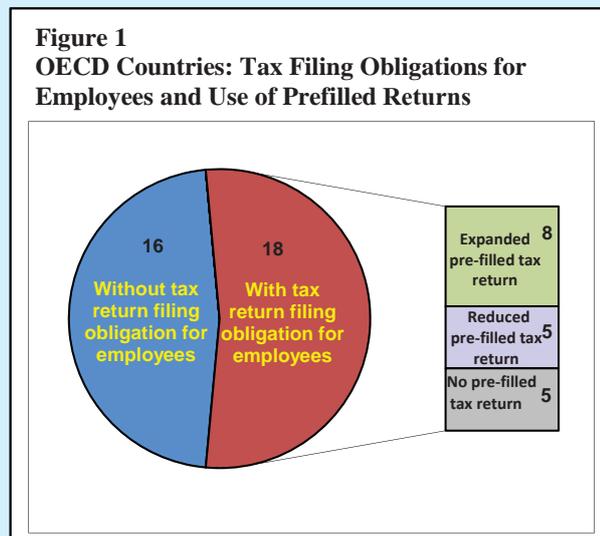
In countries such as Denmark, Finland, Norway and Sweden, in which the central information system includes data on all types of income (wages, interest, dividends, transfer payments and others), a full final assessment is made. The assessment is sent to the individual via the Internet or post, and the individual must only confirm or amend it.[6] In countries in which authorities do not collect information on all of an assessed person's income, such as Australia, Belgium, the Netherlands and France, the tax authorities prepare a partially complete tax return, and the individuals are asked to complete it with information on income that is not from work. In the five OECD countries where the general tax return filing obligation is imposed (the US, Canada, Greece, Poland and Hungary), the pre-filled tax return is not used.

Instituting a general tax return filing obligation with a pre-filled tax return in Israel will markedly reduce the individual's involvement in preparing the return, compared with an active personal return. In order to implement a pre-filled tax return, the preparation of a technological infrastructure for online dispatch and consolidation of information from various sources, as well as legislation enabling the transfer of private information from the various entities to the tax authorities, are required. The Israel Tax Authority currently has a database that includes full information on employees' income from work, which is based on employer reports (Form 126). It includes broad information on more than three million employees, and can serve as the basis for building a central information system that will enable the preparation of automatic tax assessments for employees.[7] Adding in data from reports from additional entities (such as banks, pension funds, insurance companies and the National Insurance Institute), and the cross-referencing of income tax and VAT data will make it possible to automatically generate a complete annual return for each employee. The establishment of a central database can serve as a tool in the struggle against the shadow economy by specifying individuals with a high probability of noncompliance with the tax laws, by cross-referencing data from various administrative sources that serve as indicators of individuals' income and expenses (such as merging data on real estate ownership).

Creating the technological and legal conditions necessary for establishing the central database and instituting pre-filled tax returns in Israel will take some time. Until then, the imposition of a tax return filing obligation on employees through a non-automatic method will be a heavy burden on individuals, and will lead to increased expenditure by the Israel Tax Authority. In view of the many resources expected to be expended, it is important to verify that imposing a tax return filing obligation on

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[6]  In Denmark, an individual who agrees with the assessment is not required to respond to it. A non-response is interpreted as confirmation of the assessment.

[7]  Currently, the database is actually available only about a year after the end of the tax year. This is compared to reporting within a month from the end of the tax year, as customary in countries where the declarative method is instituted.

employees will achieve its main purpose as raised in the public discussion in Israel—reducing noncompliance with tax laws.

The literature presents a broad range of factors that influence an individual's readiness to comply with tax laws, but there is no evidence found of the efficiency of imposing a general tax return filing obligation.[8] The literature mentions the theory of "the trembling hand", based in experimental economics, according to which the act of signing increases the probability that the signer will report truthfully. It is therefore possible that signing the annual return will increase the chance that individuals will report all of their income.

The rules currently in force in Israel require most of the population to declare sources of income and to sign the declaration. All employees in the economy declare their sources of income each year on the Israel Tax Authority's Form 101, which is signed at the place of work and transmitted to the Authority by the employer. Those receiving National Insurance allowances are also required to report on their income when submitting a signed request for allowances (other than universal benefits).

A simple statistical analysis of the connection between estimates of the size of the shadow economy and the institution of the general reporting obligation in OECD countries does not indicate a correlation.[9] A calculation of the average and median estimated size of the shadow economy in 32 OECD countries, divided into two groups—countries where a tax return filing obligation is imposed on employees (18 countries) and countries without such an obligation (14 countries)—indicates that the average estimated size of the shadow economy in terms of GDP is the same in both groups, close to 19 percent of GDP (both with median size of 18 percent of GDP). It is reasonable to assume that when the Israel Tax Authority obtains access to all of the data relevant for calculating taxes, the use of artificial intelligence to analyze and identify potential tax evaders will be much more effective than having millions of citizens sign forms.

The issue of the efficiency of a general reporting obligation in dealing with the shadow economy requires examination, in view of the significant costs that would be involved. If it becomes clear that the tool is effective, and the government decides to institute general reporting, it should be implemented in an advanced method that takes full advantage of up-to-date technological possibilities—the pre-filled tax return method. This method requires significantly fewer resources than the traditional "active" method, which requires each individual to file a yearly return.

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[8] Based on an OECD publication that studies the factors affecting compliance and reviews the relevant studies on the matter: "Understanding and Influencing Taxpayers' Compliance Behavior," Forum on Tax Administration: SME Compliance Subgroup, OECD, 2010.

[9] Based on estimates of the shadow economy in F. Schneider and A. Buehn (2011), "Shadow Economies in Highly Developed OECD Countries: What are the Driving Forces?", IZA DP No. 6891.