Chapter 6

The General Government, its Services and Their Financing

- The general-government deficit fell from 5.3 percent of GDP in 2009 to 3.8 percent in 2010 as tax collection grew more quickly than GDP and outpaced the budget outlook while general-government expenditure increased at roughly the pace of GDP.
- The government budget deficit dropped to 3.7 percent of GDP, 1.8 percent of GDP under the ceiling established in law.
- The decrease in the deficit and the rapid growth in 2010 lowered the debt/GDP ratio to 76.2 percent, 3 percent of GDP under the 2009 level—in contrast to the situation in most OECD countries, where large deficits pushed the ratio up considerably to an average of 84 percent.
- The reduction of the deficit to below its target and the lowering of the debt/GDP ratio in accordance with the economic recovery did much to enhance the stability of the economy and served as an anchor for a pro-activity monetary policy.
- The current level of the deficit is too high to allow the debt/GDP ratio to continue falling in accordance with the government's targets once GDP growth returns to its multiannual pace.
- The government adopted a new fiscal rule in 2010 that placed the deficit for coming years on a declining path and set the expenditure ceiling higher than the previous fiscal rule had permitted.
- It will be quite a challenge for the government to meet its deficit- and debt-reduction targets in coming years. Civilian public expenditure net of interest is already low by the standards of developed countries; this has implications for the extent of public services and that crimps the ability to reduce it. Furthermore, the potential increase in revenues is limited by the proximity of the economy to its potential GDP and legislation that envisages major continuing tax cuts from 2013 onward.
- The decrease in the debt/GDP ratio in 2010 was abetted by privatization receipts that provided more than half of the deficit financing; by payback of credit taken by the public; and by the use of some of the government's issuing surplus in 2009. The share of short-term bonds in government issues increased in 2010 as the government took advantage of low cost at the short end of the yield curve, at the price of an increase in future risks.
- Public consumption increased somewhat more quickly than potential product, whereas amendments to tax legislation hardly affected net revenue at all. Thus, fiscal policy in 2010 made a direct if minor contribution to the expansion of economic activity—in contrast to the much greater contribution in 2007 and 2008, which was based on the lowering of tax rates.
- The reductions in tax rates on wages in recent years made it possible to increase net wages with no change in employers' wage costs, thereby supporting employment and growth.
- Due to the inelasticity of private-vehicle use and the lack of adequate public transportation in Israel, environmental taxes on motor vehicles and fuel provide the government with a significant source of revenue but do not mitigate the negative externalities of vehicle use.
- The compulsory-pension arrangement is having adverse effects on many low-income workers and is expected to reduce state tax revenue by more than NIS 1 billion per year—more than three times the future saving on National Insurance benefits that it will attain.

1. FISCAL POLICY

The government was spared from having to contend in the medium term with the fiscal problems that are occupying the West, foremost in regard to financing needs.

Economic conditions and developments in recent years allowed Israel to plan and approve a two-year budget for 2011–2012 and to apply a new fiscal rule, approved in 2009, that will allow a faster increase in public expenditure and set the deficit on a downward path. In the review year, the government was spared from having to contend in the medium term with the fiscal problems that are occupying the West at the present writing, foremost in regard to financing needs.[1] This is because Israel, unlike other developed countries, stands out for not having to apply an aberrant countercyclical fiscal policy in 2009 and also because the crisis was less acute here. For example, while some Western countries laid off general-government staff at year's end and reduced wages in order to contain the increase in expenditure, Israel concluded a new wage accord with general-government labor that maintains the real wage level.

The government's new fiscal rule is composed of an expenditure ceiling and a deficit ceiling.

The new fiscal rule is composed of an expenditure ceiling and a deficit ceiling. It bases the growth rate of total public expenditure on average growth in the past decade, adjusted to the distance from the debt target of 60 percent of GDP.[2] It also places the government deficit on a downward path and, in the case of a deviation, requires the making of a choice between increasing revenues and cutting expenditure to a level that would keep it under the ceiling.

The expenditure rule has two salient advantages: it is not directly linked to growth in any particular year and it supports the lowering of the deficit and the public debt/GDP ratio in the medium term.

The salient advantages of the expenditure rule are that it is not directly linked to growth in any particular year and supports the lowering of the deficit and the public debt/GDP ratio in the medium term. The main drawback of the rule is that it permits tax cuts that are inconsistent with the continuing lowering of the debt, thereby making the government's targets harder to attain. This explains why the additional target (that of the deficit) was adopted. The importance of the added target was demonstrated in the approval of the 2011–2012 budget, when the government raised tax rates enough to keep the deficit ceiling from being overshot. The implicit downside of the definition of the deficit ceiling, however, is that it does not take account of the business cycle. For this reason, to adhere to the rule the government would have to reduce expenditure or raise tax rates precisely at times of recession—a procyclical policy that would make the recession worse.[3] The experience in Israel (largely matched by that abroad) shows that since policymakers tend to avoid such measures, deficit targets tend to be breached during recessions[4] due to the "automatic stabilizer" effect—as happened

[1] Financing needs are defined as payments of principal that fall due plus the previous year's budget deficit. Israel's financing needs in 2011 will be slightly greater than 10 percent of GDP as against an average of 17 percent among fourteen OECD countries, not including Japan, which has a 56 percent rate. See Figure 1, "Analysis of the 2011 and 2012 Draft Budget in View of Budget Targets and from a Long-Term Perspective," Bank of Israel, November 2010.

[2] The exact formula is that total public expenditure shall grow in real terms each year at the average pace of the real increase in GDP in the past ten years multiplied by 60, divided by the ratio of gross public debt to GDP (in percent) in the previous year.

[3] Mazar, Y. (2010), "The Effect of Fiscal Policy and Its Components on GDP," Bank of Israel Survey 84 (Hebrew).

[4] Brender, A. (2010)., "Targets or Measures? The Role of Deficit and Expenditure Targets in Israel's Fiscal Consolidation Efforts, 1985–2007," Israel Tax and Economic Quarterly 33 (129), May (Hebrew).

in 2009. Such overruns undermine the credibility of the rule as a policy anchor. At times of growth, the deficit target is irrelevant—as happened in the review year, for example.

The growth rate of current public expenditure accelerated in 2010, especially in public consumption, both civilian and defense-related. Even so, the share of the total general-government deficit in GDP contracted due to the faster pace of economic activity during the year, which triggered a surge in tax revenues and left room for a "correction" of the aberrantly low tax receipts in 2009.

Israel's fiscal situation in 2010 was extraordinary by the standards of developed countries. The total general-government deficit fell by 1.5 percentage points relative to 2009 and the public debt contracted by 3 percentage points (Table 1). In the OECD countries, in contrast, the deficit resembled that of the previous year and the public debt increased by 6 percentage points (Figure 1). However, even though Israel's deficit is below the OECD average, it must be borne in mind that Israel is in a different stage of the business cycle: approaching potential GDP while the product gap in the OECD countries is at a near-peak level. By implication, the developed countries' large deficits trace to expansionary fiscal policies, occasioned by the crisis, and the effect of the automatic stabilizers; as such, they are temporary and atypical (Figure 1). In Israel, such forces were not at work and Israel's cyclically adjusted deficit (net of the effect of the business cycle) resembled the OECD average. Furthermore, the contraction of Israel's deficit in 2010 resembled the decrease of this indicator in open economies where the recent crisis affected activity much as it did in Israel and where the product gap resembles Israel's product gap today.[5] These countries had smaller total deficits—in 2010 specifically and in the past decade generally—than Israel had and much smaller average debt/GDP ratios even after two years of upturns.

Israel's fiscal situation in 2010 was extraordinary by the standards of developed countries, but its deficits and those of the developed countries are similar when adjusted to the business cycle.

After a lengthy monotonic decrease in the public expenditure/GDP ratio, the downward trend stopped in 2009 and the level attained then, 42.6 percent (43.8 percent according to the international definition), was maintained in 2010 (Table 1)—below the arithmetic mean among the OECD countries (Figure 1). The share of total public expenditure in GDP in 2008–2010 was 6.4 percentage points lower than the 2000–2003 average.[6]

After a lengthy monotonic decrease in the public expenditure/GDP ratio, the downward trend stopped in 2009 and 2010.

Although Israel's public expenditure/GDP ratio has been falling in the past decade, the reduction in the total deficit was only partial due to the protracted decrease in the tax burden. During these years, the share of civilian public expenditure net of interest in GDP fell by 2.8 percentage points, placing Israel in an even lower position by OECD standards (33 percent of GDP as against 40.5 percent on OECD average); in 2010, this ratio was essentially unchanged from 2009. Additional components of expenditure that showed salient decreases relative to GDP during this time were interest payback

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5 Australia, New Zealand, Poland, Korea, and Canada.

6 These years were chosen because they preceded the government's decision to lower the share of public expenditure in GDP in 2004 and resembled the 2008–10 period, in which each year was typified by different growth rates. The result, shown in Figure 2, is robust to the selection of other years between 2000 and 2004.

Table 6.1
The Main Components of General Government Receipts and Expenditure, 2000–10[a]

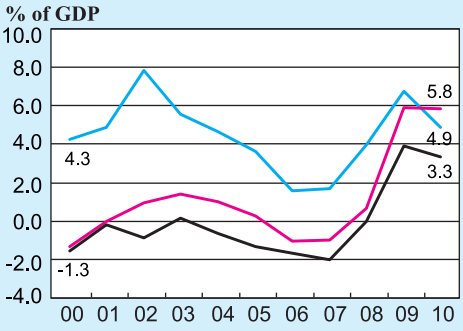
(percent of GDP)

	Average of 2000-03	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total receipts excl. Bank of Israel	44.9	45.3	43.8	42.9	42.6	43.3	42.9	40.5	37.5	38.7
Receipts from property excl. Bank of Israel	1.5	1.6	1.4	1.2	1.2	1.1	1.0	1.0	0.9	0.7
Total taxes	36.1	35.9	35.1	35.2	35.3	35.6	35.9	33.6	31.2	32.3
Indirect taxes on domestic production	12.5	12.9	13.0	12.9	12.9	12.4	12.3	12.3	12.1	12.7
Indirect taxes on civilian imports	3.9	3.8	3.7	4.1	4.1	3.9	4.4	4.2	3.9	4.1
Direct taxes, fees, and levies	13.9	13.4	12.5	12.4	12.5	13.7	13.6	11.6	9.8	9.9
National Insurance surplus	5.7	5.9	6.0	5.8	5.7	5.5	5.5	5.6	5.4	5.6
Grants	3.5	3.8	3.4	2.7	2.4	2.9	2.3	2.1	1.8	1.9
Other[b]	3.9	4.0	3.9	3.9	3.7	3.8	3.7	3.8	3.6	3.7
Total expenditure	49.1	50.4	49.8	47.0	45.1	44.4	43.4	42.8	42.8	42.6
Current expenditure	45.3	46.3	46.1	43.5	41.8	41.1	39.9	39.0	38.9	38.8
Domestic civilian consumption	18.7	19.2	18.8	18.4	17.9	17.5	17.6	17.7	17.7	17.8
Domestic defense consumption	6.4	6.7	6.6	6.1	5.8	5.7	5.6	5.6	5.3	5.3
Defense imports	1.8	2.2	1.8	1.5	1.6	1.7	1.5	1.2	1.0	1.0
Direct subsidies	0.8	0.7	0.9	0.7	0.7	1.1	0.8	0.8	0.8	0.7
Transfer payments on current account	12.1	12.4	12.1	11.1	10.6	10.3	10.0	10.1	10.4	10.5
Interest payments	5.5	5.0	5.9	5.6	5.0	4.7	4.6	3.6	3.7	3.6
Transfer payments on the capital account[b]	1.3	1.6[d]	1.2	1.6	1.6	1.7	1.8	2.0	2.1	1.9
Investments of the general government	2.4	2.5	2.5	2.0	1.7	1.7	1.7	1.8	1.8	1.9
Total deficit of the general government	2.4	5.1	6.0	4.1	2.5	1.1	6.0	2.3	5.3	3.8
Current deficit of the general government	1.3	3.9	5.1	3.5	2.2	0.9	0.2	1.7	4.3	3.3
Public debt (net)	79.5	82.0	87.7	85.6	79.0	74.0	67.3	63.6	68.6	68.3
Gross public debt excl. Bank of Israel[d]	92.3	96.6	99.1	97.4	93.5	84.5	78.2	76.7	79.2	76.2

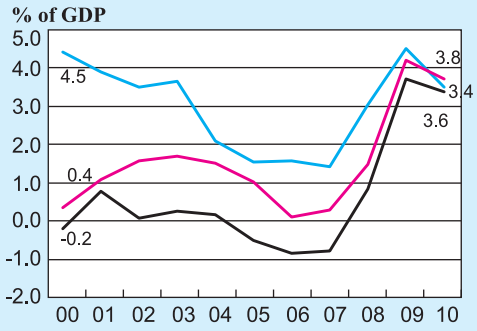
[a] This table no longer includes the Bank of Israel balance sheets because the Central Bureau of Statistics has adopted the international norm and does not include the central bank.
[b] Including transfer payments from the public on the current and capital accounts, imputed pensions, depreciation, capital transfers from abroad, and transfers from abroad to National Institutions and nonprofit organizations.
[c] Including mortgage subsidy and transfers to nonprofit organizations and businesses on the capital account.
[d] Including capital transfers to abroad totaling NIS 1,523 million, compensation paid to China for the cancellation of the Falcon deal.
[e] Excluding the Bank of Israel.
[f] Percent of GDP at the end of the year, and end-year prices.
[g] Excluding local authorities' debts to the government.
SOURCE: Based on Central Bureau of Statistics data.

Figure 6.1

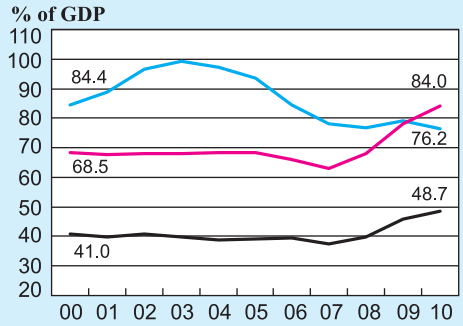
THE General Government Deficit in Israel[a] and the OECD,[b,d] 2000-10



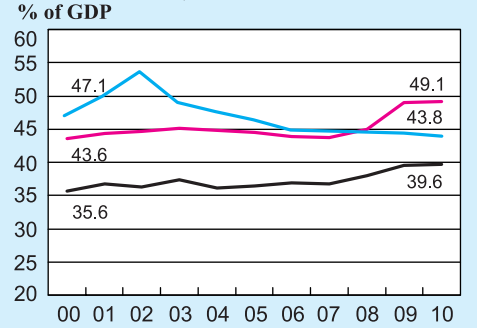
The Cyclically Adjusted Deficit in Israel[a] and the OECD,[b,c] 2000-10



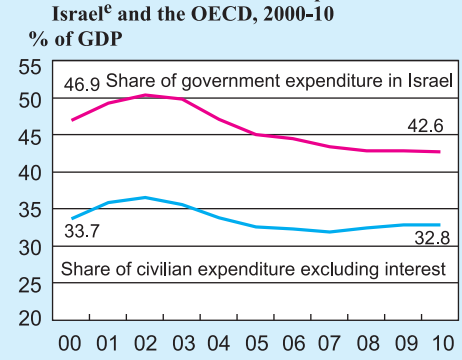
The Gross Debt of the Government in Israel[a] and the OECD,[b,d] 2000-10



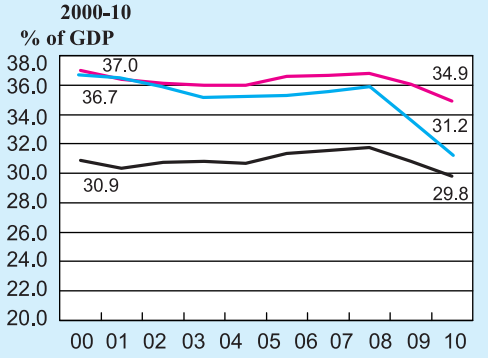
Government Expenditure in Israel[a] and the OECD,[b,d] 2000-10



Government and Civilian Expenditure in Israel[e] and the OECD, 2000-10



The Tax Burden in Israel[a] and the OECD,[b,d] 2000-10



Israel — OECD average — Peer group of countries —

[a] The figures for Israel are the general government deficit excluding the Bank of Israel. The data of the deficit and expenditure are adjusted to the internationally accepted definition.
[b] Simple average of the OECD countries except for Mexico and Turkey.
[c] Simple average of Australia, Canada, New Zealand and Poland.
[d] Simple average of Australia, Canada, Korea, New Zealand and Poland.
[e] Government expenditure and civilian expenditure in Israel excluding interest, not adjusted to the internationally accepted definition.

SOURCE: Based on Central Bureau of Statistics data and OECD Revenue Statistics 2010.

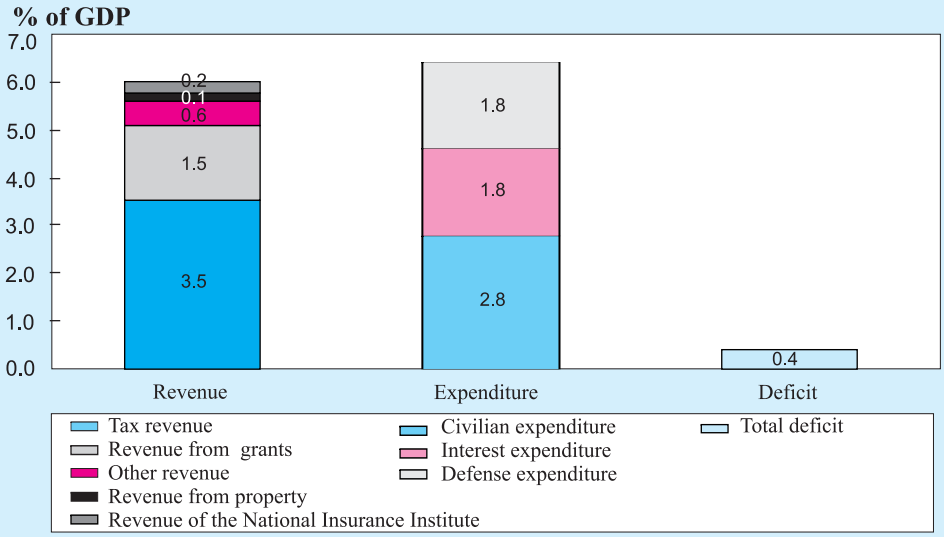
and defense expenditure. Conversely, total public revenues decreased by 5.9 percent of GDP during this time, mainly due to statutory tax cuts that were manifested in a 3.7 percentage-point decrease in the share of taxes in GDP. The total general-government deficit edged downward by only 0.4 percent of GDP (Figure 2).

Examination of the 2011–2012 state budget shows that the budget framework is compatible with the expenditure ceiling set by the new fiscal rule.

An examination of the 2011–2012 state budget[7] shows that the budget framework is compatible with the expenditure ceiling set by the new rule and that the application of the related measures to the budget will make the deficit ceiling attainable on the basis of the current growth outlook. Budget performance will remain at roughly its current level in terms of civilian expenditure net of interest in GDP. The new fiscal rule will allow the government to accommodate its outstanding multiannual commitments without breaching the budget framework by setting a higher expenditure ceiling than the previous rule did and by retroactively adjusting the ceiling to the unexpectedly large increase in the Consumer Price Index in 2009 and 2010.[8] The revenue outlook is reasonable in view of the tax measures that the Knesset passed and the expected growth trajectory.

The tax increases in the next two years, approved as part of the new budget, are immensely important in demonstrating the government's commitment to the deficit ceiling and the reduction of the debt/GDP ratio, particularly in view of the long-term

Figure 6.2
The Reduction in Public Revenue and Expenditure, by Components, 2003-10
(percent of GDP)



SOURCE: Based on Central Bureau of Statistics data.

[7] For an expanded discussion, see Bank of Israel (2010), "Analysis of the 2011 and 2012 Draft Budget in View of Budget Targets and from a Long-Term Perspective," November.

[8] The actual CPI increase was 5.5 percent; an increase of 3.3 percent was foreseen when the previous budget was prepared. This allowed an additional real increase of 2.3 percent in the new budget.

government policy of lowering the direct-tax burden. In February 2011, however, the government announced the cancellation of some of the indirect-tax increases and an increase in the public-transport subsidy. The latter measure will be paid for by an across-the-board cutback of government ministries' spending; the cancellation of the increase in indirect taxation in 2011 will evidently be covered by a one-year postponement of the reduction of corporate tax. Cancellation of the excise increase in 2012 is also being considered; this would be paid for by postponing the downward adjustment of tax brackets for the two highest income textiles. This would mean deferring the implementation of the direct-tax cut reform from 2016, as in the current version of the legislation, to 2017. As important as it is to stay within the budget ceiling, it would have been better to arrange priorities in a two-year budget more systematically—at the time the budget was approved—especially since the changes were not made due to exceptional developments.

Current legislation has placed taxes and total expenditure on a downward trajectory that will square with the deficit path only if growth continues at a 5 percent pace or better.

Existing legislation has placed taxes and total expenditure on a downward trajectory that will be consistent with the deficit path only if growth continues at a 5 percent pace or better in the long term. If the actual growth rates turn out to be lower, the government will have to choose between slowing the increase in expenditure and boosting revenue by raising tax rates or canceling direct tax cuts. The challenge is even greater because the level of expenditure derived from the government's decisions on specific programs in defense, education,[9] social services, and infrastructure already slightly overshoots the expenditure ceiling enshrined in law for 2013 and subsequent years; this reduces the likelihood of slowing the increase in expenditure in order to help cut the deficit.

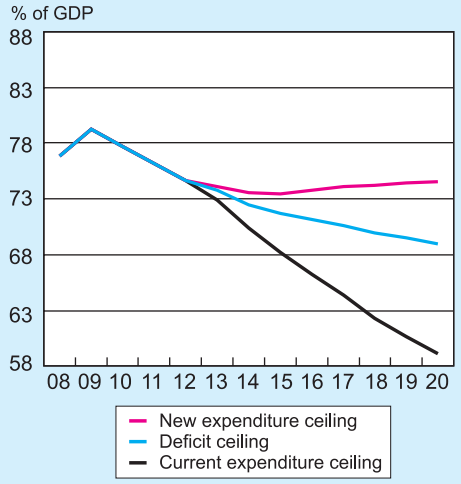
In addition to the expenditure ceiling, the budget must stay within a multiannual deficit ceiling of no more than 1.5 percent of GDP in 2013 and 1 percent in subsequent years. If this is done while GDP grows at the rates assumed in this scenario, the debt/GDP ratio will fall rapidly to less than 70 percent in 2015 and around 60 percent in 2020 (Figure 3).[10] However, while the 2011–2012 budget is roughly consistent with the attainment of the deficit and expenditure ceilings that have been set for 2011 and 2012, the picture is different in regard to 2013 and subsequent years, even if one assumes that the government will make the requisite adjustments to avoid overshooting the expenditure ceiling (reducing expected expenditure by NIS 3.5 billion). This is because the growth of expenditure according to the fiscal rule will allow the expenditure/GDP ratio to decline only mildly; if so, the rest of the adjustment will have to be paid for by increasing revenues. The current legislation and proposed amendments, however, envision a major reduction in tax rates in 2013, mainly via another decrease in personal and corporate income-tax rates in 2013–2015 and a VAT cut that the government has postponed to 2013. As a result, unless offsetting measures

[9] Including the plan to apply the New Horizon program at the junior-high level, the post-primary reform, and the budget increase for higher education.

[10] The assumed growth rate in 2015–2020 is 3.1 percent per year, based on the growth rate of per-capita GDP in recent decades and the Central Bureau of Statistics outlook for population growth in the coming decade. Estimates based on the increase of the main working-age population are lower.

to increase revenues are taken, the deficit is projected to rise in 2013 relative to 2012 and to surpass 2.5 percent of GDP. Furthermore, the ongoing tax cuts will cause the deficit to continue rising until 2016 and the debt/GDP ratio will hardly fall after 2012. Even after 2015, no meaningful change in the debt/GDP ratio is foreseen, meaning that its level in 2020 will resemble that of 2012 (Figure 3).

Figure 6.3
Debt/GDP Ratio in Various Scenarios,[a] 2008-20



[a]All scenarios assume that tax reductions set in existing legislation will be enacted fully.
SOURCE: Bank of Israel.

Annual tax receipts from the natural-gas discoveries in 2020 are projected at NIS 5 billion, around 0.5 percent of expected GDP that year.

At the present writing, annual tax receipts from the natural-gas discoveries at the Tamar and Leviathan fields in 2020, assuming full implementation of the Sheshinski Committee recommendations and the development of an infrastructure for the export of the gas, are projected at NIS 5 billion, around 0.5 percent of expected GDP that year. These receipts will not be large enough to have a significant macro-fiscal impact. However, it is already worth considering the establishment of an intergenerational wealth fund that will spread the gas receipts over many years, allow them to be apportioned more fairly between the generations, and reduce the likelihood of severe currency appreciation (the "Dutch disease" syndrome[11]).

2. THE CYCLICALLY ADJUSTED DEFICIT

Government policy was somewhat expansionary in 2010 and, as such, to some extent supported economic activity.

Government policy was somewhat expansionary in 2010 and, as such, to some extent supported economic activity. The cyclically adjusted deficit, overall and especially on its domestic side, declined in 2010 relative to 2009 (Table 2) but the 2009 level was aberrantly high due to a much steeper decrease in tax revenues than the ordinary relation between revenues and the macroeconomic environment (growth, imports, wage, and state of the financial markets) would indicate. Thus, it may be misleading to compare the 2010 deficit with its level in 2009 and to infer on this basis that the policy in 2010 was contractionary; the increase in the cyclically adjusted deficit in 2009 did not reflect an expansionary fiscal policy.[12] However, even after the aberrant decrease in tax collection in 2009 is taken into account, the upturn in the cyclically adjusted

[11] For an expanded discussion of the "Dutch disease," see Box 7.2.
[12] For an expanded discussion, see the fiscal policy section of Chapter 6 on page 238 of the Bank of Israel Annual Report for 2009.

deficit since 2007 gives evidence of an expansionary fiscal policy during those years and reflects above all the large reductions in tax rates.

The government left the average statutory tax rate essentially unchanged in 2010, as the cutback in direct statutory taxation (NIS 1.2 billion) was more than canceled out by the increase in indirect statutory taxation (NIS 1.6 billion). Conversely, most components of public expenditure, especially public consumption, increased at a slightly faster rate than nominal potential GDP[13] (Figure 3).

GDP growth in 2010 exceeded the potential growth rate slightly, implying that the government policy in 2010 was somewhat procyclical. It was so, however, only after the fact. By implication, had the expectations of much slower growth that were current when the budget was approved in 2009 come to pass, the increase in public expenditure in 2010 would have been defined as a countercyclical policy. Since uncertainty about GDP growth was also relatively acute during the year, there was no need to slow the pace of increase in public expenditure or to raise taxes rates. It should be recalled that a long-term procyclical policy, which allows the deficit to grow at times of growth—a policy that was typical of Israel in the past (especially in growth periods) and typifies emerging markets in the main[14]—will make it difficult to adopt a countercyclical policy when one is desired, i.e., when a recession comes.

After the fact, the consolidation program in recent years proved to be one of downsizing government as opposed to downsizing the deficit.

Since 2007, when the steepest reduction in direct taxation of labor in the past decade was made, the cyclically adjusted deficit has been growing. The fact that the cyclically adjusted deficit was approximately as high in 2010 as it was in 2002, before the relative decrease in public expenditure in GDP, shows that the consolidation program in recent

Table 6.2
The Cyclically Adjusted Deficit of the General Government, 2002–10[a]

(percent of potential output)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Overall deficit	2.5	2.6	1.3	0.6	0.4	0.8	2.0	3.6	2.7
Domestic deficit	2.7	2.6	1.1	0.0	0.4	0.5	2.0	3.6	3.0
Overall deficit by international definitions[b]	3.6	3.7	2.1	1.6	1.6	1.5	3.1	4.6	3.6
Average cyclically adjusted deficit[c] of the advanced economies	1.6	1.7	1.6	1.0	0.1	0.3	1.5	4.3	3.8

[a] Interest payments were calculated assuming that the rate of inflation during the year was 2 percent, and not according to the actual inflation rate.

[b] The overall deficit was brought into line with the accepted international definitions by adding indexation differentials to the CPI-indexed and unindexed local-currency debt, assuming inflation of 2 percent.

[c] Arithmetic mean of all the countries in the group appearing in Appendix Table 6.A.21.

SOURCE: Based on OECD Economic Outlook, 87, June 2010, and CBS data.

[13] Public expenditure rose by 5.2 percent in nominal terms; nominal potential GDP expanded by 5.5 percent each year in real terms.

[14] Michel Strawczynki and Joseph Zeira, "Cyclicality of Fiscal Policy in Israel," Israel Economic Review (IER), Vol. 5, No. 1.

years was, after the fact, a matter of downsizing government as opposed to reducing the deficit. (See also Figures 1 and 2.) Although expenditure was reduced before the alleviation of the tax burden, a measure that did lower the deficit at first, the deficit eventually returned to its original level after the tax cuts.

Israel's cyclically adjusted deficit resembles that of the developed-market class. In other words, the smallness of Israel's actual deficit by developed countries' standards traces entirely to the difference in the output gap. The developed countries' cyclically adjusted deficit was relatively high in 2010, as in 2009, giving evidence of the continuation of fiscal expansion in these countries—especially the US and the UK—in support of the rebound from the recent crisis. Since this policy is not sustainable, some developed countries have already begun to tighten in ways that include tax hikes and major spending cuts and others are expected to announce plans to apply such policies in coming years. This aside, some of the increase in the developed countries' expenditure is temporary, and doing away with it will allow them to make a marked decrease in the cyclically adjusted deficit. Israel's deficit, in contrast, did not reflect a meaningful cyclical component in 2010.

Lowering the deficit in accordance with the trajectory set forth in the law, especially if the government attempts to base it on further reduction of expenditure in GDP, is expected to be a major challenge.

Since Israel's rate of expenditure in GDP is not high by the developed countries' standards (Figure 1), especially in terms of civilian expenditure net of interest—an indicator of the scope of government services and activity—and given the tax cuts enshrined in the law for the next few years, the government faces a major challenge in lowering its deficit in accordance with the trajectory set forth in the law, especially if it attempts to base this on the further downscaling of expenditure in GDP.

3. PUBLIC SECTOR EXPENDITURE

Public-sector (general-government) expenditure continued to accelerate in 2010, pursuant to 2009.

Public sector (general government) expenditure continued to accelerate in 2010, pursuant to 2009. Total nominal expenditure expanded by 5.1 percent and total public sector expenditure of all kinds—including wages and, in particular, procurements—accelerated. Civilian public consumption grew by 6.3 percent and defense consumption accelerated despite relative calm in security-related matters[15] and plans to slow the growth of this type of consumption. Real growth rates of the various components of expenditure rose in 2010, from both the financial standpoint (deflated by the business output price index) and that of the service recipient or provider (deflated by the Consumer Price Index); this development contributed to the increase in uses and, thereby, to GDP growth in 2010. In contrast, the growth rates of transfer payments and of interest payments slowed relative to 2009 (Table 3).

A credible reduction of the debt/GDP ratio will require a choice between improving the public services and boosting revenues by raising tax rates.

The nominal annual rate of increase in total current public expenditure accelerated in 2009–2010 and was 5.4 percent in the latter year. This was not reflected in a higher share of public-sector expenditure in GDP, mainly due to price adjustments and rapid growth. By implication, were it not for the cyclical increase in revenues and in view

[15] The number of fatalities in terror attacks in 2010 was the smallest since 2000.

of the ongoing program of tax cuts, the rapid pace of expenditure increase would be unsustainable. Since a very low rate of civilian expenditure in GDP by international standards is also not necessarily stable[16]—as evidenced in the acceleration of expenditure growth since 2006—a credible reduction of the debt/GDP ratio will require a choice between improving the public services and boosting revenues by raising tax rates.[17]

The new general-government wage accord signed in 2010 will maintain real wage levels in consideration of wage creep.

A new general government wage accord was signed in 2010. The previous agreement, which expired in December 2009, gave general government employees a 5 percent nominal cumulative wage increase over a two-year period and maintained their real

Table 6.3
Rates of Nominal Increase of Public Expenditure in Israel, 2005-10

(percent)

	2005	2006	2007	2008	2009	2010
Total public expenditure	1.5	6.6	3.5	3.7	5.8	5.1
of which: Interest payments	-5.5	0.6	3.6	-16.8	7.2	3.2
Total public expenditure excl. interest payments	2.5	7.3	3.5	6.1	5.6	5.3
of which: Current expenditure excl. interest payments	2.9	7.2	2.9	5.3	5.3	5.7
Current primary civilian expenditure	2.7	6.9	3.7	6.2	7.0	5.8
Public consumption	3.6	6.4	3.9	4.8	3.4	5.9
Public consumption excl. defense imports	2.7	6.0	5.1	5.9	4.6	5.9
Civilian consumption	3.5	5.6	6.1	6.2	5.4	6.3
Per capita civilian consumption	1.7	3.7	4.2	4.4	3.5	4.4
Wage expenditure	2.7	5.2	5.0	5.2	3.7	6.1
Purchases	4.0	6.2	7.8	7.4	8.6	7.2
Domestic defense consumption	0.8	7.3	2.8	4.9	1.4	5.2
Wage expenditure	2.5	5.0	2.4	-0.9	2.2	8.0
Transfer payments on current account	1.7	5.1	2.5	6.4	9.3	6.3
Per capita transfer payments on current account	-0.1	3.2	0.7	4.5	7.2	4.4
General government investment	-7.6	2.8	9.0	10.5	4.7	11.0
of which Transport infrastructure	-39.6	43.4	16.9	16.3	0.8	-19.4
Transfer payments on capital account	-2.2	9.3	10.6	14.2	8.7	1.5
Change in CPI (annual average)	1.3	2.1	0.5	4.6	3.3	2.7
Change in business sector product price index	1.1	2.0	0.0	0.3	5.0	-0.1
Change in public consumption price index	1.8	3.1	0.8	2.2	1.3	2.7

SOURCE: Based on Central Bureau of Statistics data.

[16] Such is the case unless the government decides to privatize education or healthcare services. Even if the government avoids a formal decision to privatize its services, low expenditure means implicit privatization because those who can afford to make up the missing portion out of pocket do so. For an expanded discussion, see R. Gamzu, G. Navon, and D. Chernichovsky (2010), "'Malignant Growth' in the Share of Private Expenditure for Healthcare and Its Price," Jerusalem, Taub Center for Social Policy Studies in Israel (Hebrew).

[17] In fact, this is what the government of Israel is doing in its 2011–2012 budget: raising taxes but defining the increase as temporary and postponing the "hole" in the budget to 2013.

wage level in consideration of wage creep.[18] The new accord includes a 6.25 percent wage increase in three ticks: 2.25 percent in December 2010, 2 percent in December 2011, and 2 percent in December 2012. Several groups of employees were optioned out of the new accord,[19] which clears the way for them to seek more ambitious terms because the agreement signed was merely a lower bound for them. The cumulative effect of the wage increases of the optioned-out groups may also affect business-sector wages, as happened in the years following the generous general-government wage accords in 1995.

The share of general-government payroll expenditure in GDP has been falling steadily, from 15 percent in 2001 to 12.5 percent in 2010. The general-government wage accord concluded in 2008, its implementation in 2008 and 2009, and especially the GDP growth slowdown in 2009 caused the rate to level off in the past three years. The new agreement will allow this stability to continue.

4. TAX REVENUES

The signal event in 2010 was the significant recovery of state tax revenues after a steep decrease in 2009.

The signal event in 2010 was the significant recovery of state tax revenues after a steep decrease in 2009 (Figure 4). In the previous year, the downturn in tax receipts relative to the decrease in activity was much steeper in Israel than in most OECD countries.[20] In contrast with 2009, but in accordance with other recent years, the macro variables including the actual GDP growth rate, which was 3.6 percentage points higher than the forecast when the budget was drawn up in 2009, aptly explain the level of tax revenues in 2010.[21] A year earlier, in contrast, the steep decrease in state tax revenues exceeded what could be explained by the relations between revenues and the macro variables even given the actual values of the variables. Due to the effective explanation of the 2010 tax revenues, the "hole" in tax receipts from 2009[22] was almost totally offset in 2010. Indeed, Figure 4 highlights especially the strong positive relation between the pace of GDP growth and that of tax revenues.

Due to the acceleration of economic activity, government tax receipts (net of municipal authorities and the National Insurance Institute) were NIS 195 billion in

[18] General-government employees' nominal wages have been rising over time even without centralized wage accords because wage creep occasioned by worker mobility, re-ranking, and promotion more than cancelled out the decrease caused by retirement and turnover.

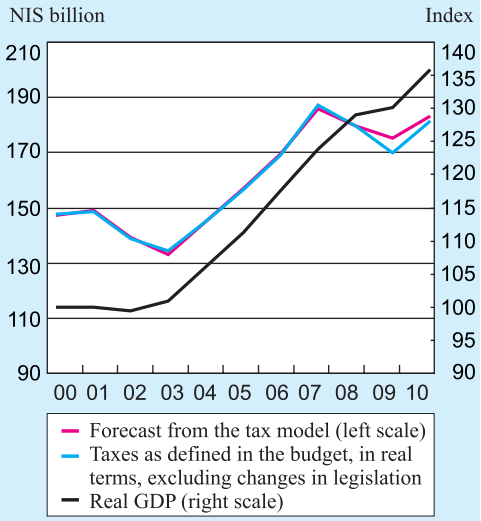
[19] Including doctors, state attorneys, employees of the Foreign Ministry, municipal authorities, low-income workers, and social workers.

[20] Only countries that tumbled into financial crises—including Greece and Iceland—had steeper rates of decrease in the tax burden than Israel's.

[21] Adi Brender and Guy Navon, "A Forecasting Model for Government Tax Revenues and an Evaluation of the Forecast Uncertainty," *Economics Quarterly*, 2008:4 (Hebrew).

[22] Roughly NIS 10 billion, 1.2 percent of GDP.

Figure 6.4
The Change in Actual Taxes, Tax Forecast, and Per Capita GDP, 2000-10 (index, 2000 = 100)



SOURCE: Based on Central Bureau of Statistics data.

Real tax receipts net of legislative changes and nonrecurrent revenues were 7.0 percent higher in 2010 than in 2009. Both direct and indirect taxes contributed to the increase.

2010, up 7.1 percent from 2009[23] (Table 4). Real receipts net of legislative changes and nonrecurrent revenues were 7.0 percent higher in 2010 than in 2009. Both direct and indirect taxes contributed to the increase.

Legislative changes in 2010 induced a net increase of NIS 400 million (0.05 percent of GDP) in tax collection, as an NIS 1.6 billion net increase in indirect-tax collection—occasioned by increases in taxes on cigarettes and private motor vehicles and the fuel excise,[24] alleviated by a half percentage-point decrease in the rate of Value Added Tax, to 16 percent—was partly offset by a NIS 1.2 billion decrease in collection of direct taxes resulting from the continued lowering of corporate tax to 25 percent and another decrease in the rate of direct taxes on labor.[25]

Real direct tax receipts grew by 6.8 percent in the wake of upturns in all items, as would be expected in this stage of the business cycle. In particular, real corporate-tax receipts climbed by 15.5 percent and their share in GDP rose by 0.4 percent, to 3.0 percent. Real-estate taxes posted a steep rate of increase (28 percent in real terms) due to brisk activity in this industry and withholding tax on activity in the capital market climbed (by 18 percent in real terms) due to continued profit taking and rising interest rates during the year. These taxes, however, are a minor 1 percent share of GDP. Real indirect tax receipts posted a 6 percent increase. VAT receipts net of legislative changes moved ahead by 12 percent but the pace of increase slowed during the year and leveled off in the last four months. The slowing of growth in indirect-tax collection is typical of this stage of the business cycle and reflects greater efficiency in the collection of VAT. This is due to the process of closing the output gap: the smaller the output gap is, the higher the rate of VAT collection divided by the tax base.[26] When an economy approaches its potential product, this indicator stops rising.

[23] In December, a decision was made to increase on a non-recurring basis of the provision to the property-damage compensation fund from 25 percent to 45 percent of revenues on account of real-estate-purchase and property tax. Consequently, direct-tax revenues decreased by NIS 0.8 billion. Net of this artificial reduction and accounting adjustments, real tax revenues increased by 7.5 percent in 2010 relative to 2009.

[24] Carried out in April 2010 but reflected in the comparison of all of 2010 with all of 2009.

[25] Data: Ministry of Finance, *2011–2012 Budget Book.*

[26] VAT collection efficiency is calculated as the ratio of VAT collection per 1 percent of tax to the tax base. The elasticity of this indicator to the product gap is –1.1.

Non-tax domestic revenues in 2010 were NIS 1.7 billion less tham the budget forecast. NIS 0.7 billion of the difference traced to a shortfall in revenues from the National Insurance Institute, owing to accounting changes that reduced the purchase of National Insurance bonds commensurably.

The tax burden rose slightly relative to 2009, in accordance with the characteristics of the business cycle.

The tax burden rose slightly relative to 2009, in accordance with the characteristics of the business cycle and, in particular, the characteristics of emergence from a recession because the elasticity of tax receipts to GDP is above one at that stage. Although the tax burden increased, it remains much lower today than in the past and is under the OECD average. Furthermore, since tax collection elasticity is expected to fall to one as the growth rate levels off, the tax burden will continue falling, resembling the trend that began in 2003 due to the long-term program of reduction in statutory (quoted) tax rates.[27] Since 2001, legislative changes alone have lowered the tax burden by 2.8 percent of GDP—4 percent of GDP due to reductions in personal tax rates, 0.8 percent of GDP because of the cutback in corporate tax rate, and partial offsetting mainly by increases in fuel and cigarette taxes (Box 3) and withholding tax on activity in the capital market.

The structure of Israel's tax system is such that the indirect-tax burden exceeds the OECD average and the direct-tax burden is smaller.

As for the structure of the tax system, Israel has a heavier burden of indirect taxes than the OECD average, especially in purchase taxes and VAT on consumption, due to a broader tax base as opposed to higher statutory tax rates. The direct-tax burden is lower, especially in National Insurance contributions and income tax on labor. In 2007, Israel's direct-tax burden was 19.3 percent as against an arithmetic mean of 22.3 percent on OECD, and indirect-tax burden was 16.6 percent as against an arithmetic mean of 12.9 percent on OECD.[28] This difference widened in the past decade because most of the decrease in Israel's statutory tax rates took place in direct taxes—a 23 percent average reduction—while the average statutory rate of indirect taxation dropped by 8 percentage points, bringing on an overall average statutory-tax decline of 17 percent.[29]

Statutory tax rates are expected to continue falling until 2016 in accordance with the government's long-term tax program.

Statutory tax rates are expected to continue falling until 2016 in accordance with the government's long-term tax program. Since some studies consider direct taxation more distortionary than indirect taxation, applying rate cuts to direct taxes appears

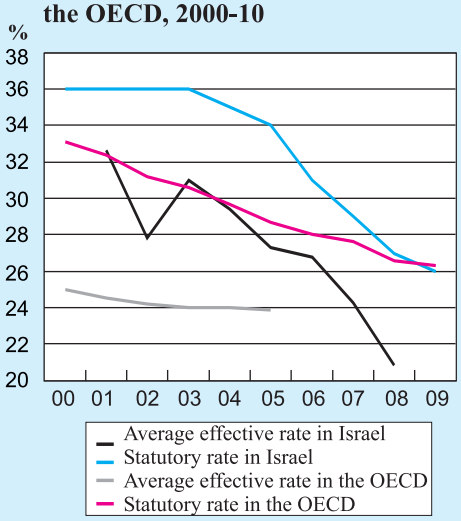
[27] Figure 6 in Chapter 6 of the 2009 Annual Report shows the long-term convergence of the tax burden trajectory to that of the average statutory tax rate.

[28] Data: State Revenues Administration, 2008, and the arithmetic mean of the tax burden in the OECD countries (excluding "other taxes"—roughly 1.0 percent of GDP) in 2007, from OECD Revenue Statistics 2010. For discussion of how the mean is calculated—on an arithmetic or a weighted basis—see A. Brender, "Tax Rates on Labor Income in Israel from an International Perspective, 2008–2009," Bank of Israel, March 2009 (Hebrew).

[29] The Bank of Israel Research Department calculates the average statutory tax rate by weighting all statutory tax rates by their shares in the tax receipt base.

to do more to encourage economic activity than reducing indirect taxation would.[30] Furthermore, as shown in Box 1, the reduction of direct taxation allowed growth to accelerate with no loss of competitiveness and at no cost to the employer. However, cutting statutory direct tax rates is regressive: most members of weak population groups fail to reach the income-tax threshold and have a much larger share of expenditure in income.[31] Therefore, this policy is contributing to the widening of income disparities. However, there are differences among countries in direct-tax systems: Israel's system is slightly more progressive than the OECD average,[32] meaning that the effects of the composition of direct and indirect taxes on income distribution are weaker in Israel than in other developed countries.

Figure 6.5
Corporate Tax Rates in Israel and the OECD, 2000-10



SOURCE: Based on OECD Tax Policy Study No. 16, Fundamental Reform of Corporate Income Tax.

Among all tax rates, the decrease in the statutory rate of corporate tax was the steepest and the most visible: from 36 percent in 2003 to 25 percent in 2010 and, according to the outlook, 18 percent in 2016. Israel's statutory tax rate exceeded the OECD average at the beginning of the decade, approximated the average in 2010 after the steep decreases in Israel, and is projected to be under the OECD average in 2016 (Figure 5). Importantly, the OECD countries broadened their tax base while lowering their tax rates by cracking down on tax exempt expenses. Accordingly, during this time (data on the effective tax rate are available only up to 2005), the difference between the statutory tax rate and the effective rate narrowed considerably,[33] since the

Among all tax rates, the decrease in the statutory rate of corporate tax was the steepest and the most visible.

[30] This finding recurs in a recent survey, "Tax Policy Reform and Economic Growth," Tax Policy Study No. 20, OECD, and in M. Strawczynski and K. Flug (2007), "Protracted Growth and Macroeconomic Policy in Israel," Bank of Israel Review 80 (Hebrew). Mazar, in contrast, found that in Israel's specific case indirect taxation incentivizes economic activity whereas lower direct taxes have no effect on activity: "The Effect of Fiscal Policy and Its Components on Product in Israel," *Bank of Israel Review 84,* 2010 (Hebrew). The difference between the findings may originate in differences in methods of estimation—cointegration in the former study as against VAR in the latter—and periods of estimation.. Divergent findings are also common among other macro studies.

[31] In fact, according to the 1999–2009 Household Expenditure Surveys, the two lowest quintiles consumed more than their total income on average :the rates of expenditure in wage income were,1.4 ,0.9 ,1.0 ,1.1and ,0.7 in order of quintiles.

[32] The progressivity of a labor-taxation method is estimated as the quotient of the weighted (by wage) average of the marginal rate of tax on labor and the weighted average of the average tax rate on labor. The larger the quotient, the more progressive the tax system is. See also Bank of Israel (2009), "Tax Rates on Labor Income in Israel from an International Perspective, 2008–2009," March (Hebrew).

[33] The effective rate is defined as the ratio of tax receipts to corporate revenues.

The effective rate of corporate tax fell tandem with the statutory rate and the average rate of exemption from corporate tax in Israel was 5.5 percentage points.

effective rate also takes account of the tax base. In Israel, in contrast (Figure 5), the effective tax rate fell approximately in tandem with the statutory rate and the average rate of exemption from corporate tax in Israel was 5.5 percentage points, meaning that the tax base was not adjusted in any material way during that time.

The Encouragement of Capital Investments Law (ECIL) was amended in 2010 with future years in mind. The ECIL was passed in 1959 in order to develop the economy's production capacity, improve the balance of payments, absorb immigrants, disperse the population, and create jobs. It awards grants and tax benefits to those who establish or expand enterprises in manufacturing, agriculture, or tourism, with emphasis on National Priority Areas and export orientation. In 2009, the Ministry of Industry, Trade and Labor handed out NIS 500 million in ECIL grants.

The ECIL was amended to help make Israeli firms more competitive with multinational ones, encourage innovation, simplify processes, and ease firms' uncertainty about its implementation—changes that serve the purpose of the Law.[34] Encouragement of capital investments and, especially, the subsidization of manufacturing in development areas, are very common in the West; most countries spend more on grants than Israel does.[35] The revised provisions of the ECIL are expected to narrow the gap between the statutory tax rates and the effective rates that firms (especially large firms) will pay.

5. THE NATIONAL BUDGET AND THE DEFICIT TARGET

The government deficit was 3.7 percent of GDP at year's end, under the ceiling established by law.

The decrease in the total general-government deficit in 2010 traces to the contraction of the central-government deficit to 3.7 percent of GDP at year's end, under the ceiling established in the law (Figure 4). The main reason was a flow of tax revenues that exceeded expectations at the time the budget was formulated; the budget itself was almost totally performed.[36] Even though the deficit undershot the statutory ceiling, considering the GDP growth rate (which exceeded its potential pace), the relatively small product gap, and the rate of increase in tax revenues (which surpassed the rate of GDP growth), a government deficit of nearly 4 percent of GDP is high relative to the level that will be needed to meet the government's undertaking to continue lowering the debt/GDP ratio.

The surplus of revenues relative to the budget outlook owes its origins to faster GDP growth than had been expected when the budget was drawn up.

The surplus of revenues relative to the budget outlook owes its origins to faster GDP growth than had been expected when the budget was drawn up. The 2010 budget was approved in the middle of 2009, when the extent of the global crisis was still vague, leading to a conservative assumption about growth in 2010 (1 percent as against 4.6 percent in practice). This is one of the most conspicuous drawbacks of

[34] For an expanded discussion, see the Manufacturing section in Chapter 2.
[35] See 2007 Bank of Israel *Annual Report*, Chapter 2, Box 3.
[36] Due to the unexpectedly high growth rate, the annual GDP exceeded the outlook. Another reason was that the deficit in percent of GDP fell short of the program at the time the budget was passed. This effect, however, was negligible at about .10 percent of GDP.

the construction of a two-year budget (not to dismiss its advantages): the longer the outlook range, the greater the uncertainty. During the review year, it became clear by all reckonings that the economy was growing faster than had been foreseen when the budget was approved.

Performance of current government expenditure was stronger in 2010 than in previous years (Figure 5), especially at the civilian ministries, which had had relatively low mid-year performance rates in recent years. The two-year budget may have abetted this by allowing the ministries to prepare effectively for the performance of current expenditure. Even though the mid-year performance rate was high in 2010, the share of government expenditure performed in December was especially large at 12.6 percent.[37] For reasons of efficiency, it is of course better to spread expenditure more smoothly over the year. Also, the government moved up NIS 4 billion in 2011 expenditure to 2010, much as it did in December 2008.

Defense expenditure overshot the original budget by a hefty NIS 5 billion.[38] The overrun was covered with the help of lower interest payments than the budget and the underperformance of civilian ministries' expenditure; these sources were transferred

Table 6.4
Central Government Deficit, Revenue and Expenditure, 2003-10

(percent of GDP)

	2003	2004	2005	2006	2007	2008	2009	2010
Overall government deficit ceiling excluding credit[a]	3.0	4.0	3.4	3.0	2.9	1.6	6.0	5.5
Actual overall government deficit excluding credit[b]	5.1	3.6	1.8	0.8	0.1	2.0	5.1	3.7
Actual government domestic deficit	4.6	2.6	0.7	-0.2	1.3-	0.5	3.7	2.5
Total revenue, net[c]	31.5	31.6	32.3	32.4	32.3	30.0	27.2	28.1
Taxes and imposts	26.9	26.9	27.1	27.2	27.9	25.5	23.3	24.2
Interest, profits, royalties, revenue from land sales	1.0	1.0	1.3	1.2	0.9	1.0	1.3	1.1
Loan from the National Insurance Institute (NII)	1.7	1.9	2.1	2.1	2.1	2.1	1.6	1.4
US government grants	2.0	1.8	1.9	1.9	1.5	1.3	1.1	1.3
Total expenditure, net, excluding credit granted	39.7	35.1	34.2	33.2	32.4	32.1	31.8	31.3
of which Interest, repayment of principal to NII, and credit	7.1	6.7	6.6	6.4	5.9	5.5	5.4	5.2
Defense expenditure, net[d]	8.4	8.0	8.0	7.9	8.0	7.9	7.4	7.5
Total primary expenditure excl. defense	21.3	20.4	19.7	18.8	18.5	18.6	19.0	18.5

[a] From 2001, the deficit ceiling specified by law.
[b] Revenue and expenditure in 2006 do not include NIS 2.8 billion transferred to the Compensation Fund and paid as compensation to the public for damage due to the war in the north.
[c] The target set in the middle of 2002. The target set when the budget was approved by the Knesset (parliament) was 3.0 percent of GDP.
[d] Excluding expenditure contingent on revenue, and revenue used to finance contingent expenditure.
SOURCE: Based on the National Budget Summary, and Central Bureau of Statistics data.

[37] The share of December expenditure in total annual government expenditure has been 11.6 percent on average since 2000; the rate of expenditure per month in full performance of the budget is 8.3 percent.
[38] This is beyond NIS 4 billion in defense expenditure that was budgeted on a reserve line and used for programmed defense spending.

Defense expenditure overshot the original budget by a wide margin, despite the intention of restraining defense spending in a year that was relatively calm in security terms.

to the defense budget during the year with the approval of the Ministry of Finance and the Knesset. The budget increase was given despite the intention of restraining defense spending in a relatively calm year in security terms—a phenomenon that raises concerns about the success of the fiscal strategy in coming years, which is based, among other things, on the reduction of domestic defense consumption in GDP along the path recommended by the Brodet Committee.

Table 6.5
Components of Deviation from the Original 2010 Budget

(current prices)

	2009	2010		
	Actual	Original budget	Actual	Difference between budget and actual
	(NIS billion, net, excluding credit)			
Deficit (–)	-39	-43	-30	13
of which: Domestic	-34	-38	-26	12
External	-5	-5	-4	1
Revenue	205	212	223	11
of which: Domestic	195	201	211	11
Taxesa	177	184	195	10
Loan from National Insurance Institute	13	12	12	-1
Other[b]	6	5	5	0
US government grants	8	10	10	1
Expenditure[a]	244	255	254	-1
of which: Domestic	229	239	237	-1
Abroad	15	16	16	0
Defense	57	56	61	10
Interest, repayment to National Insurance and credit subsidy	41	46	43	-3
Civilian ministries and transfer payments	146	155	150	-4

[a] Including VAT on defense imports.

[b] Income from interest, land sales, royalties, dividends, and other income.The method of recording the data changed in 2009. Income from land sales in the budget proposal are defined as budget income, while in data of budget expenditure they are henceforth defined as a means of financing. In 2009 this amounted to NIS 1.7 billion.

SOURCE: Based on data of the Accountant General regarding the performance of the 2007 budget.

6. GOVERNMENT SERVICES AND OBJECTIVES

One of the implications of the decline in the ratio of civilian public expenditure net of interest to GDP in recent years is the contraction of Israel's public services.

Two of government's main roles are providing adequate services to citizens and influencing income distribution. A government's ability to carry out these functions depends on tax collection, some of which distorts and discourages labor and investment, especially in view of competition from abroad. The level of government tax collection is directly related to the level and scope of services, and the tax burden has an effect on income distribution. One of the implications of the decline in the ratio of civilian public expenditure net of interest to GDP in recent years is the contraction of Israel's public services.

A major service that the government should provide its residents is defense. This service costs the government much more in Israel than elsewhere—5.5 percent of GDP[39] as against 2 percent on average in the OECD countries. It follows that if the Government of Israel wishes to provide its citizens with civilian services on a scale resembling that of the OECD countries in GDP terms while continuing to lower the debt/GDP ratio, the tax burden should be higher in Israel than in its OECD peers.

From 2004 to 2007, the share of civilian public expenditure net of interest in GDP fell by more than 4 percentage points, resulting in erosion of the public services. The erosion stopped in 2007.

From 2004 to 2007, the share of civilian public expenditure net of interest in GDP fell by more than 4 percentage points. The OECD average for this metric, in contrast, has been essentially constant for a decade[40] and higher than in Israel (Table 6). Since 2007, however, the ratio has stopped falling and has been rising gently. Concurrently, the erosion of the public services, as evidenced by the indicators in Table 6, has also stopped.

In terms of purchasing-power parity and per-capita GDP, real public education expenditure per pupil is below the OECD norm, especially at low age groups.

For example, real public expenditure per pupil (not including higher education), which resembled the OECD average in 2000 (in terms of purchasing-power parity and per-capita GDP) increased in Israel, cumulatively, by only 4 percent by 2007. In the OECD countries, in contrast, it increased by 25 percent on average. In this indicator of increase in public expenditure per pupil, Israel is near the bottom of the OECD scale. In 1995, its public expenditure per pupil exceeded the OECD average even though the gap between Israel and the OECD average in total civilian expenditure in GDP was similar that year to its 2007 level. In 2008–2010, as gradual implementation of the New Horizon program began, real public expenditure per pupil in Israel increased by 4 percent; this was reflected in a mild upward trend in the ratio of per-pupil expenditure in per-capita GDP during these years. At the present writing, according to the 2011–2012 budget, real public expenditure per pupil is expected to remain at approximately the 2010 level.[41]

In PPP and per-capita GDP terms, per-pupil public expenditure in Israel is under the OECD standard, especially in early age groups. The disparity is reflected in large

[39] Not including U.S. defense assistance.

[40] After decreasing steeply in the previous decade.

[41] The Oz Latmura ("Courage to Change") program does not appear in the 2011–2012 budget. According to this program, which is approaching signature and implementation, post-primary teachers' wages are to rise within five years, upon full implementation, by around 40 percent, together with a significant increase in teaching hours. In its essence, the agreement mirrors the New Horizon accord that pertains to primary schools.

Table 6.6
Indicators of the Extent of Public Services in Israel Compared with those in the OECD, 1995-2010

	1		2		3		4		5		6	
	Ratio of public civilian expenditure to GDP		Expenditure per student adjusted for PPP[a]		Ratio of public expenditure per student to per capita GDP		Ratio of public health expenditure to GDP divided by the share of the 65+ age group in total population		Transfer payments relative to GDP		Government contribution to the reduction of inequality	
Year	Israel	OECD	Israel	OECD	Israel	OECD	Israel	OECD	Israel	OECD	Israel	OECD
1995	36.7	44.0	4,463	4,382	0.21	0.21	53.7	43.6	16.7	19.5	31.3	31.4
2000	33.7	38.3	4,649	4,980	0.20	0.20	47.9	43.1	17.1	18.9	31.2	31.4
2001	35.9	39.2	m	m	m	m	49.1	44.7	18.5	19.2	32.5	31.4
2002	36.5	39.8	m	5,522	m	0.22	50.0	45.9	18.8	19.7	31.8	31.4
3002	35.6	40.5	4,552	5,829	0.20	0.23	48.7	46.7	18.3	20.1	30.2	31.0
2004	36.0	40.1	4,686	6,048	0.20	0.24	46.4	47.1	17.1	19.9	27.2	31.0
2005	32.6	40.2	4,881	5,926	0.21	0.23	45.3	46.4	16.5	19.8	25.7	31.0
2006	32.3	39.6	4,881	6,175	0.20	0.23	43.3	45.7	15.9	19.5	24.6	31.0
2007	31.8	39.3	4,835	6,225	0.19	0.23	43.5	45.1	15.5	19.3	25.0	31.0
2008	32.4				0.19		45.0		16.4		24.3	
2009	32.8				0.19		45.6		17.0		23.4	
2010	32.9				0.20		45.3		17.0		23.5	

[a] Purchasing power parity.
SOURCE: Central Bureau of Statistics, and Education at a glance 2001-2010, OECD Factbook.

classes, a high pupil/teacher ratio, poor teacher salaries, and few teaching hours. It is also mirrored in the poor performance of Israel's pupils on the PISA exams.[42] Many studies have shown a positive long-term connection between investment in pupils, including those of advanced age, and economic growth.[43] A new OECD publication also finds a positive relation between PISA scores and countries' long-term growth.[44] By implication, Israel should invest more education if it wishes to continue growing.

Pupils' achievements are explained to an extreme degree in Israel—more than in other developed countries—by social background and, especially, sectoral affiliation.

The PISA data, like Israel's own standardized tests, also show that pupils' social background and, especially, sectoral affiliation do much to explain scholastic achievements in Israel versus those in the rest of the developed-market class. The Government of Israel has not managed to narrow the gaps in pupil achievements and, in turn, to enhance equality in educational opportunity. (See also Figures 1 and 2 in Chapter 8.) Notably, the NIS 1.5 billion annual increase in the higher-education budget, approved by the government for implementation over a six-year period, will not solve the problem of students who suffer from a more fundamental constraint—a long-term shortage of liquidity[45]—that prevents parents in weak socioeconomic groups from investing in their children' education because they cannot afford it.[46]

The share of public expenditure on healthcare in GDP, standardized to the younger composition of Israel's population,[47] also surpassed the OECD average at the beginning of the decade. However, even though this indicator has been falling in the OECD countries during the past decade (mainly due to population aging there), Israel spent less than the OECD average on healthcare in 2007 (Table 6).[48] This indicator, too, has been improving since 2008, keeping pace with the upward trend in the share of civilian expenditure net of interest in GDP.

Due to erosion in the main components of civilian public expenditure, the rate of government expenditure in total national expenditure on education fell from 72 percent to 67 percent between 1999–2001 and 2006, and the rate of government expenditure

[42] OECD (2010), PISA 2009 Results: What Makes a School Successful? Resources, Polices and Practices, Vol. IV.

[43] For example, Sala-i-Martin, Doppelhofer, and Miller (2004) used data from 88 countries and 67 different explanatory variables to explain per-capita growth rates between 1960 and 1996: "Determinants of Long-Term Growth: A Bayesian Averaging of Classical Estimate Approach," AER, 813–835, September.

[44] OECD (2010), "The High Cost of Low Educational Performance, the Long-Run Economic Impact of Improving PISA Outcomes."

[45] Carnerio, P., and Heckman, J. J. (2002), "The Evidence on Credit Constraints in Post-Secondary Schooling," *The Economic Journal 112*.

[46] See also Y. Friedman and R. Frish (2008), "The Effect of the Liquidity Constraint on Access to Higher Education," Bank of Israel Research Department, Discussion Paper (Hebrew).

[47] This is done by dividing by the share of those aged 65 and in over the population, a good proxy for expenditure per patient.

[48] For an expanded discussion of this indicator in Israel relative to the developed markets, see R. Gamzu, G. Navon, and D. Chernichovsky (2010), "'Malignant Growth' in the Share of Private Expenditure for Healthcare and Its Price," Jerusalem, Taub Center for Social Policy Studies in Israel (Hebrew).

in total national healthcare expenditure slipped from 61 percent to 57 percent during that time.[49]

Private expenditure on education and healthcare rises commensurate with income level; public expenditure is more equal. Consequently, when the share of private expenditure increases, so does inequality.

Private expenditure on education and healthcare rises commensurate with income level; public expenditure is more equal. Consequently, when the share of private expenditure increases, so does inequality.[50] For example, from 1999–2001 to 2006–2008, private household expenditure on healthcare increased by NIS 2,600 in the uppermost quintile (in 2008 prices) and by NIS 700 in the lowest quintile; annual private expenditure on education increased during these years by NIS 1,100 and was unchanged in the respective quintiles. Total real annual income increased by 12 percent (NIS 35,000) in the highest income quintile and 5 percent (NIS 2,400) in the lowest quintile during that time.[51]

The increase in Israel's poverty rate in recent years, coupled with the widening of income gaps, was partly the result of the government policy on reducing public expenditure, especially on National Insurance benefits.

Israel has an especially high poverty rate and particularly wide income gaps. The OECD judges these to be the country's main weaknesses relative to the rest of the developed market class. Table 6 shows the decline that occurred in government's contribution to mitigating these problems in the past decade: since 2002, as part of its downsizing process, the government reduced transfer payments and benefits to its citizens while it cut tax rates. As a result, its effect on income distribution and the share of the population that it lifted out of poverty (Table 7 and Figure 7 in Chapter 8) declined steadily. At the beginning of the decade, the government's influence on income distribution approximated the OECD average and the share of allowances in GDP was also the same. Consequently, the increase in the poverty rate in the past decade, coupled with the widening of income gaps, was also a corollary of the government's policy of reducing public expenditure and, especially, benefits—a policy that had the further goal of incentivizing the poor to enter the labor cycle.

International comparison shows that the larger the share of civilian public expenditure, the stronger the state's effect on income distribution is.

Figure 6 plots the relation between the share of civilian public expenditure net of interest in GDP in the OECD countries and the effect of the government on income distribution. The relation is relatively strong and positive: the larger the share of civilian public expenditure, the more influence the state has on income distribution. The graph also shows that Israel sits more-or-less on the regression line, meaning that given its rate of civilian public expenditure net of interest in GDP, its government is as efficient in this respect as the OECD average. However, the decrease in Israel's share of public expenditure in GDP has reduced the government's influence on income distribution, causing Israel to shift to the left of the regression line.

Israel's share of public expenditure for Active Labor Market Policy in GDP is one of the lowest among OECD countries.

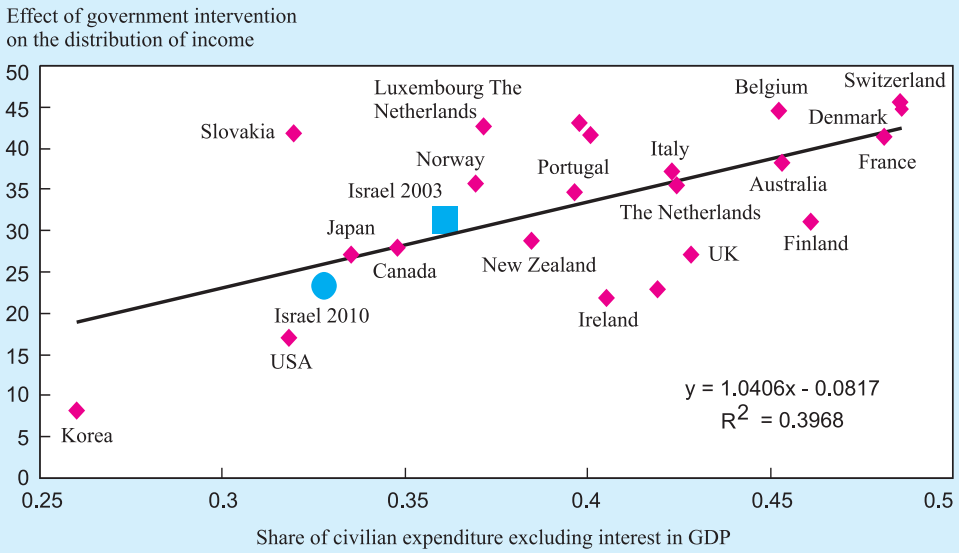
The steep cutback in benefits was implemented both to stay within the budget and to diminish the implicit disincentive to labor that the benefits create. The cutback did contribute to the increase in the labor-force participation rate to a record level in 2010, but it was not accompanied by a supportive government policy that would help workers find their place in the labor market at an adequate wage. Labor is failing to

[49] Data: Central Bureau of Statistics, "National Expenditure on Education and Health."

[50] Notably, the reverse causality may also apply: when inequality increases, so does private expenditure.

[51] Data: Household Expenditure Surveys for the relevant years and processing by Bank of Israel. In the analysis including 2009, the expenditure gap between the quintiles even widened.

Figure 6.6
Share of Civilian Expenditure Excluding Interest in GDP, and the Effect of Government Intervention on the Distribution of Income in Israel and the OECD, 2008



SOURCE: Based on OECD data.

lift many workers, especially those in single-breadwinner households, out of poverty (Tables 1 and 4 in Chapter 8). One reason for this seems to be Israel's especially slack governmental Active Labor Market Policy. The share of public expenditure for this purpose in GDP and, in particular, in public expenditure is one of the lowest among OECD countries (Chapter 5, Table 1 in the 2009 Bank of Israel Annual Report).

The national rollout of the Earned Income Tax Credit program is expected to reduce the proportion of the working poor.

The national rollout of the Earned Income Tax Credit ("negative income tax") may ease the plight of the working poor somewhat.[52] Even at full deployment, however, the Government of Israel invests scanty public resources in training people to make a decent living in the labor market. It should also be borne in mind that while the EITC increases workers' take-home pay at no cost to the employer and may even encourage participation in the labor force, it does not equip people who do not successfully join the labor market with tools that would increase their productivity. This goal has to be approached in ways that focus more on specific population groups and pledge suitable resources to the purpose. As a case in point, total government expenditure in 2010 for the encouragement of employment among haredim (the "ultra-Orthodox") was NIS 308 million—0.04 percent of GDP, a negligible budget relative to the challenge.

[52] In its first year of implementation, the EITC reduces the incidence of poverty among recipients by 4.5 percent.

7. FINANCING THE DEBT

The decrease in the debt/GDP ratio in 2010 was supported by a sharp decline in government issuing needs, as more than half of the deficit was financed by privatization revenues, payback of credit by the public, and use of sources raised by over-issuing in 2009.

The public debt/GDP ratio declined in 2010 after having grown mildly in 2009, reverting to the downward trend in recent years. The decrease reflected the recovery of economic activity and the contraction of the government deficit. The main contributing factor in the turnaround, however, was over-issuing in 2008 and 2009, making it possible to finance some of the budget deficit from internal sources amid the stabilization of economic activity and the increase in economic certainty. As for the composition of the debt, the continued decline in the share of external debt and increase in that of internal debt—due partly to relatively high issuing costs in foreign markets—was evident. Debt issues in 2010 were also typified by short durations, reflecting the government's attempt to reduce issuing cost.

a. The outstanding public-sector debt and the debt/GDP ratio

The downward trend in the (gross) public-sector debt/GDP ratio in 2003–2008 resumed in 2010. The ratio fell by 3 percentage points and reached 76.2 percent. The main reasons relate to the components of the year-on-year change. Although nominal growth was vigorous in 2010, it contributed to the decrease in the ratio much as it did in 2009. Thus, the main reason for the reversal of trend in the debt/GDP ratio was a decline in (net) capital-raising needs to 1.4 percent of GDP—4.1 percentage points lower than in 2009. The decline reflected not only the contraction of the government deficit but also, and mainly, a change in the way the deficit was financed. Thus, while the total government deficit decreased (but remained high at NIS 24 billion), net issues were only NIS 11.2 billion. The NIS 13 billion gap between net issues and the government deficit was bridged by strong privatization receipts (NIS 4.5 billion) and drawdown of the government's deposits with the Bank of Israel (NIS 8.5 billion). The drawdown of deposits, in contrast to the buildup of the deposits in 2008 and 2009, gives evidence of an increase in confidence among those who manage the debt in the stabilization of economic activity and the decrease in the risks involved in recycling the debt. Consequently, much of the decrease in the public debt/GDP ratio in 2010 traces to over-issuing in the two previous years. Additional contributing factors were the revaluation of the outstanding foreign-currency and CPI-indexed debt. Thus, NIS appreciation against other currencies lowered the outstanding public debt by 0.6 percent of GDP, and the slowing of the CPI increase, converging to the upper bound of the inflation target, reduced the indexation payments on account of indexed debt (Table 7).

The decrease in the public-debt/GDP ratio reflects the rebound of domestic economic activity and its resilience relative to the OECD countries. Government deficits in the OECD countries remained high in 2010, in contrast to Israel, and abetted the continued upturn in debt to 84 percent of GDP on average. The fact that the OECD countries' debt/GDP ratio climbed for the second consecutive year indicates that these countries moved even farther from the target set in the Maastricht Treaty—which

many developed countries adopted as a target—of 60 percent at the most.[53] Israel, in contrast, drew closer to the target in 2010; accordingly, under the new debt rule, it was able to increase public expenditure in the 2011–2012 government budget while allowing the debt/GDP ratio to decline moderately.

Table 6.7
Components of Change in Gross Public Debt in 2008 and 2009
(percent of GDP)

	2009	2010
Debt at the end of year	76.8	79.2
Nominal increase in GDP	-4.3	-4.2
Net borrowing	5.5	1.4
of which Budget deficit, cash basis	5.1	3.7
Repayment of net credit by the public[a]	-0.7	-0.7
Receipts from privatization	-0.3	-0.5
Total change in the government's deposits in banks[b]	1.4	-1.1
Revaluation of indexed local-currency debt[c]	1.5	0.9
Revaluation of foreign-currency debt	0.0	-0.6
Adjustment for costs of the issue	-0.5	-0.2
Remainder[d]	0.2	-0.3
Total debt at the end of year	79.2	76.2

[a] Including credit extended and principal paid.
[b] Surplus borrowing.
[c] The rise in the CPI during the year.
[d] Adjusted according to issue price, and rounding. At this stage the data are based on initial assessments, which is why the remainder is still high.
SOURCE: Bank of Israel.

b. Composition of the debt

In 2007–09, as the global financial crisis crested and domestic prices overshot the upper bound of the inflation target, the structure of debt raising in Israel deviated from the typical trends in previous years: the share of external debt in total debt decreased considerably and that of internal debt rose, the proportion of unindexed, fixed-interest debt in domestic issuing plunged, and the proportions of CPI-indexed and adjustable-

[53] The Maastricht Treaty, concluded in the early 1990s, stated that members of the European Monetary Union should plan a fiscal policy that would support a "debt rule" by which the debt/GDP ratio should not exceed 60 percent. In cases where the debt exceeded this target, an effort was to be made to converge to the target gradually. Pursuant to the adoption of the treaty, many other developed countries accepted this rule as a target, positioning it as one of the main indicators of a country's fiscal stability. Notably, the debt target was set as part of a pan-European accord and seems to have reflected the average level of debt at the time, as opposed to the outcome of an economic analysis relating to the optimal level of the ratio in consideration of domestic needs and in accordance with the government's ability to support economic activity while maintaining fiscal stability.

interest debt increased. These changes in the composition of issuing reflected the slowing of economic activity in Israel and abroad, the decrease in certainty, and the need to manage the debt under conditions of severe instability and market risks.

The proportion of foreign-currency-denominated government debt continued to contract in 2010, pursuant to the trend since 2006. The continued decline in the share of external debt in the total debt reflects, among other things, the relatively high cost of issuing in these markets.

In 2010, as in recent years, the share of external debt fell and that of internal debt rose (Figure 7). Even though issuing abroad increased considerably relative to 2007–09, net issuing remained negative and the proportion of government debt denominated in foreign currency continued to contract in, pursuant to the trend since 2006. Government issues abroad were USD 3.4 billion, two-thirds in the open market without U.S. government guarantees and the rest in Israel Bonds. The continued decrease in the foreign-currency-denominated component of the total debt reflects the relatively high cost of issuing in these markets. It appears, however, that the government is making an effort to raise capital in this manner due because foreign-currency government debt serves as a benchmark for future government and corporate issues abroad. This aside, Israel's government bonds were especially well subscribed in the review year, as reflected in a decrease in the risk premium from 2.63 percent in 2009 to 1.49 percent in 2010.

The Ministry of Finance carried out USD 1 billion in swap transactions in foreign-currency debt. The sizable increase in the size of these transactions reflects the government's estimates of future NIS depreciation against the USD and USD appreciation against other currencies.

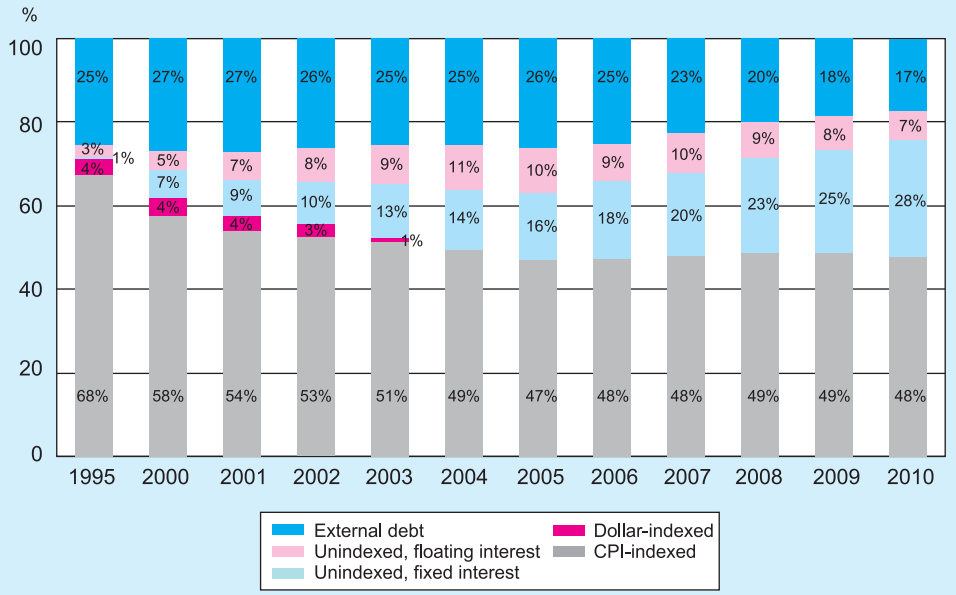
In addition to issuing abroad, the Ministry of Finance carried out USD 1 billion in swap transactions[54] in foreign-currency debt during the review year: USD 700 million within the framework of USD–NIS forward transactions and the rest in USD–EUR transactions. The considerable increase in the size of these auctions, against the background of powerful NIS appreciation against the USD, may have been done in an attempt to take advantage of the NIS appreciation trend to draw down the foreign-currency debt. If this is what really happened, it reflects the government's estimates of NIS depreciation against the USD and USD appreciation against other currencies. While financing the debt by means of these transactions helps to mitigate currency risk, it may also make the management of the debt less transparent, as no detailed records of these transactions are published.

The share of unindexed fixed-rate debt in the total domestic debt continued to trend upward and that of CPI-indexed and adjustable-rate debt continued to decline. In the composition of debt issues, in contrast, unindexed adjustable-rate activity increased at the expense of other forms of issuing.

The trends in the composition of the internal debt in 2010 resembled those in the past decade, but the composition of issues showed a sizable upturn in unindexed adjustable rate issues at the expense of the other issuing channels. In 2010, the unindexed fixed-rate debt continued to trend upward, its share in the total internal debt rising by 3.5 percentage points. Concurrently, the proportions of CPI-indexed and adjustable-interest debt in total domestic debt decreased. The resulting composition of debt issues is different than the holdings of the debt: the shares of unindexed fixed-rate debt issues and CPI-indexed bonds in total domestic issues declined by 4.8 and 2.7 percentage points, respectively, and issues of unindexed adjustable-rate debt increased by an aberrant 7.5 percentage points. This rate of increase even surpassed that of 2008, a year of growing uncertainty. Due to large redemptions of this type of debt in 2010 (NIS 13 billion), net

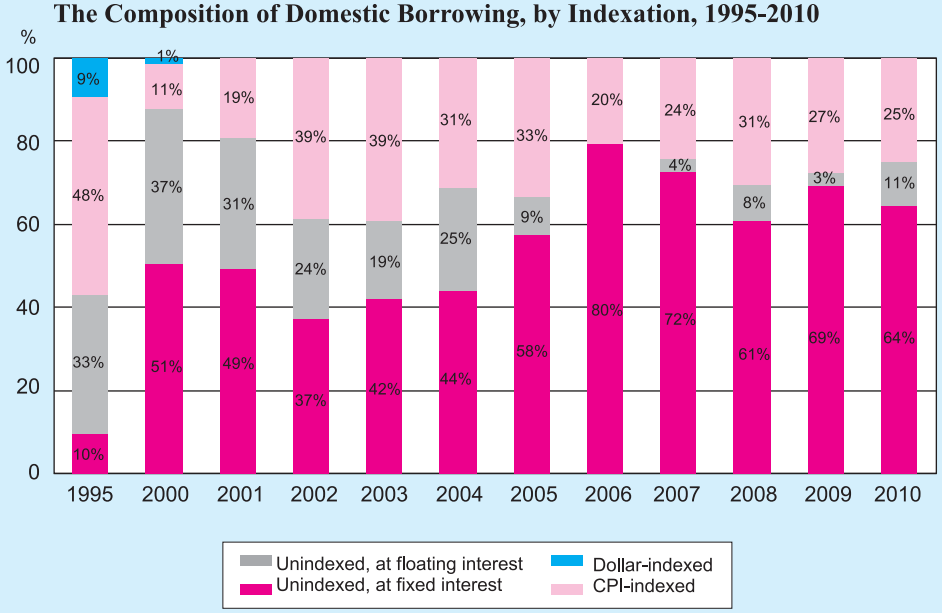
[54] Swap transactions in foreign-currency-denominated debt are different in nature from those in NIS-denominated debt. They are more like forward transactions, in which the government sets an *ab initio* fixed exchange rate for currency conversions at the time coupon is paid and upon maturity of the foreign-currency-denominated debt. In fact, these transactions were meant to set the exchange rate and mitigate the implicit currency risk of having foreign-currency-denominated debt.

Figure 6.7
Composition of Government Debt, 1995–2010



SOURCE:Based on Ministry of Finance data.

Figure 6.8
The Composition of Domestic Borrowing, by Indexation, 1995-2010



SOURCE:Based on Ministry of Finance data.

issuing of adjustable-rate bonds was negative and, accordingly, the proportion of these instruments in the total debt decreased (Figures 7 and 8). However, beyond the wish to offset some of the large redemptions of unindexed adjustable-rate debt, the increase in debt issues of this type, at the expense of the other issuing methods, is evidently also explained by the wish to take advantage of the low domestic interest rates. However, since the cost of the government debt is measured from a long-term perspective, it depends on future interest payments and the cost of recycling. Since the slope of the nominal yield curve is relatively steep and positive at the present writing, interest payments on adjustable-rate paper are expected to rise considerably. Since the cost of issuing on other paths has also fallen considerably in recent years, thought should be given to issuing debt instruments such as CPI-indexed bonds or unindexed fixed-rate paper at precisely this time, due to considerations of long-term interest payments (Figure 9). Unindexed fixed-rate bonds have several advantages over CPI-indexed debt: a higher proportion of unindexed debt helps to reduce the number of indexation mechanisms in the economy, thereby abetting monetary stability. Also, this is the most issued and most-traded debt instrument in the world; increasing its share in the total debt helps to set a benchmark for future government issues and Israeli corporate issues of this type. Conversely, one of the main objectives in managing the debt is to minimize the implicit risks to the budget in interest payments by keeping government revenues and expenditure in alignment and, as a result, minimizing the variance of the government deficit. For these considerations, CPI-indexed debt is preferable to unindexed debt at fixed interest.

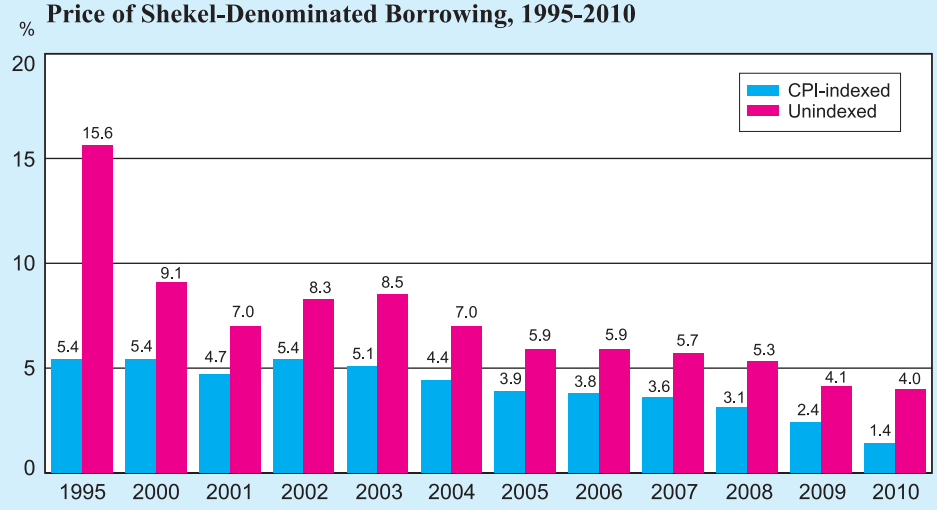
c. Term to maturity of outstanding debt and debt management

The average duration of the outstanding government debt was unchanged in 2010 at 6.4 years. However, the average duration of total issuing declined considerably, to 6.5 years in 2010 as against averages of 9.9, 7.6, and 7.5 years in 2007, 2008, and 2009, respectively.

The average term to maturity of the outstanding government debt is an indicator of its stability and one of the indicators that investors use to assess the government's financial situation. The longer the term, the more stable the debt is perceived and the more trust investors place in the government, since the prolongation of the issuing horizon eases concern about massive recycling of debt in the event of a temporary market crisis and allows greater convenience in the spreading of issues and redemptions. At times of rising economic uncertainty, however, short-term issues make it possible—due to their much greater liquidity and tradability—to raise capital at lower cost. By carrying out such issues, the government also signals its belief that future interest will be lower than the market's outlook.

The average term to maturity of the outstanding government debt was unchanged in 2010 at 6.4 years, due to a decrease in that of unindexed fixed-rate bonds from 5.5 years to 4.8 years and a mild increase in the duration of other types of paper. The decrease in the terms to maturity of fixed-rate debt was reflected in the government's extensive use of short-term issues with an average term to maturity of half a year; in the second half of 2010, 40 percent of total unindexed fixed-rate issuing was of this type. Notably, the government made extensive use of short-term issuing even though it had built up a chest of NIS 20 billion in cash due to over-issuing in 2008–2009.

Figure 6.9
Price of Shekel-Denominated Borrowing, 1995-2010



SOURCE: Bank of Israel and Ministry of Finance .

Although term to maturity increased in the other kinds of issuing, the main reason was not the issuing of longer-term bonds but large redemptions and issues of new debt. As for the terms to maturity of the issues, the focus in 2010, much as in 2008–09, was on short and medium terms. The average term to maturity of total issuing declined gradually to 6.5 years in 2010, as against averages of 9.9, 7.6, and 7.5 years in 2007, 2008, and 2009, respectively. The decrease included both unindexed fixed-rate bonds and CPI-indexed instruments. In contrast, the average term to maturity of adjustable-rate bonds increased significantly—from 2.3 years in 2007 to 10 years in 2010.

In sum, the Ministry of Finance successfully took advantage of market conditions to raise debt at low cost in 2010. The decrease in cost originated partly in the macroeconomic environment, as manifested in falling interest rates to all terms to maturity, and partly in issues of short-term bonds (in which the decrease in interest was more acute). It should be borne in mind, however, that cheap issuing of debt (as the result of the short term) involves an increase in risk. An issuing strategy of this type reflects the Ministry of Finance's belief that future interest rates will be under the market's outlook. If the Bank of Israel rate rises more quickly than the government expects, the government's recycling costs may rise and, in turn, so will its interest expenditure in the years to come. Accordingly, in future issues it would be useful to compare this alternative with that of diversifying terms to maturity by issuing to both medium and long terms in order to smooth future redemptions.

Box 6.1
Real Employee Gross and Net Wages in the Past Decade

The pace of increase in average real gross wage per employee post dropped sharply in recent years, from 3 percent per year in 1995–2001 to –0.1 percent in 2001–2010 (Table 1). Since per capita GDP and per worker product increased at similar rates in both periods, the change of trend in gross wage cannot be explained by a decline in the rate of increase of per capita GDP or per worker productivity.[1]

One possible explanation for the change of trend in the pace of increase of average gross wage is the lowering of tax rates on wage, which allows net wage to rise without an increase in employer's wage cost. In this context, employers' wage decisions in the past decade may have taken into account future or expected changes in net wage, which were known in advance because they belonged to a multiannual tax-reform program.

The government's decision on a long-term program of reductions in direct taxes on labor was made in 2003. The program was accelerated in 2005; in 2009, it was extended to 2016. A good proxy for the average tax rate on wage[2] is the quotient of income-tax receipts on account of employees' labor divided by total employee income. (Even if enforcement mechanisms have changed over the years, they may be regarded as part of the changes in the effective tax rate.) From 1995 to 2000, the average effective tax rate rose from 29 percent to 32 percent, and after 2001 it fell back sharply, to 23 percent in 2010.

Table 1
Average Annual Growth Rates of Gross and Net Wages, Compared to Average Annual Growth in Per Worker and in Per Capita GDP

	1995-2001	2001-2010
Gross wage	3.0	-0.1
Gross wage in business sector	3.6	-0.6
Net wage	2.5	1.2
Net wage in business sector	3.1	0.7
GDP per capita	1.8	1.6
GDP per employee	1.7	1.4

[1] Even if we replace the 2001 wage level, which seems to be an outlier in Figure 1, with a wage level derived from the trendline in the decade preceding 2010, we find an abrupt change in the annual average pace of wage growth: from 1.8 percent in the previous decade to 0.02 percent in the current decade. In contrast, the rate of increase in net wage was similar in both decades, at 0.9 percent per year.

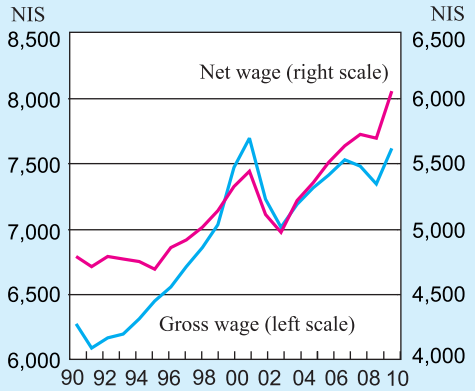
[2] In this calculation, taxpayers are weighted in accordance with the share of their gross income in total gross employee wage income. A different calculation, in which all taxpayers are equally weighted, yields a much lower result but follows much the same path because there was no extreme change in the distribution of gross wage during the years examined.

Apart from the tax cuts, additional factors may explain the decrease in the estimated tax rate. One of them is an increase in the employment rate of women during the period examined. Since women receive more tax credit points than men, an increase in their employment rate relative to men would lower the estimated tax rate. Two findings weaken this argument. First, the share of women in total employment increased more quickly at the beginning of the period, when the estimated tax rate rose. Second, even among steadily employed workers, i.e., with a constant composition of workers, the tax rate was found to have declined from 2000 onward despite the increase in these workers' wages, which pushed them into higher tax brackets. Another factor would be work in multiple shifts, since the calculation is based on the employee post and not on the individual worker. However, according to data from the Israel Tax Authority, the average number of posts per worker has not changed in the past decade.

By using the average effective statutory tax rate, one may derive the average net wage per employee post from the average gross wage based on National Insurance data for wage per employee post in the respective years. (If we calculate the net wage of each employee separately and then average the results, we get the same outcome.) The changes in the tax rate increased the average real net wage per employee post by 2.5 percent on annual average in 1995–2001, less than the rate of increase in gross wage during this time, and by 1.2 percent on annual average in 2001–2010, surpassing the average rate of increase of gross wage during that time (Figure 1).

Since the beginning of the income-tax reform in 2003, the ratio of gross wage to per worker output has been falling while net wage relative to per worker output has adhered essentially to its long-term average (Figure 2). Furthermore, the average absolute annual deviations from the average value of the gross wage/per worker output ratio exceed the net wage/per worker output ratio. In other words, in the long term, net wages correspond better to per worker output than to gross wage.

Figure 1
The Real Gross and Net Monthly Wage per Employee Post, 1995-2010

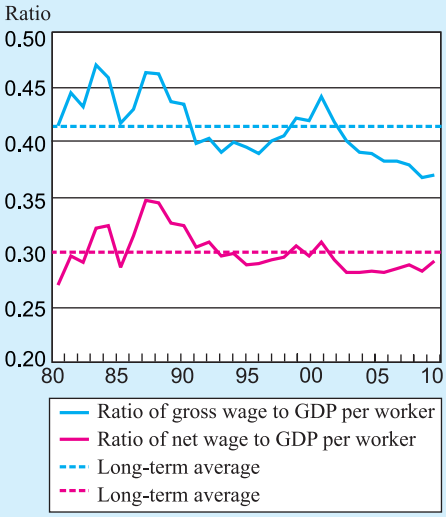


SOURCE: Based on Central Bureau of Statistics data.

The calculated increase in average net wage does not necessarily indicate an increase in the net wage of all groups of workers; it may reflect mainly an increase in the net wages of high income workers only. However, an analysis of the individualized data[3] (Table 2, top

[3] Workers who worked at least ten months during a year (70 percent of all workers) in the 30–45 age bracket (50 percent of workers). These filters increase the gross share of workers in the lowest quintile by roughly three times.

Figure 2
The Ratios of the Net and Gross Wage to GDP per Worker, 1990-2010



SOURCE: Based on Central Bureau of Statistics data.

panel) suggests that it reflects an increase in the net wage of most workers who worked at least ten months during a year in all parts of the wage distribution. The main reason for the relatively high tax rate applied to workers in the lowest wage quintile is health-tax payments and National Insurance contributions; the component of income tax among workers in this quintile, among those who worked at least ten months during a year, is only 1 percent.

Employees' wages rise commensurate with age, and the higher the wage, the higher the employee's average and marginal tax rates (Table 2, bottom panel). This effect has the opposite impact on net wage as the reform, which lowers the direct-tax rates. Our examinations found that the effect of the lowering of statutory tax rates was, on average, stronger than that of the upward movement on the tax-bracket scale. Thus, on average, workers who persevered at their jobs paid income tax at a 16 percent average rate in 2008 as against 19 percent in 2000. The decrease in the average tax rate of steadily employed workers was distributed unequally, so that the higher the worker's wage quintile was in 2000, the greater the decrease in his or her tax rate.

One may also compare the increase in a perseverant worker's net wage with the situation that would have prevailed had the tax rates not been changed (Table 2, left-hand column). The table shows that the tax rates paid by workers who stuck to their jobs[4] decreased less on average than those of other workers, irrespective of their wage quintile in the base year. This was due to the increase in their wage, which moved them into a higher tax bracket. Furthermore, the higher the wage quintile of steadily employed workers was in 2000, the more they benefited from the tax cuts; workers in the lowest quintile hardly benefited from them at all.

In sum, the reform that is reducing direct taxes on labor, beginning in 2003 and scheduled to continue until 2017, helped to make the Israeli economy more competitive. The tax cuts allowed employees to increase their net wages without increasing employers' production costs and boosted the net wages of most workers who stayed on their jobs at least ten months in a given year, especially those who earned high wages.

[4] Those who worked at least ten months during a year and were in the 30-45 age group. Some 85 percent of persons who worked in 2000 also worked in 2008.

Table 2
Average Tax Rates for All Workers and For Steadily Employed Workers, 2000-08

Wage quintile	Average tax rate in 2000 [1]	Average tax rate in 2008 [2]	Average tax rate if tax rates had remained as they were in 2000 [3]	Difference relative to gross income [2]-[3]
All workers				
1	4.3	3.0	4.1	1.1
2	5.8	3.9	5.7	1.8
3	9.0	5.3	9.0	3.7
4	17.3	10.8	17.2	6.4
5	32.3	26.0	32.3	6.3
Steadily employed workers				
1	6.2	5.6	6.5	0.9
2	6.3	6.0	7.7	1.7
3	8.5	7.8	10.9	3.1
4	16.6	13.4	19.4	6.0
5	32.0	26.9	32.0	5.0

SOURCE: Based on SHAAM Information Systems of the Ministry of Finance.

Box 6.2
The Budgetary Cost of the Mandatory Pension Arrangement

When the mandatory pension arrangement, activated in early 2008, is fully implemented in 2014, its annual budgetary cost is expected to exceed NIS 1 billion—more than three times the savings on income supplement benefits that the arrangement is expected to yield several decades farther on. Given the current structure of the labor market, the tax system, and the National Insurance benefits, the arrangement may also be harmful to many workers in the weaker segments of the labor market because it reduces their income in years when their per capita household income is low and increases it when it is high.

Under the mandatory pension arrangement, activated at the beginning of 2008, every employee in Israel must contribute 15 percent of his wage for pension saving, i.e., payout of a monthly benefit starting at retirement age. The arrangement is being implemented gradually and will reach its full rate in 2013. The provision applies to wages up to the national average, one-third withheld from the employee's wage and two-thirds paid directly by the employer. Since 70 percent of employees earn less than the national average wage, the mandatory provision applies to their entire wage. The arrangement, originally adopted

under an agreement between the Histadrut and the employers' organizations, was applied to all workers countrywide by means of an expansion order signed by the Minister of Industry, Trade and Labor. In late 2010, the Histadrut and the employers agreed to raise the provision to 17.5 percent starting in January 2014; the minister is expected to apply an expansion order to this increase, too.

Examining the implications of the mandatory pension arrangement, we find that given the current structure of tax benefits for retirement saving and of National Insurance benefits, the arrangement may be detrimental to a large share of workers in weak labor-market groups[1]. The arrangement reduces these workers' income precisely in the years when their standard per person household income is relatively low and increases it at times when it would be high. Furthermore ,for large groups of low-income workers, the arrangement will lower the total level of benefits that the state awards for retirement saving during working years—even though the benefits they received via National Insurance, when not saving for retirement, resembled those that stronger workers, who did save for retirement, received via the tax system. The arrangement also worsens the situation of low-income workers relative to people who do not work at all, who for this reason continue to receive means-tested income-supplement benefits. The analysis also finds that before the arrangement went into effect, workers acted in a way that reflected the incentives generated by the tax system and National Insurance, their household structure ,and their employment path. When the mandatory-pension arrangement was first applied, the behavior of workers and their employers showed that those expected to be the most harmed by it tended not to comply and, if they complied, they did so at rates approximating the minimum that the arrangement allows.[2]

Against these drawbacks, the mandatory-pension arrangement has the potential advantage of future savings to the state budget by reducing income-supplement payouts to the elderly. By making retirement saving mandatory, the reform assures that the current generation of workers who reach retirement will have an adequate pension income and will need no state assistance beyond the universal old-age pension. The increase in retirement saving in the present, however, reduces tax revenues because savers receive tax benefits (which include the employer's direct provision) that would not be given were it not for the mandatory pension

1 Adi Brender, "Distributive Effects of Israel's Pension System," Bank of Israel discussion paper 2009.10.

2 Adi Brender, "Implications of the Mandatory-Pension Arrangement for Labor Cost," Economics Quarterly (2011, forthcoming).

arrangement. The question is whether the arrangement will cost more in revenue than it will save later on.[3]

The loss of tax revenue as a result of the mandatory pension savings was calculated on the basis of a random sample of 10 percent of employees whose employers reported their income to the income tax authorities in 2007, the year before the arrangement went into effect. It was found that some 760,000 workers had not been saving for retirement—either directly or via their employer (including eligibility for "budgetary" pension). The forecast revenue loss on account of these workers was estimated in the following way:

1. Workers who do not reach the tax threshold: the employer's direct provision for mandatory pension (not including the severance pay component[4]), multiplied by the corporate tax rate.[5]

2. Workers whose wage is above the tax threshold but below the national average: the total wage multiplied by the rate of the pension provision and then by 0.35, the rate of the income-tax credit for pension savings. The credit for each employee was limited by the employee's income tax liability, in consideration of the tax-credit points that he or she is eligible for. In addition, the tax loss on account of employer's provision was calculated in the manner described above.

3. Workers whose wage exceeds the national average: for these workers, the credit was calculated by multiplying the national average wage by the rate of the pension provision and then by 0.35. In this case, too, the credit was limited so as not to overshoot the worker's actual tax payments. The tax loss for employer's provision was calculated in the manner described above but applied only to the portion of wage up to the national average.

Apart from the tax loss on account of workers who saved nothing for retirement until the arrangement was activated, there is an additional loss on account of employees who saved at a rate below that established by the mandatory-pension arrangement—directly or by means of their employers. The revenue loss was estimated in a manner similar to the calculation described above but only for the difference between the minimum provision rate established by law and the rate at which these employees saved in 2007.

[3] The calculation abstracts from the added cost occasioned by the implementation of mandatory pension to the general government as an employer. This is for two reasons: these costs were known when the decision on the expansion order was made, and since a large proportion of general-government employees had a pension arrangement in effect even before it became mandatory.

[4] The assumption is that employers imputed their expenses for severance-pay provision even before the arrangement went into effect.

[5] The calculation disregards, on the one hand, the possibility that employers will reduce wage payments in order to offset the cost of the pension provision and, on the other hand, the added tax rate applied to profits withdrawn from the firm by its owners or the possibility that the employer is not a corporation.

Once the full rate of mandatory pension provision is attained—in 2014—the decrease in tax receipts due to the arrangement will be around NIS 1.2 billion annually (Table 1). Countering this sum will be the savings on means-tested income-supplement benefits as a result of the arrangement. The saving is relevant only in regard to those who will have a lengthy working life. When one does not work, one does not make pension provisions; therefore, if a person has a brief working life, he or she will not accrue enough pension savings to offset some—let alone all—of the income-supplement benefit. To estimate the saving, we assumed that everyone who works at least fifteen years during their lives will have earned a pension large enough to disqualify them for an income supplement. (This is a lenient assumption, with respect to most low income employees, who account for most of those who did not save for retirement before the arrangement was activated.[6]) It was found that National Insurance pays out annually NIS 350 million–NIS 400 million in income supplement benefits for elderly people who worked at least fifteen years,[7] much less than the tax-revenue loss occasioned by the mandatory pension arrangement. Furthermore, the current level of payouts is larger than in the past and larger than is expected in the future, since more than 10 percent of it is made to immigrants who arrived in the early 1990s and had not managed to accrue meaningful pension savings. Furthermore, in comparing the expected saving with the loss of tax receipts, it should be borne in mind that the loss of tax receipts is immediate whereas it will take several decades for the saving to become meaningful; this will reduce its discounted value greatly. Thus, it is clear that the mandatory pension arrangement will inflict a substantial fiscal cost over the years and certainly cannot be justified on the basis of future budget saving, at least on the basis of the current structure of National Insurance benefits. Therefore, if the mandatory pension arrangement remains in force in its current form, then the structure of tax benefits for retirement savings and the structure of National Insurance Institute old age allowances should be redesigned in order to rectify at least part of the distortions that the agreement creates.[8]

Estimated Fiscal Cost of the Mandatory Pension Arrangement

(NIS million per year, 2010 prices)

Revenue loss on account of payments by workers who had not made pension provisions before the arrangement[a]	383.9
Estimated revenue loss on account of employers' provisions	511.5
Tax loss on account of increased provisions of employees who had saved at less than the minimum rate set forth in the arrangement	318.4
Total	1,213.8

[a] Employees who worked and did not make pension provisions in 2007 and continued to work in 2008. Calculated for men aged 21–67 and women aged 21–62 who worked at least four months in 2008 and had less than NIS 3,000 in annual income

6 See Brender (2010) above.

7 Calculation performed by Gabriella Heilbron of the National Insurance Institute Research Administration.

8 For a discussion of alternative policies, see Brender (2011) above.

Box 6.3
Environment Related Taxes

Environment related taxes serve two purposes—fiscal tool to increase tax receipts and important policy tool for the correction of externalities, i.e., air pollution and use of exhaustible natural resources. In Israel, the rates of several environmentally related taxes have been raised in recent years,[1] instead of direct taxes, which have been reduced.

A comparison with other developed countries shows that in 2008 the revenues from environmental taxes, in terms of percent of GDP, were high relative to the average for the other OECD countries, primarily due to the taxes on vehicles and fuel consumption. This is the result of a combination of a high purchase tax on motor vehicles, high excise tax on fuel, and inadequate public transport, which forces most of the population to rely on private vehicles. The result is inelastic demand for fuel relative to its price, which has led to the environmental taxes on vehicles and fuel consumption becoming a significant source of income, without correcting the adverse externalities. In contrast, environmental taxes other than those on vehicles and fuel[2] constitute a negligible share of environmental tax receipts in Israel, as in most developed countries. Income from these taxes, however, are expected to rise considerably as a result of new environmental laws relating to waste disposal.

Different organizations define environment related taxes differently. To keep the comparison simple, we chose to stick to the OECD definition: any tax, fee, or duty imposed by the general government on the use and exploitation of natural resources or the emission of pollutants.[3] General taxes, such as VAT and corporate tax, are not defined as environment related. According to this definition, Israel has fourteen types of environment related taxes. Six of them apply to fuel and motor vehicles and are the country's main sources of environment related tax receipts.

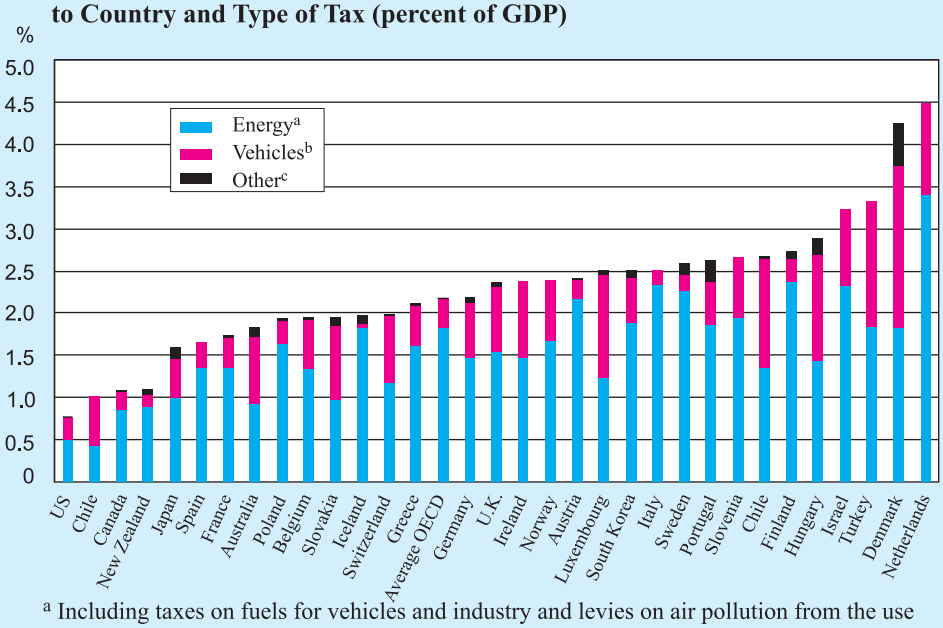
Figure 1 shows general-government receipts from environment related taxes as a percent of GDP in developed countries in 2008. Israel is in the fourth place, with 3.25 percent of GDP in environment related tax receipts that year (around 9 percent of total tax receipts). Most European countries have tax receipts of 2–3 percent of GDP; the Netherlands and Denmark are especially high (4.5 percent

[1] The fuel excise was raised by 30 agorot per liter in January 2009; the coal excise was raised from NIS 8.6 per ton in 2010 to NIS 34 per ton in 2011 and will rise to NIS 64 per ton in 2012; and the mixed household-waste landfill duty rose from NIS 40 per ton to NIS 50 and is projected at NIS 90 per ton in 2015.

[2] Sewage tax, landfill duty, mining and quarrying tax, revitalization of abandoned quarries tax, congestion fees, bottle deposit, packaging landfill tax, tire landfill tax, and ionizing radiation tax.

[3] OECD/EEA Database on Instruments used for Environmental Policy and Natural Resources Management. www.oecd.org/env/policies/database

Figure 1
General Government Revenues from Environmental Taxes in 2008 According to Country and Type of Tax (percent of GDP)



[a] Including taxes on fuels for vehicles and industry and levies on air pollution from the use of energy.
[b] Including the purchase tax and duties on the purchase of vehicles and their spare parts.
[c] Including the sewage tax, the landfill tax, the mining and quarrying levy, the quarry restoration levy, congestion taxes, the deposit on empty bottles and the tax on ionizing radiation.
SOURCE: Based on OECD and Central Bureau of Statistics data.

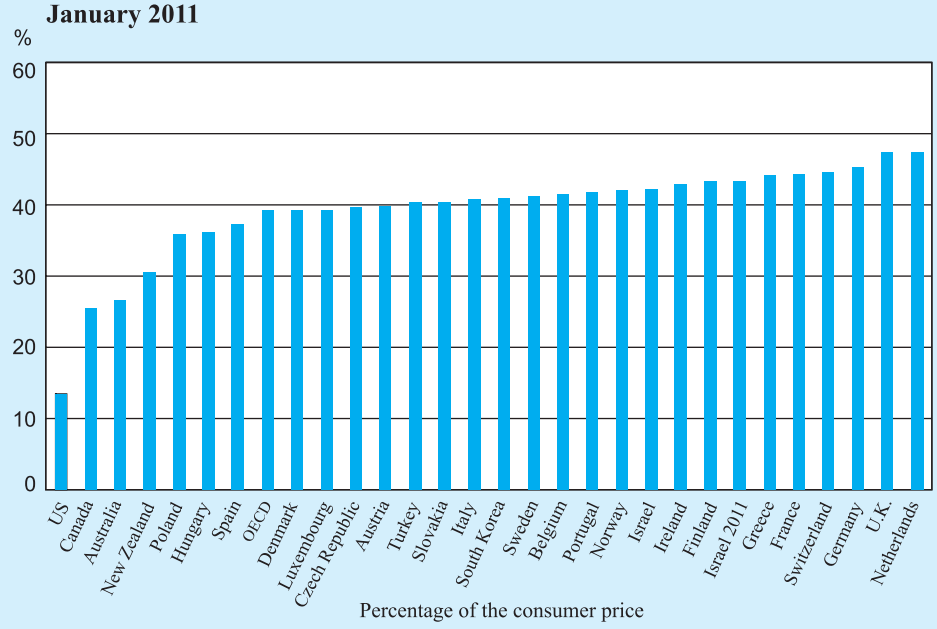
and 4.2 percent of GDP, respectively). In the Americas (U.S., Chile, and Canada), the rate is 1 percent or lower due to low taxation of petroleum and its products.

Differences in environment related tax receipts among countries may also trace to different characteristics of the countries being compared. First, environmentally related taxes are only one item in the potential policy toolbox; hence, differences in levels of taxation may originate in the usage of different policy tools. For example, a country can maintain the quality of its environmental policy by means of agreements, regulation, or an increase in public expenditure. Second, differences in tax receipts may originate in differences in the tax bases: countries at higher levels of industrialization may use more energy that creates more pollution. Third, other differences in countries' environmental characteristics—climate, territory, density, awareness, and education in preserving the environment, among other factors—may lead to differences in tax receipts.

In the past two years, Israel's fuel excise was raised twice[4] in order to reduce the government deficit. Even afterwards, the share of the excise in the consumer price of gasoline in Israel (43 percent) resembled the average among non-oil-producing developed countries (Figure 2). However, the combination of a high motor vehicle purchase tax and the recent increases in the fuel excise have apparently placed severe limits on the ability to use these tools to raise tax receipts in the future.

Concurrently, two motor-vehicle taxation reforms went into effect in 2009. In August of that year, a "Green Taxation" reform went into effect, which changed the method of calculation of the purchase tax on vehicles: from a uniform rate to a sliding rate commensurate with the level of pollution that the vehicle produces. In addition, in January 2009, the method of imputing the usage value to employees of employer owned vehicles was revised to a fixed proportion of

Figure 2
Fuel tax as a Percentage of the Consumer Price of 95-octane Gasoline in Developed Countries as of the second quarter of 2010 and in Israel as of January 2011



[4] See previous note. In January 2011 the tax on fuels was raised by 20. Current legislation prescribes another 20-agora increase in January 2012. In February 2011, however, the government canceled the January 2011 increase in the gasoline excise and instructed the Minister of Finance to find sources for the cancellation of the planned increase in 2011 (applying to gasoline only). The increase in the excise on other fuels remained in effect.

the vehicle value.[5] These reforms had a downward effect on air pollution by encouraging the purchase of less-polluting vehicles; the effect on tax receipts is expected to be relatively small. The goal of the two reforms is to reduce emissions by encouraging the purchase of cleaner vehicles. At the same time, the effect on the tax burden is expected to be relatively small.

Initial data suggest that the "Green Taxation" reform has contributed to the reduction in air pollution without changing in the tax burden. This was accomplished by a shift in demand: a 5 percentage-point decrease in purchases of vehicles in high pollution classes and a similar increase in purchase of relatively non-polluting cars.[6] The increase in the fuel excise, however, had a negligible effect on demand due to the lack of efficient public transport[7] and the price inelasticity of demand for fuel.

The proportion of the other environment related taxes— those unrelated to vehicles and fuel—in total environment related tax receipts is negligible in developed countries, at 3 percent on average. Israel, like many other developed countries, is in various stages of implementing reforms that will increase the rates of these taxes and are expected to boost their future contribution to tax receipts. The reforms include an increase in levies on sewage, landfill tax, revitalization of abandoned quarries, and the imposition of congestion fees, deposits on bottles, and an ionizing radiation tax.

Among the other environment related taxes, the landfill tax stands out. Thus far, the levy on landfill in Israel has been very low by the standards of developed countries and has not created an incentive to shift to advanced waste-treatment methods.[8] In December 2010, it was decided to gradually increase the rate of landfill tax for mixed household waste by NIS 10 per ton each year, up to level of NIS 90 per ton in 2015 (not including VAT). Two statutes that hold manufacturers responsible for the recycling of their products—the Packaging Law[9] and the Tire-Recycling law—were passed in 2010. The waste disposal laws are expected to increase the proportion of the other environmentally related taxes in total environmentally related taxes to 0.16 percent of GDP in 2015.[10]

5 The reform raised the use value in three stages (January 2009, January 2010, and January 2011); at the present writing it stands 2.49 percent of vehicle worth.

6 "A Year since the Green Tax Reform on Motor-Vehicles," Ministry of Finance, August 2010 (Hebrew).

7 "The Effect of Policy Measures on the Number of Private Vehicles and Their Usage," Bank of Israel Annual *Report* for 2009, Chapter 9.

8 Alternatively, a government subsidy could increase recycling without affecting the tax burden.

9 Practically speaking, the Packaging Law expanded the Deposit Law, which imposes a 30-agorot tax on small bottles.

10 Assuming that 40 percent of the population will recycle waste at source and that annual waste per person will be 0.6 ton.