*Chapter 6*

# *The General Government, Its Services and Financing*

- The central government deficit was 2.1 percent of Gross Domestic Product, similar tothe deficit in 2015 and below the 2.9 percent of GDP ceiling. The deficit was below the ceiling due mainly to a surplus of tax receipts relative to the budget forecast, reflecting unexpectedly vigorous GDP growth and an unusual surge in motor vehicle imports.
- The public-debt-to-GDP ratio was 62.2 percent of GDP, down 1.9 percent of GDP from 2015, continuing a propitious trend that has increased Israel's fiscal space and reduced its interest outlays. Much of the decrease reflects the development of relative prices and the public's repayment of debts to the government. The rest is mainly a result of the relatively small deficit.
- Although the real rate of increase in general government expenditure accelerated in the reviewed year, budget allocation among the main expenditure items was stable. In the past fifteen years, there have been very few changes in the composition of civilian expenditure.
- Primary civilian expenditure is 30 percent of GDP in Israel, one of the lowest rates among OECD countries. This limits the scope and quality of government services.
- Per-pupil expenditure on education in Israel is significantly below the OECD norm, though the levels had been similar at the beginning of the current century.
- Multiannual budgeting of the defense system underwent major revisions. A blueprint for the regulation of future years' defense budgets was signed, including changes in the management of military personnel, and an agreement on US defense assistance in the coming decade—providing an increase in aid but attaching some restrictions to its use—was concluded.
- The 2017–2018 budget included a reduction in income tax rates for most working people, a lowering of the corporate tax rate, tax benefits for intellectual property under the BEPS reform (which proposes to tax intellectual property in the country where it is produced), taxation of companies formed for tax mitigation purposes, and taxation of owners of multiple dwellings (the "third apartment tax"). The approved taxation changes are expected to reduce revenues from 2018 onward.
- A permanent tax cut following a temporary spike in revenues is a pro-cyclical policy that increases the economy's exposure to business-cycle volatility.
- The government adopted a far-reaching multiannual infrastructure investment program based on public-private partnerships (PPP). Notwithstanding the advantages of PPP, the method has drawbacks that should be kept in mind, such as high tendering and capital costs.

## MAIN DEVELOPMENTS

The central government deficit remained similar to that of 2015 and lower than the deficit ceiling, due to higher-than-forecast tax revenues.

The general government deficit increased to 1.9 percent of GDP, compared with 1.6 percent in 2015, reflecting growth of public expenditure at a pace similar to that of GDP and a slower increase in revenues. The public-debt-to-GDP ratio fell by 1.9 percent of GDP, to 62.2 percent. The central government deficit was 2.1 percent of GDP, similar to 2015 and far below the 2.9 percent ceiling. The surfeit of revenue was due to unexpectedly vigorous GDP growth and an unusual upturn in motor vehicle imports, along with unexpectedly large surpluses on account of National Insurance Institute activity, reflecting underperformance of benefit payouts relative to the budget. Strong tax collection was also supported by continued high revenues from property taxes. From the standpoint of economic activity, the government policy was accommodative: Expenditure increased by 5.6 percent in real terms and tax rates were lowered, causing the cyclically-adjusted deficit to rise to 2.1 percent of GDP, compared with 1.5 percent of GDP in 2015.

The 2017–2018 budget included a number of tax changes.

The two-year budget (2017–2018) includes several taxation changes, including the introduction of a tax on multiple dwellings, continued lowering of corporate tax rates, income tax cuts for all but high-income taxpayers, and tax benefits for intellectual property registered in Israel under the BEPS reform. The overall impact of these changes on tax revenues is expected to be positive and small in 2017 and negative from 2018 onward.

## 1. INTERNATIONAL COMPARISON

Israel's deficit is higher than the OECD average, but its debt-to-GDP ratio is declining.

Figure 6.1, comparing Israel's main fiscal aggregates with the OECD average, shows that Israel's deficit exceeds the OECD average (Figures 6.1 and 6.2) even though Israel's output gap is smaller.[1] This is reflected in the cyclically adjusted deficit (Figures 6.1 and 6.2).[2] Despite the relatively large deficit, Israel was able to continue to reduce its debt-to-GDP ratio because it posted a faster growth rate, driven by a stronger increase in the labor force than in the OECD countries, and by financing practices and relative-price changes unique to Israel. (See elaboration in Section 5 of this chapter.) The protracted decline in the debt-to-GDP ratio has made an immense contribution to Israel's economic strength.

Primary civilian expenditure in Israel is low relative to the OECD.

Alongside the contribution of fiscal policy to improving the country's economic resilience, the government has been reducing spending as a share of GDP on an ongoing basis, a process that has also supported tax cuts. The downsizing of government has created a large and sustained spread between government spending as a share of GDP in Israel and that in the other OECD countries—currently 5 percent of GDP—particularly in primary civilian expenditure, which is 12 percentage points smaller in

1 See Chapter 2 for a comparative discussion of output gaps.
2 For a breakdown and explanation of the cyclically adjusted deficit, see Section 4 of this chapter.

**Table 6.1**
**The main components of the general government's revenue and expenditure, 2002–16**

(percent of GDP)

| | Average 2002–2006 | Average 2007–2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| **Total public revenue** | **41.4** | **37.5** | **35.6** | **36.0** | **36.4** | **36.6** | **36.1** |
| Income from property | 1.4 | 1.0 | 0.8 | 0.7 | 0.6 | 0.7 | 0.6 |
| Total taxes | 33.4 | 31.3 | 29.8 | 30.5 | 30.9 | 31.1 | 31.0 |
| Indirect taxes on domestic production | 11.9 | 11.7 | 11.5 | 11.9 | 12.1 | 12.2 | 11.5 |
| Indirect taxes on civilian imports | 3.7 | 3.9 | 3.6 | 3.4 | 3.7 | 3.4 | 3.9 |
| Direct taxes, fees and levies | 12.4 | 10.6 | 9.7 | 10.2 | 10.0 | 10.3 | 10.4 |
| National Insurance Institute revenue | 5.4 | 5.2 | 5.1 | 5.0 | 5.1 | 5.1 | 5.2 |
| Grants | 2.7 | 1.6 | 1.5 | 1.3 | 1.3 | 1.4 | 1.4 |
| Other[a] | 3.9 | 3.6 | 3.5 | 3.4 | 3.5 | 3.3 | 3.2 |
| **Total public expenditure** | **44.4** | **39.5** | **39.0** | **39.0** | **38.6** | **38.1** | **38.0** |
| Current expenditure | 40.6 | 36.0 | 35.4 | 35.2 | 35.0 | 35.0 | 34.6 |
| Domestic civilian consumption | 17.2 | 16.3 | 16.8 | 16.8 | 16.8 | 16.7 | 16.6 |
| Domestic defense consumption | 5.8 | 5.0 | 4.6 | 4.5 | 4.5 | 4.5 | 4.4 |
| Defense imports | 1.7 | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 |
| Direct subsidies | 0.7 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 |
| Transfer payments on current account | 10.5 | 9.6 | 9.6 | 9.5 | 9.4 | 9.4 | 9.3 |
| Interest payments | 4.8 | 3.4 | 2.8 | 2.7 | 2.5 | 2.7 | 2.6 |
| Transfer payments on capital account[b] | 1.6 | 1.9 | 1.9 | 1.9 | 1.8 | 1.6 | 1.7 |
| Investments of the general government | 2.1 | 1.5 | 1.7 | 1.8 | 1.9 | 1.5 | 1.7 |
| **Primary civilian expenditure** | **32.1** | **30.0** | **30.6** | **30.8** | **30.6** | **29.9** | **30.0** |
| **Total deficit of the general government** | **3.0** | **2.0** | **3.4** | **3.0** | **2.3** | **1.6** | **1.9** |
| Deficit using international definition[c] | 3.8 | 3.2 | 4.4 | 3.9 | 2.4 | 1.2 | 1.8 |
| Current deficit of the general government | 2.6 | 2.0 | 3.2 | 2.7 | 2.2 | 2.1 | 2.0 |
| Total cyclically adjusted deficit[d] | 0.7 | 1.3 | 3.8 | 3.6 | 2.8 | 1.5 | 2.1 |
| Total cyclically adjusted deficit using international definition[e] | 1.8 | 2.2 | 4.8 | 4.6 | 3.7 | 2.2 | 2.8 |
| Net public debt[f,g] | 79.5 | 64.8 | 63.1 | 62.0 | 62.0 | 60.2 | 58.6 |
| Gross public debt[f] | 88.6 | 71.8 | 68.3 | 67.0 | 66.0 | 64.1 | 62.2 |

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

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

[c] The deficit in this item was brought in line with the accepted international definition by adding indexation differentials on indexed and unindexed shekel debt. Indexation differentials need to be added in respect of unindexed debt because the Central Bureau of Statistics imputes a reduction of these differentials when reporting interest payments.

[d] Starting this year, the definition of the cyclically adjusted deficit shown here is different than in the past. We now calculate the effect of the cycle relative to the potential GDP derived from the growth rate of the primary working age population (aged 25–64) instead of the rate derived from the growth of the entire population. The slowdown in the growth of the working-age population in recent years slowed the growth of potential GDP.

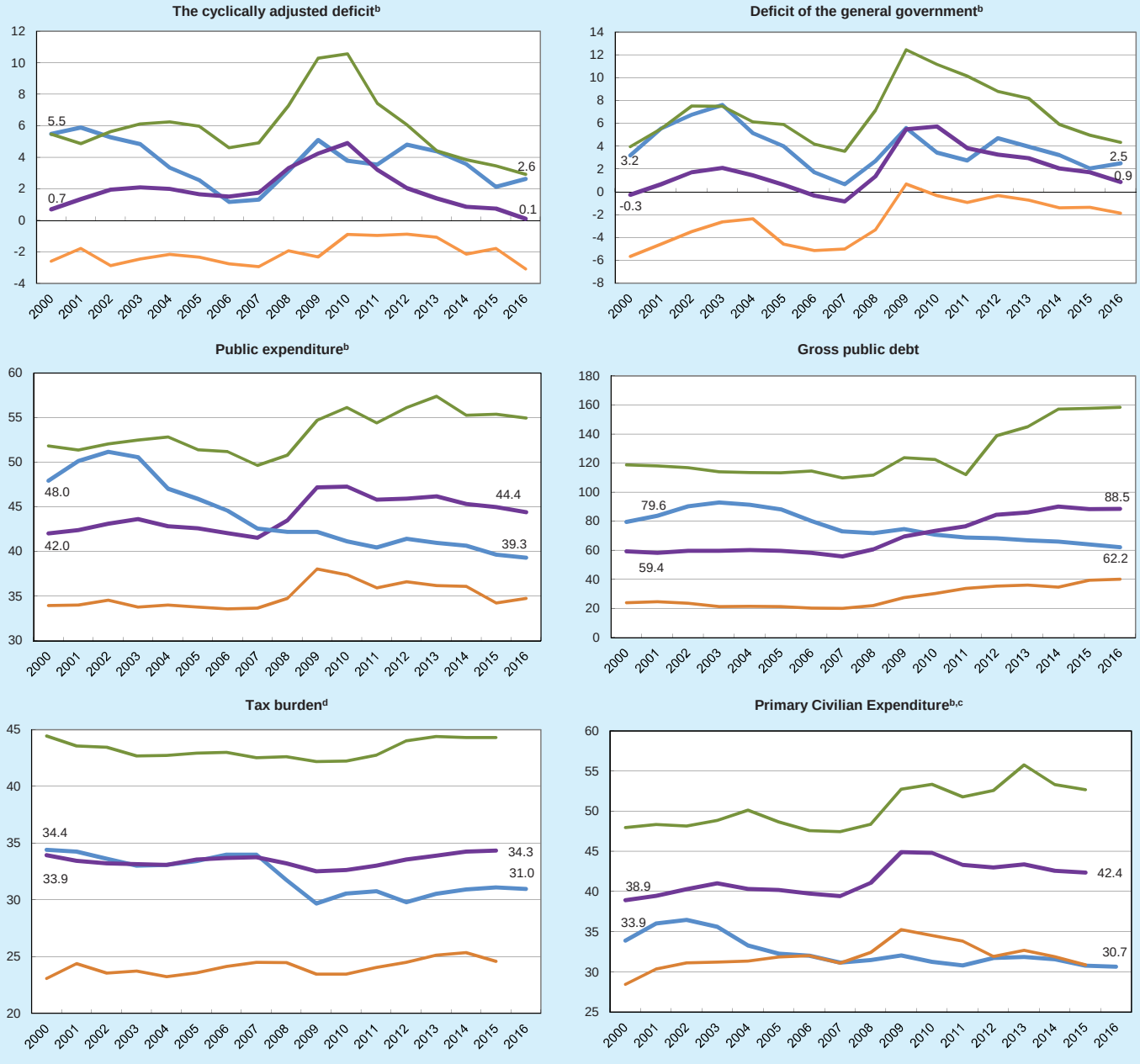
[e] The deficit in this item was brought in line with the accepted international definition by adding indexation differentials on the indexed and unindexed shekel debt, assuming inflation of 2 percent.

[f] Excluding municipalities' debts to the government.

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

SOURCE: Based on Central Bureau of Statistics data.

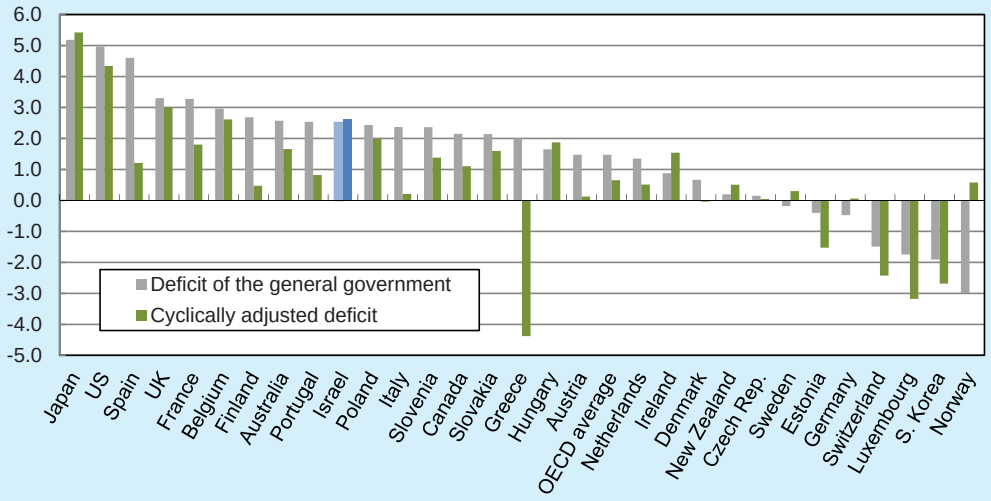
**Figure 6.1**
**Israel's Fiscal Aggregates Compared with the OECD Average[a], 2000–16** (percent of GDP)




[a] Data for OECD countries are arithmetic averages of all member countries for which there are data in the OECD's systems.
[b] Deficit and expenditure data for Israel are according to the accepted international definition and taken from the OECD systems.
[c] There are still no data for OECD countries for 2016. For a number of countries with missing data, we assumed that defense expenditures in 2015 remained the same as in 2014.
[d] There are still no data on the OECD countries for 2016.

SOURCE: Based on OECD data, Central Bureau of Statistics, and OECD Revenue Statistics 2016.

**Figure 6.2**
**Deficit of the General Government and Cyclically Adjusted Deficit, Israel and the OECD, 2016[a,b]** (Percent of GDP)




[a] Deficit data for Israel are according to the accepted international definition and taken from the OECD systems.
[b] Iceland was excluded due to a one-off surplus of 16 percent of GDP, which was a result of transfers from failing banks in the country.
SOURCE: Organization for Economic Cooperation and Development.

Israel than in the comparison countries. These disparities are reflected in the scope and quality of government services and the level of public investment in physical and human infrastructure.

Average expenditure per pupil in Israel was similar to the OECD average at the beginning of the century, but in 2013 it was only about 75 percent of the OECD average.

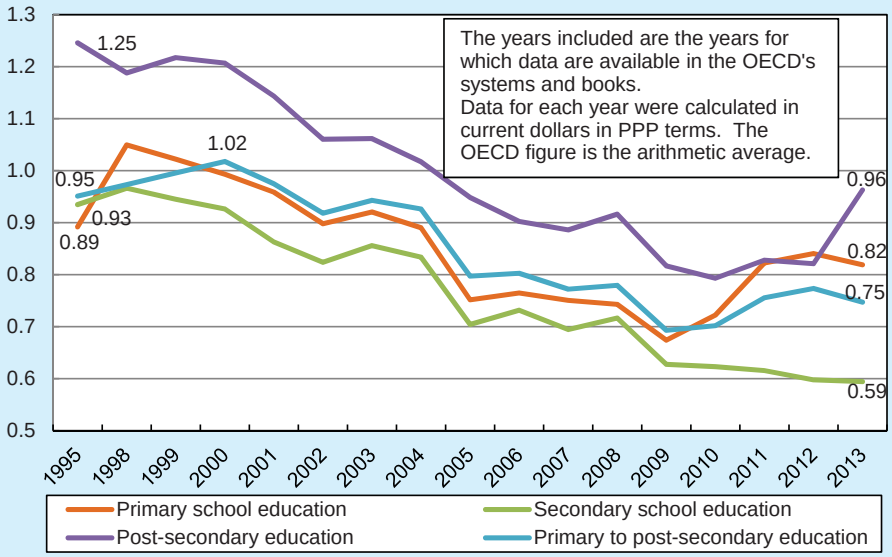
An example of the contraction of public expenditure may be seen in the development of spending on education.[3] Figure 6.3, shows the ratio of per-pupil national expenditure on education in Israel and the OECD average in 1995–2013 by different levels of education[4], and shows that, at the end of the previous century, per-pupil expenditure in Israel approximated the OECD average overall and exceeded it at the primary and post-secondary levels. The ensuing decade of cutbacks in public expenditure as a whole and in education spending in particular, lowered the ratio to 70 percent. In 2013, even after education spending rose for a number of years, average per-pupil national expenditure in Israel (primary to post-secondary) came to only 75 percent of the OECD rate. Estimated national per-pupil expenditure in 2016 is about 82 percent of the OECD average, assuming static per-pupil spending in the other OECD countries since 2013. The erosion occurred against the background of similar rates of decline in the population of young people in Israel and the OECD. These parallel slowdowns, however, were accompanied by a decline in education spending as a share of GDP in Israel and an increase in the same in other OECD countries (Figure 6.4).

3 Some 85 percent of education spending in Israel is made by the general government
4 The data in the figure stop at 2013 because OECD data for subsequent years were not available.

Public investment in Israel is low, both in absolute terms and relative to the OECD.

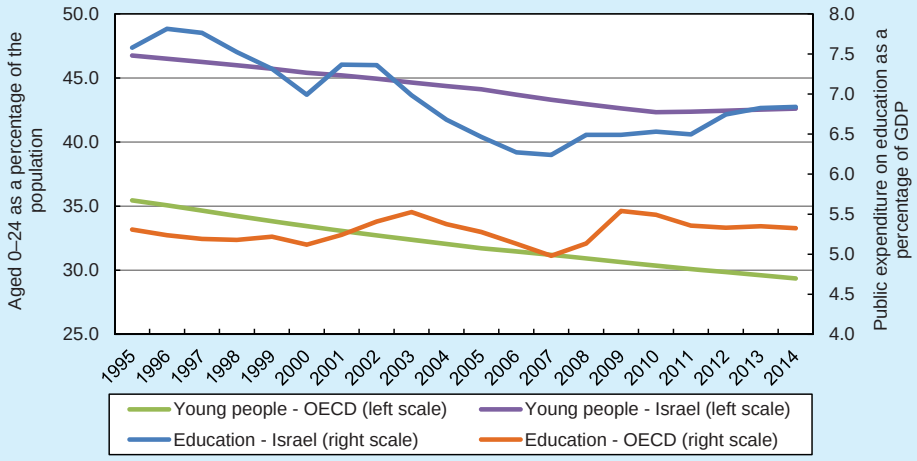
The effect of the contraction of government spending is also evident in a decline in public investment to a level far below the OECD average for more than a decade. (See discussion in Chapter 7.) There are areas in which private investment cannot replace public investment because public investment in these areas corrects market

**Figure 6.3**
**Development of the Ratio Between the National Expenditure per Student in Israel and in the OECD, 1995–2013** (by level of education)




SOURCE: Based on OECD.

**Figure 6.4**
**Public Expenditure on Education and Rate of Young People (0–24) in Israel and in the OECD, 1995 to 2014**




SOURCE: Based on OECD and UN population statistics data.

failures, for example by supplying public goods and regulating natural monopolies. In these cases, private investment complements public investment because, absent sufficient public investment in infrastructure, it will not be worth the private sector's while to invest.

## 2. GOVERNMENT EXPENDITURE

The main change in government expenditure in recent decades has been a shrinking of defense and interest expenditures.

General government expenditure increased by 4.7 percent in nominal terms, the fastest rate in the past three years (Table 6.2) and matching the rate of GDP growth. Primary civilian expenditure rose to 30.0 percent of GDP, compared with 29.9 percent in 2015, because interest expenditure dropped. An examination of the composition of government expenditure since 1995 shows that the main changes have been

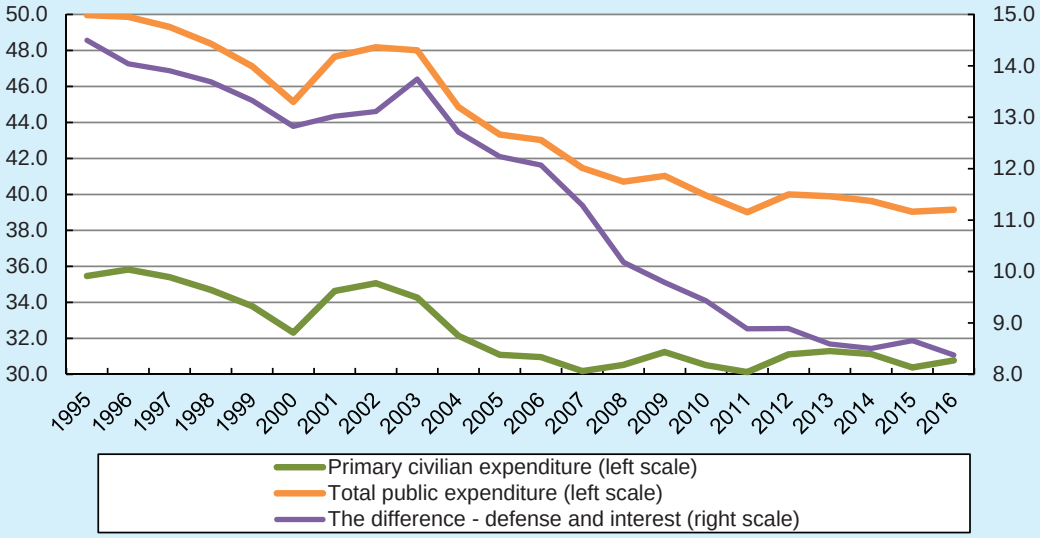
**Table 6.2**
**Rates of nominal increase of public expenditure in Israel, 2000–16**

| | Average 2000–2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| **Total public expenditure** | **3.9** | **4.1** | **4.2** | **9.0** | **6.5** | **3.4** | **3.9** | **4.7** |
| *of which*: Interest payments | 1.3 | 0.9 | -6.3 | 7.2 | 2.5 | -2.3 | - | -1.4 |
| **Total primary expenditure** | **4.3** | **4.4** | **5.1** | **9.2** | **6.8** | **3.8** | **3.1** | **5.1** |
| *of which*: Current primary expenditure | 4.3 | 6.0 | 5.7 | 7.4 | 6.4 | 4.1 | 4.6 | 4.2 |
| Current primary civilian expenditure | 4.6 | 6.3 | 6.2 | 7.8 | 7.0 | 3.9 | 4.6 | 4.3 |
| Public consumption | 4.2 | 6.6 | 5.8 | 7.6 | 6.4 | 4.3 | 4.5 | 4.1 |
| Public consumption excluding defense imports | 4.5 | 6.5 | 5.9 | 6.9 | 6.7 | 4.0 | 4.8 | 4.2 |
| Civilian consumption | 4.6 | 7.4 | 7.2 | 8.2 | 6.9 | 4.3 | 4.4 | **4.5** |
| (Per-capita civilian consumption) | 2.6 | 5.5 | 5.3 | 6.2 | 5.0 | 2.3 | 2.3 | 2.7 |
| Domestic defense consumption | 4.1 | 3.5 | 3.2 | 2.7 | 4.7 | 3.9 | 5.2 | **3.8** |
| Transfer payments on the domestic current account | 4.6 | 5.2 | 4.9 | 7.0 | 5.1 | 3.7 | 5.0 | 4.1 |
| (Per-capita transfer payments on the domestic current account) | 2.6 | 3.3 | 3.0 | 5.1 | 3.1 | 1.8 | 2.9 | 2.2 |
| Investments of the general government | 1.7 | -8.5 | 5.4 | 39.6 | 11.7 | 7.3 | -16.5 | 20.1 |
| *of which*: Land transport infrastructure[a] | 15.2 | 2.6 | -0.3 | 17.1 | 25.7 | -8.7 | -10.8 | 21.7 |
| Transfer payments on the capital account | 7.9 | -10.0 | -5.2 | 19.3 | 8.9 | -4.3 | -2.4 | 9.9 |
| Change in the CPI (annual average) | 2.0 | 2.7 | 3.5 | 1.7 | 1.5 | 0.5 | -0.6 | -0.5 |
| Change in the GDP deflator | 1.6 | -0.1 | 1.0 | 3.7 | 2.2 | 0.4 | 3.2 | 0.7 |
| Change in the public consumption price index | 2.2 | 3.8 | 3.3 | 3.7 | 2.7 | 0.7 | 1.2 | 0.3 |
| Change in nominal GDP | 5.4 | 7.2 | 7.0 | 6.2 | 6.6 | 4.3 | 5.3 | 5.1 |

[a] The 2016 figure is based on estimated quarterly investment in the fourth quarter of 2016.

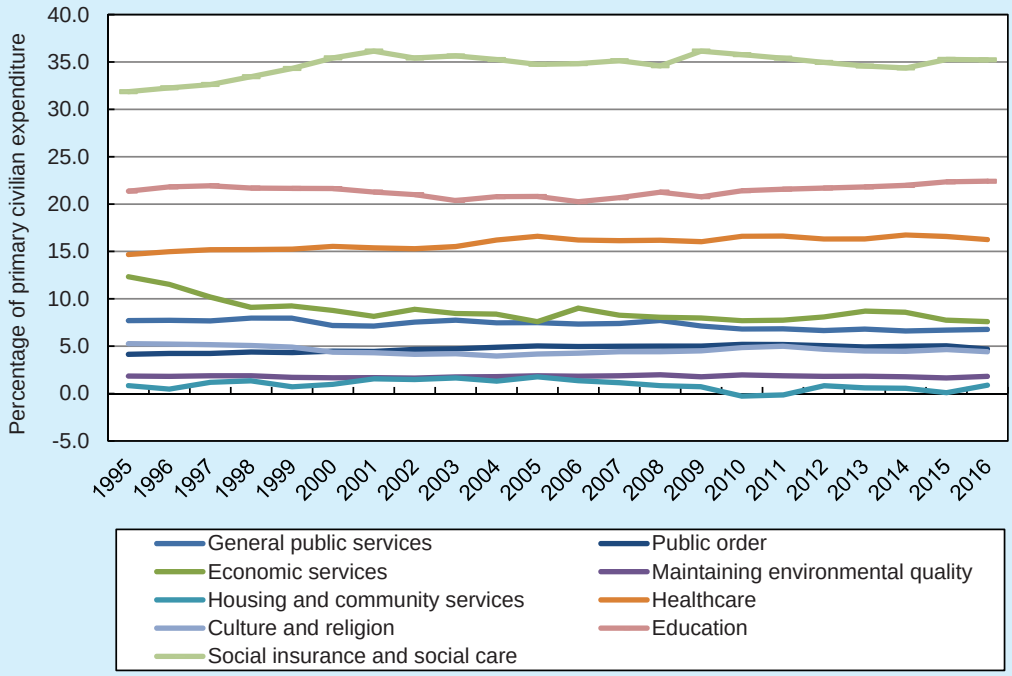
SOURCE: Based on data from the State Revenue Administration and the Israel Tax Authority.

**Figure 6.5a**
**Total Public Expenditure, Civilian Expenditure and the Difference Between Them (Defense and Interest), 1995–2016** (percent of GDP)




SOURCE: Based on Central Bureau of Statistics.

**Figure 6.5b**
**Distribution of Primary Civilian Expenditure Items, 1995–2015**




SOURCE: Based on Central Bureau of Statistics.

decreases in defense and interest outlays (Figure 6.5a). These expenditure cutbacks, continuing slowly but steadily since 2003, increased the funds available for other uses by 5 percent of GDP (equivalent to NIS 60 billion per year). At the beginning of the current century, primary civilian expenditure was reduced as well, by 4 percent of GDP (equivalent to NIS 48 billion per year). This metric, however, has been stable in GDP terms since 2006.

The composition of civilian expenditure has not changed significantly in recent decades.

The *composition* of civilian expenditure has not changed significantly over recent decades (Figure 6.5b). Budget apportionment across main items has held steady during the terms of several governments and hardly changed despite the global financial crisis and the domestic social protests. The only significant change in the apportionment of the budget across main items by international definitions is an increase in education spending since 2010 by 1 percent of civilian expenditure, from 21.4 percent in 2010 to 22.4 percent in 2016 (equal to NIS 3.8 billion per year). To equalize per-pupil expenditure in Israel in 2016 to the OECD level in 2013, it would have been necessary to raise the share of education in primary civilian expenditure to 27.3 percent in 2016.[5] The stable composition of expenditure reflects, among other things, bureaucratic and systemic rigidities that impede the implementation of reforms and major changes, particularly due to the very small size of Israel's general government sector, which makes it difficult to shift resources between budget lines; very low expenditure in almost every item by international standards; and the short lifespan of Israeli governments, which mitigate against large-scale and protracted policy measures.[6]

## Budget performance

Budgetary performance in 2016 was almost full, and the "miscellaneous" item again constituted a budgetary reserve.

In 2016, the net budget (the total excluding contingent expenditures and earmarked revenue) was almost fully performed—99.5 percent[7] (Table 6.3). Civilian ministries' expenditure (net of "Miscellaneous") was slightly below the original budget whereas defense expenditure was 7 percent higher due to mid-year budget supplements in accordance with the multiannual defense budget blueprint that was concluded in late 2015 but not included in the approved budget. An important source for the increase in the defense budget was the 50 percent underperformance of "Miscellaneous" expenditure. This item is composed of Line 13 in the budget—"Miscellaneous Expenditure"—which was underperformed by 73 percent on average between 2011

[5] Education spending bottomed out at 20.3 percent of expenditure in 2006, compared with 21.4 percent in 1995. Since then, it has gone up by 2.1 percent of primary civilian expenditure. Since total civilian expenditure as a percentage of GDP declined during that time, education expenditure fell from 7.6 percent of GDP in 1995 to 6.3 percent in 2006 and rebounded to 6.8 percent in 2016.

[6] A. Brender and A. Drazen, "Elections, Leaders, and the Composition of Government Spending," *Journal of Public Economics, 97,* 18–31.

[7] At the end of 2016, an accounting measure took place in which the government transferred NIS 1.5 billion to the National Insurance Institute as an advance on future payments and then received it back immediately as an operating surplus of the same Institute. This increased expenditure and revenue by NIS 1.5 billion and had no effect on the deficit. The data in this chapter are presented net of this move.

and 2015 (NIS 2.6 billion per year on average) and Line 83—"Other Development Expenditure"—which was underperformed by 30 percent on average during those years (NIS 1 billion per year on average). In practice, these lines serve as a full-fledged budget reserve.

**Table 6.3**
**Components of the deviation from the government's original budget for 2016**

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

| | Actual performance in 2015 | 2016 | | |
|---|---|---|---|---|
| | | Original budget | Performance | Deviation |
| **Deficit (-)** | **-24.5** | **-35.0** | **-25.9** | **9.1** |
| *of which*: Domestic deficit | -19.7 | -34.7 | -22.1 | 12.6 |
| Deficit abroad | -4.8 | -0.3 | -3.8 | -3.5 |
| **Revenue**[a] | **301.2** | **312.3** | **319.6** | **7.3** |
| *of which*: Domestic revenue | 289.0 | 301.5 | 308.6 | 7.1 |
| Taxes[b] | 269.8 | 278.9 | 284.2 | 5.3 |
| Loan from National Insurance Institute[a] | 16.4 | 19.1 | 21.7 | 2.6 |
| Other revenue[c] | 5.1 | 5.3 | 3.3 | -2.0 |
| Grants from US government | 9.9 | 9.0 | 10.4 | 1.4 |
| **Expenditure**[a] | **325.7** | **347.3** | **345.5** | **-1.8** |
| *of which*: Domestic expenditure[a] | 308.7 | 336.2 | 329.2 | -7.0 |
| Expenditure abroad | 17.0 | 11.1 | 16.3 | 5.2 |
| Defense[d] | 70.3 | 68.5 | 73.4 | 4.9 |
| Interest, repayment of principal to National Insurance Institute, and credit subsidy | 49.2 | 51.1 | 48.9 | -2.2 |
| Civilian ministries and transfer payments[a] | 206.3 | 227.8 | 223.2 | -4.6 |
| Civilian ministries and transfer payments excluding miscellaneous[a] | 201.6 | 221.3 | 220.2 | -1.1 |
| Miscellaneous expenditures | 4.7 | 6.5 | 3.0 | -3.5 |

[a] Excluding the transfer of NIS 1.5 billion to the National Insurance Institute at the end of 2016. See footnote 13 in the body of the chapter.
[b] Including VAT on defense imports.
[c] Revenue from interest, royalties, dividends and other sources.
[d] Including estimated transfers to defense from the economic reserve.
SOURCE: Based on the Accountant General's data on the performance of the 2016 budget.

## The defense budget

A multi-year outline for the defense budget was signed at the end of 2015. The outline has the potential to stabilize the budget for the defense establishment in the coming years.

The multi-year defense budget blueprint, signed in late 2015, resolved most of the recent disputes between the ministries of Finance and Defense, set the size of the defense budget for coming years, and settled several other structural issues. The accord established quotas for Israel Defense Forces payroll and personnel—compulsory ceilings that will allow the IDF to manage its personnel under an explicit and foreknown budget constraint. The army began to implement the agreement in its operations during the year and will subject the level and effectiveness of the ceilings to review in several years, as the blueprint determines. The accord has the potential to stabilize the defense budget for several years. In the years following the adoption of the previous blueprint (drafted by the Brodet Committee), setting the defense budget typically involved recurrent negotiations between the ministries of Defense and Finance, even if the annual budgets ultimately converged to an approximation of the blueprint.[8] Given that the current accord is based on simpler and more transparent parameters than its predecessor, it is likely to fulfill its purpose more effectively.

A new memorandum of understanding was signed with the US government at the end of 2016, including an increase in defense assistance and a change in the terms of use of the aid compared with previous MOUs.

In late 2016, a new Memorandum of Understanding was concluded between the governments of the United States and Israel. The MOU sets the level of US defense assistance for the coming decade (2018 onward) and dictates the terms and restrictions to which it is subject. According to the MOU, Israel will receive $3.3 billion per year plus $500 million per year for continued development of missile defense systems such as Iron Dome, David's Sling, and Arrow. Total US aid will increase under the MOU by $400 million per year relative to the amount received thus far. The MOU introduces various changes. First, from 2019 onward, assistance money may not be used to buy fuel for the IDF, a $300 million annual procurement item. In addition, until the MOU was signed Israel was allowed, unlike all other recipients of US defense assistance, to convert one-fourth of assistance funds into domestic currency and spend this sum at home (using the rest, as other recipients do with all defense assistance, for procurements in the United States). Under the new memorandum, the amount allowable for conversion into domestic currency will begin to decline in 2020—slowly at first and faster from 2024 onward, until it reaches zero in 2028.[9] The new rule will cause the IDF to reduce its procurements from domestic defense industries, where the convertible funds were usually spent thus far. The graduated nature of the decrease in convertible funds should give these industries time to adjust to the change and reduce the harm they will sustain.

Starting with the budget for 2017–2018, defense assistance from the US is recorded in the budget entirely as a contingent expenditure.

In the 2017–2018 budget and onward, a change was made in the recording of US defense aid: Henceforth all such aid will be recorded as contingent expenditure. (The Value Added Tax applying to it will still appear in the net budget.) Until 2008, all US

[8] For a discussion of how the Brodet blueprint was implemented, see Brender, A. (2012), "Remarks on Transparency in Simplicity: Setting the Defense Budget since the Adoption of the Brodet Committee Recommendations, *Magazine of the Economics and Society Program 14* (Hebrew) (Jerusalem: Van Leer Jerusalem Institute).

[9] In money terms: down from $815 million in 2019 to $775 million in 2023, and then a rapid reduction, hitting zero in 2028.

defense aid was recorded in the net budget. Consequently, the size of the state budget in general, and the defense budget in particular, depended on the NIS/$ exchange rate even though 75 percent of the aid was unaffected by exchange rate fluctuations because it was spent in the United States as required. With the signing of the previous MOU in 2007, when aid was increased, it was decided to continue recording $2.4 billion—the original level of assistance—in the net budget and to record supplemental aid as contingent expenditure, outside the net budget. Although the new change does not affect the size of the defense budget, it makes the expenditure ceiling (which applies to the net budget) less sensitive to the exchange rate and, in particular, obviates the need for unnecessary budget adjustments in response to currency depreciation. The total expenditure ceiling in the budget was reduced commensurate with the change in recording.

## 3. GOVERNMENT REVENUES

Central government tax revenues increased more rapidly than forecast in the budget, but more slowly than the increase in GDP.

General government[10] revenues were NIS 441.5 billion (36.1 percent of GDP). Most of these revenues, NIS 378.5 billion (31.0 percent of GDP) were tax revenues, including central government taxes[11], revenues collected by the National Insurance Institute (NII) (including health tax), and municipal property tax. NII collection increased by 6.5 percent, surpassing the average of the past fifteen years and outpacing the nominal GDP growth rate. Central government tax revenues grew by 4.1 percent, exceeding the budget forecast—due to vigorous growth—but falling short of the GDP growth rate due to legislative changes. Consequently, the tax burden (taxes as a share of GDP) declined by 0.1 percent of GDP.

Tax revenues were higher than forecast due to the higher-than-expected growth and the increase in vehicle purchases in 2016.

The budget forecast for central government tax revenues was NIS 277.3 billion.[12] Actual tax revenues were NIS 284.8 billion. According to the Research Department's tax model[13], the main factor in the growth of tax revenues was the unexpectedly swift growth of GDP. The increase in imports (above and beyond the expansion stemming from the long-term relationship between imports and GDP) also boosted tax revenues, whereas downturns in the capital market reduced them.[14] Most of the extra revenue

[10] The general government comprises the central government, the national institutions, public nonprofit institutions, the National Insurance Institute, and municipal authorities. (For a breakdown, see Table 6.A-9.) For further explanation, see the Bank of Israel *Annual Report* for 2001, Research Department, Chapter 3, Box 2.

[11] Income tax, Value Added Tax, tariffs, capital gains tax, land betterment tax, real estate purchase tax, purchase tax, and miscellaneous excise taxes.

[12] In July 2016, the forecast was adjusted to NIS 282.5 billion due to large tax revenues early in the year. This chapter relates to the original forecast.

[13] Adi Brender and Guy Navon (2008), "A Forecasting Model for Government Tax Revenues in Israel and an Evaluation of the Forecast's Uncertainty" (Hebrew), *Economic Quarterly, 55* (4), December, 489–526.

[14] From these revenues, 25 percent of real estate purchase tax revenues (NIS 1.6 billion) was set aside for the property tax compensation fund. This unplanned measure was taken because the provision on account of these receipts was moved up to 2015 by law. Consequently, the tax revenue surplus recorded in the budget was NIS 5.9 billion.

was produced by indirect taxes, which increased by 5.0 percent. The main deviation from the budget forecast occurred in import taxes (customs and purchase tax), which increased by 23.2 percent (NIS 4.5 billion) due to rapid growth of motor vehicle purchases.[15] Sizable above-forecast collection also occurred in Value Added Tax, up 1.3 percent (NIS 1.2 billion) due to rapid growth in private consumption, of which motor vehicle imports were a part. The increase was attained even though the VAT rate was lowered to 17 percent in October 2015. The full impact of this measure on revenues was not felt until 2016, when it reduced tax revenues by NIS 3.7 billion (0.3 percent of GDP) relative to 2015 (a static calculation, not taking account of the effect of the tax change on growth).

Revenues from direct taxes increased as expected. Purchase tax revenues increased only slightly, even though the tax on additional dwellings was raised in 2016, because the increase lowered the volume of purchases.

Direct tax receipts increased by 6.4 percent, as expected. Net income tax receipts rose by 6.3 percent, capital gains taxation slumped considerably—as expected given the bearish behavior of the capital market—and real estate taxes rose by 1.5 percent relative to the already-high level attained in 2015. Collection of real estate purchase tax grew by only a small increment even though the rate of this tax as it applied to an "additional dwelling" was raised steeply in late June 2015. The tax hike triggered an abrupt downturn in home buying for investment purposes in 2016, for reasons including moving up of purchases before the tax went into effect, offsetting the effect of the tax increase.

The higher-than-expected tax revenues allowed the government to lower taxes. Permanently lowering the tax rates due to a temporary increase in tax revenues is a pro-cyclical policy that increases the economy's exposure to business cycle volatility.

In the reviewed year, as in 2015, tax revenues significantly exceeded the beginning-of-year forecast. The extra collection, reflecting unexpectedly rapid growth and the spurt in motor vehicle imports, was used by the government to fund NIS 6.5 billion in permanent tax cuts in 2015 and 2016 and to enact an additional moderate reduction for 2017–2018. This was a pro-cyclical response—permanent cuts in revenue in response to strong temporary or cyclical receipts caused, for example, by a revenue surge in specific markets (capital, motor vehicle, or real estate). Such a response is risky because when the business cycle turns downward—or when the boom in the specific markets blows over—and tax revenues decline, the government may have to cut spending or raise taxes to curb the deficit increase that results. This causes further harm to economic activity precisely when it could benefit from fiscal accommodation. Recent years' experience shows that just as revenues surpass the outlook in some years, they fall far short of the forecast in other years, as happened in 2009 and 2012.

The 2017–2018 budget included a number of tax changes, which are expected to have a small effect on tax revenues.

Further to the tax cuts in 2016, the 2017–2018 budget includes income tax adjustments, continued lowering of corporate tax, and multiple property taxation (the "third dwelling tax").[16] The total impact of these budget measures on expected receipts is positive and small in 2017 but negative by NIS 0.7 billion from 2018 onward.

[15] The prospect of higher tax rates on motor vehicles in 2017, corresponding to the extent of the pollution that the various vehicles cause, appears to have prompted consumers to move up purchases intended for 2017 to 2016. The resulting spike, contributing to the upturn in motor vehicle purchases in late 2016, is expected to reduce motor vehicle imports in 2017.

[16] Additional tax changes in the budget: lowering the tax benefit on employers' severance pay contributions to three times the national average wage; equalizing taxation of kibbutzim to that of the rest of the population; taxation of companies formed for tax mitigation purposes while allowing the possibility of withdrawing dividends at a reduced tax rate in 2017; and reducing the tax exemption on gambling income.

**Table 6.4**
**Income tax brackets and marginal tax rates, 2016–17**

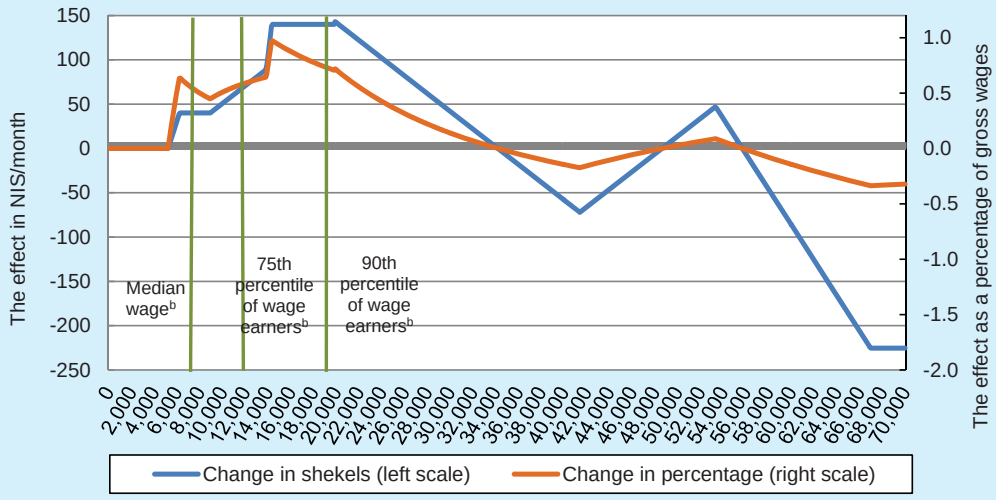
| 2017 | | 2016 | |
|---|---|---|---|
| Monthly income | Tax rate | Monthly income | Tax rate |
| Up to 6,220 | 10% | Up to 5,220 | 10% |
| 6,221–8,920 | 14% | 5,221–8,920 | 14% |
| 8,921–14,320 | 20% | 8,921–13,860 | 21% |
| 14,321–19,900 | 31% | 13,861–19,800 | 31% |
| 19,901–41,410 | 35% | 19,801–41,410 | 34% |
| Every additional shekel | 47% | Every additional shekel | 48% |
| Including surtax[a] from 53,333 | 50% | Including surtax[a] from 66,960 | 50% |

The shaded cells were changed in 2017.

[a] The surtax increased from 2 percent to 3 percent starting in 2017. This tax applies to all individual income beyond the ceiling, including income from the capital markets, and not just income from work.

SOURCE: Israel Tax Authority.

**Figure 6.6**
**The Effect of the Income Tax Change on Disposable Income, by Gross Monthly Wages[a]**




[a] The curves rise and fall sharply because the marginal tax rate on wages between NIS 41,411 and NIS 53,333 declined from 48 percent to 47 percent, and the marginal tax rate on wages between NIS 53,333 and NIS 66,960 increased from 48 percent to 50 percent.

[b] The wage percentiles relate to workers who worked more than 10 hours per week. The 50th percentile is NIS 8,000, the 75th percentile is NIS 13,000, and the 90th percentile is NIS 20,500.

SOURCE: Based on Israel Tax Authority.

**Net income tax reduction—**From the beginning of 2017 onward, income tax brackets and rates were revised so that most workers will pay less tax whereas those earning very high wages will pay more (Table 6.4, Figure 6.6). This measure will not affect those whose income fails to reach the tax threshold.[17] The change reduces tax revenues by NIS 0.9 billion per year.

Starting at the beginning of 2017, the income tax brackets and rates were changed, such that most workers will pay less tax, other than those with high incomes.

**Multiple dwelling tax**—From the beginning of 2017 onward, those owning three or more dwellings will be taxed at 1 percent of the value of the dwellings with the exception of two dwellings of their choice, up to a maximum of NIS 1,500 per month (NIS 18,000 per year) per dwelling. Dwelling value is determined on the basis of an econometric estimate that takes account of the dwelling's size, the socioeconomic region where it is located, and the peripherality index of the locality. The tax will be imposed only on those who own dwellings that exceed NIS 1.15 million in total value beyond the two exempt units. In the estimation of the Ministry of Finance, this tax will probably generate NIS 0.9 billion in state revenues in its first year. Revenues in subsequent years will depend largely on the effect of the tax on sales of dwellings by multiple-dwelling owners.

A multiple dwelling tax of one percent of the value of dwellings was imposed on individuals owning three or more dwellings, up to a cap.

The objective of the tax is to reduce the number of investors who hold large numbers of dwellings and to encourage dwelling sales. Thus, it is expected to increase the supply of dwellings for sale and cause rent levels to rise. Until 2013, Israel's tax system gave long-term investors in real estate an advantage over investors in financial assets.[18] In recent years, the main exemption from land betterment tax was revoked and the rates of real estate purchase tax for investors were raised[19], causing housing investments to be more heavily taxed than financial investments.[20] The current tax measure continues this trend and raises the tax burden on investments in multiple-dwellings. The tax approved by the Knesset also includes an exemption of up to NIS 85,000 per dwelling from land betterment tax for multiple home owners who sell dwellings by October 2017, up to three sales, provided the sales not be made

The objective of the tax is to lower the number of investors who own many dwellings and to encourage the sale of dwellings. The tax is thereby expected to increase the supply of dwellings for sale, while also leading to an increase in rental prices. The tax also included a short-term benefit for the sale of investment dwellings.

[17] Those below the threshold have minuscule income tax liability. In 2016, men paid tax only on income over NIS 4,840 per month after their entitlement to 2.25 credit points was factored in, and women paid tax only on monthly income exceeding NIS 5,912 because they qualified for 2.75 credit points.

[18] The benefit originated in a tax exemption on rent up to NIS 5,000 per month and the taxation of higher rent income at only 10 percent (albeit without allowing deduction of expenses), whereas the tax rate on dividends and interest is 25 percent from the first shekel (and 15 percent on nominal interest and gains). In addition, even though capital gains tax on the sale of financial assets and land betterment tax on the sale of dwellings were the same, there was an exemption from land betterment tax that made it possible to sell one dwelling every four years tax-free. A temporary exemption from land betterment tax was also given for the sale of a second and third dwelling worth up to NIS 2.2 million in 2011–2012. These differences, together with the low rate of real estate purchase tax, encouraged long-term investment in housing (in which the low rate of tax on rent is dominant relative to real estate purchase tax—a one-off tax on each transaction) over other investments.

[19] Bank of Israel *Annual Report* for 2013, Chapter 7; and Bank of Israel *Annual Report* for 2010, Chapter 2, section on Building.

[20] Tax benefits for the purchase of one dwelling and land betterment tax benefits for the sale of one dwelling were retained. A single dwelling, however, is not purely an investment asset because its owner holds it in order to obtain housing services—either by inhabiting the dwelling or by renting it out for the purpose of paying rent elsewhere.

to relatives and that their zoning not be changed. The law also includes a grant of NIS 15,000 or 50 percent of the land betterment tax for sellers of investment dwellings valued at less than NIS 1.15 million, even though these are exempt from the tax. The grant amounts to a benefit, albeit a temporary one, for those who invest in dwellings, at the cost of land betterment tax revenues.

Corporate tax declined in 2016, further to the volatility in corporate tax rates in Israel over recent decades.

**Corporate tax and corporate tax benefits—**Pursuant to a cut in 2016, the rate of corporate tax will be lowered to 24 percent in 2017 and 23 percent in 2018. These changes follow the fluctuations of the corporate tax rate over the past two decades, manifested both in changes in effective tax rates and in creating, revising, or doing away with long-term tax plans. This volatility is the price of tax cuts (and hikes) that were prompted by cyclical increases (decreases) in tax receipts. Thus, Israel's corporate tax rate fell gradually from 36 percent in 2003 to 24 percent in 2011, climbed to 25 percent in 2012 and 26.5 percent in 2014, and fell to 25 percent at the end of 2015 (Table 6.A-17). According to the 2003 corporate tax outline, which was repealed in 2012, corporate tax was to continue declining, to settle at 18 percent in 2016. The Encouragement of Capital Investments Law has also been amended in almost every one of the past few years. In 2011, for example, the terms of eligibility for tax benefits were revised; in 2012 the release of "trapped earnings" at a nonrecurrent low rate was allowed; in 2013 the tax benefit was temporarily increased and the benefit eligibility terms were revised; in 2015 the parts of the country that qualified for Class A National Priority Area tax benefits were redrawn; and the BEPS amendment, described in detail below, was legislated in 2016.

The volatility in corporate tax rates in Israel creates uncertainty regarding the execution of government decisions, and makes it difficult to plan hiring, investment and joining the workforce.

This conduct creates uncertainty about the implementation of government decisions and impedes the ability to plan hiring, investment, and joining the workforce. According to the economic literature, frequent changes in the tax system may deter firms from long-term investment, reduce tax revenues, and impair citizens' wellbeing.[21] It has been found, for example, that a fiscal volatility shock (one that significantly increases uncertainty about future fiscal policy) may reduce growth by 0.15 percentage points per year.[22] By implication, uncertainty about the future course of fiscal policy may impair economic growth beyond the possible effect of the tax changes themselves. Uncertainty about corporate tax rates may, among other things, impact firms' decisions about where they should invest.

In 2017, corporate tax on high-tech companies' income from intellectual property declined to 12 percent (6 percent for very large high-tech firms) as part of the BEPS reform.

In 2017, the corporate tax rate on high-tech firms' intellectual property income was lowered to 12 percent[23] and the rate on intellectual property income of very large high-tech firms[24] was reduced to 6 percent. The dividend tax on distribution

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

[22] J. Fernández-Villaverde et al. (2015), "Fiscal Volatility Shocks and Economic Activity." *American Economic Review, 105*(11), 3352–3384.

[23] Government Decision 1859, August 11, 2016—Enhancing the Attractiveness of the Israeli Economy for Investments.

[24] Firms whose total income, including that of their subsidiaries, was NIS 10 billion or more in any given tax year.

of that income was reduced to 4 percent for all foreign firms. These changes are part of Israel's response to the BEPS (Base Erosion and Profit Shifting) reform, an international process initiated by the OECD in 2013 to prevent erosion of the corporate tax base, ensure that intellectual property be taxed where it is produced, and stop ongoing international tax competition that has allowed the creation of entirely tax-free earnings. The reform includes, among other provisions, information-sharing agreements among various countries' tax authorities, requiring firms to report what portions of their activity were carried out in each country, and the tailoring of tax systems to tax earnings from local activity and not those from activity carried out abroad.[25] Israel is one of the participants in the process. According to the budget forecast, the change in taxation will reduce tax revenues by NIS 0.3 billion in 2017 and by the same amount in 2018, but its effect on the tax base—intellectual property taxable in Israel—is hard to predict due to the changes described above and the lowering of relevant tax rates in some countries.

The reform prevents the separation between intellectual property development activity (such as software and applications) and its recording, and requires countries to change their tax benefits so that they will apply only to activity that takes place in that country.

In recent years, it has become increasingly common for high-tech firms to develop knowledge in one country and record the resulting intellectual property in another country that taxes such property at a much lower rate.[26] To combat this conduct, the OECD recommended that firms not be allowed to separate the development of intellectual property (e.g., software and applications) from its recording. Some of the recommendations, those in Action 5 of the reform[27], require countries to revise their tax benefits so as to apply them to domestic activity only. As countries are also required to share information with other participating countries' tax authorities, firms will have to decide whether to leave intellectual property in the country where they choose to develop it and pay taxes there, or to move their development activity to a country that taxes the recording of intellectual property at lower rates. Some OECD countries (e.g., Ireland and the UK) have already adjusted—or have begun to adjust—their tax systems accordingly and are awarding tax benefits for intellectual property in order to attract high-tech firms and retain existing ones.

The reform is beneficial for countries such as Israel, which generate intellectual property, because its express purpose is to thwart the flight of earnings to countries where the relevant firms have no economic activity.

BEPS is beneficial for countries that generate intellectual property because its express purpose is to thwart the flight of earnings to countries where the relevant firms have no economic activity. Israel is in the former category of countries, a large-scale producer of intellectual property relative to the size of its economy.[28] Israel's low tax rates on development of intellectual property, plus the adoption of the BEPS framework in many countries, may result in more recording of intellectual property in Israel.

[25] OECD (2015), *Explanatory Statement, OECD/G20 Base Erosion and Profit Shifting Project,* OECD. www.oecd.org./bax/beps-explanatory-statement-2015.pdf

[26] Intellectual property lies at the focus of the foregoing measures because it is relatively easy to transfer across borders.

[27] OECD (2015), "Countering Harmful Tax Practices More Effectively, Taking into Account Transparency and Substance, Action 5," *2015 Final Report, OECD/G20 Base Erosion and Profit Shifting Project,* OECD, Paris.

[28] In 2015, Israel ranked twenty-ninth in the world in resident patent filings, nineteenth in nonresident filings, and thirteenth in resident filings abroad. http://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=IL

Setting tax rates that are similar to or lower than those in other countries encourages firms to stay in Israel and may generate tax revenues on activities previously recorded abroad. It is important, however, to review the tax benefit criteria regularly in order to keep labor from being diverted from other high-tech industries to companies eligible for the benefit for tax reasons only.

## 4. THE DEFICIT

The general government deficit was 1.9 percent of GDP in 2016, compared with 1.6 percent in 2015.

The general government deficit was 1.9 percent of GDP—up from 1.6 percent in 2015, still low relative to that of previous years, but higher than the average among the other OECD countries (Figures 6.1 and 6.2). The central-government deficit was 2.1 percent of GDP, below the 2.9 percent ceiling established by law in 2016 (Table 6.6).

The direct effect of fiscal policy on activity was more accommodative in 2016 than in 2015.

The direct effect of fiscal policy on activity was more accommodative in 2016 than in 2015.[29] The cyclically adjusted deficit climbed from 1.5 percent of GDP to 2.1 percent in the reviewed year.[30] This is because the general government deficit increased while the output gap narrowed in 2016, and despite the fact that the adjustment for decreases in the capital market lowered the cyclically adjusted deficit in 2016.[31] It is important to note that the cyclically adjusted deficit does not "correct" for unusual revenues from specific markets (other than the capital market), such as motor vehicle imports and real estate booms. The tax receipts from these two markets were 0.6 percent of GDP higher in 2016 than they were just a few years ago. The combination of these revenues and an economy that verged on full employment and has enjoyed several years of appreciable improvements in the terms of trade (see discussion in Chapter 2) raises the question of the trade offs between keeping the deficit low—allowing for optimal responses to future crises—and support of economic activity in the future and social objectives in the present. This issue is discussed in the next section.

[29] An accommodative fiscal policy is one that increases public expenditure and/or cuts taxes, causing the deficit to increase.

[30] The cyclically adjusted deficit is calculated on the basis of a comparison of the standard deviation of potential GDP, derived from the growth rate of the primary working-age population (25–64) in a given year, with the 1.8 percent average deviation from potential GDP over time. Thus calculated, the average cyclically adjusted deficit resembles the regular deficit over time. Another assumption made in the calculation is that, over time, tax revenues increase proportionally to GDP and total spending and nontax revenues are not sensitive to changes in GDP. The resulting deficit is adjusted for the effect of developments in the capital market on tax revenues. The cyclically adjusted deficit also "corrects" the Central Bureau of Statistics' calculations of real interest payments in accordance with the assumption that the inflation rate is 2 percent. The calculation does not necessarily present a structural deficit, i.e., not every change in the cyclically adjusted deficit reflects a change in the government's behavior. Often at issue is a structural change in the economy that affects tax receipts or expenditure.

[31] This adjustment corrects deviations of prices in the capital market from the long-term trend (an increase of 1.5 percent per quarter) and deviations of the Bank of Israel interest rate from its own long-term average (2.5 percent per year in the past decade). The resulting correction increased potential revenues by 0.9 percent of GDP in 2016 and reflects the downturns in the capital market (the General Share Index on the Tel Aviv Stock Exchange lost 11.6 percent in real terms) and the below-average interest rate (0.1 percent).

**Table 6.5**
**Central government deficit, revenue and expenditures, 2006–16**

(percent of GDP)

| | Average 2006–2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| Total government deficit ceiling excluding credit granted | 3.8 | 3.0 | 2.0 | 4.3 | 2.9 | 2.9 | 2.9 |
| **Total actual government deficit excluding credit granted** | **2.2** | **3.1** | **3.9** | **3.1** | **2.7** | **2.1** | **2.1** |
| Actual government domestic deficit | 1.0 | 2.0 | 2.9 | 2.2 | 1.8 | 1.2 | 1.6 |
| **Total net revenues[a]** | **28.3** | **25.5** | **24.8** | **25.4** | **25.6** | **25.9** | **26.2** |
| Taxes and imposts | 24.3 | 22.7 | 22.1 | 22.8 | 23.2 | 23.2 | 23.2 |
| Interest, profits, royalties, revenue from land sales | 0.8 | 0.4 | 0.4 | 0.5 | 0.3 | 0.4 | 0.3 |
| Loan from the National Insurance Institute (NII) | 1.8 | 1.5 | 1.4 | 1.3 | 1.3 | 1.4 | 1.9[b] |
| US government grants | 1.4 | 0.9 | 0.9 | 0.8 | 0.8 | 0.9 | 0.9 |
| **Total net expenditure[a]** | **30.3** | **28.6** | **28.7** | **28.6** | **28.3** | **28.0** | **28.3** |
| Interest, repayment of principal to NII and credit subsidy | 5.3 | 4.8 | 4.7 | 4.5 | 4.5 | 4.2 | 4.0 |
| Net defense expenditure[c] | 7.3 | 6.4 | 6.2 | 6.1 | 6.2 | 6.0 | 6.0 |
| Total net primary civilian expenditure | 17.6 | 17.4 | 17.8 | 17.9 | 17.6 | 17.7 | 18.4 |

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

[b] This increase is a result of over-budgeting of benefits in 2016 by NIS 2.5 billion, and of a NIS 1.5 billion advance from 2017. (For details, see footnote 13 in the body of the text.)

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

SOURCE: Based on the State Budget—Major Provisions of the Budget, Central Bureau of Statistics data, and State of Israel Financial Statements as of December 31, 2016.

## 5. THE PUBLIC DEBT AND ITS FINANCING

The public-debt-to-GDP ratio continued to decline in 2016 (Table 6.6). The trend in Israel is different from that in the other OECD countries, where the ratio has leveled off in recent years after rising steeply due to the financial crisis that began toward the end of the previous decade (Figure 6.1). The decline in the debt ratio has helped to improve Israel's sovereign rating and has lowered interest expenditure both directly, by reducing the size of the debt, and indirectly, by lowering Israel's sovereign risk premium.

The public-debt-to-GDP ratio continued to decline in 2016. This decline contributed to Israel's fiscal strength.

This steady decline has lowered Israel's ratio to very close to 60 percent—a symbolic but meaningful level because it is the European Union target and an indicator of fiscal resilience in other countries. Consequently, the question is whether to settle for this achievement and strive to hold the ratio at this level or to continue the downward path. The answer, according to the economic literature, depends on the level of the ratio and the nature and distribution of the risks that country faces (Box 1). Israel's debt-to-GDP ratio in 2016 does not entail a drastic debt reduction. As for the

In view of the debt-to-GDP ratio's proximity to 60 percent, the question arises as to whether to settle for holding the ratio at this level or to continue reducing it. The economic literature shows that Israel needs to reduce its debt-to-GDP ratio moderately over time.

risks, the exceptional risk in Israel's case—as rating agencies stress in their reports—relates to security, whereas the diversity of the domestic economy, a young population, painstaking maintenance of the stability of the financial system, and abundant foreign exchange reserves have risk-mitigating effects. Therefore, a policy that acts to lower the debt-to-GDP ratio moderately over time in order to increase fiscal space in times of crisis seems appropriate under today's circumstances.

An average deficit of 2 percent of GDP per year will lead to convergence of the debt-to-GDP ratio to 50 percent over time.

The meaning of adopting a target of gradually lowering the debt-to-GDP ratio is strict long-term adherence to appropriate deficit targets. For example, taking 3 percent as the estimated potential long-term rate of economic growth, an average deficit of 2 percent of GDP per year—similar to the current effective deficit and far below the government's deficit target—would cause the ratio to converge to 50 percent over time.[32] Apart from making progress in cutting the debt-to-GDP ratio, it is important to construct a fiscal path that will allow the deficit to increase at times of economic slowdown or when the government incurs exceptional expenses and, by implication, to fall when the economy is doing well or when exceptional revenues arrive—as is the case today. Such a path would preclude pro-cyclical policies that impair economic efficiency at any level of deficit. It would also allow the fruits of the deficit reduction attained thus far to be enjoyed.

One of the important contributing factors in slashing the debt in the past two decades was the repayment of housing loans given by the Ministry of Construction and Housing. The stock of remaining housing loans is relatively small, and will therefore not be a source for significantly reducing the debt-to-GDP ratio in the future.

One of the important contributing factors in slashing the debt in the past two decades[33] is the realization of government financial assets, which reduces the gross debt but not the net debt (gross less government assets). In Israel, most assets of this kind are loans to the public—largely housing loans given by the Ministry of Construction and Housing from the 1980s onward. After expanding in the 1990s due to mass immigration and a jump in housing prices, this kind of lending contracted sharply in the past decade for reasons including the toughening of eligibility terms from 2003 onward.[34] The stock of housing loans crested in 1998 at NIS 62 billion (14.1 percent of GDP), on which the state earned a steady stream of interest revenues. Subsequent repayments have come at the cost of reducing government interest revenues by 0.5 percent of GDP per year. By late 2016, the portfolio of loans to the public had declined to only NIS 21 billion (1.7 percent of GDP). Therefore, the continuation of this process cannot be considered a source for meaningful future contraction of the debt-to-GDP ratio.

Another factor that lowered the debt-to-GDP ratio in the past three years is the spread between the low inflation rate and the upturn in the GDP deflator.

Another factor that lowered the debt-to-GDP ratio in the past three years is the spread between the low inflation rate and the upturn in the GDP deflator. Slightly more than half of Israel's public debt is indexed to the CPI and the government continues to raise a large portion of its funding in this manner. As indexation differentials on indexed bonds are paid at the time of redemption, the size of the debt portfolio is

[32] Assuming that the long-term inflation rate is 2 percent per year, matching the pace of increase in GDP prices, and that the effect of citizens' repayment of government housing loans is about to dissipate, the debt-to-GDP ratio will fall slowly but steadily to 50 percent within several decades.

[33] See Bank of Israel *Fiscal Survey,* March 2017.

[34] T. Agmon (2013), "Description and Analysis of the Ministry of Construction and Housing Budget for Fiscal Years 2013–2014" (Hebrew), Knesset Research and Information Center.

sensitive to the inflation rate. When the GDP deflator rises more quickly than the CPI does, it has a downward effect on the debt-to-GDP ratio. In 2010–2013, when annual inflation was 2.3 percent on average, the revaluation of indexed shekel-denominated debt added an average of 0.7 percent of GDP to the debt-to-GDP ratio (Table 6.6).

**Table 6.6**
**Components of the increase in the gross public debt, 2010-16**

(percent of GDP)

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| Debt at the end of the previous year | 74.6 | 70.7 | 68.8 | 68.3 | 67.0 | 66.0 | 64.1 |
| Nominal growth of GDP | -5.0 | -4.6 | -4.0 | -4.2 | -2.8 | -3.3 | -3.1 |
| Net capital inflow | 1.3 | 1.3 | 3.7 | 3.3 | 1.7 | 1.7 | 1.8 |
| *of which*: Government's cash deficit | 3.5 | 3.1 | 3.9 | 3.1 | 2.7 | 2.1 | 2.1 |
| Net repayment of credit by the public[a] | -0.7 | -0.6 | -0.4 | -0.4 | -0.4 | -0.5 | -0.2 |
| Privatization proceeds | -0.5 | -0.8 | -0.1 | -0.1 | -0.2 | -0.3 | -0.2 |
| Funding beyond the financing deficit[b] | -1.0 | -0.4 | 0.3 | 0.7 | -0.5 | 0.4 | 0.1 |
| Revaluation of the shekel-denominated indexed debt[c] | 0.9 | 0.7 | 0.5 | 0.5 | -0.1 | -0.3 | -0.1 |
| Revaluation of foreign currency-denominated debt | -0.6 | 0.7 | -0.2 | -0.6 | 0.9 | -0.1 | -0.1 |
| Adjustment to issuance costs | -0.2 | -0.2 | -0.3 | -0.3 | -0.3 | -0.2 | -0.1 |
| Remainder[d] | -0.3 | 0.3 | -0.1 | -0.1 | -0.4 | 0.3 | -0.4 |
| Debt at year-end | 70.7 | 68.8 | 68.3 | 67.0 | 66.0 | 64.1 | 62.2 |

[a] Including the provision of credit and principal collection.
[b] Funding surplus.
[c] Effect of the increase in the Consumer Price Index during the year on indexed debt.
[d] As a result of roundings.
SOURCE: Bank of Israel.

## 6. COMPOSITION OF DEBT AND DEBT ISSUANCE

About half of the public debt is indexed to the CPI, about 35 percent is unindexed shekel-denominated debt, and about 15 percent is denominated in foreign currency.

Israel's public debt is composed as follows: roughly half is indexed to the CPI, 35 percent is in unindexed shekel-denominated debt, and 15 percent is denominated in foreign exchange (some hedged) (Table 6.A-18). The indexed debt is divided into tradable debt—bonds that can be bought and sold in the financial markets—and nontradable debt, composed of earmarked bonds for pension funds and insurance companies. The earmarked bonds, originally used as inexpensive and easily accessible funding instruments for the government, have functioned for several decades as a mechanism for the assurance of pension fund yields and, in turn, of pensioners' benefits. This use of earmarked bonds is an Israeli innovation. Pension funds in many countries purchase long-duration sovereign bonds, and those in several countries (e.g., the UK and Australia) buy indexed bonds as well. In Israel, earmarked bonds are fundamental to the pension system, especially today, as yields have been at historic lows for several years and inflation is low or negative. The immense importance of earmarked bonds

is due to a combination of three factors: the government's commitment to issue these bonds directly to the funds, the funds' obligation to buy these bonds if they hold less than 30 percent of assets in such bonds, and the guaranteed yield that the bonds deliver.[35]

Earmarked bonds as a share of government issuances increased in recent years. The government decided to designate most earmarked bonds for retirees, thereby reducing their exposure to the capital market and stabilizing their benefits.

The share of earmarked bonds in government debt issuance[36] has been rising in recent years (Figure 6.7) because contributions to pension funds have been growing since the end of the previous decade and because the share of these bonds in the funds' total assets sank to the 30 percent threshold, below which the funds must buy earmarked bonds. Net issuance of earmarked bonds returned to positive values in 2012 and constituted between one-fourth and one-third of annual issuance in the period between 2014 and 2016. Accordingly, the government reduced its tradable issuance. In 2015, pursuant to its decision to continue using earmarked bonds at the rate of 30 percent of pension funds' assets, the government established a committee to see how these bonds were being used and allocated.[37] In 2017, the Minister of Finance, adopting the committee's recommendations, revised the apportionment of the earmarked bonds within the pension funds.[38] Thirty percent of each fund's assets would be composed of earmarked bonds, as before. People who save for pensions through these funds would fall into two groups: pensioners and not-yet-pensioners. Each fund shall allocate earmarked bonds to pensioners so that they constitute 60 percent of pensioners' assets in the fund. Should the fund have unallocated earmarked bonds left over afterward, it shall allocate the remainder to savers aged 50–67 so that they constitute 30 percent of these savers' assets with the fund. Remaining earmarked bonds (if any) shall be allocated to members under age fifty. Until the end of 2023, by force of an ad hoc provision, allocation of earmarked bonds to pensioners will take place under the aforementioned new regulation but the balance of earmarked bonds that remains after this allocation will be allotted to all other fund members irrespective of age. The new rule reduces pensioners' exposure to the capital market and, by so doing, stabilizes their benefits and increases the pensions they can get risk-free, a matter of particular importance in view of the low old-age benefits paid out by the National Insurance Institute. The decision is expected to raise the share of earmarked bonds in the public-debt portfolio even more because the pension savings stock is still growing faster than GDP. In addition, recent years' issues of earmarked bonds, which

[35] Since 2004, two types of earmarked bonds have been issued: 15-year Arad bonds for pension funds, delivering a 4.86 percent CPI-indexed yield, and 15-year Hetz bonds for insurance companies, delivering a 4.04 percent CPI-indexed yield. These constant yields have exceeded those of similar sovereign bonds since 2005; prior to then, they were were lower than market yields.

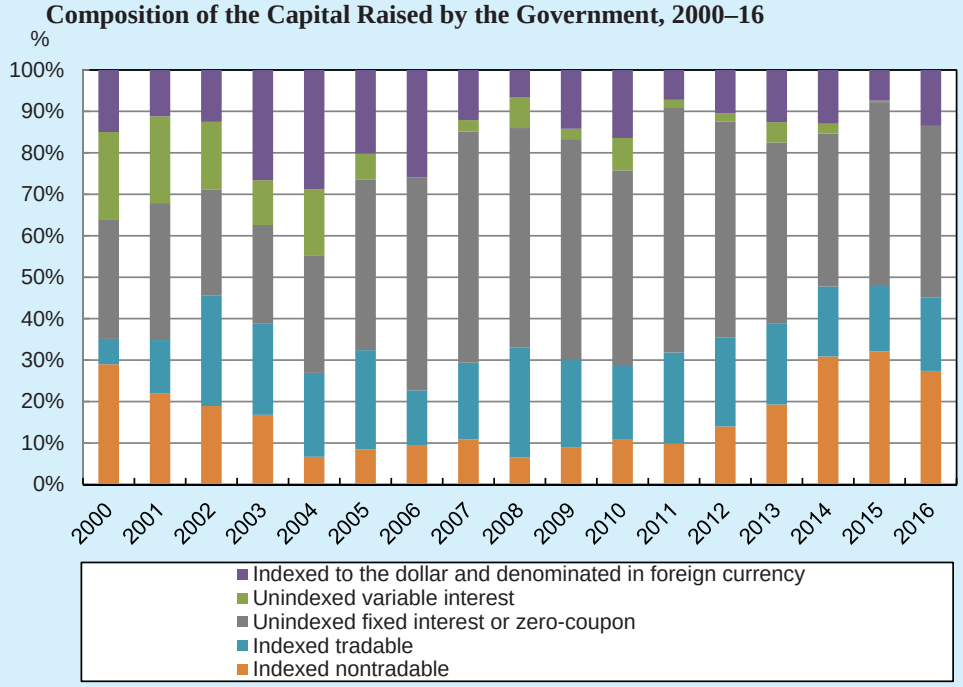
[36] The issues are differentiated by types of interest (fixed, variable), indexation (CPI, dollar exchange rate, unindexed) and tradability (whether they are ordinary bonds that can be traded on the exchange or earmarked bonds, issued to insurance companies and pension funds only, which cannot be sold but only redeemed by the government).

[37] "Adequate Pension Savings"—report of the team for enhancing certainty in pension savings, December 23, 2015.

[38] Supervision of Financial Services Regulations (Provident Funds) (Imputation of Yield in New Comprehensive Pension Funds), 5777–2017.

all have fifteen-year duration (Table 6.A-20), have contributed to an increase in the average term to maturity of the public debt. The average term has grown to 7.5 years in the past few years, reducing the rollover risk of Israel's debt, and combining with the decrease in the debt to expand Israel's fiscal space.

**Figure 6.7**
**Composition of the Capital Raised by the Government, 2000–16**




SOURCE: Based on Ministry of Finance.

**Box 1**
**The Desired Pace Of Debt Reduction**

Should a country take deliberate action to lower its debt-to-GDP ratio, or just let the ratio erode by means of GDP growth? The economic literature deals at length with this matter and offers a range of considerations. According to some approaches, at a certain level of debt no deliberate action to lower the ratio is needed; it is sufficient to ensure that it does not rise. According to other approaches, efforts to lower the ratio should be made continually.

Much of the discussion in the literature centers on whether, and to what extent, a large debt-to-GDP ratio impairs economic growth in the long run and whether the impairment worsens after a certain threshold is crossed. Many studies find a ratio of 60–90 percent high for a developed economy. However, studies disagree about the threshold beyond which the level of debt impairs growth, with the threshold ranging between 70–90 percent of GDP.[1]

According to another approach, deliberate action to reduce the public debt does not pay because rapid contraction of the debt-to-GDP ratio is likely to cost more, in terms of impairing growth, than the insurance against crisis that more fiscal space would provide.[2] Accorsding to this approach, it is better to set the deficit's share of GDP at a level that would lower the debt ratio slowly, commensurate with the rate of economic growth. Furthermore, when funding for public infrastructure investment is needed—assuming the projects are chosen optimally—the impact on the budget should be smoothed by increasing the deficit temporarily. This argument focuses on countries that have a great deal of fiscal space and no looming risk of unaffordable crisis.

Another study found no proof of a *causal* relation between the debt-to-GDP ratio and growth in the medium term.[3] In contrast, it is found in yet another paper that debt impairs growth even if no specific threshold, beyond which the growth-impairing effect gathers strength, can be identified across countries.[4] According to still another work, the debt-to-GDP ratio begins to impair growth at a very low level (20 percent of GDP) and there is no evidence of a threshold of debt that, once crossed, impairs growth more.[5] Other studies, focusing on the effect of the debt-to-GDP ratio on a country's interest rates and risk premium, show that the larger the debt-to-GDP ratio is, the higher the yields are on long-term sovereign bonds[6] and the smaller the positive effects of growth-conducive public investments (including expenditure on education, healthcare, transport, communication, and

[1] C.M. Reinhart and K.S. Rogoff (2010), "Growth in a Time of Debt," *American Economic Review* 100(2), pp. 573–578;
C.M. Reinhart, V.R. Reinhart, and K.S. Rogoff, (2012) "Public Debt Overhangs: Advanced-Economy Episodes since 1800," *Journal of Economic Perspectives,* 26(3), pp. 69–86;
C. Checherita-Westphal and P. Rother (2012), "The Impact of High Government Debt on Economic Growth and Its Channels: An Empirical Investigation for the Euro Area," *European Economic Review,* 56(7), pp. 1392–1405.

[2] J.D. Ostry, A.R. Ghosh, and R.A. Espinoza (2015), "When Should Public Debt Be Reduced?" IMF Staff Discussion Note 15/10.

[3] U. Panizza and A.F. Presbitero (2014), "Public Debt and Economic Growth: Is There a Causal Effect?" *Journal of Macroeconomics,* 41, pp. 21–41.

[4] M. Eberhardt and A.F. Presbitero (2015), "Public Debt and Growth: Heterogeneity and non-linearity," *Journal of International Economics,* 97, pp. 45–58.

[5] E. Balázs (2015), "The 90% Public Debt Threshold: the Rise and Fall of a Stylized Fact," *Applied Economics,* 47:34–35, pp. 3756–3770.

[6] For a review of literature on this topic, see A. Brender and S. Ribon (2015), "The Effect of Fiscal and Monetary Policies and the Global Economy on Real Yields of Israel Government Bonds," Bank of Israel Research Department, Discussion Paper 2015.02, http://www.boi.org.il/he/Research/DocLib/dp201502e.pdf

energy) are on growth.[7] It is found elsewhere that the direction of change in the debt is more important than its size. A protracted increase (decrease) in the debt impairs (supports) growth, particularly when the stock of debt exceeds 50–60 percent of GDP, whereas a temporary increase in the debt ratio has no harmful long-term effect on growth.[8]

In a different approach that favors continued reduction in the debt-to-GDP ratio, the focus is on the fact that the distribution of shocks to the debt is asymmetrical and tends to create sudden increases in debt. Namely, even where the intensity of positive and negative shocks is identical on average, in the long term the significant shocks (such as wars) cause the debt to surge before and after periods of gradual debt reduction. According to this approach, when shocks occur there is no choice but to increase the debt and then to start lowering it over time. For this reason, the ideal policy is one that reduces the debt-to-GDP ratio moderately each year to keep it low in the long term, giving the state a safety cushion with which it can absorb abrupt increases in debt.[9] A longitudinal examination of American and British data found an increase in debt of 30.8 percent of GDP every twenty-eight years on average in Britain and of 15.4 percent every thirty-four years in the US.[10] IMF researchers[11], measuring the average effect of diverse shocks on the debt in eighty countries, found that macroeconomic shocks occur once every twelve years and raise the debt by 9 percent of GDP on average, and that financial shocks occur once every twenty-four years and cause the debt to jump by 10 percent of GDP.[12] Research also finds a correlation among different kinds of shocks, i.e., they do not occur in isolation and are often causally related. In 2008–2009, for example, the average macroeconomic shock in advanced countries was 2.4 standard deviations of the pre-crisis distribution of shocks. The crisis also reversed the longitudinal trend and induced an average increase of 30 percent in the debt-to-GDP ratio in the OECD countries (Figure 6.1).[13]

These varied considerations reflect the complexity of the decision on the trajectory of the debt-to-GDP ratio. Most of the debate in the literature concerns the desired pace of ratio-cutting at times of stability and the question of whether continued action to reduce the ratio should be taken even when the economy slows (insofar as the deficit can be funded; otherwise, policymakers have to apply contractionary fiscal policy no matter what). In this context, it is also important to assess the nature of the risks that each country faces. The greater the financial, security, political, and demographic risks and the larger the exposure to natural disasters, the lower the debt-to-GDP ratio should be as a cushion against crises. For all the above reasons, and taking security risks into consideration, the recommended policy for Israel is to continue lowering the debt-to-GDP ratio moderately by maintaining a deficit ceiling that would lead to this outcome.

[7] V. Teles and C.C. Mussolini (2014), "Public Debt and the Limits of Fiscal Policy to Increase Economic Growth," *European Economic Review,* 66, pp. 1–15.

[8] A. Chudik, K. Mohaddes, M.H. Pesaran, and M. Raissi (2017), "Is there a Debt-Threshold Effect on Output Growth?" *The Review of Economics and Statistics,* 99(1) March, pp. 135–150.

[9] J. Escolano and V. Gaspar (2016), "Optimal Debt Policy Under Asymmetric Risk," IMF Working Paper 16/178.

[10] Assuming that the long-term average change in debt should be zero, the desired change in debt in non-crisis years is a decrease of 1.1 percent of GDP in Britain (in practice, it was 1.3 percent) and 0.5 percent of GDP (in practice: 0.3 percent) in the US.

[11] International Monetary Fund (2016), "Analyzing and Managing Fiscal Risks—Best Practices," Washington, D.C., http://www.imf.org/external/pp/longres.aspx?id=5042.

[12] Ibid.

[13] By comparison, Israel's debt fell by 2.2 percent of GDP per year on average between 1995 and 2016. The maximum decrease was 10.2 percent of GDP in one year (2000); the largest increase was 14 percent of GDP in 2000–2003.

**Box 2**
**PPP (Public-Private Partnership) Infrastructure Investments in Israel**

In August 2016, the government adopted a new multi-year transport investment plan that included a large number of expensive and geographically dispersed projects.[1] In its decision, the government stated that in developing and performing these projects much weight would be given to partnership with the private sector. According to the decision, the government would be responsible for planning, preparation, utility relocation and other preparatory work, in all projects. Everything else, including laying rails, acquiring rolling stock, and operation and maintenance of lines, would be performed by a public-private partnership.

Beyond the projects listed in the decision, it was decided to draft a multi-year plan for infrastructure development that would be updated each year. This plan would encompass all government projects that include more than NIS 250 million in physical construction that are expected to begin in the next five years. It would also examine the suitability of each project for PPP performance and funding. Pursuant to the findings, the appropriate projects would be advertised as a "Multi-year Infrastructure Program for the Promotion of Growth."

The projects specified in the decision included several that added up to NIS 43 billion for mass transit development. The performance of these projects appears to be well suited to PPP due to their immense complexity, the specific knowledge and technology that their performance entails, and their significant long-term maintenance and operating costs. The projects mentioned in the plan were the following:

- Metropolitan Tel Aviv—construction and operation of the Green Line of the light rail system. Running from Herzliya to Holon and Rishon Lezion via Tel Aviv, the line is expected to carry 65,000,000 passengers per year. The Ministry of Transport currently estimates its cost at NIS 20 billion. Government-owned NTA Metropolitan Mass Transit System, Ltd. is responsible for contact with the private sector on this project.
- Metropolitan Tel Aviv—construction and operation of the Purple Line of the light rail system, linking the eastern metropolitan areas (Yehud, Or Yehuda, and Giv'at Shmuel) with downtown Tel Aviv. The line is expected to carry 60,000,000 passengers per year. The Ministry of Transport currently estimates its cost at NIS 8.6 billion. Government-owned NTA Metropolitan Mass Transit System, Ltd. is responsible for contact with the private sector on this project.
- Metropolitan Haifa—construction and operation of a light rail line between Nazareth and Haifa. It is expected to link the Nazareth bloc with Kiryat Ata and Haifa (the Lev Hamifratz terminal). The Ministry of Transport currently estimates its cost at NIS 5.9 billion. The Trans-Israel Highway Corporation, Ltd. is responsible for contact with the private sector on this project.

[1] Government Decision 1838, August 11, 2016—Multiannual Investment Plan for Metropolitan Public-Transport Development.

- Metropolitan Jerusalem—construction and operation of the Green Line of the Jerusalem light rail. The line is expected to link southern Jerusalem (Gilo) with the northern part of the city (Neve Yaakov and Mount Scopus). The Ministry of Transport currently estimates its cost at NIS 8.5 billion. An interministerial tenders committee headed by the Accountant General is responsible for contact with the private sector on this project.

Below we briefly explain the PPP mechanism, assess some of its advantages, drawbacks, and efficient methods of use, and briefly describe the experience gained in using this method in Israel.

**What are PPP projects?**[2]

The general definition of a public project carried out in conjunction with the private sector (Public-Private Partnership) is a project entailing long-term public investment in which a private entity assumes significant management risks and responsibilities and payment depends on results.[3] Many types of contracts fit under this broad umbrella[4]: construction of a new property or renovation of an existing one; the need for private funding in project development; delivery of services to multiple end-users or a single buyer; charging users for the project or payment by the government on the basis of milestones and performance; and transfer of property from the private sector to the public sector at the end of the contract or retention by the franchisee. Most PPP contracts in Israel involve the construction of a new property, use of private funding, and long-term operation and maintenance of the property by the franchisee. The method of service delivery and collection of payment varies among projects. In most transport projects, multiple end-users use and pay for the service[5] (e.g., passengers on the Jerusalem light rail and drivers using the central and northern portions of the Trans-Israel Highway and the fast lane at the entrance to Tel Aviv) or service is delivered to multiple end-users at government expense (e.g., new non-toll roads). In the case of desalination, the buyer is a government-owned company, Mekorot.

**Advantages and drawbacks of PPP**

The main advantage of PPP projects such as those implemented in Israel, in comparison with ordinary government performance tendering, is that a PPP contract combines construction and long-term maintenance and operation of an infrastructure project. Since the developer's return depends on the extent of use and, in turn, the quality of service, this combination mobilizes the franchisee's knowledge, expertise, experience, and efficiency for optimum construction of the property. In

[2] Projects of this kind go by many names, such as PPP, PFI, BOT, BOOT, DCMF, DBFO, and others. Here we define the general case and explain differences among specific types of projects.

[3] World Bank (2014), *Public-Private Partnerships Reference Guide, Version 2.0,* Washington, D.C., p. 17.

[4] Delmon, J. (2010), "Understanding Options for Public-Private Partnerships in Infrastructure," Policy Research Working Paper, World Bank, 5173.

[5] Most contracts of this kind include a government guarantee up to a minimum number of users or a government payment for availability using the take-or-pay method. In take-or-pay, the government undertakes to purchase a certain number of units and pays for them even if they are not bought. Payment for water from PPP desalination facilities, for example, combines a fixed payment for availability and a payment per cubic meter of water actually delivered.

particular, the franchisee has an incentive to invest in quality planning and in construction that minimizes its long-term operation and maintenance costs. This is in contrast to projects in which a developer is chosen in competitive bidding for construction only, where the developer has no incentive to improve the quality of performance beyond what is required according to the terms of the tender. To attain the desired outcome, a significant portion of project risks and profits must be assigned to the developer and the developer must be able to play a meaningful role in the planning phase in order to fully apply its knowledge, experience, and motivation.

PPP projects also, however, have several drawbacks that the ordinary tendering method avoids:

- The cost of capital for the private franchisee in PPP is higher than that of the government.
- The costs of the tendering process (in money and time) are higher in a PPP project than in ordinary tendering, mainly due to the complexity of the projects involved.
- The complexity of a PPP tender and the winning company's role as the long-term operator and maintainer of the property amplify the power of the company vis-à-vis the government, particularly in projects of major economic importance, and impede the entry of a successor in the event that the performing firm runs into difficulties. For this reason, franchisees are able to renegotiate with the government in mid-project, as happened, for example, in the cases of Highway 531 and the Red Line of the Jerusalem light rail. When such negotiations take place after the competitive process has ended, the new terms concluded may impose significant costs on the government.
- As the government payment for the project is spread over several decades, far beyond an incumbent government's horizon, such projects may create large-scale multi-year liabilities without being subjected to transparent public and parliamentary debate regarding priorities. This is because the discussion focuses on the product itself and not on alternative uses of resources at the time when the franchisee will have to be paid. The more the budgeting process is subject to effective and long-term constraints, the less risk there will be of PPP projects being used as a way of circumventing budgetary constraints.

**Principles for maximizing PPP's advantages and minimizing its drawbacks, from international experience**[6]

- In each project, it is important to compare PPP with regular tendering in cost-benefit terms, including examination of the long-term fiscal effects of choosing PPP.
- The use of PPP for relatively small projects should be avoided and, if necessary, several small projects should be combined in one PPP tender. This is due to the high fixed costs (in money and time) of the PPP tendering process.
- The government should act to complete various statutory processes such as obtaining building

[6] S. Araújo and D. Sutherland (2010), "Public-Private Partnerships and Investment in Infrastructure," OECD Economics Department Working Papers, No. 803, OECD Publishing, Paris.

permits and municipal and environmental authorization before tendering. It has a comparative advantage in these activities.

- A government unit specializing in managing and monitoring PPP tenders and contracts should be set up. Projects of this kind are complex and entail specific knowledge and professionalism for effective performance.
- The PPP contract should focus on desired outcomes and binding constraints, and not on determining ways to attain the aforementioned outcomes. Thus the winning bidder can apply its knowledge and technology to reduce expenses and improve the project. Such a focus also makes it possible to assign the planning process to the developer, creating a better integration of planning and performance and clarifying the developer's responsibilities.
- PPP contracts should include terms for apportioning the remaining value of the property / the sum that the government will pay the franchisee for the property at the end of the contract, so that the franchisee will have an incentive to continue investing in the property throughout the lifetime of the project.
- Payments throughout the franchise term should be made dependent on requisite quality of service, if this quality can be well-defined.[7]

There are two conspicuous disparities between these principles and the characteristics of the government plan discussed above:

- The plan leaves the planning phase in government hands. The government performs detailed planning and then invites bids for performance in accordance with the plans set forth. The structure of such a tender facilitates the pricing process in the tender because the technical requirements are clearly specified, allowing the focus to be placed on price competition among qualified bidders. This process, however, does not make full use of the developers' knowledge and experience. It also creates room for mutual recriminations and renegotiations if difficulties arise mid-performance.
- Instead of promoting the creation of an entity that has expertise in PPP-type projects, the plan, even at this early stage, assigns responsibility for relations with the private sector to several different entities—NTA, Trans-Israel, and the Accountant General. Given the complexity of the process, it is feared that this division of responsibility will not allow for optimal use of the public sector's accumulated knowledge. It would be better to establish a PPP unit that would centralize processes and knowledge of the topic for the entire government and create expertise in this domain.

**Examples of PPP projects**

- The Trans-Israel Highway ("Highway 6")—In 1993, a state-owned corporation, Trans-Israel

[7] Service quality is easy to measure and supervise in some types of projects, e.g., desalinated water. In other projects, definition or measurement is difficult if not impossible. In roads, for example, the quality of construction materials used can be checked but traffic, loads, and accidents on the road depend on many factors and are hard to attribute directly to the quality of building and maintenance.

Highway Corporation, Ltd., was formed for the purpose of building this road. The Trans-Israel Law, under which land for the highway was expropriated, was legislated in 1994, and the Toll Road Law allowing such a road to operate in Israel was passed in 1995. In 1997, Derech Eretz, Ltd., tendered the winning bid to build the road, and in 1998 the contract with it was signed. Construction began in 1999 and the first segment of the highway was opened to traffic in 2002. The cost of the project was $3 billion and the franchisee charges tolls in accordance with the franchise agreement and the Toll Road Law. The thirty-year franchise includes state insurance of minimum demand expressed in quantity terms. At the end of the contract, the road will be transferred to state ownership with no further consideration.

- The Ashkelon desalination facility—The contract with the winning bidder was signed in November 2001. In August 2005, the facility began to produce water at the rate of 119,000,000 cu. m. per year. At the end of the twenty-five-year franchise, the facility will be handed over to the state. The franchisee is paid a fixed sum on a take–or-pay basis and a variable sum per cubic meter actually delivered.
- The Jerusalem light rail—Planning of the Red Line began in 1999. Construction was supposed to begin in 2003 and end in 2006, and the state expected to spend NIS 0.5 billion on preparatory work in 2000–2003. In 2002, the estimate of public expenditure for the preparatory work ballooned to NIS 1.3 billion. In October 2002, the winning bidder signed a thirty-year contract in which it proposed to perform the project in return for a NIS 1.36 billion grant upon completion. In 2003, following renegotiations with the franchisee, the state agreed to remit about half of the grant during the project due to the wave of terror attacks. In 2004, after further negotiations, the state agreed to participate in financing the replacement of the franchisee's equipment after ten years. The line began to operate in 2011. The franchisee charges fares, with ticket prices being set and adjusted as set forth in the contract. The contract includes a mechanism for participation in demand risks—partial indemnification for low ridership and payment of royalties / consideration for strong ridership. Problems with the project included high tendering and preparation costs, renegotiations in which the franchisee was given larger and earlier payments, revision of the specifications in the course of construction, and delays in completing the project.
- Highway 531—The PPP tender for the construction of this road and the Sharon rail line was issued in 2008. Shafir Ltd. tendered the winning bid and the project was scheduled for completion in 2012. The state undertook to pay a grant of NIS 638 million in increments commensurate with milestones. In 2008, Shafir asked the state to expedite payment of the grant because it was unable to attain financial closing. In 2010, after multiple delays and following to the company's demand for NIS 200 million in compensation for an increase in interest rates, the state cancelled the tender and decided that the project would be performed

by the government.[8] The project was divided into six segments, of which the last are expected to be completed in 2017.[9] Problems with the project included renegotiations, financial closing difficulties in view of the terms of the tender, and delays in completion. As a result, the project was nationalized, costs mounted, and project completion was further delayed.

- The Red Line of the Tel Aviv light rail—The cornerstone of the project was laid in 1997 and NTA, Ltd. was formed to monitor performance. The route was approved in 2001 and the PPP tender was published in 2003. In 2006, a group called MTS was chosen to carry out the project. In 2007, MTS signed the contract and began to plan the project and attempt financial closing. In 2010, after MTS repeatedly failed to secure funding, the state nationalized the project and decided that it would be performed by the government. Work began in 2011 and is expected to continue for many years. Problems with the project include steep tendering and preparation costs, renegotiations, financial-closing difficulties in view of the terms of the tender, and delays in completing the project—resulting in nationalization, an increase in costs, and further delays.

[8] "A Year After Tender Is Scrapped—Highway 531 Project Starts Over," *The Marker* (Hebrew), January 16, 2011, http:/www.themarker.com/misc/1.598335.

[9] https://www.iroads.co.il/content/כביש -531- לכל-אורכו. (in Hebrew)