Chapter 6
The General Government, Its Services and Financing

- The general-government deficit climbed to 3.8 percent of GDP in 2018, the highest since the 2013 fiscal adjustment.[1] The government budget deficit was 2.9 percent of GDP, 1 percentage point higher that in 2017 and matching the ceiling set in the budget.
- Due to the deficit increase, the public-debt-to-GDP ratio stopped falling in 2018 and ended the year at 61 percent of GDP—still below the OECD average.
- Public expenditure continued to surge, rising by 1.7 percentage points as a share of GDP in cumulative terms in the past three years.
- The sizable increase in expenditures in recent years was apportioned among main budget items in much the same way as expenditures were divided at the beginning of the decade. The investment component increased considerably, rising by 0.6 percentage points as a share of GDP. Most of this increase was contributed by municipal authorities, in a trend resembling that of previous municipal election years.
- The tax burden declined by 1.4 percent, as the effect of the one-off revenues in 2017 dissipated, and was slightly below the 2015–2016 level.
- In the past three years, government policy has been procyclical, allowing the cyclically adjusted deficit to expand amid stable growth and a full-employment environment—as also reflected in an increase in the actual deficit. In contrast, most OECD countries applied countercyclical policies and exploited growth to lower their budget deficits.
- Across-the-board budget cuts have been used increasingly in recent years. In 2018, for the first time since 2005, government resolutions included major across-the-board cutbacks to four years ahead (2018–2021).
- The education expenditure per student relative to per-capita GDP has been rising in the past decade. In 2017, expenditure surpassed the level typical of the early 2000s. Only a small portion of the spending increase was earmarked for narrowing achievement gaps and, in particular, investing more in Arabic-speaking students—an important way to sustain today's growth rate in the long term and to narrow productivity gaps between Israel and the OECD.
- The spending increase allotted to education in recent years has been used to fund reforms. Some of it created stronger demand for teaching personnel, and another portion revised teachers' terms of employment in such a way that their global wages increased but their hourly wage hardly changed.
- The increased hiring of teachers improved the student-teacher ratio. However, since it was not accompanied by a meaningful increase in the hourly wage, the quality of new teachers—measured in terms of their matriculation scores—has not risen in recent years.

[1] In 2018, the Central Bureau of Statistics revised the way it presents the National Accounts data on general-government activity after adjusting its definitions of interest payments to the international norm. Consequently, indexation differentials on the repayment of government bond principal are recorded as interest payments and, for this reason, are included in public expenditure and the calculation of the deficit. The adjustment was applied retroactively to all historical data. https://www.cbs.gov.il/he/mediarelease/DocLib/2018/238/08_18_238b.pdf

1. MAIN DEVELOPMENTS

The combination of larger public expenditure and a smaller tax burden led to a sharp increase in the general-government deficit.

Fiscal policy remained accommodative, as public expenditure grew and tax rates were lowered. Public expenditure as a share of GDP was 39.7 percent, the highest since the 2013 fiscal adjustment. Concurrently, the tax burden dropped sharply, by 1.4 percent of GDP, as the effects of the one-off revenues in 2017 waned. The combination of larger public expenditure and a smaller tax burden led to a sharp increase in the general-government deficit, by 1.9 percent of GDP, to 3.8 percent.[2] The cyclically adjusted deficit—the total deficit net of business-cycle effects—continued to grow this year, increasing by 1.8 percent of GDP. The steep deficit increase contributed to a halt in the downward trend of the public-debt-to-GDP ratio, which in fact rose slightly, to 61 percent (Table 6.1).

The central-government deficit—calculated on the basis of accounting rules that differ somewhat from those used by the Central Bureau of Statistics (hereinafter: CBS) to compute the general-government deficit[3]—was 2.9 percent of GDP, corresponding to the budget ceiling, but increased to 3.5 percent of GDP in the first two months of 2019.[4] This powerful deficit increase emphasizes the need for policy measures that will keep the government in line with its self-determined expenditure and deficit targets. Tax revenues ended the year slightly under the budget forecast for reasons including a steep increase in income tax refunds, due mainly to an exceptional increase in income tax collection in 2017—the year for which most of the refunds were made—and factors such as the ongoing lowering of corporate tax and the relatively high interest rate that the Israel Tax Authority pays on overpayment of tax advances. Total revenue matched the budget forecast chiefly because the National Insurance Institute amassed surpluses in excess of the forecast for the fourth consecutive year. Government spending was fully performed.

In the past three years, the growth in public expenditure accelerated, and its share of GDP increased by 1.7 percent in cumulative terms. There was no significant change in the expenditure composition.

In the past three years, the growth in public expenditure accelerated, and its share of GDP increased by 1.7 percent in cumulative terms. An analysis of the government's priorities as reflected in its apportionment of the increase during this time finds that

[2] The Central Bureau of Statistics (hereinafter: CBS) set the deficit at 3.3 percent of GDP. The reason for the difference is that the CBS subtracted revenues on account of land sales from public investment because, according to its interpretation of the international accounting rules, land sales constitute a negative government investment. Most OECD countries have had negligible revenues on this account in recent years. (The OECD average is 0.05 percent of GDP; the subtraction reflects activity such as sales of farmland that the state had improved, as in Poland, or the purchase and renovation of public housing units followed by the sale of the units to eligible persons, as in the Netherlands.) In Israel, in contrast, these revenues originate in sales of land historically owned by the State—i.e., realization of assets—and are estimated at more than 2 percent of government expenditure. Since the realization of assets is essentially a book transaction and sales have been quite volatile in recent years, we present public expenditure without subtracting land-sale revenues in order to reflect the macroeconomic effect of government activity and present land sales as a funding line that restrains the increase in the debt.

[3] In quantitative terms, the main difference is that the CBS includes indexation differentials on the public debt that comes due as an interest expenditure, in order to align the calculation with the international rules.

[4] The cumulative deficit in the twelve months ending in February 2019.

Table 6.1
The main components of the general government's revenue and expenditures, 2012–18

(percent of GDP)

	2012	2013	2014	2015	2016	2017	2018
Total public revenue	**35.7**	**36.1**	**36.2**	**36.5**	**36.1**	**37.5**	**35.9**
Income from property	0.7	0.7	0.6	0.6	0.5	0.6	0.5
Total taxes	**29.8**	**30.6**	**30.8**	**31.0**	**30.9**	**32.4**	**31.0**
Indirect taxes on domestic production	11.5	12.0	12.0	12.2	11.5	11.9	11.9
Indirect taxes on civilian imports	3.6	3.4	3.7	3.4	3.9	3.1	3.2
Direct taxes, fees and levies	9.7	10.1	10.0	10.3	10.3	12.1	10.7
National Insurance Institute revenue	5.1	5.0	5.1	5.1	5.2	5.3	5.2
Grants	1.5	1.3	1.3	1.4	1.4	1.1	1.1
Other[a]	3.6	3.5	3.5	3.4	3.4	3.4	3.3
Total public expenditure[b]	**40.4**	**40.4**	**38.9**	**38.0**	**38.0**	**39.4**	**39.7**
Current expenditure	36.4	36.2	35.0	34.3	34.1	35.1	35.4
Domestic civilian consumption	16.9	17.0	16.9	16.8	16.9	17.4	17.6
Domestic defense consumption	4.6	4.6	4.5	4.4	4.4	4.4	4.4
Defense imports	1.1	1.0	1.0	1.0	1.0	0.7	0.7
Direct subsidies	0.6	0.7	0.7	0.7	0.7	0.8	0.9
Transfer payments on current account	9.6	9.5	9.4	9.4	9.2	9.6	9.6
Interest payments[c]	3.6	3.5	2.4	2.1	2.1	2.2	2.2
Transfer payments on capital account[d]	1.8	1.9	1.8	1.7	1.6	1.8	1.8
Investments of the general government[b]	2.2	2.3	2.1	2.0	2.2	2.5	2.6
Primary civilian expenditure[b]	**31.1**	**31.4**	**30.8**	**30.5**	**30.6**	**32.1**	**32.3**
Total deficit of the general government[b]	**4.7**	**4.4**	**2.7**	**1.6**	**1.9**	**1.9**	**3.8**
Central government deficit (excluding provision of credit)[e]	3.9	3.1	2.7	2.1	2.1	1.9	2.9
Deficit using international definition[b,f]	4.8	4.5	2.7	1.7	1.9	2.0	3.7
Current deficit of the general government	3.8	3.3	2.0	1.2	1.3	1.0	2.8
Total cyclically adjusted deficit using international definition[b,f]	5.0	4.9	3.3	1.8	2.2	2.4	4.2
Net public debt[g,h]	63.1	62.1	61.7	59.9	58.4	56.7	57.2
Gross public debt[g]	68.4	67.0	65.8	63.7	62.0	60.5	61.0

[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] Excludes the decline in revenues from the sale of state-owned land.
[c] In 2018, the Central Bureau of Statistics revised the calculation for interest expenses from 1995 onward, and they are now calculated on a cumulative nominal basis plus indexation differentials on the public debt.
[d] Includes mortgage subsidies and transfers on the capital account to nonprofit organizations and businesses.
[e] The central government deficit is calculated according to various definitions.
[f] SOURCE: OECD.
[g] Excluding municipalities' debts to the government.
[h] 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.

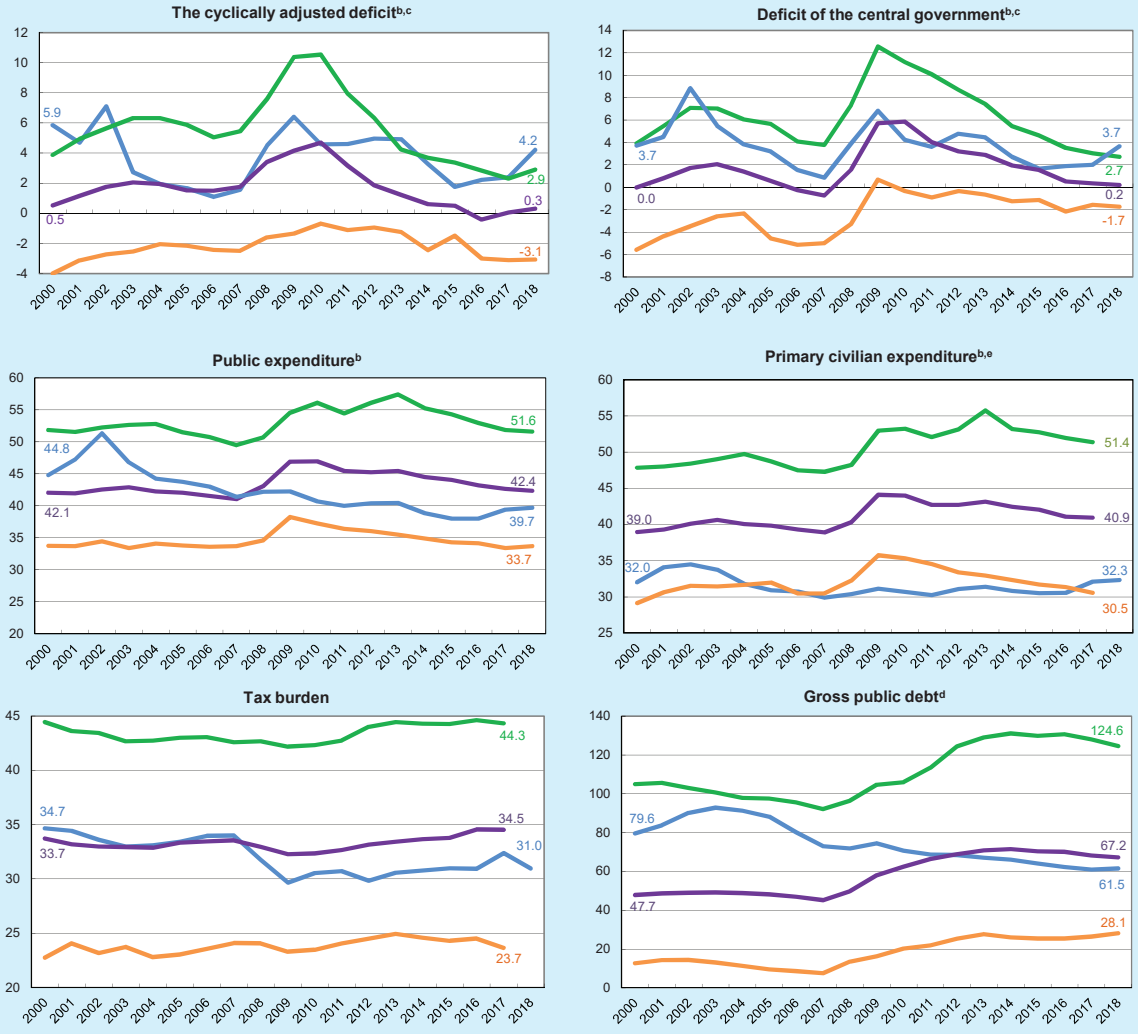
much of the extra funding—0.6 percent of GDP—accrued to investment in transport and housing infrastructure (Table 1). Most of the investment was performed by municipal authorities, true to the trend in municipal election years. This slice of the spending-increase pie was twice as large as the share of investment in total expenditure in the previous period. In contrast, the share of defense in the extra spending fell short of its proportion in total expenditure, and education, health, and social services received increases that approximated their share in total spending.

Government policy has been procyclical since 2014, allowing the cyclically adjusted deficit to grow against the background of stable growth and a full-employment environment. Most OECD countries that have a positive output gap, in contrast, have applied countercyclical policies during this time. Thus, Israel's comparison countries lowered their deficits from 2.0 percent of GDP in 2014 to 0.2 percent in 2018 (almost balancing their budgets—Figure 6.1) while Israel's deficit climbed from 2.7 percent of GDP to 3.7 percent (according to the international definition).

In recent years, the government has increased assistance to weaker population groups and expenses to improve public services and to increase investments. The increase was not accompanied by an increase in permanent sources of funding and was reflected in an increase in the structural deficit.

In the past few years, the government has boosted civilian expenditure considerably and earmarked the added increment for greater assistance for disadvantaged population groups, improvement of public services, and expansion of investment. However, the expenditure increase was not accompanied by an increase in permanent sources of funding and coincided with the lowering of tax rates. Thus, it was manifested in an increase in the structural deficit to a level that the government will find hard to maintain in the long term, particularly if and when the business cycle turns around and growth slows, and in view of its decision to carry out additional cost-intensive programs in the next few years. Unless larger permanent sources of revenue are found or major efficiencies are introduced in other expenditure items including defense, the government will struggle to sustain the large spending increases while maintaining fiscal stability. Furthermore, if the business cycle does change direction, the government may have to restrain spending and/or raise taxes precisely when economic activity will need fiscal support. If it decides to cut its deficit at the present time, when the macroeconomic conditions for such adjustments are more convenient, it will probably have to do so largely by means of tax hikes (including cutbacks in tax benefits) because civilian expenditure in Israel is low relative to the level in other advanced economies (Figure 6.1). Nevertheless, it is recommended to specify areas of public expenditure that may be streamlined and cut.

Figure 6.1
Israel's Fiscal Aggregates Compared to the OECD Average[a], 2000-18 (percent of GDP)



[a] Data for OECD countries are arithmetic means of all member countries for which there are data.
[b] Deficit, cyclically adjusted deficit, expenditure, and civilian expenditure data for Israel are according to the accepted international definition and taken from the OECD systems.
[c] Excluding the reduction of revenue from the sale of state-owned land. See discussion in Footnote 2.
[d] Data on public land are in line with the International Monetary Fund's definition, and are taken from the IMF systems.
[e] There are still no data for OECD countries for 2018, and for some countries with missing 2017 data, we assumed that defense expenditures in 2017 remained the same as in 2016.
SOURCE: Based on OECD data, Central Bureau of Statistics, OECD Revenue Statistics 2018, and IMF.

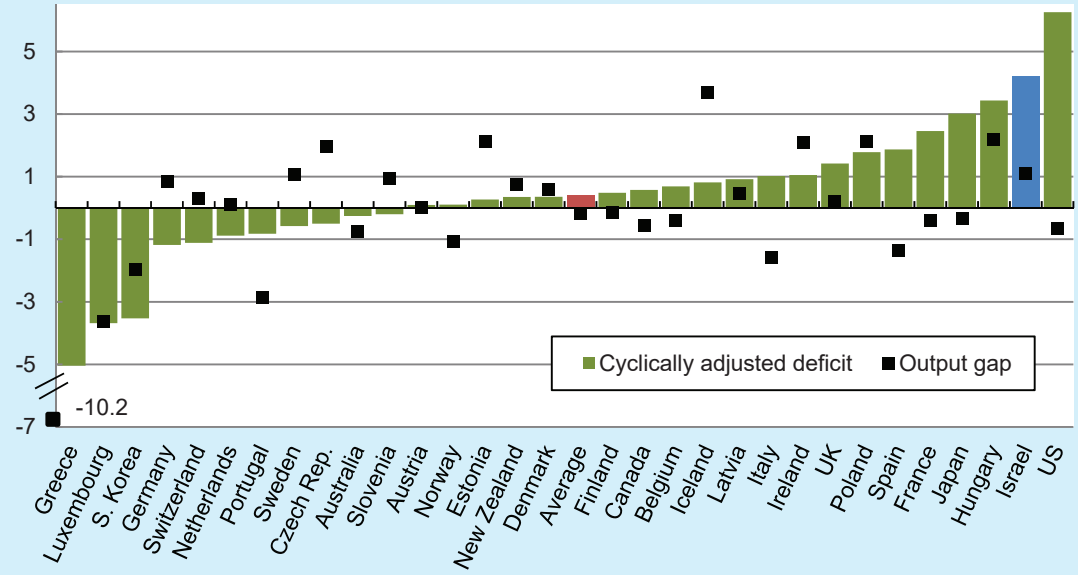
2. ISRAEL'S FISCAL AGGREGATES FROM AN INTERNATIONAL PERSPECTIVE

In 2018, the gap between Israel and the OECD average in the weight of primary civilian expenditure continued to narrow. Expenditure in Israel increased by 1.8 percent of GDP in the past three years, but it remains far below the corresponding figure in most OECD countries.

In Table 6.1 and Figure 6.1, Israel's fiscal aggregates are compared with OECD figures. In 2018, the gap between Israel and the OECD average in the total public expenditure to GDP ratio continued to narrow. The spread in primary civilian expenditure also contracted considerably due to the increase of 1.8 percent of GDP in this aggregate in Israel in the past three years, but it remains far below the corresponding figure in most OECD countries. Israel also has a low tax burden by OECD standards, and the difference widened in 2018 because the burden in Israel fell due to the waning of the effect of previous unusually large revenues and the continued lowering of tax rates (e.g., import and corporate taxes). The widening gap marks the continuation of a process that began in 2008. The combination of an increase in the public expenditure to GDP ratio and a falling tax burden caused the deficit to surge to a level exceeding that in most OECD countries. Even when business-cycle effects are excluded, the gap has widened. Importantly, since Israel has a higher rate of population growth than most comparison countries, it can sustain a larger permanent deficit. The differences in population growth rates, however, fall short of today's gap in the cyclically adjusted deficit, which is about 4 percent of GDP. The deficit increase in 2018 also halted the decline in the (gross) public-debt-to-GDP ratio in Israel, although the ratio remains lower than corresponding ratios in OECD countries.

The widening deficit gaps between Israel and the OECD countries emphasize that Israel will greet the next cyclical change with less maneuvering room within the fiscal space. Figure 6.2, relating to the OECD countries in 2018, presents the cyclically adjusted deficit and the output gap as indicators of their position in the business cycle. Greece and Luxembourg, for example, are in a much different place than Israel because they have a negative output gap. Therefore, their policies do not lend themselves to cross-national comparison with Israel's. There is another group of countries that have positive ouput gaps—Denmark, New Zealand, Slovenia, Sweden, and Germany—meaning that they are in a positive stage of the business cycle and are therefore comparable with Israel. As the figure shows, all these countries have smaller cyclically adjusted deficits than Israel's.

Figure 6.2
The Cyclically Adjusted Deficit[a,b] and Output Gap in OECD Countries, 2018
(percent of GDP)



[a] The figure for Israel is present net of revenue from the sale of land. See discussion in footnote 2.
[b] A positive figure reflects a cyclically adjusted deficit, and a negative figure reflects a surplus. A positive (negative) output gap reflects a positive (negative) deviation of actual GDP from potential GDP.
SOURCE: Based on OECD data.

3. GOVERNMENT EXPENDITURE

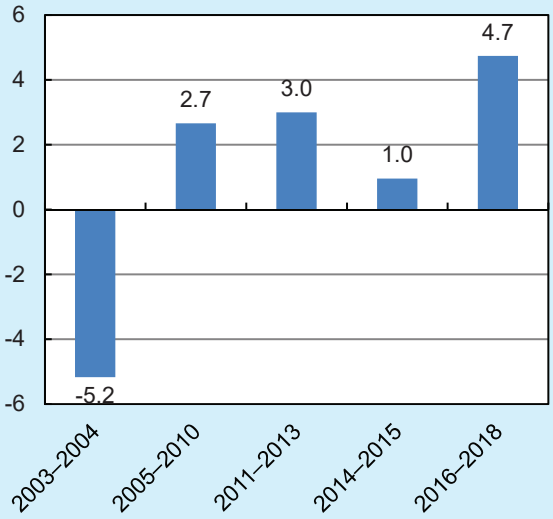
General-government expenditure increased by 5.1 percent in 2018—more slowly than in 2017 but nevertheless rapid and in excess of nominal GDP growth.

General-government expenditure increased by 5.1 percent in nominal terms in 2018, more slowly than in 2017 but nevertheless rapid and in excess of nominal GDP growth (4.4 percent, Table 6.2). The rapid growth of civilian consumption (5.9 percent) contributed to the increase in public spending, while domestic defense consumption increased more modestly. The strong growth of government investment was typical of the 2016-2018 period, and included rapid expansion of investment in overland transport. The increase in transfer payments moderated after rising sharply in 2017, and current per-capita transfer payments increased by 2 percent. The growth rates of per-capita healthcare and education expenditure also slowed in the reviewed year (2.8 percent and 2.3 percent, respectively) after rapid increases in the two previous years. The prolonged decline in the growth rate of interest payments stopped in 2017–2018, stabilizing at 2.2 percent of GDP after the decline in interest rates abroad stopped and after the public-debt-to-GDP ratio stabilized in recent years.

The average increase in public expenditure accelerated in the past three years relative to the two years following the social protests of 2011. Figure 6.3 presents main the expenditure trends between 2003 and 2018. In 2003–2004, expenditure contracted considerably as part of an economic recovery program, and in 2005–2010 it increased gradually. In 2011, following the social protests, the rate of expenditure growth

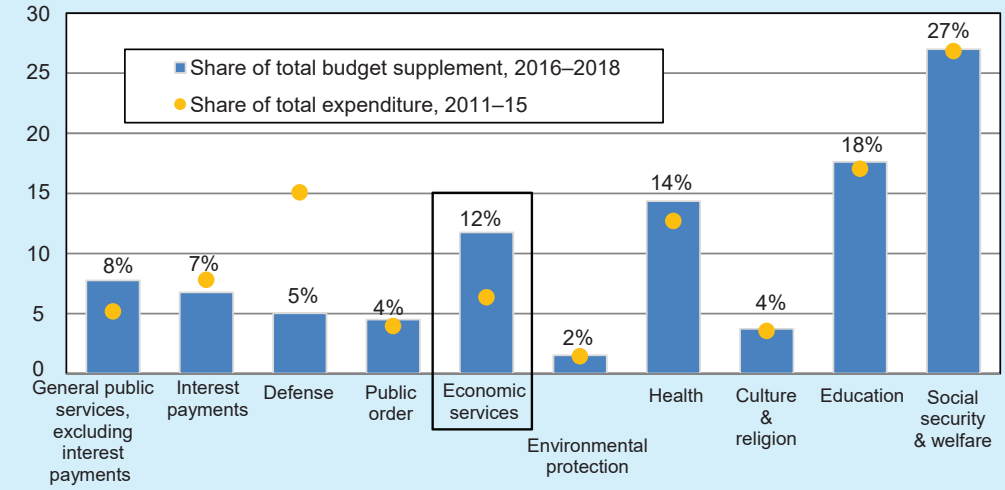
increased and, in the absence of balancing measures on the revenue side, the deficit grew to about 4.5 percent (2012–2013 average). The fiscal adjustment in the 2013–2014 budget held the rate of increase to only 1 percent, but expenditure growth again increased rapidly in 2016, even beyond GDP growth.[5] This brought expenditure as a share of GDP to 39.7 percent in 2018, approximating the level preceding the 2013–2014 adjustment. In the three years of acceleration, expenditure increased by 1.7 percent of GDP in cumulative terms.

Figure 6.3
Growth Rate of Public Expenditure, in Current Prices, 2003–2018
(percent)



SOURCE: Based on Central Bureau of Statistics.

Figure 6.4
Expenditure by Goals: Expenditure as a Share of Total Budget Supplement in the Acceleration Period (2016–18) Relative to its Average Weight in Total Expenditure in 2011–15[a] (percent, total supplement=100%)



[a] Excluding the housing and community services section.
SOURCE: Based on Central Bureau of Statistics.

[5] For a cross-national comparison of public expenditure as a share of GDP, see Bank of Israel, *Annual Report* for 2017, Chapter 6.

Parsing the budget increase in 2016–2018 by intended uses, we find that the largest portions of the budget increase were allocated to social insurance and welfare (27 percent), education (around 20 percent), and healthcare (14 percent) (Figure 6.4), resembling the apportionments for the same items in previous years' expenditure.[6]

The government's change of priorities in the three years of rapid increase (2016–2018) is reflected in the relationship between each type of expenditure's share in the increase and its share in total spending in the preceding years (2011–2015). When the expenditure item's share of the budget increase exceeds its share in total expenditure, it means that the government gave this item a higher priority than its previous policy had. Figure 6.4, relates to the government's priorities as reflected

An examination of the government's priorities as reflected in the allocation of the budgetary supplements in 2016–18 shows that the top priority was economic services, which mainly includes investments in infrastructure and construction. Other allocations were close to their previous share of total expenditures.

Table 6.2
Rates of nominal increase of public expenditure in Israel, 2012–18[a]

	2012	2013	2014	2015	2016	2017	2018
Total public expenditure	7.0	6.7	0.7	3.0	5.0	7.5	5.1
of which: Interest payments	-5.9	3.3	-26.9	-9.9	5.9	7.6	6.8
Total primary expenditure	8.5	7.0	3.4	3.9	4.9	7.5	5.0
of which: Current primary expenditure	7.4	6.5	4.1	4.4	4.4	6.5	5.1
Current primary civilian expenditure	7.8	7.0	3.9	4.8	4.6	7.8	5.1
Per capita expenditure on healthcare	5.6	5.2	4.4	1.8	5.4	4.4	2.8
Per capita expenditure on education	8.2	6.2	2.1	1.8	3.5	4.4	2.3
Public consumption	7.6	6.5	4.6	4.2	4.6	5.0	5.4
Public consumption excluding defense imports	7.0	6.8	4.2	4.4	4.7	6.4	5.5
Civilian consumption	8.2	6.9	4.4	4.5	5.5	6.8	5.9
(Per-capita civilian consumption)	6.2	5.0	2.4	2.4	3.4	4.8	3.8
Domestic defense consumption	2.9	5.3	4.7	2.8	3.2	4.4	5.1
Transfer payments on the domestic current account	6.9	5.1	3.8	4.7	3.7	8.0	4.0
(Per-capita transfer payments on the domestic current account)	5.0	3.1	1.8	2.7	1.7	5.9	2.0
Investments of the general government	16.1	13.1	-3.0	0.8	14.8	14.7	7.7
of which: Land transport infrastructure	17.1	25.7	-11.2	-5.4	9.1	12.9	15.7
Transfer payments on the capital account	20.1	9.1	-2.4	-0.5	2.7	18.4	0.1
Change in the CPI (annual average)	1.7	1.5	0.5	-0.6	-0.5	0.2	0.8
Change in the GDP deflator	3.6	2.3	0.4	2.9	0.7	-0.6	1.2
Change in the public consumption price index	3.8	2.8	0.7	1.2	0.4	1.6	1.7
Change in nominal GDP	6.0	6.5	4.9	5.3	5.0	3.7	4.4

[a] Public expenditure excluding the reduction of revenue from the sale of state-owned land. See footnote 2 in the Chapter.
SOURCE: Based on Central Bureau of Statistics data.

[6] Figure 6.4 presents the allocation of the spending increase by goals during the acceleration years (2016–2018)—i.e., the distribution of the difference between the expenditure levels in 2018 and 2015—and compares it with these goals' average shareof total expenditure in the preceding years (2011–2015).

in the apportionment of the budget increase, and shows that the highest priorities in those years were economic services, an item comprised mainly of infrastructure and building investments. Allocations for other expenditures (education, healthcare, social insurance and welfare, public order, culture and religion, and environmental quality) approximated their share in previous total expenditure. Expenditure on economic services was able to grow because the proportion of defense spending in the total budget continued to decrease after a lengthy period of low investment. A thorough examination of this item, however, shows that about two-thirds of the increase in investment originated in municipal authorities. This probably has to do with municipal elections because, historically, investments by municipal authorities spike in election years and in the year preceding them.[7] Israel had four rounds of municipal elections between 2000 and 2018, and there was a powerful surge of investment in these two years relative to the preceding two years—15 percent compared with 5 percent—and a retreat in investment the year after the elections.

Across-the-board budget cuts

To fund its programs, the government had to make several across-the-board budget cuts in 2018[8], meaning that it imposed a fixed rate of spending reduction on all ministries. Such cutbacks apply only to "elastic" budget items—procurements, subsidies, investment budgets, etc.—because some existing commitments such as payroll, signed contracts, and benefits cannot be cut back due to being anchored in statute.

In 2018, the government decided, for the first time since 2005, to make broad cuts for 4 consecutive years, 2018–2021, in order to meet the requirements of the numerator—the tool that examines the expected multiyear trend of the budget.

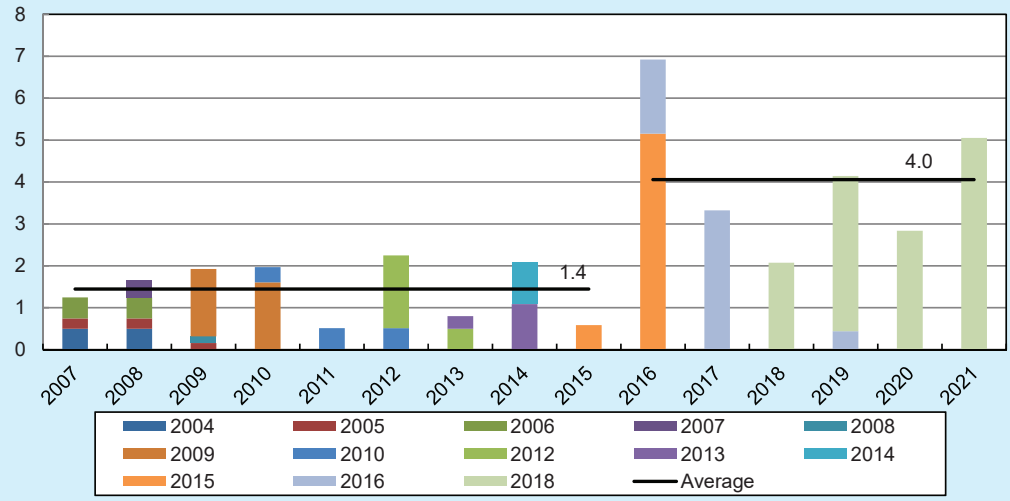
Figure 6.5, presenting the history of across-the-board cutbacks from 2007 onward by the year in which the government resolved to make the cutback, demonstrates the sizable increase in the use of this measure in recent years. In 2015, the government decided to slash the budget by NIS 5.7 billion—NIS 0.6 billion in the 2015 budget and NIS 5.1 billion in the 2016 budget—four times greater than the average reduction in previous years. Across-the-board cuts in 2016–2021 added up to NIS 4 billion. In 2018, government resolutions included—for the first time since 2005—across-the-board cutbacks over four consecutive years, 2018 and the three ensuing years (2019–2021). This is because the "Numerator," the tool used to examine the expected multiyear trend in the budget, went into effect in 2017, forcing the government to align its obligations with the spending limit and the deficit ceiling in the three years

[7] See Baskaran et al. (2015), "Revenue Decentralization, Central Oversight, and the Political Budget Cycle: Evidence from Israel," *European Journal of Political Economy*; and A. Brender (2003), "The Effect of Budget Performance on Municipal Election Outcomes in Israel, 1989–1998," *Journal of Public Economics* 87 (9-10): 2187–2205.

[8] Among other things, to give police, Prisons Service staff, and defense establishment pensioners a pay raise pursuant to labor court rulings.

after the budget year in which the obligation is approved.[9] At the beginning of 2018, when the budget for 2019 was approved, the government decided to reduce the budget across the board by NIS 2.8 billion in 2019, NIS 1.9 billion in 2020, and NIS 5.1 billion in 2021.[10] The cuts were applied to the budget base, and are cumulative from year to year, bringing the cumulative reduction in 2021 relative to 2019 to about NIS 7 billion. In late 2018, another across-the-board cut—NIS 0.9 billion in 2019 and NIS 0.9 billion in 2020—was approved in order to meet additional government obligations. The across-the-board measures in the budget for 2018–2021, approved in 2018, total NIS 13.7 billion.

Figure 6.5
System-Wide Cuts, by Year Government Decision Was Reached[a], 2007–21 (NIS billion)



[a] Each color in the figure represents the year in which the government decided on broad-based cuts for various years. The total broad-based cuts in a year equal the broad-based cuts decided on by the government in preceding years.
SOURCE: Based on Knesset website.

[9] The expenditure and deficit ceilings are not necessarily in tandem. The law requires the government to comply with the more restrictive of the two. Specifically, when revenue increases to a level exceeding what is needed to stay under the deficit ceiling, expenditure is still capped by the expenditure ceiling. All the government can do is lower tax rates or leave the deficit under its ceiling. When revenues fall short of the level needed to stay under the deficit ceiling, tax rates must be raised or expenditure cut to less than the expenditure ceiling.

[10] The future across-the-board cutbacks, parsed by budget items, are presented in Bank of Israel (2018), "Fiscal Policy in the Past Two Years Projections for Coming Years". https://www.boi.org.il/en/NewsAndPublications/PressReleases/Documents/2018-fiscal%20survey-final.pdf

4. GOVERNMENT REVENUE

Tax revenues were in line with the budget's revenue forecast. Taxes as a share of GDP declined by 1.4 percent relative to the 2017 level, because one-off revenues received in 2017 were absent, as they returned to the level of previous years—about 31 percent of GDP.

General-government revenue, comprising central-government revenue plus the receipts of municipal authorities and the National Insurance Institute, was NIS 476 billion in 2018. The weight of tax revenue fell by 1.4 percent of GDP relative to 2017 (Table 6.1) because one-off revenue from 2017, totaling 1.5 percent of GDP, did not recur, bringing tax revenue back to its typical level of earlier years—31 percent of GDP.

Central-government revenue was NIS 338.6 billion, slightly exceeding the budget estimate. Tax revenue (after an adjustment for a bookkeeping change in regard to government fees) matched the collection forecast in the budget.[11] Direct tax revenue declined relative to 2017, when it was skewed by revenue from one-off transactions (the sale of MobilEye and the Tamar Petroleum offering) and a sharp increase in dividend tax revenue due to a temporary discount on the tax rate. Income-tax refunds increased sharply (by 28 percent) in 2018. A comprehensive review shows that this increase was not anomalous, and essentially mirrored the spike in income tax collection in 2017, the year on account of which most of the refunds were made, and the effect of the protracted decreases in corporate tax rates and the relatively high interest that the Israel Tax Authority pays firms and self-employed individuals who overpay their tax advances. Net of the one-off transactions in 2017 and 2018, collection of direct and indirect taxes in the reviewed year exceeded the 2017 level by 2.5 percent. Nontax revenue climbed due to National Insurance surpluses, which exceeded the forecast for the fourth consecutive year. In 2015–2018, they exceeded the forecast by 13 percent on average, or about NIS 2.3 billion per year.

The sharp increase in income tax refunds

Income tax refunds went up by 28 percent relative to 2017, because collection increased markedly in 2017.

Income tax refunds went up by 28 percent—NIS 3.3 billion—relative to 2017, bringing the total to NIS 15 billion, nearly all (98 percent) paid out to firms and the self-employed (Figure 6.6a).[12]

Tax refunds are necessary because firms and the self-employed pay income tax in a two-stage process. First, they make monthly remittances during the tax year[13]—advance payments on account of their annual tax liability, which is calculated in final form only after the fiscal year ends.[14] The level of the advances is set by the Tax Authority, usually as a percentage of the taxpayer's monthly turnover. In the second stage—at the end of the fiscal year—the taxpayer files an annual tax return in which the annual tax liability is determined. If the total advance payments fall short of the

[11] In 2017, some revenue from the "Fees" line was transferred to "Other Nontax Revenues." The NIS 0.7 billion effect of the bookkeeping change in 2018 was not reflected in the budget forecast because the 2018 budget was approved in 2016.

[12] There were sharp fluctuations in tax refunds in late 2018 and the first two months of 2019. This chapter does not deal with this development, concerning itself solely with the 2018 annual data.

[13] Some taxpayers make income tax payments during the year on a bimonthly basis.

[14] Sums withheld at source from payments to taxpayers are also forwarded to the Tax Authority during the tax year.

annual liability, the taxpayer makes up the difference, and if the advances exceed the annual liability, the Authority refunds the difference plus interest and indexation differentials. Accordingly, income tax refunds relate largely to business activity that took place the previous year, and should be considered a finalization of that year's total collection.[15] Figure 6.6b shows the income tax refunds relative to collection from firms and the self-employed in the previous year—the year on account of which most of the refunds were made.

Figure 6.6a
Income Tax Refunds and Revenue 2000–2018
(NIS billion)

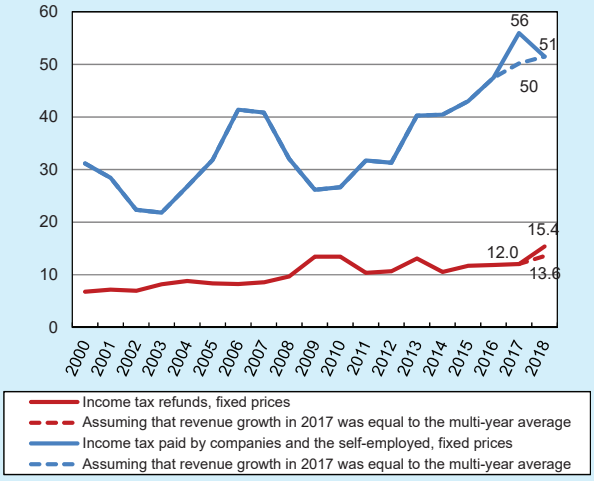
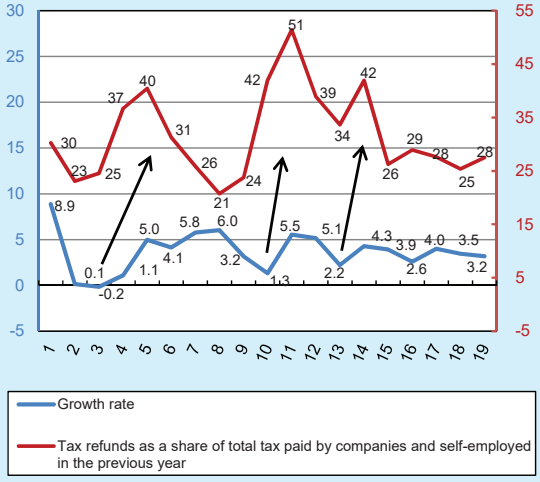


Figure 6.6b
Income Tax Refunds as a Share of the Previous Year's Total Revenue, and Growth Rates, 2000–2018 (percent)



SOURCE: Based on Tax Authority data.

From a long-term perspective, tax refunds as a share of total collection from firms and the self-employed does not show a clear trend. It depends on the size of error in the forecast of corporate and self-employed profits in the fiscal year. The error in the forecast is affected by changes in tax policy and in the business cycle. Policy changes are usually known before the start of the fiscal year to which they apply, and are therefore built into the forecast. Changes in the business cycle, however, are hard to predict, especially at times when growth changes direction. When growth takes a turn for the worse, taxpayers' profits are less than predicted, and are more likely to overpay their advances. Thus, after the slowdown that began in 2001, refunds increased from 23 percent of total income tax collected from firms and the self-employed in 2002 to 25 percent in 2003 and 40 percent in 2004. After the slowdown that commenced at the end of 2008, refunds escalated gradually to 51 percent in 2010. The slowing of growth in 2012 induced an increase in refunds in 2013, to 42 percent of total income

[15] According to the Israel Tax Authority rules, most refunds are related to activity in the previous fiscal year. Some of them, however, are paid out on account of earlier years.

The exceptional revenues in 2017 explain about two-thirds of the steep increase in refunds in 2018. That increase may also be due to three years of decreases in the corporate tax rate and the high interest that the Tax Authority pays for overpayment of advances.

tax remittances by firms and the self-employed in 2012. From 2014 onward, as the growth rate stabilized, the share of tax refunds leveled off at 25–29 percent. The proportion in 2018 was 28 percent, similar to the preceding years' refunds relative to collection the previous year, to which most of the refunds pertained (Figure 6.6b). Thus, the sharp increase in nominal terms is attributable mainly to an exceptional increase in tax collection from firms and the self-employed in 2017, which reached about 18 percent—roughly twice the average growth rate in the previous four years. Had collection in 2017 grown at the average multiyear pace, total refunds in 2018 would have been NIS 2 billion lower than they actually were (assuming that refunds totaled 28 percent of total collection in 2017, as the broken line in Figure 6.6a shows). The exceptional revenues in 2017 explain about two-thirds of the steep increase in refunds in 2018. That increase may also be due to three years of decreases in the corporate tax rate and the high interest that the Tax Authority pays for overpayment of advances, since these factors made it less worthwhile for taxpayers to reduce their advance payments.

To clarify the argument about the interest rate that the Tax Authority pays, it should be noted that taxpayers can apply to have their advance payments reduced if they expect to remit more than their eventual tax liability.[16] Several factors affect this decision, chiefly the difference between the interest rate in the economy and the rate used in the accounting with the Tax Authority. The latter is set at 4 percent indexed, whether the taxpayer owes the Authority or vice-versa.[17] In recent years, the interest rate in the economy was far below 4 percent. Second, interest and indexation-differential income that is received from the Tax Authority is not liable to income tax, unlike income from deposits with financial institutions. Finally, interest and indexation-differential expenses on underpaid taxes are not tax-deductible.

5. THE DEFICIT

The general-government deficit increased to 3.8 percent of GDP in 2018. The central-government deficit was 2.9 percent of GDP, corresponding to the deficit ceiling established in the budget.

The general-government deficit increased to 3.8 percent of GDP in 2018, exceeding the 2017 deficit by 1.9 percent of GDP. This is a high deficit by international standards and relative to Israel's position in the business cycle (Figures 6.1 and 6.2). The central-government deficit—calculated on the basis of definitions that are different from those used in the National Accounts to calculate the general-government deficit—was 2.9 percent of GDP, corresponding to the deficit ceiling established in the budget (Table 6.3). In the year ending in February 2019, the deficit climbed to 3.5 percent of GDP.

[16] If the reduction is found unjustified, however, taxpayers are liable to interest and indexation differentials on the difference from the middle of the tax year.

[17] This interest rate is established in the Income Tax Ordinance and has been constant and unchanged for years despite changes in the interest rate in the economy.

Table 6.3
Central government deficit, revenue and expenditures, 2007–18

(percent of GDP)

	Average 2007-2012	2013	2014	2015	2016	2017	2018
Total government deficit ceiling excluding credit granted	**3.5**	**4.7**	**3.0**	**2.9**	**2.9**	**2.9**	**2.9**
Total actual government deficit excluding credit granted	2.9	3.1	2.7	2.1	2.1	1.9	2.9
Actual government domestic deficit	1.7	2.2	1.8	1.2	1.6	1.6	2.6
Total net revenues[a,b]	25.5	24.7	24.7	24.9	25.4	26.4	25.5
Taxes and imposts	23.2	22.9	23.1	23.1	23.2	24.2	23.2
Interest, profits, royalties, revenue from land sales	0.6	0.5	0.3	0.4	0.3	0.5	0.5
Loan from the National Insurance Institute (NII)	1.6	1.3	1.3	1.4	1.9	1.7	1.8
Total net expenditure[a]	**28.3**	**27.8**	**27.4**	**27.0**	**27.5**	**28.4**	**28.4**
Interest, repayment of principal to NII and credit subsidy	4.9	4.5	4.5	4.2	4.0	3.9	3.8
Net defense expenditure[b,c]	5.8	5.3	5.4	5.2	5.2	5.2	5.1
Total net primary civilian expenditure	**17.7**	**17.9**	**17.6**	**17.6**	**18.3**	**19.2**	**19.6**

[a] Excluding credit granted by the government and excluding credit repaid to the government.
[b] Excluding grants from the US government.
[c] Defense expenditure in this table is larger than defense consumption shown in Table 6.1 because the Central Bureau of Statistics records pensions and other payments by the defense establishment as transfer payments, while recording an imputation of compulsory service.
SOURCE: Based on the State Budget—Major Provisions of the Budget, Central Bureau of Statistics data, and State of Israel Financial Statements as of December 31, 2017.

The structural deficit widened by 1.1 percent of GDP this year. Overall, the structural deficit has gone up by about 3.7 percent of GDP in cumulative terms since 2015—three-fourths due to increased spending and the rest caused by tax cuts.

The cyclically adjusted deficit was 4.2 percent of GDP in 2018, after three years of anomalous government revenues had held it to 2.5 percent of GDP.[18] The structural deficit[19] also widened in the reviewed year—by 1.1 percent of GDP after increasing significantly, by 1.9 percent of GDP, in 2017. In 2018, much as in 2017, most of the increase in the structural deficit was due to increased spending, but one-third was due to the lowering of statutory tax rates. Overall, the structural deficit has gone up by about 3.7 percent of GDP in cumulative terms since 2015—three-fourths due to increased spending and the rest caused by tax cuts. The spending increase since 2015 led to an improvement in civilian public services, which are at a very low level compared with other advanced economies, but the gain was paid for mainly by allowing the deficit to grow.

The high deficit halted the downward trend of the debt-to-GDP ratio, and may reverse its direction. As such, it is increasingly necessary to formulate fiscal adjustments.

The high deficit in 2018 is close to the steep deficit levels that preceded the 2013–2014 fiscal adjustment. It halted the downward trend of the public-debt-to-GDP ratio and may reverse its direction, especially if current growth rates do not persist in the coming years. As such, it is increasingly necessary to formulate fiscal adjustments—tax

[18] Adjusting for the effect of the business cycle does not account for exceptional non-cyclical factors, and the adjusted deficit does not include a correction for the exceptional revenues.

[19] The structural deficit is equal to the difference between statutory tax revenues as a share of GDP and expenditure as a share of potential GDP. Potential GDP is calculated based on the ratio of actual growth to potential real growth. This is determined by the multiple of the increase in the primary working-age population and the incrase since 1973 in average output per working-age person.

hikes, greater efficiencies in government activity, slowing the increase in expenditure, or a combination of all of these. Otherwise, the government's fiscal space—the room within which it can undertake fiscal expansion if necessary without exposing the economy to financial market risks—will contract. Fiscal space should be staked out at times of strong demand and employment, because under such conditions the economy more easily accommodates the short-term contraction of demand that the reduction of the structural deficit brings about. These conditions have been present in the Israeli economy in recent years, since it has been growing at its estimated long-term growth rate (see Chapter 1) and is in a full-employment environment. Although the public-debt-to-GDP ratio has fallen to around 60 percent in recent years, the government has not taken advantage of the auspicious conditions to set the deficit at a sustainable long-term level. Consequently, it may have to make fiscal adjustments precisely at a time of falling demand and rising unemployment.

6. THE PUBLIC DEBT AND ITS FINANCING

The debt to GDP ratio declined steadily in recent years, and bottomed out near the 60 percent mark in 2017. The decline supported the upgrading of Israel's sovereign rating and helped to lower interest expenditure on the debt. The downward trend halted in 2018, and the ratio increased by 0.5 percent of GDP.

The downward trend in the public-debt-to-GDP ratio halted in 2018. After declining steadily in recent years and bottoming out near the 60 percent mark in 2017, the ratio increased by 0.5 percent to 61 percent in 2018. The 60 percent level is a kind of international norm for the debt ceiling among advanced economies as derived from European Union rules. It also serves as an anchor for the International Monetary Fund's discussions with its member states.[20] The decline supported the upgrading of Israel's sovereign rating and helped to lower interest expenditure on the debt. The halt in the downward course of the debt ratio sets Israel apart from the OECD countries, because these countries' debt ratios continued to fall in 2018 (Figure 6.1), even though their debt levels remained higher on average. It is important that Israel keep its public-debt ratio lower than the other advanced economies, because Israel is more exposed to geopolitical risks.

The public-debt-to GDP ratio stopped falling mainly due to the government deficit (excluding credit), which raised the ratio by 2.9 percent of GDP (Table 6.4). The depreciation of the shekel and indexation differentials due to revaluation of debt indexed to and denominated in foreign currency also pushed the debt upward. The effect of the factors that acted to raise the debt was mostly mitigated by nominal GDP growth, which helped to reduce the ratio by 2.5 percent of GDP. Privatization revenues, net payback of credit, and surplus raising of funds in previous years also lowered the debt. GDP growth is the main factor blocking an increase in the debt-to-GDP ratio, and helps to lower it. In previous years, a negative spread developed between the contribution of the government deficit and GDP growth, which helped to

[20] The credit rating companies hold Israel to a more demanding criterion, which is based on the debt ratio in countries that have credit ratings similar to Israel's.

Table 6.4
Components of the increase in the gross public debt, 2013–18

(percent of GDP)

	2013	2014	2015	2016	2017	2018
Debt at the end of the previous year	68.4	67.0	65.8	63.7	62.0	60.5
Nominal growth of GDP	-4.2	-3.1	-3.3	-3.0	-2.2	-2.5
Net capital inflow	3.3	1.7	1.7	1.8	1.2	2.5
of which: Government's cash deficit (excluding credit)	3.1	2.7	2.1	2.1	1.9	2.9
Net repayment of credit by the public[a]	-0.4	-0.4	-0.5	-0.2	-0.1	-0.1
Privatization proceeds	-0.1	-0.2	-0.3	-0.1	-0.1	-0.2
Funding beyond the financing deficit[b]	0.7	-0.5	0.4	0.1	-0.5	-0.1
Revaluation of shekel-denominated indexed debt[c]	0.5	-0.1	-0.3	-0.1	0.1	0.2
Revaluation of foreign currency-denominated debt	-0.6	0.9	-0.1	-0.2	-0.6	0.5
Adjustment to issuance costs	-0.3	-0.2	-0.3	-0.1	-0.1	-0.1
Remainder[d]	0.0	-0.4	0.3	-0.2	0.2	-0.1
Debt at year end	67.0	65.8	63.7	62.0	60.5	61.0

[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.

reduce the public debt. The effect reversed in 2018, when a positive spread developed that raised the debt ratio.[21]

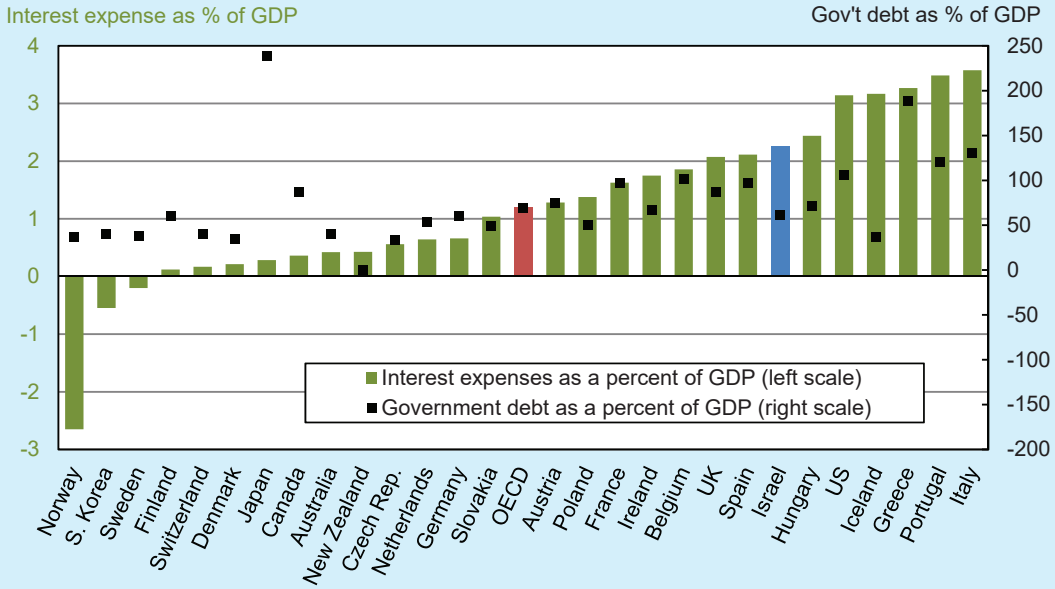
The prolonged decline in the public debt helped to lower the cost of funding it. The interest burden has contracted to about 2.2 percent of GDP over the years, but remains high at almost twice the OECD average (about 1.2 percent). Israel spends a great deal on financing its debt even though its level of public debt is low relative to other advanced economies (Figure 6.7).

Israel's debt burden is steep for several reasons: the high costs of raising debt in the past, relatively high interest on the earmarked bonds that the government issues to pension funds and insurance companies, and a risk premium on the government debt due to various risks, including geopolitical risk.

The public debt is composed almost entirely of government debt (97 percent), which is largely internal. The rest is mainly a reflection of municipal debts. Internal debt as a share of total debt is in an upward trend, from an average of about 74 percent in the early 2000s to 86 percent in 2018. About half of the debt (52 percent) is

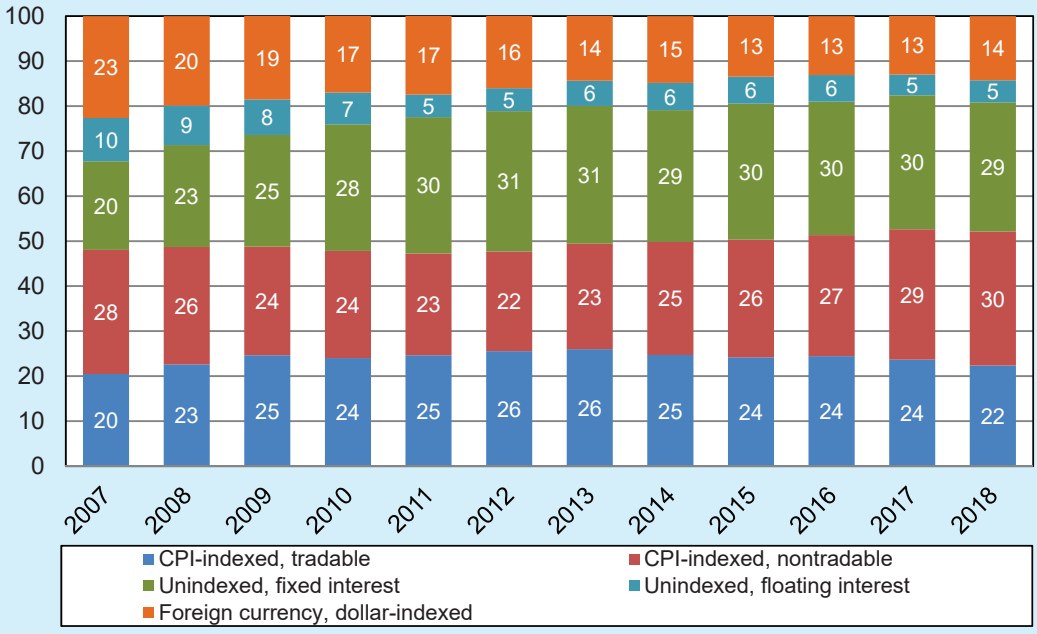
[21] Assuming that the economy's real long-term growth rate is 3 percent per year and its inflation rate is 2 percent, the deficit level that would stabilize the debt/GDP ratio at 60 percent would be 2.4 percent of GDP. Privatization receipts and payback by the public of government-issued credit (subsidized housing loans) may sustain a larger deficit, but their use entails a reduction of government assets in order to finance the deficit.

Figure 6.7
Net Interest Payments on Outstanding Government Debt Relative to GDP in 2018, Israel and Other OECD Countries



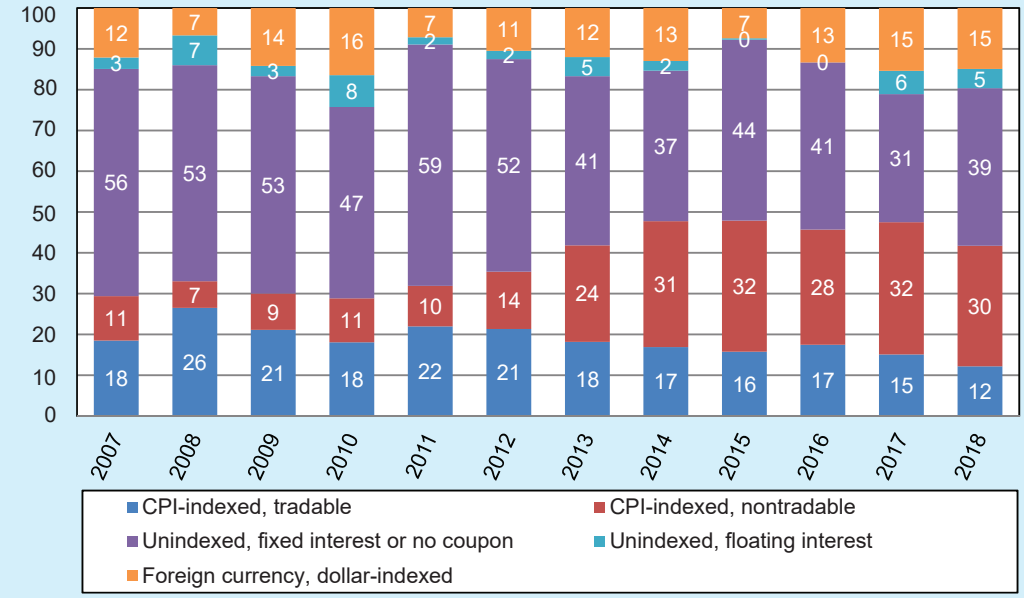
SOURCE: Based on OECD.

Figure 6.8
Outstanding Government Debt by Component, 2007-18 (percent)



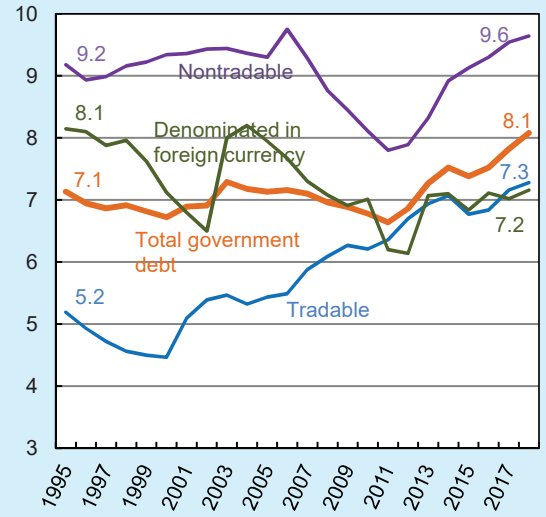
SOURCE: Based on Ministry of Finance.

Figure 6.9
Composition of Debt Raised by the Government, 2007-18 (percent)



SOURCE: Based on Ministry of Finance.

Figure 6.10
Average Range to Repayment of Government Debt, 1995-2018 (years)



SOURCE: Based on Ministry of Finance.

indexed (Figure 6.8) and the share of indexed debt has been rising in the past decade due to an increase in nontradable indexed debt (the aforementioned earmarked bonds). In contrast, the share of tradable indexed debt fell slightly during this time. Unindexed debt accounts for about one-third of the government debt, and its share of total debt has been growing steadily in tandem with the rising share of fixed interest debt and the falling proportion of variable interest debt. The proportion of foreign-currency-denominated debt has been declining steadily over the years, and came to about 14 percent at the end of 2018.

The proportion of indexed debt increased in the past decade due to an increase in the nontradable indexed debt—bonds earmarked for the pension funds and insurance companies.

The composition of government issuances in 2018 deviated from the trends in recent years. The share of issuances of indexed debt fell in both tradable and nontradable channels during the year (Figure 6.9), whereas the nonindexed proportion increased.

In recent years, the country's financial stability in the context of financing the public debt has increased, after the government extended the average term to maturity of its debt by taking advantage of the decrease in the long-term real interest rate and the increase in the weight of nontradable debt.

To assess a country's financial stability in the context of financing the public debt, one examines the average term to maturity of its outstanding debt, among other things. A lengthy average term to maturity leaves more room for debt recycling and more convenient spreading of issuances and redemptions. In recent years, the government extended the average term to maturity of its debt by taking advantage of the decrease in the long-term real interest rate and the increase in the weight of nontradable debt. Thus, the average term to maturity was extended from 6.7 years in the early 2000s to 8.1 years in 2018 (Figure 6.10).

7. GOVERNMENT SERVICES: DEVELOPMENTS IN THE EDUCATION BUDGET AND TEACHING QUALITY IN RECENT YEARS

Background

In recent years, education expenditure per student relative to per-capita GDP returned to its levels from the early 2000s, following years of decline.

Education expenditure per student relative to per-capita GDP declined significantly at the beginning of this century, and bottomed out between 2005 and 2009. It has been rising since then, and passed the turn-of-the-century level in 2017. This section examines how the resources allocated to the education system in recent years have helped the system to cope with its main challenges, particularly achievement gaps among the country's socioeconomic strata and between Israel and the OECD, teachers' standing, and teaching quality.[22]

a. Current expenditure per student and main reforms in the education system

We examined the Ministry of Education's current expenditure[23] using data on performance of the education budget, a metric that reflects the Ministry's actual spending. The ratio of expenditure per student to per-capita GDP was chosen because it estimates the extent to which the economy forgoes alternative uses of GDP in favor

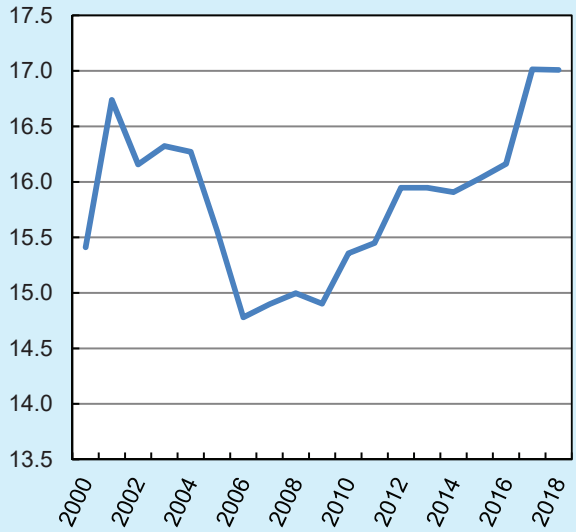
[22] Several governmental and nongovernmental committees have dealt with the systemic problems that the education system faces, the most prominent of which were the Dovrat Committee (National Task Force for the Advancement of Education in Israel) and the Aleh Committee (Citizens for Education in Israel). The panels recommended radical change in the education system and, particularly, narrowing achievement disparities among socioeconomic strata within Israel and between Israel and other advanced economies, as well as improving teachers' standing and teaching quality.

[23] Current spending does not include expenditure charged to investment budgets and higher education. To account for changes in the Ministry of Education's responsibilities over the years, we subtracted expenditure on culture, sports, and Educational Television from the total budget.

of education spending.[24] In addition, we used the education system's budgets for 2000–2019 to determine which programs were launched in which years.

There were many changes in current expenditure per student between 2000 and 2018 (Figure 6.11). In the early 2000s, expenditure declined as part of the trend of reducing public expenditure, and the decrease was most evident in programs designed to narrow disparities at the primary level and in expenditure on secondary education.[25] In the second part of the period, starting in 2009, expenditure rose due to reforms that, in their main items—those costing more than NIS 0.5 billion—were meant (1) to improve teaching and learning processes, and teachers' standing and working conditions ("New Horizon" and "Oz LeTmura")[26], (2) to reduce class size, and (3) to expand free education starting at age three to the entire population.[27] The main reforms are presented in Table 6.5.

Figure 6.11
Expenditure per Student as a Percentage of per Capita GDP, 2000–2018 (index)



SOURCE: Data on budget performance and students–Ministry of Education; Data on per capita GDP–Central Bureau of Statistics.

[24] Klinov discusses several accepted metrics that are used to examine countries' investment in their education systems. Her research shows that the indicator chosen has an advantage over the others because (a) it is expressed in domestic currency (as it should because education expenditure is unrelated to the exchange rate); (b) it is not independent of the Consumer Price Index (a sound practice because education expansion is not indexed to it); and (c) is not affected by variance in the population of children countrywide. Klinov finds a positive relation between a country's level of development and the price of a unit of education: as the national economy grows, the relative price of a unit of education rises with no change in the quality of those employed (the Baumol effect). See R. Klinov (2010), "Budgeting the Primary and Middle-school Education System, 2003–2008," The Maurice Falk Institute for Economic Research in Israel.

[25] The estimate of the size of the budget cut and the identification of affected areas of activity are based on the budget books (*Ministry of Education Budget* for 2004, 2005, and 2006). The economic recovery program and its effect on reducing civilian expenditure in the early "aughts" is described in the Bank of Israel *Annual Report* for 2003. The development of education expenditure, parsed by levels of education, is described in the Bank of Israel *Annual Report* for 2016, with reference to spending cuts during the period in question.

[26] See Ministry of Education website, Teaching Staff Division.

[27] The amendment to the Free Education from Age Three Law passed in 1984 but was not implemented until 2000. Even then, it was applied under administrative orders and for disadvantaged population groups in order to broaden their access to early childhood education. Due to its implementation, the preschool enrollment rate among the Arab population rose from 50 percent in 2000 to 88 percent in 2017, while the rate in the Jewish population climbed from 88 percent to 98 percent. The amendment was extended to the population at large in 2013 at the recommendation of the Trajtenberg Committee.

Table 6.5
Budget supplements for the main reforms in the education system, 2000–19[a]

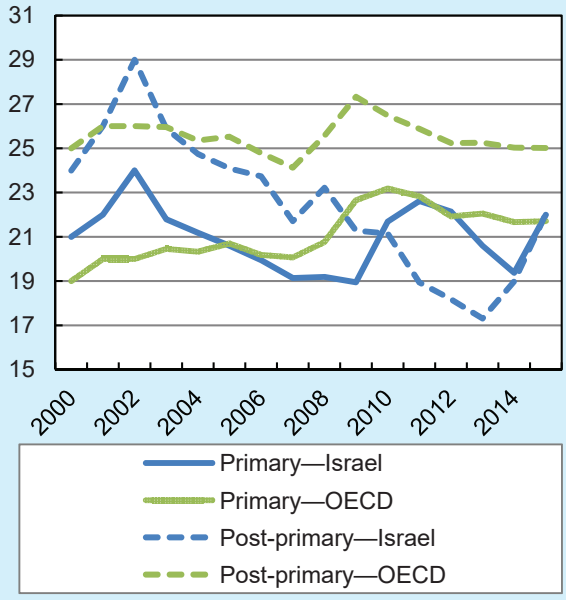
Reform	Implementation period	Cumulative supplements to the budget base[b] (NIS billion)	Education level
Free education from age 3	2000; 2006; 2013	1.82	Preschool
Program to reduce gaps (differential budget)	2001; 2004–2008; 2015–2019	1.30	All education levels
Wage increment (outside the "New Horizon" and "Oz LeTmurah" programs)[c]		4.04	All education levels
Sweeping budget cuts (excluding technical cuts and changes in areas of responsibility)		(-4.25)	All education levels
"New Horizon"	2008–2014	4.45	Preschool, primary, and middle school
Coalition supplements	2009–2011; 2015–2017	1.85	Religious and State-Religious institutions
Reducing number of pupils per class (including splitting of first and second grade classes in primary subjects)	2009–2019	1.46	All education levels
Strategic plan 2009-12	2010–2012	0.90	All education levels
"Oz leTmurah"	2013–2019	2.825	Middle and secondary schools
Afternoon school programs	2013; 2019	1.22	Preschools and primary schools
Miscellaneous[d]	2013–2019	4.14	
Extending the school year into vacations	2015–2019	0.58	Preschools and primary schools

[a] The table presents the reforms that had a cumulative budget of more than NIS 0.5 billion.
[b] The annual cost in the final year of implementation.
[c] The wage increments included: old wage agreements, increments in respect of the transition from unfunded pensions to funded pensions, convalescence pay refunds, budgeting for matriculation pay, the agreement with the teachers colleges, and the increase in the minimum wage.
[d] Items included in the "Miscellaneous" item are not detailed in the budget documents, and a request for clarification with the relevant ministries did not yield more detailed information.
SOURCE: Ministry of Education budget books for 2000–2019.

As a result of the main reforms, per-student expenditure returned to its benchmark level and beyond. Concurrently, several indicators improved relative to their turn-of-the-century condition: Class size declined[28], teaching hours increased by 15–21 percent depending on the level of education[29], and teachers' monthly wages were increased in order to improve their professional standing and attract high-quality personnel.

The increase in expenditure was due to the implementation of reforms to improve the standing of teaching staff, reduce the number of students per classroom, and provide free education from age 3.

Figure 6.12
Expenditure per Student as a Percentage of per Capita GDP in Israel and the OECD, by Education Stage, 2000–2015



SOURCE: OECD.

b. International trends in per-student expenditure

Per-student expenditure in Israel is below the OECD average at all levels of education.[30] An examination of expenditure relative to per-capita GDP between 2000 and 2015 shows that Israel lowered its spending on secondary education while the other OECD countries continued to spend as much as before if not more (Figure 6.12).[31]

The most important spending gap between Israel and the OECD is at the secondary level. It began with the budget cuts that were made in the early 2000s and continued to widen as the share of Arabic speakers in the secondary education system increased substantially[32], because these students are budgeted less generously than Hebrew

In secondary education, the gap in expenditure between Israel and other OECD countries widened, partly due to (a) low investment in general education, and (b) the increase in the number of Arabic-speaking students, since those students receive low budgets.

[28] Although Israel is one of the OECD countries that made the most significant decreases in class size, its classes remain much larger than those in the other OECD member states. The improvement in Israel's teacher/student ratio is shown in Figure 6.15. See OECD, *Education at a Glance 2017*.

[29] Source: OECD Stat, *Statutory Net Teaching Time per School Year, in Hours*.

[30] The spending disparity, calculated on the basis of per-student expenditure standardized for PPP and expressed in 2015 prices, ranges from -8 percent at the primary level to -20 percent in lower secondary education. See OECD, *Education at a Glance 2018*.

[31] There is a difference between Figure 6.11 and Figure 6.12 in the ratio of expenditure to per-capita GDP due to differences in calculation methodologies, particularly the inclusion of preschoolers in Figure 6.11. The OECD data are current to 2015. Adjusted to 2017, Israel's expenditure at the primary level rose from 22 percent to 22.5 percent and expenditure at the secondary level increased from 22 percent to 23.7 percent.

[32] Arab students as a share of secondary enrollment climbed from 15 percent in 2000 to 25 percent in 2018. See Ministry of Education, "Taking a Broad Look" (Hebrew).

speakers. Several important factors explain the expenditure gap: There are fewer teaching hours in the Arab system, their cost is low, class size is large, and drop-out prevention programs are insufficient. The decrease in spending on upper secondary education was somewhat offset by the increase in enrollment in technological education from about 30 percent of total enrollment in the early 2000s to about 39 percent in 2018, because technological education students cost much more than students in the general program.[33] The erosion in spending on secondary education places Israel among the OECD countries that have the smallest per-student expenditure gaps between the primary and the secondary levels.

The budget disparity at the secondary level widens when we focus on the general program. Here expenditure per student is 16 percent of per-capita GDP in Israel compared with 23 percent in the OECD countries. The difference may partly explain the gap between Israel and the OECD in skills and productivity because the PIACC survey—a skills assessment that the OECD conducts among members of the labor force—examines mainly non-vocational skills (see Chapter 5).

c. Do the budget increases adequately address the education system's main challenges?

Israel is among the most improved countries on international tests, but it remains relatively low due to large achievement gaps between the strong and weak segments of society.

During the period being discussed, Israeli students' achievements on international tests (TIMSS, PISA, PIRLS) improved and the Israeli education system was able to boast some of the most salient absolute gains in the past decade.[34] Most of the change was attained after per-student expenditure recovered. This improvement, however, was not enough: Israel continued to rank poorly among OECD countries, and belonged to the group of countries with the widest spreads between weak and strong students throughout the period.[35]

The lack of progress in narrowing gaps is unsurprising because the system has invested little in attaining this goal (10 percent of the budget increases shown in Table 6.5) and, in particular, in attenuating disparities between Arabic speakers and other

[33] A. Weissblei (2018), "A Glance at Technological-Vocational Education," Knesset Information and Research Center (Hebrew).

[34] Most of the change was attained in the tests administered in 2015–2016 relative to those given in 2006–2007. Blass (2018), comparing the improvement in Israel with that in a sample of countries, showed that Israel was one of the countries with the most improved achievements. See overview by N. Blass, *State of the Nation Report 2018,* Taub Center for Social Policy Studies in Israel. See also PISA, 2015.

[35] In 2015 as in past years, Israel was one of the OECD countries with the widest achievement spreads between its strong and weak strata. Most of the gaps trace to poor achievements among Arabic speakers. Even among Hebrew speakers in the State and State-Religious school systems, and even when weak groups in the comparison countries are retained, however, Israel continues to lead in achievement spreads. See Bank of Israel, *Annual Report* for 2017.

students.[36] When focusing on students from weak economic backgrounds, and when their achievements in 2006 are compared with those in 2015, we find that Hebrew speakers made greater improvements on the mathematics part of the PISA exam than did Arabic speakers.[37] Arabic-speakers' improvments were very slight, partly because of large expenditure disparities. Thus, in the 2016/17 school year, a Hebrew speaker from a weak economic background at the primary-school level received 18 percent more in expenditure than did an Arabic speaker with a similar background, and at the middle-school and secondary school levels the differences climbed to 35 percent and 75 percent, respectively.[38] The actual resource gap is even wider because the municipal and "third sectors" give education institutes in the Jewish sector much more support than they do for institutions that serve the non-Jewish population.[39]

***

The foregoing analysis illuminates several important challenges that the Ministry of Education faces. To narrow the gaps between population groups, several focused policy measures are needed: (1) Alleviate budgeting disparities between Hebrew speakers and Arabic speakers by equalizing the number of hours that are given differentially to the various remediation quintiles at the primary and middle-school levels; (2) implement a drop-out prevention program and programs to improve achievements at the secondary school level[40]; and (3) attract high-quality teachers to weak schools by means of incentive grants[41], as is done to attract physicians to the periphery—a program that has been attaining its major goals thus far. These measures

It is recommended that the Ministry of Education increase investment in narrowing the gaps, particularly between Hebrew- and Arabic-speaking students. If the gaps remain as they are, it may harm long-term growth.

[36] Most of the economic resources that were allocated to fight inequality during this period were directed to the Hebrew-speaking system. The lack of investment in the Arabic-speaking system is reflected in a comparison of PISA data in 2006 with those in 2015. During that interval, Hebrew-speakers closed their gap vis-à-vis the OECD average in mathematics (which includes scores of weak population groups in the other countries), rising from -38 to +5. Since Arabic speakers narrowed the gap from -126 to -99, the gap between Hebrew speakers and Arabic speakers widened from +88 to +104.

[37] In 2015, the share of Hebrew-speaking students who were struggling was close to the OECD average (22 percent and 23 percent, respectively), whereas the corresponding rate among Arabic speakers was 64 percent. See PISA, 2015.

[38] Socioeconomic rating is determined on the basis of the Ministry of Education's remediation index, and divides students into quintiles. In 2016/17, the lowest quintile in the Arabic-speaking system received less budgeting than higher quintiles in the Hebrew-speaking system at all levels of education. Thus, at the primary level, the lowest quintile in the Arab system resembled the third quintile in the Hebrew-speaking one; at the middle-school level it approximated the fourth quintile, and at the high school level it received 15 percent less than the highest quintile. See Ministry of Education (2018), "The Transparency System—Budget Comparison 2011/12, 2013/14, 2016/17" (Hebrew).

[39] N. Blass, N. Zussman, and S. Tsur (2010), "Budgeting of Primary Education 2001– 2009."

[40] The Ministry of Education runs many programs through the Shahar (Education and Social Services) Division. The extent of their implementation in Arab society, however, falls short of the Arabs' share of the population.

[41] See the Bank of Israel *Annual Report* for 2017 for an in-depth analysis of the utility that this policy measure would bring. Indeed, this is the measure that the OECD recommends in its 2018 publication, *Effective Teacher Policies: Insights from PISA*.

would probably help the education system to mitigate inequality at home and between Israel and the OECD countries.

Furthermore, given the skill disparities that exist between Israel and the OECD countries, and Israel's paltry investment in the general track at the secondary level, it is recommended that the Ministry of Education earmark more resources for this track because it is attended by the majority of students, and it has a much greater long-term impact on workers' skills.

Narrowing achievement gaps is expected to lead to a significant increase in productivity, boost the growth rate, and alleviate inequality.

Narrowing achievement gaps is one of the most important goals that the Ministry of Education has set—and is such for the State of Israel as well. There is a connection between education quality as measured on international tests and economic growth.[42] The weakness and the achievement gaps among Israeli students are reflected in the labor-market skills that the PIAAC survey measures.[43] Improving Arabic speakers' outcomes and narrowing their disadvantage relative to Hebrew speakers have the potential to enhance productivity, boost the GDP growth rate, and alleviate income inequality. In their forecast for Israel's long-term growth, Argov and Tsur (2019) show that unless the Arab population's human capital catches up to that of the Jewish population, long-term growth may be impaired (see discussion in Chapter 1). To demonstrate the importance of narrowing the skill gaps, we note that if Israel manages to boost the achievements of its lowest quintile on the PIAAC exams to the average of the quintile above it, the national per-hour wage would rise considerably. In Chapter 5, it is shown that had the skill level of Israeli workers been elevated to the OECD average, Israel's GDP in 2018 would have been NIS 38 billion larger. In the view of Hanushek et al., the contribution would have been even greater.[44]

[42] E. A. Hanushek & L. Woessman (2010). "The High Cost of Low Educational Performance: The Long-Run Economic Impact of Improving Pisa Outcomes". In OECD (2015). *The High Cost of Low Educational Performance,* https://www.oecd.org/pisa/44417824.pdf

[43] Israel ranks twenty-ninth among thirty-four countries and is the "leader" in the extent of its dispersion. Its Hebrew speakers' achievements approximate the average, while those of its Arabic speakers are fifty-one points below. Central Bureau of Statistics (2016), "Adult Skills in Israel, 2014–2015", https://www.cbs.gov.il/en/publications/Pages/journal/Adult-Skills-in-Israel-2014-2015.aspx

[44] Hanushek et al., analyzing a similar policy measure, found that a policy that would attain such an outcome might augment GDP by about 10 percent in the long term. See E. Hanushek, J. Ruhose, and L. Woessmann (2015), "Human Capital Quality and Aggregate Income Differences: Development Accounting for the U.S. States," NBER Working Paper 21295; and E. Hanushek, G. Schwerdt, S. Wiederhold, and L. Woessmann (2016), "Coping with Change: International Differences in the Returns to Skills," NBER Working Paper 22657.

d. Recent developments in teacher quality

The international tests show that teachers in Israel have lower scores in reading and mathematics than their peers in other OECD countries.

"The quality of an education system cannot exceed the quality of its teachers" (McKinsey, 2007). This is the main conclusion from a recent series of studies on education policy.[45] Empirical findings show a strong correlation between the quality of teaching personnel, as reflected on international tests in literacy and numeracy, and student achievements in these fields.[46] The performance of Israeli teachers in these fields is poor relative to other OECD countries (Israel ranked twenty-eighth and twenty-ninth, respectively, among thirty-four countries) and in terms of their median scores relative to the rest of the Israeli population (Figure 6.13). In other words, Israel's poor teacher quality by international standards reflects more than Israel's low ranking generally, because the teachers rate especially poorly within Israel as well.

The New Horizon and Oz LeTmurah reforms were intended to improve the quality of teaching staff. These reforms raised monthly wages without changing hourly wages.

In the past decade, as described above, the Israeli education system introduced several reforms that restored per-student expenditure to its level at the beginning of the previous decade. Two main reforms—"New Horizon" and "Oz LeTmura"—were implemented during that period pursuant to the recommendations of the Dovrat Committee. Their primary goal is to enhance teacher quality.[47] These reforms raised teachers' global wages and increased their workweek in a way that left their hourly wage basically unchanged. Below we examine the way teachers' quality changed in the aftermath of these developments in their terms of employment. We also discuss co-incidental developments that significantly increased the teacher population and, for this reason, may have affected teacher quality as well.

We examined how the quality of teaching staff changed over time using an index that is based on their matriculation scores.

We measure teacher quality on the basis of matriculation scores. In particular, we use teachers' achievements in mathematics and language relative to those of the entire student population at the same high-school grade[48] and track the development of these metrics between 2007 and 2017 among young teachers (aged 20–33) and new

[45] See, for example, Eric A. Hanushek and Steven G. Rivkin (2010), "Generalizations about Using Value-Added Measures of Teacher Quality," *American Economic Review: Papers & Proceedings,* 100: 267–271; Steven G. Rivkin, Eric A. Hanushek, and John F. Kain (2005), "Teachers, Schools, and Academic Achievement," *Econometrica,* 73(2): 417–458; Jonah E. Rockoff (2004), "The Impact of Individual Teachers on Student Achievement: Evidence from Panel Data," *American Economic Review,* 94(2): 247–252; Eric A Hanushek, Mark Piopiunik, and Simon Wiederhold (2018), "The Value of Smarter Teachers: International Evidence on Teacher Cognitive Skills and Student Performance" (No. w20727), National Bureau of Economic Research.

[46] See E. A. Hanushek, M. Piopiunik, & S. Wiederhold (2014). "The Value of Smarter Teachers: International Evidence on Teacher Cognitive Skills and Student Performance" (No. w20727). National Bureau of Economic Research. The authors of the article, focusing on teachers' skills on the basis of the OECD's PIAAC survey (2012), find a correlation between teachers' literacy and numeracy scores and students' PISA results in these respects.

[47] See Ministry of Education, Culture, and Sport (2005), "Report of the National Task Force for the Advancement of Education in Israel—National Program for Education" (report of the Dovrat Committee) (Hebrew).

[48] The matriculation scores in mathematics and language are normalized by exam and year. The math scores include bonuses—25 points and 12.5 points for five and four study units, respectively—and are weighted by the number of units.

Figure 6.13a
Educators' Median Score in Numeracy Skills, Israel and Other OECD countries

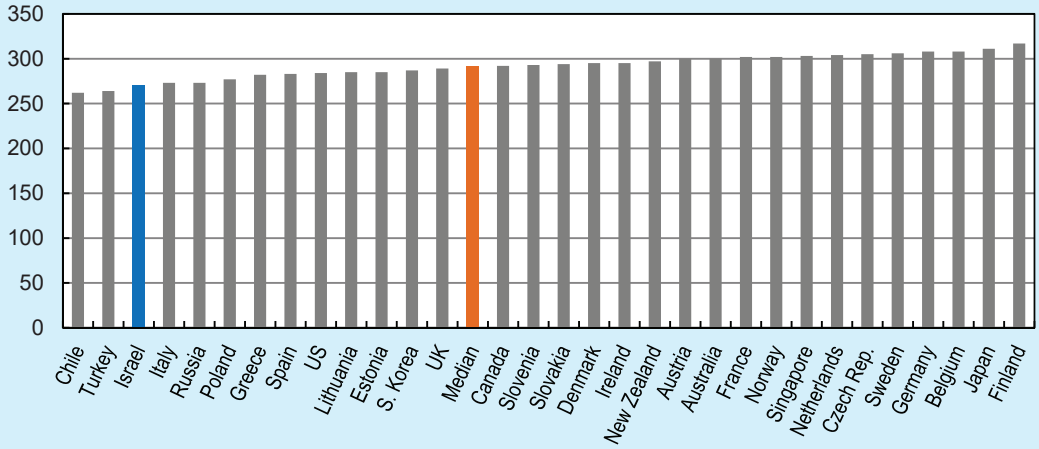
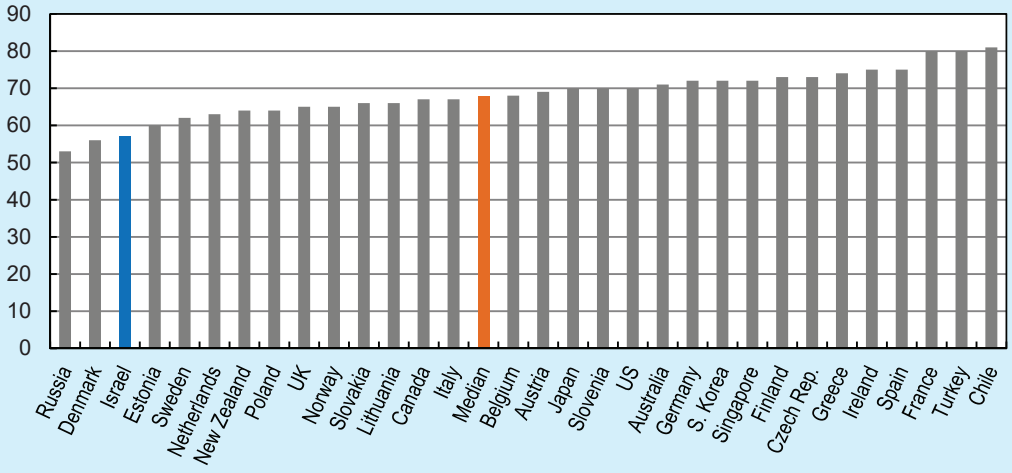


Figure 6.13b
Educators' Median Score in Numeracy Skills Relative to the Score in the Overall Population, Israel and Other OECD Countries (percent)



SOURCE: Survey of Adult Skills (PIAAC).

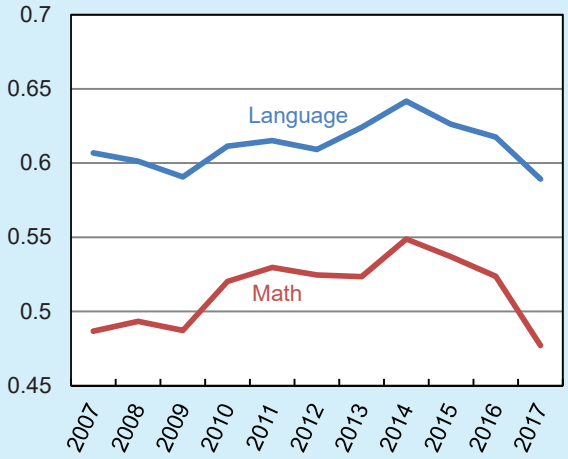
teachers (those hired by the system in the past year).[49] It is true that these are only partial indicators of teacher quality because quality is also composed of capabilities not reflected in matriculation scores. In the economic literature, however, their use is

[49] The analysis was carried out in the Ministry of Education's virtual research room by merging the matriculation file with that of teaching jobs. The analysis omits teachers in the haredi ("ultra-Orthodox") sector because few of their students take the matriculation exams. The matriculation file contains data from 1993 onward only. We therefore limited the analysis to young teachers, i.e., those who finished high school in the previous fifteen years (who account for around three-fourths of all new teachers each year). We lack quality indicators for 6 percent of young teachers each year. We identified new teachers by their first year of appearance in the teaching-position files for 2000–2017.

an accepted practice[50] because they are found to be correlated with various indicators of education-system results.

Figure 6.14, presents the indices, and shows that quality increased steadily at the beginning of the period and dropped steeply at the end. The normalized scores in mathematics rose by about 0.18 standard deviations of normal distribution (about three points in score) and fell at the same rates at the end of the period. There was a similar but more moderate trend in language scores. These developments took place among teachers at all levels of education (primary, middle-school, and secondary school) and were strongly reflected in the psychometric scores as well.[51] It is preferable, however, to test teachers' quality by means of indicators based on matriculation exams, because a large proportion of them takes these tests (95 percent of teachers), thereby making the estimation of their quality more accurate.[52]

Figure 6.14
Normalized Grades in Language and Math Achieved by Young and New Educators[a], 2007–2017



[a] The normalized grade reflects the difference, in standard deviations, between the educator's matriculation grade and the average grade in that year's cohort. A positive grade reflects a grade higher than the average grade for that year's cohort.
SOURCE: Ministry of Education.

At the start of the study period, the quality of teachers joining the system increased, and a downward trend developed toward the end.

To explain our finding that the upward trend in quality stopped and then reversed among new young teachers, we need to examine the changes that occurred in the education system and the reforms that were introduced at the end of the previous decade. Since most teacher-training programs last several years, it stands to reason that observed changes in teacher quality in a given year originate in changes that took place

[50] See, for example, the articles referenced in the footnotes above.

[51] See D. Maagan (2017), "Distribution of Teachers' Quality in the Education System and Measuring Changes in Their Quality over Time," Central Bureau of Statistics Working Paper 106 (Hebrew); M. Ritov and Z. Krill (2017), "Competencies of Teachers in the Education System," Ministry of Finance Working Paper Series; Central Bureau of Statistics (2017), "The Psychometric Profile of Teaching Staff 2006–2017," Media Release (Hebrew).

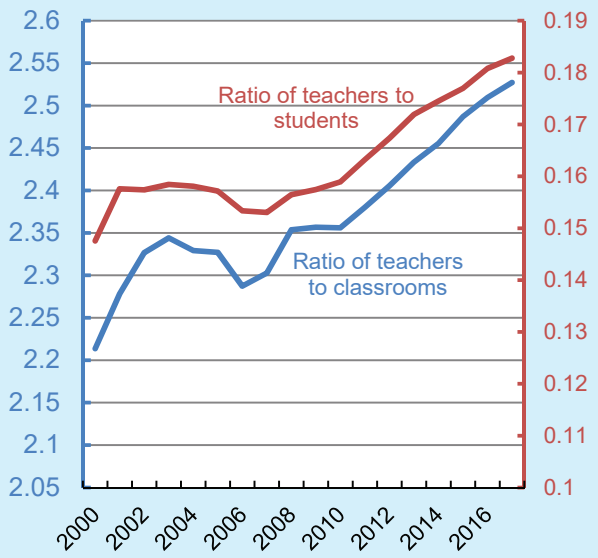
[52] The quality indicators based on psychometric exams include only a small share of teachers (between one-half and two-thirds of teachers during the period studied). Since teachers who take these exams differ in their characteristics from those who do not, and since the share of teachers who take them varied during the period, matriculation-based quality indices mitigate the bias that occurs when quality indicators are based on the psychometric exam.

The reforms intended to lower the number of students per classroom led to a significant increase in demand for teaching staff, and to a change in the terms of acceptance to teaching colleges. These developments may have contributed to a decline in the average matriculation scores of new teachers.

several years earlier and affected both demand for teachers and the way they are employed.

Toward the end of the previous decade, demand for teachers surged and the total teacher population in the education system rose more swiftly than the growth rate of young workers countrywide.[53] The increase in demand for teachers exceeded the growth in number of classrooms and student enrollment (Figure 6.15)[54], and is also due to various education reforms, particularly those aimed at reducing class size.[55] The increase was accompanied by a decline in teacher-training admission thresholds and an increase in student enrollment. The numerical increase, while allowing the system to hire more teachers and respond to the increase in demand, evidently came at the expense of quality. Thus, many teachers' colleges made the psychometric exam noncompulsory and based admission on average matriculation scores and interviews, or revoked the requirement of a matriculation certificate and based admission on the

Figure 6.15
Ratio of Teachers to Students and to Classrooms, 2007–2017



SOURCE: Ministry of Education.

[53] Between 2007 and 2017, the number of young teachers increased by 2.8 percent per year, while that of employees aged 25–34 increased by 1.8 percent (Source: Central Bureau of Statistics Expenditure Survey, various years).

[54] Figure 6.15 is based on all teachers and all students in Israel's officially recognized education system at the primary, middle-school, and secondary school levels. It omits teachers and students in the haredi sector because only some of them appear in the student and teacher files.

[55] For instance, in 2009/10, programs to reduce class size and a program to split first- and second-grade classes were first implemented.

psychometric score.[56] In the past decade, these developments were reflected in a decline in the share of students who took the psychometric exam (from 74 percent to 61 percent), and from 2011 onward the average scores of those admitted began to decline after increasing at the start of the period. This trajectory resembles the downward path observed several years later in the matriculation results of new teachers.

Following the implementation of "New Horizon" and "Oz LeTmurah", there was a significant increase in the percentage of teaching staff with academic degrees.

Notably, however, even as the quality of those admitted declined, the teaching profession has been undergoing academization since the 1990s. Most colleges of education now confer academic degrees, thus presumably improving teaching quality.[57] The wage reforms expedited the process, boosting the share of teachers on academic pay scales and master's degree and above pay scales from 76 percent and 22 percent, respectively, in 2007 to 92 percent and 34 percent in 2017.[58] The improvement in training is not reflected in the quality indicators presented below because the indicators relate to matriculation scores that the teachers earned in high school.

Concurrently, additional developments in the education system may have increased the supply of teachers with relatively poor scholastic achievements. As stated, in the past decade, the system introduced various reforms that affected, among other things, teacher hiring[59]: "New Horizon" was rolled out at the primary level and introduced gradually in some junior high schools from 2009 onward, and implementation of "Oz LeTmura" began in 2012 at the rest of the middle-school and high schools. The reforms were meant primarily to improve teacher quality and standing by (a) raising their global wages and their number of teaching hours, (b) broadening the range of teachers' in-service activities and courses and revising the rules of recognition of professional-development hours in order to improve the quality and relevance of development, and (c) improving the working environment.

As a result of these reforms, teachers' global wages rose and their work week became much longer, leaving the hourly wage basically unchanged. Within the work week,

[56] To illustrate this, in the 2014/15 school year, teachers colleges required a composite score of over 550 (thereof: 50 percent from matriculation exams, 25 percent from the psychometric score, and the remainder from a score in the screening process). All candidates accepted had to present a matriculation certificate, and at least half had to take the psychometric exam. In 2018/19, in contrast, the colleges required a matriculation score of at least 92 (without the psychometric exam) or a composite score of 540 (half from matriculation scores and half from the psychometric exam) or a psychometric score of 540 (without matriculation), and in 10 percent of cases the colleges were allowed to admit students who did not meet these criteria. See Ministry of Education, Culture, and Sports, Teaching Personnel Administration, Teaching Personnel Training Division (2014), "Admission of Candidates for Regular Studies at Academic Colleges of Education in the 2014/15 Academic Year," and Ministry of Education, Culture, and Sports, Teaching Personnel Administration, Teaching Personnel Training Division (2018), "Admission of Candidates for Regular Studies at Academic Colleges of Education in the 2018/19 Academic Year." In 2018/19, the Ministry fined colleges that admitted too large a proportion of students who failed to meet the threshold conditions.

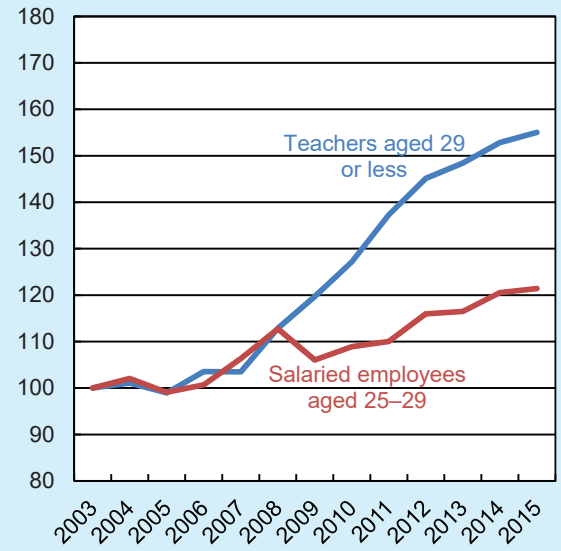
[57] These colleges' academic studies are accredited by the Council for Higher Education and are four years in duration. When they complete the program, graduates are certified and licensed by the Ministry of Education.

[58] Central Bureau of Statistics, *Statistical Abstract of Israel,* various years.

[59] See the previous section for a description of these programs.

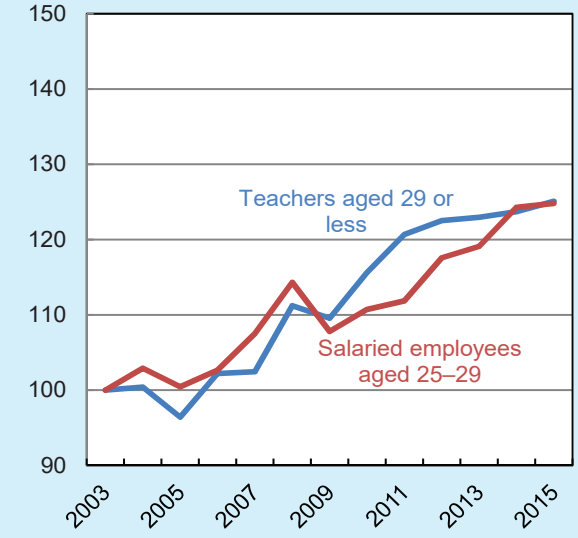
individualized hours[60] were increased and teaching-support hours were added (time reserved for work meetings, staff in-service activities, talks with parents, preparing teaching materials, and checking homework and tests). Thus, a full-time teaching post expanded from thirty hours per week to thirty-six at the primary level, from twenty-four to thirty-six at junior high, and from twenty-four to forty in high schools.[61] As for global wages, they went up considerably—by 20 percent at the primary school level, 30 percent at the middle-school level, and 40 percent at the secondary school level.[62] The hourly wage remained almost unchanged at the primary and secondary levels—assuming that the additional formal work hours did not reduce the informal hours[63]—and actually declined slightly in middle-school. Figures 6.16 and 6.17 show the change in the monthly and hourly wage among teachers up to age twenty-nine (inclusive) and employees aged 25–29. Figure 6.16 shows that teachers' monthly

Figure 6.16
Monthly Wage: Change Among Young Teachers and Young Salaried Employees, 2003–2015 (index)



SOURCE: Based on Central Bureau of Statistics.

Figure 6.17
Hourly Wage: Change Among Young Teachers and Young Salaried Employees, 2003–2015
(index)



SOURCE: Based on Central Bureau of Statistics.

[60] Lessons given to two-to-five participants.

[61] This pertains to the teaching hours of full-time teachers. (Reduced hours were established for mothers of young children and teachers above age fifty.)

[62] These global-wage changes are averages because wage depends on various factors such as rank, seniority, in-school duties, and so on.

[63] This assumption is reinforced by the Labor Force surveys. Primary and middle-school teachers reported that their weekly workload increased by three hours (from thirty to thirty-three) between 2009 and 2011 after a time of stability at around thirty hours. Since New Horizon was introduced gradually at primary and some middle schools, the reported increase in workload may have been the result of an increase in formal hours and no change in informal hours.

wages rose considerably relative to the wages of employees at large, whereas Figure 6.17 demonstrates the same rate of hourly wage increase in both groups.[64]

These developments—the increase in teachers' monthly wage and no change in their hourly remuneration—may have affected the number and quality of new teachers in accordance with personal preferences in regard to the substitution of leisure and wage. For example, teachers with a higher socioeconomic/educational status may have preferred working half-time for a relatively low wage before the reform, while after the reform and the transition to a full work week, they began to prefer some other full-time job that offered a higher monthly wage or to leave the labor force. Conversely, the developments may have increased the supply of teachers of lower socioeconomic or educational status because teachers' global wages rose relative to those of similarly educated employees at large.

In the past decade, a number of reforms have been implemented, with differing effects on the quality of teachers. While they reduced classroom crowding and increased demand for teaching staff, they did not significantly change the relative hourly wage of teachers.

In conclusion, several education reforms have been introduced in the past decade. They stimulated demand for teachers in order to reduce class size (among other goals) and revised teachers' terms of employment by combining a higher global wage and a longer work week so that the hourly wage remained virtually unchanged. As a result, the total number of teachers and the ratio of teachers to student enrollment grew, evidently contributing to a higher level of teacher quality and allowing teachers to devote more personal attention to each student and her or his needs. Conversely, demand for teachers increased more rapidly than demand for labor at large in the relevant age bracket, at a time when the average hourly wage of young workers countrywide remained relatively stable. Therefore, teacher quality as measured on the basis of teachers' matriculation results has stopped improving in recent years. As such, it appears that the changes in wage structure have not attracted high-quality population groups, at least those according with the quality criteria that we used, to the teaching profession so far.

[64] The data on teachers' wages are based on Central Bureau of Statstics (2015), "Trends in Wages of Teaching Staff: 2003–2012," Media Release; and Central Bureau of Statistics (2018), "Wages of Teaching Staff in the Education System by Selected Characteristics," Media Release. In these working-paper publications, income tax files from the Israel Tax Authority were merged with teaching post files from the Ministry of Education. Notably, to calculate teachers' total weekly working hours, the ratio of total work days per year to total days in the year (including vacations) is calculated. The wage data for employees countrywide were harvested from the Household Expenditure Survey.