Chapter 6
The General Government and Its Financing

- The general government deficit contracted from 11.5 percent of GDP in 2020 to 5.5 percent in 2021. The budget deficit of the central government dropped from 11.4 percent of GDP to 4.4 percent in those years, and the public-debt-to-GDP ratio narrowed from 71.7 percent of GDP at the end of 2020 to 68.9 percent in 2021.
- In the second half of 2021, fiscal expansion slowed in view of steadily growing vaccination rates, the economic recovery, and policy changes relative to previous waves of COVID. Restrictions on economic activity focused solely on aspects of high epidemiological risk and business relief programs were limited to the most vulnerable industries.
- The deficit contracted relative to the previous year due to a 2.3 percent of GDP increase in revenues and a 3.1 percent of GDP decline in expenditure. The main contributors to the growth in revenue were direct taxes, a sizable downturn in pandemic-related expenditure contributed on the expenditure side.
- Tax revenue in 2021 was strong not only relative to the past but also relative to other developed countries. The steep increase in revenues more than compensated for the revenue loss in 2020, but much of it was due to anomalous factors that should subside in the coming years.
- In late 2021, the Knesset approved the state budget for 2021–2022, after almost two years without an approved budget. The new budget strikes a fine balance between the need to avoid fiscal contraction, which might slow the economy's recovery from the crisis, and the importance of refraining from increasing the structural deficit in a way that would impair the management of budgetary policy in the future.
- Public expenditure on transport development has increased in recent years and further increase is reflected in the 2022 budget. The budget increase is earmarked for the development of public transit infrastructure instead of roadbuilding—an important change of government priorities in this field.
- To abide by the restrictions that Israel's current fiscal rules set forth, major fiscal consolidation will be necessary. This clashes with another economic objective that is no less important: narrowing the cumulative gaps between Israel and the rest of the developed world in labor productivity and standard of living by attaining sustained improvement in human capital and increasing the stock of public infrastructure. It is important for the government to adjust the fiscal rules in a manner than boosts investment to a level that will allow measures to narrow the gaps to advance swiftly without breaching fiscal sustainability.
- In July 2021, a historic agreement was signed concerning a treaty relating to taxation of large multinational corporations, which may set minimum tax payments for these companies as early as 2023. Some 140 countries, including Israel, have joined the accord thus far. This step may inhibit the "race to the bottom" of tax rates in competition over the location and the recording of these corporations' revenues. Israel will have to amend its tax system in order to align it with the restructuring of these companies' incentives and to prevent loss to other countries of receipts on account of revenues produced in Israel.

1. MAIN DEVELOPMENTS

a. Reversion-to-norm policy and fiscal aggregates in 2021

Developments in fiscal indicators were much more favorable than the early-year forecasts and reflected the strength and composition of the economy's recovery.

Following epidemiological developments in 2021 and the macroeconomic rebound that accompanied them, the country's fiscal indicators also showed major improvement. The general government deficit[1] fell from 11.5 percent of GDP in 2020 to 5.5 percent in 2021[2]; the central government budget deficit[3] dropped from 11.4 percent of GDP to 4.4 percent in the same years; the (gross) public-debt-to-GDP ratio declined from 71.7 percent of GDP at the end of 2020 to 68.9 percent a year later, and the net debt ratio fell from 67.6 percent to 65.1.[4] These developments were much more favorable than forecast at the beginning of the year, and reflected the strength and composition of the economy's rebound.[5]

Direct taxes and compulsory payments (1.9 percent of GDP) contributed to the 2.3 percent of GDP increase in government revenues in 2021.

The narrowing of the public-debt-to-GDP ratio was due to a 2.3 percent of GDP increase in revenues (from 34.7 percent to 37.0) and a 3.7 percent of GDP decline in spending (from 46.2 percent to 42.5). Most of the increase in revenue came from stronger tax revenues: direct taxes and compulsory payments contributed 1.9 percent of GDP to the increase (a 31 percent nominal increase relative to 2020).[6] Most of the decline in expenditure was due to less spending on provisional pandemic-related programs and the restraining nature of the interim budget that government ministries had been using to manage their affairs for almost two years.

The decrease in the general government deficit to 5.5 percent of GDP brought this indicator near its 2019 level—4.5 percent of GDP. Its composition, however, was

[1] The general government is composed of the central government, the National Insurance Institute, local authorities, NGOs (HMOs, universities, *Yeshivot*, etc.) that derive most of their income from the general government, and the National Institutions (the Jewish Agency for Israel, JNF-KKL, and the World Zionist Organization). Its activity is measured in accordance with the National Accounts definitions, which are different from those used in the State Budget.

[2] Data from the Central Bureau of Statistics (CBS) set the deficit at 3.8 percent of GDP. The reason for the difference is that the CBS subtracts from public investment (for housing purposes) revenues from sales of land, because, according to the interpretation of the international accounting rules, such sales are a negative investment on the part of the government. Data from the OECD countries for recent years show that in most cases these revenues are very small (an average of around 0.05 percent of GDP) and that the decrease in investment reflects activities such as sale of farmland that underwent betterment or the purchase and renovation of public housing units and their sale to eligible buyers. In Israel, in contrast, the revenues are from sales of land of which the state had historical ownership, i.e., realization of assets, which amounted to 1.8 percent of GDP in 2021. Since the use of assets is essentially a financing act, we present the public expenditure without the aforementioned subtraction and show land sales as a financing line that restrains the increase in the data.

[3] The budget deficit represents the government's cash expenditures and revenues in accordance with the State Budget definitions.

[4] The net public debt equals the gross public debt minus outstanding government loans to individuals and businesses, and government deposits with the Bank of Israel.

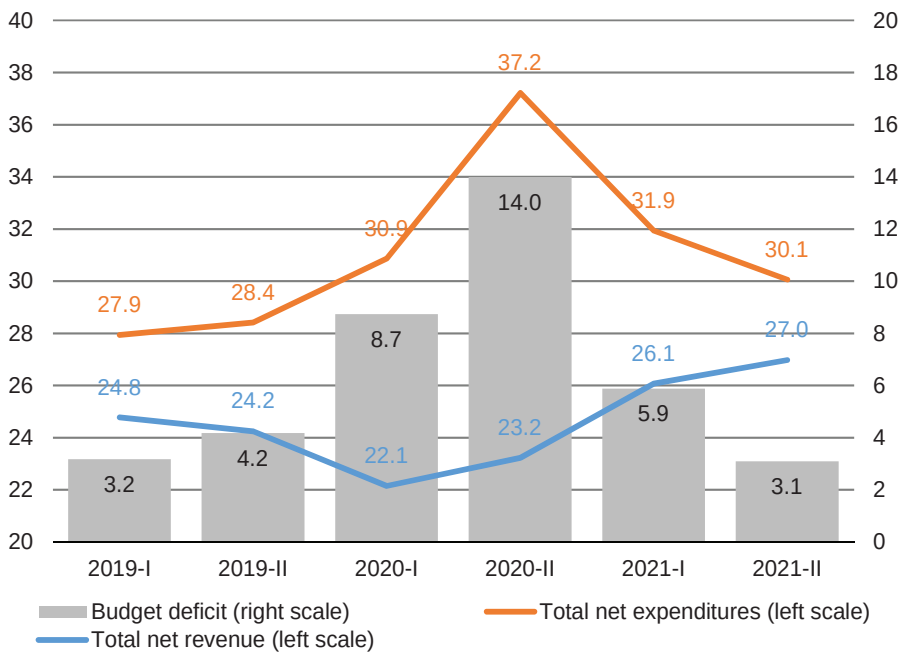
[5] The Bank of Israel *Annual Report* for 2020, for example, projected the public-debt-to-GDP ratio to be 77 percent of GDP the end of 2021 was. The Ministry of Finance forecast for the same period was similar (*Multiyear Budget Plan for 2022–2024,* March 2021, p. 29).

[6] For an analysis of the exceptional increase in tax revenues, see Box 2 in this chapter (below).

much different: expenditure in 2021 was 3 percent of GDP greater than in 2019, and revenues exceeded the 2019 level by 2 percent of GDP (Table 6.1). The difference relative to 2019 was due to temporary pandemic-related government expenditure, mostly in the first half of 2021, and exceptional revenues, mainly from the real estate and high-tech industries. In the course of the year, tax receipts continued to increase and pandemic-related expenditure waned, lowering the budget deficit in the second half of the year to 3.1 percent of GDP, compared to 5.9 percent of GDP in the first half and 4.2 percent of GDP in the second half of 2019 (Figure 6.1).

The budget deficit was 3.1 percent of GDP in the second half of 2021, compared with 5.9 percent in the first half of 2021 and 4.2 percent in the second half of 2019.

Figure 6.1
Revenue, Expenditure[a], and Deficit Accoridng to State Budget Definitions, 2019–2021 (semi-annual terms, percent of GDP)



[a] Expenditures and revenues appear in net terms, minus credit provided by the government and repayments on that credit, and minus grants from the US.

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

Israeli sovereign yields continued to decline in the first half of 2020, but rose afterwards, and were 30 basis points[7] higher at the end of 2021 than at the end of 2019. Quantitative easing (QE), in which the Bank of Israel purchased long-term sovereign bonds on the secondary market, and the decline in yields abroad in view of parallel programs of other central banks, contributed to the decrease in yields in

[7] Changes in yields are customarily expressed in basis points and not in percent. A basis point is 0.01 percentage points, i.e., 30 basis points are 0.3 percentage points.

2020.[8] Despite low funding costs, interest payments rose from 2.1 percent of GDP in 2019 to 2.8 percent of GDP in 2021 due to the increase in the public debt and the effect of CPI inflation in 2021 on indexation differentials on CPI-indexed debt, which accounts for about half of the debt.[9]

Fiscal policy changed markedly between the beginning of the year and its end. At the beginning of the year, it was a direct continuation of 2020, as the third wave of pandemic-related morbidity brought on a tightening of restrictions in January–February (see Chapter 1) along with continued government activity on the basis of the restraining interim budget[10] and the exceptional COVID-19 budgets. In the first half of the year, the safety net for businesses and households remained in effect, providing the economy with stability and helping to attenuate pandemic-related shocks.[11] Health expenditure also remained high, as vaccinations gradually spread to the entire population and testing as a monitoring tool expanded under nonemergency conditions.[12]

Government expenditure contracted in the second half of the year as the socioeconomic safety net was ended.

In the second half of the year, government expenditure declined as the government, largely in response to steadily rising vaccination rates, retracted the socioeconomic safety net and revised its policy on restricting economic activity in order to mitigate morbidity. The government decided not to extend its policies on furloughs and grants for businesses after June 2021, and rescinded its dispensations on eligibility for unemployment benefits for those aged 45 and over in October. The government's treatment of the fourth wave of the pandemic (which began in July) and the fifth wave (starting in December) also reflected a policy change relative to the previous waves. Instead of restricting economic activity and compensating large numbers of workers and businesses through a far-reaching safety net, the government focused its restrictions on activities that carried the highest epidemiological risk and, accordingly, limited its business relief programs to the most vulnerable industries. The approval of

[8] The purchases had an adverse effect on yields. In this regard, see Chapter 3 of the Bank of Israel *Annual Report* for 2020.

[9] Interest expenditure is reported in this chapter and in the National Accounts in accordance with the international norm, by which the interest presented is nominal interest on an accrual basis. This calculation requires that interest expenditure also include indexation differentials on the outstanding public debt and that the expenditure must relate to the period for which the interest is to be paid, irrespective of the actual date of payment. In the state budget, in contrast, interest payments on the government debt are shown in accordance with a real approach and on a cash basis, meaning that only actual interest payments are presented.

[10] The lack of an approved budget constrains government ministries' work plans and forces the ministries to turn to exceptions committees whenever they wish to carry out routine activities, not to mention new ones, along with uncertainty about the approval of these requests and its timing. The procedures of the interim budget also limit new long-term contracting due to the budget's provisional nature. They also prioritize spending under existing contractual obligations. Thus, for technical reasons, NGO activity by outsourcing is cut back even if funded by the government on a regular basis.

[11] Direct support payments were 3.3 percent of GDP in 2021, compared with 4.1 percent in 2020 and 1.0 percent in 2019. In contrast, current transfer payments declined from 11.3 percent in 2020 to the 2019 level (9.7 percent of GDP).

[12] Public expenditure on health totaled 5.8 percent of GDP in 2021, compared with 6.2 percent in 2020 and 5.4 percent in 2019.

Table 6.1
The main components of the general government's revenue and expenditures, 2015–2021

(percent of GDP)

	2015	2016	2017	2018	2019	2020	2021
Total public revenue	**36.8**	**36.4**	**37.4**	**35.8**	**35.0**	**34.7**	**37.0**
Income from property	0.7	0.5	0.5	0.5	0.5	0.4	0.5
Total taxes	**31.4**	**31.4**	**32.6**	**31.1**	**30.4**	**30.1**	**32.8**
Indirect taxes on domestic production	12.8	12.3	12.5	12.2	11.9	11.6	12.3
Indirect taxes on civilian imports	3.0	3.3	2.7	2.9	2.8	2.7	3.0
Direct taxes, fees and levies	10.5	10.5	12.2	10.7	10.5	10.5	12.4
National Insurance Institute revenue	5.1	5.2	5.2	5.3	5.2	5.2	5.1
Grants	1.4	1.4	1.1	1.1	1.0	1.0	0.7
Other[a]	3.3	3.2	3.2	3.2	3.1	3.2	3.1
Total public expenditure[b]	**38.4**	**38.6**	**39.4**	**40.1**	**39.5**	**46.2**	**42.5**
Current expenditure	34.4	34.2	35.0	35.5	35.1	41.0	37.9
Domestic civilian consumption	16.8	16.8	17.2	17.5	17.4	18.7	17.6
Domestic defense consumption	4.5	4.4	4.4	4.5	4.3	4.4	4.0
Defense imports	1.0	1.0	0.7	0.7	0.7	0.6	0.5
Direct subsidies	0.7	0.7	0.8	0.9	1.0	4.1	3.3
Transfer payments on current account	9.4	9.3	9.7	9.6	9.7	11.3	9.7
Interest payments[c]	2.1	2.1	2.2	2.4	2.1	2.0	2.8
Transfer payments on capital account[d]	0.5	0.5	0.6	0.6	0.5	0.5	0.6
Investments of the general government[b]	3.5	3.8	3.8	4.0	3.9	4.7	4.0
Primary civilian expenditure[b]	**30.9**	**31.1**	**32.1**	**32.5**	**32.5**	**39.2**	**35.2**
Total deficit of the general government[b]	**1.6**	**2.1**	**2.0**	**4.3**	**4.5**	**11.5**	**5.5**
Central government deficit (excluding provision of credit)[e]	2.1	2.1	1.9	2.9	3.7	11.4	4.4
Current deficit of the general government	0.8	1.0	0.8	2.8	3.2	9.5	4.6
Total cyclically adjusted deficit using international definition[b,f]	1.2	2.0	2.2	4.6	4.9	9.0	4.6
Net public debt[g,h]	60.6	59.0	57.1	57.6	57.5	67.6	65.1
Gross public debt[g]	63.8	62.0	60.2	60.4	59.5	71.7	68.9

[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
[b] Excludes the reduction of expenses financed by the sale of 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 based on various definitions.
[f] Based on the OECD estimate, adjusted to revised Central Bureau of Statistics Data. For more information see footnote d in Figure 6.2.
[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.

the budget and the Economic Arrangements Law by the government in August, and by the Knesset in November, were further milestones—redirecting the focus of policy to long-term matters.

Approval of the State Budget and the Economic Arrangements Law by the government in August and the Knesset in November were another milestone in the refocusing of policy on long-term matters.

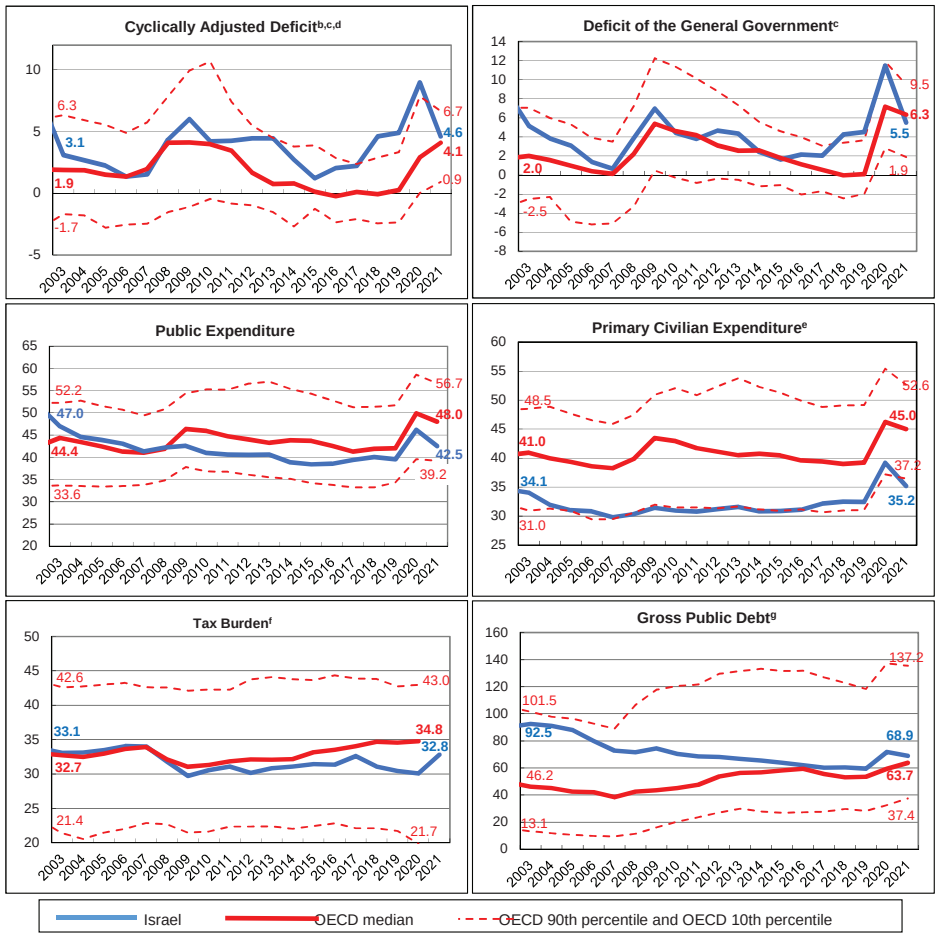
Tax receipts increased steadily throughout the year. In the first half, their growth mainly compensated for revenues lost in 2020, as a result of the recovery of private consumption and the narrowing of the employment gap that had opened up in the previous year. In contrast, in the second half of the year, a positive gap emerged and widened relative to the level of receipts expected on the basis of the long-term trend. Revenues continued to surprise upward each month, and the forecast deficit for 2021 declined accordingly. During the Knesset debates on the 2022 budget (August–October) revenues continued to grow, and the government decided to create a NIS 10 billion reserve in the 2022 budget for pandemic-related expenditure in view of the health-related uncertainty and the improvement in the coming year's revenue forecast. In February 2022, the government also approved an NIS 4 billion tax cut for 2022 on

the basis of estimations that tax revenues would be even higher than in the November forecast.

While the public debt continued to grow in many OECD member states, Israel's contracted slightly.

After exceeding the median deficit among OECD countries since 2016, Israel's deficit slipped below the median in 2021 (Figure 6.2). In contrast, the cyclically adjusted deficit (the deficit net of business cycle effects) remained high, partly due to direct spending in response to the pandemic. The steep deficit was mainly derived from more spending on defense and interest payments and a relatively low tax burden, whereas primary civilian expenditure in Israel was the third-lowest among OECD member states, after South Korea and Ireland.

Figure 6.2
Israel's Fiscal Aggregates Compared to the OECD Countries[a], 2003–2021 (percent of GDP)



[a] Data for OECD countries are based on all member countries for which there are data.
[b] Cyclically adjusted deficit data for Israel are according to the accepted international definition and taken from the OECD systems.
[c] Excluding revenue from the sale of land. See discussion in Footnote 2 of this Chapter.
[d] The OECD estimates are as of the beginning of December. In order to adjust the israeli figure to the revised Central Bureau of Statistics estimates, the gap between the overall deficit according to the OECD estimate and the overall deficit calculated by the Bank of israel was deduced from Israel's cyclically adjusted deficit. This gap amounts to less than half of one percent of GDP.
[e] Due to a lack of up-to-date data, defense expenditures in 2020 and 2021 are equal to defense expenditures in 2019 for all countries except Israel.
[f] The graphs are presented up to the last year for which there are data in the OECD systems.
[g] Data are in line with the International Monetary Fund's definition, and are taken from the IMF systems.
SOURCE: Based on Central Bureau of Statistics data, and OECD data (*Economic Outlook* 110, Dec. 2021, and Revenue Statistics, 2020) and International Monetary Fund.

In contrast with continued growth of the public debt in many OECD countries in 2021, Israel's debt ratio declined somewhat during the year, leaving its cumulative increase between 2019 and 2021 somewhat smaller than that in other developed countries—9.4 percent of GDP compared to an OECD median of 10.3 percent. Even so, Israel's public-debt-to-GDP ratio remained in the upper half of the distribution among developed countries.

b. Approval of the 2021–2022 state budget and economic program

After almost two years of government operations without an approved budget, the Knesset approved the state budget for 2021–2022 in November 2021. The budget limits were broadened relative to the fiscal rules in effect on the eve of the crisis, in order to strike a balance between avoiding fiscal tightening, which might slow down the economy's recovery from the pandemic crisis, and avoiding an increase in the structural deficit in a way that would impede fiscal policy management in the future. Relative to the 2019 budget, the 2022 budget reduces defense spending in GDP terms, further to the long-term trend, alongside a major increase in infrastructure investment due to the maturation of programs that have been promoted in recent years. The economic program that was approved alongside the budget, and government decisions made since then, are in line with Bank of Israel recommendations[13], and include important reforms that will support sustainable economic growth, enhance productivity, and address several structural issues in government activity.

Relative to the 2019 budget, the 2022 budget shows a decline in defense spending as a share of GDP—further to the multiyear trend—and a sizable increase in infrastructure investment due to the maturation of programs that have been advanced in recent years.

In the area of infrastructure investment, the government approved housing-related programs that are meant to increase the number of building starts, develop a long-term rental market, and convert offices into dwellings. Long-term targets for the deployment of advanced communication infrastructures and eliminating barriers to their attainment were set as well. In regard to the energy system, the government decided to eliminate barriers to the introduction of renewable energy and electric cars in order to help reduce emissions. In the area of public transit, regulations for the operation of on-demand transport were passed, a special-purpose "metro law" that regulates and budgets the metro project was enacted, and the construction of fast lanes was advanced. Concurrently, the government decided to introduce a congestion tax

[13] In June 2021, the Bank of Israel presented the government with recommendations on how to stimulate economic growth based on four strategic pillars of activity, and proposed a fiscal framework for their funding. This document, formulated in consultation with multiple partners in government ministries, focuses on programs that will help to cope with challenges to the economy beyond the horizon of the pandemic, with emphasis on enhancing productivity, developing the financial markets, and narrowing disparities in earning capacity and workers' capabilities. The four pillars of action that the program stresses are development of human capital, investments in technology and infrastructure, development of the financial services system, and regulatory and technological measures that will make government work more efficient. See Bank of Israel (2021), "Four Recommended Pillars of Strategic Government Action To Accelerate Economic Growth and a Fiscal Framework for Financing Them"

The economic program that was approved along with the budget, as well as subsequent government decisions, are consistent with Bank of Israel recommendations and include important reforms that will support sustainable economic growth and enhance productivity while responding to several structural issues in government activity.

in the Tel Aviv area in 2025, by which time adequate public-transit services will be available.[14]

To promote the development of human capital, the government allocated a budget from the coming school year for the transfer of early childhood education supervision from the Ministry of Economy to the Ministry of Education in order to improve the quality of early childhood education.[15] Furthermore, investment in human capital in Arab society was given high priority as part of the five-year plan for this population group, with special reference to broader differential budgeting of Arab high schools, setting targets for narrowing systemic education gaps between the Jewish and Arab sectors, enhancing the quality of teaching staff, and improving the professional and managerial capabilities of staff in municipal education and youth departments.[16] In addition, the Ministry of Education introduced measures that will give school principals managerial autonomy in adopting special pedagogical tools.[17]

To ameliorate regulation, the government approved greater lenience in imports through declaration on the basis of European standards with no need for adjustments to Israeli regulations or prior certifications. This may stimulate competition in the domestic economy, enhancing productivity and lowering the cost of living. It is important for the government to extend this policy to additional products and market segments. The government also approved a reform in business licensing, under which a regulatory committee for business licensing will be set up and authorized to revise licensing requirements, abridge licensing proceedings, lower the costs of licensing requirements, and align them with international standards.[18]

The structural measures included in the economic program that was approved in conjunction with the 2021–2022 budget are numerous and important, but efforts and perseverance are still needed to make sure that they are implemented in accordance with the schedules set forth and that they will be adjusted in view of lessons learned and additional information that emerges as implementation takes place. Furthermore, in future budgets and, particularly, in the upcoming two-year budget, it is important

[14] For a summary of the main reforms in the Economic Arrangements Law, see Ministry of Finance press release, https://www.gov.il/he/departments/news/press_04112021

[15] In Government Decision 951, adopted on January 9, 2022, the government decided to allocate NIS 600 million per year for four years to the daycare reform: NIS 350 million per year to upgrade daycare infrastructure (some to be transferred from the Ministry of Economy budget, some from the Ministry of Finance, and some from reallocation of the Ministry of Education construction budget) and NIS 240 million through an increase in the Ministry of Education budget for the improvement of daycare standards, training, and inspection. The ministry will receive 100 additional personnel slots, half new and the rest transferred from the Ministry of Economy. For details, visit https://www.gov.il/he/departments/policies/dec951_2022

[16] For the main provisions of the multiyear plan for the advancement of the Arab sector, see Ministry of Social Equality press release: https://www.gov.il/he/departments/news/arabs_economy_growth_plan (in Hebrew).

[17] For details on the changes in the Ministry of Education budget in 2021–2022, see https://edu.gov.il/heb/data/budget/Pages/budget2021.aspx (in Hebrew).

[18] For a summary of the main reforms in the Economic Arrangements Law, see Ministry of Finance press release: https://www.gov.il/en/departments/news/press_04112021

to continue advancing many additional structural measures, reforms, and investment plans that are needed to improve productivity in Israel and mitigate disparities in the standard of living between Israel and the other advanced countries in the OECD. If the government perseveres in this, it will also be reflected in the business sector's faster preparation to take advantage of these processes, and in growth of private investment, helping to close the gaps between Israel and the world's leading countries. In particular, it is important to make progress in fields that received limited attention in the current budget, particularly reforms that will improve the education system—and, in turn, upgrade human capital in Israel—and promote high-quality integration of the *Haredi* ("ultra-Orthodox") population in the labor market by providing tools for the development of human capital that is relevant to the labor market among members of this population group.

The structural measures in the economic program that was approved along with the budget are important. However, further effort is needed to make sure that they are implemented in accordance with the schedule set forth and that they reflect future lessons and information acquired as implementation takes place.

2. GOVERNMENT EXPENDITURE

General government expenditure was 42.5 percent of GDP in 2021, compared with 46.2 percent in 2020 and 39.5 percent in 2019. Primary civilian expenditure also declined between 2020 and 2021, from 39.2 percent of GDP to 35.2 percent, due to the waning of pandemic-related spending, mainly in the second half of the year.

a. Implications of the two-year interim budget

After a full year without an approved budget, the government managed its affairs in most of 2021 on the basis of a tight interim budget that held spending to NIS 6 billion below the limit that had been in effect at the beginning of the year (Table 2). In this unprecedented situation of a budget year (2020) that began and ended without an approved budget, ministries' activity and their ability to implement their working plans were impaired due to uncertainty and technical restrictions on new contracting with nongovernmental entities that had not been budgeted earlier.[19]

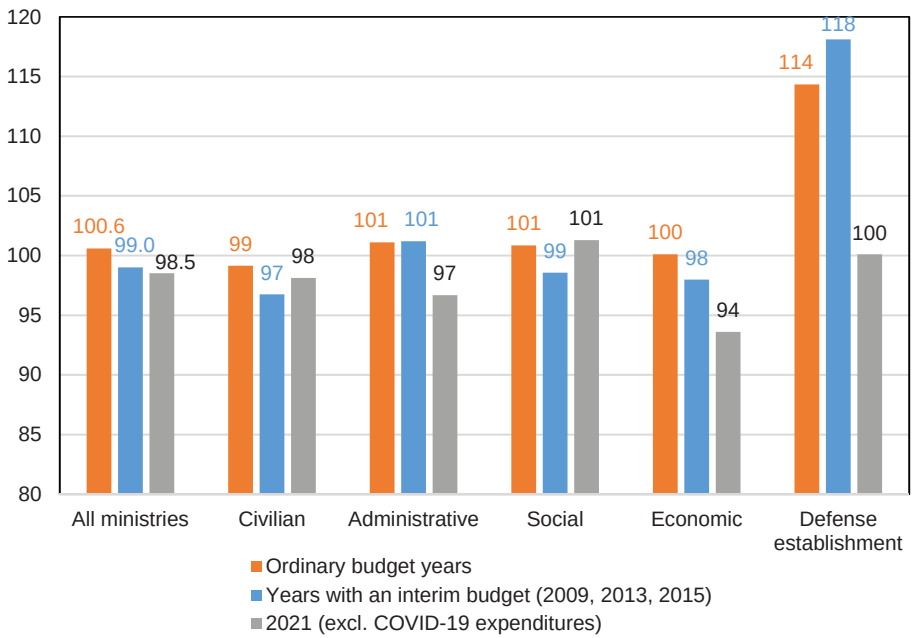
Due to the belated approval of the State Budget, government ministries' ability to utilize their budgets in the remaining two months was limited, causing the year to end with underperformance of regular ministries' expenditure (excluding pandemic-related items).

Work on a state budget for 2021–2022 began when the new government was formed in June 2021, and the budget was finally approved in early November. Due to the belated approval, the ministries were not fully able to utilize their budgets in the remaining two months of the year, causing the year to end with a NIS 5.6 billion underperformance of their regular expenditures (not including those related to the pandemic). Budget performance stood at 98.5 percent of the ministries' budget that the Knesset had approved in November (Figure 6.3). This was low not only relative

[19] Section 3b of the Basic Law: The State Economy sets rules for the performance of government expenditure in a year that has no approved state budget (i.e., that operates under an interimbudget). The statute limits spending, restricts spending authorization, and establishes a scale of importance for the performance of expenditure and the undertaking of obligations. At the beginning of 2020, the Basic Law was amended and the monthly spending limit was revised so that debt payments, with the exception of the National Insurance fund, would be excluded from the allowable spending limits. Permitted monthly expenditure is one-twelfth of the permissible annual spending limit.

to ordinary budget years but also relative to other years in which the government operated under an interim budget. The groups of ministries that were most affected by the belated approval of the budget were the administrative and economic ones. Expenditures not included in a specific group of ministries ("miscellaneous expenditures") were also impaired.[20] Although the defense system also underspent for most of the year, it managed to increase its spending considerably in November–December and ended the year at full performance.[21] The social ministries spent their budgets in the expected manner in 2021, and ended the year by overspending their budget as approved in November 2021 by NIS 2.4 billion.

Figure 6.3
Ministries' Budget Performance as a Share of Original Budget, 2019–2021
(average percentage)



SOURCE: Based on Ministry of Finance.

[20] The performance rate of miscellaneous expenditures is not noted in Figure 6.3. In 2021, it was 37 percent of the relevant ministries' budgets, compared with 49 percent in an ordinary budget year and 43 percent in previous years in which the government operated under an interim budget.

[21] The defense system received a provisional NIS 2 billion budget increase on account of Operation Guardian of the Walls. However, this was already included in the original budget that the Knesset approved in November.

Table 6.2
Changes in the budgetary framework for 2021

	Date	Event	NIS billion
Ordinary budget		[a]Expenditure ceiling in the law, as of the start of 2021	426
	29.12.2020	Interim budget pursuant to Basic Law:The State Economy	400
	30.12.2020	Increase in the interim budget framework for 2021[b]	420
	5.11.2021	Increase in the expenditure ceiling with the approval of the 2021 budget[c]	432
	31.12.2021	Expenditures excl. credit: Actual performance[d]	426
COVID-19 budget[e]	1.1.2021	COVID-19 budget at the start of the year (including surpluses from 2020)	69
	31.12.2021	Actual performance (in cash)	57

[a] Ministry of Finance, Multiyear Budget Program for the years 2022–2024, p. 14, March 2021.

[b] Basic Law: The State Economy - Amendment number 11 and Temporary Order for 2021.

[c] State Budget Framework (Special Orders for the Years 2021 and 2022) (Legislative Amendments and Temporary Order) Law, 5782–2022.

[d] Ministry of Finance, first estimate of budget performance, government deficit and its financing, January 2022.

[e] The COVID-19 programs were budgeted separately, and included only the temporary programs initiated by the government to help the economy deal with the COVID-19 crisis.

b. Exceptional COVID-19 budget[22]

The budget allocation for government efforts to cope with the COVID-19 crisis in 2021—referred to as the "exceptional COVID-19 budget"—was different in nature from the one in 2020. First, unlike 2020, the total size of the exceptional budget was set at the beginning of the year with the transfer of surpluses from 2020, and, apart from transfers among budget items, it was not changed during the year.[23] Second, the cost of publicly funded programs declined from NIS 80 billion in 2020 to NIS 57 billion in 2021 (Table 6.3).[24] The spending path in the first half of 2021, however, was closer to that of 2020—NIS 7 billion in average monthly expenditure, compared to NIS 9 billion, respectively—unlike the second half of 2021, when the monthly expenditure averaged NIS 3 billion.

[22] Apart from the interim budget framework, an additional and separately defined spending framework was created in order to fund economic relief programs in response to the pandemic. The cost of the original exceptional budget for 2021, NIS 52.3 billion, was increased at the beginning of the year by NIS 16.3 billion, transferred in the form of surpluses from the previous year, bringing the total to NIS 68.6 billion. When the official budget was approved in November, the COVID-19 expenditures were included in the regular annual budget and exempted in the Restriction of Expenditure Law as a temporary increase in the spending limit that would not affect the limit in coming years.

[23] For an analysis of the many changes in that were made the exceptional COVID-19 budget in the course of 2020, see the Bank of Israel *Annual Report* for 2020, Chapter 6, "The General Government and Its Financing."

[24] These sums include expenditure from the state budget and from the National Insurance Institute budget on relief programs for households and businesses and on programs to accelerate and reinforce social services, mainly relating to the healthcare system.

Table 6.3
Composition of COVID-19 expenditures by program type (cash performance)

(NIS billion)

Program type	2020 April–December	2021 January–June	2021 July–December	2020	2021
	Monthly average			Yearly total	
Support for households	4.9	3.6	0.7	43.8	25.7
Budgetary assistance to businesses	2.0	1.8	0.6	17.7	13.9
Dealing directly with the pandemic (healthcare)	1.1	0.8	1.1	10.0	11.9
COVID-19 expenditures in other government ministries	0.5	0.3	0.2	4.1	3.3
Maintaining employment and acceleration programs	0.5	0.1	0.2	4.6	2.0
Total (NIS billion)	8.9	6.6	2.9	80.2	56.9
Total (percent of GDP)	7.7	5.3	2.1	5.7	3.7

SOURCE: Based on Ministry of Finance.

c. Fine-tuning the transport infrastructure development budget

Budget expenditure under the transport development iterm (Line 79) has been growing steadily since 2016. The upward movement accelerated in 2020–2021 and budgeting remained high in 2022, after many years of insufficient investment considering Israel's small infrastructure stock relative to other developed countries, particularly in view of Israel's faster rate of population growth.[25] The growth of transport investment is mainly due to the progress of programs that were promoted before 2020 and the ability to implement them more quickly during the lockdowns, when there was less road traffic than at ordinary times.[26] The transport projects that were included in the acceleration programs of the exceptional COVID-19 budgets added up to only NIS 1.1 billion, out of a NIS 4.7 billion increase in the transport development item between 2019 and 2020 (Figure 6.4).

An examination of the composition of transport development expenditure in recent years shows that the budget increase was earmarked for the development of public transit infrastructure instead of roadbuilding. This represents an important change of priorities in this budget item.

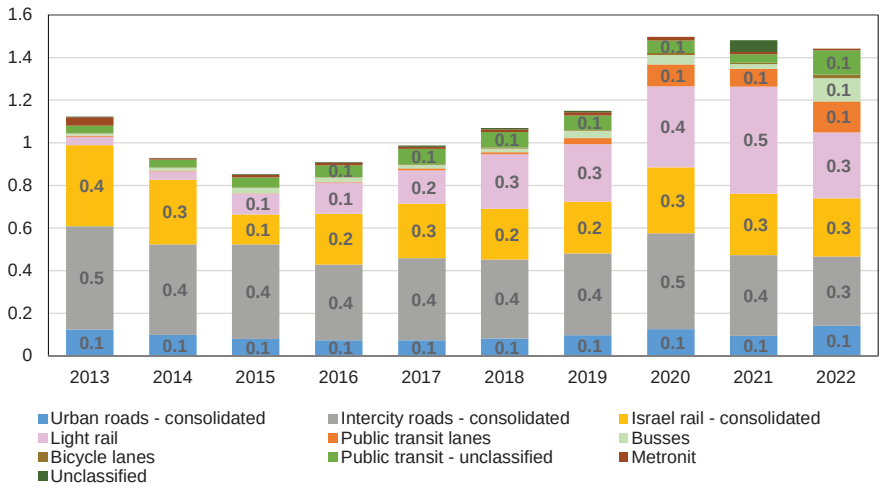
An examination of the composition of transport development expenditure in recent years shows an earmarked shift toward the development of public transit infrastructure instead of roadbuilding. This represents an important change of priorities in this budget item. The increase was led by expenditure on light rail development, which grew by 0.4 percent of GDP from the beginning of the period to the end. Annual investments in heavy rail and public transit lanes also grew—each by 0.1 percent of GDP. In contrast, road investment remained at its previous level in GDP terms, so its share of the total transport development budget fell from 61 percent to 32 percent due to the increase in the other components mentioned above.

[25] For details of an international comparison of transport infrastructure investment and policy recommendations, see Bank of Israel (2019), *Research Department Special Report: Raising the Standard of Living in Israel by Increasing Labor Productivity,* pp. 55–63.

[26] An analysis of the line items of detailed program of the interim budget, published by the Ministry of Finance in April 2020, shows that the planned increase in the transport development item of the interim budget, originating in earlier contractual obligations, was NIS 7.4 billion relative to performance in 2019—NIS 3.4 billion for infrastructure development and the rest for current subsidies.

During the period of the interim budget, spending authorization[27] was limited such that government ministries were not allowed to sign new long-term contracts. This caused the inventory of programs in progress under the transport development item to contract severely, making a reduction in expenditure in the medium term likely. To assure the continuity of adequate investment, and to close gaps relative to other developed countries, the state needs to initiate, plan, and promote projects several years before they are carried out. An important step in this context is the parliamentary approval of major provisions of the "Metro Law" that determine the manner of managing and funding the greater Tel Aviv metro project. An expanded discussion of questions that accompanied the parts of the law that were approved appears in Box 1.

Figure 6.4
Transportation Development Budget Performance[a] (excl. Current Subsidies to Public Transit Operatorsb) by Type of Transport, 2013–2021 (percent of GDP)



[a] The data presented in the figure are based on budget performance data for the years 2013–2020. Budget performance is estimated for 2021, and the original budget is presented for 2022.
[b] The Transportation development item (79) includes current support payments transferred to the public transit operators. This analysis does not include current support payments, since they do not represent a long-term investment in infrastructure, but are measures to improve the level of service and subsidies for the costs of public transit.
SOURCE: Based on Ministry of Finance and Central Bureau of Statistics.

[27] In addition to the limit on actual spending, the law restricts the creation of obligations by capping spending authorization, i.e., the maximum sum to which the government may commit in the course of a given fiscal year even if payment is made in subsequent years.

BOX 6.1: FINANCING THE ESTABLISHMENT OF THE METRO PROJECT IN GUSH DAN

- The project of establishing 3 metro lines in Gush Dan (the greater Tel Aviv area) is expected to cost approximately NIS 150 billion over about 15 years according to government estimates.
- In view of the assessment that a permanent increase in transportation infrastructure investment in Israel is required, most of the financing should be carried out via long-term fiscal steps, including raising taxes—taxes on the public overall and/or designated taxes on the population expected to benefit from the project.
- Due to the high economic cost of delays in carrying out the project, it is important to decide in advance that if there will be timing gaps between the revenue designated for funding the project and the expenses for executing it, the government will bridge those gaps, and prevent a delay in the project for cash flow reasons.

In November 2021, the Knesset approved the main sections in the Subway Law (the "Metro Law"), which provide for the establishment of a metro authority that will advance and manage the Metro project, and regulate how it is financed. According to the Law, the investment in the project will total NIS 150 billion. Half of that amount will be financed by the government budget, and half from unbudgeted sources that were noted in the law.

The plan is for the metro to be built over the course of more than 15 years, and most of the expenditure will be required over a range of about 10 years (currently 2026–36). At its peak, the annual expenditure is expected to be about 1 percent of GDP. This is an investment that is (largely) expected to be added to other investments in the economy. Although the project is of tremendous scope, spreading it out over 15 years enables the government to finance it through a combination of raising taxes, reigning in the growth of other expenditures, and temporarily increasing the public debt. In view of the assessment that a permanent increase in transportation infrastructure investment in Israel is required, including expanding the transportation system in the center of the country and the metro itself—with an increase in population in the coming decades—a considerable portion of the investment should be financed by a permanent increase in government revenues or restraint in the growth of other expenditures.

The law that was approved establishes that the investment in building the metro is to be financed by a combination of taxes on the overall public, taxes on property owners who are expected to benefit from the development of the infrastructure near their properties, and taxes on the residents living in or employed in the areas where the metro will be developed. The intention is not that future users of the subway will finance the building of the infrastructure, as its existence is expected to ease congestion on the streets and to assist with the mobility of all transportation users in the geographical region in which it is developed. Thus, this investment is different from investments in infrastructure for electricity, water, and sea and airports, in which the benefit is focused solely on the consumers themselves, and which are therefore financed by their users. Since this is a large scale investment, how the financing burden of the metro lines is divided among the overall population, the main beneficiaries (based on residential and employment areas), and property owners expected to benefit from capital gains due to the development of the infrastructures near their properties, is to a large extent a question of social preferences.

Regarding projects to establish (or expand) transportation infrastructures in other countries, we found that in many cases the financing is divided between the central government and local government.[1] In Israel, where tax policy, including local taxes, is managed exclusively by the central government, local government involvement in establishing a national infrastructure project is unfamiliar. However, the high cost of the metro project, and the fact that its main beneficiaries are residents and businesses of Gush Dan (the greater Tel Aviv area), justify the imposing of designated taxes on the beneficiaries of the project.

Approximately half of the project's financing will come, as noted, from the state budget, meaning taxes on the overall public. The financing expected from the Israel Lands Authority also essentially comes from the general public (even though officially it is considered a nonbudget source). In contrast, the revenues from the congestion tax, betterment tax (defined in the Metro Law), the local authorities in the project's geographic area, and the income from construction above the depot and the stations are revenues that come from property owners and residents who are expected to benefit from the project.

At this stage there are still no assessments regarding the gaps in timing between the revenue designated for financing the project and the expenditures on its execution. However, because of the unique attributes of some of the revenue and the dependence of a considerable part of it on individuals' decisions regarding when to realize the assets whose value will be affected by the project (meaning the date of paying the taxes on them), it is plausible that there will be a gap. In such a case, the government should bridge it with financing from the State budget. Such gaps are typical of many infrastructure projects, and often disrupt their execution, and it is therefore important that the government promote an overall budget framework that supports the execution of quality investment in infrastructure.

At this point, the details regarding execution of the project have not yet been formulated. Parts of it will likely be executed through Public-Private Partnerships (PPP). Although financing in collaboration with the private sector increases the capital cost of the project, it transfers part of the risk of its execution to the private sector. The private sector's involvement also creates a good platform for efficient utilization of knowledge on building a metro that has been accrued abroad and exists in the private sector. In the past two decades, the government has expanded its investments in infrastructure via Public-Private Partnerships, which included dividing the responsibility and risks alongside a financial component. This collaboration reduces the need to increase the reported public debt, due to raising private capital against a government commitment to pay in the future. Thus, for example, the establishment of the IDF's training campus in the Negev region was financed by the company building it, and the government pays for its establishment via annual payments over 25 years. The financing and expense-coverage agreement for the construction of Highway 431 is another example of a Public-Private Partnership in financing the construction of infrastructure. In this case, the reimbursement of expenses by the public sector is carried out by payments to the operator during the road's use based on usage volume. This condition encourages the private operator to provide quality service, but also increases the risk to the company building the

[1] Thus, for example, a considerable part of the financing for the establishment of the London Crossrail came from local public entities. The same was true regarding the subway connecting the West Sydney International Airport (WSIA), and the Gautrain Rapid Rail in South Africa.

infrastructure, and raises the cost of the capital used to build it.[2] Similarly, the establishment of the metro project in collaboration with the private sector is expected to increase the cost of capital, but could increase the efficiency of its use.

[2] Other large infrastructure projects that were financed by Public-Private Partnerships in recent years are the main section of Highway 6, desalination plants in Ashkelon and Palmachim, and the Red Line of Jerusalem's light rail. Work on Highway 531 and on the Red Line of the Tel Aviv light rail began as collaborations with the private sector, but those collaborations were unsuccessful and the government took on the execution of these projects under its sole management.

3. TAX REVENUES

Tax revenues in 2021 were 21 percent higher than in 2020 and 18 percent higher than in 2019. Almost all types of taxes showed larger average increases in 2020–2021 than in the previous five years.

Tax revenues in 2021 were 21 percent higher than in 2020 and 18 percent higher than in 2019. Thus, the sharp increase in revenues between 2020 and 2021 more than compensated for the loss of revenues in 2020. Figure 6.5 shows the contribution of each type of tax to the average annual increase in tax receipts (4.5 percent in 2015–2019 and 8.7 percent in 2020–2021) on the basis of its weight in total tax revenues in 2019 and the rate of increase of revenues from it. The picture that emerges is an almost across-the-board increase growth relative to the rate of increase in the five years preceding the crisis. The only taxes that contributed less during the crisis than before it were National Insurance contributions and the health tax, which are more sensitive than income tax to loss of revenue from low-income wage earners[28]; municipal taxes, which grew more slowly due to the exemption from municipal property tax that was given to businesses in the course of 2020; and the fuel excise, which brought in less revenue because travel declined during the lockdowns.

Israel stood out favorably among developed countries as having the strongest growth of direct-tax revenues relative to the forecast based on the trend.

The rise in tax revenue in 2021 was particularly strong not only relative to the past but also relative to other developed countries. Figure 6.6 presents an international comparison of the gap between direct and indirect tax receipts and the expected trend (the vertical axis) and the connection between this gap and the decrease in macroeconomic activity (horizontal axis) in the first three quarters of the year.[29] The comparison makes it clear that Israel stood out favorably in 2021 as the country with the strongest growth of direct tax revenue relative to the forecast based on the trend (11 percent above the trendline—Figure 6.6a).[30] In indirect taxes as well, Israel's recovery

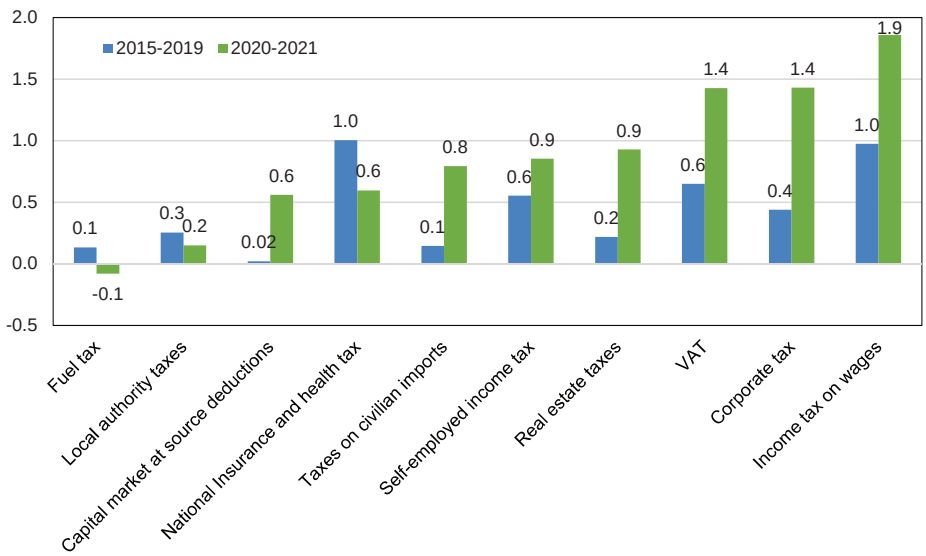
[28] Almost half of workers in Israel fail to reach the income tax threshold.

[29] The deviation of tax receipts in constant prices from the long-term trend was calculated on the basis of the annual average increase in each tax category between 2015 and 2019. Since most countries' published data did not include the last quarter of 2021, the predicted sum in 2021 for the first three quarters of the year was calculated on the basis of the same annual rate of increase, and the data for Israel were also taken only to the end of the third quarter in order to make them comparable with the other countries' data.

[30] In 2020, in contrast, the loss of direct taxes in Israel was close to the median among the comparison countries—5 percent below the trendline.

in the first three quarters of 2021 was relatively strong (Figure 6.6b). However, Israel's indirect tax receipts during this time were 1 percent lower than expected receipts in the same quarters on the basis of the long-term trend.[31] For the year as a whole (including the last quarter), direct tax receipts in Israel were 13 percent above the trendline, and indirect tax receipts were 4 percent above the trendline. This finding, however, cannot be compared with the receipt gap in the other countries due to the unavailability of last-quarter data in the comparison countries.

Figure 6.5
Contribution of Main Taxes to the Average Annual Increase in Tax Revenues[a], 2015–2021 (percentage points)



[a] The figure shows the multiplier of the average annual growth rate in each of the main taxes at its weight in 2019 as a share of revenue, such that the sum of the columns in each series is equal to the total average annual growth in revenue during the relevant period. The growth rate is calculated by the geometric average of the nominal rate of change between 2014 and 2019 for the years 2015–2019, and between 2019 and 2021 for the years 2020–2021.

SOURCE: Based on Central Bureau of Statistics.

Was this improvement in tax receipts the outcome of stronger economic activity in Israel than in the other countries? An examination of the connection between the divergence of taxes from the trend and selected macroeconomic indicators reveals a relatively weak but positive correlation between the impact to economic activity and tax collection. Figure 6.6a shows the relation between the loss of working hours in the economy in 2021 and direct tax receipts[32], clearly indicating that, as in 2020 and as in other countries in 2021, labor input in Israel was below potential. However, Israel's

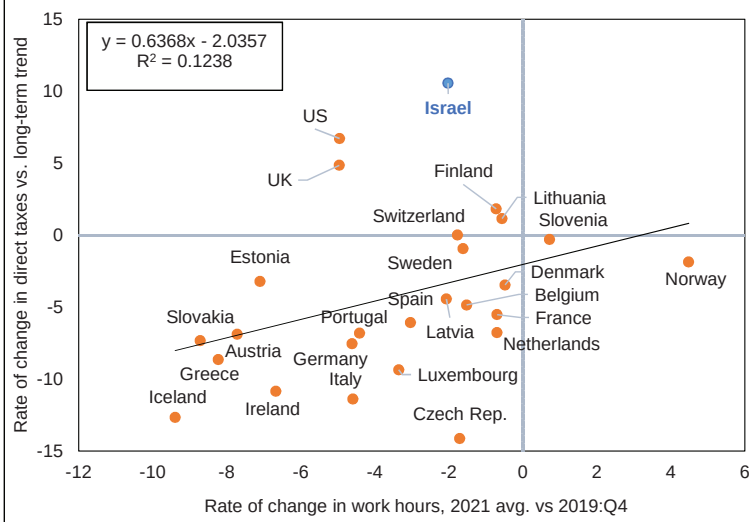
For the year as a whole, direct tax revenues surpassed the trendline by 13 percent and and indirect tax revenues exceeded it by 4 percent.

[31] Indirect taxes were also less affected in Israel in 2020: a loss of 5 percent relative to the trend, compared with a median of 9 percent among the comparison countries.

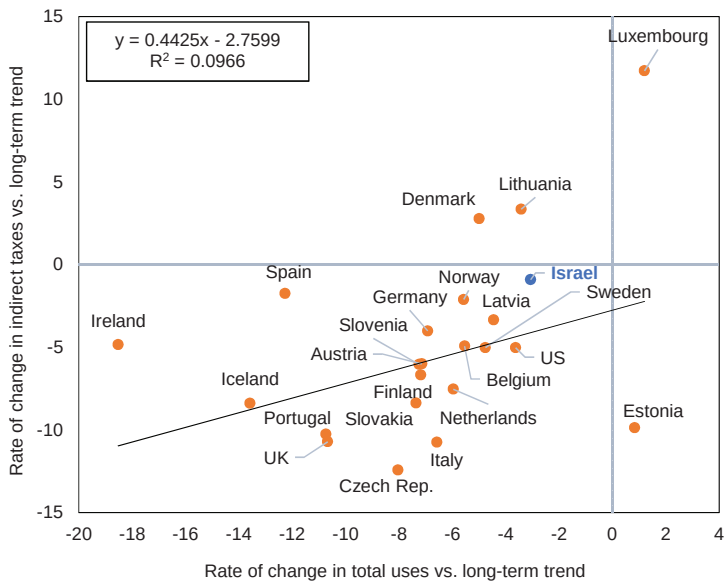
[32] The index of working hours lost is calculated as part of the nowcasting model used by the International Labor Organization (ILO). The index predicts the share of working hours lost among workers aged 15–64 compared with the data for the last quarter of 2019, seasonally adjusted. For further details, see https://ilostat.ilo.org/resources/concepts-and-definitions/ilo-modelled-estimates

Figure 6.6
Tax Revenues and Activity Variables in 2021 Compared with the Long-Term Trend[a]

a. Direct Taxes[b]



b. Indirect Taxes[c]



[a] The figures show a broad profile of the OECD countries for which there are data on tax revenues for 2021, according to the international definitions. The long-term trend was calculated based on the average annual real growth between 2015 and 2019. Since the data published for most countries do not include the fourth quarter of 2021, the forecast amount for 2021 was calculated for the first three quarter based on the same average annual growth rate, and data on israel are shown only until the end of the third quarter, in order to make them comparable to the data from the other countries.
[b] Direct taxes include taxes on income, capital gains, purchases, National Insurance deductions, and health tax. The data on changes in work hours come from the ILO's nowcasting model, based on which the average loss in work hours in 2021 relative to the fourth quarter of 2019 was estimated. According to annual data for Israel, direct taxes were 13 percent higher than the trend line.
[c] According to annual data on Israel, indirect taxes were 4 percent higher than the trend line. Fourth quarter data on the other countries have not yet been published.

SOURCE: Based on Central Bureau of Statistics, Eurostat, OECD Quarterly National Accounts, and ILO.

distance from the regression line attests to much stronger direct tax receipts than those predicted on the basis of this indicator alone. Figure 6.6b presents the relation between total uses[33] in the economy and indirect tax collection. This, too, makes it clear that despite the relatively swift recovery of uses in Israel, this figure alone does not explain the entire positive gap that opened up between Israel and the other developed countries in terms of the rebound of indirect-tax receipts. The findings suggest anomalous revenues that these indicators cannot explain. For a detailed analysis of the factors explaining Israel's strong tax revenues in 2021, see Box 6.2 below.

BOX 6.2: WHAT EXPLAINS THE INCREASE IN TAX RECEIPTS IN 2021?

- Tax receipts in Israel in 2021 were high not just compared to 2020—a year in which they declined—but also relative to what was expected according to the long-term growth trend over the past five years.
- The increase of about NIS 67 billion in tax collection compared with 2019 was partly due to the "natural" increase of about NIS 34 billion. The deviation of macroeconomic variables from the trend of the previous five years contributed a further NIS 29 billion.
- Due to the significant weight of the exceptional components—consumer goods imports, increases in financial asset prices, and the strong activity in the real estate market—tremendous caution is necessary in relying on this revenue in planning toward the next budget.

Tax receipts in Israel in 2021 were high not just compared to 2020—a year in which they declined—but also relative to what was expected according to the long-term growth trend in recent years. There are a number of mutually complementary explanations for this increase in tax revenue: structural factors, exceptional factors, and one-off factors. In order to answer the question of how much of the growth was due to each of these components, we analyze the development of the relevant macroeconomic variables in the past two years compared with the preceding five years.

Structural factors: The structural growth of tax revenues is due, first and foremost, to the "natural" growth factors in the tax base: GDP growth, which is due to the increase in the number of workers and in GDP per worker. Long-term structural processes, such as an increase in the motorization rate and fuel consumption in Israel (tax-intensive activities) and changes in income distribution (because the marginal tax on those with higher salaries is greater) have in the past contributed to an expansion of the tax base. The decline of the volume of the unreported economy and the permanent streamlining of Tax Authority activities may also lead to a structural increase in revenues. Another structural change in tax receipts may be due to legislative changes that raise the statutory tax rates or reduce tax benefits.

[33] Private consumption, public consumption, investment, and exports.

Exceptional factors: Even though tax revenues increase at a similar rate to GDP growth (as long as there are no changes in statutory tax rates), some tax revenues change with the business cycle, and are therefore referred to as cyclical changes. The tax response to changes in the business cycle tends to be nonlinear. Tax receipts fall sharply during an economic slowdown and increase with elasticity greater than one (relative to GDP) when the level of activity begins to recover from the low point it experienced.[1] The part of tax revenue that is beyond the linear effect (which is included in the structural factors discussed above) is defined as a cyclical effect. This revenue incudes taxes on domestic consumption, corporate taxes (derived from their profits), payroll taxes derived from the volume of wages in the economy, and so forth. The group of exceptional factors also includes taxes due to anomalous fluctuations in the asset markets (real estate and financial assets), where the cycles do not necessarily match the general business cycles in the economy.[2]

Two phenomena that typified the Israeli economy in particular over the past two years were an increase in the export of high-tech services[3] and the expansion of activity and increase in prices in the housing market.[4] These two phenomena are not necessarily in line with the general business cycle in the economy, but they do have a cyclical nature, such that an increase in certain years may moderate, or even reverse, in the medium term. Wage increases and capital gains of employees in high-tech services began even before the crisis, and became even more prominent during the crisis, even compared with other advanced economies. Friedman (2017) found that wages in the high-tech industries tend to be more elastic than wages in other industries in response to changes in demand and in firms' profitability. This is because of employment stability in the industry, which is due to the high level of human capital that is typical of its employees. For this reason, the growth in tax receipts from the high-tech industries observed in recent years may moderate in the coming years, and may even go through a downward correction.[5] The pace of building starts and land marketing also accelerated in recent years, and this process may continue for a number of years. However, it is difficult to know what the horizon of this process is—when it will end, and whether it will be halted sharply or gradually subside. We therefore relate to these factors as exceptional factors.

One-off factors: These reflect one-off events that are exceptional in size, such as large transactions that carry a significant tax payment, the response of tax payers to legislative or regulatory measures, and tax assessments to large companies related to events that took place in previous years. Some of the revenue this year was apparently due to legislative changes that caused economic activity to be brought forward.

[1] P. Dudine & J. T. Jalles. (2018). "How Buoyant is the Tax System? New Evidence from a Large Heterogeneous Panel". *Journal of International Development*, 30(6): 961–991.

[2] In other advanced economies as well, there are empirical attempts to determine which changes in macroeconomic activity are structural and which are passing changes, in order to determine the level of the structural deficit, for instance by assessing the extent of revenue growth derived from the cyclicality of asset prices. For instance, see Richard Morris and Ludger Schuknecht (2007), "Structural Balances and Revenue Windfalls—The Role of Asset Prices Revisited," ECB Working Paper 737 (Frankfurt, European Central Bank).

[3] For more details, please see Chapter 1 in this report.

[4] For more information, please see Chapter 9 in this report.

[5] For more information in the relatively high elasticity of wages in the high-tech industries and the cyclicality that has been typical of these industries since the 1990s, see Yoav Friedman (2017), "Information Technology Industries: Employees, Wages, and Dealing with Shocks", *Economic Quarterly*, 61(1): 145–178 (June 2017) (in Hebrew).

For instance, the increase in taxes on investors in the real estate market in November encouraged them to bring real estate transactions forward to the months preceding the tax increase, meaning that amounts that would have been collected in respect of those transactions at later times were collected in 2021 instead. This component is unexpected, short-term, and may even have a negative impact on revenue in the following years.[6]

When calculating the increase between 2019 and the following years, we must also take into account the fact that in 2019, net income taxes were relatively low due to increased tax refunds of about NIS 2.5 billion. These were due to the decline in the corporate tax rate in previous years, and to temporary benefits issued in 2017 for withdrawing dividends (including to self-incorporated individuals), which encouraged people to bring tax payments for 2018 and 2019 forward to 2017.

The components' contributions according to the tax model

The tax model, which helps formulate the state revenue forecast as part of the Research Department's staff forecast, includes a number of activity variables and a number of financial variables that are intended to explain past tax receipts and forecast tax revenue for the medium term. The model includes quarterly GDP with a lag, GDP with a lag of five quarters, GDP growth with a lag of two quarters, the portion of the average wage that is not explained by GDP growth, the portion of consumer goods imports that is not explained by GDP growth, seasonality variables (a dummy variable for certain quarters), the Bank of Israel interest rate, the change in the general shares index on the Tel Aviv Stock Exchange, the same change with a lag, and the number of housing transactions with a lag of three quarters.[7] An examination of the parameters estimated in the model up to 2019 compared with a re-estimation using actual data up to 2021 showed that there were no significant changes in the parameters, so that most of the changes in tax revenue in recent years can be attributed to the sharp changes in the variables themselves.

In order to understand the contribution of the macroeconomic variables to changes in tax revenue, we estimated the tax model twice. The first estimation assumed that the explanatory variables in the model developed in 2020 and 2021 in a similar way to their behavior between 2015 and 2019 (a routine period in which the economy operated in a full employment environment). The second estimation was made using the actual development of the variables. The difference between the forecast contribution of each variable based on past activity and its actual contribution enables us to quantify the contribution of the macroeconomic changes to overall tax revenue.

[6] A significant example of one-off tax revenue took place in 2017, when the government decided to temporarily lower the tax on dividends to owners of self-incorporated individuals. This policy encouraged the distribution of exceptional volumes of dividends, leading to tax revenues that totaled about NIS 11 billion. Due to these payments being brought forward, tax receipts from dividends and the increase in tax rebates were weaker in the following years. For more information, see the chapter on "The Public Sector and its Financing" in the Bank of Israel *Annual Report* for 2018.

[7] For details on the tax model, see A. Brender and G. Navon (2010), "Predicting Government Tax Revenues and Analyzing Forecast Uncertainty", *Israel Economic Review*, 7(2): 81–111. The parameters of the model were estimated using a sample from the years 1995–2019.

The exercise, the results of which are presented in Table 1, emphasizes the high weight of the contraction of GDP in the decline in tax revenue in 2020 (Column 2). It also emphasizes the effect of the strong recovery in 2021, which offset most of the negative contribution from the previous year (Column 3). Two additional variables that contributed much to the increase in revenue in 2021 are the sharp increase in consumer goods imports, beyond what is explained by the long-term link with GDP, and equity prices on the Tel Aviv Stock Exchange. In contrast with the large negative contribution of GDP in 2020, imports and equity prices had a negligible negative effect on revenue, while in 2021 they had an exceptionally large positive impact. In addition to these two variables, the exceptional increase in the number of housing transactions explains the increasing tax revenue as far back as 2019. However, real estate tax (betterment and purchase) revenue in 2021 was particularly anomalous (about NIS 7 billion more than the increase in total taxes that is explained by the anomalous number of transactions). The contribution of these variables to increased revenue compared to their contribution during the routine years hints at anomalous profit-taking in the capital market and anomalous levels of consumer goods imports and housing transactions, which may decline in the coming years.

In conclusion, the main contributing factor to the NIS 67 billion increase in tax revenues in 2021 compared with 2019 was the "natural" growth of tax revenues by about NIS 34 billion over the period. During those two years, there were no significant legislative changes, so that most of the structural growth in tax revenues was due to that natural growth, which would have taken place anyway had the macroeconomic variables changed in accordance with past trends. The exceptional factors, represented by the deviation of activity variables from the precrisis trend, explain an additional NIS 29 billion, divided as follows: NIS 13 billion are due to the increase in consumer goods imports that are not explained by GDP; NIS 8 billion are due to the price increases in the capital market; and NIS 10 come from the housing market. GDP and the deviation of the average wage from its long-term link with GDP were offset between 2020 and 2021, and over all they made a negative contribution of about NIS 3 billion. In addition, one-off factors reduced revenue by about NIS 2 billion, and the remaining unclassified growth is estimated at about NIS 6 billion—mainly due to unexplained growth in 2020.[8] Due to the significant weight of the exceptional components in the increase in revenue in 2021, it is necessary to be much more cautious in relying on this revenue when planning toward the next budget. In the medium term, it is reasonable to assume that the level of revenue will converge back to the long-term trend, and that the tax burden as a percentage of GDP will return to a scale similar to the precrisis level.

[8] Two possible factors for the increase in payroll tax revenue, which are not included in the model, are the concentration of the increase in the average wage in 2021 mostly on those with higher wages, on which the marginal tax is higher than the average in the economy; massive amounts of capital raised by high-tech companies, which were partly translated into the exercise of options by employees and tax payments by some company owners in respect of the issuances. Precise data on these two components are not available at this stage, but simulations show that they may amount to a few billion shekels.

Table 1:
Changes in tax revenues between 2019 and 2021 by component

(NIS billion, current prices)

			Component type	(1) 2019	(2) 2020	(3) 2021	(4) 2021 compared to 2019
Actual change[a]				**11.1**	**-6.5**	**73.0**	**66.5**
Total explanation according to the tax model[b]				**13.9**	**-10.6**	**67.5**	**56.9**
of which:	**The model's forecast in a "business as usual" scenario**		Structural	**16.0**	**16.3**	**17.4**	**33.7**
	Total explanation according to the macroeconoic variables' deviation from the trend		Exceptional	**-2.1**	**-27.0**	**50.1**	**23.2**
	of which:	GDP level[c]		-0.2	-18.0	14.0	-4.0
		GDP growth[d]		0.0	-2.2	5.4	3.2
		Wage component that is not dependent on GDP[e]		-1.1	-5.5	3.8	-1.7
		Consumer goods imports component that is not dependent on GDP		-2.4	-1.2	14.4	13.3
		General shares index in Tel Aviv[f]		0.0	-1.8	10.1	8.3
		Housing transactions (total)[g]		1.0	2.1	2.7	4.8
		Bank of Israel interest rate[h]		0.6	-0.3	-0.3	-0.6
Remainder unexplained by the model				**-2.8**	**4.1**	**5.5**	**9.6**
	of which:	Unexplained change in real estate tax revenue	Exceptional	-0.5	-1.6	7.1	5.5
		Legislative changes[i]	Structural	-0.1	-0.4	0.4	-0.1
		Exceptional revenue	One-off	-2.5	-0.2	-1.9	-2.1
			Total by component type:				
			Structural	15.9	15.9	17.7	33.6
			Temporary	-2.6	-28.6	57.3	28.7
			One-off	-2.5	-0.2	-1.9	-2.1
			Unclassified	0.3	6.4	-0.1	6.3

[a] The nominal increase in tax revenues after adjustments according to the State Budget definitions.
[b] According to the Israel Tax Authority definitions (before adjustment to the State Budget definitions).
[c] The sum of contributions of the GDP level with a lag of one quarter and the GDP level with a lag of five quarters.
[d] GDP growth with a lag of two quarters.
[e] Average wage data for 2020-2021 were adjusted to reflect the average wage of persistent workers instead of the employee component's effect on the average (for details, see Chapter 2).
[f] The sum of the contributions of the change in the index in that quarter and in the previous quarter.
[g] With a lag of three quarters.
[h] With a lag of one quarter.
[i] According to Ministry of Finance estimations, legislative changes reduced tax revenue by about NIS 0.4 billion in 2020, and increased revenue by a similar amount in 2021, such that the cumulative effect was negligible.

SOURCE: Bank of Israel calculations.

4. THE GENERAL GOVERNMENT DEFICIT

The general government deficit in GDP terms reached its highest level in two decades in 2020, but swiftly retreated toward its precrisis level in 2021, when it was only 1 percent of GDP higher than in 2019 due to rapid revenue growth and a partial decline in temporary spending on pandemic-related programs. By international comparison, the deficit in 2021 fell below the median deficit among OECD countries for the first time in several years (Figure 6.2). The cumulative two-year deviation of Israel's deficits from the 2019 level was 6.9 percent of potential GDP, compared with an OECD median of 11.7 percent.

The general government deficit in GDP terms reached its highest level in two decades in 2020, but swiftly retreated toward its precrisis level in 2021, when it was only 1 percent of GDP higher than in 2019.

The mild increase in the deficit in Israel relative to other developed countries is mainly due to a lower rate of cumulative revenue decline in 2020–2021—only 0.4 percent of GDP in Israel compared with a median of 4.7 percent of GDP among OECD countries (the sum of the blue bars and the green bars in Figure 6.7). This was brought on by stronger economic activity and exceptional revenues that the main activity variables (described in Section 3 above) cannot explain. The increase in public expenditure in Israel to cope with the pandemic was similar in magnitude to that in other countries: a 6.5 percent of GDP cumulative increase in noninterest expenditure in 2020–2021 relative to 2019, compared with a median of 7 percent of GDP among OECD countries (the sum of the yellow bars and the orange bars in Figure 6.7).

While the actual deficit in 2021 was below the OECD median, the cyclically adjusted deficit remained above (Figure 6.2). The decision on the choice of expenditure or revenue items to reduce the structural deficit depends on the socioeconomic priorities of the public and its elected representatives. However, given the small rate of civilian expenditure in Israel by international standards, an additional significant cutback of public expenditure appears to be difficult even if streamlining is possible in certain fields. In addition, many other areas of infrastructure and human capital have deficiencies that will require increased spending in order to continue supporting growth in productivity and output.[34] Therefore, in order to trim the structural deficit while investing in narrowing Israel's current infrastructure and productivity gaps, tax increases will probably be necessary. Notably, taxes as a share of GDP in Israel are low by international comparison (Figure 6.2).

The discussion of the desired tax policy in Israel should take account of changes in international standards currently being formulated. (See, for example, Box 6.3 on the topic of international tax reform.) The discussion should also bear in mind the policy measures being adopted abroad to cope with the climate crisis (described in Chapter 7) and the alignment of Israeli import regulation with world standards. While these changes create additional constraints, they also provide an opportunity to generate new sources of revenue.

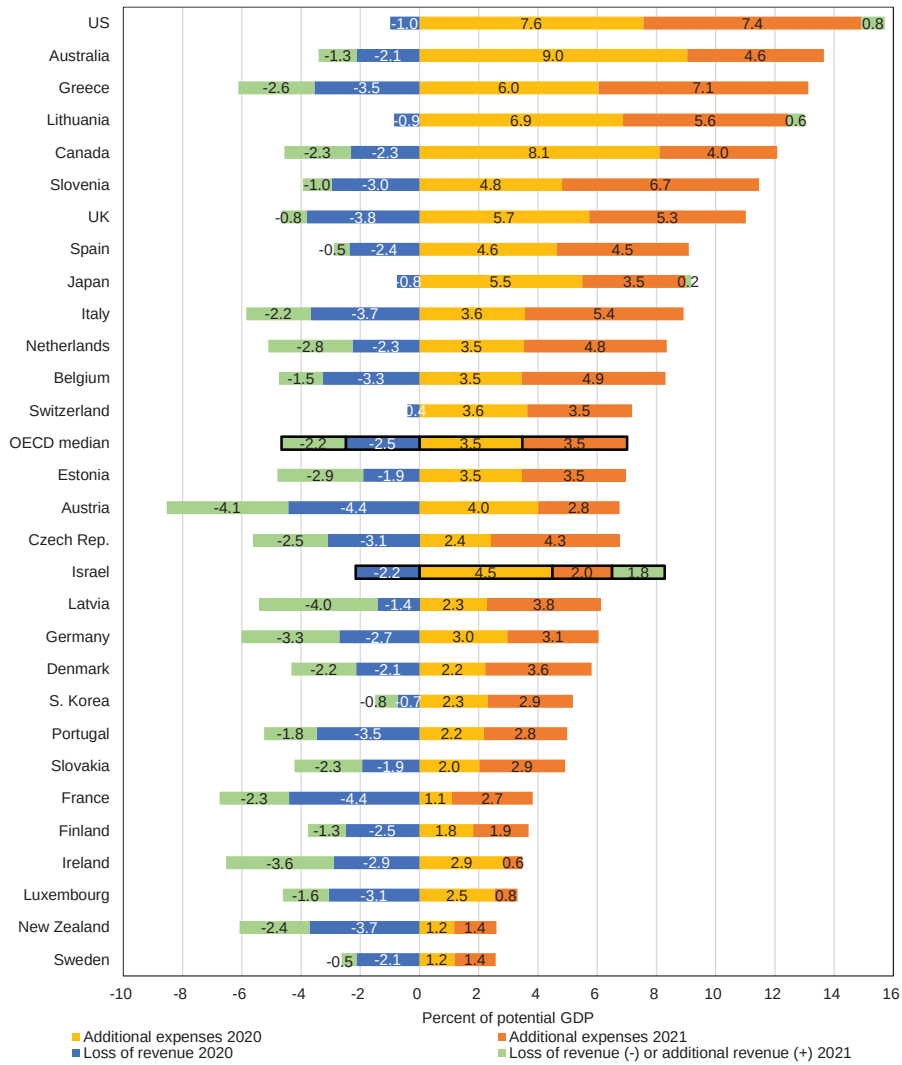
The discussion of the desired tax policy in Israel should take account of changes in international standards concerning taxation of multinational enterprises and coping with the climate crisis.

If the government indeed decides to raise tax rates but not via general taxes (income tax and VAT), there areseveral possibilities in the context of ongoing changes in tax policies abroad. One type of taxation policy that is gaining traction around the world is the imposition of Pigovian taxes[35], the purpose of which is to correct market failures resulting from externalities of products or activities (e.g., pollution, exacerbation of congestion, or impairment of health) that are not built into their prices. Another type

[34] For elaboration, see Bank of Israel (2021), "Four Recommended Pillars of Strategic Government Action To Accelerate Economic Growth and a Fiscal Framework for Financing Them".

[35] A Pigovian tax is one imposed on an economic activity that generates adverse external costs, i.e., costs that affect third parties or the environment and not only the entity that is taxed.

Figure 6.7
Cumulative Additional Expenses and Loss of Revenues[a], 2020–2021 (percent)



[a] The figure shows the surplus expenses and decline in revenue in each of the years 2020 and 2021. The additional expenses (excluding interest) and the loss of revenue are calculated according to their deviation in each of the years from their share of GDP in 2019. The aggregates are presented in terms of potential GDP, in order to neutralize the effect of the variance in the level of activity on the adjustment of the indices to GDP terms. In Israel, for example, noninterest expenses in 2020 were 4.5 percent of GDP higher than in 2019, and in 2021 they were 2 percent of GDP higher than their 2019 level. In other words, during the past two years, expenses increased by a total of 6.5 percent of GDP, compared with an OECD median of 7 percent. Revenue in Israel was 2.2 percent of potential GDP lower in 2020, and 1.8 percent of potential GDP higher in 2021 (both compared with 2019). In other words, total lost revenue was just 0.4 percent of GDP, compared with an OECD median of 4.7 percent of GDP.

SOURCE: Based on Central Bureau of Statistics, and OECD (*Economic Outlook* 110, December 2021).

of tax that does not exist in Israel is an inheritance tax.[36] A third possible path to higher tax revenues is the elimination of benefits that create distortions in the tax system. The

[36] As of 2019, 41 countries had an inheritance or estate tax. Sixteen of them were developed countries, including Belgium, Denmark, Finland, Germany, Greece, the US, and the UK. Other countries, such as Austria and Norway, abolished their inheritance taxes in the past decade. An inheritance tax makes a fiscal contribution, but usually a rather slight one because the tax base is narrower than that of general taxes (income tax and VAT), and also comes at a high regulatory cost relative to the receipts it brings in.

largest such tax benefit is the one that pertains to pension and advanced training fund savings.[37] When it takes up these measures for discussion, the government should bear in mind their implications on income distribution and the tax burden on the public. Finally, another significant potential source is the benefit given to export companies under the Encouragement of Capital Investments Law.[38]

5. THE PUBLIC DEBT AND ITS FINANCING

a. Components of the increase in the debt

After a jump of about 12.2 percent of GDP in 2020, Israel's public debt contracted by 2.8 percent of GDP in 2021, to 68.9 percent of GDP.

After a jump of about 12.2 percent of GDP in 2020, Israel's public debt contracted by 2.8 percent of GDP in 2021, to 68.9 percent of GDP—still high in comparison with the past decade (Figure 6.11). Rapid growth of nominal GDP, privatization receipts from the sale of land by the Israel Lands Authority, and the downward revaluation of debt denominated in foreign currency due to the appreciation of the shekel helped to lower the debt to GDP ratio. These factors were partly offset by the budget deficit, the revaluation of CPI-indexed debt, and excess issuing (Table 6.4).[39] The net debt (gross debt minus the government's financial assets, including government deposits, which reflected the excess issuing) stood at 65.1 percent of GDP at the end of 2021—7.6 percent of GDP higher than in 2019.

Israel is one of a group of small countries that had debt levels of under 70 percent of GDP before the crisis and modest increases in debt during the crisis.

The debt to GDP ratio remained slightly above the OECD median (Figure 6.2), but its growth during the crisis was small by international standards. (The black triangles in Figure 6.8 show the increase in the debt to GDP ratio in 2021 relative to its 2019 level in each country.) An international comparison of the increase in the ratio shows that most of countries with the highest increases in debt were the large economies (apart from Germany), and those that had smaller increases in debt were relatively small. The change in the debt to GDP ratio relative to 2019 yields a similar picture: Israel is among the group of small countries that had precrisis debt levels below 70 percent of GDP, and the increase in the ratio during the crisis was milder in these countries than in others.[40]

[37] See Ministry of Finance (2021), *State Budget: Proposal for Fiscal Years 2021–2022,* pp. 228–250 (in Hebrew)

[38] Bank of Israel Four Recommended Pillars of Strategic Government Action To Accelerate Economic Growth and a Fiscal Framework for Financing Them"

' pp. 48–51.

[39] For a survey of strategies that public-debt managers in OECD countries use to manage cash balances, see P. Cruz and F. Koc (2018), "The Liquidity Buffer Practices of Public Debt Managers in OECD Countries," OECD Working Papers on Sovereign Borrowing and Public Debt Management, no. 9, OECD Publishing, Paris, https:///doi.org.10.1787/3b468966-en

[40] A linear regression estimation of the cumulative increase in the debt in between 2019 and 2021 on the debt to GDP ratio in 2019 (for the group of developed OECD member states) shows that one additional percent of GDP in the ratio in 2019 was correlated with 0.14 percent GDP growth between 2019 and 2021.

The relatively strong growth of nominal GDP in 2021, after a rather mild slowdown in 2020, helped to keep the increase in Israel's debt to GDP ratio relatively moderate. The faster nominal GDP grows, the more the debt to GDP ratio erodes. The erosion of the ratio by nominal growth is shown in the yellow bars of Figure 6.8, which rank Israel fifth in terms of the erosion of its debt by means of GDP. Another contributing factor to the more moderate increase in the debt was the relatively small growth of the government deficit in 2020 and 2021 compared with 2019 (represented by the orange bars). Other components helped to boost the debt to GDP ratio more in Israel than in other countries. These included the high deficit on the eve of the crisis (the green bars, showing that in most developed countries the deficit net of interest in 2019 was zero or in surplus, whereas in Israel it was lower only than those of the United States and Japan) and interest payments on the public debt (the blue bars, indicating that Israel is among the ten countries that had the highest debt burdens).

Table 6.4
Components of the increase in the gross public debt, 2016–2021

(percent of GDP)

	2016	2017	2018	2019	2020	2021
Debt at the end of the previous year	63.8	62.0	60.2	60.4	59.5	71.7
Effect of nominal GDP growth on the debt-to-GDP ratio	-3.1	-2.6	-2.8	-3.3	0.7	-7.1
Net capital inflow	1.8	1.1	2.5	3.2	13.0	3.9
of which : Government's cash deficit (excluding credit)	2.1	1.9	2.9	3.7	11.4	4.4
Net repayment of credit by the public[a]	-0.2	-0.1	-0.1	0.0	0.0	0.0
Privatization proceeds	-0.1	-0.1	-0.2	-0.1	0.0	-0.9
Funding beyond the financing deficit[b]	0.1	-0.5	-0.1	-0.4	1.6	0.4
Revaluation of shekel-denominated indexed debt[c]	-0.1	0.1	0.2	0.2	-0.2	0.8
Revaluation of foreign currency-denominated debt	-0.2	-0.6	0.5	-0.6	-0.4	-0.5
Adjustment to issuance costs	-0.1	0.0	-0.1	-0.2	-0.4	-0.2
Remainder[d]	-0.3	0.1	-0.2	-0.1	-0.4	0.3
Debt at year end	**62.0**	**60.2**	**60.4**	**59.5**	**71.7**	**68.9**

[a] Including the provision of credit and principal collection.

[b] Financing surplus.

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

[d] As a result of roundings.

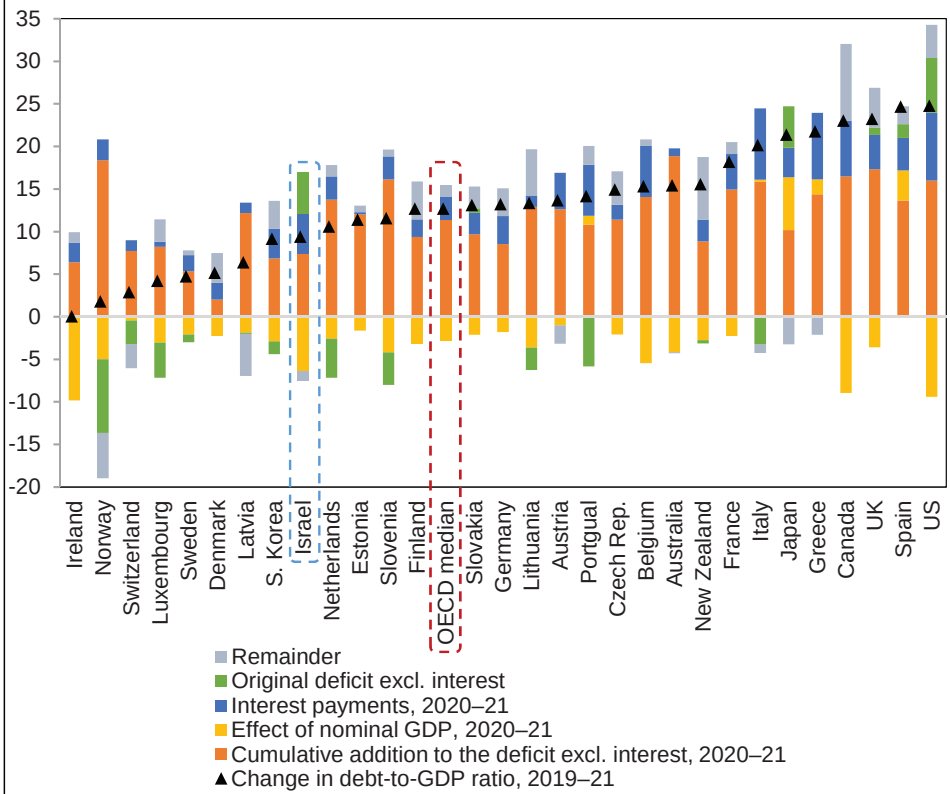
SOURCE: Based on Ministry of Finance.

b. The cost of the public debt

The cost of raising tradable debt decreased steadily in the first half of 2020, similar to the average among other developed countries. From August 2020 onward, however, sovereign yields rose to 1.2 percent in December 2021—30 basis points higher than in December 2019.

Apart from a short-lived spike in sovereign yields in March 2020, the downward trend in the cost of tradable debt on the eve of the crisis continued in the first half of 2020. The trend emerged despite large debt issues, due to the historically low debt to GDP ratio that Israel had attained prior to the crisis and the international consensus about the importance of expansionary countercyclical policy in coping with the crisis. These factors, combined with quantitative easing by the Bank of Israel in the secondary bond market and similar measures by central banks in global bond markets, allowed Israel to raise debt at relatively low cost and for longer terms.

Figure 6.8
Components of the Cumulative Change in the Public Debt to GDP Ratio in OECD Countries between 2019 and 2021[a] (percent of GDP)



[a] The figure shows an international comparison of the cumulative growth in the debt-to-GDP ratio between 2019 and 2021 (indicated by the triangles) and of its main components (the columns). The green bar shows the contribution to debt had the country maintained the deficit it had in 2019 throughout the next two years. (In Israel, for instance, the deficit excl. interest in 2019 was 2.4 percent of GDP, so the green bar equals 4.8 percent of GDP.) The orange bar shows the amount of change in the deficit in the past two years compared 2019. (In Israel, the deficit excl. interest was 7.1 percent of GDP higher in 2020 and 0.3 percent higher in 2021, so the cumulative addition is 7.4 percent of GDP.) The blue bar shows the erosion of the debt-to-GDP ratio due to nominal GDP. (In Israel, GDP contracted in 2020, leading to a 0.7 percent of GDP increase in the ratio, but GDP growth in 2021 led to an erosion of 7.1 percent of GDP, such that the total effect was -6.4 percent of GDP.) Finally, the gray bar shows the remainder that is left after revaluation of the external debt due to changes in the exchange rate or from extra-budgetary financing measures (such as privatization or the use of cash balances), which also have an effect on the gross debt to GDP ratio.

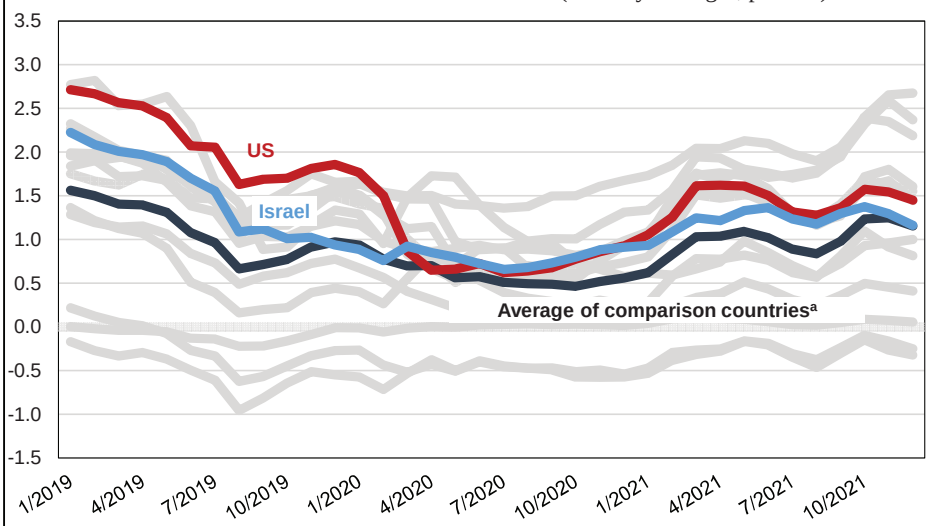
SOURCE: Based on IMF data, and OECD (*Economic Outlook* 110, December 2021).

Although the nominal long-term Israel–U.S. spread was negative in 2021, the spread on 10-year indexed bonds was positive—averaging about 20 basis points.

The cost of issuing tradable debt, proxied by nominal ten-year sovereign yields, steadily declined in the first half of 2020 to around the average among other developed countries (Figure 6.9). From August 2020 onward, however, yields steadily increased to about 1.2 percent in December 2021—30 basis points over the December 2019 level. The trend resembled that in other developed countries, where expectations of rapid economic recovery and an upturn in inflation also increased during the year. The increase in Israel, however, began earlier than in the comparison countries on average,

and the positive spread in yields relative to the average persisted for most of the year (the black line in Figure 6.9) even though fiscal risks detailed in this chapter declined. With regard to the United States—despite the negative Israel-US spread on long-term nominal yields in 2021, the spread between the countries in terms of real yields, those of ten-year indexed bonds, was positive during the year, averaging about 20 basis points (not shown in the figure). This marked a departure from 2019, when real Israel-US yields showed a negative average spread of around 40 basis points.[41]

Figure 6.9
Nominal Yields on 10-Year Government Bonds (monthly averages, percent)



[a] The comparison countries include Australia, Canada, Czech Republic, Germany, Italy, Japan, New Zealand, Norway, S. Korea, Spain, Switzerland, UK, and US. The average is calculated as the simple average.
SOURCE: Based on Bloomberg.

c. Composition of the government debt

After the government carried out one-third of its issuing abroad in 2020, the Accountant General applied a policy of net negative external issuing and the share of foreign exchange in gross issues fell to only 3 percent.

After roughly one-third of government capital issues were carried out abroad in 2021, the Accountant General adopted a policy of negative net issuing overseas and lowered the share of foreign currency in (gross) issues to only 3 percent (the orange bars in Figure 6.10). The downward revaluation of the foreign currency debt due to the shekel's appreciation, also downsized this component. Nevertheless, external debt as a share of GDP remained higher than the low level it had reached at the end of 2019 (10 percent of GDP in 2021, compared to 8 percent in 2019—Figure 6.11, orange).

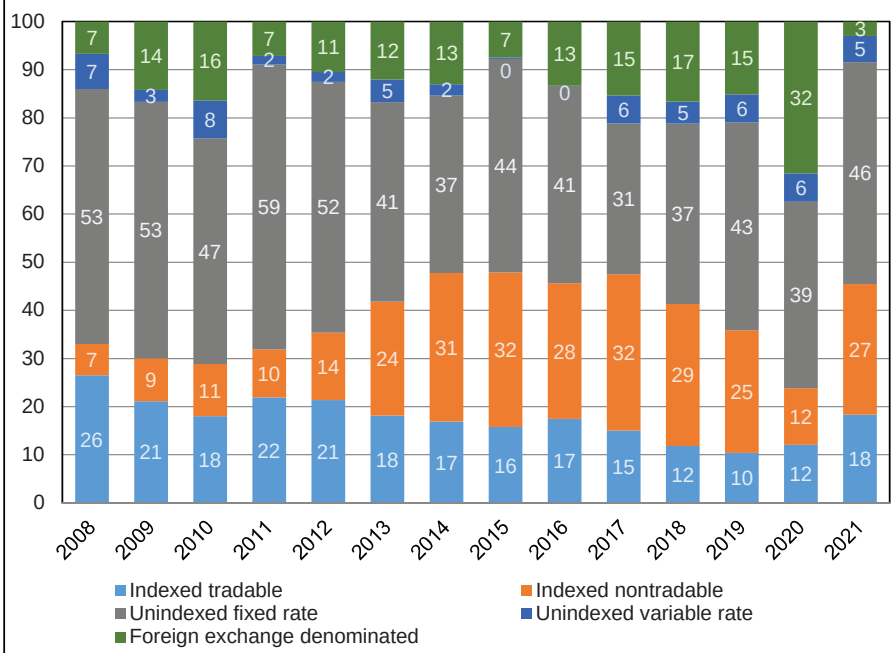
Foreign currency debt was replaced by nontradable issues, which provided about one-quarter of capital raised during the year—much as was the case on the eve of the crisis—and at the end of 2021 nontradable debt was estimated at about 20 percent

[41] Real interest rates in Israel cannot be compared with those of all comparison countries because most of these countries do not issue CPI-indexed bonds.

Issues of earmarked bonds will cease in October 2022.

of GDP (red bars). The increase in this type of debt causes interest payments on the public debt to grow due to the high interest rate paid on nontradable bonds (4.86 percent plus indexation differentials). In the economic program that the Knesset approved along with the State Budget, it was decided to stop issuing these bonds from October 2022 onward, and to insure the pension funds' asset portfolios by creating an extrabudgetary fund that would receive provisions from the Ministry of Finance and pension-fund yields beyond the assured yield of 5.15 percent per year.[42] Given that earmarked bonds are issued with a fifteen-year duration, their share in the debt inventory is expected to decline steadily as the existing inventory of bonds matures. In their place, the government will have to indemnify the pension funds if the yields they attain fall short of 5.15 percent per annum in real terms. In the Bank of Israel's estimation, this decline will reduce the burden of interest payments by larger and larger amounts, unless it raises the costs of issuing long-term tradable debt due to the government's need to raise amounts on the capital market that were heretofore deposited with it on account of the earmarked bonds.[43]

Figure 6.10
Composition of Government Bond Issuances, 2008–2021 (percent of total)

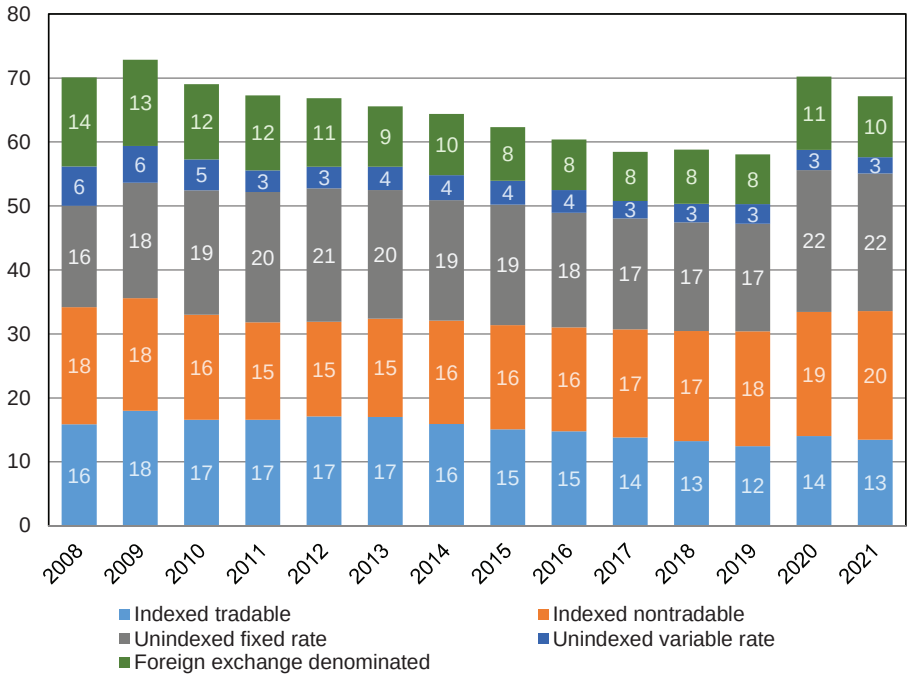


SOURCE: Based on Ministry of Finance.

[42] See also Box 4.4 in this Report.

[43] In 2030, for example, the net saving (excluding provisions to the extrabudgetary fund) will amount to 0.3 percent of GDP. For a breakdown of the estimate of the budgetary saving and the risks associated with revising the mechanism used to assure the pension funds' yield, see Bank of Israel (2021), *Budget Survey for 2021–2022 and Expected Developments in Coming Years,* November 2021.

Figure 6.11
Outstanding Government Debt by Component, 2008–2021 (percent of GDP)



SOURCE: Based on Ministry of Finance.

6. RE-EXAMINATION OF ISRAEL'S FISCAL TARGETS

a. Background

The discussion of Israel's fiscal targets is part of a broader debate that is currently taking place in many developed markets. These targets, as reflected in the Reduction of the Deficit and Restraint of Expenditure Law, were set with the intention of lowering the debt to GDP ratio and public expenditure as a share of GDP in the long term. Meeting these targets may attain the goal, but it will require significant fiscal consolidation, particularly a large decrease in public expenditure as a share of GDP, which may make it more difficult to attain an economic target that is no less important: eliminating gaps between Israel and the rest of the developed world in human capital and public infrastructure stock, two critical areas for labor productivity and continued improvement of the standard of living in Israel in the long run.[44]

To comply with the current fiscal rules, public expenditure as a share of GDP would have to be reduced considerably—possibly impeding the attainment of another economic goal that is equally important: closing the gap between Israel and the rest of the developed world in human capital and public-infrastructure stock.

Long-term fiscal frameworks are imposed with several main goals in mind: keeping the public debt sustainable, supporting the attainment of the government's long-term economic objectives, stabilizing economic activity across the business cycle, and enhancing the credibility and transparency of government policy. These frameworks,

[44] D. A. Aschauer (1989). "Is Public Expenditure Productive?" *Journal of Monetary Economics,* 23(2): 177–200.

In most developed countries that suspended their fiscal rules during the crisis, discussions are underway about whether to revert to the previous targets or to redesign their fiscal frameworks in view of the new macroeconomic circumstances.

which serve as anchors for the budget discussions, include long-term fiscal targets and numerical fiscal rules or more flexible budgeting procedures that help to improve the efficacy and credibility of government policy. The use of fiscal rules has become more prominent in many countries in the past three decades, and there is evidence of their utility in narrowing the deficit and restraining the increase in public debt.[45] Insufficiently flexible rules, however, may make fiscal policy more procyclical and reduce public investment at times of downturn, among other effects.[46] In some countries, the targets are accompanied by the establishment of institutions, such as fiscal boards, that track the government's fiscal measures, test them for compliance with targets set in statute or in government resolutions, and report discrepancies to the public.

The COVID-19 crisis triggered an unprecedented fiscal response by most governments around the world that forced them to deviate from the ordinary rules. More than fifty countries suspended their fiscal rules when the crisis began, and most are now debating whether to revert to the previous targets or reconfigure the fiscal limits in order to adapt them to the new macroeconomic circumstances.[47] While this contravention of the rules created an opportunity to re-examine limits that were ineffective even before the crisis or when abiding by the old rules became unrealistic, credible fiscal limits are valuable in the eyes of lenders in the capital market and enhance governments' ability to issue debt at reasonable cost and mitigate investors' uncertainty about the economy. Excessively frequent revisions of fiscal limits, or recurrent failure to stay within them, may impair the credibility of a government's pronouncements about its long-term policies.[48]

In the past two years, the economic discourse about the desired fiscal anchors has also changed, including talk of revising the desired long-term debt to GDP ratio or replacing the debt target—once considered the most important indicator—with other indicators, such as debt payments as a percent of GDP.[49] The reason for this paradigm shift has to do with real interest rates, which have greatly declined since the global

[45] F. Caselli, D. Stoehlker, and P. Wingender (2020). "Individual Treatment Effects of Budget Balance Rules." IMF Working Paper 20/274, International Monetary Fund, Washington, DC; A. David, C. Goncalves, and R. Perrelli (forthcoming). "Fiscal Reaction Functions and Fiscal Rules." IMF Working Paper, International Monetary Fund, Washington, DC

[46] A. Fatás and I. Mihov (2007). "Fiscal Discipline, Volatility, and Growth." in *Fiscal Policy Stabilization and Growth: Prudence or Abstinence?* Edited by G. E. Perry, L. Serven, and R. Suescun, 43–74. World Bank, Washington, DC; M. Guerguil, P. Mandon, and R. Tapsoba (2017). "Flexible Fiscal Rules and Countercyclical Fiscal Policy," *Journal of Macroeconomics* 52:189–220.

[47] International Monetary Fund (IMF) (2021). *Fiscal Monitor: Strengthening the Credibility of Public Finances,* Chapter 2. Washington, DC, October.

[48] Ibid.

[49] J. Furman and L. Summers (2020). "A Reconsideration of Fiscal Policy in the Era of Low Interest Rates," unpublished, https:/www.brookings.edu/wp-content/uploads/2020/11/furman-summers-fiscal-reconsideration-discussion-draft.pdf

financial crisis[50], and the conviction that they will remain low for a long time to come—giving advanced economies a wider fiscal margin and allowing them to fund higher levels of debt than they could in the past without forgoing other expenditures.[51] Nevertheless, this approach to the fiscal targets carries a risk due to the way the economy acts under conditions of uncertainty: In the near term, the cost of recycling debt may unexpectedly jump sharply in the case of a debt crisis[52] and, in the long run, the present low interest rate may be correlated with lower growth rates than have been typical in recent decades.

In the past two years, the economic discourse about the desired fiscal anchors has changed, including in relation to revising the long-term debt/GDP ratio or replacing the debt target—once considered the most important indicator—with other indicators.

The change of approach around the world toward the public debt and the concern about a decrease in future growth rates are strongly affecting the current discussions in the European Union[53] and the United States concerning the desired fiscal rules. The focus in these discussions has shifted from maintaining a low structural deficit to supporting economic growth by means of large-scale investment programs and structural reforms without forsaking fiscal responsibility.

In the conventional view of international economic organizations, a worthy government investment is one that delivers a greater social payoff than it costs to fund. Not every worthy investment, however, can be funded by debt alone if it fails to meet the criterion of solvency: the future revenue stream that a government gains due to this investment must suffice to keep the public debt from surging to dangerous levels. By implication, to maintain a sustainable debt level, investments that fail to pay for themselves in the long run should be funded by tax increases or reductions of other expenditures, the correct balance between these two depending on each country's point of departure.[54] This is not to say that the public is harmed by this, since when investments are of sufficiently high quality, the growth flowing from them boosts private income by more than what the public "pays back to the government" in taxes or in forgoing other services. In other words, it increases disposable income.

b. Policy scenarios in Israel

To demonstrate the substitution effect among the various goals of fiscal policy, we present (Figure 12) up-to-date long-term simulations of the development of selected fiscal indicators in several policy scenarios. Panels a and b show the costs of the various scenarios in terms of deficit and debt, and Panels c and d plot their utilities in terms of GDP and per capita government spending (net of expenditure on the investments

[50] Olivier Blanchard argues that the natural real interest rate—the rate that is consistent with full employment—has been trending downward since the mid-1980s. Blanchard, O. (2022), "Fiscal Policy under Low Interest Rates." MIT Press. https://fiscal-policy-under-low-interest-rates.pubpub.org. Last accessed March 1, 2022.

[51] For an expanded discussion of the fiscal margin and the difference between the real interest rate and the growth rate (r–g), see Chapter 6, Box 6.1, in the Bank of Israel *Annual Report* for 2020.

[52] For this reason, it is important to prolong the duration of sovereign bonds. The longer the average duration is, assuming that the debt is issued at a fixed interest rate, the less sensitive the government's debt and interest payments are to interest rate shocks.

[53] See European Fiscal Board (2021), *Annual Report 2021,* Brussels.

[54] See Blanchard (2022).

themselves). Both indicators represent the projected increase in the standard of living due to the increase in public investment in improving labor productivity and the government's ability to fund additional spending, respectively.[55]

In the basic scenario, which approximates the government's actual policy in recent years and is represented by the orange line, the government holds the budget deficit at around 3 percent of GDP without increasing public investment beyond its current scale. This scenario represents the debt to GDP ratio in the long term but does not include the investments that are needed to narrow Israel's productivity gaps vis-à-vis the leading OECD member states. Next to this scenario are three additional ones, in which the government implements investment programs for the purpose of bringing labor productivity in Israel to the OECD average by 2050.[56] As an illustration—based on the analyses that appeared in the Bank of Israel's 2019 productivity report—let us say that to attain this target, investment in human capital and physical infrastructure should be increased gradually until it becomes permanently entrenched at 3 percent of GDP more than the current level.[57] We assume that the gradual increase can be fully implemented only in 2030 due to the time needed to plan and implement large projects of this type along with reforms in the education system.

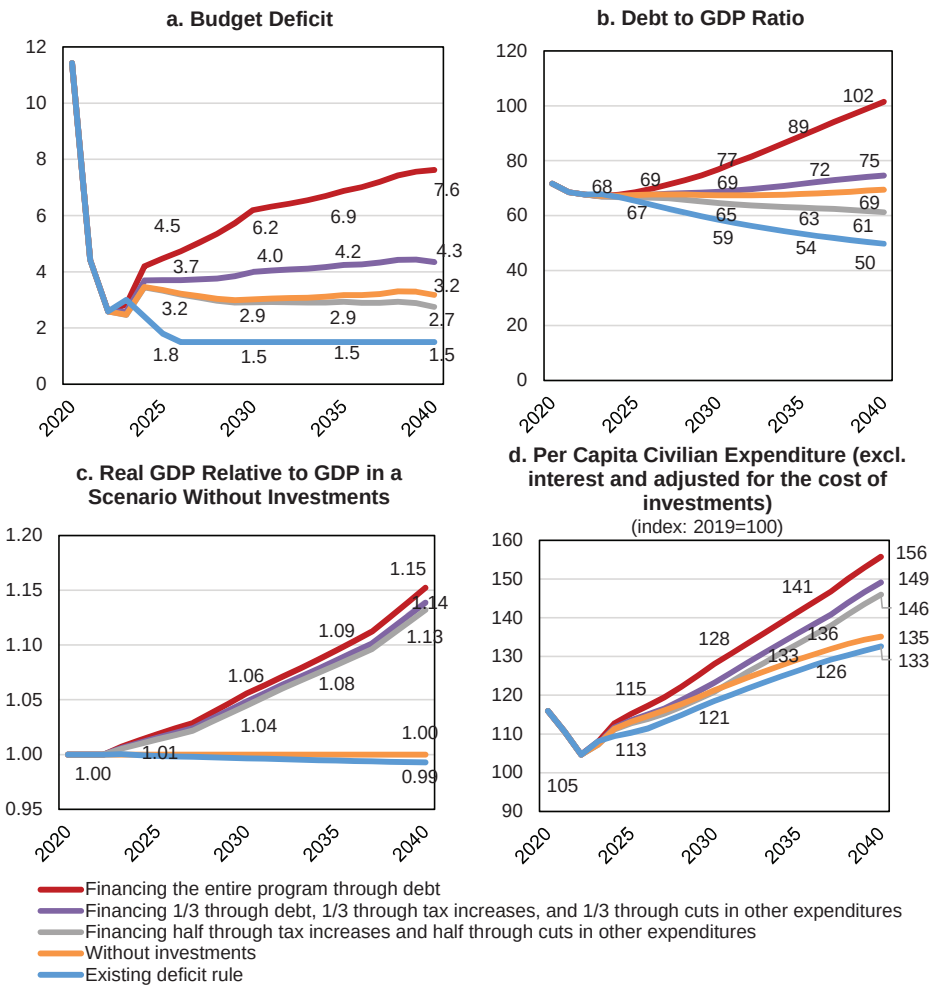
In the scenario represented by the red line, the government funds the entire program by raising the public debt. This scenario fails to meet the solvency criterion because it causes the debt to GDP ratio and interest payments on the debt to diverge in the long run, since the investments' contribution to growth does not generate enough of an increase in tax receipts to cover the cost of the investments. Therefore, it is not a sustainable scenario. In the scenario represented by the gray line, the government funds the entire program by reducing other spending and raising taxes, i.e., without increasing the underlying structural deficit. Such a policy makes it possible to lower the debt to GDP ratio in the long term while investing in boosting Israel's GDP. This, however, would entail a fiscal effort on the scale of 3 percent of GDP, a rather challenging prospect for the government. The purple line represents a middle scenario, in which the government makes the investments while undertaking to stabilize the debt to GDP ratio at a level not far from the current one. Here, about one-third of the added investment can be covered by raising the debt level, but a considerable fiscal effort would be needed to fund the rest—for example, by a balanced mix of greater spending efficiency and raising tax rates.

[55] The increase in output per worker raises the public's disposable income relative to a scenario without investments even if the tax burden remains constant in GDP terms, and even if it grows somewhat. This is because the increase in output allows tax receipts to rise and lets the government increase its per capita spending beyond the investments themselves.

[56] In 2019, the OECD average output per worker was about 20 percent higher than in Israel. One may, of course, set a different target or define a different group of reference countries, allowing level of investment required to change accordingly.

[57] For the specifics of the cost-and-benefit calculations relating to the recommended investment programs, see Bank of Israel (2019), *Research Department Special Report: Raising the Standard of Living in Israel by Increasing Labor Productivity.*

Figure 6.12
Simulation of Various Fiscal Targets and their Long-Term Effect on the Deficit, Debt, Civilian Expenditure, and GDP (percent of GDP)



[a] The scenarios show a simulation of the fiscal aggregates and real GDP as a result of various financing alternatives for long-term government programs to increase labor productivity. The working assumptions include convergence to the long-term growth rate by 2024, convergence of the basic real interest rate to 1 percent, and raising or lowering it according to changes in the risk premium resulting from the difference between the debt level at the end of 2021 and the debt level in the scenario. The cost of investments (3 percent of GDP) is fully realized only in 2030.

SOURCE: Bank of Israel.

Finally, in the scenario represented by the blue line, the government adheres to the current fiscal rules, in a departure from previous governments' conduct.[58] In this scenario, the public debt to GDP ratio falls rapidly but, because the government does

[58] Adi Brender (2021), "Fiscal Policy: The Journey Toward a Low Debt to GDP Ratio and Smaller Government," in *The Israel Economy, 1995–2017: Light and Shadow in a Market Economy,* eds. A. Ben-Bassat, R Gronau, and A. Zussman, Cambridge University Press, pp. 41–72. For an up-to-date table regarding changes in the rules since the 2015–2016 budget, see Bank of Israel (2021), *Survey of the 2021–2022 Budget and Expected Developments in Coming Years,* p. 18, Table 7 (in Hebrew).

not increase its investments, the growth rate is lower than in the other scenarios and public expenditure increases at a slower pace.

In view of changes in the balance of risks, it is worth re-examining the design of the fiscal rules and the institutions in charge of complying with them, so that they can bring about the desired balance between two policy goals—crucial investments for future growth and converging the debt/GDP ratio to an agreed-upon and safe level.

In view of changes in the balance of risks in recent years, it is worth re-examining the design of the fiscal rules as well as the institutions responsible for obeying them, so that they will bring about the desired balance between the two policy goals—making crucial investments for Israel's future growth and converging the debt to GDP ratio to an agreed-upon and safe level. It is important for the government to determine the desired balance of these objectives in its upcoming 2023–2024 budget discussions, and to project the policy path to a longer term in order to construct the multiyear framework that is needed for the planning and implementation of the requisite infrastructure measures. The next section describes the barriers that the existing fiscal rules pose against the promotion of infrastructure investment, and propose possible ways of adjusting them that would enhance the efficacy of the fiscal framework for the attainment of the government's long-term targets.

c. Israel's fiscal rules

Israel's fiscal rules include a deficit target that declines steadily to 1.5 percent of GDP by 2026 and remains at or below that level thereafter, and an expenditure ceiling that rises at a much lower rate than the pace of GDP growth. Experience, however, shows that the paths of the expenditure and deficit ceilings are adjusted upward every year when the budget is approved[59]—impairing the credibility of the paths, while at the same time restraining government ministries' ability to initiate long-term programs. This conduct also prioritizes current expenditure over investment because long-term investment programs, which require lengthy planning and preparation, are held back by the expenditure-ceiling restraint that is determined for the medium term and by the numerator rule that helps to enforce it. Therefore, when the annual expenditure ceiling is raised in the course of the annual budget discussions (or the biannual discussions in the case of a two-year budget), the inventory of investment programs is limited and the only programs that can be implemented are those funded by current expenditure.

The current fiscal rules create a structural bias in favor of current expenditure to the disadvantage of investment.

In addition to the structural bias in favor of current expenditure over investment, there is a built-in preference for cutting taxes over increasing public expenditure (for investment or for current purposes) that is due to the multiyear spending limit. This makes it possible to lower tax rates when the deficit is expected to be below the ceiling in the coming years, but does not allow public expenditure to exceed the ceiling. This outcome reflects two characteristics of the existing rules: (1) the built-in procyclical bias that is built into deficit targets that are not cyclically adjusted, allowing fiscal

[59] See Brender (2021) and Bank of Israel (2021) above.

expansion when the economy is actually doing well[60]; and (2) a rule that focuses only on reducing spending—a limitation that may have been necessary when the expenditure rule was first adopted because public expenditure as a share of GDP in Israel and the tax burden were high when compared to other developed countries, but the justification for preserving it now is less obvious.

A structural deficit target as applied in the EU maintains symmetry between changes in expenditure and changes in tax rates, and allows expenditure and tax rates to rise or fall in tandem.

The European Union, for example, noticed the problems caused by the asymmetric treatment of spending and of tax rates. Thus, in 2011 it revised its fiscal rules so that in calculating the expenditure ceiling, changes in tax rates may be offset against changes of equal size in expenditure.[61] This benchmark effectively creates a structural deficit target[62] that preserves the symmetry of changes in spending and in tax rates and also makes it possible to increase spending with a parallel increase in tax rates and vice-versa. In this respect, the EU rule is different from the current rule in Israel, which makes no allowance for an increase in expenditure at times of strong economic performance. Such a rule may be adopted at a level that would correspond to the debt to GDP ratio that the government wishes to attain, replacing both of the existing rules in Israel—expenditure ceiling and deficit ceiling. This would result in a balanced fiscal framework that is more resilient to business cycles than the current rules.[63]

The following is an example of a formula that reflects the principles proposed above:

$$PMgr = GDP\_POTgr—((D/Y)t–2*100—(D/Y)tr)*a$$

where PMgr is the rate of spending increase adjusted to changes in tax rates (as a percentage of total government spending), GDP_POTgr is the rate of change in

[60] The budget deficit tends to contract at times of strong activity and to increase when activity slumps, because tax receipts automatically track the state of the economy while expenditure does so much less. The cyclically adjusted deficit indicator is calculated by adjusting for the effect of macroeconomic developments on tax receipts (and on unemployment compensation), the so-called "automatic stabilizers." The extent of expansion in fiscal policy is examined in view of changes in this indicator, which represents discrete measures by the government (decisions on changing the level of expenditure or the tax rates). The economic literature recommends the application, as far as possible, of a countercyclical fiscal policy, the kind that supports activity at times of economic downturns and restrains it when the economy is booming. In contrast, a procyclical policy—cutting tax rates and increasing expenditure when activity is strong and doing the opposite at times of slowdowns—amplifies macroeconomic volatility and the risk to fiscal sustainability. This is because while it is politically easy to apply an accommodative policy when the economy is doing well, governments find it hard to raise tax rates and cut their spending when activity is weak, causing the cumulative deficit to grow and grow.

[61] EU Regulation 1175 (2011), Section 1-Aa, Article 5.1(b), November 16, 2011.

[62] The structural deficit is the cyclically adjusted deficit also net of nonrecurrent receipts and nonrecurrent expenditures that are not due to economic activity cycles, such as security-related events, epidemics, and temporary changes in tax rates.

[63] The total annual increase in government spending and statutory tax cuts within such a framework is derived from the government's debt to GDP ratio target and the medium-term growth forecast, along with recalibration of the estimates every few years. For discussion of a similar rule in the Israeli context, see Adi Brender (2012), "The Story of Israel's New Fiscal Rule: Theoretical Design Meets Politics," in Banca d'Italia, *Rules and Institutions for Sound Fiscal Policy after the Crisis,* Section 4b, pp. 611–629).

potential GDP—that may be estimated, for example, on the basis of actual GDP change in the years immediately preceding the year in which the budget is approved (e.g., ten years)[64], D/Y is the debt to GDP ratio, tr denotes the government's long-term debt to GDP ratio target, and a is a parameter (between zero and one) predetermined for the entire period, reflecting the pace of reducing the structural deficit until the debt to GDP ratio reaches the target.[65] According to the formula in this example, the budget allocation for policy measures—increasing expenditure or lowering tax rates—is equal to the rate of change in GDP in the past decade (a proxy for the average increase in government revenues net of the effect of changes in tax rates and temporary volatility in the business cycle), net of a component that reflects the distance of the actual debt to GDP ratio from the government's long-term target. The greater the distance, the larger the subtraction and, therefore, the smaller the budget increase that the government can make for policy measures.[66] This rule resembles Israel's current expenditure rule, but because it is an only rule, the procyclical bias flowing from the existing deficit rule would be prevented. Furthermore, because the budget for policy measures also includes changes in tax rates, it does away with the bias in favor of tax cuts in multiyear behavior.

One possible way of coping with the risk of raising the budget ceiling in order to increase investment is to exclude public investment from the fiscal rules and lower the deficit target and the expenditure ceiling.

Once the budget framework is established, one of the impediments to the advancement of public investment is the fear that raising the spending limit would be exploited to increase current expenditure in a way that would not contribute to economic growth in the long-term due to the higher weight attributed to short-term results.[67] One possible way of dealing with the risk of increasing the budget framework is to exempt public investments from the fiscal rules—a practice that (in one of its versions) is called the "golden rule." The main argument in favor of this practice is based on an empirical observation that excessively restrictive fiscal rules lead to a procyclical policy that actually cuts public investment at times of fiscal consolidation even though this is an important engine of growth. Arguments against exempting investment raise the concern that exempting items from the fiscal rules may impair the sustainability of the public debt by encouraging "creative accounting" that presents current expenditures as investments and incentivizes the government to invest in unworthy projects such as those that deliver a smaller social payoff than their

[64] In the European Union, a combination of growth in the past five years and the growth forecast for coming years is used.

[65] As stated, this is one of many versions of a rule of this kind. One may, for example, determine that the parameter be 0 when the structural deficit reaches a level corresponding to long-term convergence to the debt to GDP ratio target (see Brender, 2021, Section 2.3).

[66] For specifics and discussion of additional technical considerations for the characterization of the rule, see Brender (2012), Section 4.2. Obviously, such a fiscal rule would include an exception for states of war, natural disasters, and epidemics. It is also important for the rule to be accompanied by the implementation of the numerator law for a term of several years in order to make sure that the government's medium-term decisions correspond to the rule.

[67] A. Alesina and R. Perotti (1995), "The Political Economy of Budget Deficits," IMF Staff Papers; G. Tabellini and A. Alesina (1990), "Voting on the Budget Deficit," *The American Economic Review*, 80(1): 37–49.

cost. Furthermore, while investment in physical infrastructure is relatively easy to exempt, doing the same with social investment (such as investment in the education system in order to develop human capital) is much more challenging due to difficulty in identifying the components of this kind of expenditure that would contribute to long-term growth.[68]

Exempting investments should be accompanied by adjustment of the current budget targets.[69] In Israel, for example, if all investments in transport infrastructure (a budget expenditure of around 1.5 percent of GDP per year in recent years) were exempted, it would be necessary to concurrently determine the rate of deficit target reduction that should be set as well as to lower the expenditure ceiling—if the decision is made to preserve it. One possible way of linking the structural deficit target to the exemption of infrastructure investments is by creating a fixed multiyear provision from the budget to an accounting investment fund that would be used to finance infrastructure projects, with provisions to the fund recorded as part of budget expenditure.[70]

One possible way of linking a structural deficit target to excluding infrastructure investment is the permanent multiyear budget provisioning of an accounting investment fund that would be used to fund infrastructure projects, with the provisions recorded as part of budget expenditure.

If it is decided to separate the investment framework from the rest of the budget, it is important to concurrently consider setting up an independent entity, such as a fiscal board, that would determine which investments among those that the government proposes are suitable for exempting from the fiscal rules. It would do this by vetting them one-by-one and by subjecting the projects to professional cost-benefit analyses. One task for such a body would be to ask whether the total cost of these projects stays within the acyclical limit that will be determined for them, so that the debt will not grow beyond a sustainable level.[71]

If the government indeed considers adopting a fiscal rule that would exempt certain investments, it should focus first on separating investments from the current budget for large physical infrastructure projects in transport and digitization of public systems. This would reflect the need to balance the benefit of the needed investments and the barriers to their implementation against the ability to isolate them from

[68] For a discussion of the challenges arising from the context of exempting human capital investments from the budget limits, see Alcidi Cinzia, Francesco Corti, and Daniel Gros (2022), "A Golden Rule for Social Investments: How to Do It," *Intereconomics,* 57(1): 26–32.

[69] In the middle of the previous decade, for example, the general government budget net of the investment item was in surplus (Table 1).

[70] Provisioning of this kind creates a constant multiyear framework for the allocation of resources for investment, with actual expenditure derived from the planning inventory that is available for performance. In terms of budget behavior, such a fund would operate much as the property tax fund: Provisions to the fund are recorded annually in the budget and expenditure from the fund is recorded when it takes place, and not as part of the budget but as a use of the fund's money. The size of the provision to the fund may be determined in accordance with the government's long-term targets for investment in the relevant fields, as would be approved, for example, by a fiscal auditing body, where the provisions to the fund produce budget certainty for project planning and, where necessary, for bringing expenditure forward on account of future provisions.

[71] The IMF's report on Israel in March 2022 included a recommendation to strengthen Israel's fiscal limits by establishing a fiscal board. It is important to emphasize that a fiscal board is not a policymaking body but one that independently examines the quantitative fit of the government's fiscal measures with the targets that it set forth.

current expenditure—even if an autonomous evaluative body is set up that would determine whether the exempted expenditures fall into the categories set forth. To this one may add the adjustment of Israel's physical infrastructures to climate changes in accordance with needs that will be identified in coming years. (See Chapter 7, Box 7.1 in this report.) Obviously, a separate budget allocation for these uses will not absolve the government from having to continue to prioritize investments in human capital and multiyear projects to improve the public services within the current budget framework.

If it is decided to progress toward separating the investment budget framework from the rest of the budget, it is important to also consider setting up an independent entity such as a fiscal board to determine which government-promoted investments should be excluded from the fiscal rules.

Additional versions of fiscal rules may be applied to create a fiscal space for needed investments. Given the gaps in Israel's infrastructure inventory, it is important ahead of the next budget for the government to discuss the limits best suited to Israel and to establish rules that would strike a balance among the targets and assure a long enough planning horizon for infrastructure projects that would narrow the productivity gap between Israel and the other developed countries.

BOX 3: REFORM IN THE TAXATION OF MULTINATIONAL CORPORATIONS

- A historic declaration on a two-tier reform in international taxation ("The Two-Pillar Solution") was published in October 2021. The reform is meant to answer the tax challenges that the globalization and digitalization of the world economy present. So far, some 140 countries, including Israel, have joined the accord.
- The reform rests on two pillars. The first creates a new entitlement to tax the activities of especially large and profitable multinational firms and redistributes the international entitlements in this regard. The second imposes a 15 percent global minimum corporate tax on the earnings of multinational companies that have revenues in excess of €750 million per year.
- The second pillar is the more significant one for Israel. It determines that if Israel, for example, taxes large multinational companies that are subject to Israeli taxation at a lower rate than the one set forth in the agreement, other countries, under certain conditions, may tax the same revenue until the limit set out in the agreement is reached, and to benefit from the receipts on the difference.
- The new agreement, along with the latest tax reform in the United States, affects the balance of benefits that multinational firms operating in Israel receive, thus forcing the government to re-examine the structure, level, and purpose of the incentives that it gives.

Introduction

International taxation deals with the international implications of national-level tax laws and, in particular, the question of how to apportion taxes in transactions involving more than one country—all without an agreed-upon international entity that would centralize powers and/or obligations, such as the WTO in the field of trade. It is therefore not surprising that over the years, the professional literature has argued that no independent international taxation array exists and that, due to the strength of powerful competing interests in this field, setting one up is no simple matter. What does exist, so far, is a hodgepodge of state-level tax laws along with tax treaties and international practices that combine to create an international taxation array—one that is complex and antiquated in terms of practical implementation.

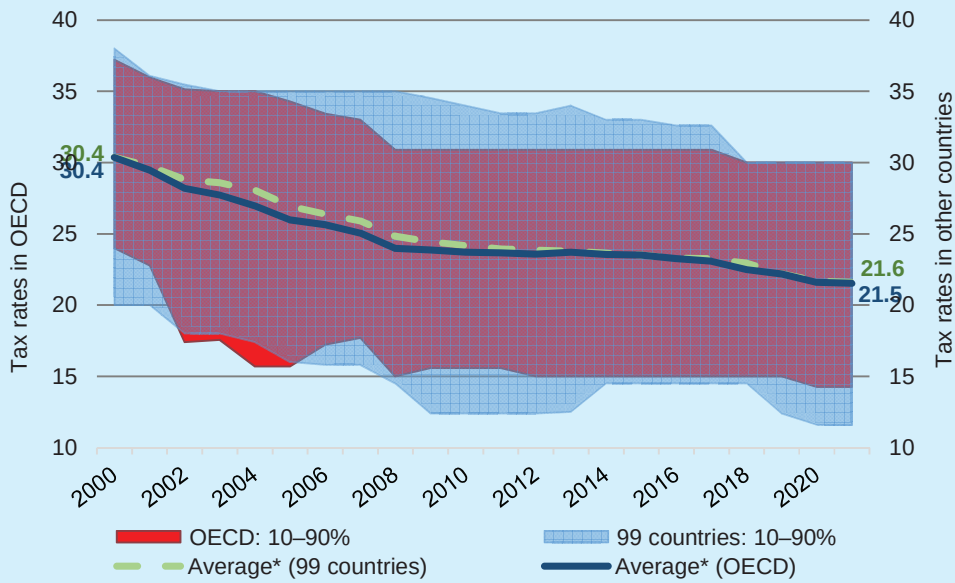
According to the conventional wisdom, international taxation owes its conceptual basis to the convergence of diplomatic forces at the League of Nations in the 1920s. At that time, geographical borders and the nation-state were major determinants in the global economy, and most trade took place in physical goods and in meaningful relation to a place. Today, in contrast, most commodities earmarked for export are part of global production and supply chains, and digital infrastructures and assets have become important parts of the global economy. Despite these and other changes, until recently the world of international taxation still strongly reflected the historical League of Nations agreements. Thus, global taxes have been apportioned mainly in reference to the taxpayer's geographical affiliation and the place where his or her income was created. In today's interconnected, more open, and digital world, however, it is difficult if not impossible to nail down such matters firmly and, in turn, to rely on them in applying and decentralizing the global tax burden.

The modern challenges of international taxation

Because the fundamentals of international taxation were established in an earlier era, the ability to collect taxes has been seriously impaired in recent years due to the expanded use of digital infrastructures and intangible assets. These processes give the relevant taxpayers—primarily multinational enterprises (MNEs)—heightened incentives to plan their taxes by migrating resources and profits from country to country in order to minimize their total tax liability. This has made the global economy fertile soil for aggressive tax planning and international tax competition. The result has been a prolonged erosion of the global tax base, particularly in source countries of economic activity, due to the diversion of profits and economic activities to other countries. Even in relation to enterprises that do not divert their activity, the very risk of their doing so motivates countries to give tax breaks. (For discussion of Israel, see below.)

The average statutory corporate tax rate in the OECD countries has fallen by 8 percentage points in the past twenty years (Figure 1). An analysis that tests effective taxation in a sample of OECD and G20 countries—relating not only to the statutory tax rate but also to the tax base and the tax rate actually applied—finds a similar decrease between 1999 and 2017. Tax competition among countries (the so-called "race to the bottom") and the threat that it creates—not only eroding the tax base in the immediate and/or long term but also producing economic and political distortions in order to supplement the shrinking tax base—play a central role in modern international taxation. They are all the more ominous when they encounter the rapid digital transformations that are taking place in today's global world.

Figure 1
Statutory Corporate Tax Rates in OECD and Other Countries, 2000–2021



* Nonweighted averages. Excluding countries that do not have a corporate tax (or have a corporate tax at a rate of 0%).

International corporate taxation, globalization, and the digital revolution

International corporate taxation relates to several issues, such as transfer prices, foreign investment, and digitalization, which are given close and detailed attention in the current reform. Although evidence of the existence of MNEs goes back to the seventeenth century, MNE activity escalated significantly after World War II due to the lowering of tax barriers, international investment, and growing quality and use of information and communication technologies. According to rough estimates, the number of multinational parent companies climbed from around 7,000 in the 1970s to 38,000 in 2000 and around 82,000 in 2008. By 2014, such firms controlled more than 230,000 foreign companies. MNEs are responsible for about one-third of global output, roughly half of global exports, and approximately one-quarter of employment (Figure 2).

Today's MNEs follow a new business model, fueled by the digital economy, that includes digital infrastructures and services and intangible assets. By comparison, the ten largest corporations in the 1980s included Coca-Cola, General Electric, Intel, HP, and IBM.[1] Forty years later, one finds Apple, Alphabet,

[1] IMF (March 2019), *Corporate Taxation in the Global Economy,* fig. 3, at 14, https://imf.org./en/Publictions/Policy-Papers/Issues/2019/03/08/Corporate-Taxation-in-the-Global-Economy-46650

Microsoft, Amazon, Facebook, and Alibaba among the ten leading companies.[2] This has elevated the digital platform to special centrality in international taxation generally and MNE taxation specifically.

Figure 2
Multinational Enterprises' Share of the Global Economy, by Category, 2014

SOURCE: Based on OECD, Multinational Enterprises in the Global Economy.

The current international taxation reform

The current reform in international taxation was set in motion by an economic-diplomatic forum called the OECD/G20 Inclusive Framework (IF) on BEPS, in which some 140 countries are members. The IF was established in Kyoto, Japan, in June 2016 to supervise the implementation of the guidelines of the Base Erosion and Profit Shifting (BEPS) initiative and to make sure the initiative would be assimilated consistently and transparently. The formulation of the BEPS initiative began in 2013 in order to cope with the challenges of corporate-tax-base erosion around the world and the growing difficulty in linking the location of economic activity with the place where profits from this activity are recorded for tax purposes—two problems that are largely due to the increase in the activity and profits of MNEs and the growth of the digital economy.[3] After the first BEPS report appeared in February 2013[4], the OECD and the G20 adopted an action plan that focuses on especially problematic areas of taxation of multinational transactions. Today, implementation of the BEPS action plan is effectively under way. Since the plan was

[2] Ibid. The ten leading firms are Apple, Alphabet, Microsoft, Amazon, Facebook, Tencent, Berkshire Hathaway, Alibaba, Johnson & Johnson, and JPMorgan Chase.

[3] See, for example, a publication on the topic from the office of the Chief Economist at the Ministry of Finance, February 10, 2020: "Tax planning that the program is expected to tackle includes MNE tax avoidance by tax-based erosion or profit-switching to tax shelters, a global phenomenon that threatens tax revenues and fairness in tax payments in many countries. The need for a special program has grown due to the free flow of capital and expansion of the digital economy, which created disparities in tax legislation that may be exploited for tax avoidance." Available at https://www.gov.il/he/departments/policies/beps (in Hebrew).

[4] OECD, *Addressing-Based Erosion and Profit Shifting* (Feb. 2013), at https:/www.oecd/org/tax/beps/addressing-base-erosion-and-profit-shifting-9789264192744-en.htm

published some ten years ago, the digital revolution and the tax challenges that followed in its wake have become a top international priority. Accordingly, the IF turned the presentation of the digital issue into a comprehensive final report. The document, published in January 2019 (Pillar I and Pillar II, hereinafter P1 and P2 or The Two Pillar Solution), comprises two tiers that together constitute the current reform.[5] The state-level agreement concerning the Two Pillar Solution was concluded in October 2021, the practical arrangements are being developed during the course of 2022, and implementation is expected to begin in 2023.

Pillar I (P1) of the agreement

P1 focuses on the nexus and the international distribution of business profits. In this pillar, the signatory states undertake to abolish unilateral taxes on multinational digital activity and to refrain from initiating new ones. In their stead, P1 proposes a standard format for the taxation of digital activity and its added value in its place of origin, even without a physical presence in the traditional sense. Digital activity includes online purchases and revenue from digital advertisements, among other things.

P1 is innovative in that it creates a new tax entitlement, in which profits at the rate of 25 percent of the residual profit of an MNE that has a turnover in excess of €20 billion per year will be apportioned among the signatory countries on the basis of a given formula.[6] Revenue relates to the country where the digital products and services are consumed and/or used, and this country will have a tax relationship with the MNE's earnings in cases where the MNE has annual revenue of at least €1 million in that country.[7] P1 also establishes a compulsory mechanism for conflict resolution but its details, including who will run it and what its powers will be, are not clear for the time being. The taxation set forth in P1 will apply to enterprises in all industries with the exception of financial services and production of natural resources.

P1 is expected to apply to a small number of megacorporations—some 15 percent of the 500 largest firms in the world[8]—and, in the OECD's estimation, more than US$125 billion per year will be distributed among the signatory countries[9], such that global tax revenues will increase by US$15–45 billion. In Israel, the corporate tax base is expected to grow by US$50–150 million, and tax revenues are expected to increase by US$12–40 million.[10] Additional components of P1 focus on improving administrative

[5] OECD, Addressing the Tax Challenges of the Digitalization of the Economy (January 2019), available at https://oecd/org/tax/beps/policy-note-beps-inclusive-framework-addressing-tax-challenges-digitalisation.pdf.

[6] Residual profit is defined in the reform as profit exceeding 10 percent of revenue. For example, if an MNE has a 16 percent profit rate, 6 percent is residual profit and 10 percent is ordinary profit. As a rule, residual profit shall be divided among the countries that develop entitlement to the tax, in a manner proportional to the percent of the MNE's revenue in those countries. However, when an MNE's residual profit is already taxed in one country, the amount of tax to be allocated to the other countries shall be reduced.

[7] For countries with less than €40 billion in GDP, the revenue threshold will stand at €250,000. P1 sets an additional sum meant to correct the remuneration of MNEs that engage in basic marketing and distribution activities. This is done in order to simplify the overall management of pricing these activities and to enhance certainty and mitigate disagreements and compliance costs.

[8] Michael P. Devereux and Martin Simmler (2021). "Who Will Pay Amount A?" *EconPol Policy Brief,* 35 (July).

[9] OECD 2021 Tax Report, at 4.

[10] Devereux & Simmler, above, estimate the increase of the global corporate tax base at US$80–100 billion.

capabilities. Their effect on revenues at the global level generally, and in Israel particularly, is expected to be modest.[11]

Pillar II (P2) of the agreement

P2 is meant to make sure that MNEs pay a minimum amount of corporate tax in every domain in which they are active.[12] The purpose is to mitigate the effectiveness, and therefore the attractiveness, of tax planning and, consequently, the erosion of the global corporate tax base and multinational profit-switching.[13] Basically, the minimum tax kicks in when the effective tax rate (ETR) imposed by the jurisdictional authorities of the P2 signatory state is below 15 percent; in that case, P2 supplements the taxation up to that threshold.

P2 is composed of two mechanisms. The first, the GloBE (Global Anti-Base Erosion Mechanism) accommodates a pair of rules (IIR and UTPR), which together supplement the effective taxation of MNEs to 15 percent. The IIR (Income Inclusion Rule) accomplishes this by transferring the supplemental tax liability up to 15 percent of the MNE's control chain until it reaches the parent company if said company is located in a P2 signatory state. In other cases, responsibility for imposing the supplemental tax switches to the entity at the closest level to that of the parent company in the relevant jurisdiction. There are cases where the IIR cannot be applied—for example, when the controlling parent companies all along the chain are not situated in a P2 signatory state, or when countries that can tax the MNE choose not to do so. Here, the UTPR (Undertaxed Payments Rule) is invoked, determining which among the companies associated with the multinational group shall apply the supplemental tax to the tax liability up to the compulsory minimum.[14]

The second mechanism in P2, the STTR (Subject To Tax Rule), is intended mainly for emerging markets, particularly those that have poor administrative capabilities by the IF definitions. According to this rule, when the nominal corporate tax rate in the country where the payment-receiving company is situated is especially low, the country of origin is entitled to charge a tax that will supplement the tax up to 9 percent. This threshold is lower than 15 percent because the tax under the STTR is a nominal tax on revenue from a transaction, not an effective tax on profits. It applies to types of payments and transfers among related parties that are especially susceptible to tax planning arrangements, such as interest, royalties, and brokerage fees. STTR takes precedence over GloBE, such that tax payments under it will be recognized for the purposes of GloBE and a tax credit on their account will be received within the total calculation.

P2 is meant to apply at first to MNEs that have total revenues, from all branches (hereinafter: the group), of at least €750 million in the previous fiscal year— an applicability threshold far below that

[11] OECD, *Tax Challenges Arising from Digitalization— Economic Impact Assessment: Inclusive Framework on BEPS* (retrieved January 18, 2022), available at https:/www.oecd-ilibrary.org/sites/ecdb6a47-en-index.html?itemID=/content / component/ecdb6a47-en

[12] An MNE, according to P2, is a group of companies comprising all entities owned and controlled by the same parent enterprise (UPE).

[13] In contrast to the fear of double taxation, a traditional concern in the context of international taxation.

[14] This rule was established because most tax distortions treated by the BEPS result from the recording and switching of profits among related companies.

required by P1. According to the OECD, the intention is to expand the arrangement to cover all MNEs irrespective of the extent of their profits. In the current version of the reform too, countries are allowed to apply P2 if they fail to meet the threshold conditions.[15] P2 is also meant to act in harmony with the American tax reform that went into effect in 2018 (GILTI).[16] Small companies located in Israel and not necessarily subject to P2, for example, may still be taxed under GILTI if their parent companies are American. This state of affairs perhaps most significantly reflects the change in the international rules of the game relative to the prereform situation, in which countries had a built-in economic incentive to lower their tax rates in order to attract foreign investment and other economic activity. In the new reality, a tax that is not collected by one country is likely to be collected by another, either by means of GILTI or under the two-pillar reform. In the OECD's estimation, P2 will result in the redistribution of more than US$150 billion per year among the signatory states[17], and its effect on Israel will be greater than that of P1.

Implications of the arrangement for Israel and its taxation policies

As stated, P1 is expected to have only a minor effect on Israel's tax receipts upon implementation, whereas P2 (and the American GILTI legislation) will be more relevant for companies operating in the Israeli economy. In particular, the 15 percent minimum effective tax rate may be relevant for large MNEs that enjoy benefits under the Encouragement of Capital Investments Law in Class A Development Areas and for firms that operate on the "Preferred Technologies," "Special Preferred Technology," and "Preferred Enterprise Exceeding 10 Billion" tracks. The corporate tax rates that apply to these firms are lower than 15 percent. As such, if the tax rate in Israel is left in place, they may be called upon to make up the gap in countries outside Israel where the group operates. Not every multinational enterprise that operates on these tracks, however, will actually be asked to pay more tax, because (1) the minimum tax payment is calculated in accordance with the MNE's total activity, not only the activity that qualifies for the benefit; and (2) the minimum taxation under the reform relates mainly to the effective tax rate, which includes all tax payments on the company's revenues and not only corporate tax. Thus, for example, if the company distributes dividends and pays tax on them, these tax payments will count toward the 15 percent minimum tax rate.[18] (3) The earnings and revenues basis on which the minimum tax liability is calculated are determined under accounting rules that may be significantly different from the rules of the calculation performed for tax purposes.

Due to these and other complexities, it is hard to determine exactly how many companies operating in Israel will be affected by the reform and how large the added tax liability will be. It apparently involves a few dozen firms (admittedly, some of them large) and a modest potential increase in taxation.[19] The

[15] Government entities, international organizations, NPOs, and pension or investment funds are not subject to the arrangements in this Pillar.

[16] GILTI is largely meant to cope with the practice among American corporations and individuals of holding foreign control companies incorporated under foreign law and operating outside the US. These firms' revenues are not subject to American taxation even though they are controlled by American principals. This practice is especially common in the context of activity in intangible assets (intellectual property, patents, etc.).

[17] OECD 2021 Tax Report, at 4.

[18] The tax on distributed dividends applies to payments to individuals and foreign companies but not to companies in Israel, for which the domestic tax rate is 0 percent.

[19] Several large companies enjoy especially beneficial tax arrangements along with the assurance of regulatory stability in these arrangements. These firms will remain liable to the minimum tax at the international level but it is not clear that they will accept a change in the tax rate that applies to them in Israel in lieu of paying the difference in tax abroad.

GILTI legislation associated with the American tax reform, in contrast, is relevant to a larger number of companies and its effects on companies active in Israel may be greater.

Despite the difficulty in precisely estimating the potential effects of the international tax reform and the American legislative changes on Israel at this stage, the progress in these measures and the approach of their implementation make it necessary to consider, already now, setting a domestic minimum tax rate (DMT) on activities in Israel. Such a tax would comport with the rules of the international arrangement (like measures recently promoted by other developed economies such as Switzerland, the UK, and the European Union) and would forestall a situation in which other countries would benefit from tax receipts on activities taking place in Israel only because Israel refrains from collecting some or all of the tax. Until the reform, especially low tax rates were attractive to companies because the low tax rate in Israel was usually the final tax liability. In contrast, once the reform goes into effect, the difference up to 15 percent will be collected by other countries, creating a revenue loss for Israel and giving no real utility to the companies that operate in the country. In certain cases, the introduction of a DMT may also motivate MNEs that currently pay a tax rate below the minimum established in the arrangement to transfer additional activities to Israel, where the tax rate is higher, in order to save on tax payments on their total global activity.

A more complex issue involves a review of the total array of benefits that Israel gives businesses, foremost under the Encouragement of Capital Investments Law. A principal motive for conferring these benefits is fear of international competition over the location of high-productivity MNEs, particularly those that maintain an exposure to international markets by exporting much of their output.[20] The international tax reform is meant to restrain this competition by withholding a competitive advantage from countries that will introduce (or maintain) tax rates under the minimum threshold established in the reform. For this reason, it is an opportunity to see whether it is desirable to continue maintaining an array of benefits based on the export criterion or whether benefits should focus on activities that serve other economic and social objectives, such as research and development, high-quality employment, adoption of technologies, and so on. The reform also underscores the need to determine whether it is correct to continue basing much of government support on tax benefits and not on direct grants, and to examine their purpose and mix. This is particularly the case regarding support of innovative companies because in many cases, their investments may not mature into profitable products that will gain from tax benefits but which, in any case, contribute to the development of Israeli technological capabilities and know-how. A detailed discussion of this issue is beyond the purview of this box, but should take place soon as Israel formulates its policy response to the changes in the international taxation environment before the target date for the application of the tax reform (January 2023) arrives.[21]

[20] For an illustration of the importance that Israel's policymakers attribute to this consideration in determining the benefits, see "Report of the Examination Team Regarding Benefits under the Encouragement of Capital Investments Law" (Andorn Committee, June 2015), p. 5; "Conclusions of the Interministerial Committee for Examination of the Tax Benefits and Grants Policy under the Encouragement of Capital Investments Law" (Shani Committee, October 2010), pp. 19–21.

[21] For discussion of the structure of the benefits, see, for example, Bank of Israel (2019), *Research Department Special Report: Raising the Standard of Living in Israel by Increasing Labor Productivity*, pp. 49–52; OECD (2019), *OECD Economic Surveys: Israel 2020,* p. 50.