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Israel's Economy 2024: A Nation at War

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Israel's Economy 2024: A Nation at War

Benjamin Bental and Labib Shami

Since October 7, 2023, Israel has been at war. In its early stages, the war's cost (military expenditures and reconstruction efforts) was estimated at approximately NIS 250 billion (about 13% of GDP), based on the assumption that it would conclude during 2024 without significant escalation in the North or an open confrontation with Iran. Additional costs have yet to be systematically assessed but are likely to reach another NIS 100 billion (about 5% of GDP). This chapter largely addresses the immediate effects of the war, while also considering long-term trends that have characterized the Israeli economy for some time, unrelated to the conflict.

GDP and its components

Figure 1 examines the growth rate of quarterly GDP and its components, calculated annually relative to the same period in 2019 and compared to long-term trends.¹ The graphs begin in the first quarter of 2020, allowing for tracking the components' development since then and comparing the economic crisis caused by the Covid-19 pandemic to that of the current war. The substantial shock of the second quarter of 2020 due to Covid-19 reduced GDP by 8% compared to the same period in 2019. However, thanks to the remarkable recovery of the Israeli economy, by the third quarter of 2023 (prior to the outbreak of the war),

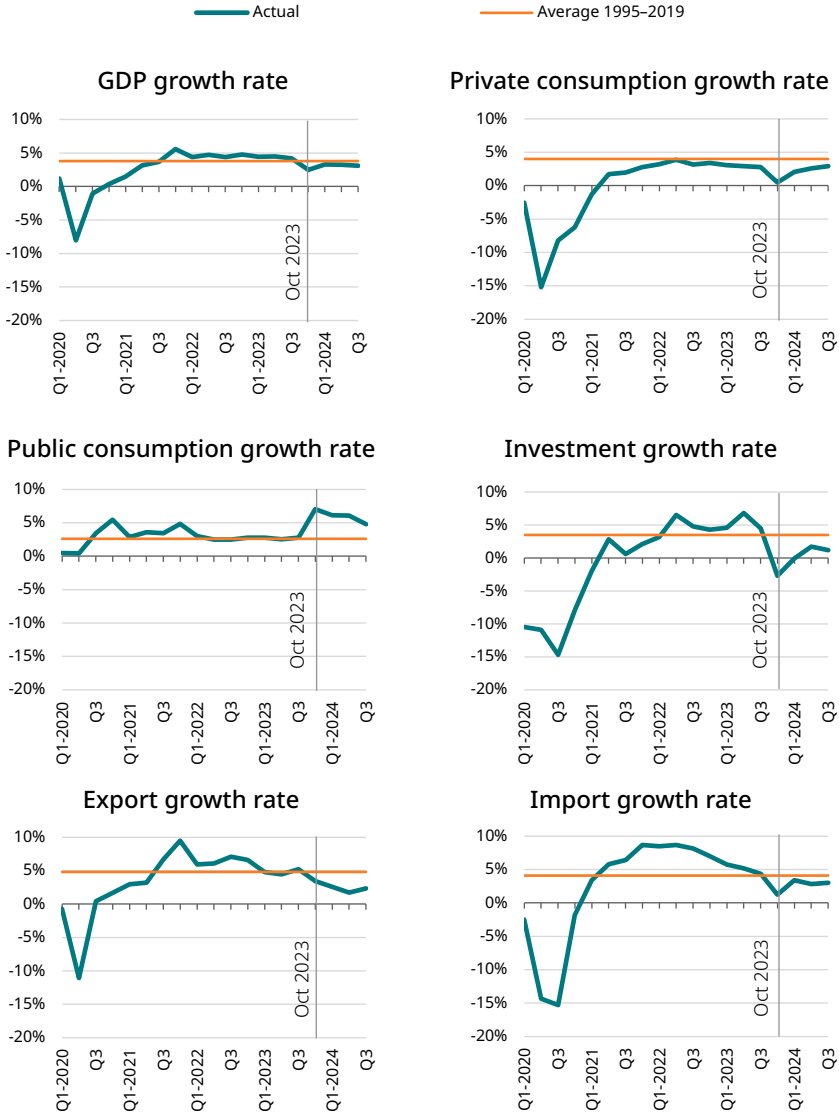
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1 The yearly rate of growth, g , of variable x in a given quarter, i , t years after the corresponding quarter of 2019 (year "0"), is calculated as follows: $g(i,t) = (x(i,t)/x(i,0))^{1/t} - 1$.

GDP reflected an average annual growth rate of 4.4% compared to the same period in 2019. This rate exceeded the long-term trend of a 4% average annual increase, underscoring the economy's robust state on the eve of the war. Despite the GDP decline in the last quarter of 2023, the partial recovery at the beginning of 2024 brought the average growth rate compared to 2019 to 3.3%.

In contrast to GDP, the growth rate of private consumption since the Covid-19 crisis has consistently been below the long-term trend (except in the second quarter of 2022). While this was expected during the pandemic due to strict restrictions on the population, the declining trend in private consumption growth that began in the second half of 2022 — likely due to interest rate hikes — resulted in private consumption in the last quarter of 2023 nearly equaling its level in the corresponding quarter of 2019, despite population growth. Public consumption returned to its long-term trend and remained there even with the government change at the end of 2022, but it has naturally deviated significantly upward since the outbreak of the war. In contrast, investments in the economy, which also recovered impressively from the pandemic, were lower in the last quarter of 2023 than in the corresponding quarter of 2019. Exports and imports, which had quickly recovered from the Covid-19 crisis, resumed their growth trends but were disrupted by the war.

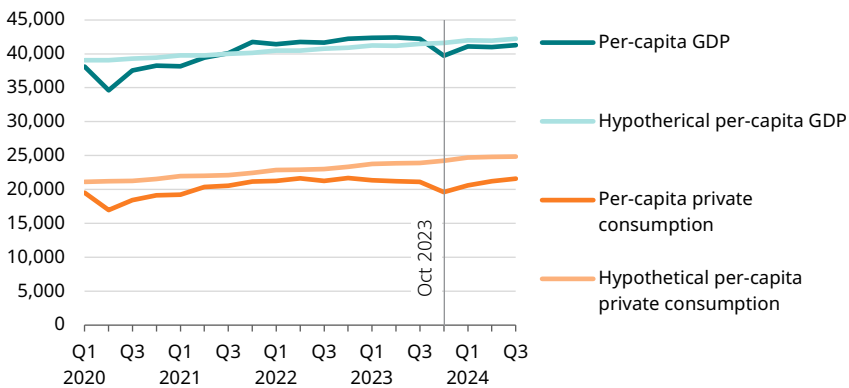
Figure 1. Annual growth rate of quarterly GDP and its components compared to 2019



Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

Figure 2 presents the levels of GDP per capita and private consumption per capita compared to a hypothetical trajectory that would have materialized had the growth rates of GDP and private consumption remained at their long-term trends (1995–2019). In doing so, it complements Figure 1. The figure once again highlights the significant contribution of the rapid economic growth following the Covid-19 crisis to the state of the economy at the start of the war. By 2022, GDP per capita exceeded the hypothetical level, but during the war, it approached that benchmark. In contrast, private consumption per capita was 15% below its hypothetical level, indicating a substantial decline in living standards.

Figure 2. GDP per capita and private consumption per capita
NIS, 2015 prices



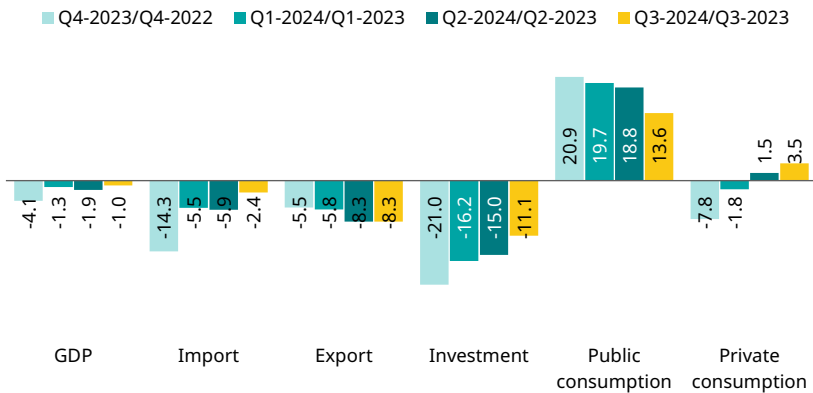
Source: Benjamin Bental and Labib Shami, Taub Center | Source: CBS

Figure 3 focuses on the short-term effects of the crisis precipitated by the war. The figure shows the growth rate (annualized) of GDP and its components during the last quarter of 2023 and the first three quarters of 2024, compared to the respective periods in the previous year. In the last quarter of 2023, GDP contracted at an annual rate of 4.1% compared to the same quarter in the previous year — a sharp decline, but significantly smaller than the 8% drop observed in the second quarter of 2020 relative to 2019. In the first three quarters of 2024, the rate of GDP decline moderated significantly (as also

shown in Figure 2). The figure also highlights the main factor that mitigated the contraction in the economy: the significant increase in public consumption (initially, more than 20%). Given that the share of investment in GDP is very similar to that of public consumption (approximately 20%), the rise in public consumption offset and even exceeded the decline in investment. It is worth noting that the drop in investment was primarily due to a reduction in construction investments, stemming from a severe labor shortage in the construction sector caused by the embargo on the entry of Palestinian workers into Israel.

With regard to foreign trade, in the last quarter of 2023, the decline in imports was greater than the decline in exports. However, this trend partially reversed in the first two quarters of 2024. Since the share of exports in GDP is very close to that of imports, these changes had little impact on Israel's current account surplus. Figure 3 also depicts the rapid (and perhaps surprising) recovery of private consumption, which is also visible in Figure 2. Private consumption fell sharply by 7.8% in the last quarter of 2023 but rose by 3.5% in the third quarter of 2024, compared to the same periods in the previous year.

Figure 3. Changes in GDP and its components during the months of war
Percent

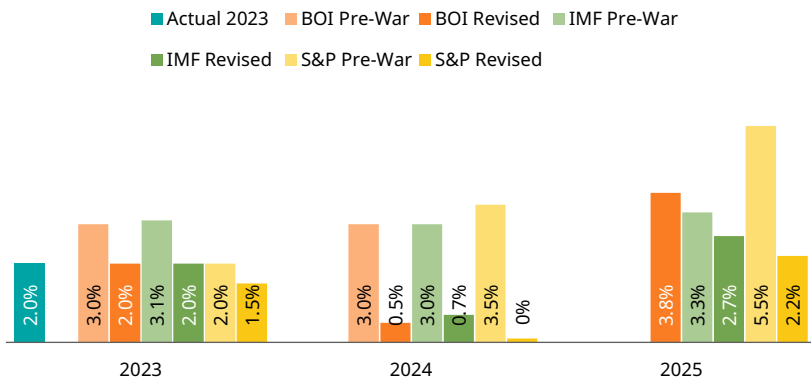


Source: Benjamin Bental and Labib Shami, Taub Center | Source: CBS

Figure 4 summarizes the projections of the Bank of Israel, the International Monetary Fund (IMF), and the credit rating agency S&P for GDP growth in Israel for 2024 and 2025, as they were before the outbreak of the war and after their updates in October and November of 2024. It also reports the gap between growth forecasts for 2023 made prior to the war and actual growth that year.

For 2024, there is a significant similarity in the forecasts by the three institutions, both in those made before the war and in those updated afterward. It is noteworthy that before the war, annual growth for 2024 was anticipated to be between 3% and 3.5%, but as the war progressed, the forecasts dropped to a range of 0% to 0.7%. These forecasts imply negative per capita growth, indicating a decline in living standards in Israel. Regarding the expected growth for 2025, the Bank of Israel continues to present a more optimistic forecast than S&P.²

Figure 4. Projections of GDP growth



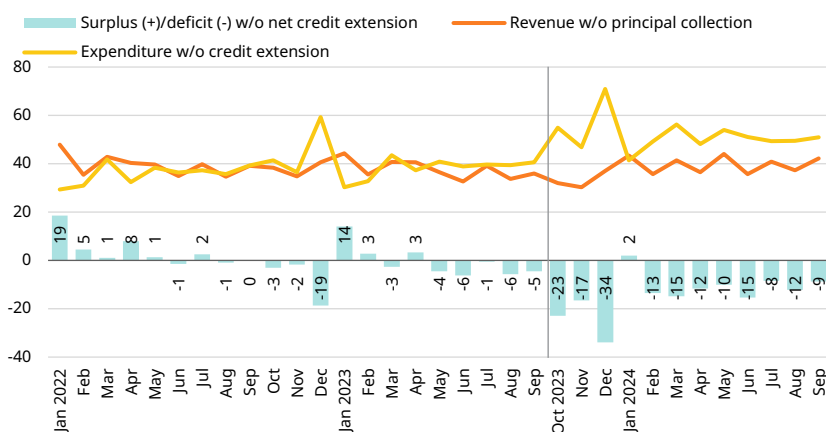
Source: Benjamin Bental and Labib Shami, Taub Center | Data: Bank of Israel; IMF; S&P

2 In Figure 4, as well as in Figures 7 and 8, the Bank of Israel's forecasts made before the war and their updates during the war are taken from the macroeconomic forecast of the Research Department for July 2023, November 2023, and October 2024. The S&P assessments are from April 2023, October 2023, April 2024, and November 2024. The IMF's assessments are from October 2023 and October 2024.

Government expenses, revenues, and the deficit

Figure 5, which looks at government expenditures and revenues and includes data for 2022 (during the Bennett-Lapid government, known as the Government of Change), illustrates the dramatic increase in expenditures that began in the last quarter of 2023 compared to previous periods. Government revenues had already been declining before the outbreak of the war, reaching a low point at the end of 2023. However, by 2024, revenues had nearly returned to the levels observed in 2022. After significant deficits in the last months of 2023, the deficit stabilized in the first nine months of 2024 at an average monthly level of approximately NIS 10 billion, amounting to 8.4% of GDP for this period of time.

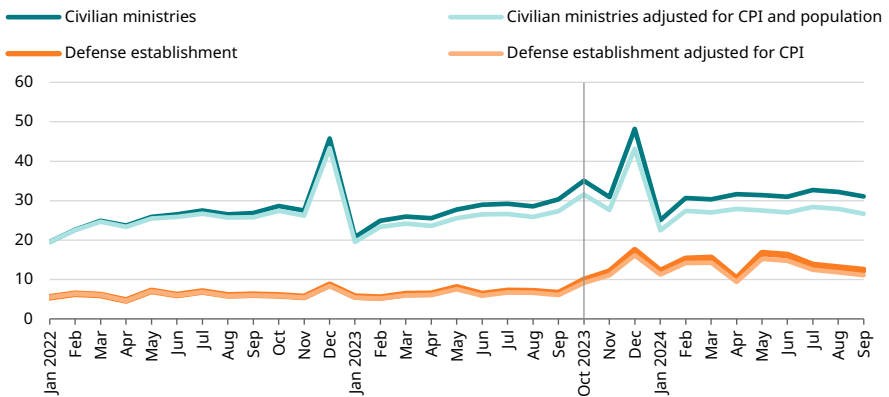
Figure 5. Government expenditures, revenues, and the deficit
NIS billions



Source: Benjamin Bental and Labib Shami, Taub Center | Data: Ministry of Finance, Accountant General Division

Figure 6 distinguishes between civilian and defense uses in government expenditures. Civilian expenditures are adjusted for increases in the Consumer Price Index (CPI) and population size, while defense expenditures are adjusted only for inflation.³ Without adjustment, there was an increase in civilian expenditures in 2023–2024 compared to 2022 (with an additional NIS 5–NIS 6 billion per month since the start of the war). However, the adjustments reveal that prior to the war, the inflation-adjusted civilian expenditures in 2023 were very similar to those in 2022. Due to the significant civilian needs during the first months of the war, even after adjustments, civilian expenditures remained higher than in the same period the previous year. Nevertheless, despite the increasing civilian needs, monthly civilian expenditures stabilized in the latter part of 2024 and essentially reverted to their pre-war levels. In contrast, monthly defense expenditures, which averaged about NIS 7 billion in both 2022 and 2023 before the war, doubled during the war months.

Figure 6. Government expenditures for civilian and defense needs
NIS billions

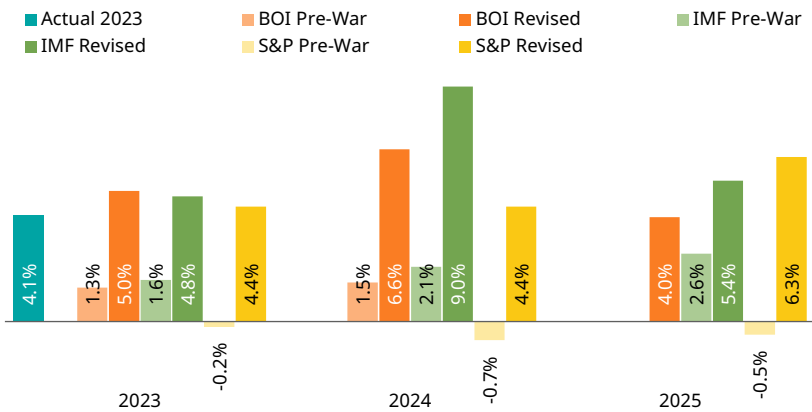


Source: Benjamin Bental and Labib Shami, Taub Center | Data: Ministry of Finance, Accountant General Division

3 The adjustment of civilian expenditures to population size was made relative to the beginning of 2022 and reflects the assumption that most of the government’s civilian expenditures are considered *individual expenditures*. In contrast, security is regarded as a public good, and therefore, expenditures related to this area are not adjusted for population size.

Figure 7 reports on deficit projections relative to GDP from the Bank of Israel, the IMF, and the credit rating agency S&P. Before the war, both the Bank of Israel and the IMF projected a deficit of less than 2% of GDP for 2023, and S&P even forecasted a small budget surplus. Following the war's outbreak, estimates were revised to approximately 5%. The year ended with an actual deficit of 4.1% of GDP. For 2024, the Bank of Israel adjusted its deficit forecast from 1.5% to 6.6% of GDP (aligning with the Ministry of Finance's estimates), while S&P adhered to the initial Ministry of Finance projection of a 4.4% deficit. Even before the escalation of hostilities in the North, the IMF, like many economists in Israel, anticipated that the deficit would reach 8% of GDP and recently updated its forecast to 9%. The deficit is expected to remain significantly higher than pre-war levels in 2025 as well.

Figure 7. Deficit forecasts



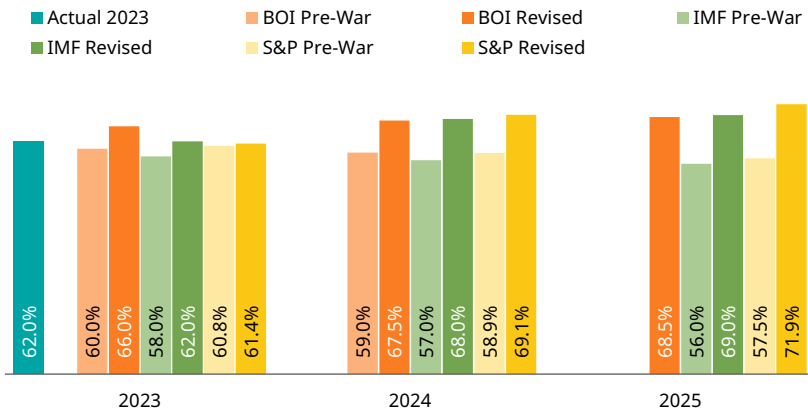
Source: Benjamin Bental and Labib Shami, Taub Center | Data: Bank of Israel; IMF; S&P

The deficit, of course, reflects the gap between government expenditures and revenues. This gap is financed by borrowing from both domestic and international sources. Interest and principal payments burden the state budget and reduce resources available for other uses. Interest rates reflect the perceived risk of the state's ability to meet its obligations. This risk is influenced by geopolitical circumstances and fiscal management. Specifically, just as banks assess the risk of private households based on their repayment capabilities,

the market and rating agencies similarly evaluate national debt. Consequently, as debt increases relative to GDP, so does the associated risk.⁴

Figure 8 outlines the projections by the Bank of Israel, the IMF, and S&P regarding the development of Israel's debt-to-GDP ratio. Consistent with the pre-war growth and deficit forecasts, the debt-to-GDP ratio, which stood at 60.5% at the end of 2022, was expected to continue declining. The IMF even projected it would fall below 60% by 2023. However, the war's impact on the deficit and GDP growth reversed this trend, bringing the ratio to 62% by the end of 2023. Forecasters now predict that this ratio will approach or exceed 70% in 2024–2025.

Figure 8. Debt-to-GDP ratio forecasts



Source: Benjamin Bental and Labib Shami, Taub Center | Data: Bank of Israel; IMF; S&P

An increasing debt-to-GDP ratio signals higher risk and, by itself, can lead to rising interest rates. The concern is a spiraling cycle where increasing debt feeds into higher interest rates, which in turn amplify the debt burden. As a result, in 2024, the growing debt-to-GDP ratio and geopolitical risks led rating

4 The Maastricht Agreements, which form the foundation of the Eurozone, set benchmarks of a 3% GDP ceiling for deficits and a 60% ceiling for the debt-to-GDP ratio. These values were set arbitrarily but have since become reference points for all high-income economies.

agencies such as S&P, Moody's, and Fitch to downgrade Israel's credit rating. These decisions reflect an increased perception of risk, as seen in Israel's credit default swap (CDS) premiums. The CDS premium, which represents the cost of insuring against default, spiked sharply due to the war, with additional surges following specific threats (e.g., the Iranian missile attack in April 2024 and other escalations later in the year).⁵ Figure 9 illustrates the dramatic increase in Israel's risk premium due to the war, as well as the spikes in the premium following each significant threat. Examples include the Iranian missile attack on the night of April 13–14, 2024, the prolonged threat in August 2024, the missile attack on October 1, 2024, and Israel's counterattack on October 26, 2024.⁶

The growing risk to Israel's economy may exacerbate the debt burden, measured by the ratio of interest payments to GDP. In 2023, this burden was 2.4%, with an average interest rate on the debt of 4%.⁷ At this rate, a 10-percentage-point increase in the debt-to-GDP ratio would raise the debt burden to approximately 2.8% and increase annual interest payments by about NIS 8 billion. If the average interest rate were to rise by 0.5 percentage points (to 4.5%), the debt burden would increase to 3.5%, raising interest payments by approximately NIS 15 billion annually.⁸

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- 5 The risk premium is related to the probability that the borrower will default on their debt. Under simplifying assumptions, the probability P of the borrower failing to meet their obligations within one year, as implied in an insurance contract with a risk premium S (measured as a percentage), where the insurer compensates the creditor at a rate R of the debt in such an event, is given by $P = \frac{S}{1-R}$. Accordingly, the probability that such an event will occur within a time period of T years is: $P(T) = 1 - \text{Exp}\left(-\frac{S}{1-R} \cdot T\right)$. Assuming (as is commonly accepted) that $R=0.4$, in the case of Israel $P=0.026$, and $P(5)=0.12$.
- 6 At the end of 2022, Israel's CDS (credit default swap) stood at 0.4 percentage points. Due to the political instability, it rose to 0.6 percentage points during 2023, even before the war.
- 7 The average interest rate has remained nearly unchanged since 2020. See Ministry of Finance, 2023.
- 8 For comparison, according to data from the IMF, Mexico's interest expenditures amounted to 15% of total government expenditures, which were 22% of GDP. See the IMF website: [Interest paid on public debt, percent of GDP](#). This translates to a debt burden of 3.3%. The debt-to-GDP ratio was 59%, meaning the average interest rate on Mexico's debt was 5.36%.

Figure 9. Risk premium on Israel's five-year government debt
In percentage points



Source: Benjamin Bental and Labib Shami, Taub Center | Data: [World Government Bonds](#)

SPOTLIGHT

Marginal Cost of Debt Issuance

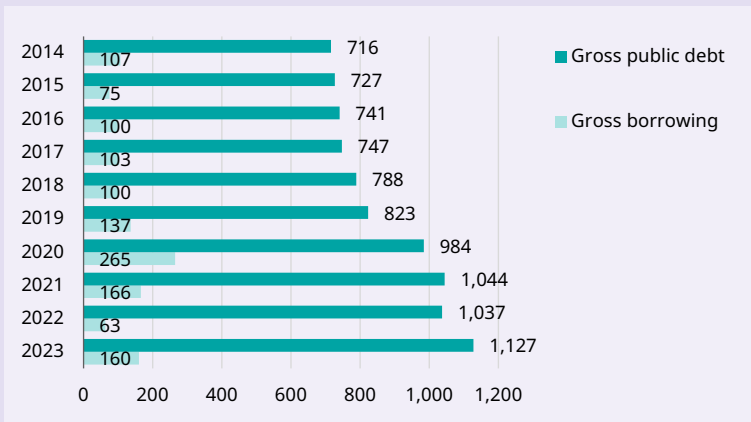
The State of Israel's debt issuance relies on three main channels: tradable domestic borrowing, non-tradable domestic borrowing, and external borrowing.⁹ The primary channel is tradable domestic borrowing, conducted throughout the year via regular auctions and swap auctions.¹⁰ This type of borrowing is itself divided into three key streams: shekel-denominated bonds, CPI-linked bonds, and variable-rate bonds.

With the outbreak of the war, there was a steep increase in total government debt issuance in the fourth quarter of 2023.¹¹

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- 9 Bond purchasers effectively provide a loan to the state, and the state commits to repaying the loan at a predetermined maturity date, along with interest (also referred to as a coupon) paid at pre-specified intervals and rates.
- 10 Swap Auctions were introduced in late 2007 and involve the exchange of tradable short-term bonds (typically maturing in less than a year) that are not regularly issued, for other tradable long-term bonds that are also not regularly issued as part of the bond mix. Swap auctions are conducted under a Cash Neutral framework, where the monetary value of the exchanged bonds is identical, resulting in debt recycling without utilizing government reserves. However, the coupon rates on the bonds exchanged are not necessarily the same.
- 11 In 2023, non-tradable domestic borrowing totaled approximately NIS 5 billion, accounting for only 3% of total debt issuance, compared to around NIS 12 billion in 2022 (19% of total debt issuance). In the external borrowing channel, issuance in 2023 amounted to approximately NIS 40 billion, constituting 25% of total debt issuance, compared to only 14% in 2022.

As shown in Figure 10, total debt issuance in 2023 amounted to approximately NIS 160 billion gross (an increase of about 54% compared to 2022), of which approximately NIS 81 billion were issued after the war began.

Figure 10. New debt issuances and total debt stock
NIS millions

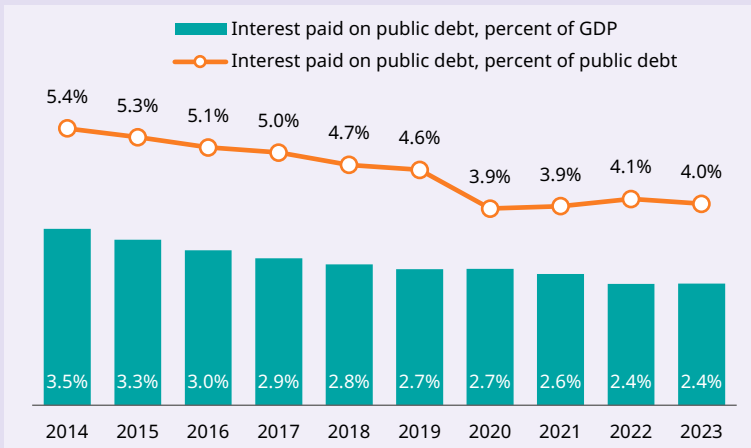


Source: Benjamin Bental and Labib Shami, Taub Center | Data: Ministry of Finance, Accountant General Division

Figure 11 tracks the ratio of interest expenditures to GDP (the debt burden) and the average interest rate on the total government debt stock. Despite the increase in the debt stock, the debt burden has shown a significant downward trend in recent years. This trend is primarily due to rapid GDP growth, as well as historically low interest rates, particularly during the Covid-19 crisis. This explains the stability of the debt burden in 2020 and the decline in the average interest rate on the debt during the same year, despite the significant increase in the debt

stock and the drop in GDP. Since the Covid-19 crisis, including in 2023, the average interest rate has remained around 4%, despite a nearly 40% increase in total government debt during this period.

Figure 11. Debt burden and average interest rate



Source: Benjamin Bental and Labib Shami, Taub Center | Data: Ministry of Finance, Accountant General Division

Unlike the calculations of the debt burden and the average interest rate based on the debt stock, the calculation below examines the additional cost of nominal interest (excluding inflation adjustments) on new debt issued in each year from 2020 to mid-2024. This annual addition consists of two components: the nominal interest on new debt issued in the year in question and the interest rate differentials involved in swap auctions, in which existing debt (at a given interest rate) is replaced with the exact same amount of new debt but for a longer term and at a different interest rate (usually

higher, though not always). Since comprehensive data on bond issuance in the external channel is unavailable, the calculations below focus exclusively on the tradable domestic borrowing channel.¹² The results of the calculations are shown in Table 1.

Table 1. The additional cost of nominal interest and its rate as a share of tradable domestic debt

NIS billions

	2020	2021	2022	2023	H1-2024
Issuance of new debt in the local tradable market	165	119	42	116	125
Additional interest expenses on the new debt without swap auctions	795	526	365	1,437	1,965
Additional interest expenses on swap auctions	369	-74	-17	-60	-10
Total additional interest expenses	1,164	452	348	1,377	1,955
Interest expense rate on the new debt in the local tradable market for the issuance year	0.70%	0.40%	0.80%	1.20%	1.60%

Source: Benjamin Bental and Labib Shami, Taub Center | Data: Ministry of Finance, Accountant General Division

As can be seen, the nominal interest rate on new debt issued in 2023 increased by 0.4 percentage points compared to 2022 (a 50% rise), and in the first half of 2024, it rose by 0.8 percentage points (double the rate in 2022). This change could reverse the downward trend in the ratio of interest expenses to the total government debt and place additional strain on the government budget in the coming years.

¹² The data on domestic government debt was sourced from the government database [Data Gov](#).

The discussion above focused on the cash flow aspect, where nominal interest expenses are reflected across all government bonds. In contrast, the market interest rate is determined through free market trading and reflects investors' assessments of the debt's risk level. To track this aspect, the following discussion focuses on the average yield to maturity for non-indexed government bonds issued for 5- and 10-year terms, within the tradable domestic borrowing channel, excluding swap auctions. The results are compared to the weekly average yield on non-indexed government bonds for 5- and 10-year terms based on market trading data. As shown in Table 2, the yield to maturity on 10-year government bonds issued in 2023 and the first half of 2024 is higher than the yield on their market counterparts, in contrast to 2020–2022, when 10-year government bonds yielded lower returns than the market. For 5-year bonds, the data shows mixed trends, but there is a notable similarity between the yields in the market and those of government-issued bonds in all years.

Table 2. Yield to maturity and market yield for non-indexed government bonds for five and ten years

	2020	2021	2022	2023	H1-2024
Yield on 5-year non-linked government bonds, market	0.34%	0.43%	2.31%	3.82%	4.26%
Yield on 5-year non-linked government bonds, issuance data for the same year	0.38%	0.44%	2.00%	3.97%	4.17%
Yield on 10-year non-linked government bonds, market	0.77%	1.06%	2.61%	3.87%	4.54%
Yield on 10-year non-linked government bonds, issuance data for the same year	0.56%	0.74%	2.51%	4.19%	4.73%

Source: Benjamin Bental and Labib Shami, Taub Center | Data: Ministry of Finance, Accountant General Division

SPOTLIGHT

Security Expenditures

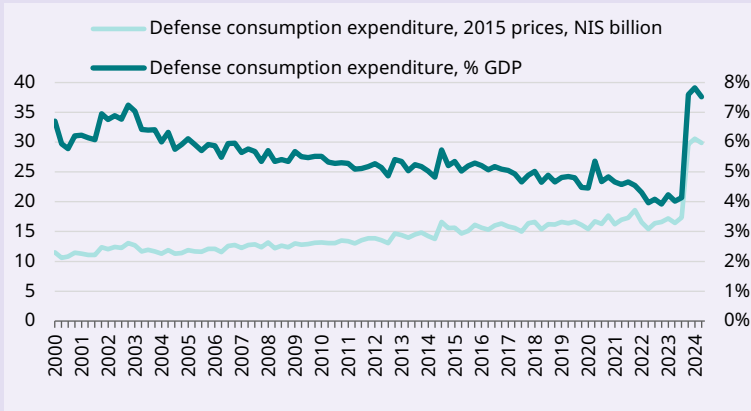
Security expenditures are a central component of Israel's defense strategy, both in the short and long term. Figure 12 illustrates the evolution of defense consumption expenditure in Israel since the beginning of the century, presented both in fixed shekels and as a percentage of GDP. It is evident that the growth rate of defense spending has been more moderate than that of GDP (approximately 1.9% versus 3.6% per year). Specifically, the share of defense consumption expenditure in GDP declined significantly, from around 7.5% during the Second Intifada to close to 4% of GDP on the eve of the October 7 war. The war caused a surge in defense spending, raising it to 8% of GDP. There is broad agreement that restocking supplies and restoring readiness after the war will require increased defense spending in the short term. However, the appropriate size of Israel's defense budget following the active combat and replenishment period remains unclear. Some experts, such as the Fitch rating agency, predict that the defense budget will stabilize at around 5.5% of GDP. Others argue for a much larger budget at the expense of civilian expenditures (Shavit, 2024).

The theoretical literature on defense budgets and their relationship to GDP does not provide a definitive quantitative answer. Qualitatively, defense spending is viewed as a form of insurance. For example, a study by Eckstein and Tsiddon

(2004) explored the macroeconomic consequences of security risks during the Second Intifada. They examined the impact of increased risk (represented by the heightened likelihood of death for a *representative consumer*) on welfare and GDP, as well as the benefits of reducing this risk. Since funding for risk reduction involves taxation, which reduces private consumption and physical capital investment, the optimal level of defense spending balances these costs against the benefits of risk mitigation. A similar approach views defense spending through the lens of classic insurance models, treating it as a means to reduce both the probability of threats materializing (deterrence) and the potential damage if threats do occur (protection).¹³ Just as households decide how much to allocate to insurance to mitigate risks, states must determine how much to divert from civilian to military uses to enhance security and improve welfare in the face of threats (Ihori & McGuire, 2010; Panagariya & Shibata, 2000). Intuitively, these models link the optimal level of expenditure for risk reduction (security) to national income or GDP, based on the widely understood principle that insuring higher-value assets entails higher costs. The strength of this relationship depends on assumptions about the security production function, particularly the extent to which the marginal returns on security investments diminish in reducing risks.

13 In their classic article, Ehrlich & Becker (1972) coined the terms *self-protection*, which corresponds to reducing the probability of a threat, and *self-insurance*, which corresponds to reducing potential damage.

Figure 12. Defense consumption expenditure



Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

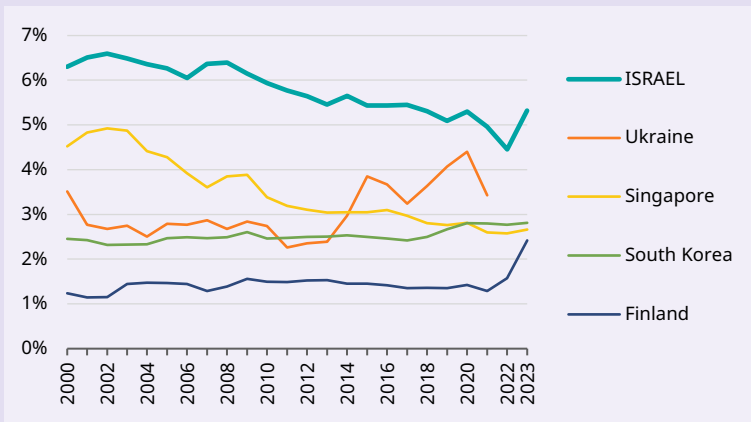
Figure 13 compares the share of defense spending in GDP among several countries facing potential (e.g., Finland, South Korea, Singapore) or actual (e.g., Ukraine) threats.¹⁴ For example, Finland's defense expenditures remained relatively stable as a percentage of GDP until Russia's invasion of Ukraine in 2022, which significantly increased Finland's risk level. Similarly, Ukraine's defense spending rose sharply after the annexation of Crimea in 2014, jumping to 26% of GDP following the full-scale Russian invasion in February 2022 and reaching 37% in 2023.¹⁵ Singapore's defense policy closely mirrors Israel's, albeit at a different scale, with a consistent decrease in the defense

14 For comparison, the figure also reports data on Israel. The data come from a different source than that of Figure 7 but are very similar.

15 These data were omitted from the figure to avoid distorting the scale.

spending share of GDP due to rapid economic growth.¹⁶ In South Korea, defense spending has moderately increased in recent years, possibly as a response to the militarization efforts of its northern neighbor.¹⁷

Figure 13. Defense spending in selected countries
As a percent of GDP



Source: Benjamin Bental and Labib Shami, Taub Center | Data: SIPRI

16 In both Israel and Singapore, defense expenditures tripled between 2000 and 2023 (in real terms).

17 For a discussion on defense expenditures in the European Union in light of the United States' demand to increase spending to 2% of GDP, see Cepparulo & Pasimeni (2024).

The impact of defense spending on productivity and economic growth is ambiguous.¹⁸ Empirical studies, as well as theoretical considerations, highlight both positive and negative aspects. On the one hand, defense spending diverts resources from other uses, particularly investments in growth-enhancing programs (such as education) and infrastructure. On the other hand, enhancing security and building confidence in a state's ability to defend itself can encourage domestic and foreign investment, while also preventing brain drain. Furthermore, some technologies developed for defense purposes yield significant external benefits (e.g., technological expertise gained by veterans of Israel's military technology units), and some defense products are sold internationally.¹⁹

18 Saeed (2023) found a negative relationship between defense expenditures and economic growth. In a meta-analysis conducted by Alptekin & Levine (2012), it was found that in developed countries, there is a weak positive relationship between defense expenditures and growth, which is hypothesized to result from the external effects of defense-related R&D.

19 It is important to note that labor productivity in the aerospace industry (defense-related high-tech) stands at approximately NIS 300,000 per year, about half that in the civilian high-tech sector. See *Innovation Policy and Challenges in the High-Tech Sector*, Aaron Institute for Economic Policy, in collaboration with Startup Nation Central (forthcoming).

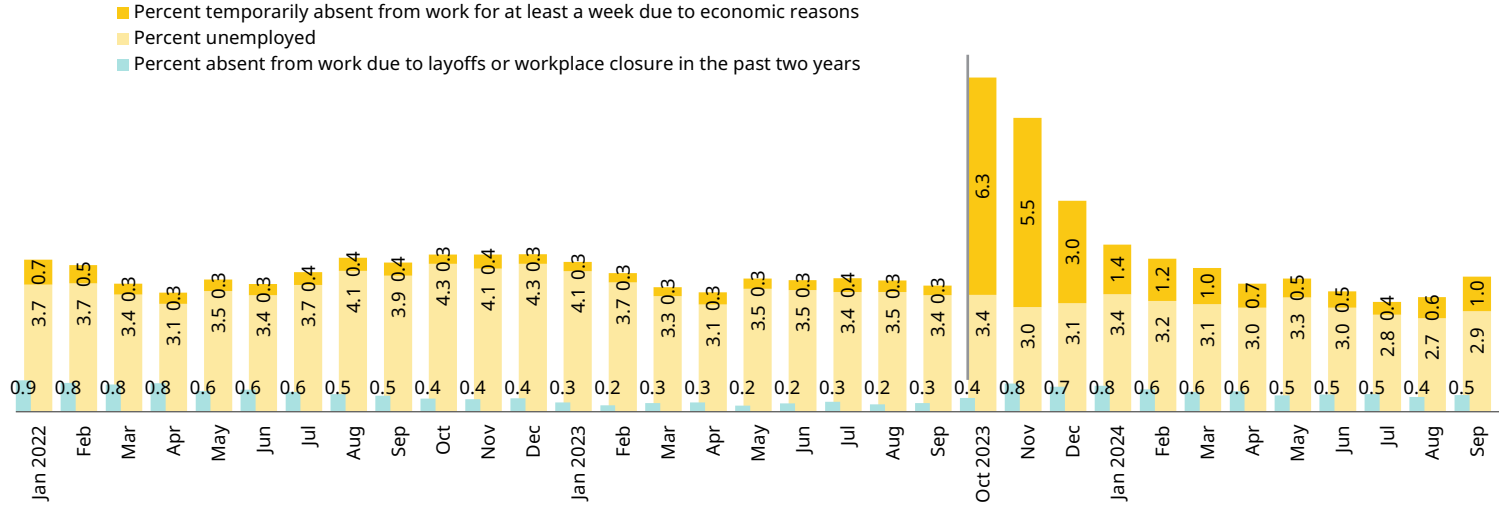
Labor market

The following figures illustrate the immediate impact of the war on Israel's labor market and the subsequent recovery, reflecting trends consistent with GDP development (as shown in Figure 3). Figure 14 examines unemployment rates based on both the *narrow* and *broad* definitions. The narrow definition includes individuals who are not employed but are actively seeking work. The broad definition adds those still affiliated with their workplace but not currently working (e.g., due to temporary shutdowns or furloughs). The figure also reports data on individuals who have stopped seeking employment altogether.²⁰ A notable observation is that the war had no impact on the narrow unemployment rate, which remained at or below 3% during the war months. There was a slight increase in the proportion of individuals who stopped searching for work, but this subsided over time without returning fully to pre-war levels. The most significant effect of the war is seen in the category of those temporarily absent from work for economic reasons, mainly due to shutdowns or furloughs. Before the war, this rate stood at about 0.3%, but it spiked to 6.3% in October 2023. The rapid return to nearly normal activity levels is reflected in a swift decline in the rate of economic absences, which approached pre-war levels by September.

20 The first two rates are calculated relative to the population of employed individuals plus those who are unemployed but actively seeking work. The rate of those who have given up looking for work is calculated relative to the population aged 15 and older.

Figure 14. Rates of inactivity in the labor market

Percent

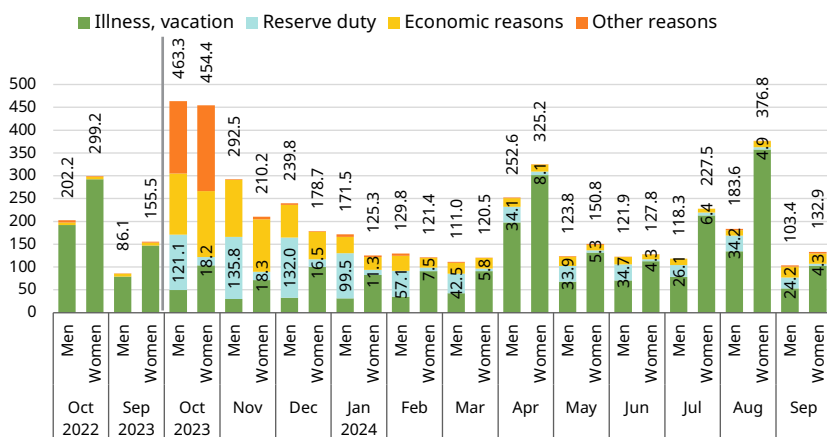


Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

In addition to economic reasons, employees may be temporarily absent due to illness, vacation, military reserve duty, or other causes (Figure 15). While such absentees remain formally employed, their absence reduces productivity in their civilian workplaces.²¹ Under normal conditions, illness and vacation are the primary causes of absences. The first months of the war drastically changed this dynamic. The sharp increase in absences due to economic reasons, highlighted in Figure 14, was compounded by a dramatic rise in the number of reservists and other absences. The latter category mainly includes parents (both men and women) who stayed home with their children due to the school closures in central Israel. By November 2023, with the reopening of the education system, this category of absences effectively disappeared. Similarly, the number of reservists (primarily men) decreased to about one-third of their peak during the early months of the war.²² The reduction in absences due to these factors contributed to the gradual increase in actual workforce participation, which, in turn, bolstered economic output.

Figure 15. Temporary absences from work

Thousands



Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

21 The output of reservists is attributed to the public sector and is reflected in defense expenditures. Typically, the contribution measured through the public sector is lower than what these individuals would contribute in their civilian activities.

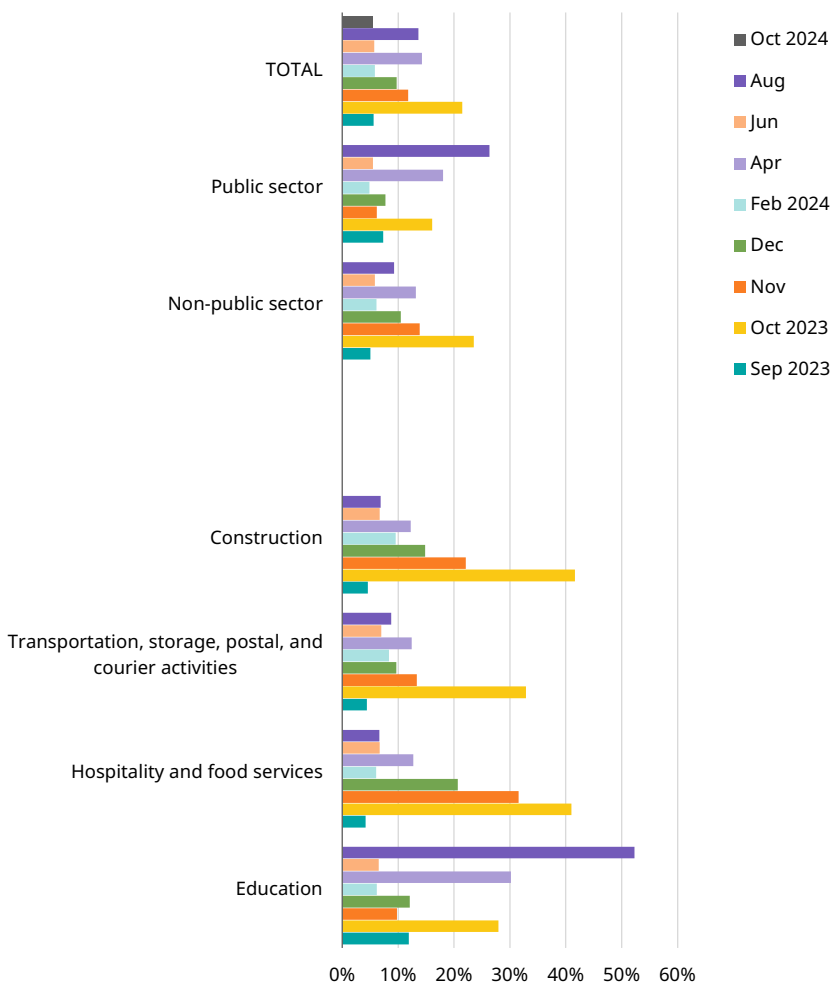
22 The data in Figure 14 include only employed reservists. In particular, most reservists who are students are not included.

Figure 16 highlights the rate of temporary absences from work across different sectors, comparing averages nationwide, in the public sector, and in the non-public sector, as well as specific industries that experienced particularly high initial absence rates.²³ During the initial stages of the war, absence rates in the public sector were lower than in the non-public sector, and the return to normalcy was faster in the public sector. This is also evident when comparing the education sector to industries such as construction and transportation. In education, the return to regular activity in November and December facilitated a swift resumption of work. Conversely, in the construction sector, where the share of Arab workers is particularly high, nearly 42% of employees were absent at the outbreak of the war. However, a relatively quick recovery followed, bringing absence rates back to pre-war levels.²⁴ A similar trend is seen in transportation, warehousing, postal, and courier services. The hospitality and food services sector, deeply impacted by the tourism crisis, experienced a slower recovery. Nonetheless, seasonal variations in absence rates across sectors appear much more significant than the effects of the war itself. For example, the high absence rates of education sector workers during the summer months reflect the standard school vacation schedule.

23 The figure pertains to workers with Israeli citizenship only.

24 The data do not include foreign workers, including Palestinians from the West Bank and Gaza Strip. The absence of the latter (at least 100,000 workers) causes significant delays in housing and infrastructure construction.

Figure 16. Absence rates in selected industry sectors and selected months



Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

The high-tech sector

The high-tech sector holds a central and unique position in Israel's economy relative to international benchmarks. In 2023, high tech employed 11.6% of Israel's salaried workforce (aged 25 and over), contributing approximately one-fifth of the national GDP and accounting for 53% of Israel's exports.²⁵ Between 2018 and 2023, the sector was responsible for about 40% of GDP growth, driven by increased employment (up from 8.7% in 2018) and high productivity levels (Innovation Authority, 2024a). Moreover, in 2020, the high-tech sector contributed roughly 24% of Israel's total tax revenues. By 2021, due to its high wages, employees in the sector, representing about 11% of the labor force, accounted for approximately 36% of all income tax revenues from wages (Innovation Authority, 2024b).

Employment and wages

The high-tech sector is typically divided into manufacturing and services. According to the National Insurance Institute, high-tech manufacturing includes the production of pharmaceuticals (ISIC 21), computers (ISIC 26), and transportation equipment (ISIC 30). High-tech services include telecommunication (ISIC 61), programming (ISIC 62), information (ISIC 63), and research and development (ISIC 72).²⁶ Figure 17 is based on National Insurance Institute data and presents trends in employment within the high-tech sector over nearly a decade and a half. The figure reveals that employment growth in the sector began as early as the mid-previous decade and is almost entirely attributable to the programming and computer consultancy subsector. The acceleration in programming jobs in 2021 and their subsequent stabilization is tied to investment dynamics within the high-tech industry (see below). Employment levels in other subsectors have remained stable or even declined, especially in telecommunications. Notably, the sharp drop in employment

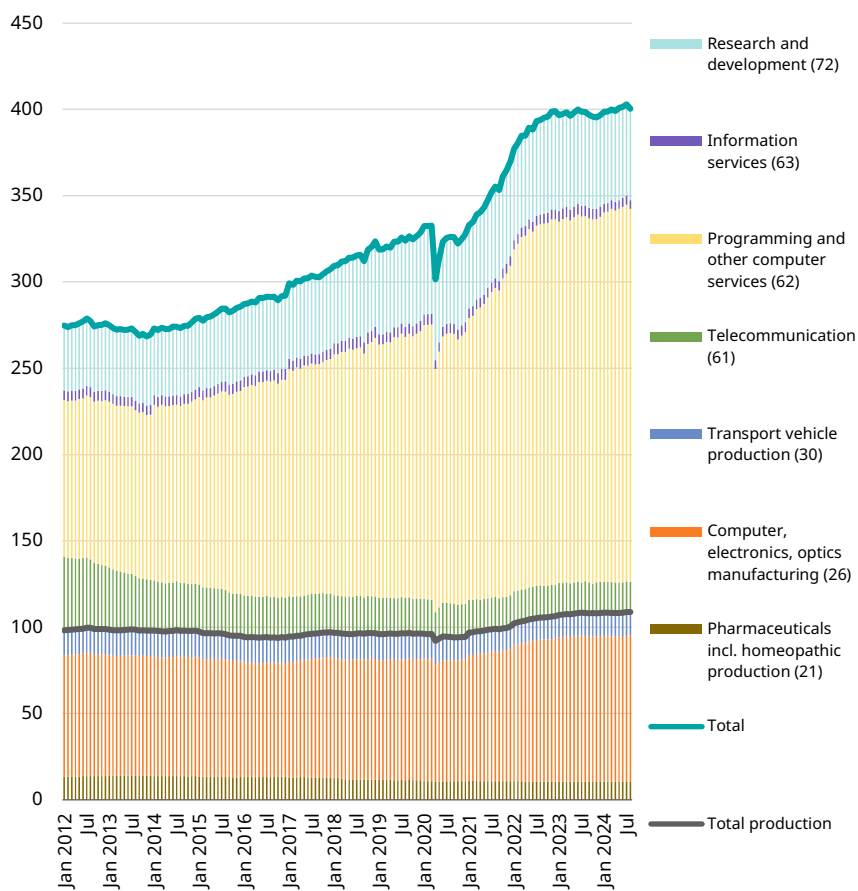
25 For comparison, between 2017 and 2021, the share of high-tech workers (out of the population aged 15 and older) was 4.9% in Finland and 4.1% in the United States, compared to 9.2% in Israel. Their contribution to GDP was 6.6% and 8.7%, respectively, compared to 16.2% in Israel. See *Innovation Policies and Hi-Tech Industry Challenges*, Aaron Institute, 2024 (unpublished).

26 This classification is not necessarily accepted by all professionals in the field. In particular, many do not include the telecommunications sector as part of high-tech services.

during the first Covid-19 lockdown primarily affected telecommunications and programming services. The modest decline in late 2023, following the war's outbreak, also impacted telecommunications.

Figure 17. Salaried jobs in the high-tech sector

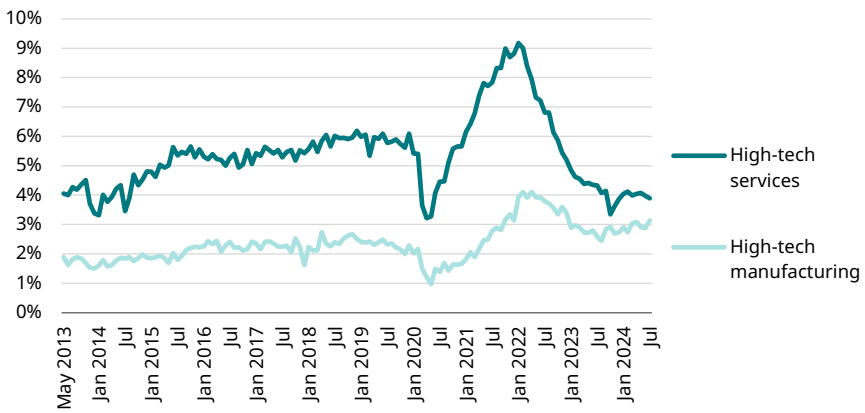
Thousands



Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

Figure 18 shows the proportion of vacant positions in the high-tech sector, divided into manufacturing and service subsectors. Alongside the increase in high-tech employment, the percentage of vacant positions also grew, particularly in high-tech services. The dramatic rise in vacancies in 2021 mirrors the surge in employment within the sector, especially in services. In other words, employment in high tech could have increased by an additional 10% if qualified workers were available to fill the open positions.

Figure 18. Vacancy rates in high-tech manufacturing and services



Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

Figure 19 reports on the evolution of wages for three main groups of workers in the high-tech sector, as well as the average wages in the sector compared to other industries. Wage trends reflect employment growth and the excess demand for high-tech workers. In 2012, the average wage in high-tech was double that of other industries. By mid-2024, it was nearly tripled. Wage growth in research, programming, and computer manufacturing has followed similar patterns, with programming seeing the most significant acceleration. In 2012, average wages in programming were comparable to those in computer manufacturing, but by 2024, they had approached the level of wages in research services.

Figure 19. Wages in high tech and other industries
NIS per month, 2022 prices



Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

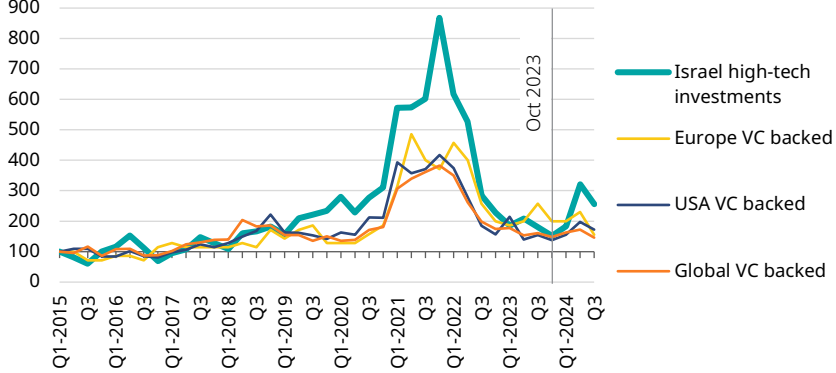
Investments

Figure 20 tracks the development of quarterly investments in high tech in Israel, the United States, Europe, and globally, relative to their levels in the first quarter of 2015. During the Covid-19 crisis, low interest rates and limited alternative investment opportunities prompted investors worldwide to turn to high tech. Between 2020 and 2022, global high-tech investments doubled compared to 2018–2019 levels. In Israel, high-tech investment quadrupled from pre-Covid-19 levels, reaching over \$8 billion in the fourth quarter of 2021. By 2023–2024, global investment levels had nearly returned to their pre-Covid-19 levels. A similar trend was observed in Israel, albeit with some fluctuations. The first half of 2024 featured several exceptional investments, the most notable being \$965 million in Wiz during the second quarter.²⁷ Despite ongoing uncertainty due to the war, high-tech investments in the third quarter of 2024 reached nearly \$2.5 billion, comparable to 2019 levels. In any case, even if the prolonged war impacts investments in the sector in Israel, the substantial sums injected into it during the Covid-19 years ensure its continued activity for several years to come.

27 Even without this investment, high-tech investment in the second half of 2024 was 19% higher than in the second half of 2023. See [Israeli Tech Review, Q2-2024](#).

Figure 20. High-tech investment trends in Israel and globally

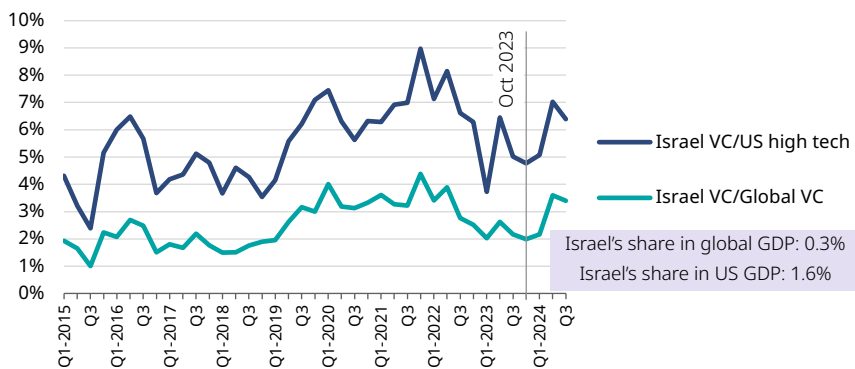
Q1-2015 = 100



Source: Benjamin Bental and Labib Shami, Taub Center | Data: Dealroom.co; Ernst & Young; IVC

Figure 21 reflects not only the extraordinary rise in high-tech investments in Israel during the Covid-19 crisis but also Israel's disproportionately large share of global high-tech investments. While Israel's GDP constitutes approximately 0.3% of global GDP and 1.6% of US GDP, investments in Israeli high tech between 2019 and 2024 constituted 2%–4% of global high-tech investments and 4%–8% of US investments.

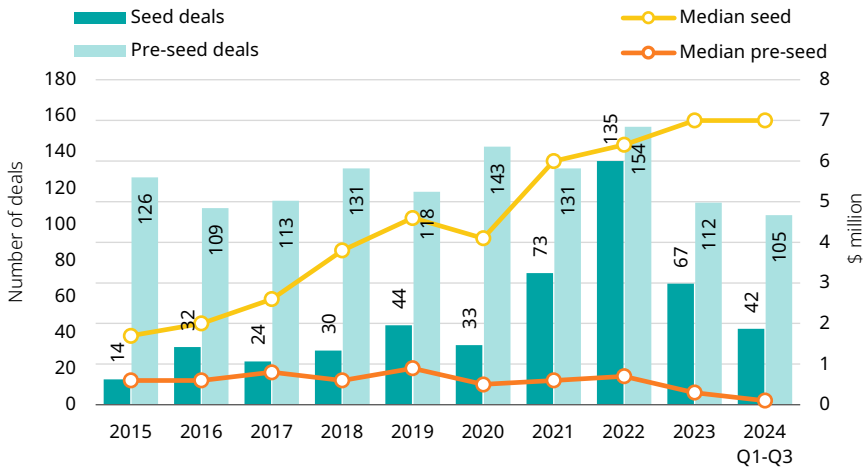
Figure 21. High-tech investments in Israel relative to the US and globally



Source: Benjamin Bental and Labib Shami, Taub Center | Data: Dealroom.co; Ernst & Young; IVC

Large investments are directed toward established companies with proven products. However, initial investments in companies that are just beginning their journey serve as an indicator of investors' expectations regarding future success prospects. Figure 22 outlines investment data for companies at the idea creation stage (pre-seed) and the initial stage (seed), which involves early development of an idea toward creating a commercially valuable product. The data show a significant increase in the number of seed-stage investments during the Covid-19 period, coinciding with the overall rise in high-tech investments in Israel. The decline in the number of investments in 2023 and 2024 appears to reflect a return to pre-Covid-19 levels. At the same time, the median investment amount for these organizations rose significantly. In the pre-seed stage, the situation is less clear-cut. There is a sharper decline in the number of transactions and a noticeable reduction in the median investment. Since these stages represent the very early development of an idea or product, it is difficult to predict the implications of this change for the future development of mature companies in Israel.

Figure 22. Transactions and investments in pre-seed and seed stages



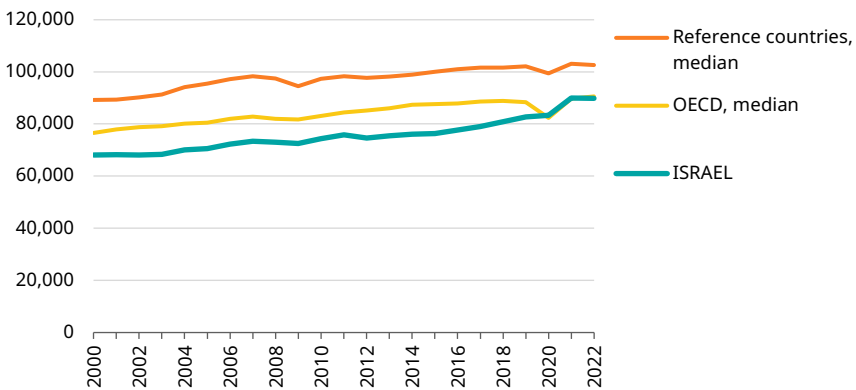
Source: Benjamin Bental and Labib Shami, Taub Center | Data: IVC

Labor productivity

Aggregate data

Figure 23 displays GDP per worker (measured in constant 2015 US dollars) for Israel, the OECD median (excluding Israel), and a group of reference countries.²⁸ The figure highlights the rapid narrowing of the productivity gap between Israel and the OECD median that began in the mid-2010s, culminating in the gap's closure. Similarly, the gap between Israel and the reference countries has also shrunk. In the mid-2010s, Israel's GDP per worker stood at about 75% of the reference country average, whereas by 2022, it had approached 90%.

Figure 23. GDP per worker in Israel and in other countries
PPP dollars, 2015 prices



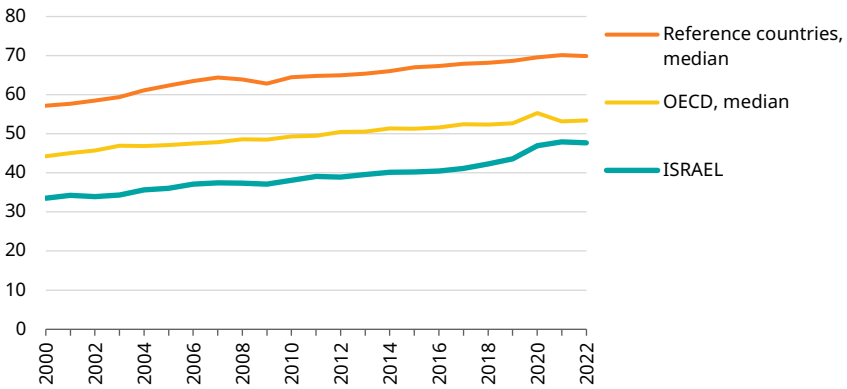
Note: Reference countries are Austria, Belgium, Finland, the Netherlands, and Sweden.

Source: Benjamin Bental and Labib Shami, Taub Center | Data: OECD

²⁸ These countries are Austria, Belgium, Finland, the Netherlands, and Sweden. They are characterized by a population size similar to that of Israel and economies that rely on skilled labor rather than natural resources. They are also used by the Bank of Israel as reference countries. See Bank of Israel, 2023.

When comparing GDP per hour worked, the results are less favorable. Figure 24 shows that despite improvements since the mid-2010s, productivity gaps remain. In the early 2000s, an hour worked in Israel produced about 75% of the median output per hour worked in the OECD. By 2022, this had increased to approximately 90%. Relative to the reference countries, Israeli productivity per hour was about 60% in the mid-2010s but improved by nearly 10 percentage points by the early 2020s.

Figure 24. GDP per work hour in Israel and in other countries
 USD, 2015 prices



Note: Reference countries are Austria, Belgium, Finland, the Netherlands, and Sweden.

Source: Benjamin Bental and Labib Shami, Taub Center | Data: OECD

The disparity between productivity per worker and productivity per work hour can be explained by the relatively high number of annual work hours in Israel compared to OECD countries and the reference group. Specifically, the average Israeli employee works about 15% more hours annually than their counterpart in the median OECD country and 25%–30% more than those in the reference group. In other words, if the average Israeli worked the same number of hours as their peers in the reference countries, labor productivity per hour in Israel would have needed to increase by about 30% to maintain the same GDP per worker. Alternatively, without any change in productivity per hour, Israel's GDP per worker would have fallen by about 30%.

Industry sector data

Figure 25 examines the evolution of value added per hour worked across major economic sectors in Israel, presented in current US dollars.²⁹ The aggregate data for all industries once again highlights the improvement in labor productivity in Israel since the mid-2010s. During this period, value added per hour worked in Israel converged to the OECD median but remained at approximately 70% of the reference countries' level. The productivity gaps relative to reference countries are particularly evident in industries such as manufacturing, construction, wholesale trade, and financial services. Smaller but still significant gaps are seen in professional services, public services, and arts and entertainment. The standout exception is the information and communication sector, where productivity growth in Israel's high-tech industry during the mid-2010s brought value added per hour worked in line with that of reference countries. The figure also allows for comparisons of value added per worker across sectors. Real estate is a notable outlier in all OECD countries, including Israel, where the high value added reflects elevated property prices rather than sector-specific productivity.

29 In single-digit classification according to the ISIC system. Figure 25 is based on national accounts derived from the production side, as opposed to Figures 23 and 24, which are based on the expenditure side. Accordingly, there is a slight difference in Israel's relative position in the various calculations.

Figure 25. Value added per hour worked in key industry sectors, Israel and other countries

USD, 2015 prices

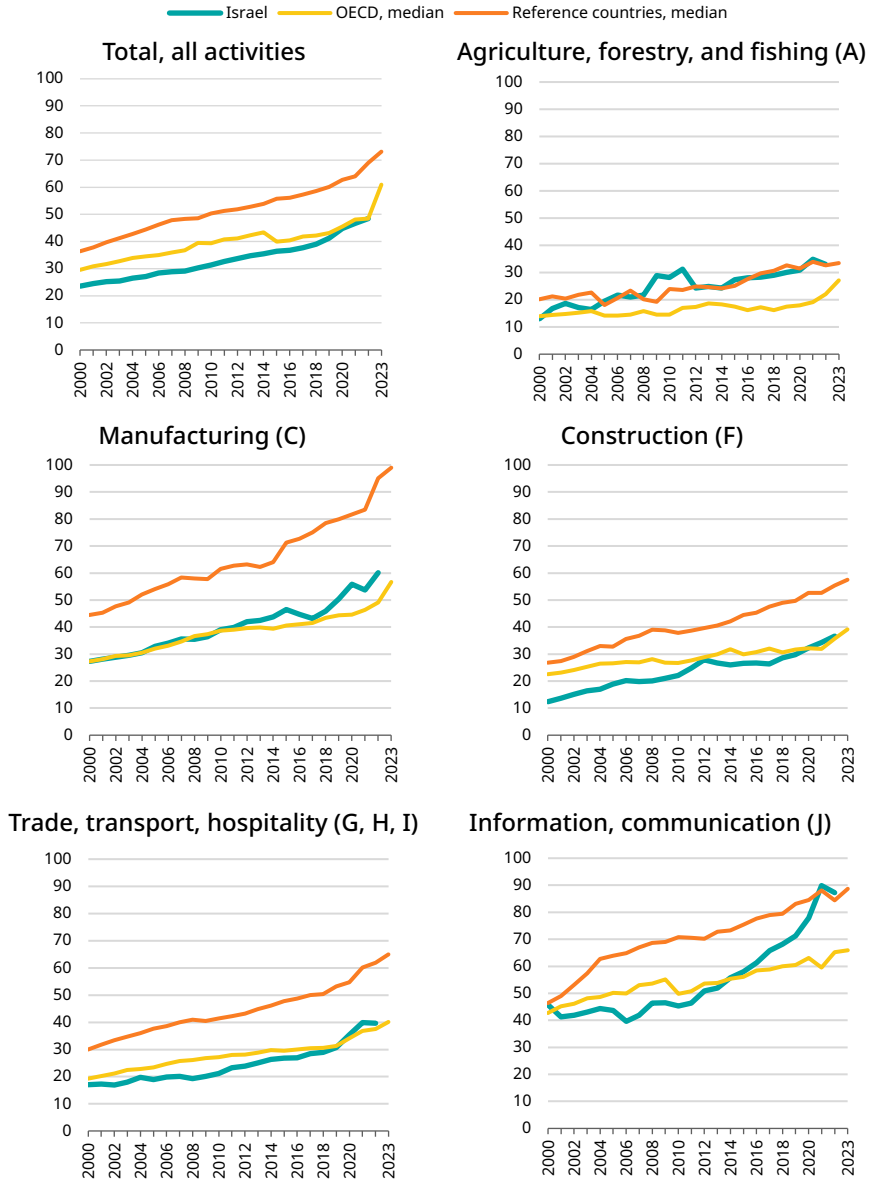
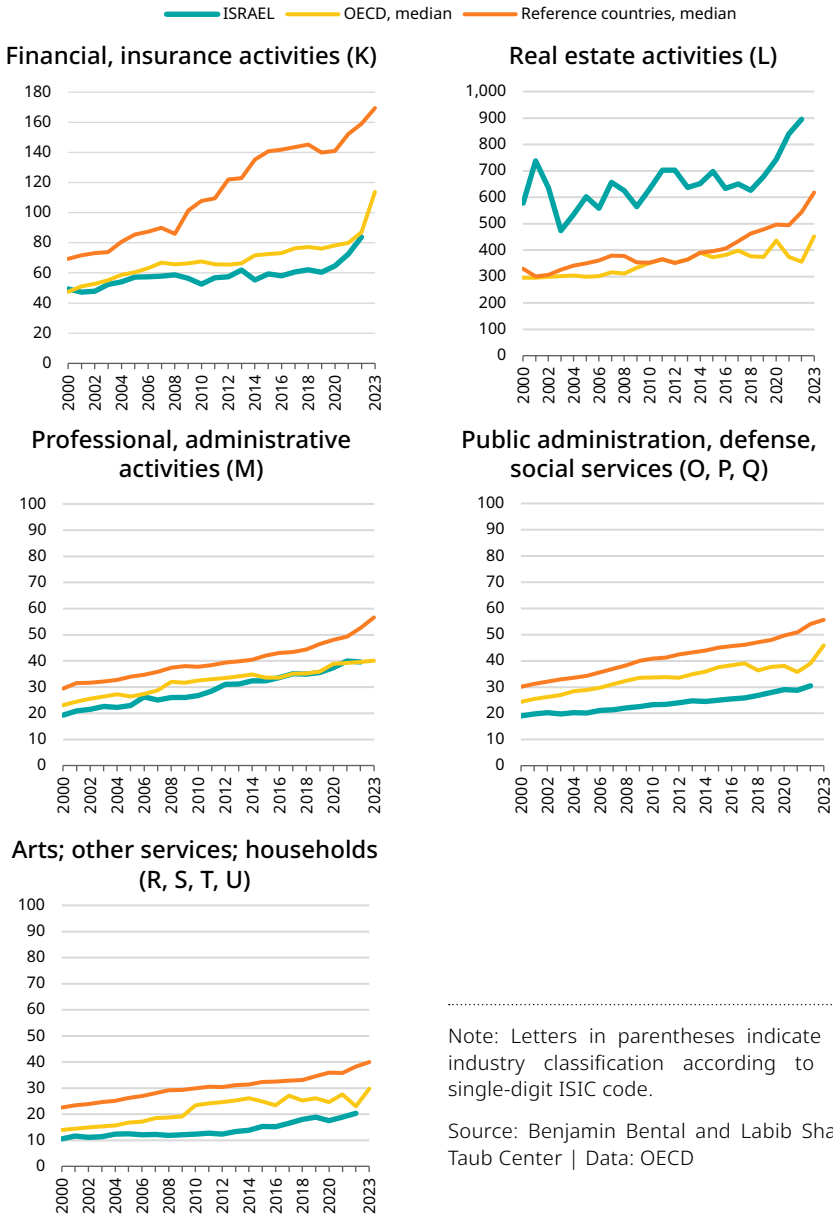


Figure 25 (continued). Value added per work hour in key industry sectors, Israel and other countries

USD, 2015 prices



Note: Letters in parentheses indicate the industry classification according to the single-digit ISIC code.

Source: Benjamin Bental and Labib Shami, Taub Center | Data: OECD

Summary

The war that has been ongoing in Israel since October 7, 2023, posed severe challenges to Israeli society and the country's economy. Thanks to responsible fiscal policies and reform measures implemented by Israeli governments since the severe crisis of 2002–2003, the economy was robust on the eve of the war, creating a *fiscal buffer* that allowed for financing heavy expenditures through capital raised in domestic and international markets. Nevertheless, the immediate need for funding and the sharp rise in the perceived risk level of Israel's economy in the eyes of investors have increased the interest rate on the debt. This creates a dangerous cycle: rising interest rates increase the debt, and higher debt further raises interest rates. To avoid a spiral that could get out of control while financing dramatically increased defense expenditures, the government must adopt appropriate fiscal policies. Significant convergence measures and substantial efficiency improvements are required to support a declining debt-to-GDP ratio. More importantly, policy measures and reforms similar to those enacted in the 2003 budget are needed to support economic growth. Training programs should be developed for populations with low labor productivity, particularly Haredi men, Arab men, and Arab women, and employment rates among Arab women and Haredi men must be significantly increased. Resources must be allocated toward the development of physical infrastructure in transportation and digitization, which offer very high returns. It is essential to ensure that the high-tech sector, Israel's growth engine, receives support, particularly for early-stage ventures, which are currently affected by the economy's high-risk level. All these measures will return the economy to the growth trajectory it was on prior to the war, increase the confidence of citizens and foreign investors in Israel's economy, and gradually reduce the debt-to-GDP ratio to pre-war levels. Only in this way can the State of Israel ensure the welfare of its citizens and instill in them the belief that, just as it successfully handled the Covid-19 crisis, it will also successfully navigate this crisis and future crises yet to come.

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