Chapter 2

Aggregate Activity: GDP and Employment

- Gross Domestic Product grew at a rapid 6.4 percent pace in 2022—on the heels of 8.6 percent growth in 2021—due to increases in private consumption, exports, and fixed capital formation.
- GDP exceeded its precrisis trend throughout the year, reflecting the resilience of the economy. The main contributors were exports of business services and of goods—supported by demand from abroad despite the global energy crisis—and residential construction. Private consumption and exports of tourism services dampened national output relative to the trend.
- Although private consumption increased rapidly in 2022, it did so from a relatively low base because it had been severely limited during the pandemic, particularly with regard to services. Therefore, its level remained below the precrisis trend and, for this reason, had a downward effect on GDP relative to the trend.
- Services exports remained the main growth engine in 2022 and goods exports also increased fairly rapidly, led by the computers and electronics industry and the chemicals industry. The trend changed direction in the second part of the year as exports of both services and goods declined.
- Private savings surged in 2020–2022 due to weak consumption and high private income relative to the precrisis levels of both, allowing excess savings of more than 10 percent of GDP to accumulate. As of 2022, the cumulative excess savings had not been drawn down.
- Employment returned to its precrisis rate and demand for labor surpassed its precrisis level by far. Employment growth outpaced GDP growth, causing labor productivity to fall to approximately the precrisis trend.
- Affected by the inflation rate and the tight labor market, nominal wages increased moderately and real wages fell. The GDP labor share declined, suggesting that the labor market was not the leading cause of the higher pace of inflation.
- The surplus in the current account of the balance of payments remained high at 3.9 percent of GDP, but dropped slightly due to higher fuel prices and an increase in the negative net tourism balance.

1. MAIN DEVELOPMENTS

GDP growth was brisk and the labor market was tight this year. The economy recovered almost fully from the COVID-19 crisis.

Gross Domestic Product increased rapidly in 2022, by 6.4 percent. Employment, participation, and job vacancy rates rose, nominal wages increased, the unemployment rate fell, and investments and exports grew vigorously and powered economic growth (Table 2.1). GDP surpassed its precrisis trend all year long.[1] These developments reflect the almost complete recovery of the economy from the COVID-19 crisis, which peaked in 2020 and waned from the middle of 2021 to early 2022. The recovery was manifested in rapid growth in the consumption of services, the level of which approached its precrisis trend. Residual effects on inbound and outbound tourism remained, but there was little harm left to other branches. Concurrently, the inflation rate began to climb and, accordingly, the Bank of Israel interest rate was raised after a decade of near-zero interest. All told, these factors are indicative of a strong domestic demand environment.

GDP surpassed its precrisis trend from late 2021 onward.

One reason for the vigorous growth in 2022 was the continued recovery from the effects of the pandemic crisis. GDP remained below the precrisis trend for most of 2021, but grew rapidly in the fourth quarter of that year, to a level that exceeded the precrisis trend. Once GDP attained this high level, its growth rate slowed to 2.6 percent in the course of 2022 (fourth quarter of 2021 to fourth quarter of 2022) (Figure 2.2).

Rapid growth in exports of goods and services contributed to the high level of GDP.

The factor that allowed GDP to exceed its precrisis trend throughout 2022 was the strength of exports, despite turbulence abroad that slowed the growth rate of world trade. Exports grew both in high-tech services and in goods, the latter expanding very rapidly in recent years for reasons including growing demand for the chemicals and high-tech products that Israel exports and a decline in the supply of chemicals from Russia.

The labor market was tight in 2022, but wages do not appear to have been a leadingfactor in the increase in inflation.

The labor market remained tight in 2022. Demand for labor began to increase in 2021, continued to do so in the reviewed year, and ended the year with the job vacancy rate[2] at a record level. The growth rates of employment and labor input outpaced GDP growth in 2022, causing labor productivity to decline.[3] The job vacancy rate was only slightly lower at the end of the year than at the beginning, notwithstanding the increase in the employment rate and the decline in labor productivity during the year. The brisk demand for labor despite the decline in productivity attests to strong demand for consumption as well as for investment and exports. In nominal terms, GDP grew more quickly than did work hours and nominal wages due to the high inflation rate. Thus, the GDP labor share—the cost of employing workers as a share of GDP—fell.

[1] In this chapter, the "precrisis growth rate" is the geometric mean growth rate of this indicator between 2014 and 2019. The "precrisis trend" is the level this indicator would have attained if it had continued to grow at the precrisis growth rate from 2019–2022.

[2] The number of vacant positions per 100 persons employed.

[3] Labor productivity = GDP per hour worked = GDP in constant 2015 prices divided by national labor input.

It appears, therefore, that despite the increase in nominal wages in 2022, the increase in demand and its corollary inflationary pressures were not driven by wage pressure.

Fixed capital formation, especially in residential construction, grew rapidly this year.

A decrease in the GDP labor share causes the return on capital to rise, which in turn increases the incentive to invest. Indeed, fixed capital formation continued to grow more quickly in 2022 than before the pandemic. The increase in investment, far outpacing that in most advanced economies, was one of the main components of Israel's GDP growth. In particular, it stimulated the ongoing and expanding investment in residential construction. (For elaboration, see Chapter 8 in this Report.)

Average labor productivity growth in 2020–2022 outpaced its prepandemic rate.

Between 2020 and 2022, starting with the onset of the pandemic crisis, average annual productivity increased by 2.2 percent, a faster pace than before the crisis (1.6 percent). The technological changes that were introduced during the pandemic may have contributed to the increase in productivity. However, a protracted and sustainable increase in productivity is not measured over only three years. Furthermore, some of these changes may not have found full expression yet because the crisis forced the entire economy to cope with extensive shocks, stimulating demand for improvements in technology and working methods. The growing openness to online shopping, for example, creates supply and demand opportunities for consumers and businesses.

The economy generated excess savings due to the COVID-19 crisis.

Sluggish consumption due to pandemic restrictions, and government transfer payments that aimed to cope with the crisis, induced a steep increase in the savings rate between 2020 and 2022. The excess savings, their use, and the timing of their use may have strong macroeconomic effects. As of 2022, the accumulation of excess savings appeared to be continuing.

The Israeli economy was in better condition in 2022 than those of most OECD countries, partly because the energy crisis had less of an impact in Israel.

In 2022, the Israeli economy was in a much better state than that of most other advanced economies (Figure 2.1). Israel's GDP grew more rapidly than before the crisis, which was unusual among the advanced economies (Figure 2.2). One reason for this was the differential damage that Russia's invasion of Ukraine in February 2022 inflicted. The sanctions that were imposed against Russia due to the war led to a decline in the supply of fuels and natural gas in global markets, triggering an energy crisis that affected Israel less than it did the United States and the European Union. (The reasons for this are discussed in Section 4 of Chapter 1 of this report—"The Energy Crisis in Europe and the Israeli Energy Market's Robustness".) The crisis affected the Israeli economy in several ways. Fuel prices rose steeply and were passed through to higher prices of motor-vehicle fuels and, to a smaller extent, higher electricity prices. In contrast, the sanctions reduced the supply of other goods that Russia exports, stimulating demand for Israel's chemical exports and aided the rapid growth of Israeli exports overall.

Table 2.1
Selected indicators of economic activity, 1995–2022

(annual change, percent)

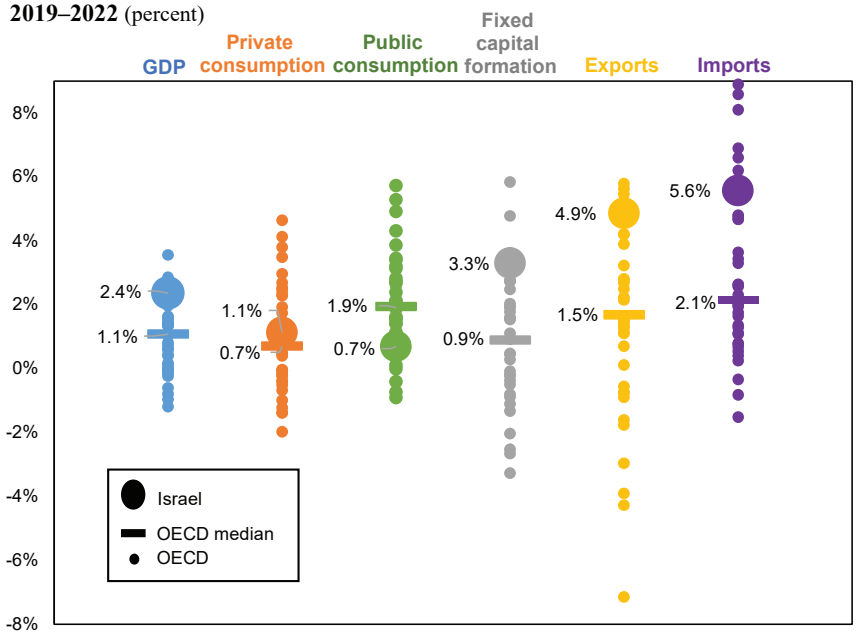
	1995–2017	2018	2019	2020	2021	2022	Average annual rate of change, 2019–2022
GDP	3.9	4.1	4.2	-1.9	8.6	6.4	4.3
Per capita GDP	1.8	2.1	2.2	-3.6	6.8	4.4	2.4
Exports excluding diamonds and startups	6.2	5.5	5.1	0.2	11.8	8.9	6.9
Domestic uses	3.6	4.3	4.1	-3.1	9.8	7.4	4.9
Unemployment rate (ages 25–64, level)	7.5	3.5	3.4	3.8	4.6	3.3	-
Real wage per employee post	1.1	2.7	2.0	7.5	0.7	-1.5	2.2
Current account surplus (percent of GDP)	1.1	3.0	3.7	5.5	4.4	3.9	-
Real effective exchange rate[a]	-0.3[b]	2.1	-2.5	-3.1	-3.9	-0.9	-2.6

[a] An increase means depreciation.

[b] The figure relates to the years 1999–2017.

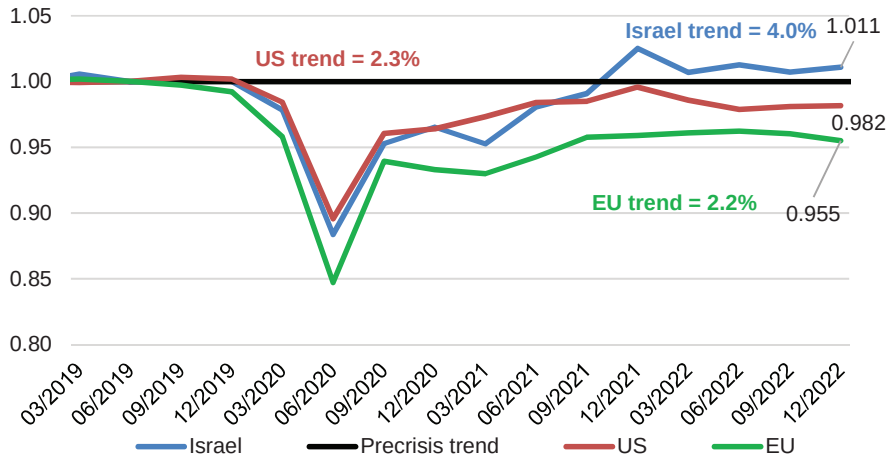
SOURCE: Based on Central Bureau of Statistics.

Figure 2.1
Growth of GDP and its Components (per capita per year), Israel and OECD[a,b], 2019–2022 (percent)



[a] In contrast with Table 1, this figure shows the average per capita change of various variables between 2019 and 2022.
[b] The figure includes the 37 OECD countries for which there are data in the organization's systems. Data on Israel for public consumption, investment, exports, and imports are adjusted to the OECD definitions for this figure.
SOURCE: Based on OECD and Central Bureau of Statistics.

Figure 2.2
GDP Relative to Precrisis Trend - Israel, US, and EU, 2020–2022 (1 = precrisis trend, fixed prices, quarterly, seasonally adjusted)



SOURCE: Central Bureau of Statistics and OECD.

2. AGGREGATE ACTIVITY

2022 was a year of rapid growth, chiefly supported by surging private consumption and investments, as well as exports.

Israel experienced strong growth (6.4 percent) in 2022, powered mainly by rapid increases in private consumption, investments, and exports (Table 2.2). The annual average GDP growth rate between 2020 and 2022 was 4.3 percent, slightly above the precrisis pace, and GDP growth surpassed its precrisis trend from the last quarter of 2021 onward (Figure 2.3). The main components that exceeded their precrisis trends in 2020–2022, thus contributing to the high GDP level, were exports of services (excluding tourism) and goods. In contrast, private consumption of nondurables, exports of tourism services, and public consumption were below their precrisis trends, pulling the GDP growth rate down. It is also evident that the positive and negative contributions of the various components have been declining over time, as one would expect during the recovery from the pandemic crisis and the return to normal levels of performance.

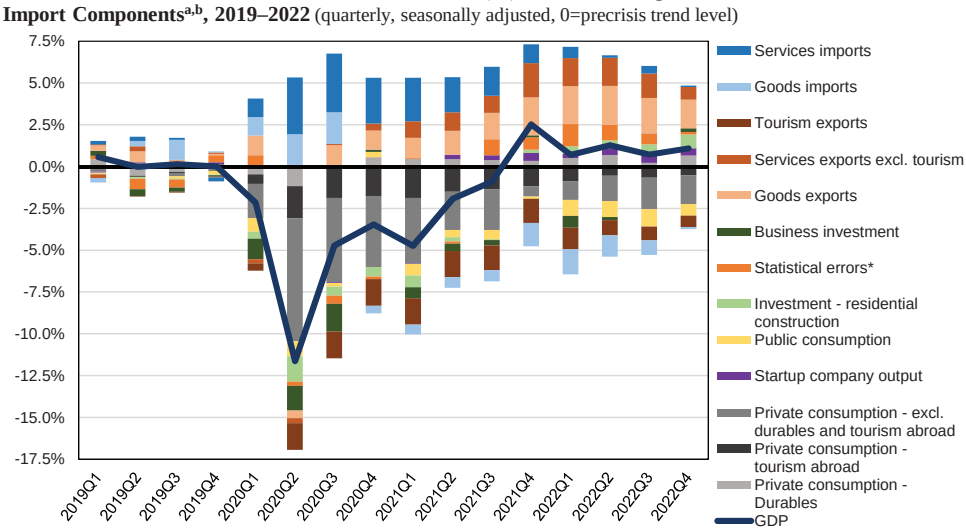
Table 2.2
Sources and uses, 1995–2022

(annual change, percent)

	1995–2017	2018	2019	2020	2021	2022	Average annual rate of change, 2019–2022	Annual trend, 2014–2019
GDP	3.9	4.1	4.2	-1.9	8.6	6.4	4.3	3.9
Imports (excluding ships, aircraft, diamonds, and defense imports)	4.7	5.9	2.7	-7.2	18.2	12.0	7.1	5.0
Domestic uses	3.6	4.3	4.1	-3.1	9.8	7.4	4.6	4.5
of which: Private consumption	4.1	3.6	4.0	-7.9	11.1	7.7	3.3	4.2
Fixed capital formation (excluding ships and aircraft)	2.9	6.6	3.6	-2.6	12.2	9.6	6.2	4.7
Investment in inventory (excluding diamonds and startups, percent of GDP)	0.4	0.2	0.1	0.1	0.0	0.3	-	-
Output of startup companies	13.0	10.6	29.6	12.3	33.4	23.0	22.6	17.6
Public consumption (excluding defense imports)	2.6	4.0	3.0	2.6	3.7	1.0	2.4	3.7
Exports (excluding diamonds and startups)	6.2	5.5	5.1	0.2	11.8	8.9	6.9	3.7

SOURCE: Based on Central Bureau of Statistics.

Figure 2.3
Deviation of the GDP Level from the Precrisis Trend (%) and Accounting Contribution of the Uses and Import Components[a,b], 2019–2022 (quarterly, seasonally adjusted, 0=precrisis trend level)



[a] When imports are lower than the trend, the contribution to GDP is positive.
[b] The components of uses and imports do not include diamonds, defense imports, ships and aircraft, or the sale of startup companies.
* Adjustments for components that are not included and for the aggregation of seasonally adjusted data with different seasonality.
SOURCE: Based on Central Bureau of Statistics.

a. Uses

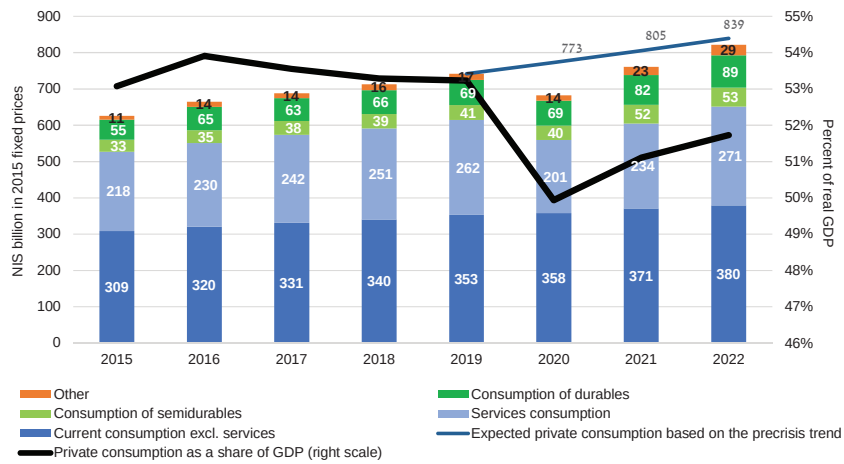
(1) Private consumption

Private consumption increased rapidly in 2022 but from a relatively low starting point due to the effects of COVID-19.

Private consumption increased by 7.7 percent in 2022. Notwithstanding this rapid growth, the annual average rate of increase during the entire COVID-19 period (2020–2022) (3.3 percent) was below the precrisis level (4.2 percent), leaving consumption in 2022 below the precrisis trend (Figure 2.4). Private consumption is composed of current consumption (including services—80 percent of the total) and consumption

of durable goods (10 percent) and semidurable goods (7 percent).[4] Consumption of durable goods (excluding motor vehicles)[5] and of semidurable goods[6] grew slowly in 2022, for two main reasons. First, they are relatively sensitive to interest rates[7], which increased during 2022. Second, consumption of durable and semidurable goods was only slightly limited during the COVID-19 period, if at all, and therefore showed only a small decline in 2020 and increased sharply in 2021. This steep increase apparently caused most components of this area of consumption to slow in 2022, since most durable goods purchased in one year remain in use the next year. Therefore, a rapid increase in purchases of durable and semidurable goods in one year is likely to result in slower growth in the succeeding year. In contrast, current consumption grew rapidly in 2022, powered by a swift increase in consumption of services (Table 2.3).

Figure 2.4
Real Private Consumption by Main Component*, Trend and As a Share of GDP, 2015–2022



* Durable goods includes furniture, jewelry and watches, electrical and other equipment, and vehicles. Semidurables includes clothing and footwear. Current consumption excluding services includes housing, fuel, electricity and water, food and beverages, and tobacco. Services consumption includes transportation, restaurants and hotels, education, healthcare, arts entertainment and leisure, communications, and social work activities. Other includes Israelis' consumption abroad minus nonresidents' consumption in Israel, plus expenditure on private nonprofits' consumption.

SOURCE: Central Bureau of Statistics.

[4] There are two additional small components: private consumption expenditure by nonprofit associations and net tourism consumption (consumption by Israelis abroad minus nonresidents' consumption in Israel). Together, they added up to 3 percent of private consumption in 2022.

[5] Vehicle purchases increased sharply at the end of 2022, apparently due to purchases being brought forward from the beginning of 2023 to avoid a tax increase on these goods at the beginning of the year. Consumption of durable goods net of motor vehicles declined in 2022.

[6] Semidurable goods are those that can be used repeatedly or continually over a period of longer than one year (clothing and footwear, home textiles, books, entertainment and leisure products, etc.). Their lifespan is often shorter and their prices are considerably lower than those of durable goods (such as vehicles, jewelry, and furniture). https://www.cbs.gov.il/he/subject/Pages/הוצאה-לצריכה-פרטית-הגדרות-והסברים.aspx

[7] See, for example, C. Erceg and A. Levin (2006). "Optimal Monetary Policy with Durable Consumption Goods." *Journal of Monetary Economics* 53(7): 1341–1359; T. Monacell (2010). "New Keynesian Models, Durable Goods, and Collateral Constraints." *Journal of Monetary Economics* 56(2): 242–254.

Table 2.3
Domestic demand: Background conditions and main indicators of its development, 1995–2022

(annual change, percent)

	1995–2017	2018	2019	2020	2021	2022	Average annual rate of change, 2019–2022	Annual trend, 2014–2019
Private consumption	4.1	3.6	4.0	-7.9	11.1	7.7	3.3	4.2
***of which*: Current consumption**	3.9	3.4	4.0	-8.6	10.4	7.6	2.7	4.2
of which: Semidurables consumption	5.0	4.0	4.4	-3.7	30.1	2.4	8.6	5.0
Services consumption	4.0	3.4	4.3	-23.1	16.3	15.9	1.2	4.7
Durable goods consumption	6.0	5.3	4.3	-0.6	19.4	9.0	8.9	4.8
Gross private disposable income from all sources	3.7	6.8	5.4	5.5	3.0	3.3	3.2	5.0
Credit to households	6.9[a]	5.1	5.2	4.4	8.4	14.8	9.1	5.8
of which: Nonhousing credit	3.5[a]	3.0	2.3	-1.9	3.4	11.9	4.3	4.6
Real 1-year interest rate (government bonds, level)	2.6	-0.8	-0.8	0.1	-1.9	-1.4	-	-
Value of the public's financial assets portfolio	10.5	4.6	6.3	5.1	15.0	3.9	7.9	4.8
Private savings	3.3	13.3	8.3	31.4	-7.9	-3.4	5.3	6.5
Consumer Confidence Index	3.8[b]	2.9	-0.4	-14.0	12.1	-4.7	-2.8	2.3
Fixed capital formation (excluding ships and aircraft)	2.9	6.6	3.6	-2.6	12.2	9.6	6.2	4.7
Credit to the business sector	4.1[a]	5.5	3.6	2.2	7.9	13.9	7.9	3.7
Real 10-year interest rate (government bonds, level)	3.4	0.5	0.0	-0.5	-0.8	0.1	-	-
Purchasing Managers Index (level)	50.9[b]	53.3	51.3	48.5	52.6	51.1	-	-
Public consumption excluding defense imports	2.6	4.0	3.0	2.6	3.7	1.0	2.4	3.7
Total taxes[c]	32.0	30.5	29.8	29.4	32.1	32.8	-	-
General government budget deficit[c]	4.7	4.4	4.6	11.5	5.5	1.6	-	-

[a] The figure relates to the years 2005–2017.

[b] The figure relates to the years 2002–2017.

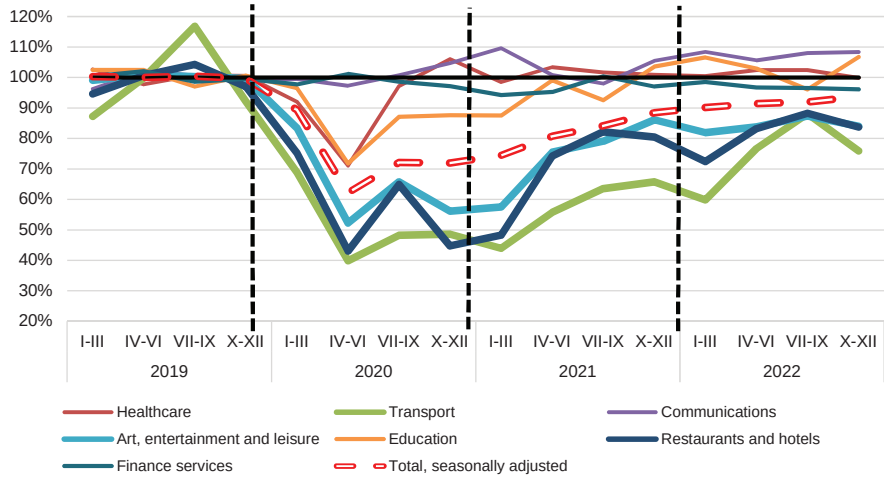
[c] Level, percent of GDP.

SOURCE: Based on Central Bureau of Statistics, and the Purchasing Managers Indices compiled by Bank Hapoalim and the Purchasing Managers Association.

Consumption of services (e.g., education, tourism, restaurants), which was badly affected by the pandemic, grew rapidly in 2022.

Consumption of services was the main contributor to the strong growth of private consumption in 2022, as well as to its negative growth in 2020. Comprised of education, healthcare, tourism, and communications, this class of consumption accounted for 35 percent of all annual private consumption in the past three decades. In 2020, due to the COVID-19 crisis and the many activity restrictions in high-contact ("proximity") service industries imposed due to the pandemic, it contracted by 25 percent. It began to recover in the middle of 2021 as the restrictions were lifted (Figure 2.4). The quarterly paths of growth in the services show the strong connection between consumption of various services and the pandemic's effects (Figure 2.5). Consumption of services in proximity industries (transportation services, accommodation and food, and art and recreation) declined steeply as the pandemic struck in 2020 and partially rebounded in 2021. Consumption of these services fell again in early 2022, apparently due to the Omicron wave of COVID-19, and surpassed the precrisis level only in the third quarter of the year. In contrast to proximity services, consumption of communication services, which attracted growing demand and faced no restrictions during the pandemic, grew in the past few years at a pace resembling, if not exceeding, that of the precrisis era.

Figure 2.5
Private Consumption of Services, 2019–2022[1] (fixed prices, not seasonally adjusted[2], 100=path according to the 2018–19 trend)



[1] The thickness of the line represents that component's relative share of average services consumption in 2019. A number of small components are not shown.
[2] The total is seasonally adjusted. All the other data are not.
SOURCE: Based on Central Bureau of Statistics.

Consumption of services remained below its prepandemic trend.

Clearly, then, it was the pandemic and its attendant restrictions that limited the supply of proximity services. Even though consumption of these services expanded when the restrictions were lifted, its level at the end of 2022 still remained far below the precrisis trend. In 2022 alone, the level was 10 percent below the trend, a gap of NIS 29 billion.[8] The ongoing difference between the level of private consumption and its trend contributed to a significant increase in excess private savings, discussed in Box 1 in this chapter below.

The possible reasons for the consumption of services remaining below the precrisis trend may be divided into temporary and structural. The temporary reasons on the demand side included a change in consumers' preferences resulting directly from the pandemic crisis (e.g., apprehension in regard to consuming proximity services); the increase in inflation, which may deter consumption altogether, particularly of items that people did without for a lengthy period of time; and the increase in interest rates, which incentivized savings. On the supply side, the temporary reasons were changes in occupation or industry due to restrictions on the provision of proximity services, particularly because some of the restrictions were applied for a two-year period; and partial switching to other employment that involves less service. The structural reasons include changes in preferences as a result of finding other areas of interest due to the crisis and its attendant restrictions, and changes in life and work settings that affect the public's consumption (such as the mass transition to working from home at least some of the time).

8 In constant 2015 prices.

Many factors, some temporary and others structural, may explain the low level of services consumption in 2022.

If the level of service consumption was affected mainly by the temporary factors, one would expect it to return to its precrisis trend. However, if individuals' preferences and/or settings of life underwent long-term changes, the service consumption trend probably changed as well, meaning that the growth rate of consumption in coming years is likely to be lower than before the crisis. For the time being, it is hard to know which of these factors actually had an effect, but it is clear that it may be a long time before supply increases broadly, particularly if skilled workers left the services industries and need to be lured back. Be this as it may, the mere fact that consumption in 2022 was below its precrisis trend does not make it possible to determine which of the aforementioned factors explains this outcome, because some of the restrictions remained in effect during much of the year.

(2) Public consumption

Public consumption grew slowly in 2022, and did not apply fiscal pressure on GDP growth.

Public consumption (excluding defense imports) increased by 1.0 percent in 2022 and by an average of 2.4 percent between 2020 and 2022, below the precrisis growth rate. Civilian purchases and civilian and defense wage expenditure crept up in 2022, and defense procurements declined. Tax revenues increased rapidly even in the previous year, bringing the general-government deficit to an especially low rate of 1.6 percent of GDP—without changes in tax rates. By implication, public consumption and the tax system did not create a fiscal push toward faster growth, and the automatic stabilizers—growth in tax revenues and a decline in transfer payments as the pandemic crisis waned—acted countercyclically to reduce the deficit and dampen demand. The increase in public savings (Table 2.6) supported continued growth in domestic investment and preservation of the current-account surplus despite the decrease in private savings as a share of national income.[9]

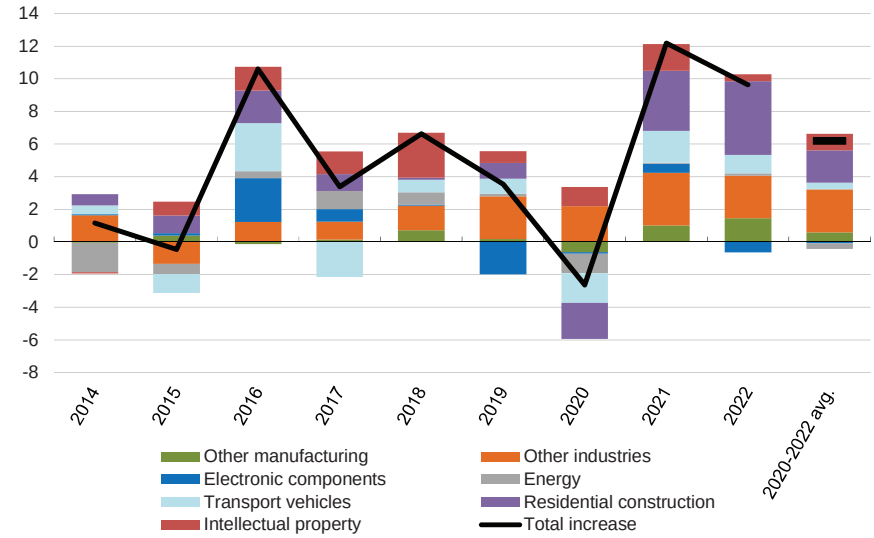
(3) Investment

Fixed capital formation—foremost in construction and particularly in residential construction—grew rapidly.

Fixed capital formation (excluding ships and aircraft) increased by 9.6 percent in 2022—one of the two main uses that grew and surpassed their precrisis trend, thus helping to propel output to a level above the trend. The main component of investment that increased was construction, which has accounted for slightly more than half of domestic investment for many years. In 2022, some 70 percent of the increase in investment occurred in the construction industry. Both components of construction investment—residential and nonresidential—increased rapidly, but the increase in residential construction investment accelerated in 2021–2022, to a 15 percent annual pace during those two years (Figure 2.6).

[9] For elaboration, see Chapter 6 in this Report.

Figure 2.6
Fixed Capital Formation (excl. ships and aircraft), Total Increase and Contribution of Components, 2014–2022 (percentage points)



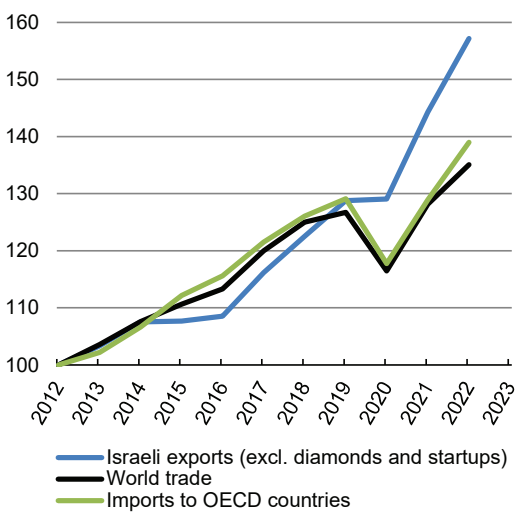
SOURCE: Based on Central Bureau of Statistics.

(4) Exports

Exports continued to grow rapidly in 2022, powered by both high-tech services and goods.

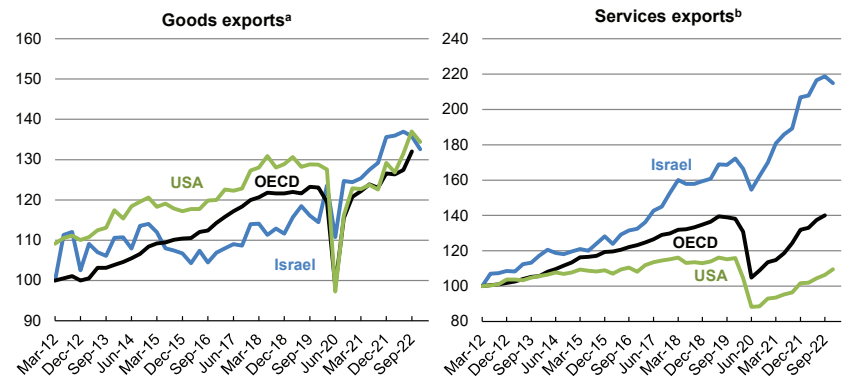
Exports continued to grow rapidly, far beyond the growth rate of world trade and of OECD imports (Figure 2.7). Exports (excluding diamonds and startups) increased at an average rate of 6.9 percent in 2020–2022, surpassing the 3.7 percent trend. The main contributor to the vigorous growth and to this differential was exports of services and, particularly, surging growth in high-tech service exports. From the beginning of 2021 onward, goods exports (excluding diamonds) also grew vigorously and, in a departure from the past, exceeded the OECD average. Services exports, however, declined in the last quarter of 2022 and goods exports fell in the last two quarters of the year (Figure 2.8).

Figure 2.7
World Trade, OECD Imports, and Israeli Exports, 2012–2022 (quantitative index, 2012=100)



SOURCE: Based on Central Bureau of Statistics and OECD.

Figure 2.8
Goods and Services Exports from Israel, the US, and OECD Countries, 2012–2022 (quantitative index: 2021:Q1=100, OECD until 2022:Q3)



[a] In Israel - excluding diamonds.
[b] In Israel - excluding the sales of startup companies.
SOURCE: Based on OECD and Central Bureau of Statistics.

Growth of high-tech and chemical exports led the increase in goods exports in 2021–2022.

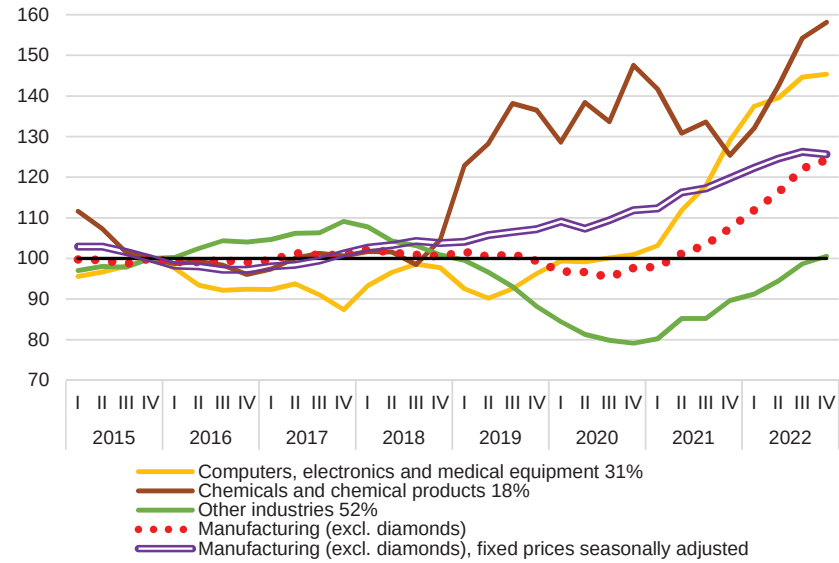
Goods exports (excluding diamonds) grew by 4.8 percent, slightly slower than the 2021 pace after years of sluggish growth. Several factors contributed to the increases in the past two years. One was an increase in chemicals exports that began back in 2019 due to stronger global demand for fertilizers (Figure 2.9). In the middle of 2022, due to the sanctions against Russia following its invasion of Ukraine, deliveries of chemicals from Russia contracted, forcing chemical prices up and helping Israel's chemical exports to rebound during the year. The second change was a steep increase in exports of high-tech goods that began in 2021, much of it originating in a US$ 3 billion increase in defense exports in 2021.[10] As a result of these changes, real exports of goods, which were almost unchanged between 2015 and 2021, increased considerably in 2021–2022. In the second half of 2022, however, they slowed at a pace that was similar to the downturn in global goods exports.

Exports of services, particularly high-tech services, have been one of the main sources of economic growth in recent years. Their expansion is seriously constrained by a shortage of trained personnel.

Services exports (excluding tourism) have been one of Israel's main growth engines in recent years—growing rapidly before the pandemic crisis (7.8 percent per year between 2014 and 2019) and not slowing even after the crisis began. Exports of tourism services plummeted due to the crisis, but growth in exports of high-tech services accelerated. The steep increase in demand for high-tech services, coupled with the negligible impact of the crisis on this sector's activity, pushed the growth rate of its activity and exports beyond the precrisis trend. The heightened activity in this industry, together with the slowing of activity in other industries, increased high-tech services' share of exports and output, and re-emphasized their importance

[10] A nominal increase from US$ 8.3 billion in 2020 to US$ 11.3 billion in 2021. Because this increase is tracked in current US dollars, it cannot be directly compared with the data reported in the figure. However, because defense export prices declined from 2019 to 2022, the gap between their real value and their nominal value is probably small. Source of data: the Defense Exports Division (SIBAT) of the Ministry of Defense.

Figure 2.9
Quantitative Exports of the Manufacturing Industries (excl. diamonds), 2015–2022 (fixed prices, four-quarter moving average, index: 2015=100)*



* Fixed dollar prices according to the Fisher index. Seasonally adjusted real manufacturing data are in shekels and taken from the national accounts for comparative purposes. The legend includes the name of the component and its share of manufacturing exports (excluding diamonds) in 2015.

SOURCE: Based on Central Bureau of Statistics.

as an engine of economic growth.[11] The upward path continued in 2022. Although it was somewhat less rapid than in the previous two years, and with a downturn in the last quarter, it exceeded the precrisis trend during the year as a whole. It is difficult to determine whether the strong global demand for high-tech services is permanent and whether the domestic sector will be able to continue growing and meeting the surging demand. As there is currently no significant demand constraint on high-tech services, their sustainable growth will require dealing with constraints to the expansion of supply—mainly, it seems, the available trained personnel.

Exports of shipping and transport services continued to grow rapidly in 2022.

Beyond high-tech exports, which have accounted for the greater part of services exports, exports of shipping and transport services have increased since the beginning of the pandemic crisis. Demand for maritime shipping services grew rapidly in 2021 and shipping prices skyrocketed. (For elaboration, see Box 1 in Chapter 2 of the Bank of Israel *Annual Report* for 2021.) Shipping prices declined over the course of 2022, but remained much higher than their precrisis level on average, as did exports of shipping services. Shipping services exports increased by 220 percent relative to their 2019 level, and accounted for a much larger share of Israel's exports (Figure 2.10). Due to the extent of activity in shipping and transportation services, the net exports of this industry were positive in 2021–2022, unlike the situation until 2020. The

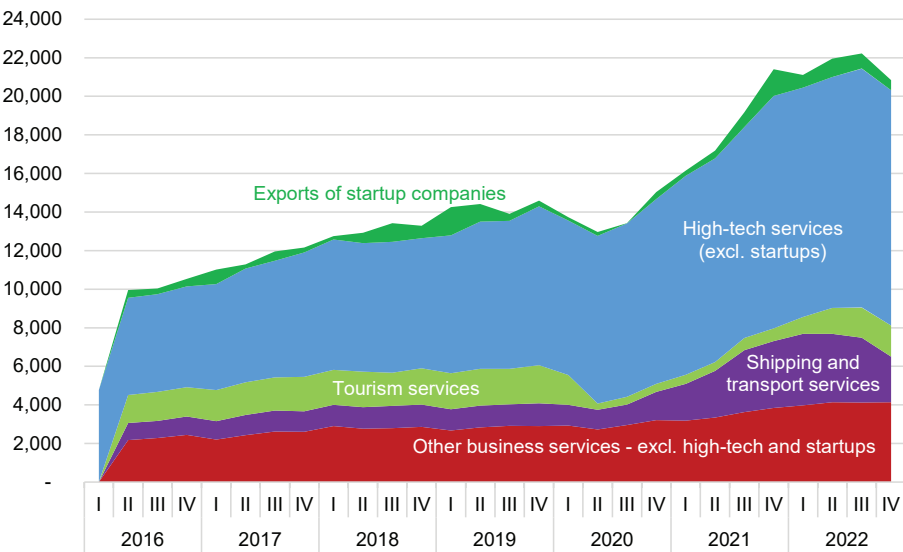
[11] High-tech output accounted for 16.3 percent of GDP in 2022—10.8 percent services and 5.5 percent goods. The sector's output growth was 25 percent of total GDP growth between 2020 and 2022.

industry's net exports increased by 20 percent in 2022 and came to US$ 3.2 billion, similar to its total exports in 2019.

The tourism industry remained the most badly affected by the pandemic crisis.

Among the business service industries that took a beating during the COVID-19 crisis, tourism was plainly the most badly harmed. Inbound tourism fell by 90 percent between 2019 and 2021 and tourism services exports declined at a similar pace. When the economies opened up in 2022, inbound tourism rebounded to 60 percent of its precrisis level, as did real consumption by tourists in Israel (exports of tourism services).[12] Real consumption abroad by Israelis and Israelis' departures to destinations abroad—outbound tourism—posted stronger recoveries, to 86 percent and 94 percent of their precrisis levels, respectively. By the end of 2022, tourists' consumption in Israel reached 75 percent of its precrisis level and Israelis' consumption abroad surpassed the precrisis level. Accordingly, the tourism industry is gaining strength but is still recovering from its bout with COVID-19.

Figure 2.10
Services Exports, 2016–2022 (quarterly, seasonally adjusted, US$ million)



SOURCE: Based on Central Bureau of Statistics.

b. Imports

Imports continued to grow even more vigorously than exports in 2022.

Import growth outpaced export growth in 2022, and on average between 2020 and 2022. The main determinants of the increase occurred in business services, including computer services, marketing services, and advertising and sales services; in raw materials for manufacturing; and in the faster recovery of outbound tourism than of inbound tourism.

[12] This export line contracted from 1.6 percent of GDP in 2019 to 0.9 percent of GDP in 2022.

3. MACROECONOMIC DEVELOPMENTS IN THE LABOR MARKET

The labor market remained tight in 2022, with low unemployment rates and high participation and employment rates.

The labor market remained tight in 2022, with a very low unemployment rate, a high employment rate, and a continued increase in the participation rate (Figure 2.11 and Table 2.5). In all these respects, the labor market in 2022 strongly resembled that preceding the pandemic crisis, attesting to its elasticity and resilience. In the first half of 2022, the unemployment rate fell in tandem with increases in the employment and participation rates. In the second half of the year, the unemployment rate rose in parallel with a downturn in the employment and participation rates (in the primary working-age cohorts), leaving all three above their prepandemic levels (Figure 2.11). High participation was the source of some of the increase in both employment and unemployment. That is, even though the unemployment rate edged upward in the last quarter of 2022, the state of the labor market in terms of employment was better than it had been before the crisis.

Demand for labor remained strong, exceeding its precrisis trend.

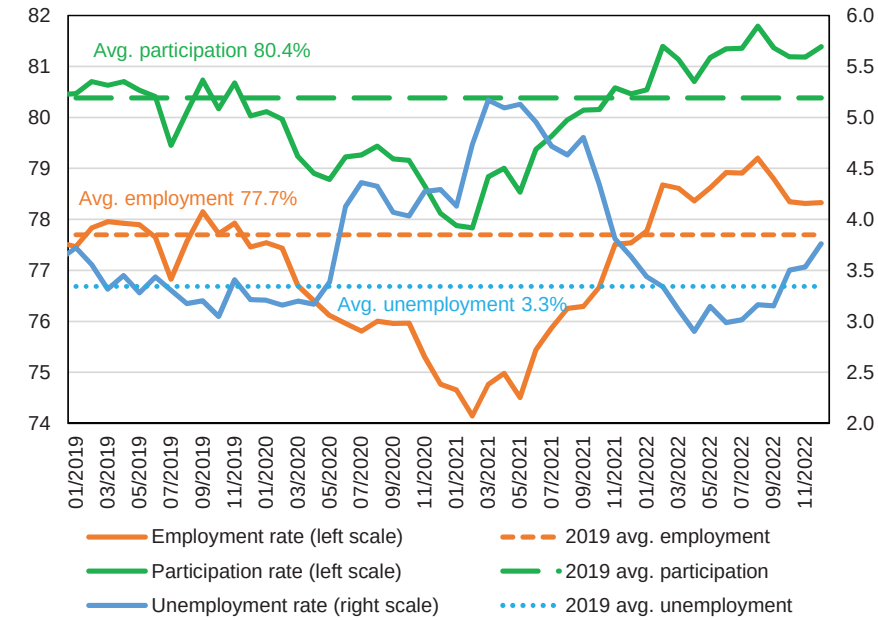
However, several phenomena typical of recent years are different from the previous situation, foremost the brisk and ongoing demand for labor—which was higher than the prepandemic trend. The job vacancy rate and the number of vacant positions increased in 2022 relative to their high levels in 2021 (Figure 2.5). The rates did decline somewhat toward the end of the year, but even then remained higher than the previous year and prior to the pandemic. This high demand encompassed many industries. The job vacancy rate in high tech also declined during the year, but resembled the precrisis situation at year's end. (For more information, see Chapter 1 in this Report.)

Nominal wages rose less than inflation, causing real wages to decline.

The second phenomenon that distinguishes the past few years from the precrisis era is inflation and its effect on wages. This may, of course, be a single combined phenomenon because inflation erodes real wages and incentivizes demands for wage increases, even as strong demand for labor, and the resulting wage increases, motivate businesses to raise prices (Figure 2.12). Wage increases may also generate greater demand for private consumption on the part of those who receive them. However, despite the inflation, the average nominal wage per employee post increased by only 2.9 percent in 2022, less than the precrisis rate (Table 2.5). What this means is that real wages fell by 1.5 percent in 2022, compared with an average annual increase of 2.6 percent before the crisis. It follows that the main impact of inflation on wages in 2022 was the decrease in real wages. While this transmission channel may create pressure for future wage increases, it does not generate direct and immediate demand pressures. At the same time, the GDP labor share fell by 2.2 percent, so that the increase in GDP[13] was routed more to an improvement in business profitability than to employees' income. On final reckoning, it appears that wages did not apply direct upward pressure on inflation in 2022 (Table 2.4).

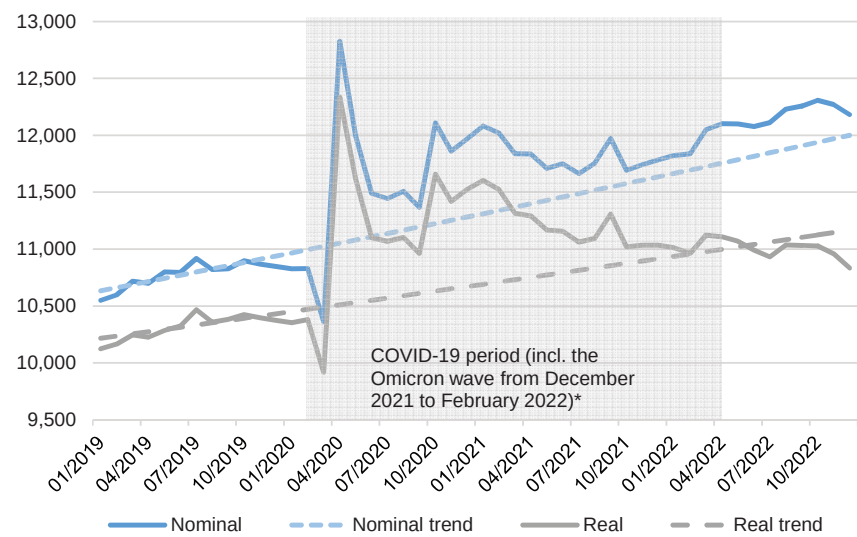
[13] GDP is composed of uses of sources minus imports. Therefore, the increase in GDP comes after subtracting the cost of imported raw materials, particularly the increases in their prices in 2022.

Figure 2.11
Labor Force Participation, Employment, and Unemployment Rates, 2019–2022 (aged 25–64, percent, not adjusted to COVID-19 definitions)



SOURCE: Based on Central Bureau of Statistics.

Figure 2.12
Average Wage Per Employee Post, 2019–2022 (NIS per month, seasonally adjusted, 2018-19 trend)



* Changes in the average wage during the COVID-19 period were greatly affected by temporary changes in the composition of employees in the economy, which were reflected in an increase in the average wage.

SOURCE: Based on Central Bureau of Statistics.

Table 2.4
The supply of gross domestic and business sector product, 1995–2022

(annual change, percent)

	1995–2017	2018	2019	2020	2021	2022	Average annual rate of change, 2019–2022	Annual trend, 2014–2019
Gross Domestic Product	3.9	4.1	4.2	-1.9	8.6	6.4	4.3	3.9
of which : Business sector product	4.3	4.5	4.8	-2.4	10.3	7.8	5.1	4.3
Output of public services	2.1	2.7	1.8	-2.6	5.1	2.7	1.7	2.6
Stock of physical capital	4.3	3.7	4.0	3.9	3.4	3.9	3.7	3.6
of which : Business sector	5.4	4.1	5.0	5.1	4.3	4.9	4.8	4.0
Labor force	2.5	1.9	1.4	-0.8	1.8	4.5	1.8	1.8
Total hours worked	2.7	1.3	0.9	-7.8	7.2	7.2	1.9	2.1
Total hours worked in the business sector	2.6	0.8	1.1	-9.2	7.3	8.9	2.0	2.0
Labor productivity (real GDP per hour worked)	1.1	2.5	3.1	6.6	1.2	-1.1	2.2	1.6
Labor productivity in the business sector (real GDP per hour worked)	1.8	3.4	3.6	7.7	2.9	-1.5	3.0	2.0
GDP per work hour (nominal)	4.2	3.7	5.6	8.0	3.1	3.8	4.9	3.2
GDP per work hour in the business sector	4.3	4.2	6.1	8.6	5.9	4.3	6.3	3.5
Labor compensation per hour worked (nominal)	4.0	4.7	4.1	6.6	1.7	2.5	3.6	3.7
Labor compensation per hour worked in the business sector	4.1	5.7	4.2	7.7	3.0	2.7	4.4	4.2
GDP labor share	-0.2	1.0	-1.4	-1.3	-1.3	-1.3	-1.3	0.5
GDP labor share in the business sector	-0.2	1.5	-1.8	-0.9	-2.8	-1.5	-1.7	0.7
GDP labor share (level)	55.8	55.3	54.5	53.9	53.3	52.6	-	-
GDP labor share in the business sector (level)	58.9	59.7	58.7	58.3	56.6	55.7	-	-

SOURCE: Based on Central Bureau of Statistics.

Labor input increased more rapidly than output in 2022, causing a decline in labor productivity.

The rapid increase in employment in 2022 resulted in an even faster increase in labor input, meaning that the average number of hours worked per employed person increased.[14] Because this growth rate surpassed that of GDP, productivity[15] declined by 1.1 percent. This decline in productivity means that newly hired workers were less skilled or less experienced on average[16]—a distinction that is consistent with the concentration of the increase in employment this year in the relatively low-wage proximity service industries. Despite the decline in productivity, demand for labor was strong during the year and remained so at year's end. This is evidence of high demand in the economy, since employers hired workers and increased their work hours even though the workers' output was below average. Be this as it may, productivity increased at a 2.2 percent annual pace between 2020 and 2022, exceeding the precrisis rate. Therefore, alongside the moderate growth of wages, the GDP labor share in the economy dropped from 54.5 percent in 2019 to 52.6 percent in 2022.

[14] The number of hours worked throughout the economy.

[15] In terms of output in constant prices per hour worked (see note 3).

[16] Output is a function of complementary factor inputs: capital and labor. Therefore, a faster increase in labor input than in capital stock may cause capital per worker to erode, possibly pushing labor productivity down. The effect of changes in the quantity each factor of production on GDP growth depends on the weight of each factor in the production function. In practice, capital stock grew by 4 percent in 2022, similar to previous years.

Table 2.5
Principal labor market data, 1995–2022

(annual change, percent)

	1995–2017	2018	2019	2020	2021	2022	Average annual rate of change, 2019–2022
Population in the primary working ages (25–64)	2.2	1.4	1.4	1.7	1.2	1.8	1.6
Labor force participation rate, primary working ages (level)		80.3	80.4	79.2	79.3	81.2	-
Employment rate, primary working ages (level)		77.5	77.7	76.2	75.7	78.6	-
Unemployment rate, primary working ages (level)		3.5	3.4	3.8	4.6	3.3	-
Job vacancy rate (level)		3.7	3.5	2.4	4.5	4.8	-
Employed persons (Including non-Israelis)	2.7	1.7	1.7	-1.7	1.5	6.4	2.0
of which : Employed in the business sector	2.6	0.8	1.5	-3.6	1.4	8.0	1.8
Employed in the public services	2.9	3.6	1.9	1.9	1.6	3.4	2.3
Total work hours (including non-Israelis)	2.7	1.3	0.9	-7.8	7.2	7.2	1.9
of which : Total work hours in the business sector	2.6	0.8	1.1	-9.2	7.3	8.9	2.0
Total work hours in the public services	3.2	2.9	0.4	-3.0	6.8	2.0	1.9
Hours per employed person (including non-Israelis) (level)	36.7	36.6	36.4	34.1	36.0	36.3	-
of which : Hours per employed person in the business sector (level)	42.1	42.3	42.1	39.6	41.9	42.3	-
Hours per employed person in the public services (level)	24.9	25.6	25.2	24.0	25.2	24.9	-
Employee posts (including non-Israelis)	2.8	2.5	2.0	-10.0	7.5	8.8	1.7
of which : Employee posts in the business sector	2.6	2.1	1.4	-13.7	8.4	10.3	1.0
Employee posts in the public services	3.2	3.4	3.2	-2.7	6.0	6.1	3.1
Nominal wage per employee post	3.8[a]	3.5	2.9	6.5	2.5	2.9	3.9
Real wage per employee post	1.1	2.7	2.0	7.5	0.7	-1.5	2.2

[a] Between 1995 and 1999, the nominal wage was affected by high inflation, and from 2000, the nominal wage has increased at an average annual rate of 2.5 percent.
SOURCE: Based on Central Bureau of Statistics.

4. THE CURRENT ACCOUNT OF THE BALANCE-OF-PAYMENTS

The current account surplus declined slightly.

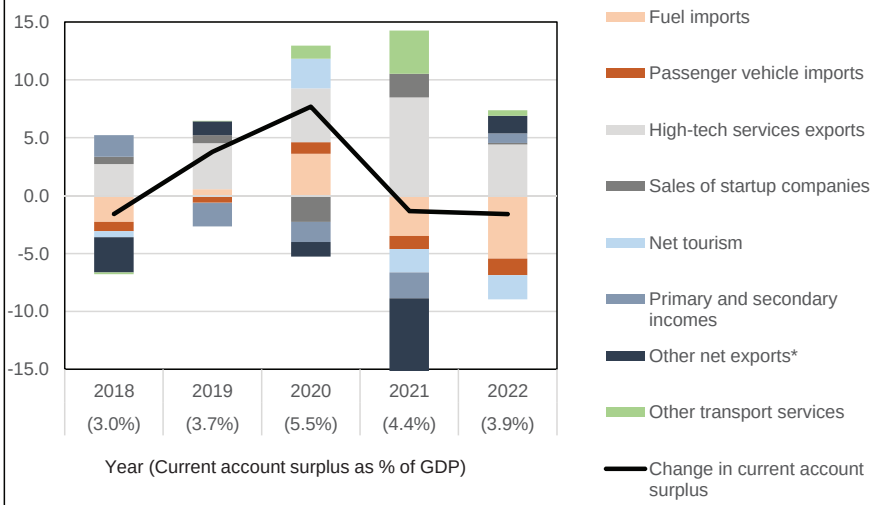
The surplus in the current account of the balance of payments was US$ 19.8 billion in 2022—US$ 1.6 billion less than in 2021 (Figure 2.13 and Table 2.6) due to the steep increase in fuel prices as a result of Russia's war in Ukraine and the faster recovery of outbound tourism than of inbound tourism.

The increase in fuel prices due to the war in Ukraine was one of the main factors in the decline of the current account surplus.

Expenditure on imports of energy products increased by US$ 5.7 billion in 2022, almost all (US$ 5.3 billion) due to the jump in fuel prices during the year. The upward trend in oil prices that began in 2020 continued in early 2022. Following Russia's invasion of Ukraine in February 2022, which triggered sanctions on these imports followed by an energy crisis, oil prices surged, remained high until mid-year, and then began to fall. Even with this continuing decline, oil prices were higher at year's end than from 2014 to the end of 2021.

Inbound tourism recovered considerably but the number of Israelis' trips abroad did so much more rapidly. The difference in the growth rates between outbound and inbound tourism narrowed the current account surplus by US$ 1.7 billion. Exports

Figure 2.13
The Change in the Current Account Surplus and the Contributions of its Main Components, 2018–2022 (US$ billion)



* Net exports of goods and services that are not detailed above.
SOURCE: Based on Central Bureau of Statistics (national accounts and balance of payments).

and imports of transport services (net of travel fares) increased by 21 percent and 12 percent, respectively, relative to 2021. Therefore, net exports of transport services grew by 50 percent and boosted the current account surplus by US$ 1.2 billion. The increase in prices of energy products and other goods that Israel imports, and the decline in shipping prices, weakened Israel's terms of trade slightly.

The balance of tourism lowered the current account surplus, while the balance of shipping services increased it.

Gross national savings increased to 30.1 percent of national income in 2022, but their composition changed. Due to the surplus in this year's government budget owing to an increase in tax revenues, public savings increased after two years of large expenditures in response to the pandemic crisis. The increase in domestic investment beyond that of national savings was reflected in a reduction of the current account surplus to 3.9 percent of national income, similar to the precrisis rate.[17] The combination of the ongoing current account surplus and strong domestic demand supported average real appreciation of the shekel during 2022 relative to the previous year. However, the forces for appreciation weakened during the year and even reversed, leading to real depreciation at year's end. The forces that underpinned this change of trend, foremost the interest rate and inflation spreads vis-à-vis other countries, are described in Chapter 3 of this Report.

National savings increased, as did the share of public savings in it.

[17] More than half of the increase in investments in 2020–2022 took place in inventory investment. Some 95 percent of inventory growth occurred in startup companies, and was the result of these companies not yet exporting their output. Sales of startup companies (exits) are recorded as exports and as a drawdown (negative investment) of the companies' inventory. When startup exits decline more than the companies' output grows (it grows in particular during the companies' development stages), the total inventory investment of high-tech companies increases.

Table 2.6
Savings, investment, and the current account, 1995–2022

(percentage of national income)

	1995–2017	2018	2019	2020	2021	2022	Change between 2019 and 2022 in percentage points
Gross national savings	24.7	26.2	26.7	29.0	29.0	30.0	3.4
of which: Public	1.1	0.7	0.2	-6.0	-0.7	3.2	3.0
Private	23.6	25.5	26.4	35.0	29.7	26.8	0.4
Gross investment	23.6	23.3	23.0	23.6	24.7	26.2	3.2
of which: In principal industries	16.6	16.3	15.9	15.8	16.4	16.5	0.7
of which: General government's investments[a]	7.0	6.0	5.8	7.0	5.9	5.7	-0.1
In housing	6.2	6.5	6.5	6.1	6.5	7.2	0.7
In inventory	0.8	0.5	0.7	1.7	1.8	2.4	1.8
Net current account	1.1	2.9	3.7	5.4	4.3	3.9	0.2
of which: Balance of goods and services	-0.7	0.9	2.2	4.4	3.9	3.3	1.1
Net income account	-2.2	-0.1	-0.6	-0.9	-1.5	-1.4	-0.9
Net current transfers	3.3	1.9	1.8	1.7	1.7	1.6	-0.1
Terms of trade[b]	0.1	-3.6	3.9	2.9	1.0	-0.6	
Real effective exchange rate[b,c]	-0.3[d]	2.1	-2.5	-3.1	-3.9	-0.9	

[a] Including investment grants.

[b] Rate of change in annual terms, percent.

[c] An increase refers to depreciation.

[d] The figure relates to the years 1999–2016.

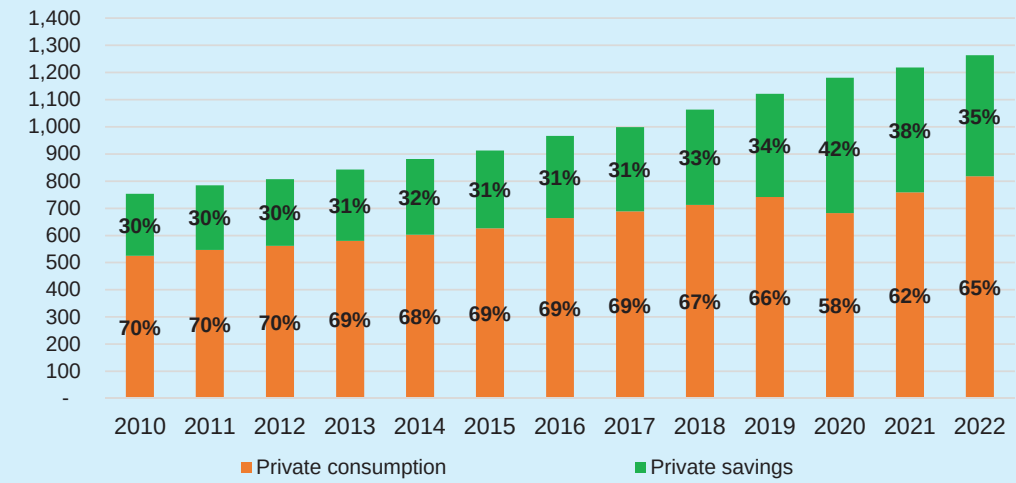
SOURCE: Based on Central Bureau of Statistics.

BOX 2.1: EXCESS SAVINGS IN ISRAEL FROM THE COVID-19 CRISIS AND HOW THEY MAY BE USED

Private savings in a given year are the difference between private disposable income and private consumption during that year.[1] In 2020, due to the COVID-19 crisis, the private savings rate (savings as a share of private disposable income) jumped as a result of two factors acting in concert. The first was a forced decrease in private consumption, primarily of services, and the second was an increase in private disposable income—despite the pandemic's adverse effects on national income—due to the transfer payments that the government distributed as part of its program for coping with the crisis. As a result of these developments, a sizable excess of private savings accumulated in 2020–2022. This box examines the development of the excess savings during that period and discusses various scenarios of the pace and extent of their future use for consumption.

The concept of "excess savings" is poorly defined in the literature. It requires a definition of "normal" savings, a deviation from which would be considered an excess. In this box, "excess savings" each year are defined as actual savings minus the amount that would have been amassed had the savings rate been identical to its 2018–2019 average ("normal" savings).[2] This definition is equal to the amount of disposable income above "normal" disposable income ("excess income") plus the amount of private

Figure 1
Private Consumption, Private Savings, and Their Shares of Disposable Income, 2010–2022 (NIS billion, fixed prices)



SOURCE: Based on Central Bureau of Statistics.

[1] Private disposable income is private income from labor and capital minus direct taxes plus transfer payments received. It is the total income that individuals may spend on consumption and savings.

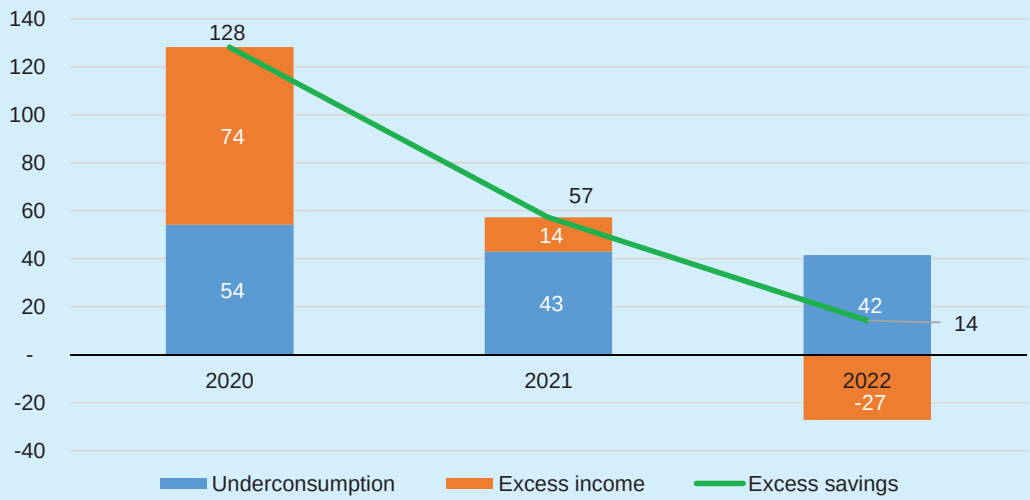
[2] All magnitudes used in the calculations are in constant 2015 prices. The average rate is as a share of national income from all sources—Gross National Product plus income tax from abroad and net current transfers from abroad.

consumption below "normal" consumption ("underconsumption").[3] "Cumulative excess savings" is the stock of excess savings from previous periods. It is natural that in each period, savings may deviate from its "normal" rate, so the important questions are what the size of the deviation is, and whether its direction persists.

Figure 1 shows actual savings, private consumption, and their share of private disposable income, from which consumption and savings are generated. The savings rate ranged from 30 percent to 34 percent of private disposable income in 2010–2019, shot upward in 2020 as the COVID-19 crisis evolved, began to decline in 2021, and continued falling in 2022, but remained higher than its prepandemic level. The flow of excess savings throughout this period can be deconstructed into a steep and protracted decline in private consumption (underconsumption, in blue in Figure 2), mainly in the consumption of services, and an increase in disposable income, supported by government transfer payments that were made in order to cope with the pandemic crisis (excess income, in orange). We see in Figure 2 that most of the excess disposable income accumulated in 2020, when most of the government relief programs were operative, whereas private consumption was and remained sluggish. Some 70 percent of the excess savings that accumulated was due to underconsumption and 30 percent came from excess income.

Cumulative excess savings in 2020–2022 totaled NIS 200 billion (12.7 percent of GDP). Specifically, excess savings in 2022 came to NIS 14.3 billion—NIS 41.5 billion in underconsumption and NIS 27.3

Figure 2
Composition of the Flow of Excess Savings, 2020–2022 (NIS billion, 2015 fixed prices)



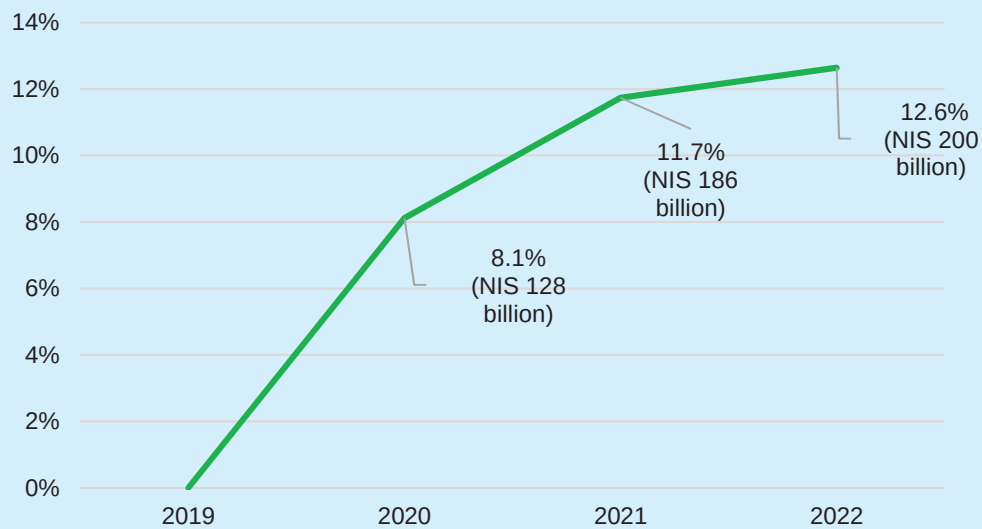
*Numbers are rounded.
SOURCE: Based on Central Bureau of Statistics.

[3] Normal private disposable income and normal private consumption are calculated the same way as normal savings and for the same period. The average rates of private disposable income, private consumption, and savings as a share of national income from all sources in 2018–2019 were 77.7 percent, 51.7 percent, and 26 percent, respectively.

billion in negative excess income.[4] An analysis of the outcomes shows that the excess savings, shown in Figure 3, have not been put to significant use thus far.[5]

In the United States, too, the savings rate climbed when the COVID-19 crisis broke out, for the same reasons as noted for Israel. A comparison of the path of Israel's excess savings with that of the US, however, reveals an interesting difference: In the US, the flow of excess savings declined almost uninterruptedly following the beginning of the crisis, and became negative in late 2021 (Aladangady et al., 2022). The reason is that underconsumption there steadily contracted and turned into excess consumption by the middle of 2021. In Israel, in contrast, underconsumption continued—primarily in services—and remained even at the end of 2022. (See the section on private consumption in the body of this chapter.) The difference may be due to the switching of some service providers in Israel to other industries, in which brisk growth led to strong demand. Therefore, when the restrictions were lifted for good, the supply and consumption of services returned to their ordinary levels more slowly. Another possible reason is that due to the size of the US economy, the lifting of restrictions created a broader range of consumption opportunities, including consumption of services, than the small Israeli economy offered. In developed economies, cumulative excess savings varied from country to country. In 2022, the rates were 5 percent of GDP in the US, France, and Germany; 9 percent in Italy; and 15 percent in Spain and

Figure 3
Aggregate Excess Savings, 2019–2022 (percent of 2022 GDP)*



* Assuming that excess savings was zero in 2019. The numbers in the parentheses are in fixed prices.
SOURCE: Based on Central Bureau of Statistics.

[4] Excess disposable income in 2022 was negative because disposable income as a share of national income from all sources was below its normal rate.

[5] An additional check based on the average "normal savings" in 1995–2019 (instead of 2018–2019) reinforces the conclusion that the savings have not been put to use. According to this check, sizable excess savings continued to accumulate in 2022.

the UK (Allianz Research, 2023). As of 2022, among these countries, only US consumers had begun to use their excess savings.

The key questions that this increase in savings raises are whether, when, and how Israel's excess savings will be put to use. Many variables may affect this process: how the excess savings are divided across the population and, in particular, between individuals who have a high marginal propensity to save and those with low propensity. What percent was used used to repay debts or buy assets? Will people use the excess savings to make up for forgone service consumption or will they go beyond? To what extent will the declines in the capital market reinforce the wish to save, thus encouraging individuals to conserve their excess savings?

Since none of these factors can be weighted and measured, we illustrate the possibilities by presenting two general scenarios, one of rapid decline and one of slow decline. In the rapid-decline scenario, the public uses a large share of its cumulative excess savings as quickly as possible in order to take advantage of the consumption opportunities that it was denied during the pandemic. In this scenario, 20 percent of the excess savings are used each year for four years, causing private consumption to increase by NIS 40 billion per year (2.5 percent of 2022 GDP) or 5 percent of private consumption in 2022. By comparison, the difference between actual consumption of services and its prepandemic trend was NIS 30 billion in 2022. The direct effects of the scenario would be steep increases in private consumption and in GDP and/or imports, and likely inflationary pressure.[6] A steep decline in the supply of savings is liable to trigger an increase in real interest rates (because real investors will have less savings on which to draw, making them costlier). This pressure may result in appreciation that will reduce exports, increase imports, and lower the current-account surplus because imports will satisfy the domestic demand that will be generated. The more the use of savings focuses on consumption of services, the smaller the direct effect of imports will be in the short term because most services (excluding tourism) are nontradable. If this consumption focuses on making up for consumption of services that did not take place during the crisis, upward pressure on prices will be stronger because one cannot import those services or accumulate an inventory of services until they are needed. This scenario resembles the "cut back" scenario in Attinasi et al. (2021), which assumes that 70 percent of the excess savings that accumulated in the United States, Japan, and the UK (7 percent of GDP) will be used within two-and-a-half years. In this scenario, private consumption increases steeply, boosting GDP over three years by 1.5, 2.6, and 1.8 percentage points, and increase inflation by 0, 0.6, and 1 percentage point respectively. According to them, some of the decrease in consumption's contribution to GDP in Year 3 will be due to an increase in imports of consumer goods.[7]

[6] This would happen if supply suffices to meet the excess demand. If a significant supply constraint exists, however—such as in a state of full employment—the increase in GDP would be smaller and the inflation caused by the rapid drawdown of savings would be higher. Inflation would be divided between an increase in domestic prices and appreciation, commensurate with the distribution of the increase in demand between consumption of tradable and nontradable goods. In this situation, employment might increase even beyond the full-employment level and would mitigate these effects. This is because wages would probably rise swiftly, incentivizing labor-market participation, and the increase in inflation would motivate households that have no excess savings to increase their supply of labor in order to avert an overly severe blow to their consumption.

[7] As mentioned in Note 6, if a significant constraint on labor supply exists in such economies, such as in a state of full employment, a rapid drawdown of savings will have a smaller downward effect on GDP and a larger upward impact on inflation and imports.

As of the time of this publication, this scenario seems improbable in Israel for several reasons. First, according to the consumption-smoothing approach and the permanent-income hypothesis, a nonrecurrent increase in assets is likely to boost individuals' immediate consumption only slightly because individuals are more interested in increasing their consumption over time and maintaining that higher level than they are in giving it a large but nonrecurrent upward push. Second, most of the decline in private consumption during the pandemic took place in the consumption of services, which is hard to defer "until the storm blows over" and then recoup in full. Consumption of services increased in 2022 but remained considerably below its prepandemic trend even though nearly all COVID-19 restrictions were repealed in the second quarter of 2022.

In the slow drawdown of savings scenario, 5–10 percent of the excess savings are put to use each year over a period of ten years. This scenario means an increase in private consumption of NIS 10 –20 billion per year over a decade. In the first years, this would increase private consumption by 1.25–2.5 percent per year and GDP by 0.6–1.2 percent. The effect on GDP of using the excess savings will subside over time as consumption and GDP increase and as the purchasing power of the excess savings erodes due to inflation. This scenario is more likely to occur because it is consistent with the consumption-smoothing approach and leaves people time to spend their savings on new consumption opportunities. Furthermore, the increase in real interest rates will encourage individuals to hold on to their excess savings instead of spending them. In this scenario, consumption may increase mildly over time and, therefore, is unlikely to generate demand or price-increase pressures.

The large stock of excess savings that formed during the pandemic will accompany the developed economies, including Israel, for years to come. The future development of private savings in Israel will be contingent upon the state of the economy, the expansion of consumption opportunities, price developments, and the time preferences of Israel's citizens.

REFERENCES

Aladangady, Aditya, David Cho, Laura Feiveson, and Eugenio Pinto (2022). "Excess Savings during the COVID-19 Pandemic." FEDS Notes. Washington, DC: Board of Governors of the Federal Reserve System, October 21, 2022, https://doi.org.10/17016/2380-7172-3223.

Allianz Research (2023). "Falling Off a Savings Clip?" *Economic Reports*, February 2, 2023, https://www.allianz.com/en/economic_research/publications/specials_fmo/saving-usa-europe.html

Attinasi, M. G., A. Bobasu, and A. S. Manu (2021). "The Implications of Savings Accumulated during the Pandemic for the Global Economic Outlook." *Economic Bulletin Boxes,* 5.

BOX 2: NO LONGER AN ISLAND ECONOMY? GROWING TRADE AND TOURISM RELATIONS BETWEEN ISRAEL AND MIDDLE EASTERN COUNTRIES

- Israel's trade in goods with Middle Eastern countries, long limited, has been growing rapidly in the past two years. Imports from Turkey are surging and so are imports from and via the United Arab Emirates following the Abraham Accords. Israeli exports to these two countries have increased, as have natural gas exports to Egypt and Jordan. Total goods imports from the region's countries exceed exports to them.
- Israeli tourism to the region's countries—mainly Turkey, Egypt, and the new destinations of the UAE and Morocco—expanded to more than 1.8 million visits in 2022 and increased relative to 2019 as well. The number of passengers flying to countries in the region (including back to Israel) was 3.9 million in 2022—about one-fifth of international air travelers through Ben-Gurion International Airport.

For decades, Israel developed as an "island economy", a market cut off from neighboring Middle Eastern countries with the exception of Turkey. Even peace agreements with Jordan and Egypt did not produce economic relations of macroeconomic significance. The Abraham Accords (September 2020), normalizing Israel's relations with the United Arab Emirates (UAE), Bahrain, and Morocco, and successor agreements such as the Israel–UAE free-trade agreement (May 2021), created expectations of the development of significant economic relations between Israel and countries in the region. These expectations are consistent with public willingness in the Gulf States to maintain relations with Israel, in contrast to disapproval of normalization with Israel in Egypt and Jordan.[1]

This analysis describes the widening of trade relations in goods and tourism[2] between Israel and regional countries in the two years since the Abraham Accords were signed. Whereas trade relations with the UAE have expanded swiftly in the past two years, the main increase in trade took place with Turkey. Concurrently, trade with Egypt and Jordan has grown to a limited extent, mainly as a result of Israeli natural gas exports. In addition, the lifting of COVID-19 restrictions on foreign travel by Israelis in 2021 brought about a rapid increase in the number of Israeli tourists visiting Turkey, the UAE, Egypt, and Morocco. The number of air passengers from Israel to Middle Eastern countries and, via them, to continuing destinations also grew. As a rule, imports of Middle East goods to Israel exceed Israeli exports to these countries, and Israeli tourism to regional destinations far surpassed Middle East tourism to Israel.

[1] Public opinion polls show that about 40 percent of the citizens of Saudi Arabia, the UAE, and Qatar favor relations with Israel, whereas only 10 percent of citizens of Jordan and Egypt do so, even though peace treaties between these countries and Israel were concluded decades ago. Source: Washington Institute for Near East Policy (January 19, 2023).

[2] This overview does not cover trade in business services—Israel's main export industry—and investment relations with Middle East economies due to incomplete data.

Trade in goods

In the decade preceding the Abraham Accords, most of Israel's trade in goods with regional markets was with Turkey. Trade with Jordan and Egypt, which have had peace treaties with Israel for decades, was limited despite agreements on encouraging this activity, such as the Qualified Industrial Zone accords.[3] Trade with the UAE added up to several tens of millions of dollars per year at the most. In the past two years, trade with the region's countries has been growing rapidly—particularly with Turkey and the UAE. Goods imports from the region to Israel in 2022 climbed to a record US$ 8.3 billion (7.7 percent of total goods imports) and exports to regional markets increased to US$ 3.2 billion (4.4 percent of goods exports) (Table 1). In addition, natural gas exports to Egypt and Jordan grew to 9.2 BCM.[4]

Table 1: Israel's goods trade with Middle Eastern economies, 2011–2022 ($ million in current prices)

	a. Imports to Israel by country of purchase						By country of production
	2011–15	**2016–18**	**2019**	**2020**	**2021**	**2022**	**2021**
Turkey	2,348	2,794	3,208	3,498	4,764	5,700	5,641
of which: Production inputs[a]	1,148	1,409	1,896	1,990	2,816		
UAE	15	31	-	116	837	1,891	632
of which: Excluding diamonds	15	31	-	76	440	1,374	
Jordan	287	314	293	210	392	469	105
Egypt	80	65	76	80	127	180	209
Morocco	8	14	10	10	11	18	117
Bahrain	0	-	-	-	3	11	3
Total	2,738	3,218	3,587	3,914	6,134	8,269	
Share of total goods imports	3.9%	4.6%	4.7%	5.6%	6.7%	7.7%	
	b. Exports from Israel						
	2011-15	**2016-18**	**2019**	**2020**	**2021**	**2022**	
Turkey	2,050	1,546	1,758	1,431	1,919	2,272	
UAE	25	17	11	74	354	670	
of which: Excluding diamonds	25	17	11.1	18.4	116.2	381	
Jordan[b]	134	60	99	39	64	67	
Egypt[b]	27	22	4	12	31	127	
Morocco	164	92	111	91	121	38	
Bahrain	0	0	-	-	4	2	
Total	2,400	1,737	1,983	1,647	2,493	3,176	
Share of total goods exports	3.7%	2.8%	3.4%	3.3%	4.1%	4.4%	

[a] Imports of manufacturing inputs from Turkey are listed by country of production.

[b] Excluding the export of natural gas to Jordan and Egypt, the volume of which increased between 2020 and 2022.

SOURCE: Israeli Central Bureau of Statistics and Comtrade.

[3] Agreements among the United States, Israel, and Egypt or Jordan that absolve goods produced in Israel, Egypt, and Jordan from American tariffs in order to promote cooperation among these markets. The agreement with Egypt continues to promote Israel–Egypt trade but the Israel–Jordan treaty has lost its importance due to the conclusion of a bilateral free-trade agreement between the United States and Jordan.

[4] Billions of Cubic Meters, the accepted unit of measurement for trade in natural gas.

Goods Imports

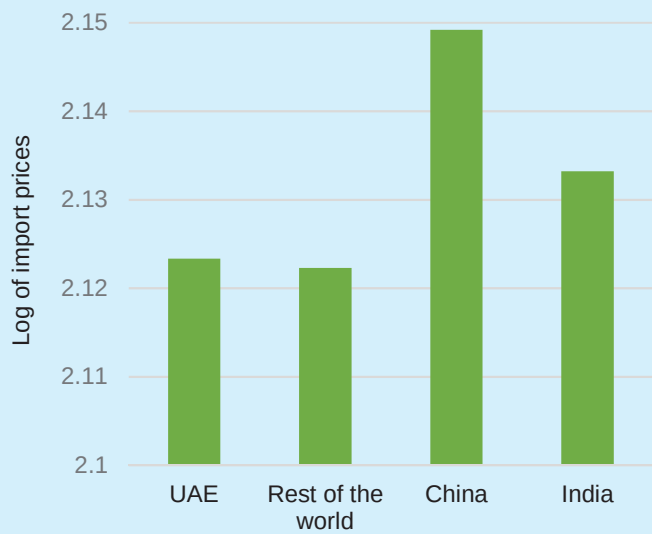
Most of the increase in imports from the region's countries in 2021–2022 was from Turkey and the United Arab Emirates. Israel also imports hundreds of millions of dollars worth of goods from Jordan, mostly goods produced in other countries. Imports of goods from Egypt and Morocco have grown as well. Much of the imports from Egypt and most of the imports of goods produced in Morocco were imported through other countries (Table 1, compare imports by country of production and by country of purchase in 2021).

The value of imports from Turkey (as the country of purchase) was US$ 5.7 billion, nearly twice the 2019 level. In addition, Israel imported more than US$ 800 million per year in goods produced in Turkey via other trade partners. Most of the increase in imports from Turkey was in production inputs, which grew from 4 percent of Israel's total import of production inputs in the previous decade to 9 percent in 2020–2021. In general, imports of production inputs from Turkey increased between 2020 and 2022, along with nominal and real growth in total imports of production inputs to Israel, due to the increased global supply chain pressures in the past two years. Goods imported from Turkey to Israel are mainly metals, machinery, plastics, cement products, textiles, and motor vehicles.

Recorded imports from the UAE have been developing rapidly since the Abraham Accords were reached (September 2020), and added up to US$ 1.9 billion in 2022. Imports from the UAE are expected to see further growth in coming years as the countries solidify their business relations and implement their bilateral free-trade agreement. Even if these imports double, however, they will still account for only a few percent of Israel's imports and an even smaller fraction of the UAE's exports.

The UAE is an important regional trade hub due to its position along maritime and air routes between Europe, Africa, and Southeast Asia. It provides a modern logistical and financial infrastructure for large-volume international trade, and some two-thirds of Emirati exports (excluding fuel) are goods that are re-exported after having been imported from other countries.[5] This phenomenon

Figure 1
Gross Import Prices of Goods Imported from the UAE and Other Countries, January–September 2022



SOURCE: Based on Central Bureau of Statistics import data reported to Comtrade (details in Footnote 7).

[5] In January–September 2022, 39 percent of Emirati imports originated in eastern Asia and 18 percent in Europe, and almost half of them were re-exported to other Middle East countries. Source: Emirati Federal Competitiveness and Statistics Authority.

stands out in particular in the Emirates' exports to Israel. According to Emirati data, 82 percent of the UAE's exports to Israel in January–September 2022 were re-exports of goods imported from elsewhere.[6] Goods imports via the UAE rather than from the countries of production indicates that this trade pattern streamlines the import process and/or lowers its costs, including those of insurance and shipping.

By comparing import prices from the UAE with those of parallel goods originating elsewhere, we can examine the advantages of trade via the Emirati trading hub. Gross import prices (including shipping and insurance) of goods (excluding diamonds) that were imported from the UAE in 2022 were 1 percent lower the import prices of the same goods from India, and 2.6 percent lower than from China, respectively. The import prices of the same goods from the rest of the world, however, were slightly lower than the prices of imports from the Emirates (Figure 1). Therefore, importing via the UAE may lower the cost of importing from Southeast Asia slightly but is unlikely to make overall imports to Israel much less expensive.[7] Imports from nearby trade partners, however, may make importation more efficient by shortening delivery times, allowing Israeli importers and manufacturers to maintain smaller inventories in Israel, particularly as the cost of maintaining inventory rises in tandem with the increase in interest rates.

Goods exports

Turkey is Israel's most important export destination in the region. Exports to Turkey recovered gradually in the last few years after contracting by around one-fourth due to bilateral tension after Operation Protective Edge (2014). Israeli exports to the UAE increased following the Abraham Accords (September 2020), but increased more slowly than imports. Furthermore, more than one-third of these exports are diamonds, which generate relatively little local added value. Reported Israeli exports (excluding gas and water; see below) to other Middle Eastern countries, particularly Egypt and Jordan, came to only several hundred million dollars in 2022, consistent with the negative public sentiment in those countries toward economic cooperation with Israel (see Footnote 1).

Gas and water exports to Egypt and Jordan

In addition to the exports reported above, Israeli exports of gas and water to Egypt and Jordan—Israel's current export destinations for these goods—have increased and are expected to continue growing in the years to come. Exports of Israeli gas to Jordan grew gradually from 2.1 BCM in 2020 to 2.9 BCM two years later, and gas exports to Egypt increased from 2.2 BCM to 6.3 BCM during those years. Gas exports

[6] Data: Federal Competitiveness and Statistics Authority. According to the Israel Central Bureau of Statistics, however, imports from the UAE of goods from other countries were only about one-fourth of Israeli imports from the Emirates. A misclassification of goods as products of the UAE may lead to future lenience in the importation of these goods under the Israel-UAE free-trade agreement. Re-exported goods from the Emirates to Israel originate in a wide variety of countries including Russia, China, Ukraine, and even Morocco and Brazil (CBS).

[7] We examine the effect of the expansion of imports from the UAE on import prices (including shipping and insurance) by comparing the specific prices (according to net weight in tons) of goods imported from the UAE (six-digit resolution in the HS code) with the corresponding prices of the same goods imported from India, China, and the rest of the world. The import prices were compared on the basis of data that the Israel Central Bureau of Statistics reported to Comtrade. The data pertain to January–September 2022 only. The weight of each good in the weighted average of import prices was determined on the basis of the share, in import value, of the same good to Israel in total goods imports to Israel in 2019 (on the eve of the COVID-19 crisis).

to these two countries together accounted for 45 percent of total gas produced in Israel's economic waters in 2022. The expansion and improvement of gas transmission infrastructure, from about 12.5 BCM per year in 2022 to about 22 BCM per year in 2026, is expected to facilitate higher gas exports to these countries.[8] Some of the gas that Egypt imports from Israel is liquefied there and re-exported to Europe. In June 2022, Egypt, the EU, and Israel signed a memorandum of understanding that paves the way to the expansion of Israel gas exports to Europe via Egyptian liquefaction facilities.

In addition to natural gas, Israel has been selling water to Jordan in the past two decades. In accordance with the bilateral peace treaty (1994), Israel undertook to sell Jordan 50 million cubic meters of water at a subsidized price. In October 2021, the two countries signed an agreement for the sale of an additional 50 million cubic meters over a three-year period. In 2021 and 2022, Israel, Jordan, and the UAE also signed memoranda of understanding concerning the Prosperity Project, which focuses on promoting the possibility of Israel's sale of up to 200 million cubic meters of water per year to Jordan and Jordan's selling 600 MW per year of electricity from renewable sources to Israel.[9] Imported water from Israel is increasingly important for Jordan, which consumes about 1 billion cubic meters of water per year and faces an ongoing decline in the available quantity of water per resident commensurate with population increase.[10]

Trade in services

Even though most Israeli exports are composed of services, mainly business services, there are so far no indications of sizable trade in services between Israel and other Middle Eastern countries, with the exception of visits by Israeli tourists. The development of trade in goods with and via the UAE, however, is expected to increase trade in transport and financial services that are associated with international trade. The limited scale of trade in nontourism services is typical of trade among most of the region's markets.

Israeli tourism to Middle Eastern markets expanded in 2022 to a record of more than 1.8 million visits, continuing the increase in visits that began in 2017–2019 and resumed in 2022 after the COVID-19 restrictions on outgoing tourism from Israel were lifted. On top of the growing scale of Israeli tourism to the veteran destinations of Turkey and Egypt, Israeli tourists flocked to new destinations such as the UAE and Morocco.[11] The number of Israeli residents who entered Jordan through the overland border crossings, however, has not yet returned to its prepandemic 2019 level and arrivals of citizens of other Middle Eastern countries remain minuscule.[12]

[8] Based on Ministry of Energy data, gas transmission infrastructure are expected to grow with the inauguration of a pipeline via Nitzana Crossing, projected to open in 2026, with a capacity of 3.5–6 BCM per year; expansion of capacity of the EMG pipeline to Egypt, planned for 2024, from 4.5 BCM to 7 BCM; and expansion of capacity of the gas pipeline to northern Jordan from 7 BCM to 10 BCM.

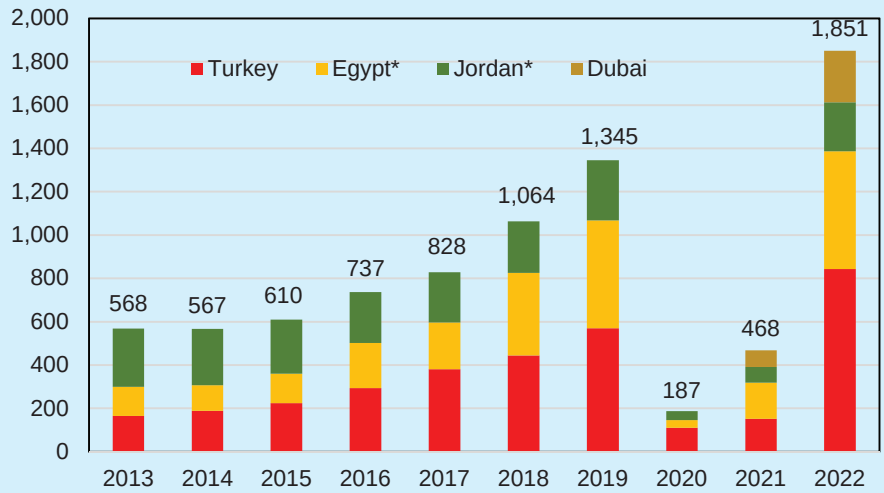
[9] Declaration of Intent between the Hashemite Kingdom of Jordan, the State of Israel, and the United Arab Emirates (November 22, 2022).

[10] Water sector overview at the U.S. International Trade Administration website (as of December 14, 2022).

[11] We have no official data on the number of Israeli tourists who visited Morocco, but one may estimate their number at more than 70,000 on the basis of the number of passengers on flights between these countries (Table 2) and the small number of Moroccan tourists visiting Israel.

[12] Incoming tourist arrivals in 2022 were 17,000 from Jordan, 8,000 from Egypt and Morocco combined, 1,400 from the UAE, and only 400 or so from Bahrain.

Figure 2
Israeli Visits to Other Middle Eastern Countries, 2013–2022 (thousand)



* Cross-border trips: Egypt (Taba) and Jordan (Arava, Jordan River, and Allenby), excluding Israeli tourists arriving in those countries by air.

SOURCE: Israeli Central Bureau of Statistics, Turkish Institute of Statistics, and Dubai Ministry of Tourism.

The Abraham Accords also brought with them the establishment of air transport relations between Israel and the UAE and Bahrain, resulting in approximately 1 million passengers among the destinations, as well as the resumption of flights from Israel to Morocco and Sharm el-Sheikh, Egypt. The rapid increase in air travelers to the UAE and via there to Eastern Asia appears to have come at the expense of travelers who land in Jordan and may continue to destinations in the East, which decreased steeply between 2019 and 2022. There were a total of 3.9 million air passengers to regional markets in 2022[13] (20 percent of international air passengers from Ben-Gurion Airport), compared with 2.5 million (11 percent of passengers on these flights out of Ben-Gurion) in 2019. At the beginning of 2023, Israeli airlines resumed service to Turkey and began to fly to destinations in the East over Saudi Arabian and Omani airspace, significantly shortening their air routes to Asia. The strengthening of Israel's aviation relations with the region's countries and the direct overflight permission given to Israeli airlines flying to the east are expected to help develop air tourism and freight relations not only with regional markets but also with those in Southeast Asia.

[13] A comparison of data on Israeli tourism to Turkey and the UAE with data on flights to these countries shows that about half of those flying to the UAE, and about one-third of those flying to Turkey, were Israelis on continuing flights or passengers without Israeli citizenship.

Table 2: Passenger movement from Ben-Gurion airport to and from Middle Eastern markets, 2017–2022 (thousand)

	2018	2019	2020	2021	2022
Turkey	2,113	2,325	514	643	2519
UAE			72	269	979
Morocco				15	152
Egypt	36	44	11	4	169
of which : to Sharm el-Sheikh				0.6	124
Jordan	159	180	31	6	77
Bahrain				4	27
Total	2,307	2,549	629	940	3,923
Share of total passengers	10%	11%	14%	15%	20%

SOURCE: Israel Airports Authority.