Chapter 2

Aggregate Activity: GDP and Employment

- Gross Domestic Product increased by 3.5 percent in 2019, close to the previous year's rate and the potential rate of GDP growth.
- Net of exceptional factors, growth slowed and was slightly below its potential rate.
- Improved terms of trade and accommodative macroeconomic policies supported growth in domestic uses, while the slowdown in world trade inhibited export growth.
- Imports continued to grow more quickly than GDP, meeting the brisk domestic demand.
- The labor market remained in a full employment environment but stopped tightening.
- The current account surplus increased, supported by the terms of trade and high-tech activity, and the shekel's appreciation in terms of the real exchange rate resumed.
- The ongoing real appreciation continued to burden the manufacturing industries, while trade and services were less sensitive to exchange rate volatility. The effect of the appreciation is reflected at a lag of approximately one-year and impedes both manufacturing exports and domestic production that is exposed to competing imports.

1. MAIN DEVELOPMENTS AND BACKGROUND CONDITIONS

a. Main developments

Gross Domestic Product increased by 3.5 percent in 2019, close to the growth rate of potential GDP, signaling an increase in the economy's production capacity. The macroeconomic picture has been stable in recent years, showing strong growth and a labor market at full employment. During the reviewed year, however, this stability could not be taken for granted in view of the worsening world environment. A main reason for Israel's relatively strong GDP and export growth in 2019 was the activity of Intel, which made an exceptional contribution to growth (as detailed in Box 1) as the plant that it built in recent years began operations. Our assessment is that the rest of the economy expanded at a rate lower than 3 percent and lower than potential, and that per capita GDP grew at roughly the OECD average. Per capita GDP remained about 15 percent lower than the average among OECD countries, as it has for the past thirty years.[1]

Services exports, supported by world demand for advanced services, and domestic uses, supported by the improvement in terms of trade[2] and accommodative macroeconomic policies, continued to expand swiftly and powered growth. As the labor supply constraint continued to impede rapid growth in the trade and services industries, the share of domestic demand met by imports continued to grow.

Table 2.1
Selected indicators of economic activity, 1995–2019

(annual change, percent)

	1995–2014	2015	2016	2017	2018	2019
GDP	3.8	2.3	4.0	3.6	3.4	3.5
GDP of OECD countries[a]	2.2	2.6	1.8	2.6	2.3	1.7
Per capita GDP in Israel	1.7	0.3	2.0	1.6	1.4	1.6
Per capita GDP in OECD countries[a]	1.5	2.0	1.2	2.0	1.7	1.1
Exports excluding diamonds and startups	6.8	-1.1	-0.7	6.2	5.1	5.7
Imports excluding ships, aircraft, diamonds, and defense imports	4.6	1.8	8.8	7.1	5.1	4.5
Domestic uses	3.3	3.4	6.6	4.1	3.5	3.4
Unemployment rate (ages 25–64, level)	8.1	4.5	4.1	3.7	3.5	3.4
Real wage per employee post	0.8	2.9	2.8	2.8	2.7	2.0
Current account surplus (percent of GDP)	0.6	5.2	3.6	2.4	2.6	3.6
Real effective exchange rate[b]	0.0[c]	-0.1	-1.9	-4.5	2.1	-2.6

[a] Weighted average according to each country's GDP. Data for 2019 are based on estimates.

[b] Adjusted to the Consumer Price Index. An increase means depreciation.

[c] The figure relates to the years 1999–2014.

SOURCE: Based on Central Bureau of Statistics, OECD, and IMF.

[1] During this time, Israel's employment rate grew more quickly than the average among OECD countries. This advantage, however, was offset by less vigorous growth of per-worker output.

[2] The expression "terms of trade" denotes the ratio of import prices to export prices.

The improved terms of trade and activity of the high-tech industries, the latter of which fueled rapid export growth, combined to give the current account surplus an upward push. As a result of this growth, and in view of the world economic slowdown accompanied by falling world interest rates, the shekel appreciated by 2.6 percent in terms of the real exchange rate, on annual average[3], whereas year-on-year real appreciation was much steeper, at 6.5 percent.

The labor market remained in a full employment environment in 2019. The participation rate edged upward, reaching an all-time high, and the unemployment rate dropped to its lowest level in several decades. Nevertheless, there were indications that the labor market is no longer tightening: The job vacancy rate and work hours per employed person fell, firms in the business sector reported a slight easing of the labor shortage, the rate of increase in wages slowed, and the GDP labor share stopped growing. Due to the ongoing deceleration of growth in the prime working age population (25–64) and the full employment environment, GDP growth was again based more on growth in the stock of physical capital stock and less on an increase in employment.

b. Background conditions

World trade and growth slowed in 2019.

World economic growth slowed in 2019 and inhibited Israel's growth. After a mild deceleration in 2018, the slowdown in world growth worsened in 2019 and spread to additional countries (Table 2.2). The expansion of world trade slowed to just 1.1 percent, the lowest growth rate since 2009. International agencies and investment houses revised their growth forecasts for the next two years downward, and assessments are that they will remain low.[4] These developments were accompanied by falling energy and commodity prices and a depreciation of the euro-dollar exchange rate, which led to an improvement in Israel's terms of trade (see Section 4b).The terms of trade improved by 3.9 percent in 2019—after a similar cumulative decline in the previous two years—contributing 1.2 percent to national income.

Monetary policy was accommodative in 2019 as well. The nominal interest rate was steady at 0.25 percent all year, the real 1-year rate stabilized in negative territory, and real long-term (10-year) yields sank to zero. In the last quarter of the year, the Bank of Israel resumed large-scale interventions in the foreign exchange market for the first time since early 2018. (For elaboration on monetary policy, see Chapter 3.)

Monetary and fiscal policies remained accommodative.

Fiscal policy was also expansionary, which contributed to the increase in domestic demand but probably made only a limited contribution to growth since the economy is near full employment. Public expenditure growth outpaced GDP growth, largely due

[3] The real effective exchange rate (against the basket of currencies) is deflated by the Consumer Price Index. Average annual appreciation equals the rate of change in the average real exchange rate in 2019 compared with the average in 2018, whereas year-on-year appreciation is the rate of change in the real exchange rate in December 2019 against its value in December 2018.

[4] As for the forecast of world trade, the international institutions are of two minds. The IMF foresees a relatively swift rebound, and the OECD believes that the recovery will be much slower.

Table 2.2
Global economic developments, 1995–2018

(annual change, percent)

	1995–2014	2015	2016	2017	2018	2019[a]
Advanced economies						
GDP[b]	2.4	2.3	1.7	2.5	2.3	1.7
Trade[c]	5.6	4.3	2.2	4.7	3.0	1.0
US						
GDP	2.8	2.9	1.6	2.4	2.9	2.4
Eurozone						
GDP	1.6	2.1	1.9	2.5	1.9	1.2
Developing economies						
GDP	6.1	4.3	4.6	4.8	4.5	3.9
Trade[c]	8.4	0.3	2.4	7.4	4.5	1.3
World trade	6.4	2.8	2.3	5.7	3.6	1.1

[a] Data for 2019 are based on estimates.

[b] Data for the years 1995–2014 are from the OECD.

[c] Simple average of rates of change of exports and imports of goods and services.

SOURCE: Based on OECD and IMF.

to continued rapid increases in civilian expenditure and per capita transfer payments. As a result, the central government deficit increased to 3.7 percent of GDP and the structural deficit[5] stabilized at a higher level than in the past. (For elaboration on fiscal policy, see Chapter 6.) A transition government was in place during the year, whichled to uncertainty about continued fiscal policy, particularly in regard to the implications of government conduct under the continuation budget in 2020.

The economy is undergoing a structural change, transitioning from manufacturing to services.

The economy has been undergoing a structural change in the past decade, transitioning from manufacturing to services, particularly from manufacturing exports to high-tech service exports.[6] The process continued in 2019. The growth in services exports outpaced the increase in world trade in services—which itself grew more quickly than trade in goods—whereas goods exports continued to languish (Figure 2.1).[7]

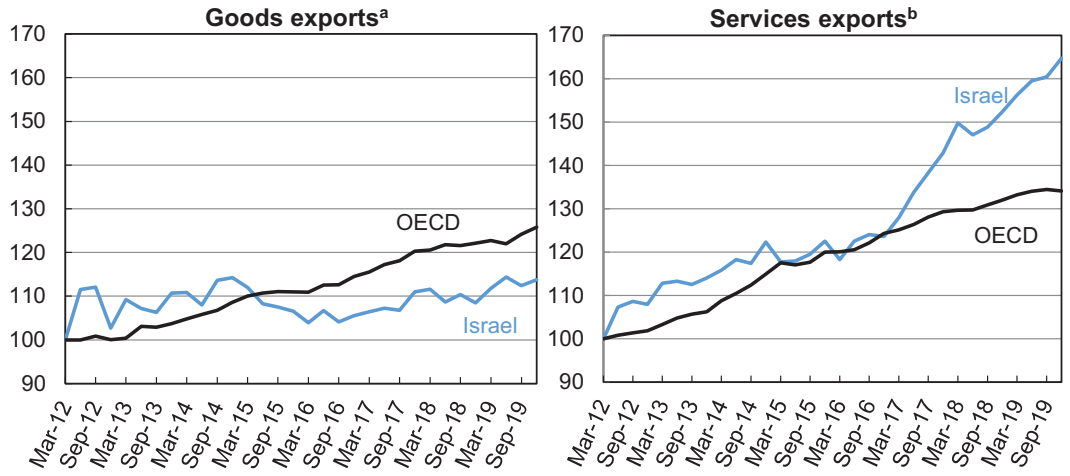
The restructuring originates mainly in an acceleration of world demand for advanced services, in which Israel enjoys a relative advantage due to the composition of its human capital. It also finds expression in the rapid growth of output in the information

[5] The structural deficit is the share of the deficit that originates in a structural disparity between statutory spending and statutory revenue; it nets out the effect of the business cycle and nonrecurrent events.

[6] Most developed countries have been undergoing similar restructuring, but in Israel it has been particularly fast. (See Bank of Israel *Annual Report for 2017,* Chapter 2.)

[7] Output of high-tech services including startups increased by 5.3 percent, whereas that of manufacturing grew by only 2.4 percent.

Figure 2.1
Goods and Services Exports from Israel and OECD Countries, 2012–19 (quantitative index, 2012:Q1=100)



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

and communications industry (including startups) and brisk demand for engineers, particularly software engineers. Given the high added value of services exports, national income has increased rapidly during the transitional period of structural change. Most of the increase has accrued to the upper deciles, which tend to have relatively high savings rates. This is one of the factors of the continued surplus in the balance of goods and services. Some of the increase in income is diverted to consumption, which tends more/ over time toward domestic services and less toward tradable goods, which can also be imported (as explained in Part 2b), thereby supporting domestic price increases. This tendency, accompanied by capital flows to high-tech investment (discussed in Chapter 4), is generating appreciation pressure, and is followed by a decrease in manufacturing as a share of exports, GDP, and employment (as explained in Box 2). Although the structural change has been detrimental to goods exports, from the macro perspective it reflects the Israeli economy's adaptation to the world trend of growing importance of services at the expense of goods. It also reflects the efficient exploitation of domestic relative advantages. Although the structural change in Israel is particularly rapid, its per capita output gap relative to the OECD is not narrowing because productivity in its non-high-tech industries remains lower than in its OECD peers.[8]

[8] For elaboration on the productivity gap and policy recommendations in regard to it, see Bank of Israel (2019), Research Department Special Report: "Raising the Standard of Living in Israel by Increasing Labor Productivity," https://www.boi.org.il/en/NewsAndPublications/PressReleases/Documents/2019-9%20Productivity%20Report.pdf

Box 2.1: The Impact of Anomalous Factors on the 2019 Growth Data

Domestic economic activity in recent years has been heavily affected by two large projects: construction of a new plant between 2016 and 2018 by Intel, which made massive investments in imported machinery and equipment for this purpose; and the Leviathan gas reservoir, run by a partnership that made large-scale development investments between 2017 and 2019 (peaking in 2018), mostly in equipment from abroad. The timing of these operations was reflected in a marked increase in investment and imports between 2016 and 2018, and a faster rate of increase in the stock of capital and, in turn, in the potential GDP growth rate. In 2019, the investments in these projects exhausted themselves, causing the growth rates of investment in the economy and imports to slow. The maturation of Intel's investment in the reviewed year was reflected in a large increase in exports and a marked contribution to GDP growth (Table 1), but only a marginal contribution to employment. Gas exports from the Leviathan reservoir began in late 2019 and will probably affect GDP from 2020 onward.

Table 1
Selected Macroeconomic Aggregates, 2019, Total and Net of Anomalous Factors

(Rate of change)

	Total	Net of anomalous factors	Net of the following
Gross Domestic Product	3.5	2.6	Intel exports and added value associated with vehicle imports[a]
Potential GDP	3.6	3.4	Increased stock of capital due to investments in electronic components[b] and gas and oil infrastructure
Exports excluding diamonds and startups	5.7	3.3	Intel exports
Fixed capital formation (excluding ships and aircraft)	1.2	3.8	Investment in vehicles, electronic components[b], and gas and oil infrastructure
Imports excluding ships, aircraft, diamonds, and defense imports	4.5	6	Vehicle imports and investment in imported machinery and equipment in the electronic components[b], mining and quarrying, and oil product manufacturing industries

[a] Intel exports contributed 0.7 percentage points to GDP growth, and added value associated with vehicle imports contributed 0.15 percentage points.
[b] Intel does not release information about the extent of its investment and imports. We therefore used the total investment of the electronic components industry, which includes Intel.

As a rule, ordinary macroeconomic analyses include the activity of large firms because such entities are part of the economy. In view of Intel's past contributions to Israel's growth, exports, and employment, analyses in previous Bank of Israel Annual Reports treated this firm's activity as an integral part of the picture of the economy.[1] However, when acute volatility in the activity of large firms occurs mainly within a given year—especially when it originates in decisions made several years earlier—the underlying macroeconomic developments are hard to detect. For this reason, in such cases the macroeconomic aggregates should also be examined net of such volatility. Although Intel's heightened exports from the plant that it inaugurated in 2019 are expected to remain at their 2019 level in coming years, their contribution to GDP in the reviewed year was nonrecurrent because their rate of increase will probably slow (as will the expected contribution of Leviathan in 2020). Furthermore, export and product volatility in the case at hand had little effect on overall employment and tax revenues in 2019. Thus, total economic activity net of these firms is a relevant metric to use in analyses of the labor market and the fiscal situation in 2019.

The year also saw rapid growth of vehicle imports as consumers moved up their purchases of hybrid and electric vehicles to the end of 2019 in advance of a purchase tax increase on them at the beginning of 2020. Accordingly, the added value associated with vehicle imports increased, which contributed to GDP growth (although less so than Intel). This increment, however, will probably be offset by a parallel decline in early 2020.

Viewed on the basis of macroeconomic aggregates net of anomalous factors, GDP growth appears to have slowed in 2019 and fell slightly short of the economy's potential growth rate. Domestic uses including investment continued to expand rapidly and drove growth, whereas the growth rate of exports slowed due to weakness in world trade. Nevertheless, the growth rate of exports surpassed that of world trade thanks to vigorous growth of services exports (Figure 2.1). Import growth continued to outpace GDP growth, and met the brisk domestic demand.

[1] In 1999, for example, when Intel inaugurated its plant in Kiryat Gat, the company's activity contribute to growth in investment and employment in southern Israel, contributing immediately to GDP growth and to a decline in unemployment.

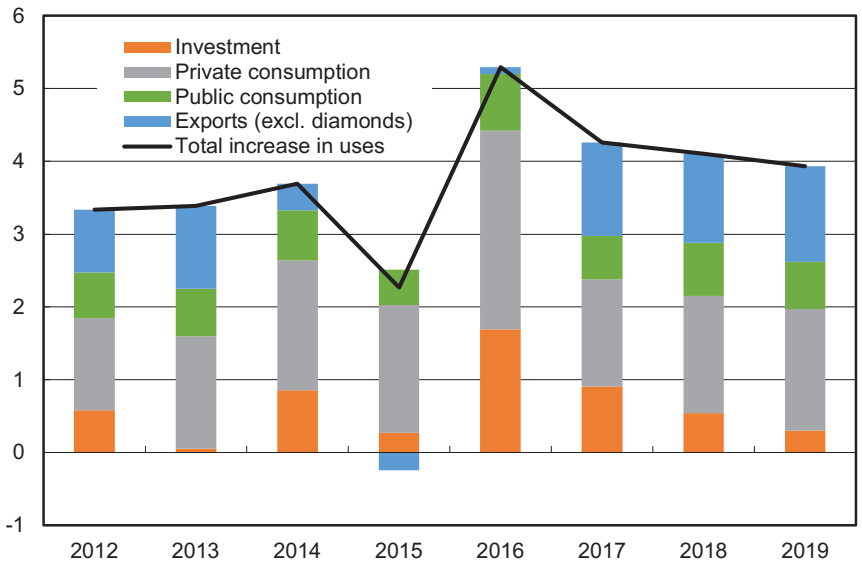
2. AGGREGATE DEMAND AND USES

a. Composition of foreign and domestic demand

The growth in uses has been slowing gradually in recent years, and totaled 3.9 percent in 2019. The moderation of growth in uses mainly reflectsa slowdown in investment, while the contribution of the other components—private consumption, public consumption, and exports—has been stable in the past three years (Figure 2.2). Investment slowed in 2019, following three years of vigorous growth due to large investments by Intel and in the "Leviathan" reservoir, while exports increased significantly due to the start of exports from Intel's new plant (Box 1).

The moderation of the growth rate in uses was also reflected in slightly slower import growth in 2018–2019. The import components with slower growth rates included consumer goods (except transport vehicles), services, and foreign travel.[9] Nevertheless, the growth of imports continued to outpace GDP growth (Table 2.3) due to falling import prices and the economy's proximity to full employment. Thus, domestic uses continued to increase rapidly with only a moderate increase in prices.

Figure 2.2
Increase in Uses: Total Increase and Contribution of Components, 2012–19
(percentage points)



SOURCE: Based on Central Bureau of Statistics.

[9] Investments in imported equipment and machinery contracted in 2019, but this mainly reflected activity in the electronic components and natural gas industries. Net of these investments, imports increased more rapidly in the reviewed year than in 2018.

Table 2.3
Sources and uses, 1995–2019

(annual change, percent)

	1995–2014	2015	2016	2017	2018	2019
GDP	3.8	2.3	4.0	3.6	3.4	3.5
Imports (excluding ships, aircraft, diamonds and defense imports)	4.6	1.8	8.8	7.1	5.1	4.5
Domestic uses	3.3	3.4	6.6	4.1	3.5	3.4
of which : Private consumption	4.1	4.1	6.3	3.4	3.7	3.9
Fixed capital formation (excluding ships and aircraft)	2.7	-0.1	12.3	4.6	3.6	1.2
Investment in inventory (excluding diamonds and startups, percent of GDP)	0.3	0.3	0.1	0.3	0.1	0.0
Output of startup companies	12.4	30.6	20.3	-3.6	13.9	29.0
Public consumption (excluding defense imports)	2.1	3.4	4.4	4.5	4.5	3.5
Exports (excluding diamonds and startups)	6.8	-1.1	-0.7	6.2	5.1	5.7
Net exports[a] (percent of GDP, fixed prices)	0.5	3.6	1.1	0.9	0.9	1.3

[a] The difference between exports excluding diamonds and startups and imports excluding ships, aircraft, diamonds and defense imports).
SOURCE: Based on Central Bureau of Statistics.

b. Domestic uses

1. Private consumption

Private consumption grew by 3.9 percent in 2019 and, similar to previous years, continued to expand more rapidly than GDP. Consumption excluding durable goods continued to expand at a rate similar to the previous year, particularly in its main components—services, housing, and food. Private consumption continued to rely on disposable income, which increased thanks to continued rapid growth of real income from labor and transfer payments. Although labor income grew less vigorously than in 2018 due to slower increases in the number of employed people and in wages, its rate of increase remained greater than the long-term average. The expansion of private consumption was helped along by faster increases in the value of the public's financial asset portfolio (Table 2.4) and home prices, which contributed to the sense of wealth, and improved terms of trade that pushed up the GDP deflator. Nevertheless, the private savings rate increased because the quantitative increase in consumption, although outpacing output growth, was not fast enough to offset the decrease in its price. There were several reasons for this:

The quantitative growth of private consumption outpaced GDP growth, but so did the savings rate.

First, an improvement in terms of trade occasioned by falling world energy and commodity prices (for elaboration, see Section 4b) is usually channeled to increased savings and not to consumption.[10] This is evidently because such an improvement is perceived as temporary and because it is accompanied by an increase in the GDP capital share, and capital income is typified by a low propensity to consume.

Second, households probably increased their savings for reasons of caution due to the world economic slowdown and domestic political uncertainty, as suggested by a slight decline in the consumer confidence index after uninterrupted increases since 2013 (Table 2.4). The political situation also appears to have had a direct impact on private consumption because NGOs that serve households cut their consumption due to uncertainty about their budgets in coming years.

[10] See Bank of Israel, *Annual Report for 2015,* Chapter 7.

Table 2.4
Domestic demand: Background conditions and main indicators of its development, 1995–2019

(annual change, percent)

	1995–2014	2015	2016	2017	2018	2019
Private consumption	4.1	4.1	6.3	3.4	3.7	3.9
***of which* : Current consumption**	3.9	4.4	5.1	4.5	3.5	3.7
Durable goods consumption	5.9	0.3	19.5	-7.5	5.4	6.1
Gross private disposable income from all sources	3.6	4.4	5.9	2.0	7.5	5.1
Credit to households	7.2[a]	6.5	6.7	5.5	5.1	5.2
of which : Nonhousing credit	3.5[a]	6.9	6.1	4.8	3.0	2.3
Real 1-year interest rate (government bonds, level)	3.0	-0.5	-0.1	-0.1	-0.8	-0.8
Value of the public's financial assets portfolio	10.5	7.0	1.8	4.4	4.6	5.6
Consumer Confidence Index	3.8[b]	3.4	1.9	3.7	2.9	-0.4
Fixed capital formation (excluding ships and aircraft)	2.7	-0.1	12.3	4.6	3.6	1.2
Credit to the business sector	4.5[a]	1.6	3.5	3.8	5.1	4.6
Real 10-year interest rate (government bonds, level)	3.7	0.5	0.4	0.6	0.5	0.0
Purchasing Managers Index (level)	50.5[b]	50.2	52.3	55.2	53.3	51.3
Change in capital utilization in manufacturing (net balance from the Bank of Israel Companies' Survey)	-2.6	-9.0	-0.1	5.9	5.2	-10.2
Public consumption excluding defense imports	2.1	3.4	4.4	4.5	4.5	3.5
Total taxes[c]	32.9	31.1	31.0	32.3	30.8	30.3
General government budget deficit[c]	5.0	1.4	1.9	2.1	4.3	4.5
Change in the structural deficit in the government budget[c]		-0.9	0.8	1.9	1.2	-0.3
Change in the cyclically adjusted deficit[c]		-1.5	0.6	0.6	2.6	0.9

[a] The figure relates to the years 2005–2014.

[b] The figure relates to the years 2002–2014.

[c] Percent of GDP.

SOURCE: Based on Central Bureau of Statistics, the "Globes-Smith" Consumer Confidence Survey, the Bank of Israel Companies Survey, and the Purchasing Managers Indices compiled by Bank Hapoalim and the Purchasing Managers Association.

Third, the rapid increase in disposable personal income in 2018–2019 was accompanied by a decline in public savings. Households may have increased their own (private) savings in response. This would accord with the Ricardian equivalence, by which the public realizes that a current increase in the structural government deficit will lead to fiscal tightening in the future.

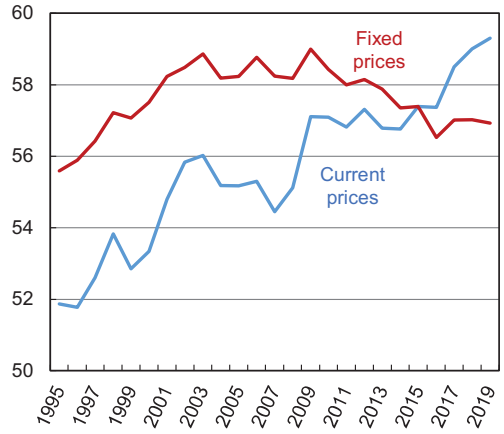
Fourth, even though the low interest rate environment continued to support an increase in the value of financial and real assets and make it easier for households to take out credit, the substitution effect of the low interest rate on private consumption may be about to exhaust itself after several years of near-zero interest rates, and households are internalizing the risks of low interest rates to their long-term income. In many OECD countries, asset prices have risen considerably in recent years without

a concurrent decline in household savings.[11] Accordingly, the intensity of the ultimate transmission of the low interest rate environment to an increase in private consumption is not known.

Finally, consumption of "other" durable goods[12] stagnated in 2018–2019 even though their prices fell. The underlying reason for this, evidently, is that consumption of durable goods is relatively sensitive to the interest rate effect, which is close to exhausting itself, coupled with a decrease in the volume of housing market activity in 2017–2018, since durable goods are complementary to housing. (For elaboration on the housing market, see Chapter 8.)

As for the composition of private consumption, the long-term upward trend of nontradable services[13] as a share of total private consumption (in current prices), at the expense of consumption of tradable goods and consumption abroad[14], continued in the reviewed year (Figure 2.3). Although tradable goods as a share of private consumption in fixed prices has risen in the past decade, the increase fell short of compensating for the decline in relative price. The continued decline in the relative prices of tradable goods is a worldwide phenomenon known as the Balassa-Samuelson effect, which is based on an increase in the output productivity of the tradable sector that triggers an increase in the wages of those working in it. The competition for labor between the tradable and nontradable sectors also causes wages in the nontradable sector to rise, but without a similar increase in productivity, which leadsto an increase in the

Figure 2.3
Nontradables as a Share of Private Consumption, 1995–2019 (percent)



The consumption of nontradables includes business services (excluding nonresidents' consumption in Israel), housing services, electricity and water, and the expenses of NGOs that serve households.
SOURCE: Based on Central Bureau of Statistics.

[11] *OECD Economic Outlook,* 2019, no. 2.

[12] "Other" durable goods include electrical and other equipment, furniture, and watches. Total consumption of durable goods accelerated due to rapid growth in consumption of transport vehicles, which mainly reflects acquisitions of hybrid and electric vehicles being brought forward to the end of 2019 ahead of an increase in purchase tax on these items at the beginning of 2020.

[13] Private consumption of nontradables includes business services (net of nonresidents' consumption in Israel), housing services, electricity and water, and expenditures of NGOs that serve households. The "Business Services" aggregate in this context is composed mainly of transport and communication services; restaurants and hotels; insurance and financial services; art, entertainment and leisure; education; and health.

[14] Private consumption of tradable goods includes food, beverages, and tobacco; fuel; durable goods; semidurable goods; and manufacturing products for current consumption.

relative prices of nontradable services. Accordingly, in affluent economies (which are typified by high productivity), relative prices of nontradable services tend to be high, creating a tendency among households to devote much of their consumption expenditure to these items. The growth of services as a share of the economy and, in particular, as a share of private consumption, is typical of most OECD member states and has been especially strong in Israel. (Only in the United States do services account for a greater share of consumption than in Israel.)

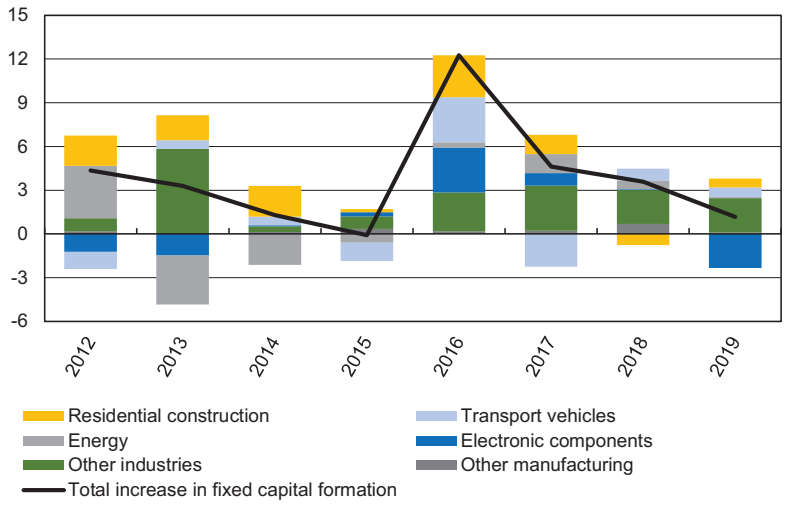
2. Investment

The growth rate of investment, net of anomalous factors, was largely unchanged from 2018.

Gross domestic investment increased by a moderate rate of 1.8 percent, reflecting slow growth in fixed capital formation and a rapid increase in inventory investment thanks to a jump in inventory buildup by startups.[15] Fixed capital formation slowed from rapid growth in 2016–2018 to moderate expansion in the reviewed year, largely due to the conclusion of large-scale investment projects (Box 2.1). Net of these factors, investment continued to expand at approximately the 2018 pace but more slowly in 2018–2019 than in 2016–2017.

Investment in residential construction—about one-third of fixed investment—recovered slightly in 2019, expanding by 2.0 percent after contracting in 2018 (Figure 2.4). The recovery is consistent with the halt of the decline in building starts along with

Figure 2.4
Increase in Fixed Capital Formation: Total Increase and Contribution of Components, 2012–19 (percentage points)



SOURCE: Based on Central Bureau of Statistics.

[15] Commensurate with their buildup of inventory, startups' output leaped ahead (Table 2.3) and their contribution to total GDP growth came to 0.25 percentage point. The startups' contribution to product (in the development phase) is derived from their production costs: their current expenses and average sales margin are recorded in the National Accounts as startups' inventory accumulation.

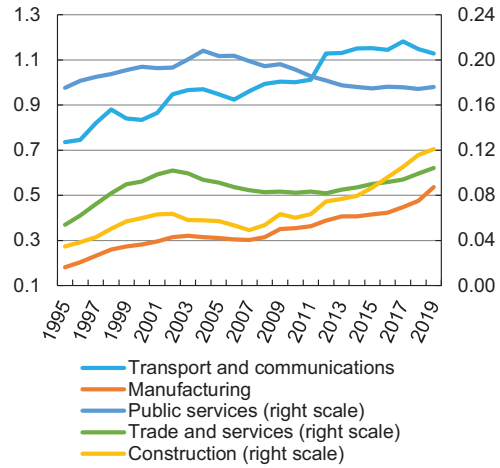
stability in building completions due to the extension of the residential construction duration to two-and-a-half years. (For elaboration on the housing market, see Chapter 8.) In contrast, investment in nonresidential construction and other building activity declined, such that the increase in construction industry output moderated slightly and its contribution to total GDP growth (0.2 percentage points) was slightly lower than in the previous year.

Investment in the primary industries—about two-thirds of fixed investment—was flat in the reviewed year, largely due to the completion of Intel's investment program and, to a lesser extent, the end of development work related to the Leviathan natural gas reservoir. In contrast, fixed capital formation enjoyed a positive contribution from investment in transport vehicles (Figure 2.4). Capital investment in manufacturing showed negligible growth with the exceptions of the electronic components and energy industries, and the rate of machinery and equipment utilization in manufacturing actually declined[16] in view of the slowdown in world trade and in accordance with the negative sentiment shown by the purchasing managers index (Table 2.4).

The other primary industries continued to show rapid investment growth, led bythe trade and services industries, in which two kinds of investment increased: (a) investment in nonresidential construction, particularly in business and office buildings—an activity that is consistent with the strong domestic demand—and public buildings in municipal jurisdictions; and (b) investment in intellectual property, mainly reflecting software and R&D investments by advanced export industries that enjoy strong demand abroad.

Machinery and equipment investment stagnated in most industries, as in 2018. The rapid increase in capital investment in previous years, however, and the moderation in the growth of employment increased the stock of capital per worker in the business sector (Figure 2.5).

Figure 2.5
Net Stock of Capital per Worker, Various Industries, 1995–2019 (NIS billion, fixed prices)



[a] The figures on the electricity and water industry are not presented due to a break in the data on employed persons, which resulted from a change in the industrial classification in 2013.

SOURCE: Based on Central Bureau of Statistics.

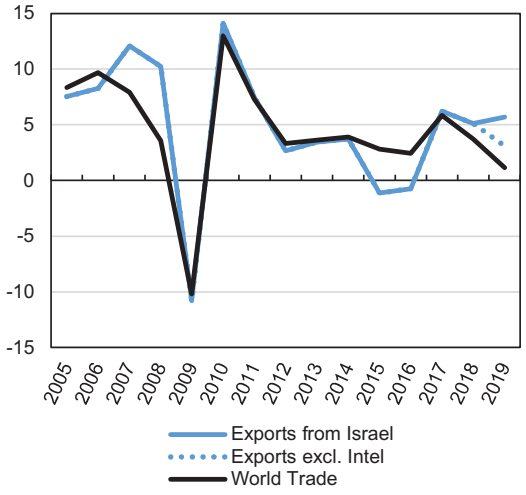
[16] The utilization rate of total factor inputs in manufacturing also dropped in 2019 (source: Central Bureau of Statistics Business Tendency Survey).

c. World demand and exports

Although the growth rate of exports net of Intel slowed, it exceeded that of world trade.

Over time, Israeli exports have developed largely in tandem with world trade. In the reviewed year, growth of world trade slowed and held export growth back. Although total exports expanded by 5.7 percent, this was much a reflection of the onset of exports from Intel's new plant. Net of this outlier, export growth was a mere 3.3 percent (Figure 2.6). Even excluding Intel, however, export performance outpaced the growth of world trade thanks to the continued flourishing of services exports.

Figure 2.6
Goods and Services Exports from Israel and World Trade, 2005–19 (rate of change, percent)



SOURCE: Based on OECD and Central Bureau of Statistics.

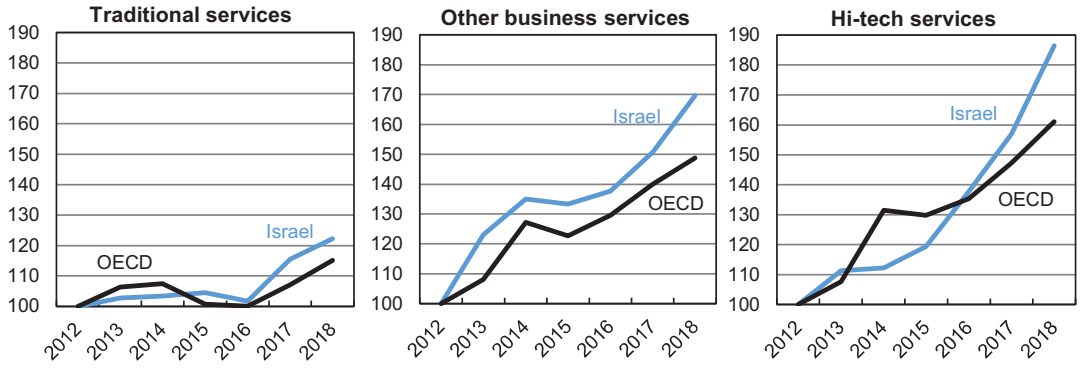
Services exports (excluding and the sale of startup companies) expanded by 8.1 percent in 2019, and for the first time accounted for half of total exports.[17] In recent years, services exports have been growing more rapidly than world trade in services for two reasons. First, advanced services, which account for an especially large share of Israeli exports, are increasing as a share of world trade. Second, Israel's advanced services exports have been increasing at an even more vigorous rate (Figure 2.7).

The success of Israeli exports first and foremost reflects exports of the country's high-tech industries[18], particularly software services. Such exports are expanding partly due to the domestic activities of R&D centers owned by foreign multinational firms that are identifying the potential of Israel's human capital. In recent years, these firms have accounted for nearly half of all R&D expenditure in Israel, and between 2012 and 2017 total R&D spending and job creation in these centers grew by an average of about 8 percent each year. Furthermore, the distribution of the multinational firms' spending indicates that they pay their employees more, and outsource their

[17] Given the difficulty in separating price from quantity in advanced services, the development of services exports should be tested in current prices as well. When this is done, a similar growth rate (8.5 percent) is found.

[18] High-tech services account for about 55 percent of total services exports and include the following: communication services, programming, and consulting in computers and other services; data processing, storage and related services and Internet portals; and scientific research and development.

Figure 2.7
Services Exports by Type from Israel and the OECD, 2012–18 (index in current dollars, 2012=100)



Hi-tech services as a share of total services exports from Israel increased from 42 percent in 2012 to 49 percent in 2018, while in the OECD it increased from 18 percent to 23 percent. Exports of other business services does not include scientific research and development services.

SOURCE: Based on OECD.

R&D activity less, than do other business firms—contributing to the strong added value of the R&D centers' activity.[19]

Israel's services exports show superior performance not only in high-tech but also in other business services.[20] In contrast, the growth rate of exports of more traditional services[21] resembles the world rate of increase in exports of such services (Figure 2.7).

The largest traditional service industry is tourism services—some 6 percent of Israeli exports—the growth of which slowed to only 3.3 percent in the reviewed year. Tourist arrivals continued to increase rapidly, but overnight stays showed relatively modest growth and per-tourist spending declined, mainly due to an increase in short visits.[22] The slowdown in tourism services exports corresponds to the moderate increase in world tourism, in view of the world economic slowdown and an increase in geopolitical tension. There are also indications of a supply constraint in the industry, manifested particularly in the record hotel occupancy rate. These trends are consistent with reports from hotel firms about growing shortages of inbound tourist reservations, workers, and hotel rooms.

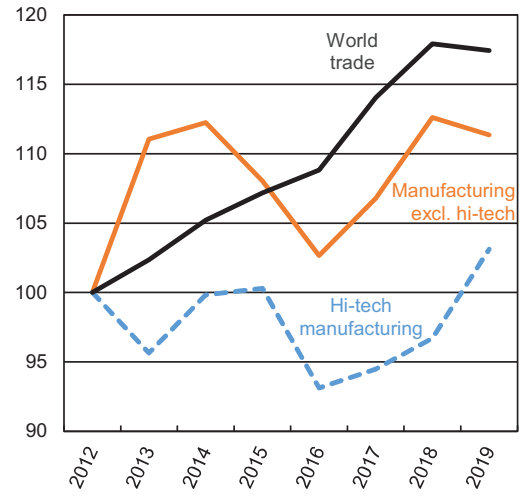
[19] See Central Bureau of Statistics (2019), Press Release: "R&D at Startups and Multinational R&D Centers, 2017" (in Hebrew).

[20] The other business services include legal services; accounting services; selected professional, scientific, and technical services; management and support services for offices and businesses; wholesale trade services; and more.

[21] Including tourism services; transport and haulage services; financial services; insurance and pension services; construction services; personal services; and more.

[22] The proportional increase in short visits is consistent with a sharp increase in overland tourist arrival in view of the disparity in accommodation prices between Israeli and Jordan. This disparity may have widened considerably due to the appreciation of the shekel and the proximity to a supply constraint in this industry. Day visitor arrivals, both overland and by sea, also escalated sharply.

Figure 2.8
Manufacturing Exports Revenue and World Trade in Goods, 2012–19
(quantitative index, 2012=100)



SOURCE: Based on CPB and Central Bureau of Statistics.

Goods exports (excluding diamonds) continued to grow modestly. Just the same, the 3.5 percent increase in the reviewed year outpaced world trade growth due to an acceleration of high-tech manufacturing activity[23] after flat performance since 2012, which reflected the onset of exports from Intel's new plant. Pharmaceutical exports continued to contract, making a negative contribution to high-tech manufacturing exports. Manufacturing exports excluding high-tech edged downward, and it seems that their changes in recent years seem to correspond closely to the development of world trade (Figure 2.8). Since 2014, total goods exports have shown near-zero cumulative quantitative growth, and actually fell slightly in terms of monetary value. The growth rate of goods exports was lower than that of world trade during these years, and the gap was even wider when focusing on world trade more closely related to Israel by taking into account the composition and destinations of Israel's exports.[24]

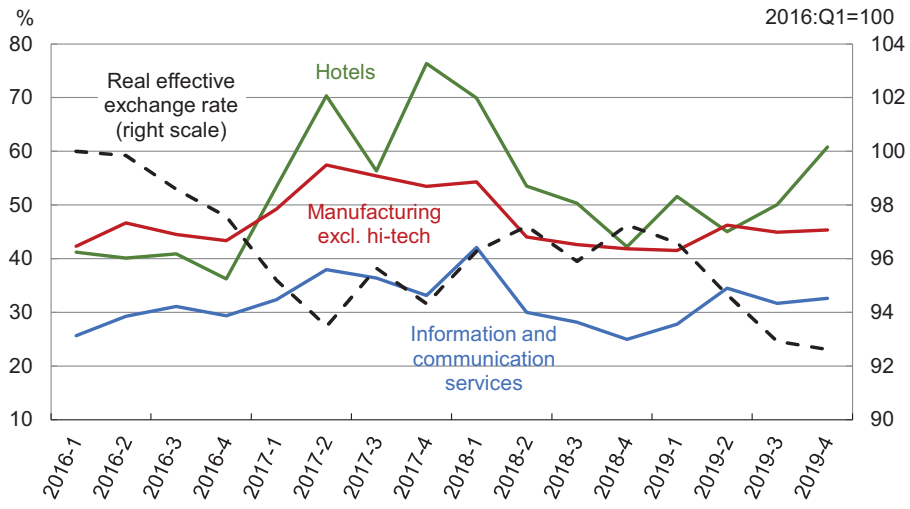
Aside from the deceleration of world trade, domestic factors evidently continued to weigh on goods exports. Foremost among them in recent years are increased competition with the services industries for human resources, and the real appreciation of the shekel. An analysis of the impact of the real appreciation on the primary industries (Box 2.2) shows that manufacturing is more sensitive to exchange rate volatility than the trade and services industries, and that the effect of this volatility on manufacturing exports finds expression at a one-year lag. This outcome is consistent with the upward trend in world demand for Israel's services exports, which generates stronger demand for domestic human resources in the advanced services industries and leads to real appreciation, with its burdening effect on manufacturing. The protracted appreciation in previous years had a negative impact on manufacturing industry output and employment, beyond its direct detriment on exports. Thus, the halting of trend of appreciation in 2018 seems to have made it easier for manufacturing in 2019 year, and the resumption of the appreciation trend in 2019 will probably impede it in the future.

[23] High-tech accounts for about 56 percent of total manufacturing export revenue (data up to 2016).
[24] See Bank of Israel, *Annual Report for 2018,* Chapter 2, Box 2.1.

The resumption of the shekel's appreciation had a negative impact on export profitability and is likely to impede export growth next year.

In contrast to export quantity, which responds at a lag, export profitability appears to sustain an almost immediate impact, and not only in manufacturing. Thus, when appreciation resumed in the course of 2019, a growing share of firms in non-high-tech manufacturing, hospitality, and information and communications services reported an acute activity constraint due to the impairment of their export profitability (Figure 2.9).[25] Nevertheless, the proportion of firms that reported an acute constraint remained lower, in all industries, than the peak levels attained in 2017.

Figure 2.9
Companies that Reported a Severe Constraint in Activity due to Erosion of Export Profitability, Selected Industries, 2016–19



The constraint that appears in the questionnaire for the manufacturing industry is "erosion of export profitability", while in the questionnaires for the services and hotels industries, the wording is "erosion of profitability due to exchange rate fluctuations", regarding which we assume that the erosion of profitability is mainly due to export activities.

SOURCE: Based on Central Bureau of Statistics.

[25] In contrast, in high-tech manufacturing and the other service industries there appears to be no statistical relation between the development of the real exchange rate and the severity of the constraint occasioned by the erosion of export profitability.

Box 2.2: The Effect of the Real Exchange Rate on Economic Activity

The Israeli economy has been exposed to ongoing currency appreciation for more than a decade. This box examinesthe impact of this appreciation on economic activity, as reflected in exports, manufacturing output, and employment.

Appreciation erodes export profitability because some spending by exporters in the local market (e.g., wages) is denominated in domestic currency, whereas export revenues are denominated in foreign exchange.[1] A decline in profitability may roll over into a decrease in quantity offered and a negative impact to employment. Furthermore, if firms stop exporting due to an exchange rate shock, they may have difficulty returning to the markets when conditions improve, due to the costs of exiting and re-entering the markets, resulting in long-term impairment.

Box 2.1 of the Bank of Israel *Annual Report for 2016* examined the connection between the real exchange rate and exports, and found that a 1 percent currency appreciation lowers export quantity by about 0.8 percent in manufacturing and about 0.3 percent in business services[2], in an effect that crests at a two-year lag[3] (and the opposite in the event of depreciation). Since then, however, the restructuring of the economy has gathered momentum and real appreciation has continued. Therefore, the Bank of Israel should reexamine the implications of the appreciation for the various industry groups and, in particular, for the services industries, which account for a steadily growing share of exports.

The effect of the exchange rate on exports is hard to detect since changes in these variables impact each other. Real appreciation has a negative impact on exports, and an increase in exports—for other reasons—leads to real appreciation because it boosts the supply of foreign currency supply by increasing the current account surplus.

To surmount this simultaneity problem, the analysis that follows is based on industry-level data including trade and services (thirty-six industries in all). The use of these detailed data mitigates concern about the possibility that each industry's exports affect the exchange rate independently. We also performed sensitivity checks by testing the instrumental variable of the US dollar exchange rate against the currency basket, assuming that exchange rate changes resulting from dollar volatility are exogenous to activity in Israel.[4] This box also shows results for total

[1] Exceptions to this generalization are foreign-owned firms and multinational companies' R&D centers, whose revenues are received in accordance with the cost of local inputs plus a margin (a cost-plus method).

[2] Previous studies showed a non-significant relation between the exchange rate and exports in all manufacturing industries, a positive relation net of high-tech manufacturing, and near-unit elasticity in industries with mixed technological intensity. In services exports, too, near-unit elasticity was found in the past, but it is important to note that the composition of services exports has changed markedly since then.

[3] An important assumption in that box was that changes in the current account and capital flows affect the foreign exchange market rapidly, whereas the impact of the exchange rate on export quantities is generally felt at a lag.

[4] Changes in the dollar exchange rate against the currency basket correlate strongly with changes in the shekel/dollar exchange rate. The dollar is important for Israel's export activity (at least in the short term) because 85 percent of its export transactions are denominated in US dollars.

output and employment in manufacturing[5] in order to see whether exchange rate changes also affect competition with imports in the domestic market and whether they divert activity and sales from exports to the domestic market.

The basic regression equation is: $\Delta Y_{jt} = \beta_0 + \beta_1 \Delta RER_{t-1} + \beta_2 \Delta WT_{jt} + \theta_j + \varepsilon_{jt}$

where Y_{jt} represents an outcome variable (exports/output/employment) of industry j in Year t, RER is the real exchange rate, WT_{jt} is world trade of relevance to the industry, and θ_j is a fixed industry effect.

Results

Table 1 presents a summation of the estimated effect of the real exchange rate on exports, output, sales to the domestic market, and employment in the manufacturing industries. These results show that a 1-percent appreciation reduces the quantity of manufacturing exports by 0.4–0.6 percent (at a one-year lag) and total manufacturing output by 0.35–0.4 percent. This extent of appreciation also appears to lower manufacturing sales to the domestic market by 0.2–0.4 percent and manufacturing employment by 0.11–0.23 percent (at a one-year lag). These results, however, are slightly less stable and, in particular, are not significant when the instrumental-variable method is used. The impact of appreciation on total manufacturing output exceeds that derived from the increase in manufacturing exports. By implication, it also reflects an increase in sales to the domestic market at the expense of competing imports. The lag in the effect may be due to the relatively long-term nature of exporters' and importers' agreements with foreign entities and with those in the domestic market.

In the trade and services industries, changes in the exchange rate were not found to have any significant effect on exports. Although the estimation results do not suffice to disprove the claim that appreciation has a negative effect on trade and services exports, the coefficient obtained for the exchange rate is significantly lower than that yielded by the manufacturing industry regressions.

We also examined the effect of the exchange rate at different timings vis-à-vis each of the outcome variables examined, and found that the effect is strongest and most significant at a one-year lag. We also examined whether the impact of exchange rate shocks is dependent on the industry's technological intensity or level of openness as reflected in its rates of exports, imports, and exposure to competing imports. None of the interactions of the exchange rate with these variables was found significant.

In conclusion, the results of the analysis in respect to exports correspond well to those of previous studies, and show that different industries are differentiated in their export elasticity relative to the exchange rate. Export elasticity is positive in manufacturing (0.4–0.6 percent), whereas trade and services exports, which account for half of total export value, are less sensitive to exchange rate shocks. This analysis also breaks new ground in two respects: the effect of the exchange rate on manufacturing exports is already realized after one year, and it is also reflected in total manufacturing output and employment. Thus, a decline in manufacturing exports does not appear to cause output to be diverted to the domestic market.

[5] Additional differences between the boxes are that this box includes a control for world trade at the industry level, uses different definitions for the real exchange rate, and is based on data from the Industrial Production Index and the balance of payments, whereas the discussion in the earlier box is based on foreign trade data for manufacturing and National Accounts data for services.

Table 1
Elasticity Relative to the Exchange Rate, at One-Year Lag

	Main outcome	Range of outcomes
Manufacturing exports	0.574**	0.4-0.6
Manufacturing output	0.389***	0.35-0.4
Manufacturing sales to the domestic market[a]	0.338***	0.2-0.4
Number of employees in manufacturing[a]	0.216***	0.11-0.23
Goods and services exports	-0.255	(-0.4)-0.2

** Significant at 5% level, *** significant at 1% level

[a] The exchange rate coefficient is not significant when the instrumental variable method is used.

The data are annual and represent the average annual rate of change over the previous year.
The main outcome is estimated using the OLS method for all industries. The explanatory variable is the real effective exchange rate deflated by the Consumer Price Index.
The range of results is based on the following estimations: deletion of large export industries, use of different definitions of the real exchange rate, and estimations using the instrumental variable and weighted least squares methods.
The estimations for manufacturing are based on the Central Bureau of Statistics Industrial Production Index for twenty-two subindustries in 2005-2017, and include a control for world trade parsed by economic industry (World Bank data).
The estimations for the trade and service industries are based on the Central Bureau of Statistics data for fourteen indsturies in the years 2003 to 2018, and inlcude a control for total world trade in these industries.

3. MACROECONOMIC DEVELOPMENTS IN THE LABOR MARKET

The labor market remained tight in 2019, as indicated by a record 77.7 employment rate (in the prime working ages, 25–64), a slight increase in the participation rate, and a continued decline in the unemployment rate (Figure 2.10).

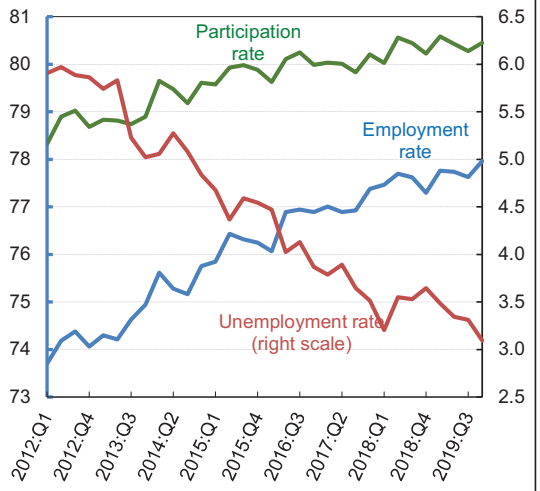
The labor market is tight but is not tightening further.

After more than a decade of impressive increases, labor supply has continued to expand slowly in recent years due to slower growth in the prime working age population and exhaustion of the effects of structural processes (the increase in schooling and raising of the retirement age). The possibility of continuing to increase the labor force remains mainly in population groups with low participation—Arab women[26] and *haredi* (ultra-Orthodox) men.[27] While the increase in the participation rate of Arab women has accelerated in the past three years, the upward trend among *haredi* men has halted—a troubling phenomenon because their share of the working-age population is expected to grow in the coming decades.

[26] The participation rate of Arab women aged 25–64 has nearly doubled in the past two decades. In 2019, this rate was 39.1 percent—a slight decline following a sharp increase in 2018.

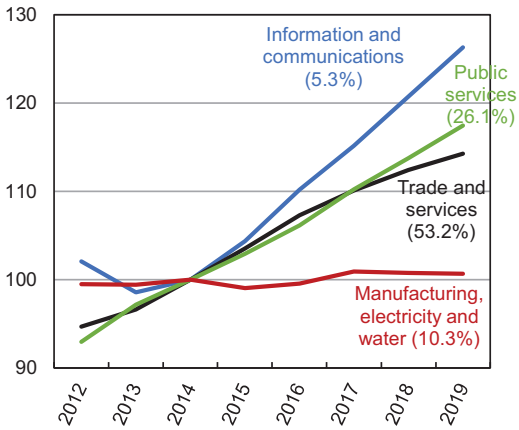
[27] According to the Central Bureau of Statistics definition of the ultra-Orthodox, the participation rate of *haredi* men aged 25–64 (50.8 percent) is much higher than a decade ago (37 percent), but has not risen further in the past three years.

Figure 2.10
Labor Force Participation, Employment, and Unemployment Rates, Prime Working Ages (25–64), 2012–19 (percent)



SOURCE: Based on Central Bureau of Statistics.

Figure 2.11
Number of Employee Posts by Industry Group, 2012–19 (index: 2014=100)



The number in parentheses is each industry's share of total employee posts in 2019. The percentages add up to 95 percent since the figure does not include the following industries: agriculture, other services, households as employers, and foreign organizations and entities.

SOURCE: Based on Central Bureau of Statistics.

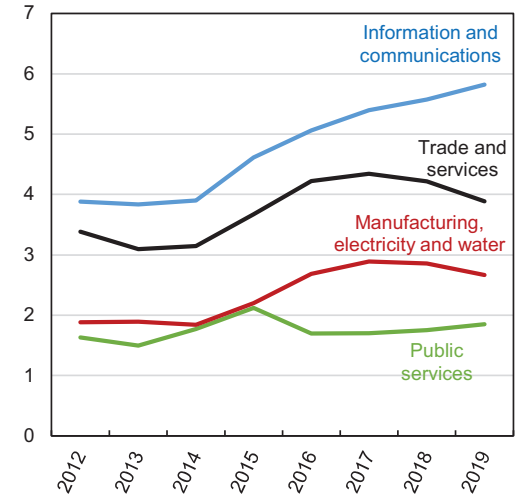
In view of the full employment environment in 2018–2019, the growth rate of employment and the number of employee posts has slowed, particularly in the business sector (Table 2.5). After rapid increases in employee posts in 2016–2017, job creation in trade and private services has decelerated in the past two years and the number of posts in the manufacturing and electricity and water industries has leveled off (Figure 2.11). Outliers in this respect are the public services industries, which continued to hire vigorously and consistently as part of the government's accommodative policy, and the information and communications industry, which is in high demand abroad and, due to its rapid growth, continues to lead economic growth at large (Table 2.6). Concurrently, the surplus demand for labor countrywide is evidently not being met by an increase in hiring of non-Israeli workers, since their numbers have been stable in recent years (at around 290,000).[28]

The job vacancy rate and hours worked per employee declined.

While labor supply continued to expand moderately and the labor market remains tight, there were indications of a halt in the growth of demand for labor after several years of rapid growth. First, in 2018–2019 the job vacancy rate (as a share of total employee posts) declined gradually to 3.5 percent. The decrease was evident in all industries except information and communications (which posted a steep increase) and the public services industries (Figure 2.12), and was strongly consistent with the development of the number of employee posts. Thus, in the trade and services, manufacturing,

[28] The stable count of non-Israeli workers reflects an increase in Palestinians and a decline in foreigners.

Figure 2.12
Job Vacancies as a Share of Total Employee Posts by Industry Group, 2012–19 (percent)



SOURCE: Based on Central Bureau of Statistics.

and electricity and water industries, the moderation in the number of employee posts was accompanied by a decrease in job vacancies, which is consistent with the weakening of demand for labor in these industries. Second, the number of work hours per employee also declined, and ended the year below the long-term average (Table 2.5). Finally, according to the Central Bureau of Statistics Business Tendency Survey, the labor shortage remained acute in 2019 but the severity of the constraint did not worsen during the year.[29] Although it cannot be stated with certainty, this evidently reflects concern that the world slowdown will persist, prompting employers to cut back on new hiring while refraining from layoffs as long they perceive the weakness as temporary. The labor markets of many OECD member states present a very similar picture: low unemployment rates along with declining job vacancy rates (from high levels), fewer hours worked, attenuation of the labor shortage, and moderation of the increase in employee posts.[30]

The ratio of employee posts to employed persons gives further evidence that the labor market, while remaining in a full employment environment, is no longer tightening. This variable, like the unemployment rate, changes cyclically (Figure 2.13).[31] Thus, when the labor market is tight, labor input is boosted by an increase in the share of workers who have more than one job. This increase in this ratio accelerated between 2015 and 2017, but in 2018 and 2019, the numbers of posts and of persons employed advanced at similar rates, meaning that the ratio of the two has increased only moderately.

The growth rate of wages slowed but continued to exceed the long-term average.

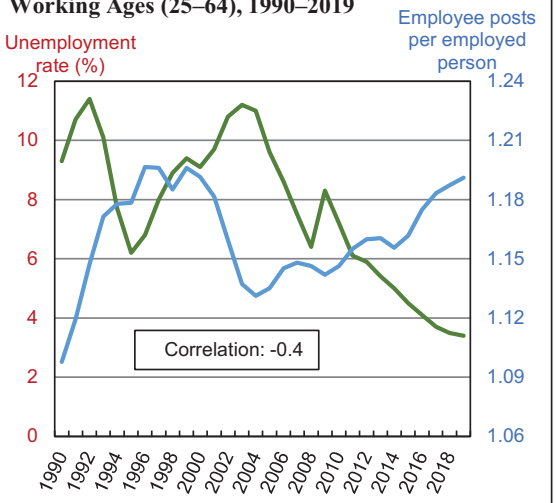
The weakening of demand for labor in 2019 was reflected in a slower increase in nominal wage per employee post and, as a result, in real wages. Thus, the rate of increase slowed from a steady 2.8 percent in the previous four years to 2.0 percent in the reviewed year (Figure 2.14). The development of wages reflects slower growth of

[29] This finding is valid for all industries other than information and communications, which had the smallest share of firms reporting a severe constraint.

[30] See *OECD Economic Outlook,* 2019, no.2.

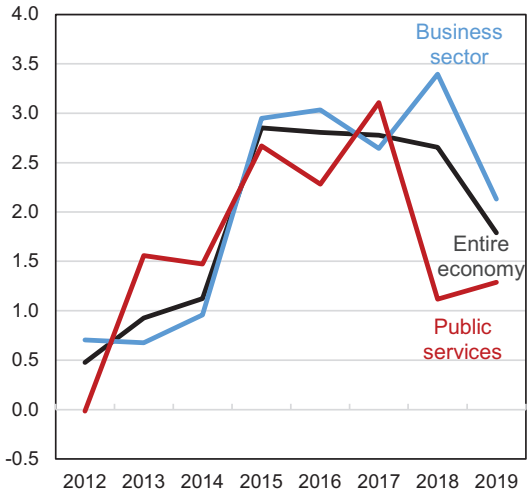
[31] The number of employee posts per employed person also seems to include a long-term component. Therefore, it has been gradually rising since the middle of the previous decade in tandem with a downward trend in the structural unemployment rate.

Figure 2.13
The Umeployment Rate and the Number of Employee Posts per Employed Person, Prime Working Ages (25–64), 1990–2019



SOURCE: Based on Central Bureau of Statistics.

Figure 2.14
Rate of Change in Real Wages, 2012–19 (percent)



SOURCE: Based on Central Bureau of Statistics.

the average wage in most business sector industries, along with a slight acceleration in the public services industry. Just the same, wages advanced more rapidly in the business sector than in the public services in the reviewed year. The rate of wage increases countrywide moderated even though GDP price surged, allowing employers to absorb higher wage expenses.[32] Although slowing in 2019, real wage growth remained more rapid than the long-term average (Table 2.5).

The moderation of wage growth, alongside the improvement in terms of trade, was also reflected in a halt of the increase in the GDP labor share. After rising uninterruptedly[33] since 2015, this variable declined slightly in the reviewed year, to 55.9 percent (Table 2.7).

[32] Real wage from the producer's standpoint (deflated by output price) rose by only 0.5 percent.

[33] The GDP labor share increased in recent years after a lengthy decline, and returned to the 2006 level. For elaboration on the development of labor cost, see Bank of Israel, *Annual Report for 2016,* Chapter 5.

Table 2.5
Principal labor market data, 1995–2019

(annual change, percent)

	1995–2014	2015	2016	2017	2018	2019
Population in the primary working ages (25–64)	2.3	1.4	1.5	1.5	1.4	1.4
Labor force participation rate in the primary working ages (level)		79.8	79.9	80.0	80.3	80.4
Employment rate in the primary working ages (level)		76.2	76.6	77.1	77.5	77.7
Unemployment rate in the primary working ages (level)		4.5	4.1	3.7	3.5	3.4
Job vacancy rate (level)		3.2	3.6	3.8	3.7	3.5
Employed persons (Including non-Israelis)	2.7	2.3	2.3	2.4	1.7	1.6
of which : Employed in the business sector	2.6	1.7	2.8	2.2	0.8	1.4
Employed in the public services	2.9	3.5	1.4	2.8	3.5	2.0
Total work hours (including non-Israelis)	2.7	2.3	3.8	2.2	1.5	0.6
of which : Total work hours in the business sector	2.6	2.0	4.2	2.0	1.1	0.7
Total work hours in the public services	3.2	3.2	2.5	2.9	2.9	0.3
Hours per employed person (including non-Israelis) (level)	36.7	36.5	37.0	36.9	36.8	36.4
of which : Hours per employed person in the business sector (level)	42.1	41.9	42.5	42.4	42.5	42.2
Hours per employed person in the public services (level)	24.9	25.4	25.7	25.7	25.6	25.2
Employee posts (including non-Israelis)	2.7	3.0	3.5	3.3	2.5	2.2
of which : Employee posts in the business sector	2.6	2.8	3.6	3.0	2.1	1.6
Employee posts in the public services	3.1	3.2	3.3	3.8	3.4	3.3
Nominal wage per employee post[a]	4.0	2.2	2.2	3.0	3.5	2.9
Real wage per employee post	0.8	2.9	2.8	2.8	2.7	2.0

[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.

Table 2.6
Change in output of principal industries, 1995–2019

(annual change, percent)

	Share of total output (2019)[a]	1995–2014	2015	2016	2017	2018	2019
Total		3.9	2.4	3.3	4.1	3.4	3.5
Public services	16.1	2.1	2.4	3.3	2.6	2.6	1.4
Business sector	71.0	4.4	2.4	3.3	4.5	3.6	3.8
Manufacturing, mining and quarrying	12.6	3.3	0.4	-4.8	3.2	1.8	2.4
Trade and hospitality and food services	11.6	6.0	2.4	4.7	5.6	3.2	4.4
Business services	18.0	4.4	2.7	4.6	5.8	3.6	4.7
Construction	6.4	1.7	0.9	6.8	6.7	4.9	3.2
Transport and Storage	3.5	4.9	3.6	5.0	7.0	4.4	2.1
Information and communication	9.7	8.9	8.0	7.7	2.6	6.3	6.9
Agriculture	1.2	2.8	-6.5	5.1	1.5	-2.6	-6.9
Water and Electricity	1.6	3.8	2.0	7.1	-1.5	5.6	0.2

[a] In addition to output of public services and business sector product that appear in the table, total output also includes housing services output.

SOURCE: Based on Central Bureau of Statistics.

Table 2.7
The supply of business sector product, 1995–2019

(annual change, percent)

	1995–2014	2015	2016	2017	2018	2019
Gross Domestic Product	3.8	2.3	4.0	3.6	3.4	3.5
of which: Business sector product	4.2	2.3	4.2	3.8	3.7	4.0
Stock of physical capital	4.4	3.6	3.4	4.0	3.9	3.9
of which: Stock of physical capital of the business sector	5.5	3.7	3.3	4.4	4.4	5.0
Labor force	2.6	1.8	2.1	1.7	1.9	1.4
Total hours worked	2.7	2.3	3.8	2.2	1.5	0.6
Total factor productivity	0.7	-0.3	-0.4	1.3	1.1	1.5
Output per work hour (nominal)	4.6	3.2	1.4	2.3	3.4	5.2
Labor compensation per hour worked (nominal)	4.0	2.9	2.0	3.4	4.3	4.3
GDP labor share	-0.6	-0.3	0.6	1.1	0.9	-0.9
GDP labor share (level)	59.0	55.1	55.4	56.0	56.5	55.9
Potential output[a]	3.6	3.4	3.3	3.5	3.5	3.6
Output gap[a,b]	-0.1	-0.4	0.1	0.3	0.4	0.3

[a] Estimate. Potential output is equal to the output in a hypothetical equilibrium in which capacity utilization of all factors of production is similar to the long-term average and does not create price or wage pressures. The output gap reflects the extent to which actual GDP deviates from potential output. The change from year to year in the output gap is not the same as the difference between actual growth and potential growth as there are gaps between the quarterly and annual National Accounts data.

[b] A negative output gap is obtained when actual GDP is lower than potential GDP.

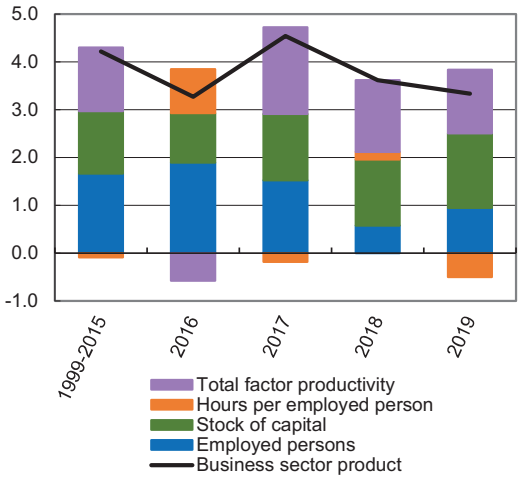
SOURCE: Based on Central Bureau of Statistics.

4. SUPPLY AND EQUILIBRIUM

a. Output supply, potential output, and the output gap

Given the full-employment environment in recent years, supply-side growth in business-sector output has been based more on growth in the stock of physical capital than on growth in employment (Figure 2.15). The contribution of total factor productivity has been stable in the past three years. In 2019, it reflected a sharp increase in Intel's productivity and a decline in capital utilization among other manufacturing firms, as shown by these firms' responses to the Central Bureau of Statistics and Bank of Israel business surveys. Since the output decline in manufacturing was mainly due to a reduction in the utilization

Figure 2.15
Increase in Business Sector Product: Total Increase and Contribution of Components, 1999–2019
(percentage points)



Business sector product at base price.

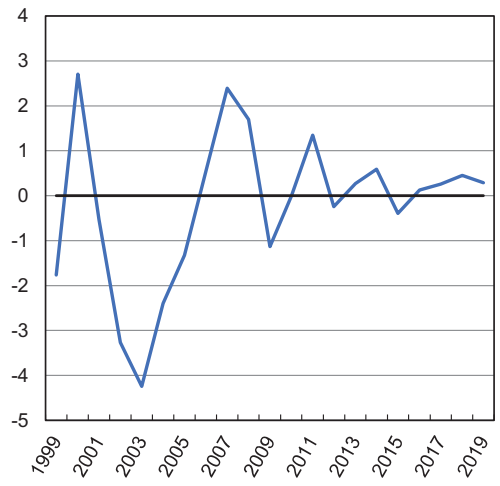
SOURCE: Based on Central Bureau of Statistics.

of machinery and equipment, it did not free up factor inputs for the benefit of other industries. Therefore, the slowdown of world trade growth impaired output growth despite the full-employment environment.

The potential rate of output growth[34] slowed gradually from the exit from the 2008 world crisis until 2016. The trend was halted in 2017 and the rate in the reviewed year was 3.6 percent (Table 2.8). The growth rate of labor input moderated during this period due to slower growth of the prime working age population, a slowdown of the upward trend in participation (Table 2.5), and the near-exhaustion of the decrease in the natural unemployment rate. In contrast, the increase in the stock of physical capital has accelerated in the past few years, largely due to sizeable investments by Intel and the Leviathan partnership. This aside, the GDP capital share, although having grown somewhat in recent years, is lower than in the past, and is expected to continue dropping as the restructuring of the economy—expansion of services industries at the expense of physical-capital-intensive manufacturing—proceeds. The contribution of total factor productivity, after growing slowly between 2012 and 2016, has been recovering in the past three years due to a rapid increase in the employment of unskilled workers along with a decline in manufacturing productivity in view of lethargic growth of world trade and surplus production capacity. However, since then, the increase in productivity accelerated—because the rapid growth of employment of unskilled labor has slowed, manufacturing rebounded somewhat thanks to world trade, and the increase in output per worker in the trade and services industries sped up after stagnating for years, against the background of heightened domestic competition.

Since 2016, actual GDP growth has surpassed that of potential GDP (Figure 2.16).

Figure 2.16
Output Gap, 1999–2019 (percent of GDP)



A negative output gap is obtained when actual GDP is lower than potential GDP.
SOURCE: Bank of Israel.

[34] According to the production function approach—which underlies the analysis that follows—potential output equals the output obtained at the hypothetical equilibrium at which the level of utilization of all production factors resembles the long-term average and does not create price and wage pressures. The deviation of actual output from potential output is the output gap. The growth rate of potential output is derived from the multiyear growth trends of the various means of production—physical capital, labor, and human capital—and from the average increase in total factor productivity, which originates in technological and other structural improvements.

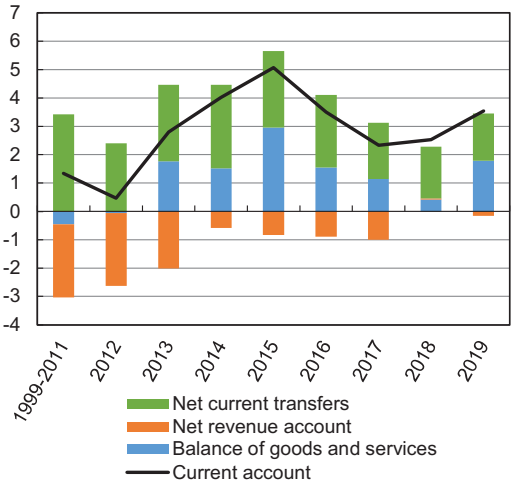
The output gap has stabilized at around zero.

An improvement in terms of trade, fiscal expansion, and then the world economic recovery led to an acceleration of domestic growth in 2016–2017, narrowing the positive output gap. Consequently, a demand surplus developed and the labor market tightened as never before. However, the world economy has been gradually worsening since then and policy accommodation largely exhausted itself in 2019. As a result, the positive output gap stopped widening and GDP growth in 2018–2019 was close to the potential rate—a situation also reflected in the slightly looser labor market in the reviewed year. On final reckoning, the output gap remained close to zero, meaning that the economy has no significant surplus on either the supply or the demand side.

b. The current account and the real exchange rate

The current account surplus increased to 3.6 percent of GDP in 2019. The fluctuations in the surplus mainly reflect changes in the balance of goods and services—which rose sharply in the reviewed year—whereas the deficit in the income account and the surplus in current transfers are declining gradually[35], leaving their combined effect on the change in the balance negligible (Figure 2.17).

Figure 2.17
The Current Account Surplus and Contribution of Components, 1999–2019 (as a percentage of GDP)



SOURCE: Based on Central Bureau of Statistics.

The current account surplus increased and reflects growth in the private savings rate.

The current account surplus strikes a balance between domestic investment and national savings. Gross investment as a share of GDP fell in 2019 after increasing in previous years. This was mainly due to transient factors (electronic components and natural gas), net of which the ratio has remained stable for several years. It follows that the changes in the current account surplus in recent years are largely representative of volatility in the national savings rate. National savings were 24.3 percent of GDP, surpassing both the rate in 2017–2018 and the long-term average. The increase was supported by the improvement in terms of trade accompanied by an increase in the GDP capital share. Therefore, much of the growth of national income in the reviewed year was channeled to savings.[36]

[35] The deficit on income account is narrowing mainly because residents' receipts on account of investments abroad have been rising, whereas financial income from inbound current transfers have been stable in recent years, causing the share of this income in GDP to slip.

[36] The increase in national savings in 2018–2019 comes from an increase in private savings, while public savings contracted (Table 2.8).

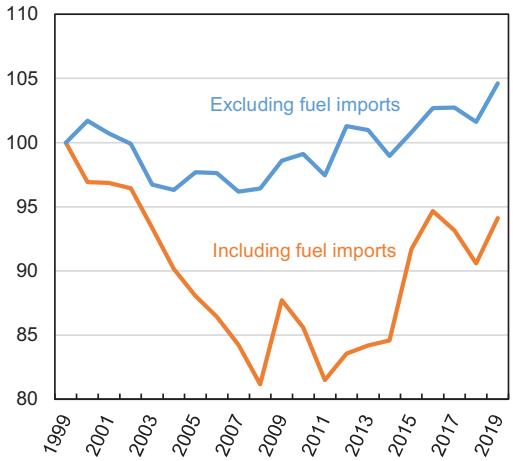
Most of the increase in savings was directed to investment abroad and not to domestic investment, the share of which in Israel's GDP is consistently below the OECD average, principally due to under-investment in infrastructure and nonresidential buildings. (See the Bank of Israel *Annual Report* for 2016, Chapter 7.)

In the past 15–20 years, the Israeli economy has undergone several structural changes that have kept the current account in a state of long-term surplus, which has contributed to more than a decade of shekel appreciation. The changes include an increase in the savings rate following the absorption of immigrants from the Former Soviet Union[37], and later in view of compulsory pension legislation; a decrease in the share of fuel in imports due to the the transition to using domestic natural gas instead; the rapid growth of services exports, which secured a larger share of world trade with no need for large capital investments; and an increase in the incomes of high-wage workers, who tend to save more of their current incomethan others.

Another factor that has had an upward effect on the surplus in the goods and services account is the prolonged improvement of Israel's terms of trade in the past decade after deteriorating in the previous decade (Figure 2.18). The main reason for the improvement, accounting for half of it, was a 40 percent decrease in fuel prices. Concurrently, the US dollar strengthened by 20 percent against the euro, which improved the terms of trade because Israeli exports tend toward countries that trade in dollars while its imports are more heavily weighted toward the euro.[38] Furthermore, the services industries that export managed to raise their output prices beyond the rate of appreciation.

Terms of trade improved sharply by 3.9 percent in 2019, offsetting in the worsening of the previous two years. However, after years of volatility in the balance of goods and services that traced largely to changes in terms of trade originating in fuel prices, the terms of trade improved by 3.0 percent in

Figure 2.18
Israel's Terms of Trade, 1999–2019
(index: 1999=100)



The terms of trade are qual to the ratio between the price of exports excluding diamonds and startups and the price of imports excluding diamonds and defense imports.
SOURCE: Based on Central Bureau of Statistics.

[37] In the 1990s, Israel absorbed approximately one million immigrants from the FSU. In response, the economy had to make large and rapid investments to meet housing demand and adjust the stock of capital to the population. When the process of integrating the immigrants was completed in the early 2000s, the volume of investment dropped, the immigrants joined the labor market, and the savings rate climbed.

[38] See Bank of Israel (2017), "The GDP Deflator, CPI, and Terms of Trade," *Selected Research and Policy Analysis Notes*, 143, pp. 60–68.

the reviewed year even net of fuel prices. The end of large investment projects in electronic components and natural gas also contributed to the increase in the surplus by slowing the expansion of imports and giving Intel's exports a sharp upward push.

The real appreciation that has typified the shekel for more than a decade resumed in 2019 after pausing from the middle of 2017 to the end of 2018. During that time, the world economy staged a recovery, monetary policy abroad tightened, Israel's terms of trade worsened due to rising energy prices, the current account surplus narrowed, and the shekel depreciated in terms of the real exchange rate. All these trends reversed direction in the reviewed year, allowing the current account surplus to grow and appreciation to resume (Table 2.8).

The real appreciation of the shekel, a characteristic of the Israeli economy for more than a decade, resumed in 2019.

Table 2.8
Savings, investment and the current account, 1995–2019

(percentage of national

	1995–2014	2015	2016	2017	2018
Gross national savings	21.8	24.7	24.3	23.6	23.9
of which : Public	-1.6	1.2	0.9	1.1	-1.0
Private	23.4	23.5	23.4	22.5	24.9
Gross investment	21.2	19.6	20.8	21.2	21.3
of which : In principal industries	14.6	12.4	13.8	13.8	14.6
of which : General government's investments[a]	3.9	3.1	3.3	3.7	3.7
In housing	5.8	6.3	6.6	6.7	6.4
In inventory	0.7	0.8	0.5	0.7	0.4
Net current account	0.6	5.1	3.5	2.3	2.5
of which : Balance of goods and services	-1.2	3.0	1.6	1.1	0.4
Net income account	-2.5	-0.8	-0.9	-1.0	0.0
Net current transfers	3.6	2.7	2.6	2.0	1.8
Terms of trade[b]	-0.3	8.4	3.2	-1.6	-2.8
Real effective exchange rate[b,c]	0.0[d]	-0.1	-1.9	-4.5	2.1

[a] Including investment grants.

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

[c] Adjusted to the Consumer Price Index. An increase refers to depreciation.

[d] The figure relates to the years 1999–2014.

SOURCE: Based on Central Bureau of Statistics.