

Chapter 2

Aggregate Activity: GDP and Employment

- The rate of GDP growth slowed somewhat during 2014, to 2.8 percent. Per capita GDP grew by only 0.8 percent, which is lower than in most OECD countries.
- The tense security situation around Operation Protective Edge reduced growth this year by about 0.3 percentage points, as incoming tourism was negatively impacted and current household expenditure contracted during the operation.
- Net of one-off factors that affected growth during the last two years—the start of natural gas production last year and the security situation this year—it appears that the underlying rate of economic growth has stabilized in the range of 2.5 to 3.0 percent in recent years. This is a relatively moderate rate of growth relative to previous years.
- The low rate of growth was primarily due to the slow recovery of the large economies from the global crisis that began in 2008. This reduced direct demand for exports and at the same time eroded export profitability, since it supported the real appreciation that was a result of Israel's success in coping with the crisis.
- The low demand during this period was also due to a reduction in fixed capital formation. During the surveyed period, there was a particularly large decline in investment in infrastructure (electricity, water and transport) and in public services. Investment in residential housing remained stable at the elevated level it reached two years ago.
- The Bank of Israel reacted to the developments during the last three years by reducing the interest rate and purchasing foreign exchange, which had the effect of partially offsetting the weakness in demand and the appreciation of the exchange rate. The effect of the low interest rate was especially notable in private consumption, whose rate of growth accelerated due to the purchase of durable goods. The Bank's response also led to a depreciation which began in the second half of the year and contributed to a significant increase in exports during the final quarter.
- The growth in the supply of labor, alongside the continuing decline in structural unemployment, allowed the employment rate to increase without creating upward pressure on wages and resulted in only a moderate rise in productivity. The expansion in employment was also due to the composition of total demand, which continued to shift toward growth in labor-intensive activity, such as business services, and to growth in employment in public services.
- The moderate level of demand, at the same time as an expansion of supply, led to a widening of the negative output gap. The output gap, together with the decline in oil prices starting from mid-year, contributed to a decline in the inflation rate, the restraint of upward pressure on real wages and an expansion in the current account surplus.
- The level of infrastructure in a number of sectors, and in particular in public transportation, is still lower than in most advanced economies; nonetheless, the level of investment in infrastructure in recent years has been lower than in the past.

1. MAIN DEVELOPMENTS AND BACKGROUND CONDITIONS

a. Main developments

The underlying rate of growth in the past two years has been lower than the previous years, due to the stagnation in global economic activity.

Gross domestic product (GDP) grew by 2.8 percent this year. Net of one-off factors—the start of natural gas production from the Tamar reservoir in April of last year and Operation Protective Edge in the summer of 2014—the underlying rate of growth accelerated somewhat relative to 2013. This was due to the rise in private consumption and exports, which offset the unusual weakness that characterized 2013. Nonetheless, the underlying rate of growth during the last two years, which ranged between 2.5 and 3.0 percent, can still be said to have been somewhat moderate relative to previous years and relative to potential growth. Contributing to higher potential growth were the expansion of the supply of labor and reforms that enhanced competition in a number of areas. Growth was lower than its potential primarily as a result of the continuing standstill in global economic activity, particularly in the eurozone. Thus, Israeli exports are unable to lead growth, in contrast to the situation prior to the crisis in 2008. Furthermore, since Israel was less affected by the crisis than its main trading partners—all of which were among the hardest hit by the crisis—there has been steady pressure for an appreciation of the real exchange rate, which in turn gradually balanced the levels of activity between Israel and other countries. The expansion of supply factors, alongside weak demand abroad, the appreciation in the exchange rate and the drop in global energy prices contributed to a decline in the inflation environment.

The decline in investment in construction projects this year restrained growth. In contrast, monetary policy contributed to the expansion of private consumption and moderation of appreciation forces.

Another factor that has restrained growth in recent years has been the significant drop in investments. However, this situation does not reflect pessimism regarding the chances of Israel and other countries recovering from the crisis, since investment in machinery and equipment has in fact risen, mainly in manufacturing which is particularly sensitive to global demand. The decline in investment was the result of the completion of large infrastructure projects, such as the construction of private electricity generating plants, and the decline in the extent of investment by local authorities. In recent years, active residential construction has been stable, after reaching a high level in 2011–12. Furthermore, the steps taken by the government to reduce the structural deficit in the budget, i.e., raising taxes and reducing expenditure in several areas, including public investment, have slowed domestic demand in recent years. In view of this situation, monetary policy was directed at stimulating demand through reductions of the interest rate and the purchase of foreign exchange. The low real interest rate, the appreciation of the exchange rate and a number of reforms to increase competition together contributed to the acceleration in private consumption. However, the composition of private consumption tended towards durables this year, and in particular vehicles¹, which are import-intensive products. The reductions in the interest rate, alongside various global factors, contributed to the depreciation that

¹ The increase in the purchase of vehicles could be seen throughout the year, although at the end of the year it accelerated ahead of tax regulations coming into force that were expected to raise the cost of some vehicles.

began during the second half of the year and to the increase in exports toward the end of the year.

Despite only moderate growth, the employment rate continued to improve this year, climbing to 75.5 percent among the primary working ages, and the unemployment rate dropped to a historic low. The resilience of the labor market can be explained by a number of factors: On the demand side, the cyclical change in the composition of demand continued, with demand shifting toward an increase in employment-intensive activity (such as services), and employment grew in public services. With regard to the supply side, the rise in the level of education among the population, alongside the policy measures adopted in recent years, worked toward both an increase in the supply of labor and a continuation of the decline in structural unemployment. These phenomena restrained the rise in the cost of labor.

Despite the low level of unemployment, production factors in the economy are not being fully utilized and during the last two years the negative output gap has widened. While this caused total factor productivity in the economy to rise moderately last year, this year there were various signs that the utilization of factors of production, in particular machinery and equipment, had declined. The global recovery from the crisis which is expected in the near future supported an equilibrium in which capacity utilization is reduced rather than employment and investment in machinery and equipment. The surplus in production capacity allowed exports to grow in the final quarter of the year, following the depreciation of the exchange rate.

Employment increased as a result of the growth in the supply of labor, employment in public services and labor-intensive components of business activity.

The growth in supply factors, alongside weak demand, has increased the economy's surplus productive capacity.

Table 2.1
Indicators of economic activity, 1995–2014

	(annual rate of change, percent)						
	1995–2008	2009	2010	2011	2012	2013	2014
GDP	4.0	1.9	5.8	4.2	3.0	3.2	2.8
GDP of OECD countries	2.6	-3.5	3.0	1.9	1.3	1.4	1.8 ^a
Per capita GDP in Israel	1.8	0.1	3.8	2.3	1.1	1.3	0.8
Per capita GDP in OECD countries	1.9	-4.1	2.4	1.3	0.7	0.8	1.2 ^a
Exports excluding diamonds and startups	8.5	-10.5	14.3	5.7	4.2	-0.3	4.7
Domestic uses	3.3	1.3	5.3	5.6	3.4	2.5	3.2
Unemployment rate (percent)	10.7	9.5	8.4	7.1	6.9	6.2	5.9
Real wage per employee post	1.1	-2.6	0.7	0.4	0.5	0.9	1.4
Surplus in the current account (percent of GDP)	0.1	3.9	3.4	1.5	0.8	2.3	3.0
Real effective exchange rate	0.8 ^b	1.8	-5.1	-1.0	4.7	-6.0	-1.5

^a Data for 2014 are based on estimates.

^b The data relate to the years 1999–2008.

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

Per capita GDP grew slowly this year relative to most OECD countries.

The slowdown in growth could also be seen in per capita GDP, which grew by only 0.8 percent. This growth rate is lower by one percentage point than the average in Israel between 1995 and the onset of the global crisis, and is lower than in most of the OECD members (Table 2.1 and Figure 1.2). This slowdown occurred following the years of the crisis (2008–11), when the economy enjoyed per capita growth rates that were among the highest in the OECD, so that the gap in GDP per capita between Israel and the OECD average declined from 25 percent in 2006 to 13 percent in 2013. Israel's advantage over the OECD average in growth decreased already in 2012–13, and this year they switched places.

b. Background conditions

Global background conditions

Large economies' growth rates were slow relative to the period prior to the global crisis.

The global growth rate improved somewhat relative to the previous year, but it is still lower than the growth rates that prevailed prior to the crisis (Table 2.2). In the US, which is the destination for one-third of Israel's exports of goods and services, the slow recovery in economic activity continues. The GDP growth rate was 2.4 percent, which is somewhat higher than in the previous two years, and the unemployment rate completed a decline of four percentage points since the peak of the crisis in 2009–10. The support for economic activity provided by policy makers is slowly changing its composition. Thus, accommodative monetary policy is gradually becoming more moderate as the central bank is terminating its purchases, while the effect of contractionary fiscal policy in recent years is dissipating. This constitutes evidence of the expectation that the recovery in the US is becoming more solid. The situation in the eurozone, which is the destination for one-quarter of Israel's exports, remains pessimistic. Although the eurozone's GDP grew this year, following two years of contraction, the levels of unemployment remain high (about 11 percent) and fears of deflation have developed in a situation where the central bank's interest rate is already close to zero.

Trade as a proportion of global GDP has not grown since the crisis in 2008.

The rate of growth in world trade, a variable that has been found to explain the demand for Israeli exports to a large extent, was similar to that during the previous two years. This was the outcome of slower rates of growth in developing economies, which offset the improvement in advanced economies. The ratio of trade to global GDP has not risen since the crisis that began in 2008.² According to research carried out by the IMF³, this is mainly the result of the change in the global production chain following the slowdown in vertical specialization,⁴ to which the liberalization in

² OECD Economic Outlook 96, Chapter 1 (November 2014).

³ Constantinescu, C., A. Mattoo and M. Ruta (2015), "The Global Trade Slowdown: Cyclical or Structural?", IMF Working Paper 15/6.

⁴ As a result of vertical specialization, the production chain is made up of a number of stages and is dispersed among several countries. Each transfer of intermediate goods between countries is recorded in world trade data according to its full value although each stage contributes only a small amount to the added value.

international trade contributed. Additional factors working in this direction include the widening extent of restrictions placed on trade in order to protect local production,⁵ the weakness in demand for capital goods (which are import-intensive) and a drop in intra-European trade.

Table 2.2
Global economic developments, 1995–2014

	(annual rate of change, percent)						
	1995–2008	2009	2010	2011	2012	2013	2014
Advanced economies							
GDP	2.7	-3.5	3.0	1.9	1.3	1.4	1.8 ^a
Imports	6.1	-12.2	11.7	5.3	1.2	2.0	3.0 ^a
US							
GDP	2.9	-2.8	2.5	1.6	2.3	2.2	2.4
Eurozone							
GDP	2.2	-4.5	2.0	1.6	-0.7	-0.5	0.9 ^a
Developing economies							
GDP	5.6	3.1	7.5	6.2	5.1	4.7	4.4 ^a
Imports	8.8	-8.0	14.3	9.8	6.0	5.5	3.6 ^a
World trade	6.7	-10.6	12.6	6.7	2.9	3.4	3.1 ^a

^a Data for 2014 are based on estimates.

SOURCE: Based on OECD and IMF.

Although economic activity in advanced economies improved this year, their rate of growth did not meet earlier expectations. Figure 2.1 shows that during the last four years, there has consistently been an expectation that the rate of growth in the large economies would recover during the subsequent year, but the actual rates of growth figures did not meet the forecasts.⁶ To illustrate, until mid-2013 expectations existed that growth in the US would accelerate this year to 3.0 percent; however, these expectations eventually declined to the level of the actual rate of growth, i.e., 2.4 percent. This phenomenon sheds light on the macroeconomic processes in Israel, whereby the decisions of households, firms and policy makers are based not only

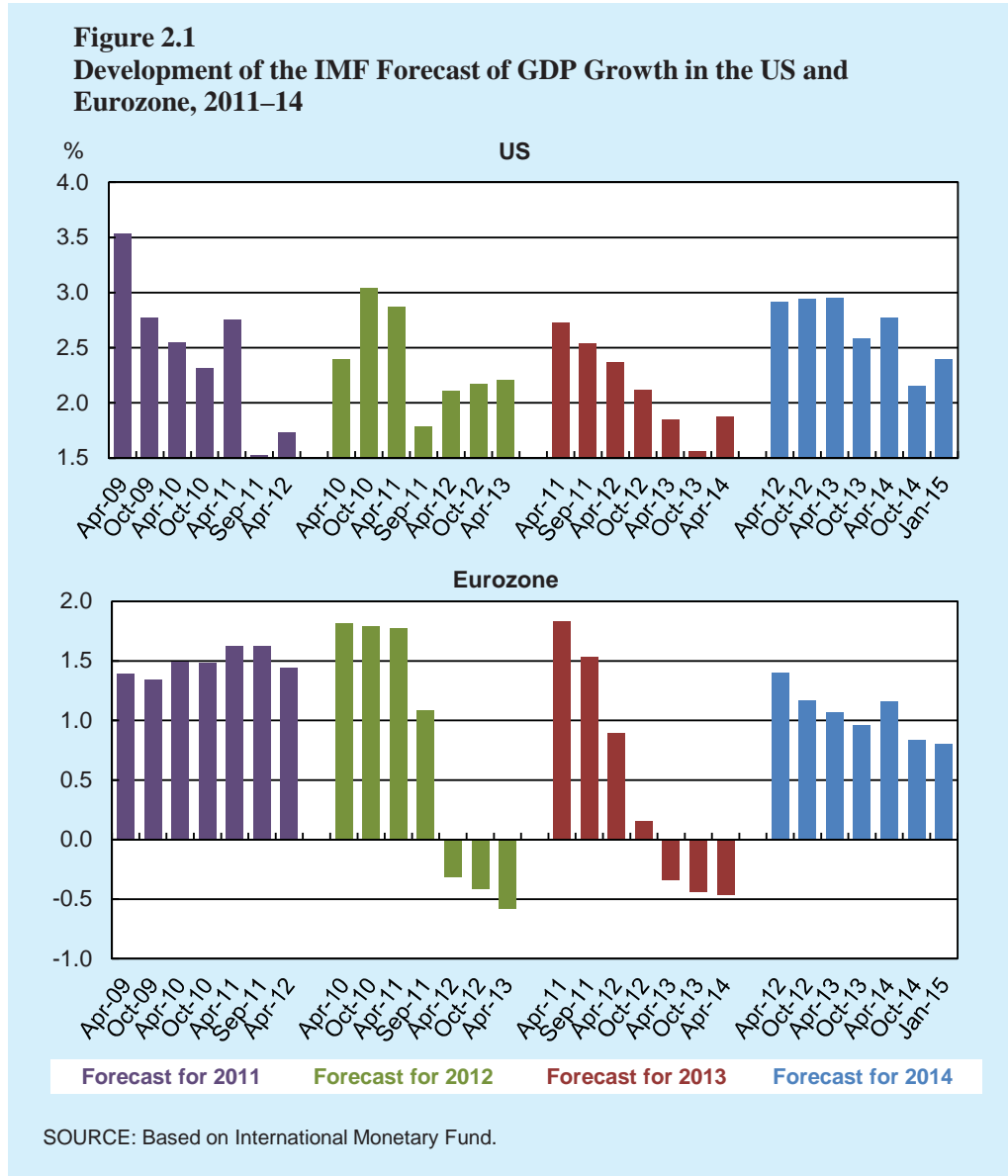
The rate of growth in the large economies has not met expectations during the last four years.

⁵ The World Trade Organization identifies about 1,000 restrictions that have been put in place since 2008 and not yet removed. These cover about 4 percent of global trade in goods and include, for example, changes in tariffs and the opening of investigations against dumping, which can lead to preventative policy measures.

⁶ Figure 2.1 relates to the forecasts of the IMF. However, downward revision is also characteristic of the forecasts of other financial bodies that report to the Bloomberg service.

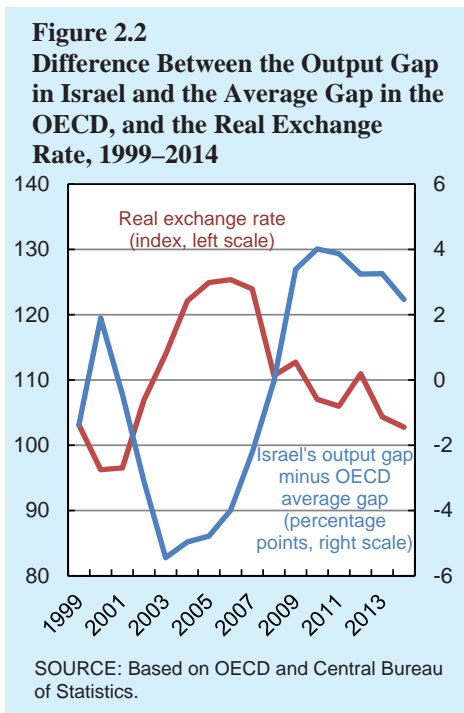
on the current situation but also (and perhaps primarily) on the expectations of the future.⁷

There are several background conditions that help in understanding the developments in Israel, with one of the main ones being the relative level of economic activity in Israel since the onset of the crisis in 2008. First and foremost, the crisis



⁷ Chapter 3 of this report, as well as in the 2013 Annual Report, contains a discussion of the relationship between expectations of growth in the US and the Taylor rule, which describes how the Bank of Israel determines the monetary rate of interest.

adversely affected Israel's main trading partners, i.e., the US and Europe. Israel was only moderately affected by the crisis and the main effect was the drop in real demand for Israel's exports. At first, domestic demand for consumption and investment declined as a result of global pessimism but the expansionary response of monetary policy and the understanding that the financial system in Israel is coping with the crisis led very quickly to the acceleration of local demand, which offset part of the global effect. Thus, a situation was created in which Israel's output gap, which is an indicator of surplus demand relative to supply factors, was less affected than the output gaps in the developed countries. According to estimates of the OECD, Israel's advantage in this respect was about 3.3 percentage points just prior to 2014 (Figure 2.2). This difference has been a force acting to encourage real appreciation since 2008. Not only is this appreciation the result of a positive development, it is the economic mechanism for balancing between the level of economic activity in various countries through the erosion of net export surpluses in counties with relatively strong demand. This is one of the reasons that Israel's advantage with respect to the output gap has been gradually eroded since the crisis reached its peak in 2009.



As Israel was adversely affected by the global crisis less than its main trading partners, appreciation forces were created and are eroding its advantage.

Domestic background conditions

During the surveyed year, there were two factors that had a one-off effect on economic growth. The first was the military engagement (Operation Protective Edge) between Israel and Hamas in Gaza during July-August, during which Israel absorbed, among other things, barrages of missiles fired at cities in the Center and the South. The fighting led to a temporary reduction in private consumption and more enduring damage to the export of tourism services. In addition, it was necessary to increase defense expenditure and the government financed the increase by cutting non-defense budgets and making use of the reserves that had been accumulated in the budget (Chapter 6). According to estimates, the direct economic cost was a reduction of the rate of growth in GDP by about 0.3 percentage points. Box 2.1 presents a more detailed discussion of this estimate and describes how various military operations affected economic activity in Israel during the last decade.

Operation Protective Edge reduced GDP growth by 0.3 percentage points this year.

After adjusting for one-off factors, underlying growth increased somewhat this year, from 2.5 percent to 2.8 percent.

Private and public consumption contributed to the stabilizing of economic activity.

The reductions in the interest rate by the Bank of Israel since 2011 have contributed about 0.5 percentage points on average to annual growth.

Second, in April 2013, the production of natural gas began from the Tamar reservoir, which replaced the more expensive fuels that the country had been forced to import previously.⁸ While the beginning of production contributed about 0.8 percentage points to growth last year, this year the contribution was only up to 0.3 percentage points. The contribution to growth is the result of the fact that natural gas was produced during the whole of this year while in 2013 it was only produced from April onward. Once the rate of growth is adjusted for the contribution of the two one-time factors, it appears that while the trend in growth reached more than 4 percent in 2010–11, in 2013 it declined to the vicinity of 2.5 percent, while in 2014 there was somewhat of an improvement to 2.8 percent.⁹

Fiscal policy makers acted to reduce the structural deficit in the budget during the last two years. The statutory tax rates rose this year by 0.6 percentage points of potential GDP as a result of the full-year effect, i.e., the rate of VAT was raised only in mid-2013 while in 2014 the new rate was in effect for the entire year, and also as a result of the increased corporate tax rate. In addition, the reduction in transfer payments (as a result of the cut in child allowances) and interest rate payments (as a result of the decline in interest rates), alongside the reduction in public investment, resulted in a decrease in the share of public expenditure in potential GDP of about 0.7 percentage points. These two factors together led this year to a decline in the structural deficit of 1.3 percent of GDP, which in turn contributed to a decline in disposal private income. However, it appears that this did not significantly affect growth, since domestic demand and in particular private consumption acted to stabilize economic activity.

The Bank of Israel responded to the drop in the inflation rate, the signs of weakness in domestic activity and the real appreciation during the first half of the year by additional reductions in the rate of interest and by the purchase of foreign currency. These measures moderated the appreciation and its negative influence on the profitability of exports and even contributed to a shift to depreciation during the second half of the year and supported the increase in exports towards the end of the year. The reduction in the interest rate stimulated domestic demand, and private consumption in particular, through two main channels: First, it reduced the cost of credit to businesses and households and reduced the incentive to save.¹⁰ Second, the low interest rate strengthened the wealth effect among the public by raising the value of the public's portfolio of assets while the increase in housing prices increased the wealth of home owners.¹¹ An analysis of the data using the Bank of Israel's general

⁸ See Chapter 2 in the 2013 Bank of Israel Annual Report.

⁹ In 2012, there were two one-off factors with opposing effects and according to estimates each of them contributed between 0.5 and 1.0 percentage points in absolute value. The cessation of the import of natural gas from Egypt and the substitution of more expensive fuels reduced the rate of growth, while the start of production in the new Intel factory contributed to growth. Therefore, it is difficult to determine if the underlying rate of growth fell already in 2012.

¹⁰ Further discussion appears in Chapter 4: The Financial System.

¹¹ Kahn, M. and S. Ribon (2014), "The Effect of Home and Rent Prices on Private Consumption in Israel – a Micro Data Analysis", *Israel Economic Review*, 11(1), p. 97-144.

equilibrium model¹² shows that the process of interest rate reductions—from 3.25 percent in mid-2011 to 0.25 percent at the end of 2014—contributed about 0.5 percentage points to growth in GDP in each of the years from 2012 until 2014, and 0.8 percentage points to the level of employment in 2014.

2. AGGREGATE DEMAND AND USES

a. The composition of foreign and domestic demand

The economy's total demand for final uses grew this year by a moderate 2.9 percent. Figure 2.3 shows that the rate of growth in uses fell to a lower level already last year, primarily due to the exposure of the export component to the moderate demand from abroad and the appreciation. The contribution of investment has also been eroded in recent years. In contrast, domestic demand for private consumption continued to increase at an unchanged rate and even accelerated this year, thus maintaining the growth in total demand in the economy.

However, the composition of the growth in sources changed this year relative to the previous year. Thus, while the rate of growth in GDP slowed this year, imports resumed their growth after contracting in 2013 (Table 2.3). This development has a

Imports grew this year as a result of the import-intensive composition of demand and the continuing real appreciation; this follows the drop in imports last year with the start of natural gas production.

Table 2.3
Sources and uses, 1995–2014

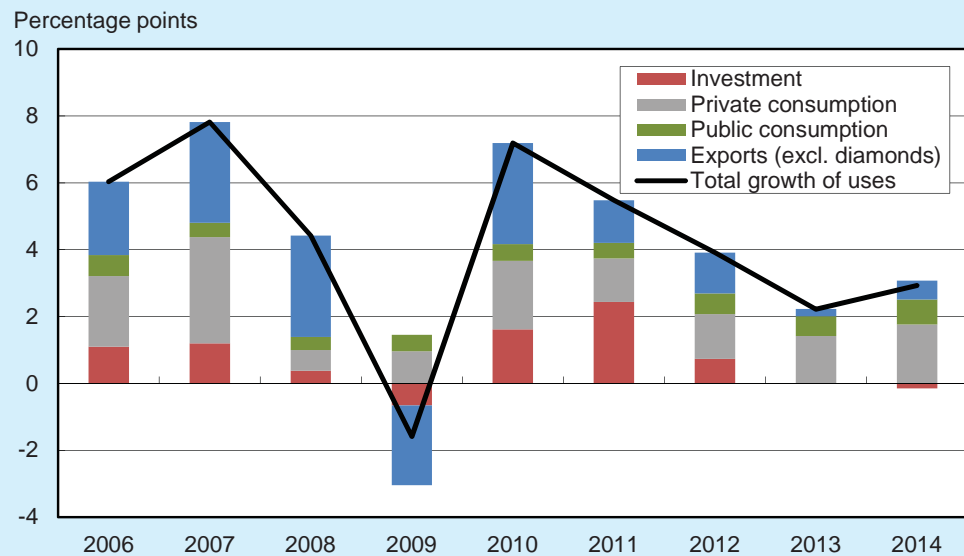
	(annual rate of change, percent)						
	1995–2008	2009	2010	2011	2012	2013	2014
GDP	4.0	1.9	5.8	4.2	3.0	3.2	2.8
Imports excluding ships, aircraft, diamonds and defense imports	5.6	-12.0	12.2	9.0	5.4	-2.7	2.4
Domestic uses	3.3	1.3	5.3	5.6	3.4	2.5	3.2
<i>of which:</i> Private consumption	4.3	2.2	4.6	2.9	3.1	3.3	4.0
<i>of which:</i> Current consumption	3.8	2.6	4.1	2.5	3.3	3.0	2.8
Fixed capital formation (excluding ships and aircraft)	1.9	-2.7	9.9	15.0	2.9	0.5	-1.7
Investment in inventory as a percentage of GDP (excluding diamonds and startups)	-0.5	-0.4	-0.4	0.2	0.6	0.7	0.2
Public consumption excluding defense imports	2.0	4.5	2.3	2.5	3.2	3.3	3.9
Exports excluding diamonds and startups	8.5	-10.5	14.3	5.7	4.2	-0.3	4.7

SOURCE: Based on Central Bureau of Statistics.

¹² Argov, E., A. Barnea, A. Binamini, E. Borenstein, D. Elkayam and I. Rozenshtrom (2012), "MOISE: A DSGE Model for the Israeli Economy", Bank of Israel, Research Department Discussion Paper No. 2012.06.

number of explanations: (1) The start of production of natural gas in April 2013 was accompanied by a drop in the import of fuels, which contributed to the contraction of imports in the previous year. (2) Relative to 2013, the composition of demand this year was skewed toward imports. Thus, while there was an increase in import-intensive components, i.e., private consumption of durable goods (and in particular vehicles) and investment in machinery and equipment, there was also a decline in output-intensive components, i.e., investment in construction projects. (3) The real appreciation continued until the middle of the year and supported a shift of domestic production to imports.

Figure 2.3
Total Growth of Uses and Contribution of Components, 2006–14



SOURCE: Based on Central Bureau of Statistics.

b. Foreign demand and exports

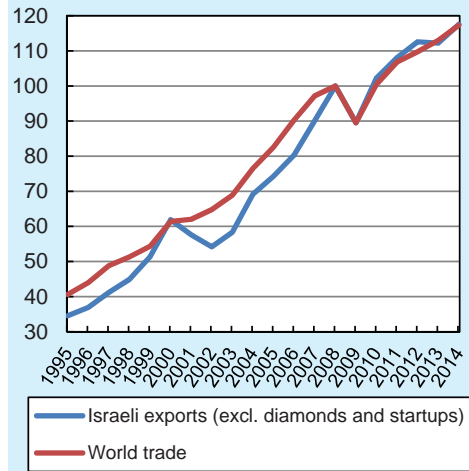
During the last three years, the trend in Israel's exports has followed that of world trade, which grew at a more moderate rate than in the past.

Exports (excluding diamonds and start-up companies) grew this year by 4.7 percent, after remaining unchanged in 2013. However, the rate of growth in exports is still low relative to its average during the period that preceded the global crisis (about 6 percent between 2000 and 2008). Export growth was held back in recent years primarily due to only moderate growth in world trade which was the result of the lingering effects of the global crisis. During the last three years, trade grew at a rate that fell short of the average during the period preceding the crisis (3 percent as opposed to about 6 percent between 2000 and 2008). Figure 2.4 shows that prior to the global crisis, Israel's exports grew faster than world trade, due to among other things the recovery from the domestic slowdown experienced by the economy during the early 2000s. However, since the onset of the crisis, Israel's exports have kept pace with world trade.

Although the growth in goods (excluding diamonds) exports resumed this year, its rate has been a moderate 3.4 percent.¹³ The increase this year is primarily explained by medium-high technology manufacturing, which experienced volume growth of 19 percent, while exports of low technology and medium-low technology manufacturing grew by 7 percent and exports of high technology manufacturing remained unchanged. The export of tourism services declined this year by 1.4 percent, as a result of the security tension that prevailed during the Protective Edge operation and following it (Box 2.1). The increase in exports was led again this year—as in the previous two years—

by business services, which grew by 8.7 percent.¹⁴ Furthermore, this component has been a relatively stable component of the growth in exports over the years. There are several reasons for this: in contrast to goods exports, the export of services does not involve the physical crossing of international borders and therefore is less subject to trade barriers imposed by many countries on one another after the crisis.¹⁵ Even more importantly, about 65 percent of services exports are characterized by a high level of technology and a unique character¹⁶ (while commodity goods are more homogenous) and therefore demand for these services is less sensitive to relative prices. The market power created by the uniqueness of services provided by these industries, together with the high share of their added value, enables companies to cope with the erosion in profitability caused by prolonged appreciation. The growth in the export of high tech services constituted about 75 percent of the total increase in the export of business

Figure 2.4
World Trade and Israeli Exports
(Goods and Services), 1995–2014
 (Quantitative Index: 2008 = 100)



SOURCE: Based on Central Bureau of Statistics and OECD.

The increase in exports this year was led by business services, particularly in high tech industries.

¹³ Goods exports also declined last year as a result of technical recording issues. Thus, the opening of the Intel factory in 2012 led to a recording all at once of exports against all of the pre-production costs that had accumulated during the investment period. This factor on its own explains the decline that occurred in goods exports in 2013, which appear in the Central Bureau of Statistics data in the line for adjustments of foreign trade data to the balance of payments. In contrast, the one-time increase in the rate of growth of fuel exports from Israel as a result of the start of production of natural gas from the Tamar reservoir contributed to exports last year.

¹⁴ The aggregate of “business services” analyzed here also includes transport and shipping services.

¹⁵ See footnote 5.

¹⁶ We include the following industries: production of computers, electronic and optic instruments, the repair of electronic, optical and medical equipment (26, 3133), computer programming, computer consulting and other supplementary services (62) and scientific research and development, apart from the export (sale) of start-up companies and outlier transactions (72).

services during the last three years. In 2014, 64 percent of the increase in the export of business services originated from the computer industry, while their share in exports of services is about 40 percent. The characteristics of the industry, i.e., the high rate of value added and the particularly high intensity of highly educated labor and high labor productivity (Table 2.4), illustrate the positive contribution of the export of services to the growth in GDP this year.

Table 2.4
The computer industry^a compared to the total business sector, 2011

	Computer industry	Total business sector
Value added as a share of output (percent)	64	45
Return on employee posts as a share of value added (percent)	81	60
Value added per employee post (NIS)	303,189	196,069
Rate of those with higher education (percent)	80	42
Average number of years of schooling	15.7	13.4

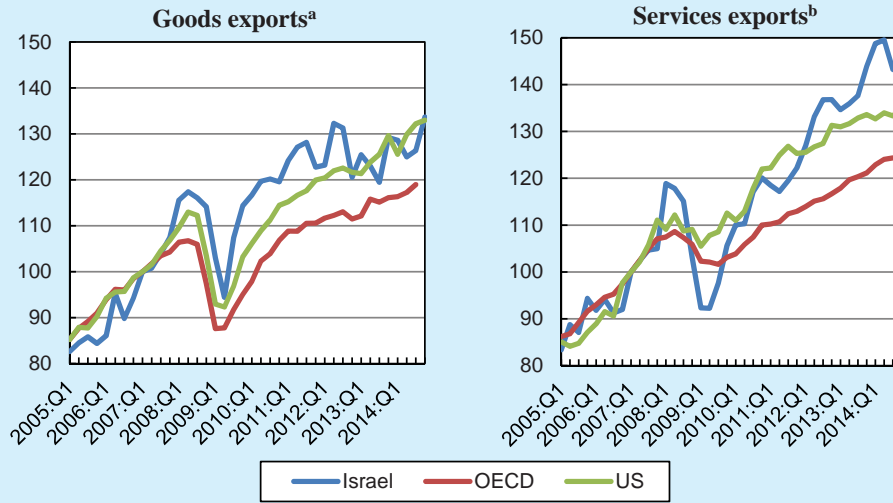
^a Software and computer consulting and other services.
SOURCE: Based on Central Bureau of Statistics.

Figure 2.5 presents the development of Israel's exports of goods and services in comparison to exports from the US and from OECD countries overall. The graph leads to several interesting findings: Services exports from advanced economies, including Israel, were affected less by the global crisis than goods exports. Although Israel's exports of services declined more than that of other advanced economies at the peak of the crisis, here it recovered to a greater extent. In contrast, Israel's goods exports were less affected than those of other advanced economies and it maintained this advantage until 2011. However, since then it has remained relatively unchanged, while the exports of the US and the OECD as a whole have gradually increased. These developments describe a gradual return to equilibrium, in which economies that were less affected by the crisis, including Israel's, lose the relative advantage they achieved previously during the recovery from the crisis. The mechanism that contributes to this is the appreciation of the real exchange rate, which does not directly affect the demand for exports but rather their profitability, as export revenues are received in foreign currency, while a major portion of costs, and in particular wages, are denominated in shekels.

The decline in profitability leads to a drop in the volume of exports through two channels on the supply side: (1) Exporters are forced to increase their prices in foreign currency terms in order to maintain their profitability and as a result they lose market share. (2) Exporters who are not able to increase prices, and therefore become

The appreciation of the exchange rate has lowered the profitability of exports and reduced the ability to compete for producers of import substitutes.

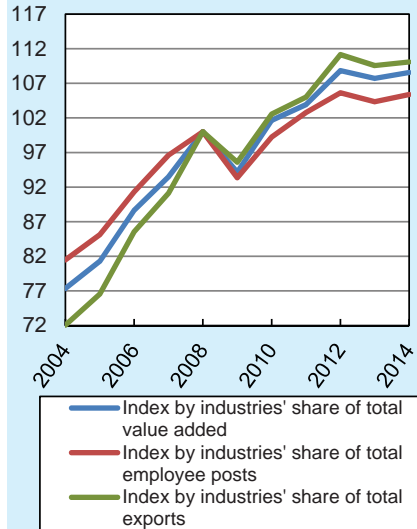
Figure 2.5
Goods and Services Exports from Israel, the US, and OECD countries, 2005–14
 (Quantitative Index, 2007:Q1 = 100)



^a In Israel - excluding diamonds.
^b In Israel - excluding startup company sales.
 SOURCE: Based on Central Bureau of Statistics and OECD.

unprofitable, stop producing.¹⁷ The real appreciation also harms producers of import substitutes for the domestic market, since it brings down the prices of their competitors. Confirmation of the effects of global developments and the appreciation of the exchange rate can be found in the data for manufacturing, an industry that represents the producers in Israel's tradables sector. The Industrial Production index, which is also used as an estimate of the industry's output, has remained relatively unchanged during the past two years.¹⁸ The decline in the export of goods does not fully explain the weakness in manufacturing production. Thus, the Index fell in recent years in labor-intensive sub-industries to a greater extent

Figure 2.6
Industrial Production Index, 2004–14



SOURCE: Central Bureau of Statistics.

¹⁷ According to models that estimate the quantitative effect of the real exchange rate on exports, an appreciation of 1 percent leads to a decline of about 0.3 percent in total exports after about one year.

¹⁸ Figure 2.6 shows stability in 2013 while Table 2.5 shows an increase for that year. This is because the indices in Figure 2.6 include only the manufacturing industries while Table 2.5 also includes the mining and quarrying industry, which grew in 2013 due to the start of production of natural gas from the Tamar reservoir.

than in export-intensive sub-industries (Figure 2.6). This development indicates that domestic industries are having difficulty competing with imports that have been made cheaper by the appreciation.

Table 2.5
Change in output of principal industries, 1995–2014

(annual rate of change, percent)

	Share of total output (2013)	1995–2008	2009	2010	2011	2012	2013	2014
Total ^a		4.0	1.9	5.8	4.2	3.0	3.2	2.8
Public services	15.6	1.8	3.5	2.2	3.5	3.1	2.4	2.6
Business sector	72.3	4.5	1.5	6.8	4.4	3.0	3.4	2.7
Manufacturing and Mining	14.5	4.5	-4.3	12.0	0.0	2.9	3.2	0.9
Trade	8.9	4.5	-0.5	7.4	1.3	2.7	1.0	1.9
Business services	21.4	4.4	2.9	8.2	14.6	5.5	1.4	6.4
Construction	5.5	0.4	3.4	11.2	11.6	6.8	1.3	-5.0
Transport and Communications	12.8	7.4	0.9	4.5	-1.7	5.4	3.6	7.4
Agriculture	1.8	3.7	16.0	-9.8	11.3	11.6	-8.5	0.7
Electricity and Water	1.4	4.7	23.5	10.3	-14.2	-45.3	65.5	-4.4

^a The data on the changes in total output in this table are different from the data in Tables 2.1 and 2.2, since their source is in industry data and not uses data.

SOURCE: Based on Central Bureau of Statistics.

c. Domestic demand and uses

Domestic uses have been a stabilizing factor since the onset of the global crisis, since they have continued to grow at a stable rate relative to the demand for exports. However, their components have not developed similarly during the last year. Thus, consumption demand, both private and public, grew at a higher rate than that of GDP; in contrast, the rate of growth in fixed capital formation continued to erode this year. Fixed capital formation actually declined this year, primarily due to the stagnation in activity in the residential construction industry and the reduced activity in other types of construction (Table 2.6).

Private consumption

The rate of growth in private consumption accelerated this year to 4.0 percent, primarily due to the rapid increase (12 percent) in the purchase of durable goods. The rate of increase in nondurables consumption remained stable despite the moderating effect of Operation Protective Edge. The combination of two main factors explains the resilience and stability of private consumption in recent years: the real appreciation and the low level of the interest rate. Between 2006–07 (prior to the global crisis)

The significant increase in domestic demand this year derived from private and public consumption. However, investment contracted.

The private consumption growth rate accelerated this year due to the low interest rate environment and the appreciation of the exchange rate.

Table 2.6
Background conditions and main indices of the development of domestic demand, 1995–2014

	(annual rate of change, percent)						
	1995–2008	2009	2010	2011	2012	2013	2014
Private consumption	4.3	2.2	4.6	2.9	3.1	3.3	4.0
<i>of which:</i> Current consumption	4.1	3.0	3.9	2.6	3.4	3.3	3.3
Durable goods consumption	6.2	-4.7	11.3	5.8	-0.2	3.8	12.3
Gross individual disposable income from all sources ^a	4.0	5.5	3.3	2.7	5.5	3.5	3.4
Credit to households	6.7 ^a	6.0	10.0	8.5	5.9	6.1	5.3
Real 1-year interest rate (government bonds, percent)		-0.1	-0.4	0.6	0.2	-0.3	-0.7
Value of the public's asset portfolio	10.5	22.5	11.1	-1.2	7.9	8.8	7.2
Consumer Confidence Index	2.3 ^b	8.3	15.1	-11.3	-7.4	-2.0	2.1
Fixed capital formation (excluding ships and aircraft)	1.9	-2.7	9.9	15.0	2.9	0.5	-1.7
Credit to the business sector	9.3 ^a	1.9	0.6	2.6	3.9	-1.3	-0.7
Real 10-year interest rate (government bonds, percent)		2.8	2.2	2.5	2.1	1.7	1.0
Purchasing Managers Index (level)	51.0 ^b	48.4	54.8	48.7	43.2	47.2	48.6
Change in capital use (net balance from the Bank of Israel Companies Survey)	-4.3	-12.1	16.8	9.8	-0.1	-3.2	-4.5
Public consumption excluding defense imports	2.0	4.5	2.3	2.5	3.2	3.3	3.9
General government budget deficit	2.7	4.7	3.0	2.0	3.7	3.1	2.6
Change in the structural deficit		0.0	-0.1	0.1	0.2	-0.5	-1.3
Change in the cyclically adjusted deficit		1.8	-0.8	-0.4	1.5	-1.1	-0.9

^a The figure relates to the years 2005–2008.

^b The figure relates to the years 1996–2008.

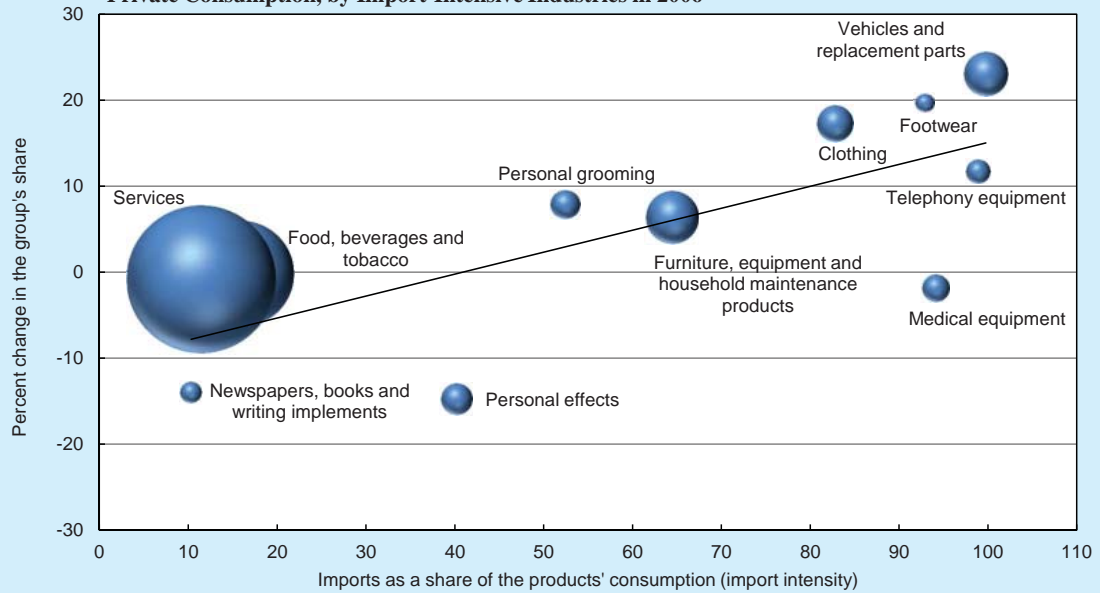
SOURCE: Based on Central Bureau of Statistics, the "Globes-Smith" Consumer Confidence Index, the Bank of Israel Companies Survey, and the Purchasing Managers' Index published by Bank Hapoalim and Purchasing Managers Association.

and 2013–14, the exchange rate appreciated by an average rate of 2.7 percent per year, which gradually brought down the price of the imported component within consumption goods (for further discussion see Chapter 3). Figure 2.7 shows that import-intensive goods (such as vehicles, clothing and footwear and home furnishings) increased their share in consumption during this period, at the expense of goods whose production relies mainly on domestic inputs (such as services and food). This trend can also be seen from a comparison of the shares of consumption in 2014 to those in 2013, a year that was characterized on average by appreciation of the exchange rate (such a relationship was not found during a year of depreciation, such as 2012). This illustrates the mechanism by which a real appreciation works to balance between the levels of activity in different economies.

The continuing expansion of private consumption, and in particular durable goods, was supported by a downward shift of the real interest rate curve, as a result of the monetary accommodation in Israel and the decline in long-term interest rates abroad, through the increase of bank credit to households, including non-housing credit.

The low interest rate, the appreciated exchange rate and the expected changes in taxation contributed to the exceptionally large increase in vehicle purchases.

Figure 2.7
Change Between 2006–07 and 2013–14 in Consumer Product Groups' Share of Total Private Consumption, by Import-Intensive Industries in 2006



The size of the circle represents the share out of total consumption in 2006–07.
 SOURCE: Based on Central Bureau of Statistics.

Primarily, households increased their vehicle purchases, which grew this year (both quantitatively and in nominal terms) at the exceptionally high rate of 24 percent, although also other components of durables consumption increased at relatively high rates (about 5.5 percent on average). The increase in the purchase of vehicles occurred throughout the year, although toward the end of the year it accelerated ahead of new tax regulations coming into effect, which were expected by potential buyers to increase the cost of certain types of vehicles. The increase this year in the purchase of vehicles was partly the result of the continuing appreciation, since they have a dominant import component (their contribution to GDP is a result of indirect taxes). Therefore, in the short term households benefit from the appreciation which acts to balance between the business cycles of the various economies and is accompanied by monetary expansion. However, in the medium term, the appreciation is expected to also restrain private consumption, due to the decline in income resulting from the erosion in the profitability of exports and the domestic production of import substitutes.¹⁹

Other factors that acted to expand private consumption this year include: (1) the high level of employment and the unexpected drop in inflation, which contributed to the increase in real wages and labor's share of income (Table 2.7 and 2.8); (2) the increase in the net income of households from investments abroad, as a result of

¹⁹ In a simulation of the General Equilibrium Model (see the referral in footnote 12), it was found that an appreciation which is the result of an exchange rate shock leads to an increase in private consumption that lasts about two years; however, following that it drops to below the level that would have prevailed without the appreciation.

which private disposable income from all sources grew faster than GDP (Table 2.6); and (c) reforms carried out in recent years to increase competition, which created a positive shock to supply and in turn lowered the prices of services and increased their quantity; as a result, the output of the transport and communication industries together grew by more than 7 percent (Table 2.5).

Public consumption

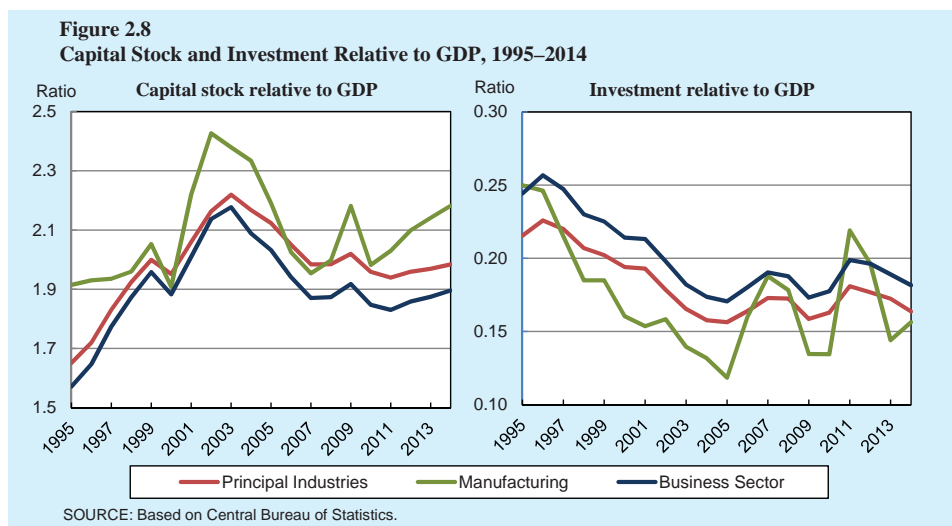
Public consumption, not including defense imports, grew this year at a rate of 3.9 percent, which was higher than its levels of growth in recent years (Table 2.6). This was due to the growth of almost 8 percent in domestic defense consumption, which was largely the result of costs incurred as a result of Operation Protective Edge in the areas of domestic defense purchases and salary payments (including compensation for reserve duty). However, the structural deficit nonetheless declined, which implies that fiscal policy was contractionary relative to growth (see the discussion in the section on background conditions).

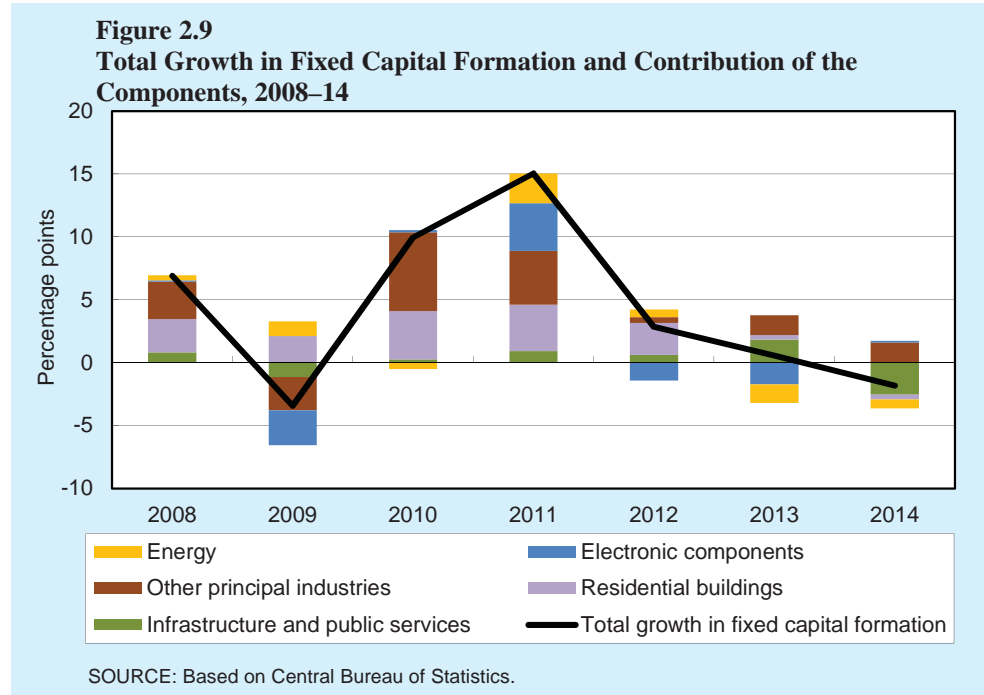
The increase in defense consumption as a result of Operation Protective Edge accelerated public consumption.

Investment

Gross domestic investment fell this year by 1 percent due to a decline in investment in inventory (excluding start-up companies and diamonds) and a decline of 1.7 percent in fixed capital formation (details appear in Table 2.A.3). The weakness in investment explains a large part of the weak growth in demand during the last three years (see Section 2a above). It appears that in contrast to the previous two years, the drop in investment this year was focused on activity that is intensive in domestic output and therefore it particularly contributed to the slowing of its growth. At the same time, the level of investment is still sufficiently high to support an increase in the capital stock and even to support it at a rate higher than the rate of increase in GDP (Figure 2.8), thus contributing to future production capacity.

Fixed capital formation declined this year, particularly in areas that have a large influence on domestic product.





Although the number of building starts fell relative to last year, investment in residential construction maintained its level.

Nonresidential fixed investment fell by 1.9 percent due to the completion of infrastructure projects and a decline in investment by local authorities.

The growth in investment in residential construction came to a halt already last year. This occurred following an average annual growth rate of 10 percent during the period 2008–12 and, according to estimates, the contribution of investment in residential construction to the annual growth of GDP reached 0.3 percentage points annually. The volume of investment in residential construction did not grow this year as a result of the drop in building starts, which had reached a high level of around 47,000 units in 2013 and totaled around 44,000 units in 2014. However, despite the annual fluctuations, the level of building starts has remained stable since 2011 and is around 45,000 units per year (for a detailed discussion of the housing market, see Section 1 of Chapter 7).

Nonresidential fixed investment reached a peak in 2011, which was the result of expectations that the world would recover from the financial crisis and as a result of several large investment projects in the areas of electronic components and energy (primarily infrastructure related to the natural gas discoveries). Since then, it has been growing at a negligible rate, and this year even declined by 1.9 percent due to the significant decline (of about 13 percent) in nonresidential construction. Figure 2.9 shows that this primarily involves construction in the areas of electricity infrastructure (completion of the construction of private power plants), water, road, railways (several large projects advanced from the implementation stage to the planning stage) and projects related to public services, primarily those carried out by local authorities. Although the decrease in nonresidential investment may be attributed to the scheduled completion of large projects, it is possible that the delay in the implementation of the government's investment budget prevented the start of other projects or their expansion

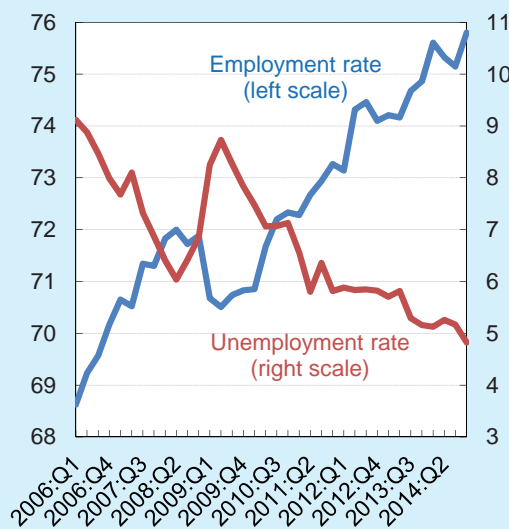
(Box 6.2). Furthermore, the decrease is a cause of concern since total investment in some parts of the infrastructure in Israel, as well as their level of development, are low by international standards (Box 2.2). The decrease in both components of investment in construction (residential and nonresidential) led to a drop of 5 percent in the construction industry’s added value, which reduced the growth in GDP by about 0.3 percentage points. This compares with the period 2008–12 when the industry contributed about 0.4 percentage points to the growth in GDP. It is reasonable to assume that the slowdown in construction does not reflect lower expectations in the private sector regarding the demand for domestic output in coming years since it has not led to a reduction in employment in the industry. Furthermore, despite indications that the current year was characterized by low utilization of capital (see Table 2.6 and the discussion in Section 4), investment in machinery and equipment, particularly in the manufacturing industry which is more sensitive to foreign demand, rose this year by 4.4 percent and contributed to the continuing increase in the ratio of capital stock to output in manufacturing.

3. MACROECONOMIC DEVELOPMENTS IN THE LABOR MARKET

Since GDP and demand grew at moderate rates this year, total labor input in the economy continued to grow this year, though at a slow pace (2.0 percent) relative to the period 2010–12 (when it ranged from 2.5 to 3.0 percent). However, the positive developments in total employment continued again this year. Thus, the unemployment rate declined to a historically low level and the rates of participation and of employment continued to rise (Figure 2.10). Several factors, reviewed below, acted in recent years to ameliorate the negative effect of aggregate demand on total employment and unemployment in the economy.

First, the supply of labor continued to expand this year. The working age population grew by 1.8 percent, which is lower than the average for the past

Figure 2.10
Unemployment and Employment Rates, Prime Working Ages (25–64), 2006–14 (Quarterly data, percent)



SOURCE: Based on Central Bureau of Statistics.

Total employment continued to grow again this year.

The supply of labor continued to grow this year as a result of long-term factors: the rise in the level of education, the government's policy to encourage employment and the raising of the retirement age.

decade (2.3 percent).²⁰ This is a reflection of the long-term demographic process that the Israeli economy is undergoing, whereby the cohorts exiting the working age group are larger than the cohorts within it. The expansion of the labor supply contributed again this year to the continuing increase in the rate of participation and this process reflects several factors: First, educational attainment in the population has risen and educated individuals tend to participate more in the workforce.²¹ Second, government policy in recent years has led to a reduction in the reservation wage, below which it is not worth joining the workforce, in particular for young parents. While the government has cut benefits that are not dependent on employment (for example, the cuts in the children's allowance in 2003 and 2013) at the same time it has reduced the taxes on labor (by expanding the negative income tax and adding credit points for fathers) and

Table 2.7
Principal labor market data, 1995–2014

	(percent, annual rate of change, unless noted otherwise)						
	1995–2008	2009	2010	2011	2012	2013	2014
Population in the prime working ages (25–64)	2.6	2.2	1.9	1.7	1.1	1.3	1.8
Labor force participation rate in the prime working ages (level)		76.7	77.1	77.5	78.6	78.8	79.5
Employment rate in the prime working ages (level)		70.7	71.8	72.8	74.0	74.5	75.5
Unemployment rate in the prime working ages (level)		8.3	7.2	6.1	5.9	5.5	5.1
Employed persons (Including non-Israelis)	2.9	0.6	3.3	2.8	3.1	2.7	2.7
<i>of which:</i> Employed in the business sector	3.0	0.2	3.2	1.8	2.7	1.9	2.4
Employed in the public sector	2.6	1.3	3.6	4.9	4.0	4.3	3.3
Total work hours (including non-Israelis)	2.9	2.0	2.8	2.5	2.6	2.1	1.9
<i>of which:</i> Total work hours in the business sector	2.8	1.8	2.7	1.8	3.2	1.8	1.6
<i>of which:</i> Total work hours in the manufacturing industry	0.6	-3.2	0.8	0.9	0.3	-1.1	-0.1
Total work hours in the public sector	3.4	2.8	2.9	5.0	0.9	2.8	2.2
Hours per employed person (including non-Israelis)	0.1	1.4	-0.5	-0.2	-0.4	-0.6	-0.7
<i>of which:</i> Hours per employed person in the business sector	-0.1	1.6	-0.5	0.0	0.5	-0.1	-0.6
Hours per employed person in the public sector	0.7	1.4	-0.7	0.1	-3.0	-1.4	-0.4
Nominal wage per employee post	4.7	0.7	3.4	3.8	2.2	2.5	1.9
Real wage per employee post	1.1	-2.6	0.7	0.4	0.5	0.9	1.4

SOURCE: Based on Central Bureau of Statistics.

²⁰ According to Labor Force Survey data, while the prime working age population (aged 25–64) grew this year by 1.8 percent, during the previous two years (2012 and 2013) it grew at a more moderate rate of 1.1–1.3 percent. It is reasonable to assume that this reflects statistical fluctuations and that the basic rate of growth during this period was similar to the average for 2012–14. Support for this is obtained from the five-year demographic forecasts based on the population in 2009. The forecasts predicted that the prime working age population would grow by 1.3–1.5 percent during the period 2009–14.

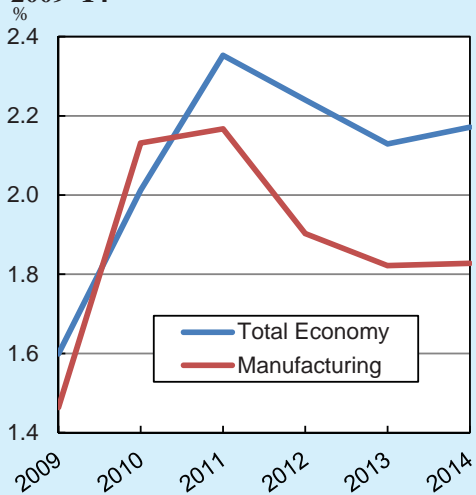
²¹ Box 5.1 in the Bank of Israel Annual Report for 2012 analyzes the long-term effect of education on the participation rate.

has increased state support through the pre-school frameworks (free education for 3–5 year olds). Together, these measure have contributed to an increased participation rate among young women (aged 25–34), which explains about 40 percent of the increase in the overall participation rate. Finally, raising the retirement age in the mid-2000s continued to contribute this year to the increase in the rate of participation of women aged 55–64 and this increase explains more than 15 percent of the growth in the overall participation rate.²² As a result of these trends, the labor force of Israelis has grown this year by about 2.7 percent (100,000 individuals), which is similar to the average annual rate of increase during the previous decade (2.6 percent).

Second, employment in public services, both in the general government and in the private nonprofit organizations, continued to expand this year at a higher rate than in the business sector. Furthermore, the accommodative response of monetary policy, together with the equilibrium that led to a prolonged appreciation in the exchange rate, accelerated the structural change taking place in the composition of demand for labor in the business sector. This involves a shift from the tradable industries that are sensitive to foreign demand and competitive imports to industries that are dependent on domestic demand and which are labor intensive. This can be seen in the decline in the job vacancy rate in the manufacturing industry (Figure 2.11) and the lack of change in labor input (Table 2.7) and the number of employee posts in the industry.²³ On the other hand, the number of employee posts in the trade and business service industries and in the public services continued to grow (Figure 2.12). It is interesting to note that during the major recession at the beginning of the previous decade the number of employee posts essentially remained unchanged and even fell in all of the industry groups.

Also contributing to the labor market's resilience was the growth in employment in public services and the relative increase in demand for labor-intensive business activity.

Figure 2.11
Job Vacancies as a Percentage of Total Employee Posts Held by Israelis, Manufacturing and Total Economy, 2009–14



SOURCE: Based on Central Bureau of Statistics.

²² The participation rate of men near retirement age did not increase this year. This may be because the effect of the raising of the retirement age has been exhausted in this population.

²³ In order to analyze the trend of employment in the various industries, we primarily used data for employee posts (number of salary slips reported to the National Insurance Institute) rather than the number of employees according to the Labor Force Survey of the Central Bureau of Statistics (CBS). This is because the National Insurance Institute relies on a broader database than the Labor Force Survey and also because the categorization by industry is more reliable since it is derived directly from the employer's identification. These advantages are even more significant when the historical data is concatenated according to the new classification of industries, which the CBS has been using since 2013.

Labor input grew at a lower rate than employment due to the drop in the average number of work hours per employee.

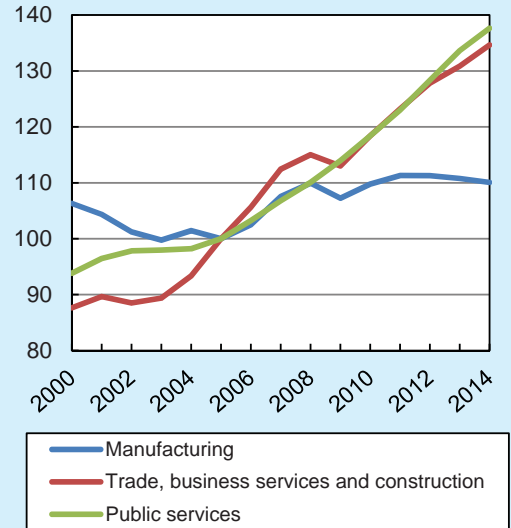
Third, part of the slowdown in the growth of labor input occurred as a result of the drop in work hours per employee, rather than in the number of employees. Although on the aggregate level, a decline in work hours per employee reflects a decrease in the utilization of labor, it appears that the decline this year reflected, at least in part, changes on the supply side. First, a large part of the increase in the workforce occurred among young and old women, which is a population that works less on average. Furthermore, there has been no increase in the proportion of part-time employees who would prefer to be working full time. Second, the decline in work hours per employee was especially noticeable in domestic industries in which demand and employment have grown (trade and services). In addition, in these industries—and also in the public services (education and health), in which employment rose—there is a tendency to work less hours on average than in industries where there has been a relative drop in demand and employment (such as manufacturing). The change in composition was found to explain about 30 percent of the decline in work hours.

The unemployment rate continued to decline this year and reached historic lows.

The unemployment rate continued to decline this year, despite the moderate rate of growth and the increase in the supply of labor. This reflects the flexibility of Israel's labor market, whereby negative shocks to the demand for labor are reflected in a slower rate of increase in the real wage and a decline in work hours per employee. During the last two years, the main contribution to the decline in unemployment has been in the mid-levels of education (11–12 years of schooling) which were responsible for 0.2 to 0.3 percentage points of the drop in unemployment. This reflects a high level of employment, yet at the same time an increase in employment in industries that do not require a high level of education. In addition, it is believed that at least part of the drop in the unemployment rate is a result of long-term processes rather than

Figure 2.12
Employee Posts in Manufacturing, in the Trade, Business Services and Construction Industries, and in the Public Services Industries, 2000–14

(Index: 2006 = 100)



The trade, business services and construction industries include the following sub-industries: wholesale and retail sales and repair of vehicles; professional, scientific and technical services; management and support services; hospitality and food services; and construction.

The public services industries include: local administration, public administration, national security and insurance, education, and healthcare, welfare and social care.

Data for years prior to 2005 are based on the old classification of industries (1993 industrial classification).

SOURCE: Based on Central Bureau of Statistics.

cyclical factors and in particular the increased efficiency with which positions are filled and the rising proportion of educated workers, which are characteristic of low rates of unemployment.²⁴

The expansion of the supply of labor, in particular the supply of workers with below average productivity, alongside the fact that the cyclical change in the composition of demand is moving toward industries characterized by relatively low productivity, have partly offset the forces acting to increase wages in the economy. However, the unexpected decrease in the inflation rate led this year to a rise in the real wage and this was also manifested in an increase in the unit labor cost (Table 2.7 and 2.8). This development is not necessarily evidence of domestic inflationary pressure since the rate of increase in the nominal wage slowed and also because inflation is dependent on the intensity of utilization of all the relevant factors of production and not only the intensity of the labor input.

The real cost of labor rose this year, primarily as a result of the unexpected drop in inflation.

4. SUPPLY AND EQUILIBRIUM

a. Sources of growth and the output gap

Potential business sector product

According to the production function approach—on which the following analysis is based—potential output is defined as the output that would have been achieved in a hypothetical equilibrium in which the utilization rate of all factors of production is similar to its long-term average and which does not create pressure on prices and wages. The rate of increase in potential output is derived from the long-term growth trends of the various factors of production—physical capital, labor and human capital—and from the average increase in total factor productivity, which is the result of technological improvements and other structural improvements.

Calculations based on this approach show that the rate of growth of potential business sector product was 3.5 percent in 2014, somewhat lower than the average for 2000–13 (3.9 percent). The reason is related primarily to the trend in potential labor input: a gradual slowing of the rate of growth of the working age population, the effect of the decrease in the natural rate of unemployment which is nearing exhaustion and the growth in the number of employees in the public service industries which has accelerated “at the expense of” an increase in the potential number of employees in the business sector. On the other hand, the rate of increase in potential labor input was supported by the long-term increase in the participation rate.

Contributing to the growth in potential output was expansion on the supply side: the increase in the participation rate, the shift to natural gas and reforms to encourage competition.

The stock of physical capital maintained its rate of growth and even exceeded its average during the previous decade, due to the high level of investment in the economy. The contribution of human capital to potential growth fell gradually relative

²⁴ For a detailed discussion, see Chapter 5 of the Bank of Israel Annual Report for 2013.

to its contribution until the end of the 1990s.²⁵ The rate of growth in total factor productivity is somewhat higher than its long-term average, as a result of, among other things, structural changes in the economy, i.e., the shift of the energy sector to domestically produced natural gas and reforms carried out to encourage competition.

Table 2.8
The supply of business sector product, 1995–2014

	(annual rate of change, percent)						
	1995–2008	2009	2010	2011	2012	2013	2014
Gross Domestic Product	4.0	1.9	5.8	4.2	3.0	3.2	2.8
<i>of which:</i> Business sector product	4.5	1.5	6.8	4.5	2.9	3.4	2.7
Public services product	1.8	3.5	2.2	3.5	3.1	2.4	2.8
Stock of physical capital of the business sector	6.2	4.0	3.0	3.5	4.8	4.4	3.9
Labor force	2.7	2.0	2.4	1.8	3.2	2.0	2.7
Total work hours	2.8	1.8	2.7	1.8	3.2	1.8	1.6
Total factor productivity	0.6	-1.0	3.9	2.0	-0.6	0.7	0.3
Product per work hour (nominal)	4.8	3.7	3.0	3.8	4.8	3.4	0.6
Return on work hour (nominal)	4.8	-2.1	4.0	5.4	2.6	2.4	2.1
Cost of labor per output unit	0.0	-5.7	1.0	1.6	-2.0	-0.9	1.5
Rate of return on labor in the business sector (level)	64.0	59.9	60.5	61.4	60.2	59.6	60.5
Output gap	-0.1	-1.9	-0.1	0.6	-0.4	-0.9	-1.8

SOURCE: Based on Central Bureau of Statistics.

Sources of actual growth and the business output gap

The actual rate of growth was lower than the potential rate and the negative output gap widened.

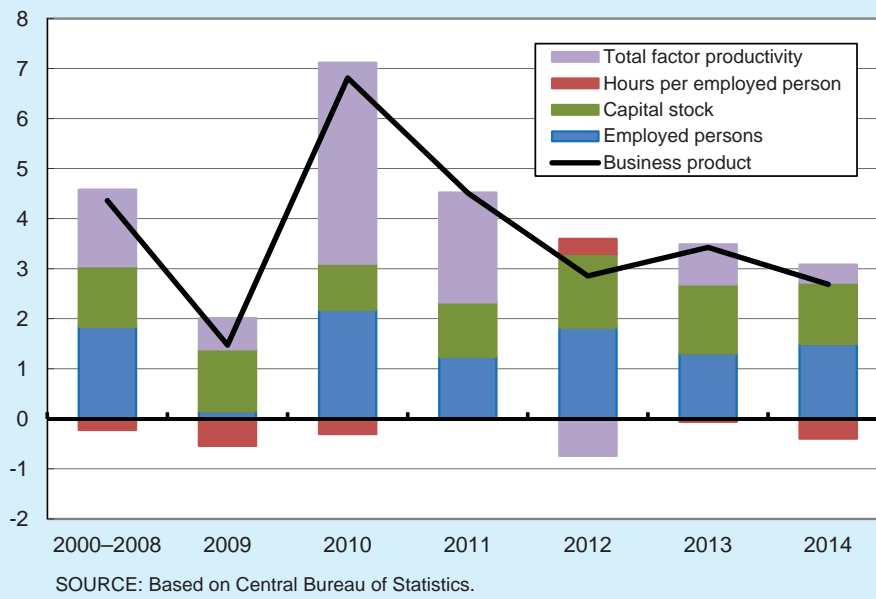
As the rate of growth of actual business sector product was 2.7 percent this year and continued to lag behind the rate of growth of potential output (about 3.5 percent), there was a widening of the already negative output gap (Table 2.8). In other words, there is excess capacity in the economy such that some of the factors of production (workers and the capital stock) are employed at below-average rates and this excess capacity has grown in size in recent years. The widening negative output gap is consistent with the economy's low inflation rates, a low real rate of interest, a moderate rate of increase in the real wage, and the growing surplus in the current account.

Total productivity rose this year at a moderate rate, reflecting a drop in the utilization of the factors of production.

How is the surplus in productive capacity reflected in manufacturing inputs? When actual business sector product is broken down into sources of growth, it can be seen that the gross capital stock increased in 2014 at a slightly lower rate than in 2013 as a result of relatively high levels of investment (Figure 2.13). The number of

²⁵ A detailed discussion of the issue appears in Recent Economic Developments 136.

Figure 2.13
Total Growth in Business Sector Product and Contribution of its Components, 2000–14 (percentage points)



employees rose at a somewhat higher rate than last year, while the unemployment rate fell. In contrast, the number of work hours per employee declined this year and total factor productivity rose by only 0.3 percent.²⁶ Although supply in the communication industry expanded as a result of greater competition and total productivity in the industry rose (contributing about a percentage point to the increase in the economy’s total productivity), its contribution was offset by the unchanged level of productivity in the manufacturing industry (since it is sensitive to the drop in foreign demand and the appreciation) and the large decline in productivity in the electricity industry (since it provides inputs to manufacturing) and in the construction industry (Table 2.A.15).²⁷

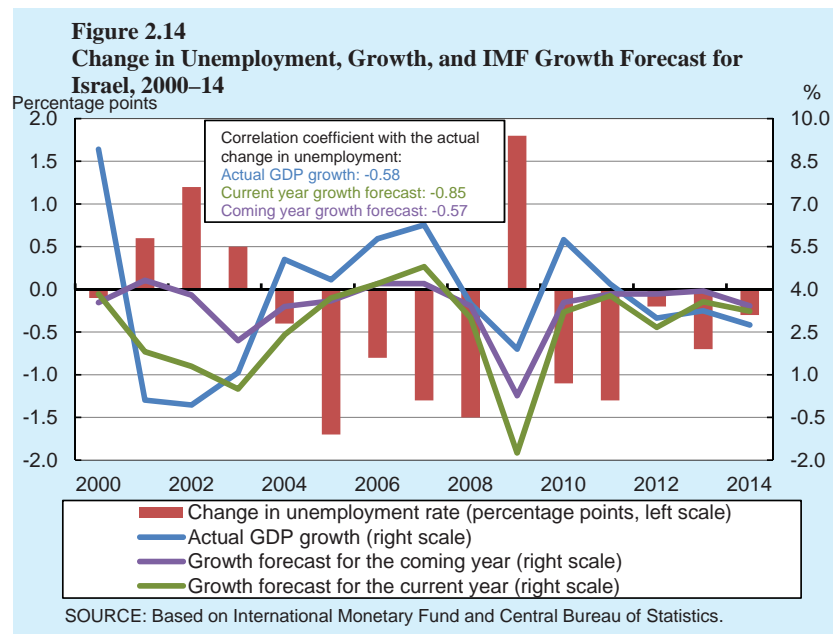
How is this equilibrium, i.e., low and declining unemployment, achieved, despite the low rate of utilization of the factors of production? In addition to the explanations that involve the improvement in the labor market (Section 3), it is also worth noting that during the last four years there has been an ongoing expectation that the world would recover from the global crisis during the coming year (see Section 1). To the extent that these expectations also represent the views of exporters in Israel, it appears that employers preferred not to reduce the number of their employees in order to save future costs of search and hiring, in particular since the export industries in Israel are

There have been expectations in recent years that the world will be recovering from the crisis and this is one of the explanations for the combination of low utilization of factors of production with, at the same time, low unemployment and continuing growth in capital stock.

²⁶ Total factor productivity rose last year due to the start of production of natural gas from the Tamar reservoir.

²⁷ The decrease in the output of the electricity industry is also apparently the result of the relatively warm winter at the beginning of 2014. The large fluctuations that occurred in the industry’s output in 2012–13 are a result of the cessation of Israel’s imports of natural gas from Egypt in 2012 and its replacement with more expensive fuels and Israel’s return to natural gas in 2013.

characterized by manpower that is human-capital intensive²⁸ and the cost of search and hiring of these individuals is very high. A panel regression using data for the OECD countries during the period 1999–2014 shows that the (negative) relation between the change in the unemployment rate and expectations of growth is stronger and more significant than its correlation with actual growth and this is even stronger for expectations of growth in the current year. Figure 2.14 shows this finding for Israel: it presents the change in the unemployment rate, the actual growth in GDP and the IMF forecasts at that time for growth in the current year and in the subsequent year. The graph shows two previous business cycles in which the unemployment rate increased markedly: (1) the years of the Second Intifada (2001–03), during which the rate of growth was particularly low for a prolonged period, and (2) 2009, in which the global crisis reached its peak and the rate of growth was only somewhat lower than the current rate. These two episodes were not just periods in which the actual rates of growth declined but also when the forecasts of growth for those years were relatively low. During such periods, firms prefer to reduce their number of workers in the belief that they will not have to rehire in the near future. In contrast, in the past two years, although the rates of growth declined, expectations of growth were less pessimistic due to the belief that the world would be recovering from the crisis in the near future. Furthermore, the low real interest rate environment in recent years has allowed firms to maintain the stock of existing factors of production and even to invest in new capital at low financing cost. Therefore, firms in the tradables sectors are not reducing the number of workers and are even continuing to invest in physical capital; in the short term, they are instead reducing their utilization of factors of production. At the same time, the number of workers in domestic sectors, which are labor intensive and



²⁸ See Box 2.1 in the 2013 Bank of Israel Annual Report.

in which the ability to raise labor productivity is limited, has increased as the demand for them has grown.

Even though the demand for private consumption has grown rapidly, it can be said that the negative output gap has supported the decline in the rate of inflation, as measured by the CPI. This is because the output gap is also the result of the expansion of supply factors, which works to bring prices down (see Chapter 3). In addition, there is a surplus of productive capacity in the factors of production market in general, i.e., in the market that serves both the export industries and the domestic industries. The growth in private consumption is the result of equilibrium in which the factors of production, and in particular labor, are shifting to industries in which demand has not declined (such as private consumption) and is even making it possible for them to increase their production without pressure on prices.²⁹

b. The current account

As in 2013, this year’s surplus in the current account increased, reaching about 3.0 percent of GDP (Table 2.9). The increase last year was the result of the start of production of natural gas from the Tamar gas field and the sale of startup company Waze, which increased the surplus in the goods and services account. If these factors are adjusted for, then the quantitative export surplus³⁰ has not risen in the past two years (Figure 2.15). Figure 2.15 indicates that the surplus (in percent of GDP) did not



The quantitative export surplus, net of outlying components, did not rise this year.

²⁹ This result, i.e., a drop in GDP and inflation simultaneous with a rise in private consumption, is obtained from a general equilibrium model in which a negative shock occurs in global demand (see footnote 12).

³⁰ The quantitative export surplus analyzed here is in 2010 prices and we removed from it items on a macroeconomic scale, such as ships and aircraft, defense imports, diamonds, sale of start-up companies and energy imports, since the outlier developments in these items is not in general a result of macroeconomic factors whose influence we can analyze here.

Table 2.9
Savings, investment and the current account, 1995–2014

	(percentage of national income)						
	1995–2008	2009	2010	2011	2012	2013	2014
Gross national savings	20.7	21.0	21.0	21.5	21.5	21.7	21.6
<i>of which:</i> Public	-0.1	-2.2	-0.9	-0.2	-1.6	-0.8	-0.6
Private	20.8	23.2	21.9	21.7	23.1	22.5	22.2
Gross investment	21.0	17.2	17.6	20.0	20.7	19.4	18.6
<i>of which:</i> In principal industries	14.5	12.8	12.6	13.8	13.8	13.1	12.3
In housing	5.5	5.1	5.5	6.0	6.3	6.2	6.0
In inventory	1.0	-0.6	-0.4	0.3	0.5	0.1	0.4
Net current account	-0.3	3.8	3.3	1.5	0.8	2.3	3.0
<i>of which:</i> Balance of goods and services	-2.2	2.8	2.0	-0.5	0.2	1.4	1.2
Net income account	-3.0	-2.4	-2.2	-1.4	-2.5	-2.2	-1.6
Net current transfers	3.9	2.9	2.9	2.9	2.4	2.7	3.1
Terms of trade ^a	-0.8	8.9	-3.3	-5.0	3.1	0.7	0.0
Real effective exchange rate ^a	0.8 ^b	1.8	-5.1	-1.0	4.7	-6.0	-1.5

^a Percent change in annual terms.

^b The figure relates to the years 1999–2008.

SOURCE: Based on Central Bureau of Statistics.

The surplus in the current account grew this year as a result of the net increase in income received by Israelis from foreign investments.

even return to the upward-sloping trend that characterized it until 2011.³¹ It may be that this is the result of the appreciation in recent years.

The surplus in the current account rose this year mainly as a result of the primary income account, in which there was an increase in income received by Israeli residents from foreign direct investment and securities held abroad, alongside a decrease in payments that foreign residents received from direct investments and securities in Israel. The change in the flow of income and payments between direct investments apparently is a manifestation of the slight worsening in the situation of the Israeli economy relative to the rest of the world, since the flow of net foreign direct investment in Israel in fact has grown in recent years.

In equilibrium, the surplus in the current account balances between national saving and domestic investment. The rate of national saving remained unchanged this year due to the increase in public saving (fiscal contraction; see Section 1b) at the same time as a drop in private saving. The decline in demand for investment in the economy resulted in more available sources and these were directed to investment abroad. However, the surplus in the current account, together with the fact that the surplus in productive capacity in Israel is less than the surplus abroad, creates pressure for the inflow of capital into the economy and these capital movements are expressed in an appreciation of the exchange rate. And indeed, the annual average indicates that this year the real appreciation in the exchange rate continued. There are also short-term

³¹ About one-third of the decrease in the quantitative export surplus in 2011 was the result of a large one-time imported investment made by Intel.

financial forces that affect the exchange rate and which are the result of short-term interest rate spreads, risks that are specific to the economy, etc.³² In mid-year, there was a significant nominal depreciation in the exchange rate of about 10 percent, which was due to a reversal in short-term forces, against the background of the improvement in the US economy, the reduction of the interest rate by the Bank of Israel to a level close to that in the large economies and the risks resulting from Operation Protective Edge and the declaration of early elections (for further details, see Chapter 3). In addition, during the second half of the year, there was a dramatic decline of 50 percent in the global price of energy, which can be explained by the growth in supply as a result of the shale revolution in the US, alongside the fact that OPEC did not cut back its supply of oil as it had done in the past. Since Israel is a net importer of energy (of about 2.5 to 3.0 percent of GDP), the drop in energy prices is expected to bring about an additional improvement in Israel's terms of trade, on a much more significant scale than that during the last two years. This will contribute directly to the increase in the current account surplus and in national income. An improvement in income can also contribute to growth in domestic demand, in particularly private consumption, and the creation of pressure for an appreciation. However, these effects were not yet felt in a significant way in aggregate activity in 2014.

In mid-year, there was a depreciation in the exchange rate and a drop in the global price of oil.

Box 2.1

The Effect of Military Conflicts on Economic Activity

In July-August 2014, Israel's economy dealt with 50 days of hostilities during Operation Protective Edge. This conflict joins several others that have been waged in recent years, including Operations Pillar of Defense (2012) and Cast Lead (2008), and the Second Lebanon War (2006). This box will review major aspects of the direct economic impact of Operation Protective Edge while comparing those aspects with the parallel ones in the conflicts mentioned.¹ It should be noted at the outset that although the Second Lebanon War took place on the Northern front and not in the Gaza Strip, in contrast to the other episodes of hostilities, it serves as the most appropriate basis for comparison, because it lasted for 34 days and was also waged in July-August. In contrast, Operation Pillar of Defense lasted for only 8 days, and as opposed to the Second Lebanon War it did not include a ground incursion, while the economic ramifications of Operation Cast Lead are hard to distinguish from those of the global crisis that broke out in 2008.

¹ For perspectives on the effect of Operation Protective Edge on financial market indicators, see the Bank of Israel's Financial Stability Report of January 2015.

³² Section B of Chapter 7 analyzes the factors that affect the real exchange rate in the short and long terms.

Tourism

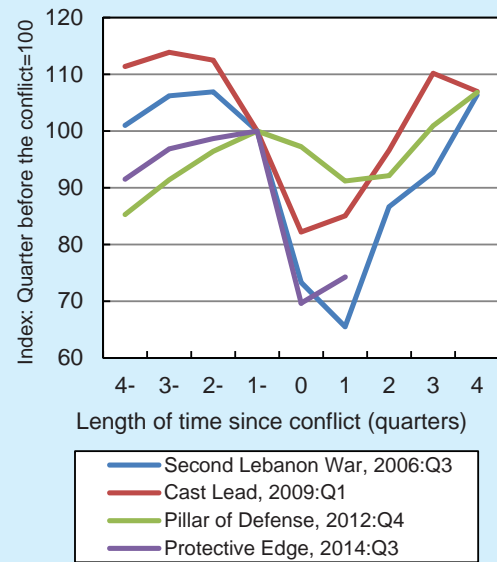
Among the various industries in the economy, tourism is adversely impacted most severely by military conflicts. All the conflicts had a clear negative impact on the industry, reflected in a decline in several indicators, including the number of tourist and visitor entries, the number of overnight hotel stays by tourists, the revenue of the food and hospitality services industry, and revenues of Israeli airlines. The source of the negative impact is in tourism from abroad, as foreign tourists respond rapidly and sharply to the deterioration in the security situation, while Israeli tourism is much less sensitive to that.² The harm caused to tourism services exports is not only during the actual days of conflict, but also, and primarily, because the negative impact continues beyond them. Activity does not recover immediately, and returns to its level of the period preceding the fighting only after about a year (Figure 1). During times of hostilities, a decline is also seen in outgoing tourism, but this recovers rapidly and already returns to its pre-conflict level in the following quarter.

It is estimated that the loss suffered by tourism services exports in 2014 due to Operation Protective Edge reached NIS 2 billion, about 0.2 percent of annual GDP. However, it should be noted that the tourism industry in Israel is of greater importance than just its proportion of GDP, as its share of total jobs in the economy is larger, and it mainly employs workers who earn low wages and do not have many employment alternatives.³ A positive aspect is that despite the extended fighting and the temporary halt in operations of some foreign airlines at Ben-Gurion Airport, tourism was not negatively impacted to a greater extent than during the Second Lebanon War.

Current household expenditure

Military conflicts also negatively impact current household expenditure, primarily on services, a component that represents about 40 percent of nondurables consumption and about 20 percent of GDP. Private consumption of services increases by an average rate of 1 percent per quarter, but during Operations Cast Lead and Pillar of Defense it grew by a lower rate, during the Second Lebanon War it remained essentially unchanged, and during Protective Edge it contracted (Figure 2). This phenomenon apparently

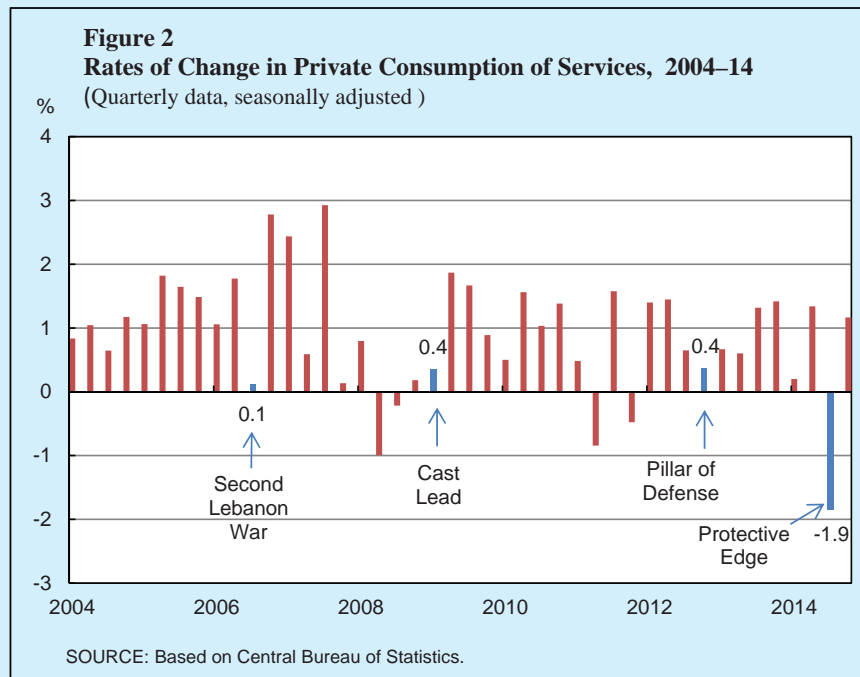
Figure 1
The Response of Tourism Services Exports to Military Conflicts, over the Past Decade (seasonally adjusted data)



SOURCE: Based on Central Bureau of Statistics.

² Shaharabany, Ran and Yigal Menashe (2011). "The Hotel Market in Israel", Discussion Paper Series 2011.04 (in Hebrew) (Bank of Israel); Shaharabany, R. (2014) "The Impact of Terrorism, Israel's Image and Economic Variables on Different Types of Incoming Tourism", Discussion Paper Series (Bank of Israel).

³ Ibid.



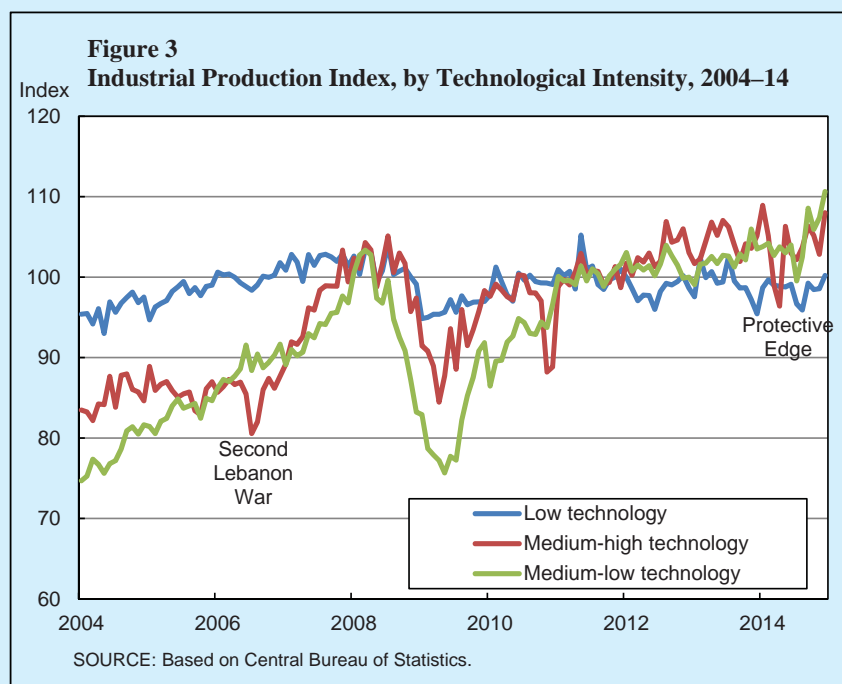
derives from a decline in two major components of services consumption—transportation services, and restaurants and hotels. An indication can be seen in the summer of 2006 as fuel consumption declined markedly, and in the summer of 2014 as it declined even more sharply. Likewise, during Protective Edge a decline was seen in the number of Israeli tourist overnight hotel stays and a negative impact on trade (based on credit card sales), but these phenomena were not observed during the Second Lebanon War. It is plausible that the response this past summer was more severe because the hostilities were protracted and the rockets' range expanded to include major population concentrations in the center of the country. The GDP loss attributed to private consumption was estimated at about NIS 1.5 billion, most of which derived from a decline in services consumption, and a minority of which derived from a slowdown in the growth rate of food, beverages, and tobacco consumption. Private consumption recovered nearly immediately, and the negative impact was entirely in the third quarter.

Industrial Production

Overall industrial production is not especially sensitive to military conflicts, but when examining the Industrial Production index by technological intensity, differences can be found in the groups' responses. While a decline during the conflict was not seen in high technology industries, a different picture emerges from other manufacturing industries (Figure 3).

There was a sharp decline in medium-high technology industries during the Second Lebanon War, deriving primarily from a marked negative impact on activity of the oil and chemicals industries which are concentrated around Haifa Bay. Medium-low and low technology industries remained stable during the Second Lebanon War and suffered a moderate negative impact during Protective Edge. As for low technology industries, its representation in northern Israel is double its representation in the South, and

nonetheless, according to the Industrial Production index, it was negatively impacted precisely during Protective Edge. This was due to the decline in activity in the food, beverages, and tobacco industry.⁴ The negative impact on medium-low technology industries derived primarily from the adverse effect on two industries—metals⁵ and production of goods based on non-metallic minerals. Overall, industrial production remained relatively stable during Protective Edge, and its negative impact on GDP was only marginal.



Goods and services exports

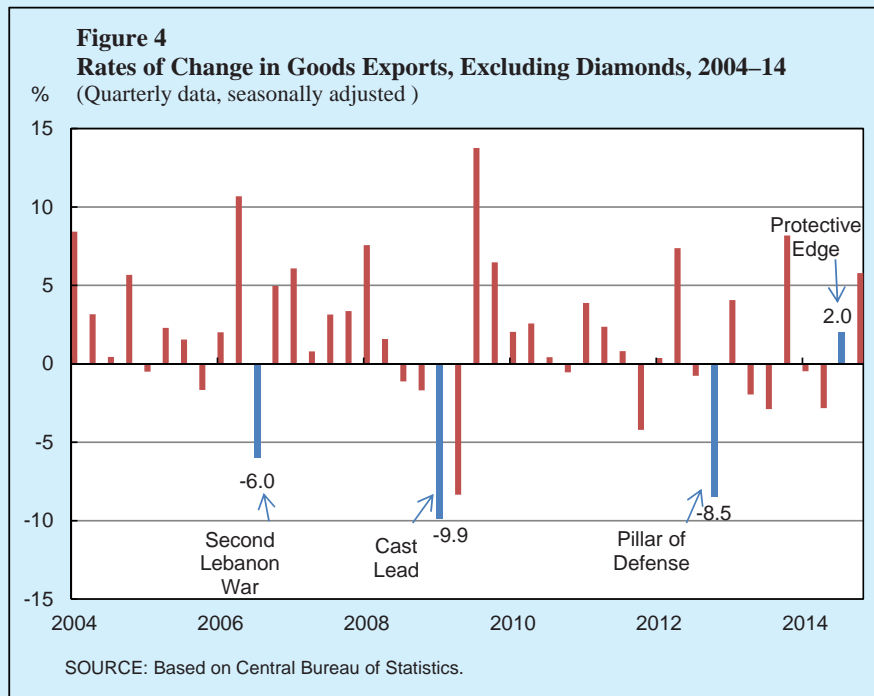
The tourism industry, as noted, suffers the most significant adverse economic impact caused by hostilities, and this is reflected in services exports. Other export data indicate that during Protective Edge, the economy was more resilient than during previous episodes of hostilities (Figure 4), in contrast to the picture that emerges from services consumption (Figure 2). Nonetheless, it should be noted that the sharp decline during Cast Lead should probably be attributed to the global economic crisis, and the short duration (8 days) of Pillar of Defense points to it having only a marginal effect on the decline in exports during the fourth quarter of 2012.⁶ In contrast, the Second Lebanon War, as noted, serves as a relatively suitable basis for comparison with Operation Protective Edge: while in the third quarter of 2006, goods

⁴ Industrial production for the food, beverages, and tobacco industry remained stable in the summer of 2006. This is surprising, as the share of this industry in the North is markedly greater than its share in the South. The explanation does not seem to be based on different patterns of absence from work, as the index of employees' actual work hours in this industry moved similarly (a slight decline) during the two conflicts.

⁵ The base metals and production of metal products in assembly, excluding machinery and equipment.

⁶ An alternative explanation for the decline is the shekel's strengthening against the dollar during that same quarter.

exports excluding diamonds contracted by around 6 percent, in the parallel quarter of 2014 they grew by 1.1 percent (similar to the multiyear average). A similar scenario, though more moderate, can be observed as well in total goods and services exports (excluding diamonds). It is difficult to attribute the contraction in exports in 2006 to the operations of the seaports, since even though container traffic at the Haifa port declined sharply that summer, a marked shift to the Ashdod port compensated for that. In addition, it appears that part of the decline in exports in 2006 was a correction to the rapid growth in the previous quarter.⁷ It can therefore be concluded that the military conflicts discussed had only a marginal effect on goods exports.



Total GDP loss

Operation Protective Edge caused an estimated loss of NIS 3.5 billion, about 0.3 percent of annual GDP. This loss is slightly lower than the lower bound of the estimated loss caused by the Second Lebanon War, 0.35–0.5 percent of annual GDP. As the supply side remained relatively stable, it may be inferred that the negative impact derived primarily from a decline in demand, which is reflected in tourism services exports and nondurables consumption. It should also be noted that military conflicts increase the public expenditure on defense, but it is difficult to quantify its effect on GDP since it is not clear to what extent the increase is at the expense of public civilian expenditure.

⁷ In the second quarter of 2006, there was an atypical increase, of 10.2 percent, and in the corresponding quarter of 2014 there was a decline of 4.4 percent (Figure 4).

Box 2.2**The Level of Infrastructure and Infrastructure Investment in Israel: International Comparison and Examination over Time**

Infrastructure projects require large investments, which frequently creates natural monopolies. Moreover, in contrast with investment in other physical capital, such investment has positive externalities¹—as well as yield in terms of quality of life—that are not taken into account by the market. The government must therefore influence the level of infrastructure through regulation, creating appropriate conditions for investment by the business sector, and subsidizing or making the investment.

This box shows that in some areas—particularly metropolitan public transit—the level of infrastructure in Israel (or at least the intensity of its use) is still lower than in most other developed countries. Studies conducted in Israel² and elsewhere in the world³ indicate that an improvement in the level of infrastructure may contribute to the convergence of the Israeli economy to the standard of living in these other countries. This is particularly valid regarding public transit: an improvement in infrastructure in this area will contribute to growth and to the standard of living, since it will improve the compatibility between workers and firms, and will support the population that is interested in joining the labor market but cannot purchase a private vehicle. Wide-scale and efficient public transit in the large cities will make it possible to cluster employment areas and increase population density. It therefore has significant economic advantages. The availability of public transit also has quality of life implications, since long travel to and from the work place has a negative impact on the balance between leisure and work time, and the large-scale use of private vehicles has a negative impact on environmental quality.⁴ Investment in public transit infrastructure is mainly derived from government policy, and the findings in this box bring into sharper relief the need for the government to act more determinedly to improve it.

1. The level of infrastructure⁵

Figure 1 shows Israel's relative position in a series of indices of the scope and quality of transport and communications infrastructure. In most of the indices, Israel is ranked below the midpoint. It is ranked predominantly well in indices of landline and cellular telephony, fields in which the companies belong to

¹ Externalities are the effects of factors that are not involved in a certain action. For example, the paving of a road has externalities on the quality of life of the residents in the surrounding area, including improved access (positive effect) and air pollution (negative effect).

² Sharabany, R. (2008), "The effect of infrastructure capital on manufacturing industries in Israel, 1990–2003", Discussion Papers Series 2008.05, Bank of Israel Research Department (in Hebrew); Bergman, A. and A. Merom (1993), "Growth factors in the business sector (1958–1988)", Discussion Papers Series 93.02, Bank of Israel Research Department (in Hebrew).

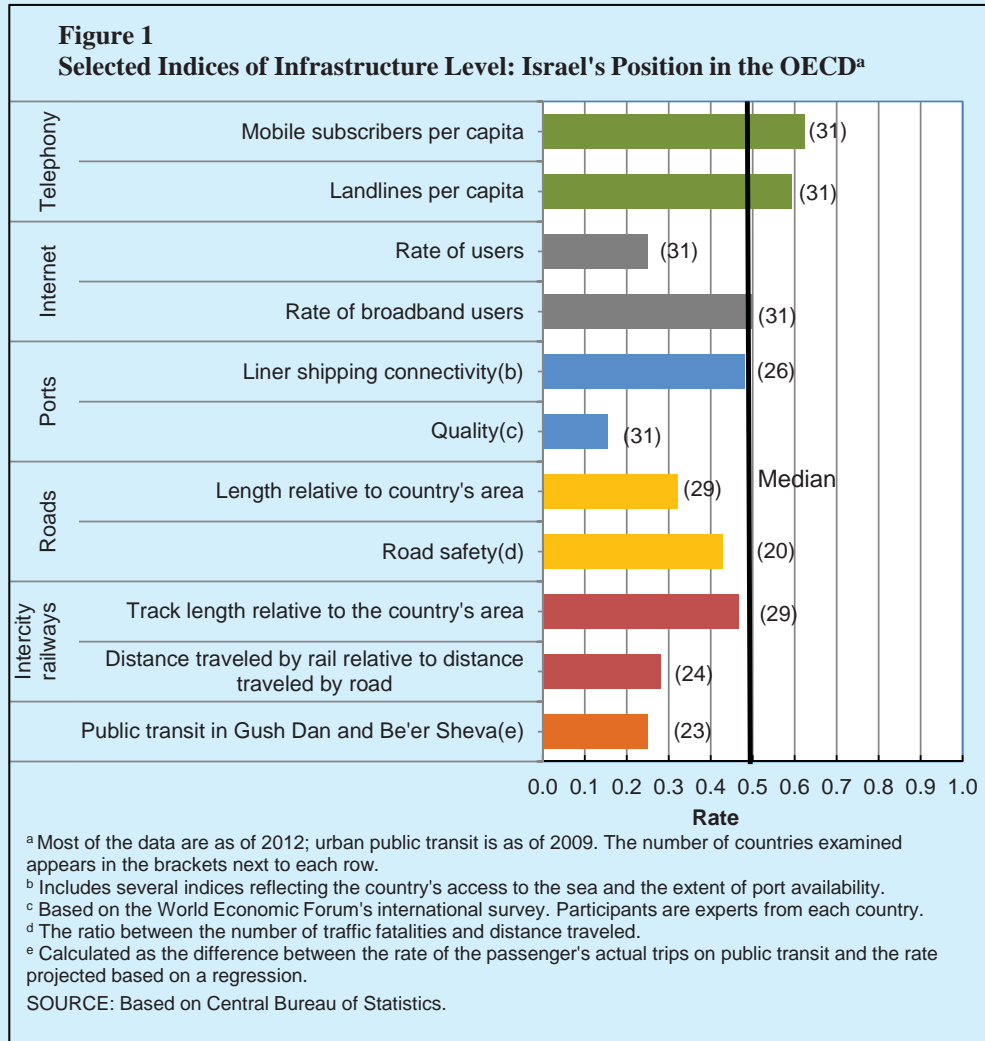
³ Coenen, G., C.J. Erceg, C. Freedman, D. Furceri, M. Kumhof, R. Lalonde, D. Laxton, and others (2012), "Effects of Fiscal Stimulus in Structural Models." *American Economic Journal: Macroeconomics* 4 (1): 22–68.

⁴ According to the OECD quality of life indices, these are two of the areas in which Israel particularly lags behind the other members of the organization. Housing affordability, security, and civil rights are also among these areas.

⁵ The data on infrastructure quality are mainly from the World Bank; data on traffic accidents are from the International Road Federation (IRF); data on the quality of ports are from the World Economic Forum; and data on metropolitan public transit are from the European Metropolitan Transport Authorities (EMTA).

the business sector. Reforms have been implemented in recent years in these fields, increasing competition and the volume of use.

In the Internet field, the rate of users in 2012 was 69 percent, while the OECD average was 77 percent. This may indicate low demand, but it may also indicate that limited competition in terms of infrastructure—where there are just two companies—has a negative impact on supply and makes use more expensive. In contrast, the rate of broadband users out of all Internet users is in the center of the distribution. The government is acting to improve competition through the addition of an infrastructure competitor—“the fiber initiative”—and through the “wholesale market” of Internet infrastructure.⁶



⁶ The fiber initiative will add another company to the Internet infrastructure field, and the wholesale market for Internet infrastructure will make it possible for content companies to purchase infrastructure services and offer consumers a single package of infrastructure and content services, where until now customers have been forced to purchase them separately.

In the ports, Israel is in a dual position: The Liner Shipping Connectivity Index⁷ shows that the number of ports is reasonable and in the center of the distribution, but their overall quality is in the lower portion. The government decided to build two new terminals that will be operated by parties unconnected to the current operators, with the objective of increasing competition and improving service at the existing ports as well.

In terms of road infrastructure, road safety is just slightly below the midpoint. The ratio between the number of fatalities in accidents to distance traveled is just slightly above the midpoint. The length of roads in relation to the country's area is lower than in most other countries, and the same is true for the length of roads in relation to population (figure not shown). While investment in roads in recent years has been greater than in other countries (Figure 4), that investment is almost not reflected in additional road length—the comparison variable in Figure 1—since it has focused on adding interchanges and improving existing roads. A study conducted by the Bank of Israel found that improvement in infrastructure also contributes to a decline in the number of accidents.⁸ In terms of road infrastructure, Israel is therefore ranked at a reasonable level, which is consistent with the comparison presented in the Bank of Israel Annual Report for 2009.⁹

The use of private vehicles is growing more rapidly than the use of public transit in Israel. Between 2000 and 2014, the distance traveled by private vehicle increased by 4 percent, while the characteristics of the volume of public transit—number of seats on regular bus lines and number of busses and distance traveled by them—increased by only about 2 percent per year, similar to the rate of growth of the population aged 15 and above—the main consumers of public transit. However, these characteristics began improving in the past three years.

In terms of railways, track length in relation to the country's area is slightly below the center of the distribution. The level of investment increased beginning in the 1990s, and rail use increased apace. However, the rail network is still relatively small, and Israel is below the midpoint of developed countries in terms of the ratio between the use of railways and distance traveled on roads (Figure 1). With railways, like with all areas of mass transit, there are advantages to a network. Additional investments may therefore generate greater marginal benefit.

In order to estimate the level of metropolitan public transit, we examined the intensity of use of public transit in 41 metropolitan areas in 23 OECD countries. For each metropolitan area, we calculated two values: The first is actual public transit trips as a share of total travel. For this calculation, we used the number of trips per passenger—how many times the passenger boarded and disembarked from a means of public transit—and included walking and riding a bicycle. The second value is the forecast share of trips, based on a regression in which the dependent variable is public transit as a share of the passenger's trips, and the explanatory variables are per capita GDP, average family size in the metropolitan area, and population density in

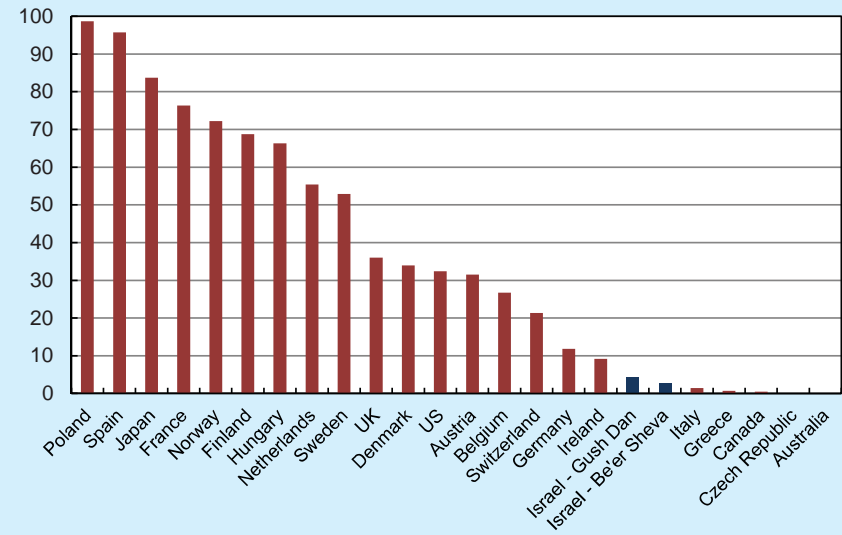
⁷ This index shows to what extent a country is connected to the global network of shipping lines, and includes a number of sub-indices, including the state's accessibility to the sea and port availability.

⁸ Brown, L., R. Sharabany and N. Zussman (2014), "Causes of traffic accidents with casualties on intercity roads in Israel", Discussion Papers Series 2014.04, Bank of Israel Research Department.

⁹ The examination included a number of countries and two comparisons of road capital—normalized by GDP and normalized by distance traveled.

the metropolitan area.¹⁰ After that, we calculated the difference between the first value and the second. Metropolitan areas with higher-than-average intensity of use obtained a positive difference, which may indicate that public transit in those areas is characterized by high quality. We weighted these differences by the size of the population in the metropolitan area in order to obtain the average intensity of use in the country. By way of illustration, in Spain we found high intensity, which may indicate that there are developed mass transit systems in Spain. We also found that the standard of living—according to per capita GDP and size of family—has, as expected, a negative effect on public transit as a share of total passenger trips, while population density has a positive effect (Figure 2).

Figure 2
Index of Intensity of Public Transit Use^a in Selected Metropolitan Areas^b, 2009



^a The difference between the actual rate of travel and the rate projected based on a regression.
^b The main metropolitan areas in each country. In some countries, the mark weights a number of metropolitan areas. Mass transit systems were recently constructed in Haifa and Jerusalem, but data on those systems are not available.
 SOURCE: Based on Central Bureau of Statistics and EMTA Barometer of Public Transport in the European Metropolitan Areas.

We found that intensity of use in two of the metropolitan areas in Israel—Tel Aviv and Be’er Sheva—is far from the accepted level in OECD countries, which may indicate low quality. In the Jerusalem and Haifa metropolitan areas, mass transit systems were built in recent years.¹¹ In Tel Aviv, there was a recent reform in the bus lines¹², but almost no infrastructure investment was made in mass transit. The Tel Aviv metropolitan area still has no mass transit system, even though attempts have been made for decades to implement the plan to construct one (see Box 6.2) and the delay has extensive economic implications. In

¹⁰ The regression suffers from an endogeneity problem, since it is not clear what direction to make the connection between population density and the use of public transit: Does density cause an increase in public transit as a share of travel, or the opposite? When the regression included only average family size as an explanatory variable, we found that the order of the countries is similar to the order in the regression that also included density.

¹¹ Even though Jerusalem and Haifa have high shares of the population, they are not included in the estimation due to lack of up-to-date data for the period after the mass transit systems were constructed.

¹² Likewise, investment was made in laying out bicycle paths, and a bicycle rental project was launched. These may contribute to a reduction in the use of private vehicles.

most OECD countries, the government is streamlining and expanding public transit in the metropolitan areas, particularly in the chief metropolitan area in the country.

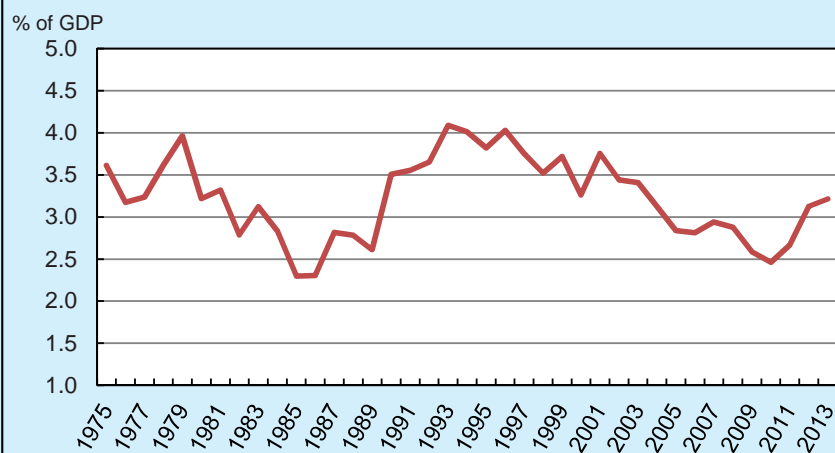
2. Investment in infrastructure

There are, therefore, a number of areas—particularly public transit—in which the level of infrastructure is still lower than in most developed countries, but even so, the volume of investment in them in recent years is lower than in the past. In the mid-1990s, the volume of investment in infrastructure reached a particularly high level in terms of GDP (Figure 3), mainly due to the absorption of the large wave of immigration from the former Soviet countries. Since then, the volume has decline almost constantly, and the decline accelerated at the beginning of the last decade. Between 2010 and 2013, investment increased, due among other things to large investments in energy. It seems that the volume of investment declines during economic slowdowns, which is what happened in the mid-1980s, in the early years of the last decade, and between 2009 and 2011. According to empirical findings presented in an International Monetary Fund policy paper¹³, an increase of about 1 percent of GDP in investment in infrastructure projects—if the projects are selected carefully and executed efficiently—is expected to raise GDP by 0.4 percent in the immediate term, and by 1.5 percent four years hence. Among other things, the paper emphasized that investment in infrastructure makes an important contribution to economic growth during economic slowdowns.

Figure 4 shows an international comparison of investment from all sources in land transportation (roads and railways). It shows that the volume of investment between 1995 and 2011 is higher than the volume in most countries, particularly due to high investment in roads. In contrast, investment in railways was lower than in most countries, despite the need to improve the mass transit systems.

This box raises a number of findings. First, according to an

Figure 3
Infrastructure Investments^a in Israel as a Share of GDP, 1975–2013



^a Including investment in seaports and airports and in land transportation, communications, electricity and water infrastructure.

SOURCE: Based on Central Bureau of Statistics.

¹³ “The Time Is Right for an Infrastructure Push” <http://www.imf.org/external/pubs/ft/survey/so/2014/res093014a.htm>

international comparison, distance traveled by rail is low relative to distance traveled by road. The latter continues to grow rapidly, which may indicate that connectivity by public transit is limited, at least in some of its segments. Second, among these segments is public transit in metropolitan areas. We found that the intensity of use of public transit in the Gush Dan and Be'er Sheva areas is particularly low by international comparison (Figures 1 and 2). If the inferior quality of the mass transit systems is not dealt with, it will over time become a very serious impediment, since the Israeli population—particularly in the center of the country—is growing more rapidly than in other OECD countries. These findings indicate that action must be taken more vigorously to improve public transit in Israel, but even so, the volume of investment in urban and intercity railways is low by international comparison, while the volume of investment in roads is high (Figure 4).

While many areas of infrastructure were privatized long ago, and government policy has an effect on them mainly through regulation, the government’s influence on transport infrastructure is both through regulation and through budget. The government has already made decisions to deal with some of the problems mentioned above, but as Box 6.2 shows, the implementation of those decisions is one of the main challenges with which the government must deal.

