

Chapter 1

The Economy and Economic Policy

- In 2016, GDP grew by a more rapid rate than the previous four years. The rate of growth in private consumption accelerated, primarily due to the improved terms of trade during the last two years and the decline in consumer goods prices.
- Israeli exports grew at a slow rate this year due to a slow pace of world trade growth. In addition, the appreciation in terms of the real exchange rate, and the labor supply constraint in technological sectors, have apparently been holding back export growth in recent years.
- The expansion of economic activity increased demand for labor, and unemployment declined to the vicinity of full employment, contributing to an increase in wages.
- Supply side factors—particularly the decline in shekel denominated prices of imports and increased competition in the economy—reduced prices more than increased demand in a full employment environment increased prices, and the CPI declined by 0.2 percent.
- Monetary policy remained accommodative this year. The Monetary Committee kept the interest rate unchanged at 0.1 percent, maintained purchases of foreign exchange, and continued to provide forward guidance.
- Home prices rose strongly this year, by 6.3 percent. The increase of credit risk in financing real estate activity and Banking Supervision Department directives led to a rise in the interest rate on mortgages and recently to a slower rate of increase in mortgage volume.
- The reduction in tax rates and the expansion of public expenditure contributed to economic expansion this year. However, from a long-term perspective a greater proportion of the planned fiscal expansion should be used to increase expenditure to support supply, particularly in view of Israel's lag in the quality of some of its physical infrastructure and human capital, and because there is considerable inequality in human capital in Israel.
- The government has for the most part refrained from reducing inequality relative to the norm in the OECD. The decline in the scope of transfer payments since 2002 has widened inequality in net income, but has apparently contributed to the increase in the employment rate during the past decade and the decline in inequality of gross income. These have offset part of the increased inequality in net income. However, some workers lack the skills for successful integration into the labor market.
- The main challenge facing policy makers is the need to take advantage of the favorable economic situation in order to strengthen the foundation for growth, which is based on increased productivity, while maintaining a high rate of employment and reducing inequality.

1. MAIN DEVELOPMENTS

GDP grew by a more rapid rate than that of the previous four years, due to improved terms of trade and a decline in prices of private consumption.

In 2016, GDP grew by 4 percent and GDP per capita grew by a more rapid rate than that of the previous four years. The cumulative decline in import prices during the last two years, and to some extent increased competition as well, markedly increased households' purchasing power and expanded supply. These in turn contributed to the acceleration in the growth rate of private consumption and to a rapid increase in the activity of industries that sell to the domestic market. Therefore, the demand for labor in these industries grew markedly, and in view of the economy's proximity to full employment and the support provided by the accommodative monetary policy, unemployment continued to decline and wages rose at a faster pace than output per worker. The improved conditions for workers in turn led to greater consumption on the part of households and credit to households continued to grow. Since the expansion in economic activity was supported from the supply side, and in particular the drop in the shekel denominated prices of imports, inflation remained near zero despite the proximity to full employment and the accompanying rise in wages. Although the macroeconomic situation is encouraging for the moment, the challenges in the long term remain to be dealt with, including the gap between labor productivity in Israel and in other small advanced countries, which has increased over time (Figure 1.1b), and the inequality in net income which is high by international standards.

Exports were negatively impacted by world trade increasing at a moderate rate and by appreciation in terms of the real exchange rate.

While industries that sell to the domestic market enjoyed favorable conditions for growth, exports grew by a slow rate, similar to that of world trade. This followed three years in which Israeli exports grew at a slower rate than world trade. Israeli exports' underperformance could be seen in their proportion of world trade, which has declined relative to their level in 2008. Exports were adversely affected by the appreciation in terms of the real exchange rate, which offset the outperformance of the Israeli economy, and in particular exports, during 2009–12.¹ It is also likely that a constraint on the supply of workers in engineering and computer fields has held back export growth. This constraint is reflected in the high number of vacant positions for educated professionals in technology-related occupations and the rapid rise in their salaries (for further details, see Chapter 5). Expanding the skilled workforce—in the medium term through vocational training and in the long term through early education—will help maintain the ability of the Israeli economy to compete and will even increase it.

Most of the developments in 2016 were characteristic of a full-employment environment, i.e., a rapid increase in domestic demand that led to an increase in work hours per employee and in the number of job vacancies. The increase in the demand for labor in what was a tight market even beforehand led to an increase in the labor share, which followed five years in which it had declined continuously. These developments, alongside the increased utilization of machinery and equipment², led

¹ Box 2.1 expands on the discussion of the effect of the real exchange rate on exports.

² Based on the Companies Survey conducted by the Bank of Israel.

producers to increase their production capacity by increasing investment in fixed assets. The decline in prices of imports in a full-employment environment and the increased demand for investment in the economy reduced the current account surplus although it still remained high relative to the past and to other countries.

The CPI declined during the year by 0.2 percent. Although many countries have experienced low inflation during the last two years as a result of the drop in commodity prices, the decrease is even more pronounced in Israel, even though its labor market is characterized by full employment and wage increases. The main explanation for the low inflation in Israel is apparently related to the decline in the shekel denominated prices of imports for the second year in a row, due to both the appreciation of the shekel and the composition of commodities that the economy imports.³ Another possible factor is related to stronger competitive pressure on local firms. The decrease in prices under government supervision also contributed somewhat to this situation, although its direct negative contribution was negligible for the year as a whole and it appears that this effect was primarily indirect; past inflation and expectations of inflation have a moderating effect on prices.⁴

The Monetary Committee kept the interest rate at 0.1 percent this year and continued to declare that monetary policy will remain accommodative for a considerable time, and the Bank of Israel continued to purchase foreign exchange. The Committee maintained the level of the interest rate in order to balance between the need to return inflation to within its target range and the need to manage the risks to financial stability. It refrained from reducing the interest rate to below zero for several reasons: medium to long term inflation expectations remained anchored close to the target range, the rate of domestic economic growth accelerated during the year which allayed the concern of a deflationary process and also because there has been little experience with negative interest rates in other countries. The low rate of interest, with assistance from foreign exchange purchases, was also intended to moderate the appreciation process so as to prevent cyclical factors and short-term capital movements having a long-term effect on the tradable goods sector—and in particular the market share of Israel's exports—and also to prevent the loss of a foothold in markets and the loss of knowledge. In order to minimize financial risk to the banks originating from a global and domestic low interest rate environment, and in particular the risk arising from the taking of mortgages, the Banking Supervision Department in recent years imposed various limitations on the provision of credit.

The continued monetary accommodation, alongside fiscal expansion, which was reflected in the rapid increase in government expenditure and the reduction of tax rates, supported the expansion of the consumption of durable goods (20 percent) and an

In the past 2 years, many countries have seen low inflation due to the decline in commodity prices, but the situation is stronger in Israel even though the labor market is near to full employment.

Continued monetary accommodation and fiscal expansion supported expansion of domestic uses.

³ Section 4a below further describes the effect of the terms of trade and in particular import prices.

⁴ Box 3.2 expands on the factors that determine inflation. The findings presented there indicate that inflation expectations have a major effect on the inflation rate, while the output gap has a smaller effect which has become even smaller in recent years. It is found that the relative price of imports in any case fulfills an important role in explaining inflation, though the influence of the exchange rate has diminished in recent years, primarily because rent is no longer linked to the dollar.

additional acceleration in the growth of current consumption (from 4.4 to 4.7 percent). Nonhousing credit to households grew faster than housing credit and it supported the growth in consumption of consumer goods and also the purchase of vehicles, which grew at an exceptionally fast rate. Vehicle purchases were brought forward due to the changes in the green taxation regulations that were to go into effect at the beginning of 2017 and which would increase the prices of some vehicles.

The transmission of monetary policy to the credit market continued to affect the business sector as well. Thus, the spreads in the corporate bond market narrowed in all industries and the sources of business credit grew, primarily due to bond issues and expanding credit to small businesses as well. The marked growth in investment in the principal industries (11.8 percent) included an exceptionally large expansion in investment in the electronic components industry and the expansion of purchases of vehicles by the business sector, which was partly due to the expected change in taxation. Nonetheless, the remaining investment in industry contributed to the rate of increase in total investment in fixed assets, following two years of stagnation.⁵

The output of the construction industry⁶ grew this year by 5.4 percent and its activity continued to contribute to the economy's growth. The number of annual building starts during the last two years reached 52,000 units, which exceeds the levels during 2011–14 (about 47,000). The demand for housing continued to grow as a result of demographic trends, the high return on housing relative to other investments and the increase in demand due to the “Buyer’s Price” program that notably subsidizes the price of a home. The growth in demand played a dominant role, despite the increase in the interest rate on mortgages which worked to reduce the quantity demanded, and it contributed to the continuing upward trend in prices (6.3 percent this year). The quantity of transactions declined slightly during the year. At the beginning of 2017, the tax on multiple home ownership went into effect and in the short run this is likely to moderate the rise in home prices, but at the same time it will increase rents, since part of the tax will apparently be passed on to renters.⁷

A long-term perspective on the housing market shows that the population is expected to grow at a rate that will require a significant addition to the supply of housing, particularly in areas of high demand, where the amount of land available for building is shrinking. The planning authorities are finding it difficult to accelerate plans for increasing density in the country's Center and the construction of infrastructure for housing still involves a prolonged process. These processes need to be streamlined and resources need to be allocated to them, but through careful action—these processes have long-term implications and therefore it is critical that they remain thorough in order for the land to be utilized efficiently and to preserve the quality of housing

The increase in demand for homes had a dominant role in the real estate industry, and prices continued to rise strongly.

The efficiency of the construction planning process must be increased, but it is crucial to act fundamentally so as to utilize the land resources and maintain the quality of residences and the environment.

⁵ Chapter 2 provides further discussion of uses and Chapter 4 discusses the financing of economic activity in the credit market.

⁶ For further details, see Chapter 9.

⁷ While this Annual Report was being written, appeals related to the multiple-home tax legislation were being heard in court.

and of the environment. The strategic plan for housing that the government recently approved (the 2040 Plan) has adopted this approach.

The growing public discourse over the cost of living in Israel, which reached a peak with the social protest in the summer of 2011, contributed to a change in consumer behavior and to the government and the Knesset adopting a range of measures to increase competition (see Section 3c below). In addition, consumers in Israel have enjoyed increasing access to retail Internet sites in recent years. It may be that these processes have increased the competitive pressures on public companies producing consumer goods and as is shown in Section 4b their profitability has declined somewhat. This may result in the expansion of supply of some goods and a decline in relative prices, as well as efforts to increase efficiency in companies whose market power was previously too large. In the medium term, such a continued process is expected to moderate inflation and to contribute to an increase in the level of productivity and income, and these in turn are expected to increase the purchasing power of the public. The low level of inflation in Israel is consistent with this description.

The long-term perspective indicates that the increase in the population's average level of education has made a significant contribution to the rate of growth in recent decades. The raising of the retirement age has also contributed to growth and apparently so has the cut in government allowances in recent years, since this has raised the employment rate during the last decade. The aforementioned, alongside cyclical differences in the rate of growth, have helped to narrow the gap in GDP per capita between Israel and other advanced economies, which had widened during the period 1995–2004 (Figure 1.1d). However, the contribution of these growth drivers has declined in recent years, and furthermore, it cannot be taken for granted that Israel will manage in the future to maintain a high employment rate, since an increase is expected in the proportion of population groups that have low participation rates and lower levels of relevant education.

The contribution that quantity of schooling and increase in employment make to growth has declined in recent years.

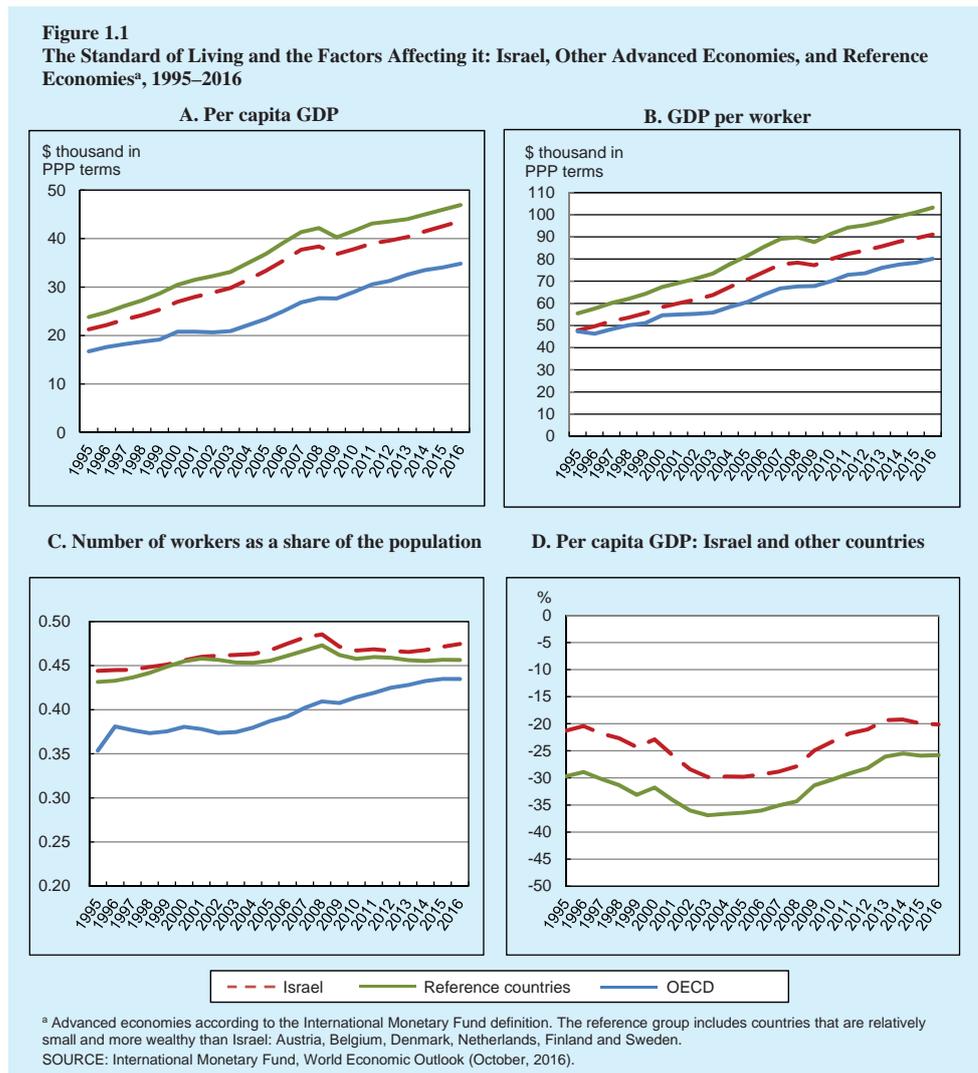
While the employment rate in Israel is similar to that in advanced economies (Figure 1.1c), its lag in output per worker (labor productivity) has worsened since 1995 (Figure 1.1b).⁸ This is consistent with the lag in the quality of human capital, and the high level of inequality between population groups is in line with the variance in human capital (see Section 5 below). Israel also lags behind other countries in some types of communication and public transportation infrastructures and without a change in government policy this lag is not expected to narrow, as the rate of investment in infrastructure and public structures is low relative to that in the OECD. The low quality of human capital and physical infrastructures, along with inadequate

⁸ The labor force participation rate is already high relative to most advanced economies, but the ratio of the number of workers to the population is still somewhat low due to the higher dependency ratio in Israel. Although the growth in participation, both in historical terms and in comparison to other countries, increases per capita GDP, it is reasonable to assume that additional workers make a lower contribution to labor productivity than the average worker.

bureaucratic and regulatory conditions, contribute to a situation in which investment in physical capital in the business sector as well is low by international standards.⁹

Gradual withdrawal of prolonged monetary accommodation will reduce the probability of risks materializing. The main challenge to fiscal policy makers is the need to increase investment in growth drivers that will increase labor productivity.

To the extent that the full employment environment becomes further entrenched and the moderating effect of lower import prices becomes weaker, so the main challenge facing monetary policy makers—to identify early on the turnaround in the development of inflation, will become more urgent. This will make it possible to gradually withdraw from the prolonged monetary accommodation that is reducing



⁹ The low rate of investment in the public and business sectors, alongside higher than expected saving relative to the economy’s fundamentals, is also reflected in the structural surplus in the current account of the balance of payments since 2004 (see Chapter 7).

the probability of the actualization of the risks to financial and economic stability embodied in the expansion of credit, particularly housing credit and credit to the real estate industry.¹⁰ The main challenge facing fiscal policy makers is the need to increase investment in growth drivers in order to help the economy transition from growth that relies on countercyclical policy to growth based on increased productivity and that contributes to reducing inequality. The low level of the public debt and the structural surplus in the current account create optimal conditions to promote such policy.

Table 1.1
Main developments, 2011–16

	2011	2012	2013	2014	2015	2016
Mean population (million)	7.8	7.9	8.1	8.2	8.4	8.5
Nominal GDP (NIS billion, current prices)	935.2	993.4	1059.1	1104.7	1163.8	1222.0
Per capita GDP (NIS thousand, current prices)	120.5	125.6	131.5	134.5	138.9	143.3
Goods and services exports (\$ billion, current prices) ^a	83.5	84.8	88.8	90.1	84.8	87.0
Goods and services imports (\$ billion, current prices) ^a	82.8	85.0	83.1	85.3	76.7	84.0
Current account of the balance of payments (surplus, \$ billion)	6.7	1.6	9.8	11.9	13.7	12.4
Overall government deficit (as a percentage of GDP)	1.8	3.4	3.0	2.3	1.6	1.9
Public debt (as a percentage of GDP)	68.8	68.3	67.0	66.0	64.1	62.2
Employed persons in Israel (thousands)	3251.5	3359.0	3449.5	3555.8	3643.8	3736.8
Real wage per employee post (yearly average, percent change)	0.4	0.5	0.9	1.1	2.8	2.9
Nominal yield on 10-year government bonds	5.1	4.6	4.0	3.1	2.2	2.0
Real yield on 10-year government bonds	2.5	2.1	1.6	1.0	0.5	0.4
GDP	5.1	2.4	4.4	3.2	2.5	4.0
Private consumption	3.6	2.9	3.8	4.3	4.3	6.3
Unemployment rate	7.1	6.9	6.2	5.9	5.3	4.8
Exports (excluding diamonds)	8.6	1.8	3.1	2.5	-2.6	3.8
Inflation	2.2	1.6	1.8	-0.2	-1.0	-0.2
Bank of Israel interest rate	2.9	2.3	1.4	0.6	0.1	0.1
Real one-year interest rate	0.6	0.2	-0.3	-0.7	-0.5	-0.1
Real effective exchange rate	-1.1	5.3	-5.7	-1.3	-0.1	-1.9
NIS/\$ exchange rate (yearly average)	3.6	3.9	3.6	3.6	3.9	3.8
Tel Aviv 125 Index ^b	-20.1	7.2	15.1	6.7	2.0	-2.5
World trade (rate of change, percent)	7.0	2.8	3.5	3.8	2.7	1.9

^a Excluding diamonds.

^b Nominal rate of change - the last day of December compared to the last day of the previous December.

SOURCE: Based on Central Bureau of Statistics and International Monetary Fund.

¹⁰ Section 4c below further discusses this challenge while mapping the risks to price stability, growth and economic stability.

2. GLOBAL DEVELOPMENTS

Global growth in 2016 was slow relative to 2015 due to transitory and regional factors, but structural problems are also preventing the growth rate from rising markedly.

In 2016, global economic growth slowed relative to 2015, though it accelerated over the course of the year. Inflation increased somewhat in most countries due to increased prices of commodities and fuel over the course of the year. Nevertheless, there were no signs of real inflationary pressures in these countries due to moderate demand in most of them. Although the slowdown in growth was the result of a number of transitory and localized causes, the continuing stagnation in the global economy strengthens the assessment that there are also structural problems that are restraining the growth rate from increasing markedly.

The transitory factors that slowed global growth this year vary from one country to another, and this is also the case for economic policy (Figure 1.10). In the US, growth slowed, particularly in the first half of the year, due to weakness of investment in residential construction and in industrial production. Later in the year, the economy recovered and labor market performance improved, against the background of assessments that the new administration will adopt expansionary fiscal policy, and the Federal Reserve decided to raise the interest rate by one quarter of a percentage point, to 0.75 percent.

The eurozone growth rate relied on the central bank enhancing monetary accommodation. In contrast, in the US, the Fed raised the interest rate in response to the economy's improvement during the year.

The eurozone's growth rate in 2016 was similar to that in 2015, with growth driven by private consumption. The growth rate rested on the action of the ECB which, in contrast to the Fed, enhanced its monetary expansion. It reduced the interest rate on surplus balances of the commercial banks from -0.3 percent to -0.4 percent and increased the scope of its asset purchases. The enhancement of the monetary accommodation contributed to consumer sentiment and to an improvement in the labor market. In contrast, the unreliable repayment of loans to the banks (particularly in Italy) and the uncertain status of the EU continue to weigh on economic activity. The unemployment rate is still high and limits the pace of increase in domestic demand.

The UK's economy had been suffering from uncertainty even before the referendum on leaving the EU, but even more so after it. The uncertainty continues as an arrangement for its exit from the EU has not been reached. The effect on economic activity is concentrated primarily in the financial sector—equity prices fell—but growth remains robust, due to the support from accommodative monetary policy.

In Japan, the central bank enhanced its monetary expansion and the economy continued to grow at a stable rate, which is higher than the long-term rate of growth. The tradable goods sector was weak, affected by the sharp appreciation in the exchange rate and the weakness of some of Japan's trading partners in Asia.

Economic policy in China and other emerging economies was characterized by monetary restraint and fiscal support.

Growth in most of the emerging economies remained low but only somewhat less than the long-term growth rate. Although the rate of growth in China declined slightly relative to the previous year, it is low compared with the long-term average, but the concerns of a severe economic crisis dissipated during the course of the year. Economic policy in China and the other emerging economies was characterized by monetary

contraction and fiscal support—by means of increased investment in infrastructure and wage increases in the public sector.

In addition to transitory factors, there were also structural factors, as mentioned above, that slowed the rate of growth. First, the series of financial and real crises during the last nine years left investors repeatedly disappointed with the forecasts of recovery that were not realized. The share of fixed capital formation in GDP was significantly lower than it had been before the crisis and this affects not only the demand side but also the potential rate of growth, which feeds back into investment. The IMF and OECD believe that it is possible to solve the “low growth trap” by means of government investment that will increase the potential rate of growth and will also cause the business sector to increase its investment. However, it is important to choose projects that will generate a high return and which will contribute to potential growth.

Second, demographic processes that are occurring worldwide, and in particular the aging of the population, are accompanied by slower growth in the labor force, an

Investors were disappointed by forecasts for recoveries that haven't been realized, and reduced investment. They thus contributed to a negative impact in the potential growth rate, and thus to investment.

Table 1.2
Economic indicators: International comparison^a, 2009–16

	Average 2009–15				2016			
	Israel	US	Eurozone	OECD	Israel	US	Eurozone	OECD
GDP growth rate	3.5	1.5	0.2	1.1	4.0	1.6	1.7	1.6
Per capita GDP growth	1.6	0.7	-0.1	0.5	1.9	0.8	1.3	1.1
Per capita GDP (\$ thousand, current prices)	33.5	51.4	37.7	36.8	37.3	57.3		
Population growth rate	2.0	0.8	0.4	0.6	1.9	0.8	0.4	0.5
Civilian labor force participation rate, ages 25–64	78.5	77.5	73.0	78.5	79.9			
Unemployment rate	7.0	7.8	10.8	7.7	4.8	4.9	10.0	6.3
Inflation rate (during the year)	1.8	1.4	1.3	1.6	-0.5	1.3	0.2	1.1
Exports (percent of GDP) ^b	30.6	13.0	41.3	27.4	27.8	11.9		
Gross investment (percent of GDP)	19.8	19.1	20.3	20.6	20.2	19.8	19.0	20.6
National savings (percent of GDP)	23.0	17.1	22.2	21.0	24.3	17.6	22.7	21.5
Current account (percent of GDP)	3.2	-2.6	1.4	-0.3	3.9	-2.6	3.9	0.3
Public expenditure (percent of GDP) ^c	38.9	37.8	49.7	42.7	38.1	35.5	46.3	39.1
Tax revenue (percent of GDP) ^d	30.1	24.2	36.6	33.5	30.5			
Gross public debt (percent of GDP) ^c	68.5	99.5	87.4	108.1	62.2	108.3	86.3	107.5

^a Figures for the eurozone and OECD countries are weighted averages of the data for the countries in each group, as published in the OECD Economic Outlook.

^b For Israel—exports excluding diamonds.

^c Deficit and expenditure data for Israel are adjusted to the accepted international definition.

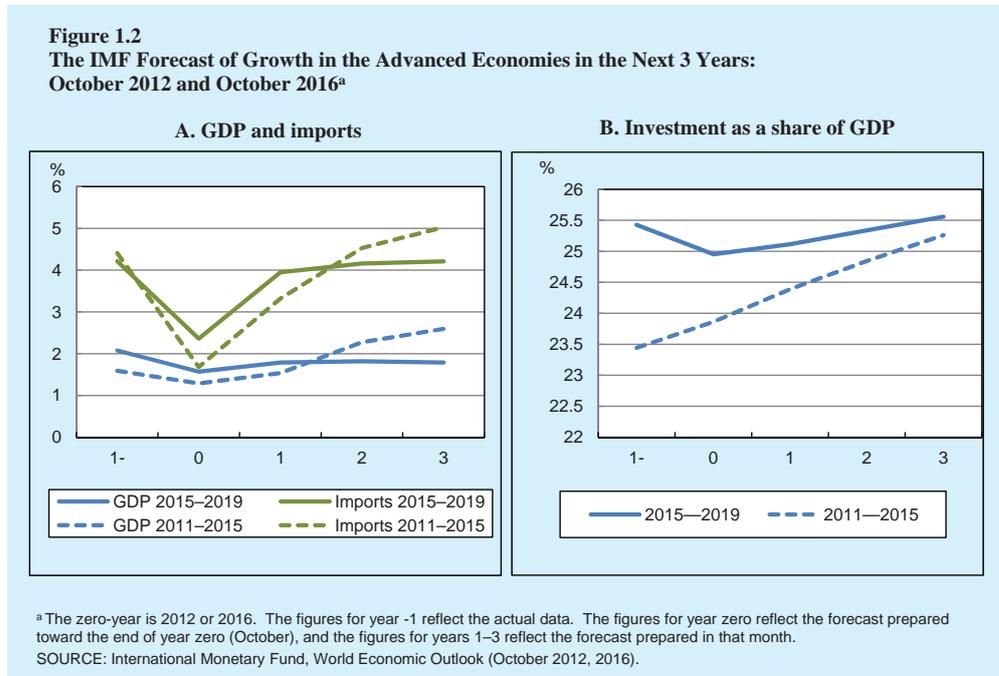
^d Data for the eurozone and OECD countries are the simple averages of the data for the countries in each group. Data for the eurozone do not include Latvia, Malta or Cyprus.

SOURCE: International Monetary Fund, OECD and Bank of Israel.

Various countries backed away slightly from the globalization trend and expanded protections of domestic output. Concern arose that prolonged decline in the share of world trade would negatively impact economic efficiency.

increase in the rate of saving of countries and a decrease in demand for investment.¹¹ Finally, various countries have retreated to some extent from the globalization trend and are increasing the level of protection of domestic output, claiming that although trade liberalization increases average growth, it also increases inequality within countries. Concern has arisen that the prolonged decline in the share of global trade will negatively impact economic efficiency and in particular the potential flow of technologies from one country to another. This concern increased recently due to Britain’s decision to leave the EU and other countries thinking of doing so, and also due to the change in administrations in the US that to some extent reflected the feelings that led to the aforementioned retreat from globalization.

In any case, leading international economic organizations assess that the main economic indicators will improve to only a limited extent during the next three years, as in the IMF forecast seen in Figure 1.2.. The rate of growth in GDP in advanced economies is expected to remain similar to its current level, and even though the rate of increase of their imports is expected to rise somewhat, it will only return to its level



¹¹ This situation is called “secular stagnation”, in which increased savings have trouble finding investment channels and long-term yields remain low. (See Summers, L. [2013]. “Why stagnation might prove to be the new normal”, Financial Times 15, and also Baldwin, R. and T. Coen [2014]. “Secular stagnation: facts, causes and cures”, London: Centre for Economic Policy Research-CEPR). However, there is disagreement as to the extent of this effect. To illustrate, a recent study claims that the data in fact shows that countries with aging populations have grown faster since they are quicker to adopt advanced technologies in order to overcome the shortage of manpower. See: Acemoglu D. and P. Restrepo (2017). “Secular stagnation? The effect of aging on economic growth in the age of automation”, No. w23077, National Bureau of Economic Research.

of 2015. The rate of investment is expected to rise by only 0.5 percent. Figure 1.2 also shows that in 2012, a year in which economic activity moderated as it did this year, the forecasts were higher. The trend in the forecasts reflects the assessment that the cyclical component in the global slowdown is gradually shrinking.

3. ECONOMIC POLICY

a. Monetary policy

The process of interest rate reductions that began at the end of 2011 halted in March 2015 and the interest rate has remained at 0.1 percent since then. In 2016, the Monetary Committee continued to provide forward guidance—the monthly interest rate announcements include the assessment that monetary policy will remain accommodative for a considerable time. In this way, the Monetary Committee sought to reduce long term interest rates with the goal of also increasing domestic demand for types of consumption and investment whose financing is spread out beyond the horizon of the short-term interest rate.

The interest rate remained at 0.1 percent, and the Monetary Committee assessed that policy would remain accommodative for a considerable time.

The Bank of Israel this year purchased foreign currency in the amount of \$4.9 billion, \$1.5 billion of which was part of the program to offset the effect of the start of natural gas production on the current account. The rest of the purchases were mainly intended to minimize the negative impact to exports caused by appreciation that results from transitory factors, particularly the influence of short-term capital flows. The purchases also served to some extent as a substitute for monetary accommodation achieved by a reduction in the interest rate. The amount of purchases in 2016 declined relative to the previous year, primarily because the forces for an over-appreciation were more moderate during most of the year.

In recent years, the Bank of Israel has taken macroprudential steps in order to moderate the risks inherent in the amount of housing credit and the contribution of the low interest rate environment to developments in the housing market. The Banking Supervision Department placed restrictions in the area of mortgages both on banks and on borrowers, and its directives included limitations on the loan-to-value ratio (leverage level), on the payment-to-income ratio and on the proportion of a mortgage that carries a variable interest rate. In addition, Banking Supervision instructed the banks to increase their capital allocations and their provisions in respect of the housing credit portfolio on their balance sheets. These measures, alongside the increase in the risk of real estate credit, contributed to an increase in the interest rate on mortgages and a moderation of the increase in new mortgage volume.

The Bank of Israel's macroprudential steps, and the increase in credit risk to real estate, contributed to mortgages becoming more expensive and the increase in their scope moderating.

b. Fiscal policy

In the review year, the government adopted expansionary fiscal policy. Government investment in infrastructures rose markedly. The share in GDP is still lower than before the large budget cut in 2014.

This year the government adopted an expansionary fiscal policy and as a result the share of the deficit in GDP increased. VAT was reduced by one percentage point and the corporate income tax by 1.5 percentage points during the last 18 months. A further reduction in the corporate income tax will go into effect in early 2017 and a third reduction was set for 2018. On the expenditure side, the proportion of civilian consumption in GDP grew by 0.4 percentage points while the proportion of civilian wage payments rose by 0.2 percentage points, although total wage payments grew slower than wage payments in the business sector. Government investment in infrastructure grew significantly in 2016 and its proportion of GDP grew by 0.1 percentage points. Nonetheless, its proportion of GDP remained lower than it was prior to the large cut in the 2014 budget. Despite the significant expansion on the expenditure side, the deficit was still lower than the ceiling thanks to a larger than expected increase in tax revenues. This increase was the result of unexpectedly high growth that was characterized by, among other things, an acceleration in the import of highly taxed consumer goods, an increase in the labor share of income and intensive activity in the real estate market.

The exhaustion of the interest rate tool at this time has accentuated the importance inherent in integrating monetary and fiscal policy to achieve the goals of the government and the central bank. Indeed, the domestic component of civilian purchases, which grew significantly in 2016, and the increase in wages in the civilian public sector have contributed to economic growth and the increase in prices. The increase in civilian expenditure was made possible by, among other things, the decline in interest payments on the debt, which was the result of three factors: (a) the reduction of the public debt to GDP ratio; (b) the decline in the interest rate on the debt due to lower interest rates in Israel and abroad; and (c) a lowering of the State's credit risk. The advantages of a low interest rate in the short and long terms have led fiscal policymakers to adopt an expansionary policy, which is an effective response under near-zero interest rates and which supports the goals of monetary policy.

The deficit in the 2017–18 budget is expected to increase and will work toward fiscal expansion. However, in view of the economy's favorable location in the business cycle at this point and the long-term challenges that it is facing, it would have been worthwhile to adopt a mix of expenditure that includes a marked increase in investment in growth drivers. The expenditure on education per student is low by international standards and it is not expected to increase significantly during the coming two years. The investment in infrastructure is also low by international standards and is expected to grow at only a slow pace in 2016 (Figure 1.3).¹² To the extent that projects with a high rate of return are chosen, public investment in human and physical capital also increases the return on private investment, which complements public investment, particularly in a near-zero interest environment, and considerably

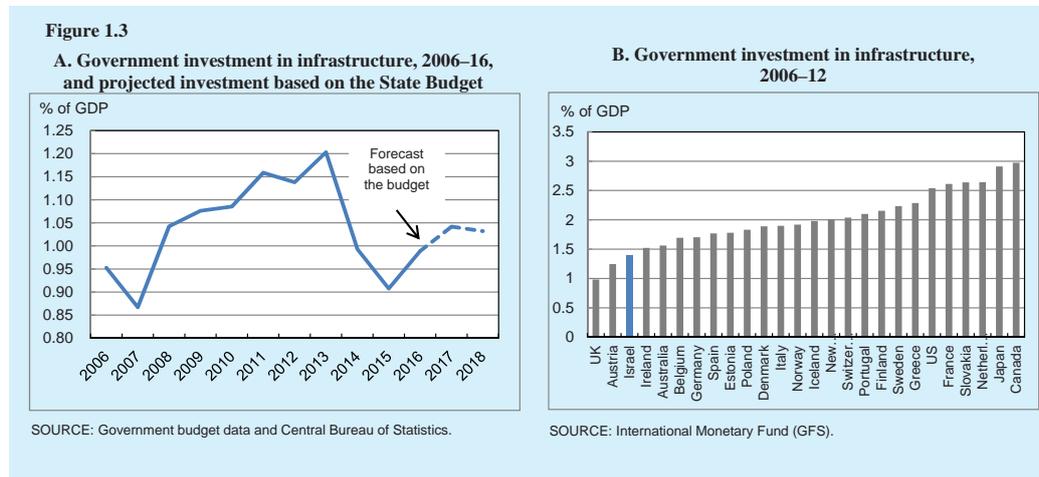
The infrastructure investment budget is low relative to advanced economies, and at times it is cut, making multiyear plans difficult. In addition, plans proceed slowly and it is hard to accelerate them.

¹² Section 5 below expands the discussion of human capital and investment in education.

moderates the upward pressure on the interest rate as a result of the expansion of government expenditure.¹³ However, despite the advantages of markedly increasing public investment, governments find this difficult to accomplish, even if they want to, for two reasons:

(1) Fiscal policy makers are interested in maintaining the lower tax burden and even wish to reduce it further, since the government prefers to allow the private sector to initiate and finance activity that is to its benefit and the investments that it needs to make. Therefore, the government finds it difficult to prioritize the projects according to their benefit to the public. Furthermore, since many other budget lines cannot be changed as quickly, the budget for investment is cut from time to time, which makes long-term planning difficult. To illustrate, when the government's structural deficit rose to a high level in 2012 because the government was reducing taxes without at the same time cutting expenditure, it implemented a plan for fiscal austerity in 2013–14. Since the plan was based primarily on reducing the proportion of expenditure in GDP, NIS 1.5 billion (about 0.15 percent of GDP) was cut from the budget base for investment in infrastructures and from the long-term budgets of various investment programs. It is not a simple matter to reverse these cuts, partly because it is difficult to frequently change the implementation of infrastructure programs.

(2) The programs that have already been approved are underbudgeted, particularly during the planning stage. The deficient planning, the frequent planning changes made by policy makers, as well as the slow progress in efficiency during in implementation stages, all contribute to the slow advance of these programs and the difficulty in accelerating.¹⁴ This lack of efficiency is manifested in prolonged disagreements between the government ministries, frequent changes in the characteristics of the project, delays during the tender stage, overly optimistic cost estimates and problems for the companies that are chosen to implement the projects. Similar problems also



¹³ See, for example: Mourougane, A. et al. (2016). “Can an increase in public investment sustainably lift economic growth?”, (OECD ECONOMICS DEPARTMENT).

¹⁴ See the Bank of Israel Annual Report for 2014 – Box 6.2.

characterize projects that the State has decided to implement and finance using the Public Private Partnership (PPP) method.¹⁵ In the short run, the difficulty in efficiently implementing programs weakens an important countercyclical policy tool and in the long term harms the economy's growth potential.

c. Policy to reduce the cost of living

The steps to reduce the cost of living act to increase efficiency, productivity, and standard of living over the long term.

In recent years, and particularly since the social protest in the summer of 2011, a declared policy has been adopted to reduce the level of prices in the economy, in particular by increasing competition. Among the main measures in this effort are: (1) the reform of the cellular phone market; (2) implementation of the recommendations submitted by the Committee to Increase Competition in the Economy, which included the separation of ownership between financial companies and real companies; (3) measures to implement the recommendations of the Committee for Socioeconomic Change (the Trajtenberg Committee), and in particular the recommendation to remove barriers to personal imports of consumer products, including imports by mail; (4) the “open skies” reform which was intended to lower the prices of flights; (5) implementation of the recommendations of the Committee to Increase Competition between the Banks (the Zaken Committee); (6) efforts to implement the recommendations of the Kedmi Committee and other measures to increase competition in the food industry;¹⁶ (7) the five-year plan to reduce regulation (the 2017–18 budget focuses on regulation that is meant to reduce concentration in the cosmetics market and a reform of the regulatory process); and (8) completing the legislation stage for the recommendations of the Strum Committee with the goal of lowering the prices of financial services. The aforementioned are desirable measures since they work to increase efficiency, productivity and the standard of living in the long term.

The success of the government in reducing the cost of living represents a challenge for the Bank of Israel, as it is striving to return inflation to the target range set by the government (1–3 percent per year) within a period not exceeding two years. However, the Monetary Committee is not acting to offset one-off changes in the level of prices, but rather to increase demand in the short run in order to return their rate of change to its target range. The actions taken by the Bank of Israel in the short term do not negatively impact the fundamental efforts of the government to increase the efficiency of the economy and lower the relative prices of some products. Furthermore, the flexible inflation target regime allows the process of adjusting prices to structural change.

¹⁵ Box 6.1 expands the discussion of this issue.

¹⁶ As a result of the Price Transparency Law, the supermarket chains were required to publish their prices on the Internet and apps were developed that enable the consumer to easily compare prices. Ater and Rigbi (2017) found that these apps contributed to the drop in prices in the supermarket chains. See: Ater, I. and Rigbi O. (2017). “The effects of mandatory price disclosure of supermarket prices”, working paper, <https://sites.google.com/site/itaiater/>.

The work of the Strum Committee constitutes part of the policy to reduce the cost of living. Recently, most of the Committee's recommendations have been approved as legislation, as well as several components that were added after the Committee had completed its final report. The Committee concentrated primarily on requiring the two large banks—Hapoalim and Leumi—to sell their control of credit card companies. This measure is intended to increase competition in the provision of credit, primarily consumer credit. In addition, the Committee promoted several supplementary legislative measures to facilitate entry of new players into the credit and banking market. The main ones include: (1) the creation of a computerized system to be used by new financial institutions with the goal of overcoming the main barrier to entry, i.e., the large amount of capital needed to create such a system; and (2) after the Committee had completed its work it was decided to establish a system for the sharing of information on banks' customers, with the customers' approval.

In parallel with the work of the Committee, the Bank of Israel began to implement additional measures to lower barriers to entry in the credit and banking markets, including processes to establish a credit register at the Bank of Israel and measures taken by the Banking Supervision Department to reduce the capital barriers facing new banks and to encourage new competitors to enter the merchant acquiring market. The Bank of Israel's guideline in implementing these measures is to increase competition in the credit market while maintaining stability in the financial system. Box 4.1 expands the discussion of legislation concerning financial intermediaries in the economy.

4. ISSUES IN CURRENT DEVELOPMENTS

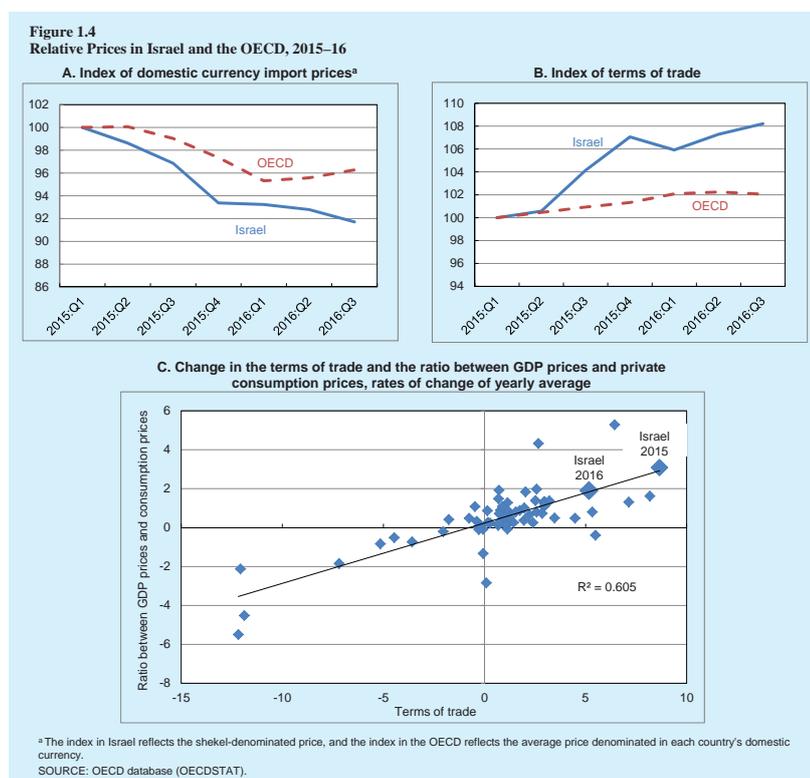
a. Relative prices

In 2016, the CPI decreased by 0.2 percent and the relative price of private consumption declined: the GDP deflator increased by 1 percent and the ratio between it and the prices of private consumption rose by 1.3 percent, following an increase of more than 3.2 percent in the previous year. The cumulative gap during the last two years reflected primarily the improvement in the terms of trade, as a result of the increase in export prices and the decrease in import prices (Figure 2.2). The improvement experienced by Israel during these two years is much greater than that experienced by most OECD members and, in contrast to them, it is continuing to benefit this year from the continuing drop in its import prices (see Figure 1.4). The Israeli economy is benefiting from the fact that its imports are biased toward product groups whose prices have declined dramatically and the fact that its imports are biased towards the euro, which has depreciated in value during the last two years (Figure 1.4a and 1.4b). Figure 1.4c presents the correlation between: (1) the terms of trade and (2) the ratio of the GDP deflator to private consumption prices. The graph indicates that the ratio in

The improvement in Israel's terms of trade in the past two years helps explain how activity in Israel expands rapidly without an increase in inflation.

Israel indeed rose during the last two years and to an extent that is in line with what is expected based on the improvement that occurred in its terms of trade relative to other countries.

The improvement in terms of trade contributes to an increase in purchasing power, though the increase in export prices may negatively impact the future market share of exporting companies if it derives from the exchange rate appreciation. In any case, the advantage that Israel accumulated during the past two years with regard to the change in price ratios helps to explain the high rate of economic growth in Israel unaccompanied by an increase in inflation, while its trading partners—countries with lower levels of growth—are experiencing inflation that is 1.7 percentage points higher. First, import prices in Israel have fallen to a greater extent (Figure 1.4a) and this has directly affected the prices of private consumption. Thus, the Index of Tradable Goods, which account for 36 percent of the General Index, declined by 1.6 percent in 2016, and the Index of Nontradable Goods was somewhat affected by the drop in input prices, although it increased by 0.4 percent.¹⁷ It should be noted that the decline in import prices during the last two years reflects both the decrease in commodity



¹⁷ A description of the transmission channels from import prices to the CPI can be found in Orfaig, D. (2015). “Transmission Channels from the Exchange Rate to the Consumer Price Index: The Tradable Component of the CPI by Industry”, Discussion Paper, Research Department of the Bank of Israel. (Hebrew).

<http://www.boi.org.il/he/Research/DocLib/dp201504h.pdf>

prices (denominated in foreign currency) and the appreciation in terms of the nominal effective exchange rate (4.5 percent over the course of this year and 9 percent during the course of 2015).

Second, the decline in the relative price of private consumption, alongside the increase in nominal wages, has raised real disposal income of households by 6 percent, which is similar to the rate of growth in private consumption and higher by 2.5 percentage points than the rate of growth in GDP. The income effect implicit in this development has increased the demand of households for consumer goods while the substitution effect resulting from cheaper imports has led to an increase in relative share of

imports in private consumption. Therefore, pressure on prices in the domestic goods market has risen only moderately, despite growing demand.

Finally, the increased ratio of the GDP deflator to private consumption prices has led to wages that—from the viewpoint of employers—increased by only a moderate rate, while from the viewpoint of employees and consumers, wages have risen by a greater extent (Figure 1.5). It should be mentioned that the rapid increase in wages in terms of consumer prices during the last two years has closed the gap that developed during 2009–11 between it and wages in terms of producer prices. However, the increase in wages as a result of the improvement in price ratios will not necessarily persist, in contrast to an increase deriving from an improvement in labor productivity, which has improved at only a moderate rate during the last two years.¹⁸

b. Have competition and efficiency in the economy increased?

This section will survey evidence of another positive shock to supply—an increase in competition in the economy, a process that should improve efficiency and contribute to growth in the economy and to consumers' welfare. The evidence relates to the decline in profitability of public companies in a number of sectors. It is important to note that the findings are only preliminary and further research is needed in order to back up the conclusions from the analysis.¹⁹

¹⁸ Chapter 5 expands the discussion of the relation between labor productivity and wages.

¹⁹ The increased competition is likely, among other things, to increase efficiency rapidly, and in such a case would not be reflected in decline in profitability.

Figure 1.5
Development of Wages in Producer Prices and in Consumer Prices, Fixed Prices, 2006–16



Changes in consumer behavior and improvements in technology that allow online price comparisons and purchases apparently contributed to increased competition.

The social protest that broke out in 2011 expanded public discourse on the cost of living. This reflects the feeling that the prices of goods and services in Israel are excessively high, and therefore the material standard of living is unsatisfactory. In addition to the steep increase in home prices, this feeling may be the result of inefficiency, particularly in view of the low level of competition in some markets. Chapter 1 of the Bank of Israel Annual Report for 2014 found that in 2013 consumption prices in Israel were somewhat higher than prices in other countries, when taking into account the level of per capita GDP, particularly in sectors that are characterized by natural and regulatory barriers which impede competition.

It is likely that competition has increased as a result of government efforts (see Section 3c), the change in consumer behavior and the technological improvements that facilitate price comparison and the purchase of goods on websites in Israel and abroad. The accessibility of international sites for the Israeli consumer fulfils an important function since the Israeli economy is small and closed to competition from businesses in neighboring countries (as opposed to, for example, those from the US and small countries in the EU). Purchases from international websites are relatively inexpensive, in particular due to their exemption from tax up if their total does not exceed \$75.²⁰ Chapter 3 in this report finds that during the last two years there has been a marked increase in the activity of the Israeli consumer on the Internet and in addition the number of parcels sent to Israel by way of the Israeli post office has grown.

In view of the pressure to increase competition and reduce prices, we looked for evidence that this has affected the profitability of Israeli public companies in three sectors: food; clothing, footwear and personal items; and computers and communication (Figure 1.6). With regard to the food sector, wholesalers recorded a decline in gross profits,²¹ but this finding should be treated with great caution since during most of the period it is based on figures for only two companies. The gross profits of supermarket chains have been declining since 2008. Starting from the social protest in 2011, the drop in gross profits also led to a decline in operating profits, which reached near-zero levels in 2015 although in 2016 they rebounded. However, these fluctuations occurred as part of the structural changes in the sector. Public companies that are food producers did not suffer from a decline in profits: their gross and operating profits relative to sales remained stable even after 2011.

In the clothing, footwear and personal items sector, the continuous increase in gross profits slowed somewhat prior to 2011 and their operating profits have been declining since 2011. It is likely that the intolerance of the public toward price increases has made it difficult for the chains to raise prices, even if this was justified by, for example, an increase in costs. In the last two years, the gross profit of the retail chains has dropped, perhaps due to the increase in consumer purchases from abroad via the

²⁰ The purchases are exempt from VAT and tariffs up to \$75 and are exempt only from tariffs up to \$500.

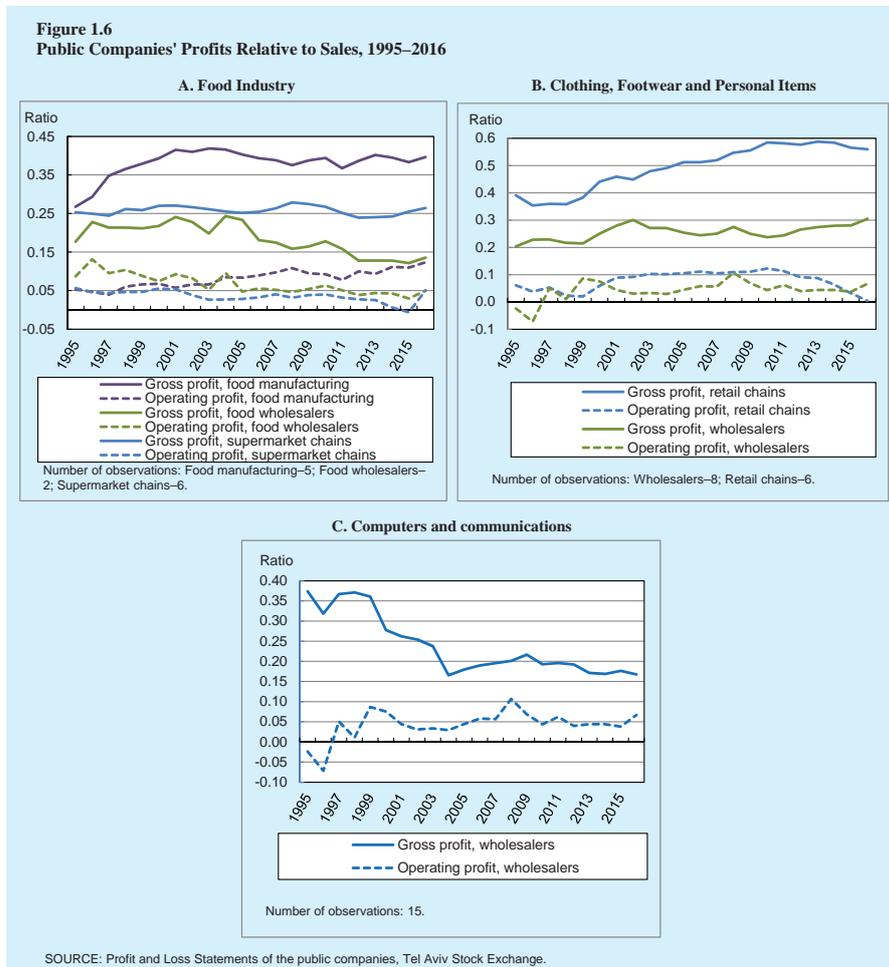
²¹ Gross profit: sales less cost of goods sold; operating profit: gross profit less operating costs.

Internet. Among clothing wholesalers, gross profits have in fact risen, and in the past year so has operating profit.

Figure 1.6c indicates the decline in gross profit among computer and communication wholesalers, including cellular phone equipment. This may be the result of the increase in purchases from abroad via the Internet in recent years. The operating profit of these companies remained stable, which may be evidence of increased efficiency in response to the drop in gross profit.

It could be expected that a change in consumer behavior would impact first and foremost on retailers' profit rates. However, as the competitive pressure impacts on the various links in the chain, in accordance with the market structure as well, this examination conveyed a mixed picture. A decline in gross profit was found for the two (public) wholesale food companies, and its timing may indicate the impact of the social protest. In the supermarket chains, fluctuations were seen that appear to be related to structural changes in the sector, although the social protest may have made the competitive pressure more severe during part of the period. We did not find a decline in the profitability of food producers, perhaps due to the barriers related to

There are signs that the increase in competition contributed to a decline in profitability among some public companies in the consumer products sector.



kosher products and the inherent difficulty in importing food products due to various factors such as regulation and short shelf life.²² The decline in profitability in the clothing, footwear and personal items sector points to the effect of the social protest in 2011–12 and the more recent effect of increased purchases from abroad by way of the Internet. Finally, the decline in the profitability of computer and communication wholesalers is perhaps related to the expansion of purchases by way of the Internet.²³

c. To what extent can growth and stability endure?

The economy was strong last year, but it is important to check to what extent growth and stability can persist.

A turnaround in development of terms of trade, primarily import prices, is expected to increase the inflation rate.

During the past year, the economy performed well and if the improvement in competition and efficiency continues, the economy will benefit from the secondary effects of this improvement—a further increase in productivity and investment. However, it is important to look somewhat beyond the rapid expansion and low inflation and to examine whether growth and stability can endure over time.

The prices of goods: Figure 1.7 illustrates the expansion on the supply side. As noted, the economy has grown without inflationary pressure, primarily due to the improvement in the terms of trade. However, as is shown in Chapter 3, the “domestic” price index, i.e., the parts of the CPI for which the import component is negligible,²⁴ increased by 1.1 percent. When taking into account the contribution of price decreases initiated by the government, it increased by 1.4 percent. A reversal in the development of terms of trade, and in particular import prices, can be expected to increase the inflation rate. Figure 1.4a indicates that over the course of 2016, the decline in import prices moderated, although this still could not be considered a change in trend.

Real wages (Consumer wage in fixed prices) rose in 2016 by 2.9 percent, after rising by a similar rate in the previous year. According to the analysis in Chapter 5, the increase in wages encompassed most of the economy’s industries and occupations and is first and foremost the result of the increase in demand for labor, which is reflected in the job vacancy rate in all industries. The real wage rose faster than labor productivity this year and therefore the unit cost of labor rose by 1.5 percent. This increase contributes to inflation, but it appears that at this stage its contribution is only moderate as the rate of return on capital rose by 5 percentage points, cumulative, between 2006 and 2016. Despite the increase in wages, employers are not rushing

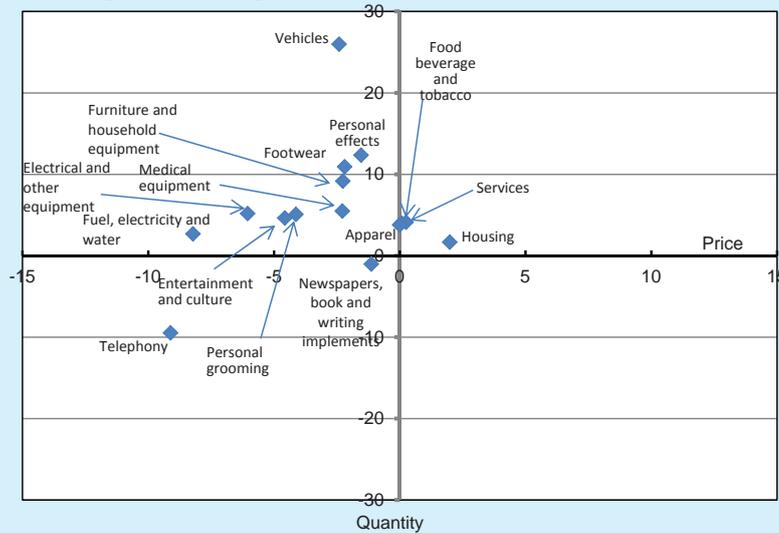
²² Further details can be found in the Bank of Israel Annual Report for 2014, Chapter 1.

²³ The analysis of profitability focused on public companies (i.e., companies traded on the stock exchange), since data for them is publicly available. In order to determine whether the increase in competition led to a drop in the profitability of smaller companies, we examined the survivability of businesses in the various sectors in recent years and did not find any significant change. We also examined whether in recent years there has been a shift of activity to larger companies, particularly in trade and services, since such a shift is liable to harm competition (although it also creates economies of scale). Also in this case, the analysis did not lead to any major conclusions.

²⁴ The analysis was carried out based on an input-output table found in D. Orfaig (2015), “Transmission Channels from the Exchange Rate to the Consumer Price Index: The Tradable Component of the CPI by Industry”, discussion paper, Research Department of the Bank of Israel (Hebrew).

<http://www.boi.org.il/he/Research/DocLib/dp201504h.pdf>

Figure 1.7
Rates of Change in Private Consumption Prices and in Per Capita Private Consumption, 2016 compared with 2015



SOURCE: Based on Central Bureau of Statistics National Accounts data.

to raise the prices of their products, since the return on capital is near a record high, even though it declined somewhat this year.²⁵ The comprehensive increase in wages indicates that growth has trickled down to a wide spectrum of sectors in the population. Moreover, it is not expected to slow economic activity or reduce employment even if there is a negative turnaround in economic activity, due among other things to labor market flexibility.

Fiscal balance—the fact that in 2016 the deficit was lower than its ceiling (2.1 percent as compared to its 2.9 percent ceiling)—was primarily the result of greater than expected tax revenues. Greater than expected tax revenues during the last two years led the government to reduce tax rates, in some cases permanently. The reduction decided upon was carried out even though tax revenues increased due to, among other things, factors with low persistence and which are related to the character of growth in recent years, i.e., the improvement in terms of trade, the robustness of the housing market and the increase in durable goods imports, particularly vehicles. If and when tax revenues return to their regular level and rate of increase, the government will have to deal with an increase in the deficit and eventually will have to again change tax policy and/or expenditure. The fiscal risk currently appears to be small due to the low level of debt, which is approaching 60 percent (a level that is considered

²⁵ To complete the analysis, we would mention that capital owners do not appear to be demanding a higher return as a result of the increase in risk. Thus, the Israeli economy's risk premium did not rise relative to 2008 and even fell somewhat. The yield spread between the Tel Bond 20 Index and government bonds declined from 2.6 in 2008 to 1.7 in 2016. The yield spread between other Tel Bond indices and government bonds fell even more. The overall risk of the Israeli economy (5-year CDS premium) in 2016 is lower by 0.2 basis points than in 2008 and higher by a half a basis point than in 2007.

worldwide to be a sign of stability). Nonetheless, the debt to GDP ratio is liable to rise rapidly in the event of a crisis, as occurred in Israel in the past and as occurred in other countries during the previous decade (Figure 6.1). Moreover, frequent changes in tax rates and cuts or deferrals in expenditure negatively impact the ability of businesses and households to plan and therefore adversely affect the efficiency of the economy in the long run.

The inferior quality of infrastructures, as well as other factors controlled by the government, such as the ease of doing business, adversely impact potential yield on private investment and contribute to its low level.

The current account of the balance of payments is in a surplus that constitutes more than 3 percent of the economy's income. This year, the surplus declined somewhat due to, among other things, the increased purchases of imported goods. As shown in the analysis in Chapter 7, the current account is characterized by a large structural surplus, relative to the fundamentals of the economy. In the short run, such a large surplus allows the economy to increase its purchases from abroad as needed, without any difficulty in financing them, as occurred in 2016. However, it may be that the current account surplus, i.e., the fact that saving exceeds investment, is an indication that the economy is not exploiting its sources sufficiently in order to invest in growth generators that produce benefits in the long term.

The rates of government and private investment are low by international standards. Government investment is low even though the Israeli economy lags in the quantity and quality of some of its infrastructures, particularly those related to public transportation in the large cities.²⁶ It is possible that the inferior quality of infrastructures, alongside other factors that the government controls, such as the ease of doing business, are adversely impacting the potential returns on private investment and contributing to its low level.

The real estate and housing credit market:²⁷ Home prices increased this year by 6.3 percent, a continuation of the somewhat more rapid increase in 2015. In recent years, home prices have increased significantly faster than rents, and rents reflect equilibrium between the supply and demand for housing services. The increase in home prices is to a great extent due to the positive gap between the return on housing, i.e., rent²⁸, and the interest rate on mortgages and the long-term return on other investment channels (Figure 1.8 presents bond yields). The increase in prices may even indicate overpricing of housing.²⁹

The increase in risk deriving from the housing market, alongside the limitations imposed in recent years by the Banking Supervision Department, were reflected in an

²⁶ An international comparison of the quantity and quality of infrastructures appears in Box 2.2 in the Bank of Israel Annual Report for 2014.

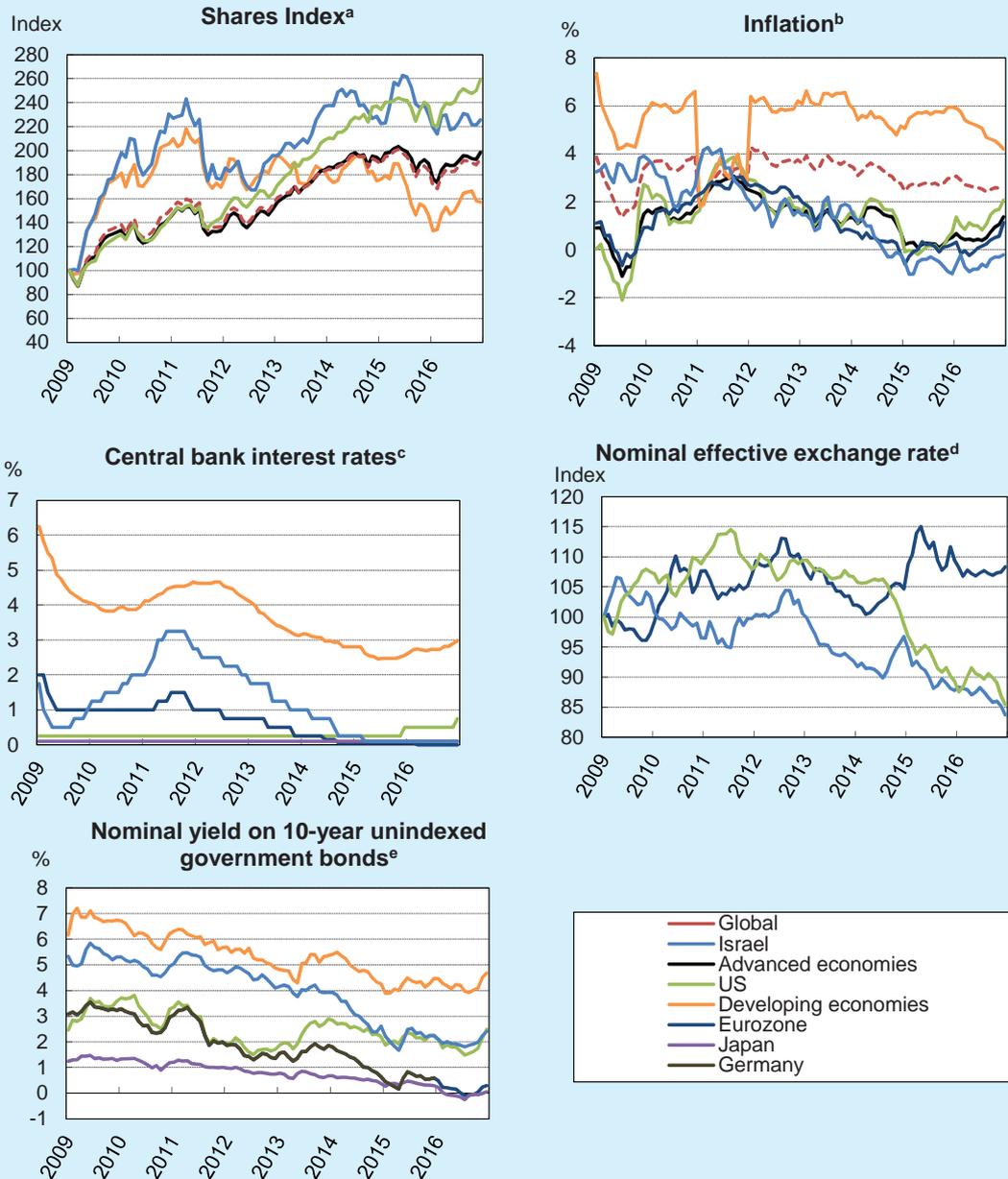
<http://www.boi.org.il/he/NewsAndPublications/RegularPublications/Pages/DochBankIsrael2014.aspx>

²⁷ For further details, see Chapter 9.

²⁸ An owned home produces a return either because the household occupying it does not have to pay rent or because the household receives rent from an investment home.

²⁹ A phenomenon reflected in, for example, the findings of recent tests carried out by I. Caspi (2015). Caspi (2015), "Testing for a Housing Bubble at the National and Regional Level: The Case of Israel", Discussion Paper, Research Department, Bank of Israel. <http://www.boi.org.il/en/Research/DiscussionPapers/1/dp201505e.pdf>

Figure 1.8
Monetary Indicators, Israel and Globally, 2009–16



^a Based on the monthly average in dollar terms. Advanced economies, developing economies and global—MSCI indices; Israel—Tel Aviv 125; US—S&P 500. SOURCE: Bloomberg and the Tel Aviv Stock Exchange.

^b Inflation over the past 12 months. The countries are divided into groups by IFS definitions. SOURCE: IFS database.

^c SOURCE: Israel—Bank of Israel; Japan, US and eurozone—Bloomberg; developing economies—simple average of the interest rates in South Africa, Mexico, Thailand, South Korea, Poland and Hungary.

^d An increase denotes depreciation. SOURCE: IFS database.

^e SOURCE: Bloomberg and Bank of Israel. Developing economies = simple average of the yields in South Africa, Mexico, Thailand, South Korea, Poland and Hungary.

A stress test found that a negative shock to activity and a decline in home prices will adversely impact banks' balance sheets notably, but don't pose a risk to their stability. A sharp decline in home prices is liable to lead to a slowdown in building activity and lead to contraction of activity and consumption in the economy overall.

increase in the interest rate on mortgages over the past year and a half. The share of new mortgages at high risk declined, and the increase in mortgage volume moderated recently. The Bank of Israel's Banking Supervision Department carried out a stress test that combines a macroeconomic shock with a sharp decline in home prices and found that although such a scenario harms the bank's balance sheets, it does not endanger their stability.³⁰

The boom in the real estate market has in recent years contributed to economic growth. The construction industry and industries that provide it with inputs, including several manufacturing subindustries, have benefited from the increase in the demand for housing and have increased their output. Furthermore, the "wealth effect" created by the increase in home prices has expanded private consumption.³¹ The increase in home purchases has apparently also contributed to the purchase of durable goods that households tend to buy when they move to a different home. It appears therefore that in addition to the financial risk attributable to the housing market there also exists the risk that a sharp drop in home prices, whatever its cause, will lead to a slowdown in construction activity, which will reduce activity and consumption in the economy as a whole.

A third type of risk relates to the longer term. The number of building starts has risen in recent years to more than 50,000 annually, partly in response to the rise in prices, and it is consistent with the need for new housing in Israel, particularly when taking into account the shortage that accumulated in the years when the number of building starts was too low.³² However, as a result of the soaring prices, the planning authorities are operating with urgency in the housing market, which is liable to lead to, for example, construction that is not aligned with the level of infrastructure, with the needs of the environment or with the geographic distribution of demand.³³ As such, the long term considerations and short term considerations should be balanced.

Credit to households³⁴ continued to grow rapidly, with a growth rate of 6 percent, which is similar to previous years. Research that has recently been discussed in the US has found that in countries with rapid and prolonged growth in the supply of credit to households and in their level of debt, there is a greater probability of moderation in economic growth.³⁵ When household credit is broken down by type, it is found that

³⁰ For further details on the financial risk originating in the housing market, see the Financial Stability Report that is published twice annually: <http://www.boi.org.il/en/NewsAndPublications/RegularPublications/Pages/Default.aspx>

³¹ Section 2b in Chapter 2 expands on the discussion of the contribution of the boom in the real estate industry to economic growth.

³² For further discussion of this issue, see Chapter 9 as well as the analysis presented by Kobi Braude of the Bank of Israel at a conference held by the Alrov Institute on housing accessibility (Hebrew): <http://www.boi.org.il/he/NewsAndPublications/PressReleases/Pages12-07-2016/Speech.aspx>

³³ Chapter 9 of the Bank of Israel Annual Report for 2015 discusses in greater detail the tradeoff between long-term and short-term planning in the housing market.

³⁴ Further discussion of credit appears in Chapter 4.

³⁵ Mian A. R., A. Sufi and E. Verner (2015), "Household debt and business cycles worldwide", No. w21581, National Bureau of Economic Research.

nonhousing debt continued to increase its share of debt for the third year in a row, as it has grown faster than housing credit, on which the Banking Supervision Department has imposed special restrictions.³⁶ The level of non-housing credit (relative to GDP) is somewhat high relative to other countries while housing credit is relatively low. The rapid increase in credit to households, particularly non-housing credit, has in recent years supported the expansion of private consumption, particularly in 2016 when private consumption grew by more than 6 percent.

Exports: Again this year, the Bank of Israel acted to moderate the effect of the appreciation on the tradable goods sector by purchasing foreign currency; however, the scope of purchases was less than in the previous year since the forces operating toward over-appreciation were more moderate. As noted in the survey of the world economy, the leading international economic organizations are of the opinion that an increasing share of the moderation in global activity and world trade is permanent. If this trend persists, the strengthening of the tradable sector's competitiveness will have to be based on tools that are the responsibility of the government and the government will have to give priority to tools that work to increase productivity.

This year, the government decided to promise stable tax rates for a decade to "strategic" companies, following a decade of fluctuations in tax rates, and to increase benefits to large high tech companies that bring their intellectual property to Israel. The effectiveness of such tools will be enhanced if it is accompanied by a loosening of the constraint on the supply of technologically skilled labor by means of training additional professionals.

To summarize this section, the accommodative monetary policy—and the declaration that it will remain so for a considerable time—led to a boom in the credit and assets markets, and this is at present feeding into real activity. This occurred without the development of inflationary pressures, due largely to the improvement in the terms of trade. The policy in the foreign currency market is intended to assist the tradable goods sector deal not only with cyclical factors, but also with structural factors that constrain its rate of growth. The main challenge facing the Israeli economy in the medium term involves the need to gradually shift away from growth based on a countercyclical expansionary policy to growth based on fundamental forces, which increase the factors of production, and in particular productivity.

The main challenge to Israel's economy in the medium term is the need to gradually switch from growth relying on expansionary countercyclical policy to growth based on fundamental forces.

5. THE CONTRIBUTION OF HUMAN CAPITAL TO EXPLAINING THE STANDARD OF LIVING AND INEQUALITY IN ISRAEL

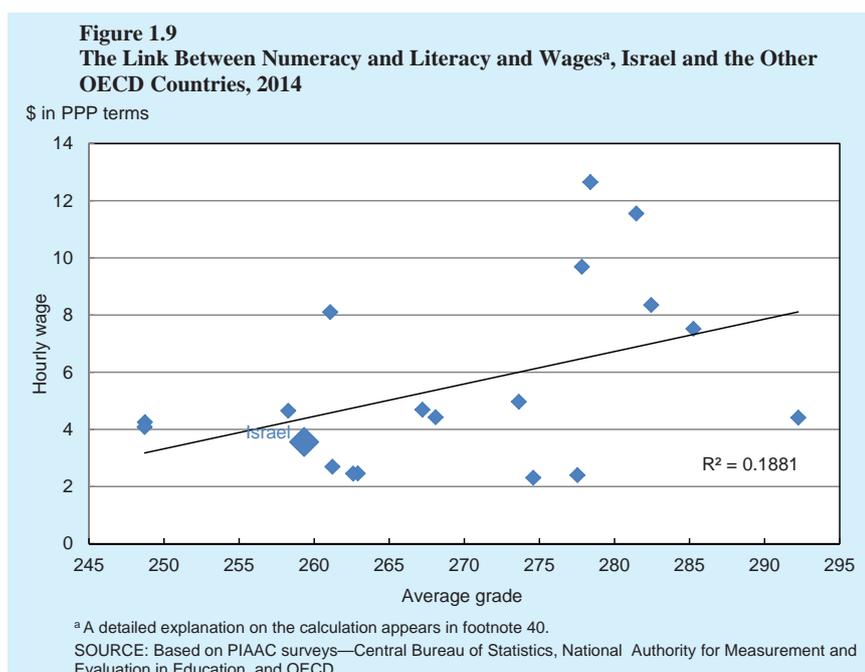
Section 4b discussed the possibility that the level of competition in the domestic market has increased, a process that will contribute to sustainable growth if it persists. This section discusses Israeli human capital, a component in which a sustained improvement will contribute to a sustainable increase in the standard of living.

³⁶ Housing credit includes: (a) credit for a residential dwelling where the dwelling serves as collateral and (b) credit for any purpose where the collateral is a residential dwelling.

a. Human capital and the average wage

Previous analyses found that labor productivity (output per worker) in Israel is lower than in other countries, which may be due to the inferior basic skill level of workers in Israel.³⁷ Over time, the trend in wages should resemble the trend in labor productivity. Therefore, this section will examine the relationship between the skills of average workers in Israel and other countries and their wages.

The OECD recently examined, for the first time, the scholastic skills of the 16–65 age group by means of the PIAAC survey.³⁸ The survey looked at three skills: literacy, numeracy and problem-solving in a technology-rich environment. The advantage of the survey is the ability to carry out comparisons between OECD members with regard to the basic scholastic skills of working-age individuals (until now such comparisons were only possible among school-age individuals, using tests such as PISA). The survey shows that the skill level of workers in Israel is relatively low in all three categories,³⁹ even though there is a high proportion of university graduates in Israel. That is, the fact that average years of schooling in Israel is relatively high is not manifested in higher skill levels, at least with respect to the basic cognitive skills examined in the survey.



³⁷ Bank of Israel (2016), “Basic Skills of Workers in Israel and Industrial Productivity”, Fiscal Survey and Selected Research Analyses. <http://www.boi.org.il/en/NewsAndPublications/RegularPublications/Research%20Department%20Publications/RecentEconomicDevelopments/red141e.pdf>

³⁸ Programme for the International Assessment of Adult Competencies.

³⁹ Further details and the data can be found on the site of the Central Bureau of Statistics – Skills of Adults in Israel 2014–15 (Hebrew): http://www.cbs.gov.il/webpub/pub/text_page.html?publ=116&Cyear=2015&Cmonth=1

Figure 1.9 presents the relationship between the average score on the numeracy and literacy tests and wages adjusted for gender, age, age squared and years of schooling (herein: wages).⁴⁰ First, there is a positive relationship between the average worker's skill level and average wage and the explanatory power of the equation is not insignificant. In contrast, no similar relationship was found between average formal education and the average wage (adjusted for the effects of other characteristics). Research has indeed found that the quality of the labor force explains differences in standard of living between countries better than other measures, such as years of schooling and total expenditure on education.⁴¹ Second, wages in Israel are almost identical to the value predicted by the scores on the skill tests. Although one should be cautious in interpreting a relationship between two variables as causal, it is reasonable to conclude that the low wages in Israel are connected to the low level of human capital. Looking forward, the situation is even less encouraging: young workers (aged 25–35) are characterized by higher skill levels than older workers but the improvement in Israel is no larger than in other countries, at least not to the extent that will make it possible to bridge the gap over time. Moreover, young ultra-Orthodox men have even lower skill levels than their adult counterparts and their proportion of the population is expected to increase over time.⁴²

Israeli workers' skills are relatively low, even though Israel has a high share of those with higher education. Inferior wages in Israel are in line with inferiority of human capital.

b. Inequality in Israel and its causes

(1) Background: Inequality and the incidence of poverty

The trend that was apparent during the last decade—a gradual decline in economic inequality (before taxes and transfer payments)—continued in 2015, alongside the reduction in the direct contribution of the government to reducing inequality. As a result, inequality as measured by disposable income (after taxes and transfer payments) has

The incidence of poverty in Israel declined gradually from the middle of the previous decade through 2013, but it remains higher than in the period before reductions in allowances and taxes.

⁴⁰ We carried out the calculation in the following manner: we took the hourly wage, adjusted for purchasing power parity and in its logarithmic form, and in the first stage estimated a joint wage equation for all the countries, while controlling for the following characteristics: age, age squared, education and gender. In the second stage, we calculated the residual for each individual. In the third stage, we calculated the average residual for each country. The averages of the residuals (after converting them from logarithms to their natural values) are presented on the vertical axis. This process was intended to reveal the connection between country and average skill level on the one hand and average wage (net of the effect of the correlation between demographic composition and formal education on the one hand and basic skills on the other) on the other. In addition to Israel, we included Belgium, Cyprus, the Czech Republic, Denmark, Finland, France, Greece, Ireland, Italy, Japan, Korea, the Netherlands, Norway, Poland, Slovakia, Slovenia, Spain and the UK. The problem-solving test was not carried out in many of the countries and therefore we left it out of the analysis.

⁴¹ Hanushek E. A. and D. D. Kimko (2000), "Schooling, labor-force quality, and the growth of nations", *American Economic Review*, pp. 1184-1208.

Hanushek E. A. and L. Wößmann (2007), "The role of education quality for economic growth", Policy Research Working Paper; No. 4122, World Bank, Washington, DC. <https://openknowledge.worldbank.org/handle/10986/7154>

⁴² Bank of Israel, (2016). "Is there a difference in the return on cognitive skills between the public sector and business sector?", Fiscal Survey and Selected Research Analyses, Bank of Israel.

remained stable during the last three years. Similar processes are taking place with regard to the incidence of poverty. Thus, inequality and the incidence of poverty as measured by disposable income continue to exhibit particularly high levels relative to other countries, while inequality calculated on an economic basis is found to be under the average for advanced economies.

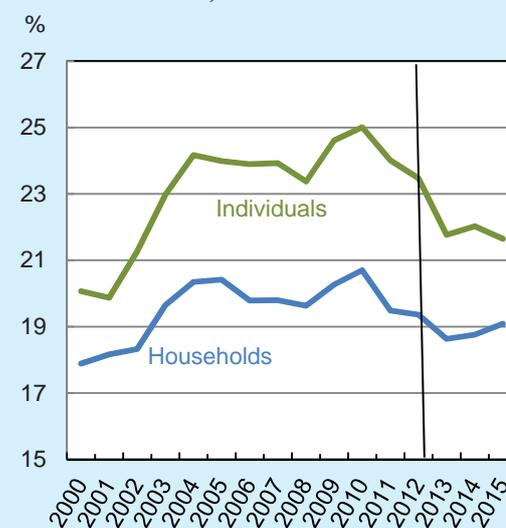
The incidence of poverty in Israel gradually declined from the middle of the previous decade until 2013, following a steep increase after the stabilization program in 2002–04 and it is still higher than during the period prior to the program.⁴³ In 2015, the incidence of poverty among households rose somewhat relative to 2014 (from 18.8 to

19.1 percent), after increasing somewhat in 2014 as well. In contrast, the incidence of poverty among individuals declined somewhat (from 22 percent in 2014 to 21.7 percent in 2015), primarily as a result of the increase in child allowances (Figure 1.10).

Examining the trend in inequality reveals that inequality measured according to economic income has declined gradually in recent years while inequality of disposable income has fallen even more moderately. The decline in economic inequality is consistent with the upward trend in the employment rate. In contrast, the cuts in allowances and tax rates reduced the direct contribution of the government to reducing poverty and inequality in disposable income and therefore the reductions in poverty and inequality did not offset their increase at the beginning of the last decade (Figure 1.11).

The government's contribution to reducing poverty in 2015 was essentially the same as in 2014 and remained at about 20 percent. This is a relatively small contribution compared to the OECD average and derives from the difference in the contribution of transfer payments. In Israel, transfer payments reduce poverty by 11 percent while in

Figure 1.10
Incidence of Poverty Among Individuals and Households, 2000–15^a



^a In 2012 changes were made to the structure of the surveys used in calculating the poverty and inequality indices, which made it difficult to compare between the periods prior to the change and the periods following it.

SOURCE: Based on Central Bureau of Statistics.

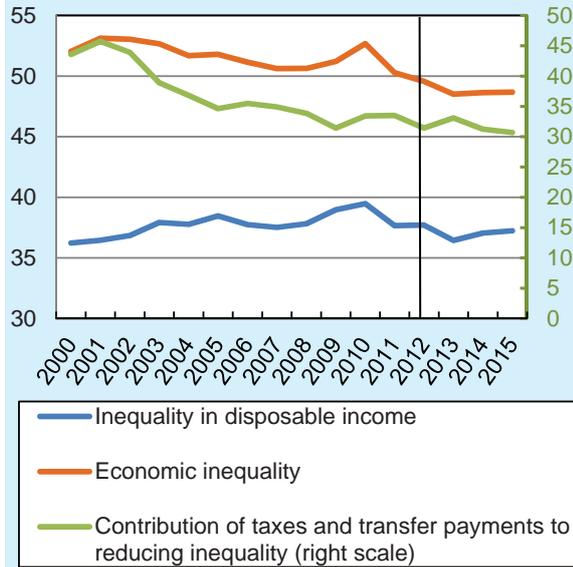
Inequality based on economic income declined gradually in recent years, in parallel with an increase in the employment rate.

⁴³ In 2012, changes were introduced into the structure of the surveys that are used to calculate the indices of poverty and inequality, which make it difficult to compare the current period to previous ones.

other countries the figure is 28 percent, while the tax system makes a somewhat higher contribution than average since direct taxation in Israel is more progressive (Figure 1.12).

In comparison to other countries and to 2013, Israel's ranking in indices of inequality based on economic income improved, but not when inequality and poverty are measured by disposable income (Figure 1.13). This reflects the contribution of the higher rate of employment to reducing inequality in contrast to the limited intervention of the government in reducing inequality and poverty.

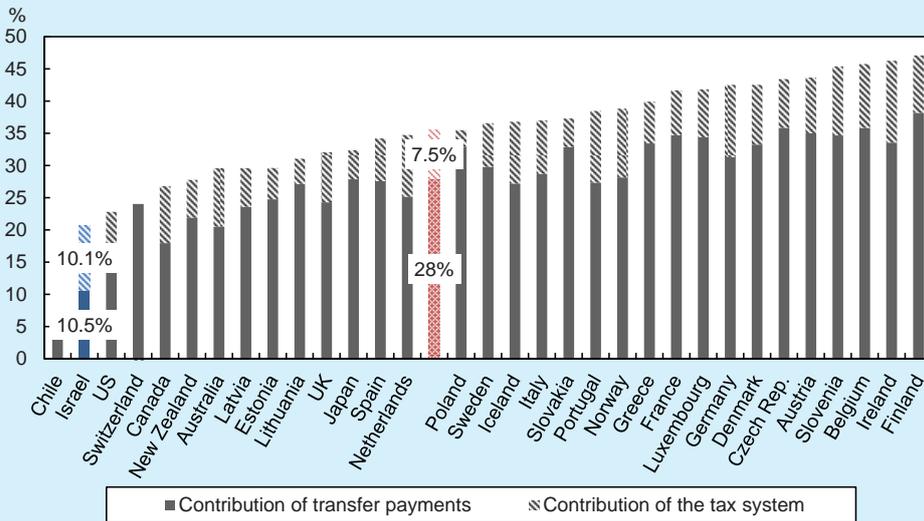
Figure 1.11
Gini Index of Inequality Between Households, 2000–15^a



^a In 2012 changes were made to the structure of the surveys used in calculating the poverty and inequality indices, which made it difficult to compare between the periods prior to the change and the periods following it.

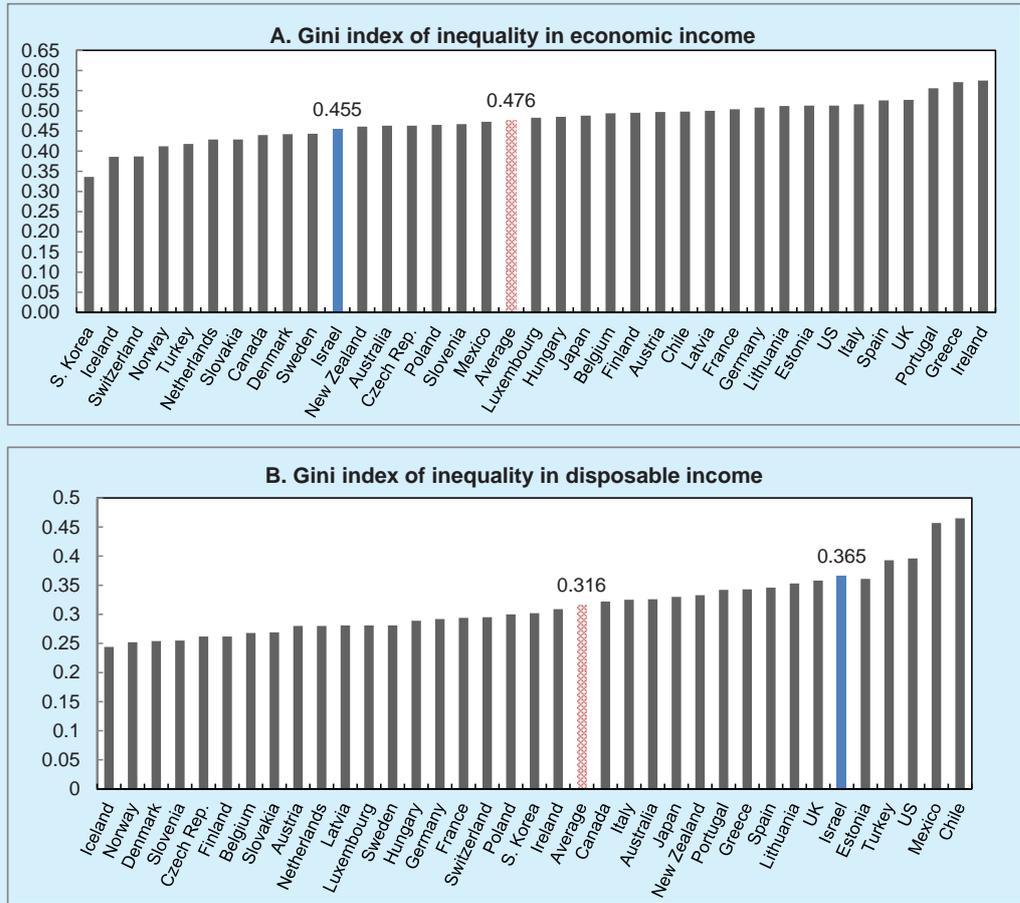
SOURCE: Based on Central Bureau of Statistics.

Figure 1.12
The Government's Contribution to Reducing Poverty



SOURCE: Based on Central Bureau of Statistics.

Figure 1.13
International Comparison of Poverty and Inequality Rates, 2012, 2013 and 2014^a



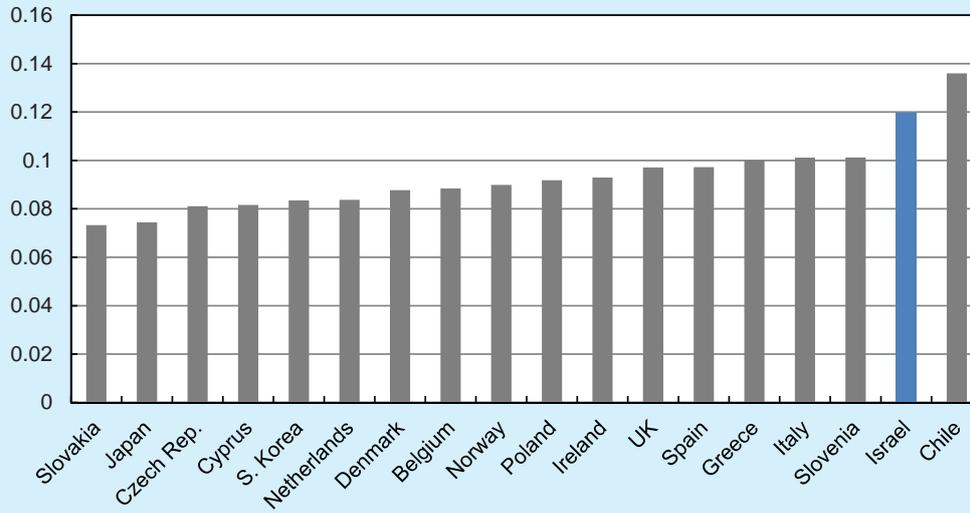
^a Data for Israel from 2014, data on other countries - 2012 and 2013.
 SOURCE: Based on Central Bureau of Statistics.

(2) *Inequality in human capital and wages*

Some joining the labor market do not have the skills necessary to integrate into it successfully.

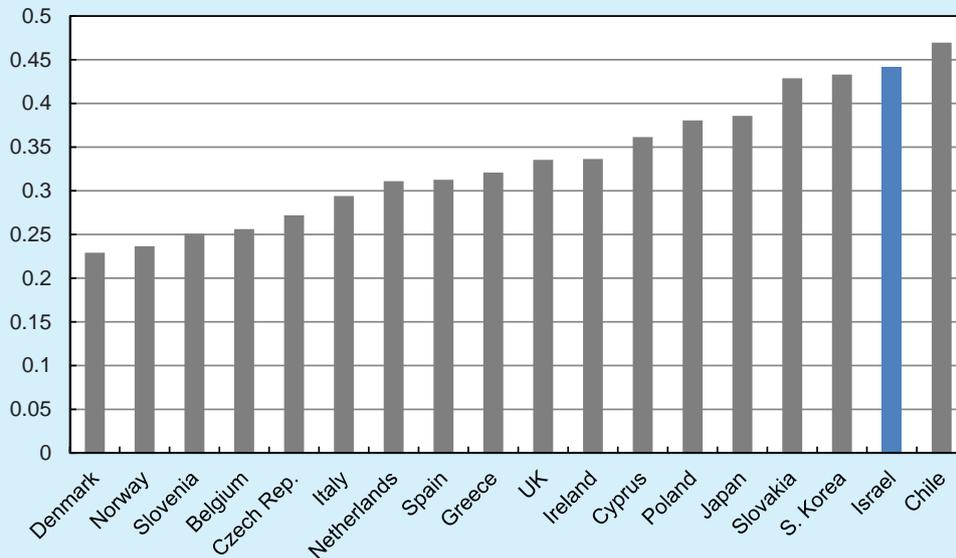
One of the tools for reducing income inequality and raising the level of income in the economy is the improvement of workers' skills, particularly among workers with a low level of skills. Some of those entering the labor market lack the skills needed to integrate successfully. For example, the skills of the young ultra-Orthodox are lower than the average in Israel and the achievements of the Arab sector on the PIAAC are very low relative to those of the Jewish sector. Sectoral inequality in skill levels contributes to overall inequality in achievement, which is high relative to the high-income members of the OECD (Figure 1.14).

Figure 1.14
Gini Index of Inequality in Average Scores on Numeracy and Literacy Skills Tests, Israel and Other OECD Members, 2014



SOURCE: Based on PIAAC surveys—Central Bureau of Statistics, National Authority for Measurement and Evaluation in Education, and OECD.

Figure 1.15
Gini Index of Inequality in Hourly Wage, Israel and Other OECD Members, 2014



SOURCE: Based on PIAAC surveys—Central Bureau of Statistics, National Authority for Measurement and Evaluation in Education, and OECD.

As in the case of inequality in PIAAC scores, inequality in hourly wages in Israel is much higher than in other countries.⁴⁴ Figure 1.15 presents the Gini coefficient calculated using data from the PIAAC survey. It indicates that inequality in Israel is higher than in the other sample countries, apart from Chile. High inequality in Israel is likely to be the result of many factors, including inequality in the human capital of individuals, inequality between younger and older generations, inequality between genders, and also unobserved factors or discrimination.

Inequality in human capital quality contributes to relatively high inequality in wages.

Figure 1.16 presents the contribution of the human capital of individuals in each country to inequality in the hourly wage.⁴⁵ First, it can be seen that human capital—which is measured according to years of schooling and basic skills—in all the countries makes only a small contribution to the general Gini coefficient. In Israel, the contribution is 0.052 out of the Gini coefficient for wage inequality (0.44). However, the contribution of human capital to wages explains about one-third of the portion of the coefficient that can be explained by observable traits.⁴⁶ It also appears that the return on human capital increases inequality in hourly wages in Israel to a greater extent than in all the other countries, apart from Spain.

When dividing the contribution of human capital into the part due to years of schooling and the part due to basic skills, it is found that the latter is larger. However, education and skills are correlated (0.43) and it is possible that the separation

⁴⁴ This is different from inequality in economic income which was described at the beginning of the section. To calculate economic income the economic income of all the individuals in a household was divided by the sum by the equivalized number individuals in it. The difference between the two indices can derive from a variety of factors, such as non-labor income, the correlation between the income of the spouses and the correlation between income and number of children. High inequality in wages can also be found within the OECD.Stat data.

⁴⁵ We carried out the calculation using the PIAAC data in the following manner: In the first stage, we took the wage (per hour, adjusted for purchasing power parity, in logarithmic form) and estimated a wage equation for each country, including age, age squared, a dummy variable for gender, years of schooling, scores on the numeracy test and scores on the literacy test. In the second stage, we calculated for each individual the value that the regression forecasts for him and calculated the Gini coefficient for the wage in each country (after converting it from its logarithmic value to its natural value). In the third stage, we calculated for each individual the value that the regression “partly” predicts, i.e. a value that does not include years of schooling and basic skills. We calculated the Gini coefficient for this “partial” value as well. In the fourth stage, we calculated the difference between the Gini coefficient for the value predicted from the second stage and the Gini coefficient for the “partial” predicted value from the third stage. We calculated this difference for each country and the full columns in Figure 1.14 present its value. In a similar manner, we expanded the calculation with the goal of distinguishing between the contribution of years of schooling and that of basic skills.

⁴⁶ The Gini coefficient for inequality in hourly wages in Israel is 0.44. The contribution of other observable traits (age, age squared and gender) is 0.095, while the average for the other countries in the sample is equal to 0.083. If account is also taken of the contribution of human capital to wage inequality in Israel (0.052), it appears that unobservable traits explain 0.29 within the Gini coefficient for inequality in hourly wages.

between their contributions is not precise;⁴⁷ however, these findings certainly show that when discussing the level of human capital in Israel and its contribution to economic inequality, an analysis of the quantity of education (years of schooling) is not sufficient and it is important to also analyze its quality. The analysis shows that reducing inequality in human capital, particularly in basic skills, is likely to reduce inequality in wages in the long run, especially in Israel.

Since 2003, the government has lowered taxes and social benefits in order to reduce the negative incentives to employment that are implicit in direct government intervention in the distribution of income. If the government is interested in reducing inequality in net income to the generally accepted level in advanced economies, and at the same time leave social benefits at their current levels, it must make use of other tools to a greater extent than they are used in other countries. The government can, for example, intervene in the distribution of income by markedly expanding the use of the work grant, a program that does not involve a large negative incentive to employment, even if it has some level of negative incentive to investment in human capital. It can also act to reduce inequality in gross wages in the free market: in the short term by means of an active policy in the labor market, such as vocational training, and in the long term by means of education in its early stages.⁴⁸

In recent years, the government has implemented reforms in the education system that are meant to improve human capital and thus reduce wage inequality in the long term. At the same time, the government increased the financial investment in education and has restored its level to that which prevailed in the late 1990s, after it had declined from then until 2006.⁴⁹ Research and accumulated experience worldwide indicate that increasing the investment in quality of education can be expected to yield desirable

If the government wants to reduce inequality in net income to a level generally accepted in advanced economies, and in parallel leave allowances at their current levels, it must act via other tools more than other advanced economies do.

⁴⁷ Araujo et al. (2016) deal with the difficulty in distinguishing between the contributions of different variables in a regression.

Araujo, M. C., P. Carneiro, Y. Cruz-Aguayo and N. Schady (2016), “Teacher quality and learning outcomes in kindergarten”, *The Quarterly Journal of Economics*, 131(3), pp. 1415-1453.

Likewise, Lerman and Yitzhaki (1989) discuss the bias existing in calculations of the Gini index through the Lorenz curve—the calculation used here—that somewhat negatively impacts the precision of the comparison between Gini indices of various sizes:

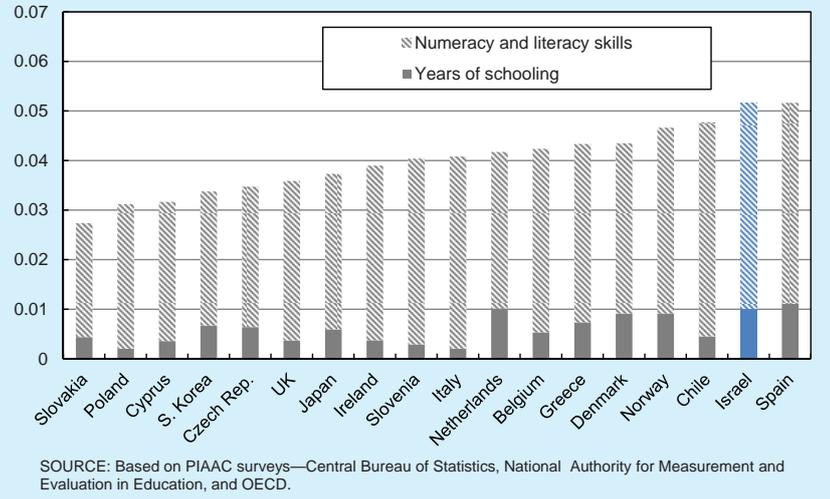
Lerman, R.I. and S. Yitzhaki (1989). “Improving the accuracy of estimates to Gini coefficients”, *Journal of Econometrics* 42.1, pp. 43–47.

⁴⁸ The expenditure on active labor market policy, and in particular in vocational training, is low relative to other countries.

⁴⁹ See Figure 6.2.

scholastic outcomes.⁵⁰ However, such results are not achieved quickly and long-term investment is required in order to raise the level of education.

Figure 1.16
The Contribution of Human Capital to Inequality in Wages in Gini Index Terms, Israel and Other OECD Countries, 2014



It is suggested to increase investment in education, with an emphasis on expanding affirmative action, in order to increase long-term growth in a way that includes all citizens.

In view of the lag in basic skills and the link between it and wages in the economy, it is recommended that investment in the quality of education be further increased, while maintaining the efficient use of existing resources and encouraging the ultra-Orthodox to study subjects that contribute to integrating into the labor market. The documented link between inequality in human capital and inequality in wages suggesting that there is also a need to expand affirmative action in the allocation of resources, with the goal of stimulating growth in the long term in a way that will include all citizens.

⁵⁰ See, for example, research that finds a link between investment in the quality of teachers and scholastic achievement worldwide: Hanushek E. A., M. Piopiunik and S. Wiederhold (2014). “The value of smarter teachers: International evidence on teacher cognitive skills and student performance”, No. w20727, National Bureau of Economic Research.

Research that found a causal link between class size and scholastic achievement in Israel: Angrist J. D. and V. Lavy (1999), “Using Maimonides’ rule to estimate the effect of class size on scholastic achievement”, *The Quarterly Journal of Economics* 114.2, pp. 533-575.

