

Chapter 5

Long-Term Development of the GDP Labor Share in Israel

- The GDP labor share quantifies the division of GDP between labor and capital, which accounts for its importance.
- Much as in other OECD countries, the GDP labor share in Israel has been declining since the 1990s.
- In Israel, in contrast to most countries, the GDP labor share fell steeply during the financial crisis, continued to decline after the crisis, and today is lower than that of the other developed economies.
- In view of structural economic processes, the sizable increase in domestic labor supply—including the integration of new population groups into the labor force—supported the decline in GDP labor share in recent years, which was also supported by an increase in the GDP deflator in Israel due to improved terms of trade relative to the Consumer Price Index, allowing employers to raise real wages from labor’s standpoint without eroding their business profitability.
- The continued entrenchment of the full employment environment, the tight labor market, and increased competition in the goods market induced a sharp increase in the GDP labor share in 2017, which was also supported by the fact that the GDP deflator increased this year just slightly more than the Consumer Price Index.

This chapter is divided into four parts. The first defines GDP labor share, explains its importance, and presents main explanations in the literature for its decline over the years. The second describes the development of GDP labor share in Israel and compares it with the average among OECD countries. Part 3 breaks the development of GDP labor share down into its components. The last part describes the development of factors in Israel that may have affected the development of GDP labor share in recent years.

1. BACKGROUND AND EXPLANATIONS FOR THE DEVELOPMENT OF GDP LABOR SHARE

The GDP labor share quantifies the distribution of GDP between labor and capital. This explains its importance.

GDP labor share is the ratio of total wage payments to employees¹, plus the imputed return on labor of self-employed workers, to Gross Domestic Product. Its complement is the GDP capital share, namely the rate of operating profit of firms in the economy. As such, GDP labor share quantifies the division of GDP between labor and capital, which accounts for its importance.²

There are additional important reasons for the interest in, and discussion of, GDP labor share in the literature. First, this indicator shows the state of domestic competition by international comparison: the larger the GDP labor share is, the less profitable enterprises are relative to other countries. Second, a decline in GDP labor share has implications for inequality—the lower it is, the greater income inequality in the country is.³ This is because the distribution of income that originates in the labor market is much more egalitarian than the distribution of income from capital. Third, the higher GDP labor share is, the more rewarding it is to participate in the labor force and the more people are extricated from poverty by participating.⁴ The fourth reason comes from another domain: An increase in this indicator may signal increased price pressures originating in the labor market, which are expected to be reflected in the development of prices and to have implications for monetary policy. In view of all these factors, the downward trend of GDP labor share in many countries has stimulated renewed interest in this indicator in the literature.

The GDP labor share is in a downward trend in most advanced economies.

¹ Including gross wages and the employer's cost of employment.

² In this context, it is conventional in the literature to assume that wages are determined in equilibrium by an employer–employee bargaining model in which each side aspires to a larger share of the earnings that the employment generates. That is, the employee wishes to maximize his or her wage relative to that available in an alternative workplace, and the employer aims to pay employee as little as possible for his or her output without losing his or her services.

³ T. Piketty and G. Zucman (2014), “Capital Is Back: Wealth–Income Ratios in Rich Countries 1700–2010,” *The Quarterly Journal of Economics*, 129(3): 1255–1310.

⁴ A.B. Atkinson (2009), “Factor Shares: The Principal Problem of Political Economy?” *Oxford Review of Economic Policy*, 51(1): 3–16.

The decline in the GDP labor share is a global phenomenon. In most developed economies, the decline began back in the 1980s. In Israel, as in emerging markets, it started a decade later.⁵

Studies have found several factors that affect GDP labor share in many markets. They may be divided into three components:

a. Long-term global processes—main factors

1. The decline in GDP labor share (mainly in developed economies) is largely attributed to **technological improvements** that lowered the relative cost of investing in physical capital, facilitated capital portability, and thereby increased the net return on investment in physical capital.⁶ In addition, automation in various occupations caused an increase in wage polarization, mainly due to a relative decline in the income of persons employed in middle-skilled occupations, in which there was a particular decline in GDP labor share.
2. **Globalization**, manifested in the expansion of international trade, has standardized labor prices by increasing the supply of unskilled and foreign workers, thereby exerting downward pressure on GDP labor share in developed economies. In emerging markets, the intensification of globalization has made investment and portability of capital less costly, allowing greater capital intensity in the production function and generating downward pressure on GDP labor share.⁷
3. A structural increase in **labor supply** is degrading labor's bargaining power.
4. A change in the **mix of employment** may affect GDP labor share, either through a change in the proportion of unskilled workers, i.e., employment quality, through a shift of workers to industries with a higher return on capital, or through a change in the return on education as a result of a positive shock to the technology-skilled bias.
5. In contrast, growing **competition** in the goods market⁸, particularly the opening of the economy to competing imports, makes it difficult to raise prices because the increase in demand elasticity may lead to a sharp decline in employers' revenue, exerting downward pressure on firms' profitability and an increase in the GDP labor share.⁹

Technological changes and the expansion of international trade explain the downward trend in the GDP labor share.

⁵ T. Kristal (2014), "The Political Economy of Israel and the Increase in Income Inequality, 1970–2010," *Israeli Sociology* 15, 282–311 (Hebrew).

⁶ L. Karabarbounis and B. Neiman (2014), "The Global Decline of the Labor Share," *Quarterly Journal of Economics*, 129(1): 61–103.

⁷ M.C. Dao, M. Das, Z. Koczan, and W. Lian (2017), "Why is Labor Receiving a Smaller Share of Global Income? Theory and Empirical Evidence," IMF Working Paper 17/169. The paper provides a broad literature review. See also T. Kristal (2007), "Distribution of National Income Between and Within Labor and Capital," Ph.D. dissertation, Tel Aviv University.

⁸ For elaboration on competition in the goods market, see Chapter 1, Section 4.b. of this report, and/or Chapter 1 of the Bank of Israel *Annual Report* for 2016.

⁹ Research has recently started to examine the relationship between an increase in the concentration rate, including firms' monopsonistic power, and the erosion of wages relative to labor productivity. See E. Benmelech, N. Bergman, and H. Kim (2018), "Strong Employers and Weak Employees: How Does Employer Concentration Affect Wages?" NBER Working Paper 24307.

b. Economic policy

Economic policy, such as the level of the minimum wage and statutory tax rates, may affect the GDP labor share.

1. **Rate of taxation on labor.** When the labor tax rate falls, wages rise from the worker's perspective with no increase in cost to the employer. This allows employers to raise gross wages to a smaller extent than the increase in workers' output, with the tax cut divided between employer and employee commensurate with the sides' bargaining power.¹⁰ In the short term, changes in the apportionment of tax between capital and labor may also have an effect on the GDP labor share until factor quantity adjusts to the change in relative prices.
2. **Unionization rate.** Unionization of labor delivers a positive wage premium—as is documented in many studies and valid in Israel as well—because unionized workers have more bargaining power than non-unionized ones.¹¹ The unionization rate in Israel, as in most OECD countries, has been falling, irrespective of whether the decline reflects labor's diminishing bargaining power or is its cause.
3. **Ratio of minimum wage to average wage.** This is another indicator that may affect the development of the GDP labor share. When the ratio is raised by law, the wage gain for minimum-wage workers may be greater than the increase in their marginal output, precipitating a general increase in GDP labor share. An increase in the minimum wage also raises workers' alternative wage. Conversely, an overly sharp increase in labor cost pushes up the relative cost of labor and may prompt firms to use capital at labor's expense, which can be expected to lower the GDP labor share in the long term.
4. **The public sector.** The public sector's share of employment is important because, by being an especially large employer, its return on capital is relatively small, its unionization rate is high, and it represents the government's economic preferences.¹²

c. Business cycle and crises

In most countries, the GDP labor share rises when negative demand shocks occur.

When labor is in short supply, surplus demand exists, and output gaps narrow, the expected outcomes are upward pressure on wages and an increase in the GDP labor share. Conversely, relative wage rigidity causes the GDP labor share to behave countercyclically.¹³ In other words, a positive demand shock is likely to be reflected

¹⁰ A Brender and E. Politzer (2014), "The Effect of Legislated Tax Changes on Tax Revenues in Israel", Discussion Paper 2014.08, Bank of Israel Research Department (2017), S. Igdalov, N. Zussman, and R. Frish, "The Wage Response to a Reduction in Income Tax Rates: The 2003–2009 Tax Reform in Israel," Discussion Paper 2017.14, Bank of Israel Research Department.

¹¹ F. Kramarz (2016), "Offshoring, Wages, and Employment: Evidence from Data Matching Imports, Firms, and Workers," in *The Factor-Free Economy* (Oxford, UK: Oxford University Press).

¹² The return on labor in the public services is composed of wages and imputed pensions. Wages are based on administrative data from the ministries of Finance and Defense and reports from municipal authorities, the National Insurance Institute, the National Institutions, and public and private nonprofit organizations. Pension imputation relates to budgetary pensions for state employees in respect of which no provision to a pension fund—which the government is supposed to make in order to assure its workers' future pension entitlements—was made.

¹³ P. Goome and P. Rupert (2004), "Measuring Labor's Share of Income," *Federal Reserve Bank of Cleveland*, Policy Discussion Paper.

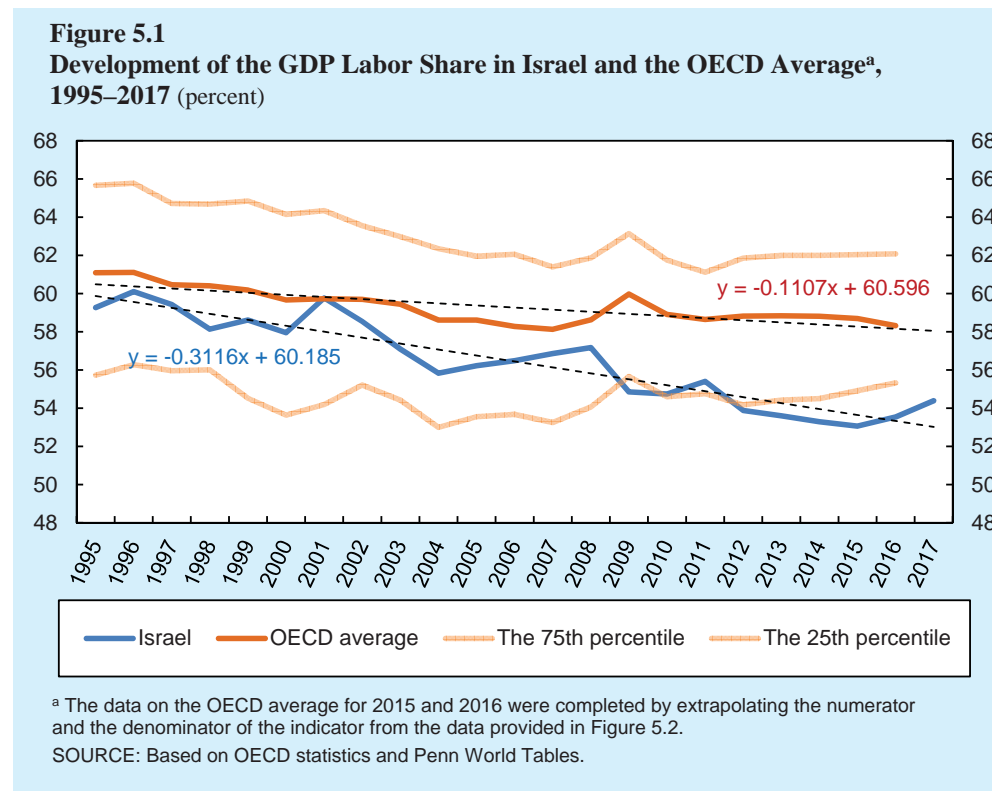
in a decrease in the GDP labor share. This is because capital, which easily adjusts to an increased in demand, grows while wages—a rigid parameter—remain stable. This effect stands in contrast to that of protracted growth and progress toward eliminating the output gap, which is expected to generate upward pressure on the GDP labor share.

Furthermore, an economic crisis brings to the surface pre-existing pressures that are corrected due to the crisis. Thus, in countries where wages climb too quickly before the crisis, a strong correction during the crisis should be foreseen. This happened in Israel at the beginning of the previous decade, and also occurred in other countries where the GDP labor share declined after the global financial crisis.

2. DEVELOPMENT OF GDP LABOR SHARE IN RECENT YEARS: ISRAEL VS. OTHER OECD COUNTRIES

Figure 5.1 shows the development of GDP labor share in Israel and the OECD average since 1995.

The figure highlights several points:



1. Since 1995, the GDP labor share in Israel has been declining more rapidly than the OECD average. While the average performance of a group of countries is much smoother than that of one state, it masks the variance among and within countries

over time. When compared individually to other countries, Israel's deviation from the GDP labor share development trend is not exceptional.

2. Israel's GDP labor share dipped sharply in the two recessions of the previous decade, which were preceded by a slight increase in this indicator. In particular, the GDP labor share declined sharply during the global financial crisis—in which Israel was impacted less than other countries for reasons including its relative wage elasticity. In contrast, as expected, the GDP labor share in other OECD countries increased on average due to their wage inelasticity.
3. In 2007, the gap between Israel's GDP labor share and the OECD average was similar to that in 1995. From 2008 onward—with the exception of the financial crisis period—the average GDP labor share in OECD countries was relatively stable, whereas the GDP labor share in Israel continued to drop until 2015. This created a rather large disparity between Israel and the rest of the OECD in this respect. The current chapter focuses on these years.
4. GDP labor share in Israel increased by 0.5 percentage points in 2016 and by 0.9 percentage points in 2017, returning to approximately its 2009 level in the latter year.

Since 2008, Israel's GDP labor share has been falling—unlike the trend in most countries—and it is now relatively low but not exceptional by international comparison.

The GDP labor share in Israel increased slightly in 2016 and sharply in 2017, returning to its 2009 level.

First we examine whether the stability in the OECD's average GDP labor share masks variance among the organization's member states. Figure 5.2 divides the development of the GDP labor share into two periods—1995–2007, when it declined, and 2008–2014, when it was stable. The figure shows clearly that the GDP labor share fell in almost all OECD countries, including Israel, until 2007. By implication, there are international factors that affect the development of the GDP labor share.¹⁴ From 2008 onward, the GDP labor share remained stable in most countries and continued to drop in Israel, as stated. Apart from Israel, it continued to fall in countries that were seriously affected by the financial crisis—Ireland¹⁵, Greece, Spain, Portugal, and Poland.¹⁶ In Israel, the GDP labor share in 2016 was one of the lowest among OECD members (Figure 5.3)

In the next section, we examine whether Israel has undergone idiosyncratic processes since 2008 that may have affected the trend of its GDP labor share. If the answer is affirmative, we will describe the background of these processes and determine how much the decrease in the GDP labor share in recent years is structural or cyclical.

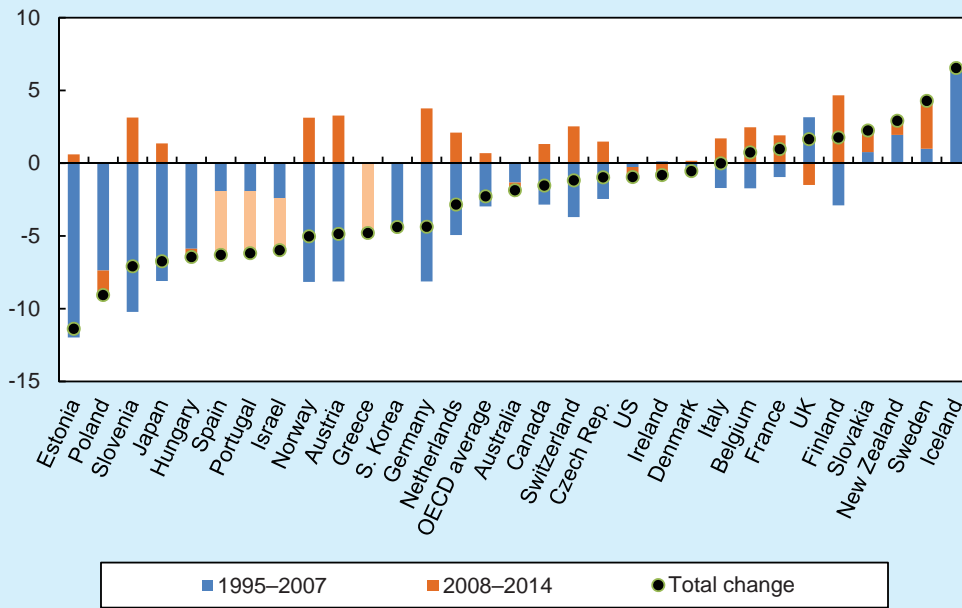
3. DECONSTRUCTING THE DEVELOPMENT OF THE GDP LABOR SHARE

¹⁴ For elaboration on these years, see Box 2.2 in the Bank of Israel *Annual Report* for 2007.

¹⁵ In Ireland, the GDP labor share increased by 3.7 percentage points during the crisis in 2009, and then declined by 4.7 percentage points afterwards.

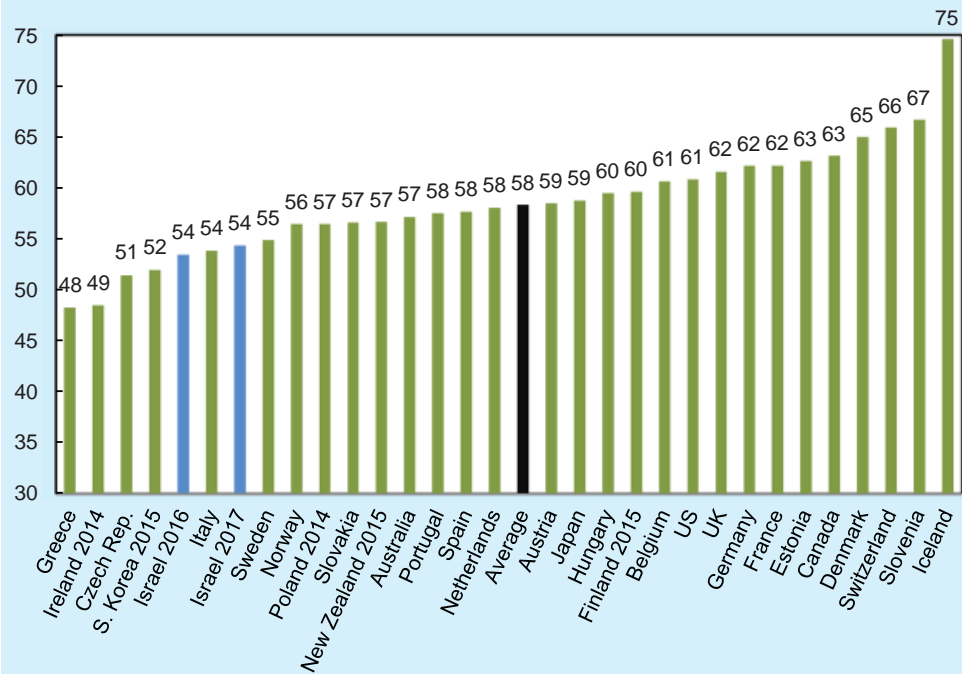
¹⁶ These countries had to sharply correct problems that persisted in the decade preceding the crisis, through processes that included public sector wage cuts. They also had to improve their profitability relative to the rest of the world (by real depreciation, since they do not have autonomous currencies), a move that entailed wage adjustments in the business sector as well.

Figure 5.2
Change in the GDP Labor Share in Israel and in the OECD, Divided into Two Periods (ascending order by total change, percentage points, 1995–2014)



SOURCE: Based on Penn World Tables.

Figure 5.3
GDP Labor Share in Israel and other OECD countries, 2016 (percent)



SOURCE: Based on Penn World Tables.

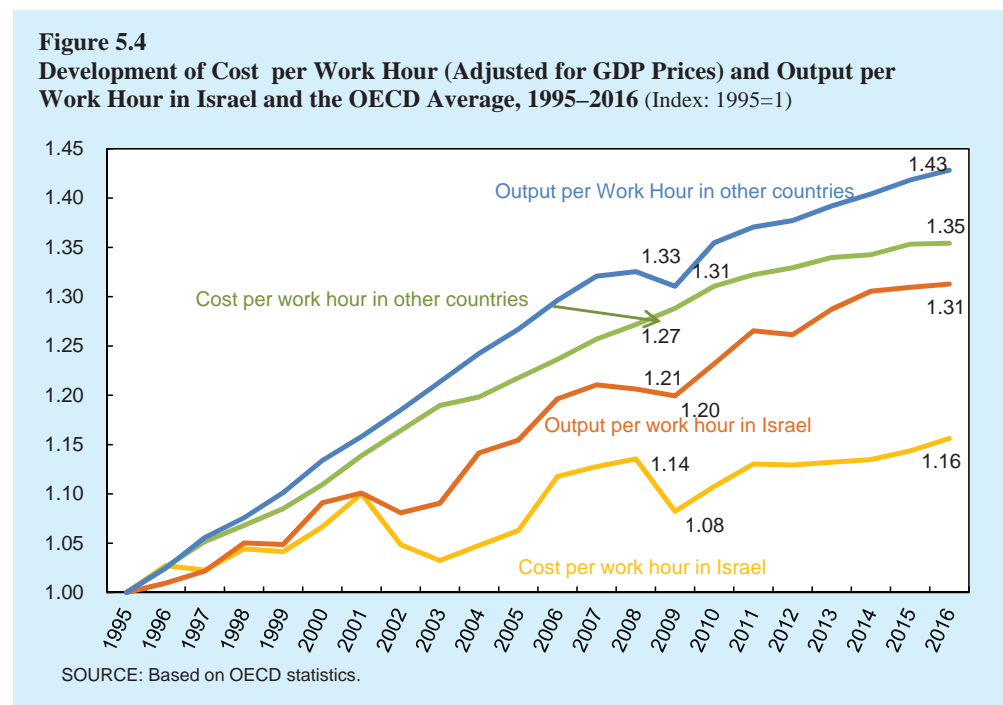
To analyze the development of the GDP labor share, one may divide the numerator and the denominator of this indicator by hours worked. The GDP labor share yielded in this manner is the ratio of hourly labor cost to hourly product—the real unit labor cost:

where W = gross hourly wage; Y = hourly product; L = hours worked; C =

$$Labour_share = \frac{Labour_cost}{Y} = \frac{(1 + C) \cdot \bar{W} \cdot L}{Y} = \frac{(1 + C) \cdot \bar{W}}{Y/L}$$

employment cost beyond gross wage.

Figure 5.4 breaks down the development of these variables in Israel and in the OECD (average) in the years investigated.



The Figure yields several insights:

1. At the beginning of the previous decade, with Israel mired in recession, labor cost declined sharply.¹⁷
2. Hourly labor cost in Israel also contracted considerably during the recent financial crisis (by about 6 percentage points, of which around 1 percentage point was in

¹⁷ This was also a correction for the sharp increase in real wages between 1994 and 2001. For elaboration on the development of wages during those years, see Y. Mazar (2014), “The Development of Wages in the Public Sector and Their Connection with Wages in the Private Sector,” Bank of Israel Research Department Discussion Paper No. 2014.03.

nominal labor cost)—in contrast with the development of the average return on labor in the other OECD countries. Therefore, the Israeli labor market generally, and Israeli wages particularly, were typified by very high elasticity, unlike other countries.¹⁸ This forestalled an even sharper increase in the unemployment rate.¹⁹

3. Labor productivity in Israel, which eroded in relative terms until 2007, increased from 2008 to 2016 at a pace resembling the OECD average—slower than the pre-crisis rate of growth in the other countries. This pace did not suffice to close the labor-productivity gap between Israel and the rest. The increase in labor productivity in Israel slightly outpaced the real increase in hourly labor cost, as reflected in the continued decline in Israel’s GDP labor share (Figure 5.1).

Labor productivity in Israel, which eroded in relative terms until 2007, increased between 2008 and 2016 at a pace that was similar to the OECD average.

Table 5.1
Labor Market Developments between 2008 and 2016

	Israel	OECD average	Countries where the Unit Labor Cost declined significantly since 2007 (Ireland, Portugal, Spain, Greece)	OECD average excluding the four countries seriously impacted by the crisis
Change in nominal hourly labor cost (percent)	23.5	20.3	7.0	22.3
Change in hourly output - labor productivity (percent)	8.8	9.4	17.3	8.0
Change in GDP deflator (percent)	22.8	14.8	3.8	16.6
			Additional data	
Change in Consumer Price Index (percent)	12.6	12.0	5.3	13.2
Change in employment rate (percentage points)	8.7	0.5	4.9-	1.3
Change in unemployment rate in 2009 (percentage points)	1.8	2.2	2.8	2.1
Change in unemployment rate (percentage points)	-1.9	1.7	4.3	0.9
Change in work hours per employee (percent)	-0.1	-1.4	-0.6	-1.5

SOURCE: Based on OECD statistics.

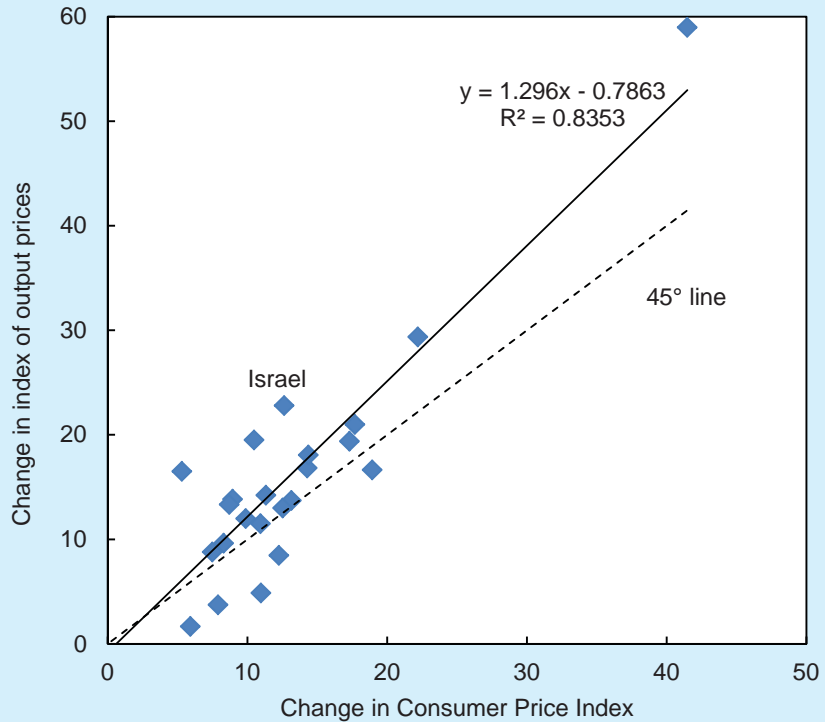
Table 5.1 describes the development of the components of GDP labor share—nominal hourly labor cost, hourly product, and GDP prices. All of these are shown for Israel, the OECD average, the four countries in which GDP labor share declined between 2008 and 2014 (Figure 5.2), and the OECD average net of those four countries. The Table also describes the development of three additional important

¹⁸ See box and, particularly Figures 2.1 and 2.2 in *Recent Economic Developments* 132, Bank of Israel Research Department, 2012.

¹⁹ For elaboration on the development of Israel’s labor market during the financial crisis, see Chapter 5 of the Bank of Israel *Annual Reports* for 2008 and 2009.

labor market indicators—the unemployment rate, the employment rate, and average hours worked per employee.

Figure 5.5
Change in GDP Prices and CPI Prices, 2008–16



SOURCE: Based on OECD statistics.

Table 5.1 shows that nominal labor cost (as well as real wage cost from the employee’s point of view, which is not shown in the table) increased in Israel between 2008 and 2016 by more than the average rate among the other OECD member states and even more than the OECD member countries net of the four countries that were particularly stricken by the financial crisis. The sharp increase in GDP prices in Israel, however, lowered cost relative to labor productivity. Furthermore, the rapid growth of Israel’s GDP deflator relative to the CPI (Figure 5.5)—most of which is due to exogenous factors, mainly reflecting improved terms of trade, particularly in volatile commodity prices—allowed real wages to increase from the employee’s perspective with no impairment to employers’ profitability.^{20,21} This is a cyclical development.²²

Because the GDP deflator rose more quickly than the CPI in Israel, real wage growth has not been reflected in impaired profitability.

²⁰ For discussion of this topic, see Chapter 1 of the Bank of Israel *Annual Report* for 2016, and particularly Figure 1.5, which contrasts the increase in real wages in terms of consumer prices with stagnation in real wages in terms of producer prices.

²¹ Israel is above the regression line in Figure 5.5, meaning that its GDP prices increased faster than its Consumer Price Index—a wider spread than in the other OECD countries.

²² Since the beginning of the previous decade, GDP prices and consumer prices in Israel have been rising at similar rates.

In the opposite situation, in which consumer prices rise more rapidly than producer prices (as happened in Israel at the beginning of the previous decade), an increase in nominal wage commensurate with its real erosion from the employee's standpoint impairs employers' profitability and may cause unemployment to rise. Thus, a relative increase in GDP prices facilitates economic growth. However, real wage growth as a result of improved price ratios is unlikely to prove long-lasting²³, in contrast to an increase precipitated by growth in labor productivity, which has happened only moderately in the past three years (Figure 5.4).

Real wage growth as a result of improved price ratios is unlikely to persist for long.

Table 5.1 also shows that in contrast to Israel, the four countries that saw declines in their GDP labor share in recent years are among those that were worst hit by the financial crisis. In these countries, nominal hourly wage increased only mildly, unemployment increased sharply—during and after the crisis year—and the employment rate is still lower than its pre-crisis level. These countries fell into distress and had to cope by improving their competitiveness either via domestic depreciation (a problematic step to take, since all use the Euro) or by lowering labor cost.

As part of the explanation of the unusual development of Israel's GDP labor share, the next section describes additional processes that Israel has experienced in recent years.

4. ANALYSIS OF PROCESSES IN ISRAEL IN RECENT YEARS THAT MAY HAVE AFFECTED THE GDP LABOR SHARE

a. Structural changes

Table 5.2 tracks four structural indicators that may have affected the path of GDP labor share: the mix of employment (expected to lower the GDP labor share), openness of the economy, globalization (also expected to reduce the GDP labor share), and competitiveness (likely to raise the GDP labor share).

Mix of employment. Manufacturing labor input as a share of total business input has been trending downward since the 1990s. This development, not exclusive to Israel, reflects a shift of labor from manufacturing to other industries. The question is whether the decline in GDP labor share reflects a change in mix of employment at the individual industry level—namely, whether industries with different GDP labor shares developed differently in recent years. If such is indeed the case, it may help to explain the overall decrease in the GDP labor share in recent years.

The upper panel of Table 5.3 shows that output growth in the principal industries did vary from one industry to another. The expansion of output in Information and Communication, Construction, Trade and Services, and Financial Services at the expense of manufacturing stands out.

²³ Figure 5.5 shows the strong correlation between the GDP deflator and the CPI during the reviewed period. The position of the correlation near the 45-degree line means that both indices rose at similar rates over time.

Table 5.2
Structural factors in the Israeli economy, 1990, 1999, 2002, and 2008–17

	Mix of employment	Globalization		Competition
	1	2	3	4
	Manufacturing industry inputs as a share of total business sector inputs	Exports as a share of uses	Goods imports to emerging economies as a share of total imports	Imports as a share of manufacturing consumption (current prices)
1990	23.8	24.2		56.6
1999	18.2	24.2	32.5	63.1
2002	16.7	28.7	33.3	72.4
2008	16.0	27.7	38.4	70.6
2009	15.2	25.5	39.0	73.3
2010	14.9	26.3	41.9	74.5
2011	14.8	26.6	43.5	74.3
2012	14.7	26.5	45.2	75.4
2013	14.5	25.3	46.5	76.3
2014	14.3	24.6	45.7	75.7
2015	14.0	24.4	46.8	77.6
2016	14.5	23.6	44.8	
2017		22.6	42.2	

SOURCE: Based on National Accounts data.

Table 5.3
Growth of the principal industries and weight of employee wages in each industry, 2008–16

	Manufacturing	Information and communication	Construction	Trade and services	Transport and storage	Financial services	Total business sector
Rate of change of GDP							
2008–2016	20.7	67.9	87.3	59.5	25.0	75.4	55.0
Industry's share of total business sector output							
2008	24.3	14.7	7.5	17.0	6.3	24.9	
2016	19.0	16.0	9.1	17.6	5.1	28.4	
GDP labor share							
2008	55.0	49.6	51.2	61.6	53.1	66.8	63.2
2016	56.4	46.5	44.6	59.8	60.3	60.6	59.9
GDP labor share under the 2008 industry composition							60.2

SOURCE: Based on National Accounts data.

We found (by disaggregation) that the most salient change in the composition of industry fails to significantly explain the decrease in GDP labor share in recent years, despite the strong negative correlation between change in the GDP labor share in each industry and the rate of change in its output.²⁴ (The more the GDP labor share in a given industry fell, the more the industry grew.²⁵) The reason for the negligible effect of the mix of employment is that the GDP labor share has decreased in almost all industries in recent years (Table 5.3, lower panel).^{26,27}

Israel's economy is an open one. Since the early 1990s, exports as a share of uses has been growing steadily, reflecting the greater impact of global trade on the economy. During the financial crisis, however, the share of exports in GDP stopped growing and even began to trend downward (Table 5.2, Column 2). The share of emerging markets in imports and the share of imports in manufacturing consumption increased steadily, particularly in recent years (Table 5.2, columns 3 and 4). These trends reflect both an increase in the competition that the economy—especially domestic manufacturing—faces, and an increase in the impact of globalization. The escalating effect of globalization on the economy is mitigating wage pressure and inflation rates. Conversely, in view of intensifying competition, employers are afraid to raise prices.²⁸ Thus, they are also less inclined to pass on wage increases to prices of (consumer) goods, which would manifest in a larger GDP labor share.²⁹

The most salient change in the composition of industry fails to significantly explain the decrease in GDP labor share in recent years.

With intensifying competition in the goods market, employers are afraid to raise prices, a move that would be reflected in an increase in the GDP labor share.

²⁴ Minus 84 percent in all industries and minus 90 percent in the total excluding electricity, water, and agriculture.

²⁵ The direction of causality—whether the decrease in GDP labor share made hiring easier and therefore helped the industry to grow, or whether hiring in a state of stronger competition pushed down the industry's GDP labor share—is not discussed in this chapter.

²⁶ A recent IMF paper (“What Explains the Decline of the U.S. Labor Share of Income? An Analysis of State and Industry Level Data,” *IMF Working Paper 167*, 2017), found that nearly all of the decrease in global GDP labor share occurred within industries and not between them. Another paper (“Why is Labor Receiving a Smaller Share of Global Income? Theory and Empirical Evidence,” *IMF Working Paper 169*, 2017) found that intra-industry declines explain about 90 percent of the global decrease in GDP labor share. However, another study (M. Kehrig and N. Vincent (2017), “Growing Productivity without Growing Wages: The Micro-Level Anatomy of the Aggregate Labor Share Decline,” *CESifo Working Paper No. 6454*) found evidence of the effect of subindustry composition on the development of GDP labor share in manufacturing:

²⁷ The table shows that the decrease in GDP labor share was less significant in trade and services, evidently because those industries are less exposed than others to changes in the terms of trade.

²⁸ Particularly after the 2011 social protests, which reflected a desire to lower the cost of living and led to enhanced awareness of it. For elaboration on the increase in competitiveness in the goods market, see Section 4b in Chapter 1, and Chapter 3. Furthermore, online shopping, and mainly the ability to compare prices using mobile devices, are allowing shoppers obtain information with greater ease. For elaboration, see box in Chapter 3 of this Report.

²⁹ On the effect of a decrease in inflation expectations on the development of wages, see Chapter 5 in the Bank of Israel *Annual Report* for 2016.

b. Socioeconomic policy

Table 5.4 tracks six indicators of socioeconomic policy in Israel.

Table 5.4
Indicators of socioeconomic policy in Israel, 1990, 1999, 2002, and 2008–17

	Socioeconomic policy					
	1	2	3	4	5	4
	Average income tax rate	Statutory corporate tax rate	Primary civilian expenditure as a share of GDP	Cost of employment rate	Minimum wage as a share of average wage	Unionization rate ^a
1990	26.9	43.5	34.5	28.6	42.6	70.0
1999	29.7	36.0	32.4	23.6	43.0	37.7
2002	31.7	36.0	34.8	22.9	46.0	
2008	25.9	27.0	30.7	22.5	47.5	30.3
2009	24.8	26.0	31.4	22.2	47.2	
2010	24.6	25.0	31.0	22.2	46.5	
2011	24.4	24.0	30.6	22.5	46.4	
2012	23.7	25.0	31.5	23.3	47.4	22.8
2013	24.1	25.0	31.7	22.9	47.8	
2014	24.4	26.5	31.3	22.2	47.0	
2015	24.7	26.5	30.9	22.7	48.8	
2016	25.2	25.0	31.0	23.7	49.1	24.8
2017	25.8	24.0	32.1	24.2	51.2	

^a Since there are no consecutive data for each year, the data regarding the unionization rate for 1990 are 1992 data; for 1999 they are 2000 data; and for 2008 they are 2007 data.

SOURCE: Based on National Insurance Institute data on wages per employee post; the Central Bureau of Statistics Social Survey, and OECD statistics.

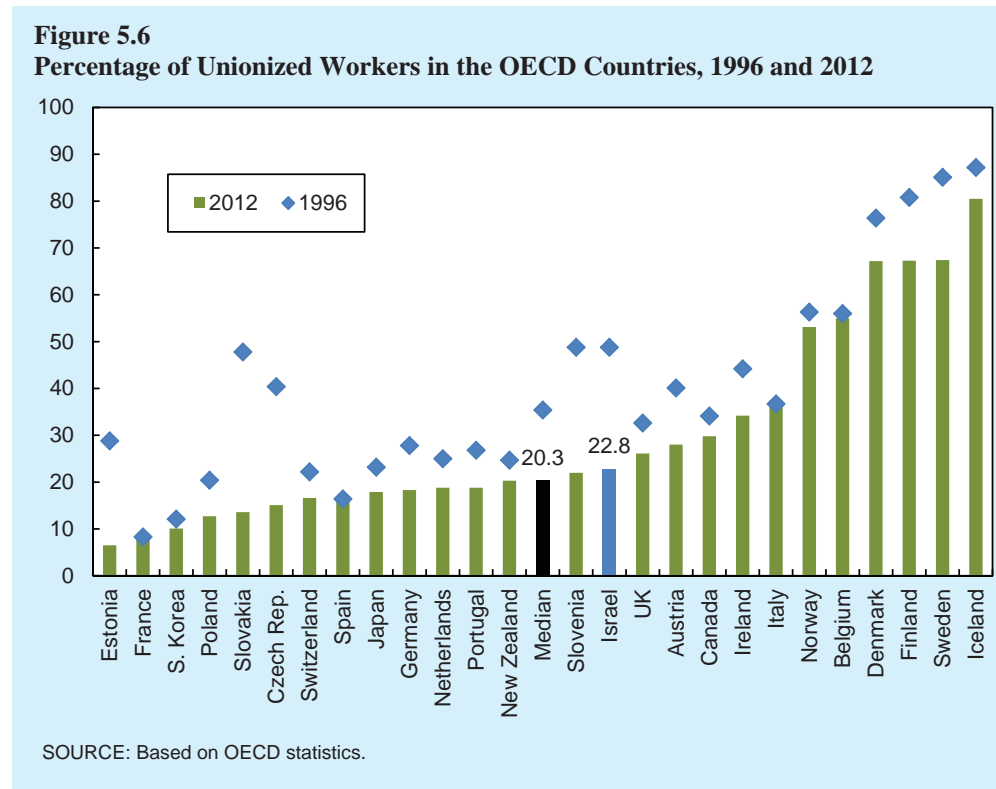
At the beginning of the previous decade, government policy eased the tax burden and lowered the share of public expenditure in GDP (Table 5.4, columns 1–3). Since 2008, however, primary civilian public expenditure as a share of GDP has been more-or-less steady and has even gone up recently. **The average income tax rate** declined steadily until 2012—by about 8 percentage points from 2002. From 2012 onward, it rebounded to approximately the level preceding the global crisis. **The corporate tax rate** declined even more sharply than the income tax rate. The employment cost ratio, defined as the ratio of the cost of employing a worker and his or her gross wage, declined by around 6 percentage points during the 1990s but has held steady since the beginning of the previous decade and shows no trend whatsoever. By overall

implication, in terms of economic policy and, particularly, tax policy, downward pressure on the GDP labor share has been absent since 2008.

While average wage has increased solidly in recent years, **the minimum wage** has climbed even faster and has therefore increased relative to the average wage (Table 5.4, Column 5). This, as stated, probably raised the GDP labor share because it was not accompanied by an increase in domestic unemployment.

Throughout the reviewed period, **the share of unionized workers** has been in a downward trend in Israel and in most developed countries (Table 5.4, Column 6, and Figure 5.7).³⁰ As of 2012, according to OECD data, Israel had a unionization rate of 23 percent, slightly above the median among the other countries. In 2007, the rate in Israel was 30 percent. The 2016 Social Survey reported a 2 percentage point increase in unionization relative to 2012. Thus, the downward trend in this indicator has stopped and cannot help to explain the decrease in the GDP labor share in recent years.

The decline in the rate of unionized employees in Israel has come to a halt.



³⁰ In Israel, most disaffiliation with unions traces to the spinoff of the healthcare system from the Histadrut (General Federation of Labor) that accompanied the passage of the National Health Insurance Law in 1994. The legislation uncoupled healthcare services from union membership and, by so doing, led many union members to deunionize.

Since the beginning of the previous decade, Israel's labor force participation rate has been rising significantly.

The increase in participation reflects, among other things, the entry of new population groups to the labor force—foremost ultra-Orthodox women, older workers, and people with relatively low levels of education.

The participation rate has stopped rising in the past 2–3 years, causing the labor market to tighten and generating wage pressure.

Generally speaking, further to Israel's economic liberalization policies (first instituted in the 1980s stabilization program that tackled the inflation crisis³¹), the government continued to pursue a policy of reducing intervention in the economy almost until the end of the past decade. Since the global financial crisis, however, and particularly under the influence of the summer 2011 social protests³², that trend was halted, the ratio of primary civilian expenditure to GDP leveled off (and has recently risen), and the tax and unionization rates bottomed out (and even increased). By implication, the government's policy since the financial crisis did not contribute to the continued decline in the GDP labor share.

All this notwithstanding, we must qualify our conclusion: Collective wage agreements in the public sector have been restrained in recent years³³ and, in contrast to the 1990s, when the public sector led the private sector toward accelerated wage increases, the public sector is currently a balancing factor.³⁴

c. Structural or cyclical factors in the labor market

Table 5.5 tracks two of Israel's main labor market indicators in recent years. **The participation rate**, i.e., labor supply, has grown appreciably in the past decade (Column 1) as new population groups have joined the labor market—ultra-Orthodox women, the elderly, and people with average and below-average levels of education.³⁵ Thus, their labor input increased beyond that of population groups that were already part of the labor market. The increase in labor supply mitigated labor's bargaining power, and population groups that have a weaker connection with the labor market naturally have less bargaining power than strongly connected population groups.³⁶

In the past two or three years, however, the increase in the labor force participation rate has halted and the unemployment rate, an indicator of the possibility of wage pressures, has declined steadily. The fact that the economy has been in a full

³¹ T. Kristal (2014), "The Political Economy of Israel and the Increase in Income Inequality, 1970–2010," *Israeli Sociology* 15, pp. 282–311 (Hebrew), or A. Ben Bassat, *From Government Intervention to Market Economy, the Israeli Economy 1985–1998* (Hebrew) (Tel Aviv: Am Oved, 1999).

³² For elaboration, see Chapters 6 and 1 in this Report.

³³ For details, see Chapter 5 in the Bank of Israel *Annual Report* for 2016.

³⁴ Y. Mazar (2014), "The Development of Wages in the Public Sector and Their Connection with Wages in the Private Sector," Bank of Israel Research Department Discussion Paper No. 2014.03.

³⁵ For example, since 2002, for each hundred-person increase in the population aged 25–54, 270 employed persons with 0–15 years of schooling were added, compared with ninety-five employed persons with sixteen or more years of schooling. Source: Shores Institute, 2017–2018, *Shores Guide to Education in Israel and Its Impact* (Hebrew), .p. 8.

³⁶ An examination by industry during the past decade found no stable relation between the average wage in an industry and its GDP labor share. On the one hand, the higher the wage level in an industry is, the higher its profit margins are and the more technology-intensive it is. Therefore, the industry's GDP labor share should be lower in industries that pay higher wages. On the other hand, competition for labor increases in tandem with the wage level, amplifying labor's bargaining power. Since these two main effects may offset each other, no stable statistical relation is found between the wage level in a given industry and the GDP labor share.

employment for quite a long time, together with continued strong domestic demand, creates pressure for wage increases and, in turn, a higher GDP labor share.³⁷

In summation, since the financial crisis, the global forces—including the lowered cost of investing in physical capital and the spread of globalization—supported continued declines in GDP labor share in Israel. These forces, coupled with an increase in the GDP deflator relative to the CPI and, foremost, the growth of labor supply, pushed the share down until 2015. Developments in the past two years have headed in the opposite direction. Exhaustion of the increase in labor supply, together with the tightening of the labor market, pressure on profitability due to intensification of competition in the goods market, the increase in the minimum wage, and stability in the GDP deflator, led to a halt in the decline of the GDP labor share in 2016 and a sharp increase in 2017.

Table 5.5
Labor market indicators in Israel, 1990,
1999, 2002, and 2008–17

	Labor market factors	
	1	2
	Supply of labor	State of the business cycle
	Participation rate (age 25–64)	Unemployment rate
1990	70.3	9.3
1999	73.5	9.4
2002	74.1	10.8
2008	76.7	6.4
2009	76.7	8.3
2010	77.1	7.2
2011	77.5	6.1
2012	78.7	5.9
2013	78.8	5.4
2014	79.5	5
2015	79.8	4.5
2016	79.9	4.1
2017	80.0	3.7

SOURCE: Based on Central Bureau of Statistics Labor Force Surveys and Expenditure Surveys.

³⁷ For further details on labor market developments in the reviewed year, see Chapter 2.

