Chapter 5

Labor Market Issues

- The labor market was characterized this year by high demand for workers, a low unemployment rate, an increase in the number of work hours per employee and an increase in the job vacancy rate. The rapid increase in demand for workers and the increase in the job vacancy rate encompassed a wide range of industries and professions.
- Nominal wages per employee post increased by 2–2.5 percent in recent years, similar to the pace in the other OECD member countries. This is the pace predicted by a statistical model that takes into account the fact that in the advanced economies there is a long-term correlation between wages and productivity, the unemployment rate, and inflation expectations.
- Real wages, adjusted for the Consumer Price Index, increased significantly in the past two years. In 2016, total wage payments as a share of GDP also increased slightly, following years in which it eroded.
- The rate of increase in the nominal wages of workers in the public sector moderated greatly in 2015–16, and declined below the rate of increase of business sector wages after exceeding it in the past two years. Wages in the public sector are expected to continue increasing relatively slowly due to wage agreements signed for the period ending in 2019, but over time, wages in the two sectors increase at similar rates.

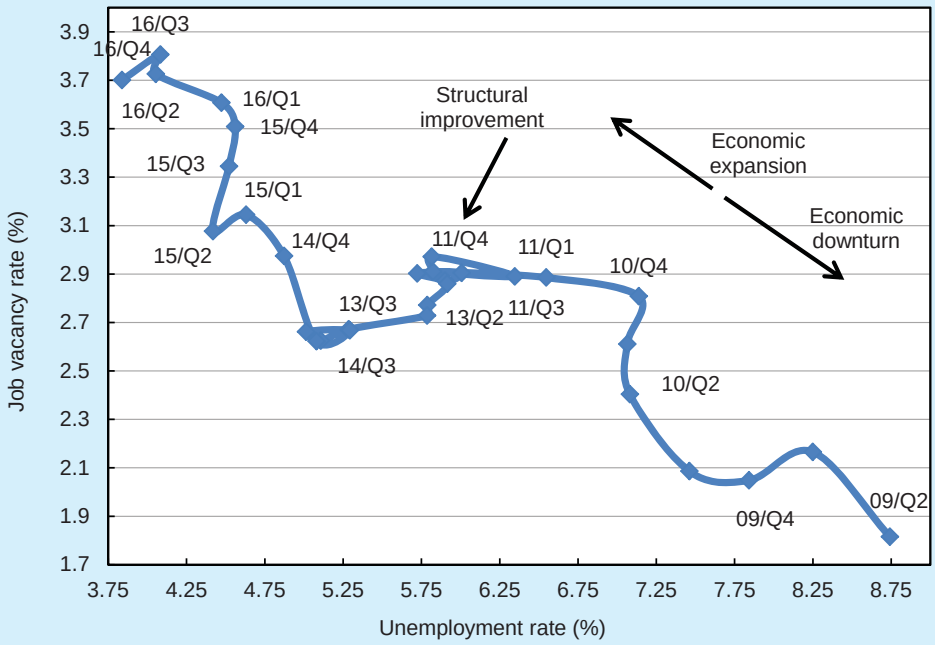
1. WHY DO NOMINAL WAGES INCREASE MODERATELY WHEN THE LABOR MARKET TIGHTENS?

One of the main issues currently facing the economy and the Bank of Israel Monetary Committee is the question of why the inflation rate is so low even though the labor market is close to full employment and the economy is growing at a high rate. Part of the answer has to do with developments on the supply side of goods—the increase in competition and the decline in the prices of imported goods, as reviewed in Chapters 1 and 3. Another part concerns the fact that nominal wages are increasing moderately considering the state of the labor market. The reasons for this are discussed here.

Since the beginning of 2009, the unemployment rate has declined almost constantly, and since 2014 the job vacancy rate has increased in parallel.

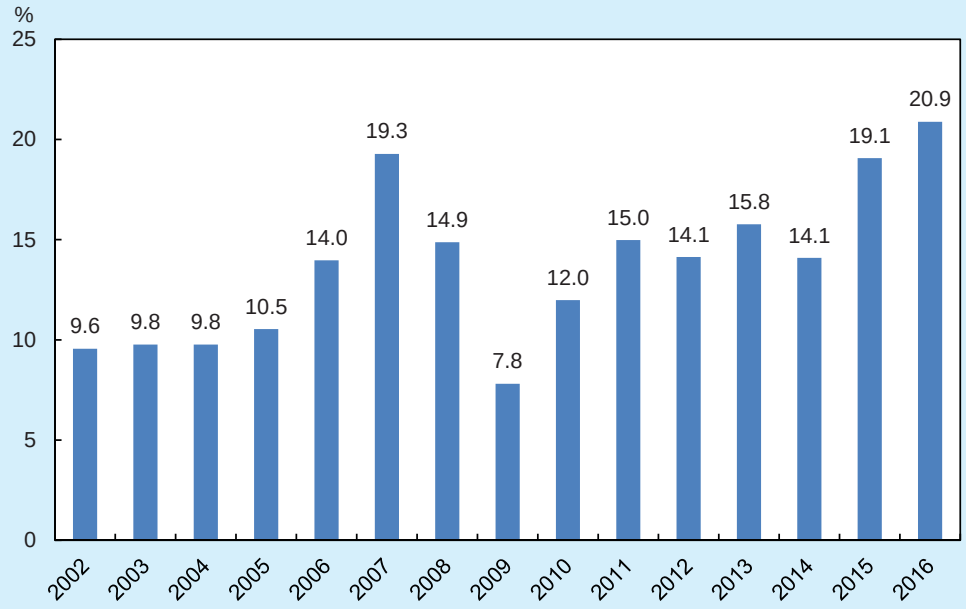
Since the beginning of 2009, the unemployment rate in Israel has declined almost constantly. Since 2014, the job vacancy rate has increased in parallel. We therefore see a leftward and upward movement on the Beveridge Curve—the curve representing the link between these variables and reflecting the state of the labor market (Figure 5.1). During this period, the number of companies reporting difficulty in recruiting workers has also increased (Figure 5.2), among other things because the increase in the supply of workers has slowed due to moderation in the increase in the labor force participation rate in the primary working ages. Moreover, in 2016, the number of work hours per employee increased by about 1.5 percent, after having declined

Figure 5.1
Unemployment in the Prime Working Age Range (25–64) and Job Vacancy Rate in the Business Sector, 2009–16 (seasonally adjusted quarterly data)



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

Figure 5.2
Rate of Companies That Reported A Serious or Very Serious Limitation in Hiring Professional Workers, 2002–16



SOURCE: Based on the Bank of Israel Companies Survey.

over a number of years and remaining stable in 2015. The number of employed persons increased by 2.2 percent in 2016, similar to the pace of the previous year, and slightly lower than the pace that had characterized its growth since the beginning of the decade. As a result of these processes, wages as a share of GDP increased this year following years of decline.

Wages as a share of GDP increased this year following years of decline.

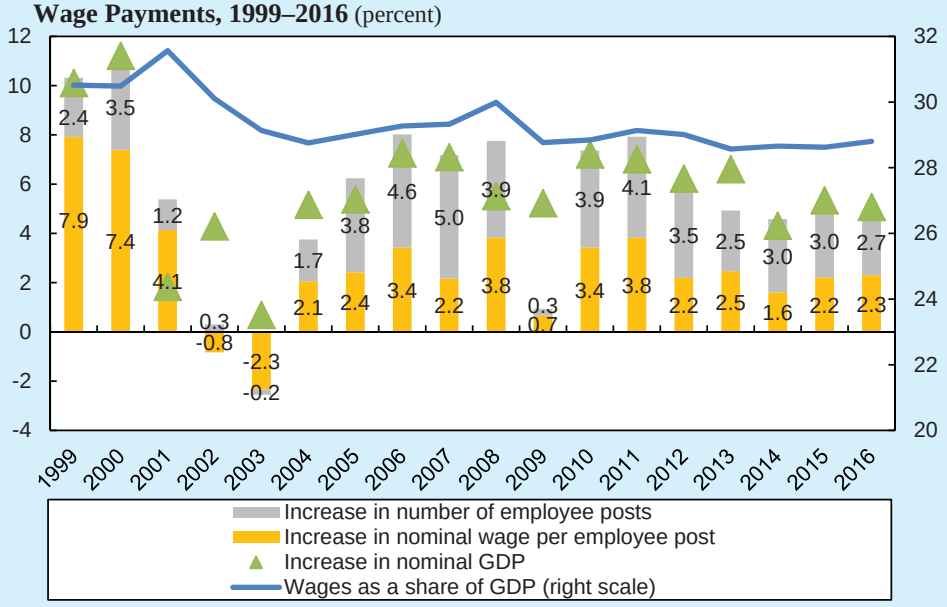
The total nominal wage paid for employee posts in the economy have increased since the beginning of the previous decade at a pace slightly slower than the growth rate of nominal GDP, but during the crisis years of 2002 and 2009, it increased at a much lower rate (Figure 5.3).[1] The number of employee posts increased by about 3 percent since 2013, and the average nominal wage per employee post increased by about 2–2.5 percent per year, similar to, and slightly below, the average of the past 15 years.

Despite the tightening of the labor market, the growth rate of nominal wages has not accelerated.

Despite the tightening of the labor market, the growth rate of nominal wages has not accelerated. In order to try and understand why, we will examine whether this is unusual compared with the past and with other advanced economies. For this purpose, we will focus on the OECD member countries and on the period from 1999 to 2015, and we will use an equation that includes the macroeconomic variables that affect the development of nominal wages—labor productivity, the unemployment

[1] The economy was in recession during those years, and nominal GDP increased due to the increase in the GDP deflator—4.5 percent in 2002 and 3.8 percent in 2009.

Figure 5.3
Change in Nominal GDP, Wages as a Share of GDP, and Contribution of the Change in Wages and of the Number of Positions to the Increase in Total Wage Payments, 1999–2016 (percent)



SOURCE: Based on National Insurance Institute and Central Bureau of Statistics–National Accounts data.

Nominal wages increased moderately due to the decline in the growth rate of GDP per worker, and because the decline in the inflation environment significantly increased real wages from the consumer's standpoint.

rate, and inflation expectations. As we will show, there are two processes that explain the phenomenon: the decline in the inflation environment significantly increased real wages from the standpoint of the consumer, and there was a decline in the growth rate of GDP per worker.

Labor productivity (real GDP per work hour) serves as an accepted estimate of the marginal output of workers over time. Historically, productivity has increased over time as a result of technological improvements, an increase in capital per worker, and an increase in the human capital of workers. Economic theory holds that the employer's ability to raise wages and maintain profitability increases with an increase in output. We would therefore expect that labor productivity and its manufacturer-price-adjusted cost will change over time at a similar rate. There is a similar effect on wages when manufacturers' profitability increases as a result of an increase in goods prices and/or a decline in the cost of other inputs—developments that are reflected in the GDP deflator.

Labor productivity and its cost are expected to change over time at a similar rate.

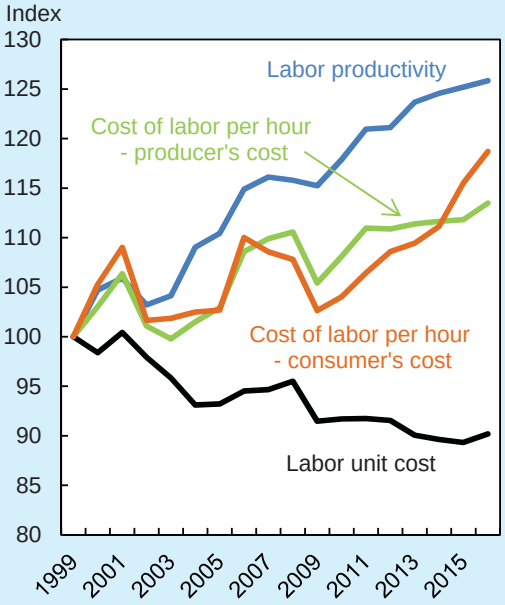
In a competitive labor market, an employer cannot pay an employee less over time than his marginal contribution to output, since in such a case, the worker will prefer to move to an employer that is prepared to pay more. However, in practice, there are sometimes gaps between wage increases and growth in productivity over significant periods, as a result of changes in the supply of workers, developments in the goods market, changes in workers' bargaining power, and policy measures in the labor market (such as lowering the statutory tax on labor, increasing the minimum wage,

and so forth). These may be reflected in changes in the unemployment rate and/or in a lack of workers.

Figure 5.4 shows that since 1999, labor productivity has increased more rapidly than the cost of employment per hour (the total payment for work divided by the number of work hours in the economy—the green line in Figure 5.4).[2] Most of the gap developed because wages declined during crisis periods—between 2001 and 2004 and in 2009[3]—and because in both cases, the productivity path returned to its previous trend line while the cost of employment path did not. These developments show that we must examine other factors, in addition to productivity, that may have had an effect on the short-term development of wages.

Since 1999, output per work hour has increased more rapidly than the cost of employment per hour.

Figure 5.4
Labor Productivity, Cost of Labor per Hour and Labour Unit Cost, 1999–2016



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

Since a gap developed between the productivity path and the cost of labor path, over time the numerator obtained by dividing the cost of labor by productivity—the cost of labor per output unit—declined. The continued decline in this figure is not unique to Israel. A large portion of it is attributed around the world to the process of globalization, which increases the mobility of capital and strengthens competition in the labor and goods markets, and therefore lowers the bargaining power of workers in the advanced economies. In Israel, this comes in addition to the increase in education of the population, the increase in the retirement age, and the decline in transfer payments, all of which led to a significant increase in the supply of labor.[4] There are two other additional factors in Israel. First, the significant tax reduction increased net wages from the consumers' standpoint. Second, in the past two years, consumer prices in Israel have not increased, while the GDP deflator

The continued decline in the cost of labor per output unit is not unique to Israel.

[2] Wages per employee post and the nominal cost per work hour increased at the same rate between 1995 and 2016.

[3] In 2009, wages declined due to the global financial crisis. This decline reflects the elasticity of the Israeli labor market, a characteristic that in that year prevented an outlier increase in the unemployment rate. See Bank of Israel (2012), Recent Economic Developments 132.

[4] Box 2.2 in the Bank of Israel Annual Report for 2007 provides more discussion of the decline in the return on labor in Israel and presents and international comparison.

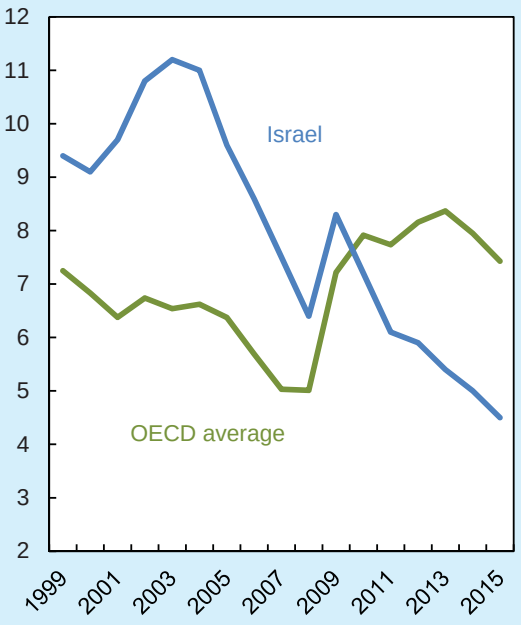
has, which has increased wages from the standpoint of the worker without eroding the profitability of manufacturers (Figure 5.4, orange line).[5]

The unemployment rate serves as an important index of the state of the labor market. When wages are higher than the marginal output of workers—for instance as a result of shocks to productivity, institutional intervention that raises wages, price increases of other inputs, or a cyclical decline in demand—some businesses become unprofitable and cease operations, while others try to again raise their profitability by lowering the number of workers, a process that increases unemployment. Such a situation puts pressure on workers to agree to wage reductions in order to avoid dismissals, and it puts pressure on those who are not working to agree to accept a low wage in order to get a job. In addition, during periods when the number of those joining the labor market increases, a surplus supply of workers (unemployment) may develop, which creates pressure to lower wages since the capital stock is adjusted to the increase through a prolonged process. In contrast, during periods when the unemployment rate is low, the bargaining power of workers increases, and employers who need new workers, or who are interested in maintaining the ones they have, are forced to offer higher wages.

The unemployment rate in Israel is very low compared with the past—as well as compared with other countries, among other things because it increased less during the financial crisis—following years in which the economy suffered from relatively high unemployment (Figure 5.5). Since the unemployment rate in Israel is low, wage pressures currently should be more significant. The econometric model actually shows that in recent years, the low unemployment rate in Israel has been putting upward pressure on wages, and it contributed to the increase in nominal wages in recent years.

From the worker's point of view, **inflation expectations** reflect the expected development

Figure 5.5
The Unemployment Rate in Israel and the OECD, 1999–2015 (percent)



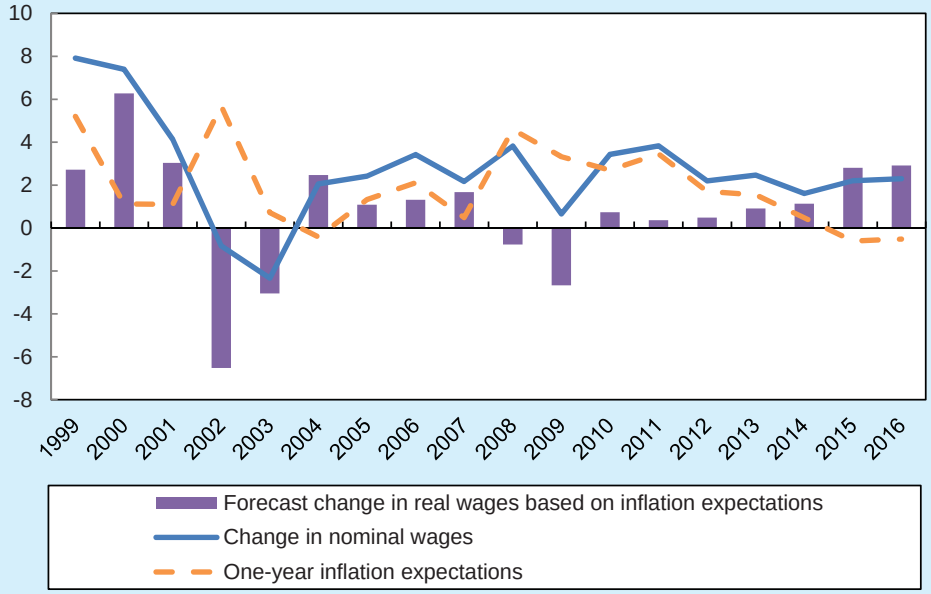
SOURCE: Based on OECD data.

[5] Section 4a provides more discussion of the gap that has developed in recent years between the development of the GDP deflator and the development of consumer prices. See also Figure 1.5.

Since 2012, one-year inflation expectations have developed in a different direction than nominal wages, declining constantly while wages have increased at a stable rate.

in the purchasing power of wages, and from the employer's point of view they approximate the expected price of output. Theoretically, therefore, an increase in inflation expectations leads to workers demanding higher nominal wages and employers being prepared to pay them, assuming that the other variables remain fixed.[6] Short-term inflation expectations in Israel have declined sharply in the past three years, and this factor may therefore partly explain why nominal wages have increased relatively moderately while the labor market tightens. Figure 5.6 shows that since 2012, one-year inflation expectations have developed in a different direction than nominal wages, declining constantly while wages have increased at a stable rate. This gap is reflected in the fact that the increase in real wages, in terms of consumer prices, accelerated in the past two years to rates higher than those seen in all the years since the beginning of the previous decade (Figure 5.6).

Figure 5.6
One-Year Inflation Expectations and the Change in Nominal and Real Wages in Israel, 1999–2016 (percent)



SOURCE: Based on National Insurance Institute and OECD data.

Figures for the OECD countries also show that there is a positive correlation between inflation expectations and nominal wages. As Figure 5.7 shows, since 2011, expectations have declined markedly, while the growth rate of nominal wages slowed to a lesser extent, meaning an acceleration in the change of real wages.

[6] This obviously refers to the correlation between the variables, and not necessarily the identical direction of effect, since the expectations themselves are affected by wages.

Figure 5.7
One-Year Inflation Expectations and the Change in Nominal and Real Wages in the OECD Countries, 1999–2015 (percent)

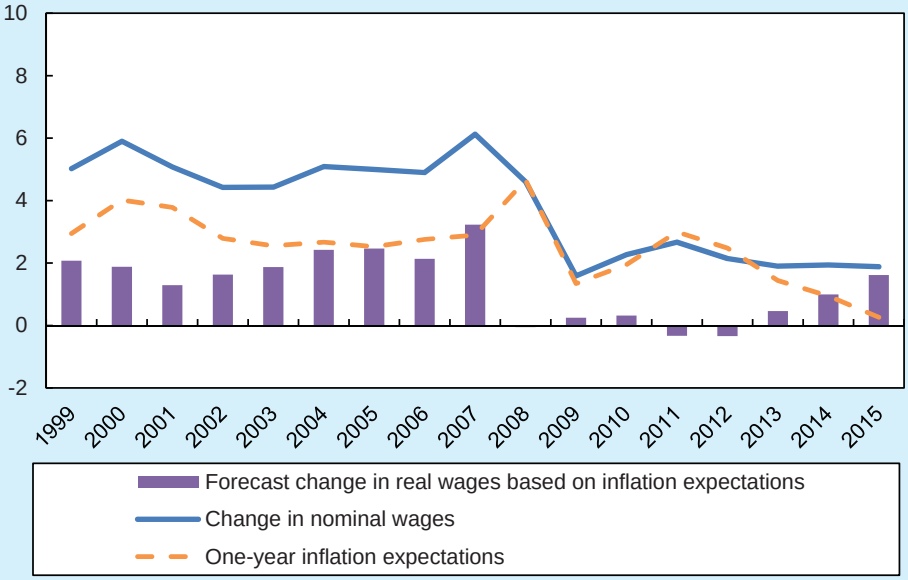


Table 5.1
Contributions to the increase in nominal wages, 1999–2015

	Coefficient	Standard deviation
Unemployment rate	-0.396	0.045
Inflation expectations	0.330	0.068
Change in GDP per worker	0.452	0.034
Number of observations	508	
Number of countries	33	
r-sq (within)	0.517	

SOURCE: Based on OECD data.

A change of 1 percent in nominal GDP per worker is correlated with a nominal increase of about 0.5 percent in wages. When inflation expectations are taken into account, the wage increase is about 0.8 percent.

We estimated the correlation between the annual change in nominal wages and the three variables outlined above—(nominal) GDP per worker, the unemployment rate and inflation expectations—by using panel data on 22 OECD countries between 1999 and 2015. The results of the estimation are presented in Table 5.1, and show that a change of 1 percent in GDP per worker is correlated with an increase of about 0.5 percent in wages. When inflation expectations are taken into account, the elasticity of

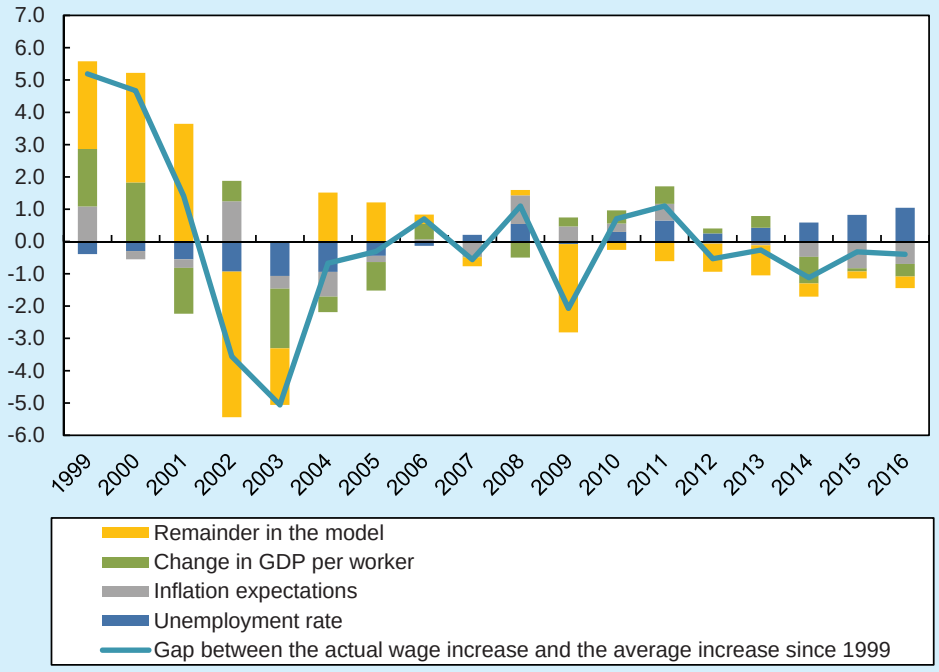
nominal wages relative to nominal GDP is about 0.8 percent.[7] In addition, the results show that, as expected, the rate of increase in wages is negatively correlated with the unemployment rate, and is positively correlated with inflation expectations.[8]

In the past four years, nominal wages have increased at a rate only slightly lower than forecast.

Figure 5.8 shows how nominal wages in Israel changed in practice, and the change predicted by the model. The Figure shows that in the past four years, nominal wages have increased at a rate only slightly lower than forecast according to the other variables in the regression.[9,10] According to the coefficients that were found, the decline in inflation expectations in Israel contributed about -0.3 percentage points to the growth rate of nominal wages in 2014, -0.7 percentage points in 2015, and -0.6 percentage points in 2016. The Figure also shows he contributions made by the low inflation expectations and the change in GDP per worker to the fact that wages in the

In the past three years, the decline in inflation expectations has contributed about -1.6 percentage points to the increase in nominal wages.

Figure 5.8
The Factors in the Gap Between the Annual Increase in Wages and the Average Increase in Wages, 1999–2016



SOURCE: Based on OECD data.

[7] The elasticity is slightly lower than 1, and reflects the decline over time of the cost of labor as a share of GDP.

[8] When we estimated the model relating to the nine countries with similar unemployment rates to Israel (Sweden, Slovenia, Finland, Germany, Australia, Chile, Czech Republic, Canada and Belgium), we obtained results similar to those in the general sample.

[9] A unit root test shows that the remainders in the model are stationary, meaning the model is statistically appropriate for both the full sample and the partial sample.

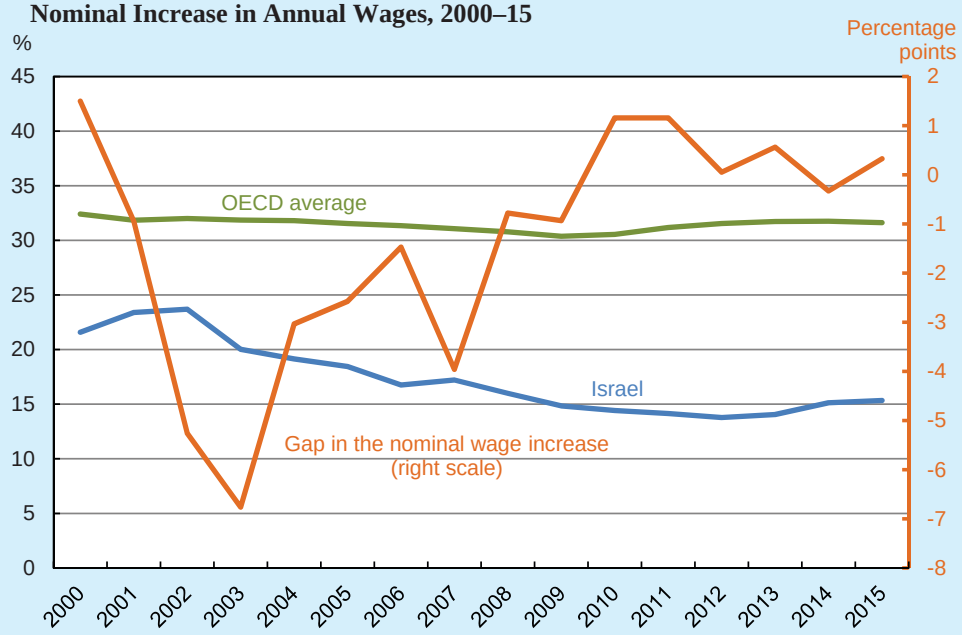
[10] It should be noted that in 2016, wages in the business sector increased by 2.7 percent, in line with the model's forecast, and the wage increases this year moderated wages in the public sector (see discussion below).

past three years did not increase at a rate higher than the multi-year average despite the tight state of the labor market and the low unemployment rate. The Figure also shows that in 2002 and in 2009 actual wages declined more significantly than forecast by the model, and it seems that during the recessions, the bargaining power of workers absorbed a negative impact from which it has not recovered (see also the black line in Figure 5.4).

Wages in Israel are increasing more slowly than wages in the OECD, mainly because nominal GDP per worker in Israel increased more slowly.

The regression shows that if we take into account the development of the variables (GDP per worker, inflation expectations and the unemployment rate) from 1999, we find that the forecast rate of the total increase in nominal wages in Israel is about 6.5 percent lower than in the other OECD members, meaning about 0.4 percent lower per year. In actual, the total gap in the increase is about 27 percent, meaning 1 percent per year (2.8 percent in Israel compared with 3.8 percent in the other countries). This means that the model succeeds in explaining about 40 percent of the gap during the study period between the annual increase of nominal wages in Israel and the annual increase in the other countries. Wages in Israel are increasing more slowly since the increase in nominal GDP per worker is slower (3.1 percent compared with 4.1 percent in the other countries) and inflation expectations are lower. However, the low unemployment rate in Israel led to a higher increase in nominal wages.

Figure 5.9
The Gap Between the Cost of Employment and Net Wages[a] (Wage Wedge) in Israel and the OECD, and the Gap Between Israel and the OECD in the Nominal Increase in Annual Wages, 2000–15



[a] Relates to households with two children and two breadwinners, one of whom earns the average wage and the other earns 67 percent of the average wage.

SOURCE: Based on OECD data.

Since 1999, net wages per employee post increased more rapidly than gross wages.

One of the explanations of the gap in wage increases between Israel and the rest of the OECD in the past decade is that payroll taxes in Israel were reduced significantly since 2003, which increased the net wages of workers even if their gross wages remained static.[11] Net real wages per employee post increased by about 19 percent since 1999—an average of about 1 percent per year—while gross real wages increased by about 13 percent all told—an average of 0.7 percent per year.

Figure 5.9 shows an approximation of the development of taxes—the gap in percent between the employer's cost of employment and the employee's net wage (the wage wedge)—in Israel and in the other countries. Studies in Israel and abroad[12] showed that a reduction of tax rates on wages causes a decline in the growth rate of gross wages, because it is divided between employers and employees in accordance with the bargaining power of each side, and may therefore explain why gross wages in Israel increased more slowly than in other countries between 2003 and 2008 (Figure 5.9 right scale). However, it should be noted that the current estimate did not find a significant statistical correlation between the change in the tax rates and the change in wages.

Box 5.1

The inflation environment and public sector wage agreements

Public sector wage agreements provide an example of the inflation environment's effect on the development of wages. Table 1 breaks down the increase in wages of public administration employees[1] into the increase resulting from wage agreements (the second column from the right) and the increase resulting from wage creep (the third column from the left)—advancement in pay grades and pay scales and/or in tenure. The Table shows that while the pace of nominal wage creep is very stable, around 2 percent per year, there was a slowdown in the increase resulting from wage agreements, which slowed the increase in nominal wages of all workers in public administration (the first column on the left).

[1] A public sector industry that mainly includes employees of government ministries, the police, and the National Insurance Institute—about 120,000 employees.

[11] See Box 6.1 in the Bank of Israel Annual Report for 2010.

[12] Brender and Politzer analyzed how changes in tax rates affect gross wages in Israel, and showed that 65 percent of tax changes reach employees and 35 percent go to employers. See Brender, A. and E. Politzer (2014), "The Effect of Legislated Tax Changes on Tax Revenues in Israel", Discussion Paper 2014.08, Bank of Israel Research Department. Mazar shows that an increase in direct taxes has a short-term negative effect on GDP (Mazar Y. (2013), "Fiscal Policy and its Effect on GDP and its Components", Bank of Israel Review (Hebrew), 87). The decline in GDP, for its part, is reflected in a decline in gross wages. A comprehensive review of the literature and an integrative analysis appear in Gonzales-Paramo, M. and A. Meguizo (2009), "Who Bears Social Security Taxes? A Meta-Analysis Approach", Instituto de Estudios Fiscales, 20/09, and in Fuchs, V.R., A.B. Krueger, and J.M. Poterba (1998), "Economists' Views About Parameters, Values and Policies: Survey Results in Labor and Public Economics", Journal of Economic Literature, 36(3), 1387–1423.

Table 1
Components of the increase in the wages of public administration workers[a], 1999–2015

	A	B	C	B-C=D	B-A=E
Year	Total nominal increase in wages of all workers	Total increase in the wages of persistent workers	Wage creep of persistent workers	Wage agreements (remainder of the change in wages that is not explained by other factors)	The effect of the change in composition (new employees and retirees)
1999	7.17	10.37	2.2	8.1	-3.2
2000	3.49	5.88	1.9	4.0	-2.4
2001	6.20	9.18	2.3	6.8	-3.0
2002	2.57	5.54	2.3	3.2	-3.0
2003	-3.01	-0.17	2.3	-2.5	-2.8
2004	2.02	2.90	2.1	0.8	-0.9
2005	4.92	7.08	2.1	5.0	-2.2
2006	5.79	7.72	2.1	5.6	-1.9
2007	-2.01	3.56	2.0	1.6	-5.6
2008	4.42	7.86	2.0	5.8	-3.4
2009	1.51	1.98	2.0	-0.0	-0.5
2010	3.84	7.21	2.0	5.2	-3.4
2011	4.24	8.04	1.9	6.1	-3.8
2012	4.40	7.17	2.1	5.0	-2.8
2013	5.79	6.05	2.1	3.9	-0.3
2014	2.52	4.86	2.2	2.7	-2.3
2015	0.73	4.26	2.2	2.1	-3.5

[a] An explanation on the structure of this table appears in Mazar Y. (2015), "The Development of Public Sector Wages in Israel and the Links Between It and Private Sector Wages", Bank of Israel Review, 88 (in Hebrew).
SOURCE: Based on MLM data.

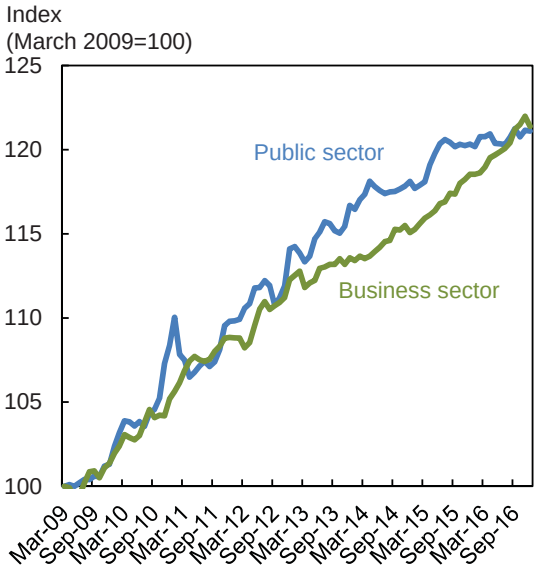
This development shows that the main wage agreement in the public sector—the Framework Agreement through which the wages of public employees are expected to increase by 7.75 percent over 4 years until 2019—is characterized by a nominal path that is moderate compared to past agreements (see details in Table 2). Between 2010 and 2013, framework agreements set an average wage increase of about 2 percent per year (in addition to the wage creep associated with tenure or industry-specific agreements). In 2014, the government and the Histadrut agreed to "skip" the wage increment, and in 2015, they made do with an increase of just 1 percent.[2] The agreement for the coming ye4ars set out that the increment for 2016 would

[2] The increment given to workers in 2015 was basically delayed from the previous year. In June 2013, the government and the Histadrut agreed to delay the 1 percent increment that should have been given in July 2013 to January 2015. According to the logic inherent in an annual salary increment in a framework agreement, the workers should have been paid an additional increment in 2015. The new framework agreement sets out that this increment would be given to the workers as a one-off amount in two installments of NIS 1000 each, and would not be included in the base wage.

be 1 percent and would be paid only from July, the increment for 2017 would be given in September and would be 1.75 percent, the increment for 2018 would be paid in June (1.5 percent) and in December (1.75 percent), and the final increment would be paid in June 2019 (1.75 percent). It seems, therefore, that the agreements were based on an assessment that the inflation environment is very low, wage creep already grants a real wage increment, and more moderate increments are sufficient.

The lower wage agreements led in 2016 to stability in nominal wages in the public sector[3], and the economy-wide increase in the nominal wage reflected an increase in the nominal wage in the business sector. If we take into account a slightly longer time frame, we find that between 2009 and 2013, wages in the two sectors moved at a similar pace. Between 2013 and 2015, it increased more slowly in the business sector due to the rapid increase in the supply of labor in the economy, and since 2015, it has been increasing more rapidly in the business sector due to the significant increase in demand for workers[4] (Figure 1).[5]

Figure 1
Development of Nominal Wages[a] in the Business Sector and in the Public Sector, 2009–16



[a] Three-month moving average.

SOURCE: Based on Central Bureau of Statistics and National Insurance Institute.

[3] The public sector includes some 600,000 employee posts. In contrast, the public services also includes the positions of workers in the business sector.

[4] This is reflected, as stated, in the upward movement of the Beveridge Curve. See Figure 5.1.

[5] Mazar showed that since the beginning of the previous decade, wages in the two sectors move together and affect each other, but in the 1990s wages in the public sector led the development of wages in the economy. Mazar, Y. (2015), "The Development of Wages in the Public Sector and their Connection with Wages in the Private Sector", Discussion Paper 2014.03, Bank of Israel Research Department.

Table 2
The large wage agreements (framework agreements) signed in the public sector, 2010–19

Covering the years	Annual increment	Actual inflation or inflation expected by the market	Comments
2010–13	2% per year on average	About 2.1% per year on average	In addition to the continued implementation of the significant wage agreements in the Ministries of Health and Education
2014	0	-0.20%	
2015	1%	-1.00%	Starting in July, and in addition to a one-time grant of NIS 1000 given in January that was not included in the base wage.
2016	1%	-0.20%	Starting in September, and in addition to a one-time grant of NIS 1000 given in January that was not included in the base wage.
2017	1.75%	0.30%	Starting in March
2018	1.50%	0.75%	Starting in July
2018	1.75%	0.75%	Starting in December
2019	1.75%	1.40%	Starting in June

SOURCE: Based on Ministry of Finance Wage Department.

2. THE DEVELOPMENT OOMINAL WAGES AND EMPLOYMENT IN THE PRIMARY INDUSTRIES

The development of wages and employment in the various industries is a result of processes in the labor market and in the goods market. Theoretically, an increase in demand for certain goods and services leads to an increase in demand for workers in the industries that supply those goods and services. This is reflected in an increase in the number of employed persons, and during a shortage of workers, in an increase in the number of job vacancies. The increase in demand for workers leads to an economy-wide increase in the wages of workers relevant to those industries, since workers in other industries can move to the industries where demand for their output is higher, and enjoy the increased wages.

There were nominal wage increases and increases in the number of positions and the number of employed persons in almost all industries in recent years, and the job vacancy rate increased markedly in most professions.

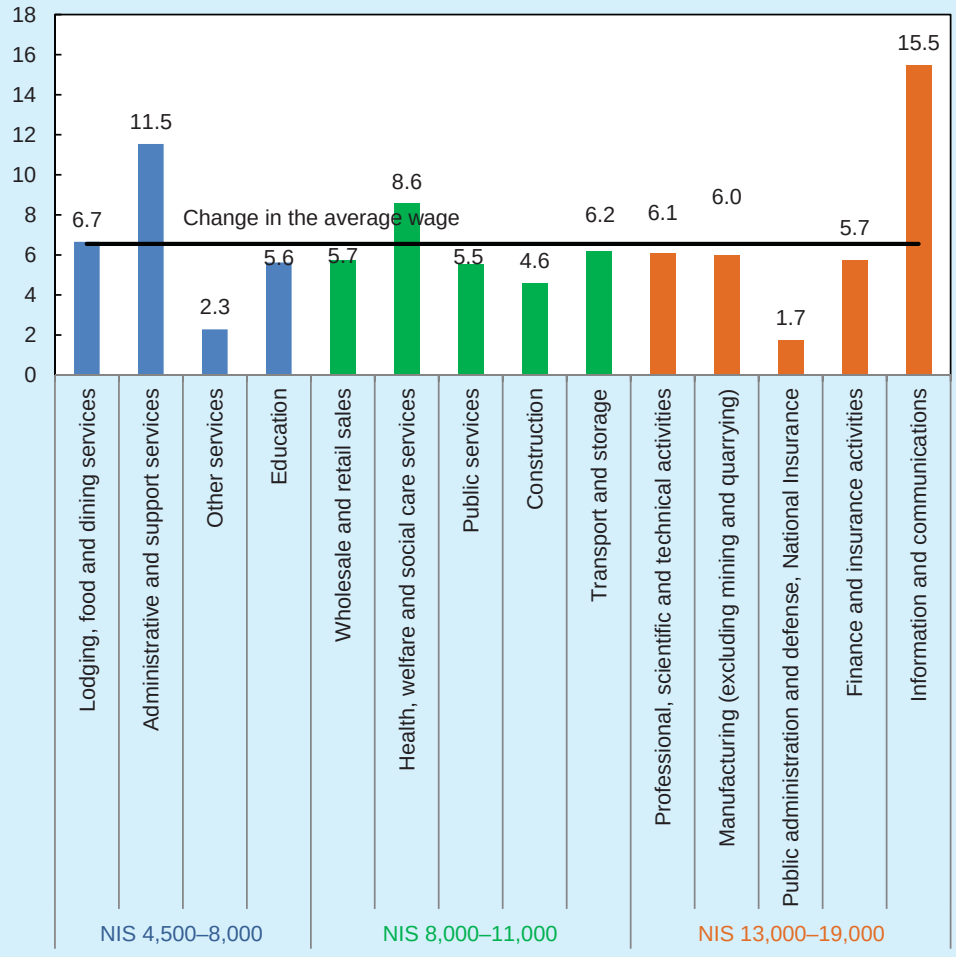
Contrary to the increase in demand in a specific industry, an increase in demand in wide variety of industries and professions indicates a broad increase in demand in the economy. In order to more precisely specify these forces, we examine how wages, employment and the job vacancy rate developed in the various industries.[13] As we show below, there were nominal wage increases and increases in the number of positions and the number of employed persons in all industries in recent years, and the

[13] Using National Insurance Institute data regarding employee wages, and using Central Bureau of Statistics Expenditure Surveys and Labor Force Surveys.

job vacancy rate increased markedly in most professions. As such, there was a broad increase in demand in the economy.

Figure 5.10 ranks a number of main industries by the level of nominal wages in those industries, and shows the change in the past four years.[14] The Figure shows that nominal wages have increased since 2013 in all industries, and that in most industries they have increased in quite similar fashion. It also shows that wages increased to a greater extent in 2 industries: Administrative and Support Services (about 8.5 percent of positions in the economy), an industry that is characterized by relatively low wages, and information and communications (about 5 percent of positions in the economy),

Figure 5.10
The Increase in Nominal Wages in Main Industries, 2013–16 (percent)



SOURCE: Based on National Insurance Institute.

[14] These industries include about 97 percent of total employee posts in the economy.

which is characterized by high human capital and wages. However, it seems that in this latter industry, the increase was not due to an excessive wage increase, but rather to a change in the composition of workers.[15]

As with wages, the number of employee posts grew in recent years in all industries (the horizontal scale in Figure 5.11), other than the manufacturing industry. However, as opposed to the growth rates of wages, the growth rates in this case showed a relatively broad distribution. The domestic services, industries characterized by low wages, are particularly prominent in this regard, since the number of positions in those industries increased more rapidly. The commerce and public services industries[16] are similar to the average in the other industries, both in terms of the increase in wages and in terms of the increase in the number of positions.

An analysis by the number of positions shows that the change in the distribution of workers between the industries contributes relatively little to explaining the development of wages in the past four years.

An analysis by the number of positions shows that the change in the distribution of workers between the industries contributes relatively little to explaining the development of wages in the past four years (2013–2016). We conducted a simulation with the aim of examining how wages would have changed had the composition of the industries not changed, and we found that the average nominal wage would have increased by 6.9 percent compared with the actual increase of 6.2 percent. Using the Expenditure Surveys to examine how employee qualities affected the distribution of nominal wages per hour between 2012 and 2015, we found that the increase in years of schooling contributed to an increase of 1.5 percentage points out of about 9.5 percent in wages. In contrast, the increase in the rate of women, ultra-Orthodox and Arabs in the workforce and the distribution of the workers' ages contributed -0.6 percentage points.

Figure 5.11 and the industry analysis also show that there is no significant statistical connection between the change in the number of employee posts and the development of wages per employee post by industry, meaning that workers are moving between industries.

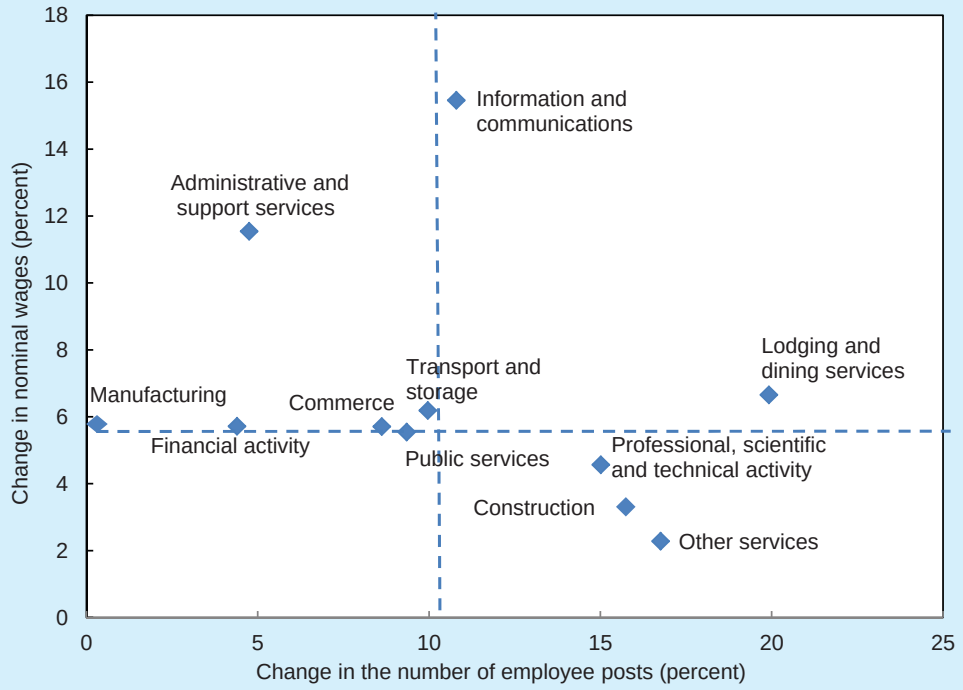
The number of positions increased particularly in the domestic services, industries that are characterized by low wages.

The increase in wages in industries characterized by low wages is apparently mainly a result of an increase in demand for their services. Wages in these industries increased, the number of employee posts increased more rapidly than the average in

[15] When conducting the analysis with detailed figures from the Labor Force Survey, we find that the number of workers in the information industry increased by more than one-third, while in the communication industry it declined by about 20 percent. The decline is mostly explained by a decline in positions that typically pay low wages (for instance, the number of salespeople in the industry declined to half of what it was in 2012), since the number of workers with academic professions declined by 10-15 percent and the number of technological practical engineers even increased. In contrast, the number of workers in the information industry increased in all professions.

[16] The public industries include about 1.2 million positions. Wages in the public industries increased slightly in recent years as a share of total wage payments, from 26.5 percent to 27.1 percent, due to the rapid growth in the number of positions in the education industry and wages in the healthcare industry. These represent the growth in domestic demand for these services, and to a certain extent also represent government policy. The public services also include the public sector itself, about 600,000 positions. Between 2012 and 2016, there was no change in the number of employee posts in the public sector as a share of the total number of positions in the economy—it remained at about 17 percent. There was also no change in wages payments in the public sector as a share of total wage payments per employee post.

Figure 5.11
Change in Nominal Wages and in the Number of Employee Posts[a], 2013–16



[a] The horizontal broken line represents the median change in nominal wages, and the vertical line represents the median change in the number of employee posts.

SOURCE: Based on National Insurance Institute.

the economy, and the job vacancy rate increased among professions characterized by low wages (Table 5.2). Since these industries were not characterized by an increase in workers' education (increased human capital), this does not explain the rapid increase in their wages. In other words, in these industries, the increased demand exceeded the increase in supply. This is almost certainly a result, to a great extent, of the rapid increase in private consumptions (see Chapter 2). It seems that the agreement concerning the increase in the minimum wage reached between the Histadrut and the employers, and which was expanded to the entire economy after the government adopted it, entrenched these trends and did not serve as a main cause of them. The minimum wage itself increased significantly in nominal terms in the past three years—by about 10 percent (about 12 percent adjusted for consumer prices), compared with about 11.5 percent (and about 5.8 percent in real terms) in the three years between 2010 and 2013, and with about 5 percent (about -5 percent in real terms, meaning erosion) between 2007 and 2010.

The minimum wage adjusted for the Consumer Price Index increased significantly in the past three years.

Table 5.2
Job vacancy rate by profession, increase in job vacancies, and increase in total demand for workers, 2013–16

		Job vacancy rate (percent)				Difference in percentage points	Total increase in demand for workers - Job vacancies and employed people (percent)	Number of job vacancies, 2016
		2013	2014	2015	2016	2013–2016	2013–2016	
Holders of academic professions		1.31	1.19	1.51	1.57	0.26	15.7	14,722
Holders of academic professions	Technological	3.28	3.29	4.30	4.78	1.50	28.4	5,856
Holders of academic professions	Engineering and information	2.05	1.99	2.35	2.42	0.36	14.8	3,469
Holders of academic professions	Business and management	1.12	1.16	1.27	1.66	0.55	24.2	1,390
Sales and service workers		2.97	3.32	3.89	4.51	1.53	5.4	30,724
Managers		0.49	0.36	0.45	0.52	0.02	14.7	2,045
Practical engineers, technicians, agents, and peripheral professions		1.52	1.24	1.46	1.67	0.15	-1.0	8,163
General clerks and office workers		1.47	1.68	2.25	2.50	1.04	-10.6	6,446
Non-professional workers		2.82	2.82	3.72	4.53	1.71	10.1	9,888
Professional workers in manufacturing		2.82	2.88	3.68	4.48	1.66	2.5	22,032
Unknown profession		0.69	0.64	0.59	0.88	0.19	12.7	2,018
Total		1.87	1.97	2.32	2.66	0.79	12.4	96,999

Source: Based on Central Bureau of Statistics.

Figure 5.12
Developments in the Manufacturing Industry, 2013–16 (Index: 2013=1)

SOURCE: Bank of Israel.

The foregoing analysis shows that the increases in wages and in demand for workers took place broadly across the economy, and were not restricted to certain groups of industries or professions. Table 5.3 clarifies that demand for workers—as well as the lack of them, a phenomenon that is reflected in the increasing job vacancy rate)—increased in almost all professions, whether blue collar or white collar.

Breaking down the development of manufacturing wages and employment by technological intensity[17], we find that the number of employee posts increased slowly in all sub-industries, and even declined in high technology, while wages increased markedly (Figure 5.12). This combination may indicate that the manufacturing industry—which is mostly a tradable industry—is having difficulty competing for workers in the domestic market because their alternative wages in other industries

[17] High, mixed-high, mixed-low and low technology.

Table 5.3
Number of engineers aged 30–54 in the main industries, 2012–15

Year	Manufacturing and production	Construction	Information and communications	Professional, scientific and technical services	Total
	Number of workers				
2012	22,088	1,746	2,797	26,325	52,956
2013	22,581	2,613	3,541	28,894	57,629
2014	22,842	2,761	2,542	30,251	58,396
2015	23,573	2,431	2,728	33,144	61,876
Rate of change	7%	39%	-2%	26%	17%

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

Demand for workers—as well as the lack of them—increased in almost all professions. The number of engineers has grown, particularly in the professional services industry, while it has grown only moderately in the manufacturing industry.

increased. This is particularly prominent in the high technology manufacturing industries, where competition with the advanced services industries may have pushed wages upward and made it possible for them to keep their workers. These hypotheses are supported by the evidence in Table 5.3, which shows the number of engineers in the various industries since 2012, and shows that the overall number of engineers has grown, and that this is particularly the case in the professional services industry, while it has grown only moderately in the manufacturing industry.