Chapter 5
The Labor Market

The minimum wage in Israel

- The minimum wage in Israel will be raised three times during the next two years: in April 2015 to NIS 4,650; in July 2016 to NIS 4,825 and in January 2017 to NIS 5,000.
- Countries set a minimum wage in order to enable workers at the bottom of the wage scale to earn a reasonable income, in order to reduce poverty and inequality—with a focus on households that include wage earners—and in order to prevent employers from abusing monopsonistic power.
- There are several sectors of the population that are overrepresented among workers who earn the minimum wage, including women, the young, workers with a low level of education, residents of the periphery and minorities.
- A large proportion of low wage earners are in occupations that do not require a high level of education and they tend to be employed in industries that are intensive in unskilled labor.
- A large proportion of those earning the minimum wage belong to households whose income is around the median of the income distribution. In contrast, a large proportion of those receiving the negative income tax belong to the lowest deciles and only a small proportion of them belong to households whose income is around the median. Therefore, when both options involve a similar addition to income, an increase in the amount granted through a negative income tax would probably result in a greater reduction of poverty and inequality than a minimum wage increase.

Raising the age of retirement and its effect on income

- Raising the age of retirement deferred the age of eligibility for the old age pension and employment-related pensions. When one examines the changes that have occurred after the raising of the retirement age, on the income of the older population that was influenced by the change, it is found that the number of employees rose, as did wages. However, total income rose among high-earning workers and declined among groups that have trouble finding and maintaining employment at an older age.
- Since these effects are expected to reappear when it is decided to again raise the age of retirement, it is worthwhile making the decision ahead of its actual implementation so that the increase can be gradual, thus enabling employers and workers to prepare.

Expansion of Palestinian employment in Israel and its characteristics

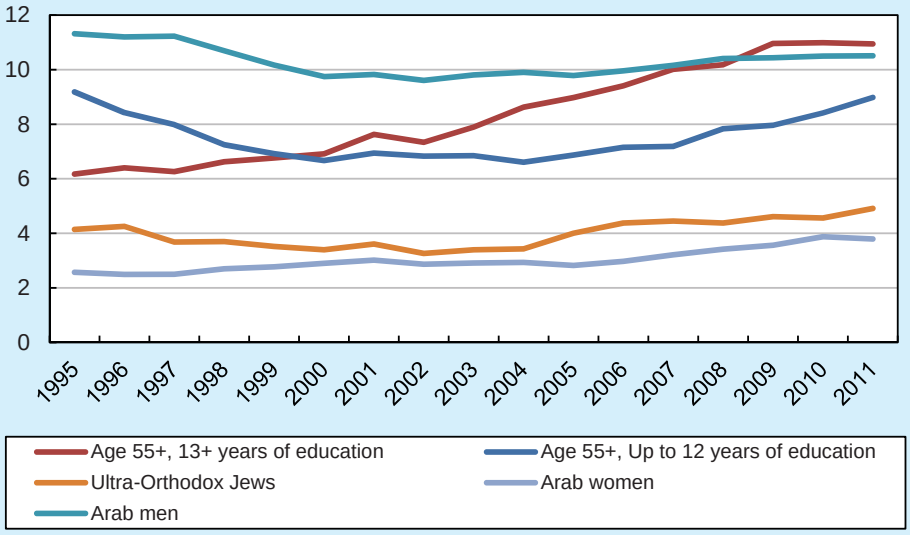
- In the past four years, the number of Palestinians residing in the West Bank and working in the Israeli economy has doubled, reaching around 92,000 in 2014. This increase includes both workers with a permit and those without a permit.
- The number of employee posts filled by Palestinians in the construction industry doubled in the past two years, reaching about 15.3 percent of employee posts in the industry. This increase accounts for most of the growth in employment in the industry, as the number of posts held by Israeli and foreign workers was virtually unchanged.
- Alongside the marked increase in the number of legal Palestinian workers, the stability and availability of their employment increased as well. This contributes to the efficiency in industries employing them, and diminishes one of the advantages that foreign workers held over Palestinian workers in the past decade.

INTRODUCTION

During the last decade, there has been a major improvement in the integration into the labor market of population groups that were characterized by low participation rates in the past. Thus, there is a continued uptrend in participation rates of women, particularly Arab and ultra-Orthodox women; the decline in the participation rate among men, particularly Arab and ultra-Orthodox men, has come to a halt; and the participation rates and employment rates among older individuals, in particular those with a high level of education, have grown markedly. As a result, the composition of the labor market in Israel has changed—the shares of these groups in the labor force and in employment have increased significantly (Figure 5.1). This has occurred simultaneously with the increase in the average education level of the workforce and against the background of a significant cut in allowances.

A significant proportion of the increase in the supply of labor originated in population groups with relatively low earning capacity and who face unique barriers in the labor market. The increase in the participation rate has many positive ramifications but the shift in the composition of the labor supply has presented several challenges to policy makers. These populations have trouble finding jobs at a suitable wage and their entry into the labor market has macroeconomic implications, which include reduced occupational stability, an increase in the proportion of the working poor and a decline in labor productivity, due both to the entry of populations with a low level

Figure 5.1
Composition of Employment: The Share of Groups Whose Integration into the Labor Market Should be Supported, out of all Employed Persons, 1995–2011



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

of education and to the reduced incentives for workers to invest in the development of human capital and for employers to invest in physical capital.

These challenges were exacerbated by the fact that Palestinian workers—both legal and illegal—have increasingly found employment in Israel in recent years, particularly in the construction industry, as this is liable to reduce the wages of Israelis with a low level of education. This occurs because employers can rely on the alternative provided by Palestinian workers and as a result have less incentive to raise wages and invest in Israeli workers.

In order to deal with these challenges, a policy tool is needed that will improve the situation of the aforementioned groups of workers and will at the same time raise their productivity. First, the policy measures that are intended to increase the labor supply of these groups should be accompanied by measures that will support their employment, such as incentives to employ workers who face unique barriers in the labor market (individuals who belong to minority groups, older individuals and individuals with a low level of education). Similarly, the policy measures should be backed up by effective enforcement of the labor laws and in particular the laws that deal with discrimination. Furthermore, the enforcement of these laws should be applied to all employees in the economy, including non-Israelis. Second, there is a need to create tools that will increase the productivity of these workers and will improve their earning capacity, in both the long and short term, by allocating resources to vocational training, among other measures.

Against this background, this chapter deals with three labor market issues: (1) the minimum wage; (2) the raising of the retirement age—its effect on the income distribution among the older population to whom the law applies and the need to provide employment support for older individuals who have difficulty assimilating into the labor market; and (3) the expansion of Palestinian employment in Israel and the characteristics of these workers.

1. THE MINIMUM WAGE IN ISRAEL

Starting from April 2015, the minimum wage will be raised in three stages.

In January 2015, the Minimum Wage Law was amended, in accordance with the agreement signed between the Histadrut (National Federation of Labor in Israel) and employers. According to the amendment, the minimum wage will be raised in three stages in coming years: in April 2015 to NIS 4,650; in July 2016 to NIS 4,825; and in January 2017 to NIS 5,000.[1] The amendment of the law will not apply to those workers in the public sector who are eligible for a wage supplement according to previous agreements even though their overall wage is much higher than the minimum.[2]

[1] In April 2016, the minimum wage will be revised to 47.5 percent of the average wage or will remain at NIS 4,650, the higher of the two.

[2] Details appear in: "Minimum Wage (Raising the level of the minimum wage – temporary order) Law, 5775-2015". An explanation of the effects on the wages of public sector workers appears in: "Description and Analysis of the Minimum Wage Bill (Raising the Level of the Minimum Wage – temporary order) 5775-2015", the Knesset Research and Information Center.

The discussion of the minimum wage increase again raised the issue of low-paid workers. The interest of researchers in these workers, and in the policies that are needed to improve their situation, has grown in recent years, in parallel with the widening of income and wage gaps in most advanced economies. Some of the policy measures can raise wages indirectly, by increasing workers' marginal product, or earning capacity. The most prominent of these measures belong to the category known as active labor market policies (ALMP) and they include, among others, placement services and vocational training. Other policy measures contribute directly to an increase of wages. Among these are employment subsidization, such as negative income tax, and the minimum wage.

The obligation to pay a minimum wage exists in one form or another in most advanced economies and also in many of the developing countries and emerging market economies.[3] Countries adopt a minimum wage in order to allow workers who are at the bottom of the wage scale to earn a reasonable income and in order to reduce poverty and inequality, focusing on households that include wage earners. Although this policy tool has been dealt with at length in the economic literature, there is still no consensus as to the extent of its effect on various economic indicators and in some cases even the direction of its influence. The most debated point involves the effect on employment among populations with low earning capacity (whose expected wage is low, as are their chances of finding a job). Other important questions relate to its effects (and the effects of changes in it) on wages, labor productivity, the incentives of workers and employers to invest in human and physical capital, economic and social mobility and also on more general indicators, such as inequality and poverty. The discussion of the minimum wage and low wage earners is too broad to be presented here in detail, and therefore will only be presented along general lines.

a. The history of the minimum wage in Israel

The Minimum Wage Law went into effect in April 1987 and replaced the collective agreements that had determined the minimum wage in Israel since 1972. At that time, it was decided that the minimum wage would be equal to 39 percent of the average wage in the economy[4] and through April 1988 this was gradually raised to 45 percent. In April 1997, a number of changes were introduced into the law, according to which the minimum wage was raised to 47.5 percent of the average wage in the economy, the number of work hours per full-time position was reduced to 186 and the mechanism

[3] A report by the ILO (International Labor Organization) provides a detailed survey of minimum wage policy among the organization's members: "Minimum Wage Systems" ILO (2014). http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_235287.pdf.

[4] The minimum wage is calculated using the average wage per employee post, as calculated by the Central Bureau of Statistics based on the figures of the National Insurance Institute. The calculation does not take into account part-time positions or individuals who hold more than one job. Therefore, the minimum wage per full-time position is essentially determined relative to the average wage per employee post, which is less than full time.

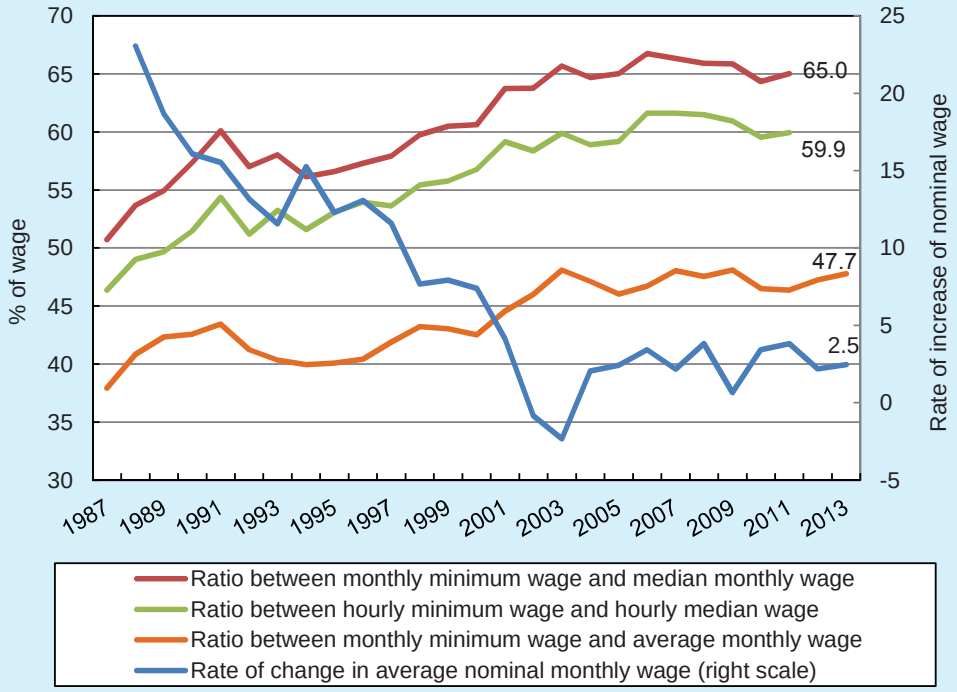
for its updating was changed (such that the minimum wage is changed annually in accordance with the average wage).[5]

During the period in which the Minimum Wage Law came into effect, the nominal wage rose at a particularly rapid pace. As a result and because the minimum wage is updated only once annually, during this period it eroded with respect to the average wage and did not reach the level determined by law, i.e., 47.5 percent (Figure 5.2). As the rate of increase in the average wage leveled off due to the convergence of the economy to price stability at the beginning of the previous decade, the rate at which the minimum wage eroded with respect to the average wage slowed, and since 2003 it has been close to the rate specified by law.

Indexing the minimum wage to the average wage in the economy is likely to encourage employers to become more efficient. However, it may also expose minimum wage earners to employment shocks.

There is a debate regarding the appropriate updating mechanism that should be applied to the minimum wage. The advantage of updating the minimum wage on the basis of changes in average wage is that the wages of individuals at the bottom

Figure 5.2
Development of Minimum Wage and Average Wage, 1987–2013



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

[5] Until then, the minimum wage was changed once every two years according to the average wage and once every two years according to the CPI. It should be noted that since 2006, the minimum wage has almost not been updated according to the automatic mechanism (apart from an increase of NIS 10 in April 2011) but rather according to temporary orders—agreements signed between the Histadrut and the representatives of the employers, and then extended to the entire economy by extension orders and introduced as amendments to the law.

of the wage scale are updated according to the rise in the standard of living and the productivity of all workers. There are normative reasons for adopting this type of linkage, i.e., the desire to reduce inequality and poverty among workers, but there is also an economic justification—linking the minimum wage to an increase in average productivity in the economy may encourage employers to increase their efficiency and to work towards increasing the productivity of their workers (by investing in human and physical capital) rather than continuing to rely on cheap labor. Yet at the same time, indexation to the average wage exposes minimum wage earners to wage shocks even when the increase in the average wage reflects an unusual wage increase in specific industries or occupations. Because the productivity of low-paid workers does not rise in such situations in line with the increase in wages, the risk to their employment increases. An example can be seen in the developments during the late 1990s and early 2000s when the wages of skilled workers in the high tech industries increased significantly within a short period of time. This resulted in a rapid increase in the average wage and the minimum wage increased accordingly. Since the economy at that time was characterized by high rates of unemployment, particularly among individuals with a low level of education, the jobs of minimum wage earners were put at risk. This is a minor risk in the case of the current increase in the minimum wage, because the unemployment rate is relatively low at the moment and the ratio of the minimum wage to the average wage is not being raised.

b. Who earns the minimum wage?[6]

The hourly wage of about one-quarter of all employees in Israel in 2012 (about 640,000 individuals) was similar to or less than the minimum wage.[7] A number of groups are overrepresented among low wage earners, including women, the young, individuals with a low level of education, residents of the periphery and minorities (Table 5.1) Israel is similar to other OECD countries from that perspective.[8]

[6] The minimum wage in Israel has been about 65 percent of the median wage during the past decade (the minimum hourly wage is about 60 percent of the median hourly wage) and therefore there is a large overlap between minimum wage earners and low wage earners (those whose wage is up to two-thirds of the median wage; the calculation is generally made according to the hourly wage or according to the wage per full time position). The data and analysis that relate to minimum wage earners is therefore very similar to those relating to low wage earners.

[7] From October 2012 until March 2015, the minimum wage was NIS 4,300 per month and NIS 23.12 per hour. From January until September 2012 it was NIS 4,100 per month and NIS 22 per hour. Therefore the average minimum wage in 2012 was NIS 22.85 per hour. About 9 percent of male workers and about 17 percent of female workers earned less than NIS 20.50 per hour in 2012 (which is about 90 percent of the legal minimum hourly wage). This high proportion is evidence either of the low level of compliance with the law or of inaccurate reporting, i.e., wages are higher than reported and/or the number of hours worked is less than reported. In our calculations, we reduced the extent of the problem by omitting outlying observations of reported work hours (more than 100 hours per week).

[8] A survey of studies on low wage earners appears in Grimshaw, D. (2011), "What do we know about low wage work and low wage workers?: Analyzing the definitions, patterns, causes and consequences" in International Perspective, ILO.

Table 5.1
Demographic characteristics of individuals who earn up to the minimum hourly wage, 2012[a]

		Minimum-wage earners			All salaried employees			Results of logistic regression	
		Men	Women	Total	Men	Women	Total	Men	Women
Total (thousands)		262	378	640	1,393	1,316	2,709		
of which: live in a poor household (thousands)		67.6	79.1	146.7	144.1	119.9	264.0		
Incidence of poverty among households where the head of household or spouse earns minimum wage				27.0					
		Share among minimum wage earners (percent)			Minimum-wage earners as a share of the group (percent)			Ratio of the probability of earning minimum wage[b]	
Age	15–24	25.8	22.8	24.0	46.8	55.4	51.3	4.6	4.5
	25–34	28.4	28.3	28.3	19.4	29.9	24.5	1.5	1.7
	35–44	17.0	19.4	18.4	12.6	22.5	17.4	*	*
	45–54	12.3	15.8	14.3	13.0	23.2	18.2	0.9	0.7
	55–64	11.6	10.4	10.9	14.9	21.1	17.8	1.1	0.6
	65–74	4.4	2.9	3.5	21.4	36.1	26.7	1.7	1.6
	75 and over	0.6	0.3	0.4	18.6	35.7	23.2	1.2	2.7
Total		100.0	100.0	100.0					
Education (years of schooling)	Up to 8	8.1	5.0	6.3	32.8	54.7	40.4	1.4	1.4
	8–10	13.0	6.7	9.3	31.0	48.4	36.6	1.3	1.2
	11–12	44.1	45.5	44.9	24.0	41.6	32.1	*	
	13–15	18.7	24.4	22.1	14.7	25.9	20.5	0.9	0.6
	16 and over	16.1	18.3	17.4	10.4	15.0	12.9	0.8	0.4
	of which: Non-ultra-Orthodox Jews	70.1	79.3	75.8	8.4	13.8	11.3	*	*
Total		100.0	100.0	100.0					
Population groups	Non-ultra-Orthodox Jews	69.9	84.5	78.5	16.2	27.4	21.9	*	*
	Arabs	26.5	10.2	16.9	30.8	42.0	34.1	1.2	3.4
	Ultra-Orthodox Jews	3.7	5.3	4.6	27.6	32.8	30.9	2.9	1.4
Total		100.0	100.0	100.0					
Residential district	Jerusalem	13.3	8.4	10.4	27.8	28.2	28.0	1.1	1.3
	North	23.2	17.1	19.6	26.2	40.5	32.0	1.5	2.9
	Haifa	12.4	13.5	13.0	18.7	31.3	24.8	1.2	2.0
	Center	19.6	23.3	21.8	13.7	23.6	18.6	0.8	1.3
	Tel Aviv	14.3	16.5	15.6	14.6	22.2	18.6	*	*
	South	14.9	17.9	16.6	21.4	38.8	29.9	1.2	2.3
	Judea and Samaria	2.3	3.4	3.0	12.9	23.5	18.6	0.6	1.2
Total		100.0	100.0	100.0					

[a] Minimum wage earners were identified by their hourly wage—lower than 110 percent of the hourly minimum wage. Observations in which individuals reported more than 100 work hours were deleted.
[b] The ratio of the probabilties of earning minmum wage was calculated by a logistic regression where the dependent variable is earning minimum wage. This variable obtains a value of 1 if the individual earns minimum wage, and a value of 0 if the individual earns more than minimum wage. The regression was run for men and women separately. The explanatory variables are: age, education, belonging to a certain population group, residential district, the industry in which the individual is employed, and the individual's profession. We also added interaction variables between Arabs and residential district, between ultra-Orthodox Jews and the Jerusalem district, between ultra-Orthodox Jews and the Center district, between ultra-Orthodox Jews and levels of education, and between someone aged 15–24 and education levels. An asterisk represents the base status, meaning we calculated the probability ratio compared to a professional worker in the manufacturing industry aged 35–44, with 11–12 years of schooling, who is a non-ultra-Orthodox Jew living in the Tel Aviv district.
SOURCE: Based on Central Bureau of Statistics Household Expenditure Survey.

There are groups in the population in which a large proportion of workers earn the minimum wage. In most cases, this results from a combination of characteristics that reduce earning capacity. Thus, for example, more than half of young workers (aged 15 to 24) earn the minimum wage or less. Although this group has little work experience (the age effect) and has not yet completed their education (the education effect), it also includes a relatively high proportion of individuals with unobservable characteristics (such as ability and preferences) which adversely affects their earning capacity. Specifically, a large proportion of the younger population attends high school or is studying in academic institutions (and therefore their rate of employment is relatively low). Those that choose to work usually have low earning capacity relative to those that study and this is also true for their employment horizons. Other sectors in which a large proportion of workers earn a low wage include Arabs and the ultra-Orthodox (in particular women), residents of the South and North regions, and individuals with less than 12 years of schooling.

The earned income tax credit focuses on the lower half of the income distribution while the minimum wage has its greatest effect on the middle deciles.

In order to distinguish between the effects of the various factors on the probability of earning the minimum wage, we estimated a logistic regression whose dependent variable is earning the minimum wage, which receives the value of 1 if the individual earns the minimum wage or less and 0 if the individual earns above it. It can be seen that being young has the largest influence on the probability of earning a low wage, and being old (older than the retirement age) is also correlated with the probability of earning the minimum wage. However, when we estimate the regression for the prime working age population (25-54) we obtain similar results for the other demographic and occupational characteristics. Living in the South or North regions (the periphery), particularly for women, a low level of education and belonging to the Arab or ultra-Orthodox sectors also significantly increase the probability of earning the minimum wage. For men living in the Jerusalem district, there is a higher probability of earning the minimum wage, primarily because of the high proportion of Arabs and ultra-Orthodox in this district. When we estimate the probability of earning the minimum wage separately for ultra-Orthodox and Arab men that live in Jerusalem, the effect of living in the Jerusalem district is reduced significantly.

A high proportion of minimum wage earners are in occupations that do not require a high level of education and they are employed in industries that are unskilled-labor intensive. Even when taking into account the composition of employment (workers' age, education and place of residence) in the various industries and occupations, there is still a very high correlation between employment in certain industries and professions and the probability of earning the minimum wage (Table 5.2). To illustrate, working in the education or service industries markedly increases the probability of earning the minimum wage. Being employed in sales and services or in a non-professional occupation also increases it.

Although there is a high correlation between the characteristics of low wage earners and those of low-productivity jobs, the causal relationship between productivity and wages is unclear. According to the traditional approach, the low wages of these

Table 5.2
Employment characteristics of individuals earning up to minimum wage, 2012[a]

		Minimum-wage earners			All salaried employees			Results of logistic regression[b]	
		Men	Women	Total	Men	Women	Total	Men	Women
Total (thousands)		262	378	640	1,393	1,316	2,709		
Average monthly income from wages		3,530	2,852	3,130	10,940	7,252	9,148		
Average number of weekly work hours		43.3	34.6	38.2	44.9	35.5	40.3		
		Share among minimum wage earners (percent)			Minimum-wage earners as a share of the group (percent)			Ratio of the probability of earning minimum wage[b]	
Employment industries	Agriculture	3.2	0.8	1.8	30.2	46.4	33.1	1.4	2.1
	Manufacturing	14.9	8.7	11.2	14.2	28.3	18.4	*	*
	Electricity and water	0.0	0.0	0.0	0.0	4.1	0.6	-	0.2
	Construction	11.0	0.6	4.9	24.4	17.5	23.7	1.2	0.8
	Wholesale and retail trade	15.7	12.7	13.9	23.7	33.1	28.0	1.2	0.8
	Hospitality and food services	9.1	5.1	6.7	36.8	36.6	36.7	1.3	0.5
	Transport, storage, communications	9.5	3.2	5.8	20.8	19.3	20.3	1.3	0.5
	Banking, insurance and finance	0.4	1.1	0.8	2.6	6.5	5.0	0.2	0.3
	Business services	13.9	10.1	11.7	18.1	23.8	20.6	1.5	1.1
	Public administration	2.5	2.7	2.6	11.1	18.5	14.7	0.8	0.9
	Education	7.1	22.4	16.1	22.2	29.7	28.0	2.5	2.1
	Health, welfare and social work services	3.5	19.7	13.1	13.9	34.5	29.7	1.3	1.8
	Community, social, personal and other services	3.7	4.4	4.1	17.2	30.7	23.9	1.2	1.5
	Household services by individuals	1.8	6.8	4.7	64.6	52.7	54.2	6.2	1.6
	Total[c]	96.1	98.3	97.4					
Profession	Those with academic professions	6.1	6.7	6.4	7.7	13.5	10.5	0.5	1.8
	Those with "free" and technical professions	6.0	11.5	9.2	9.7	16.9	14.2	0.5	0.9
	Executives	3.0	1.5	2.1	5.5	8.8	6.6	0.4	0.7
	Clerks	6.7	19.1	14.0	15.4	21.7	20.0	1.1	3.0
	Sales and service workers	22.7	42.3	34.3	28.7	52.5	42.9	1.7	5.2
	Agriculture professionals	2.6	0.3	1.3	31.8	46.8	33.6	1.7	2.1
	Manufacturing, construction and other professionals	28.0	4.0	13.8	20.4	35.5	22.0	*	*
	Unskilled workers	21.4	12.0	15.8	43.6	48.3	45.6	2.9	4.2
	Those with unknown profession	3.5	2.6	3.0	17.1	32.1	22.5	1.0	3.1
	Total	100.0	100.0	100.0					

[a] Minimum wage earners were identified by their hourly wage—lower than 110 percent of the hourly minimum wage. Observations in which individuals reported more than 100 work hours were deleted.
[b] The ratio of the probabilties of earning minmum wage was calculated by a logistic regression where the dependent variable is earning minimum wage. This variable obtains a value of 1 if the individual earns minimum wage, and a value of 0 if the individual earns more than minimum wage. We ran the regression on men and women separately. The explanatory variables are: age, education, belonging to a certain population group, residential district, the industry in which the individual is employed, and the individual's profession. We also added interaction variables between Arabs and residential district, between ultra-Orthodox Jews and the Jerusalem district, between ultra-Orthodox Jews and the Center district, between ultra-Orthodox Jews and levels of education, and between someone aged 15–24 and education levels. An asterisk represents the base status, meaning we calculated the likelihood ratio compared to a professional worker in the manufacturing industry aged 35–44, with 11–12 years of schooling, who is a non-ultra-Orthodox Jew living in the Tel Aviv district.
[c] The data do not add up to 100 percent due to observations where the conomic industry was unknown.
SOURCE: Based on Central Bureau of Statistics Household Expenditure Survey.

workers reflect their low productivity. However, a different approach suggests that due to imperfect competition in the labor market, wages reflect a richer combination of factors than workers' productivity and human capital alone. Among those factors are different characteristics of the labor market (e.g., the existence of institutions such as the minimum wage and collective bargaining), the characteristics of welfare policy (allowances, unemployment insurance, etc.), characteristics of the education and vocational training systems and characteristics of the employer (the competitive environment, the specific business and bargaining power in negotiations with workers).

There is evidence that employers may have monopsonistic power over their current workforce even if they operate in a competitive labor market[9], as long as their employees bear a cost of job change. When an employer has monopsonistic power and can pay his workers less than their productivity, he faces an upward sloping supply curve for labor. He understands that hiring a new worker at a higher wage means that he will have to increase the wages of all of his current workers, and thus the marginal cost that he attributes to an additional worker is higher than his actual wage. If an effective minimum wage exists, hiring an additional worker does not involve raising the wages of the existing workers and therefore the marginal cost of hiring a new worker is lower and equal to the wage of this marginal worker only. Thus, if employers take advantage of monopsonistic power, setting the right level of minimum wage does not just raise the wages of the relevant workers but may also have a positive impact on employment.

The extent of employers' monopsonistic power is affected by the elasticity of the labor supply. The more inelastic the supply of labor, the greater will be the employer's monopsonistic power and ability to pay a wage that is lower than the worker's marginal product. In particular, the monopsonistic power is positively correlated with the cost that workers attribute to switching jobs.[10] This cost includes not only the direct monetary cost but also the effect on a worker's chances of finding an appropriate alternative. Therefore, the employer's monopsonistic power increases for workers with an insecure status in the labor force due to low productivity and/or discrimination (particulars attributed to members of minority groups, individuals with a low level of education, older workers, women or the inexperienced). To the best of our knowledge, there has not been any quantitative study in Israel of employers' monopsonistic power and the discussion above is based on findings from other countries.

[9] Ashenfelter, O.C., H. Farber and M.R. Ransom (2010), "Labor Market Monopsony", Journal of Labor Economics 28 (2), pp. 203-210.

[10] Manning, A. (2009), "Imperfect competition in the labor market", unpublished manuscript, Centre for Economic Performance, London School of Economics.

c. Does a low-paying job provide a springboard to a higher-paying one?

Since a large proportion of low-wage workers are young, it may be that a low-paying job serves as a springboard to a higher-paying one. However, research carried out in Israel has found that wage mobility is relatively low.[11] Studies in other countries also present a picture of low mobility among low-salaried workers.[12] Only a small fraction improve their earnings and about 20 percent become unemployed or leave the workforce. Low mobility is particularly evident in countries with a high proportion of low-wage workers. It appears that the low rate of exit from low-paying jobs is reflected in the growth of a stock of low-wage workers. The other results are as expected: it is easier for young workers and highly-skilled workers to switch to higher-paying jobs, while older workers (35 and above) and women have a higher probability of remaining in a low-paying job.

The low mobility of low-wage workers, and in particular older ones, implies that policy measures that are meant to deal with the relevant populations must focus on long-term solutions. These must improve the earning capacity of workers in the present and at the same time raise their chances of upgrading their employment in the future. For workers who will remain at the bottom of the wage scale for their entire working lives, it is important that there be a security net of social services.

d. Does the minimum wage deal effectively with the working poor and with wage inequality?

The indices of poverty and inequality in Israel are among the highest in the OECD (see Chapter 8). As in the rest of the OECD countries, most of the poor in Israel live in households with at least one earner and this phenomenon is becoming increasingly prevalent.

The minimum wage is one of the main policy tools used to deal with poverty and inequality. To the extent that it is effective and is not set in order to deal with employers' monopsonistic behavior—that is, if it is set above the wage in competitive equilibrium—then it is essentially a tax on employers and at the same time a labor subsidy to the worker. Therefore, it appears to constitute an alternative to the negative income tax. However, the two policy tools differ with respect to the distribution of the burden of the cost, such that the cost of the minimum wage is paid by the employers of the relevant population (through reduced profitability), low-wage workers (through an increase in unemployment) and households (through an increase in prices), while the cost of the negative income tax is borne by the state (and indirectly by all employers, workers and households through an increase in the tax burden). Furthermore, the minimum wage is currently viewed as a complementary policy tool to the negative

[11] Ben Naim, G. and A. Belinsky (2012), "Wage divergence in Israel—an analysis of wage mobility in the economy during the last decade", The Israeli Tax Quarterly, no. 131, pp. 7-40; Brender, A. (2010), "The effect of retirement savings arrangements in Israel on income distribution" Bank of Israel Survey no. 84, pp. 87-123 (in Hebrew).

[12] For example, Grimshaw (2011). See footnote 8 above.

income tax, rather than an alternative one, since setting minimum wage at the appropriate level may prevent a situation in which the main benefit implicit in the negative income tax goes to employers rather than low-wage workers.

The minimum wage and the negative income tax may have indirect effects on productivity—the subsidization of employment creates an incentive to employ less-productive workers; conversely, to the extent that the minimum wage reduces an employer's profitability, it creates an incentive to increase efficiency and raise productivity. However, it is important to remember that these two policy tools do not work directly to raise the productivity of the affected workers and therefore it is worthwhile including them in a policy mix that also includes tools to raise the productivity of workers at the bottom of the wage scale.[13]

The earned income tax credit reduces inequality and poverty more efficiently than the minimum wage. However, in order to ensure its efficiency, it is important to set the minimum wage at a level that is appropriate to the productivity of its recipients.

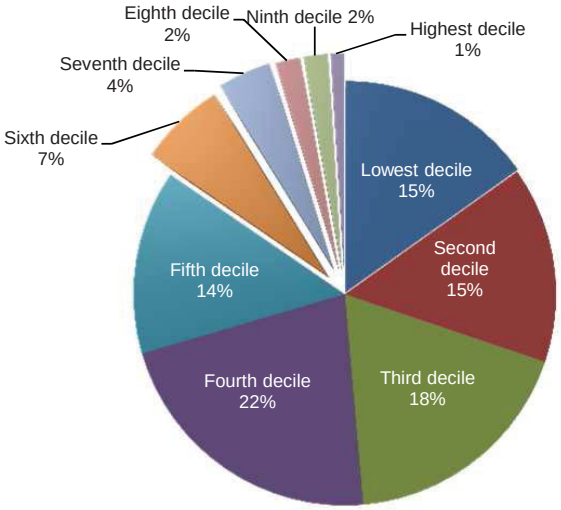
In comparison to the negative income tax, the minimum wage is less focused on households at the lower end of the income distribution. Only one-quarter of workers who earn the minimum wage belong to households in the lowest income centile, in comparison to about 30 percent of workers benefiting from the negative income tax (Figure 5.3); and about one-third of them belong to households in the upper half of the income distribution, in comparison to one-sixth of workers who receive the negative income tax. This reflects that fact that some of the workers who earn the minimum wage live in households with additional wage earners whose salary may be higher. About 40 percent of the men that earn the minimum wage and about one-third of the women are secondary wage earners and a large proportion of them are aged 15–24 and apparently live with their parents (Figure 5.4). In contrast, about one-quarter of women and one-third of men that earn the minimum wage are the sole wage earners (either they live alone or their spouse does not work) and about an additional quarter live with a spouse who earns less than the average wage. In other words, although the minimum wage is not focused on low-income households, raising it will likely have a significant effect on a significant proportion of those households.

According to our estimates, about one-quarter of workers receiving the negative income tax earn an hourly wage that is similar to or less than the current minimum wage and they constitute about 15 percent of workers who earn a wage that is less than or similar to the minimum wage. Recall that the amendment to the Minimum Wage Law passed in January 2015 stipulated that the minimum wage would gradually be raised during the subsequent two years to NIS 5,000 per month. More than half of the workers who receive the negative income tax earn up to NIS 26.88 per hour (equivalent to NIS 5,000 per month) and therefore they will be directly affected by the scheduled rise in the minimum wage.

The criteria to be eligible for the negative income tax and the amounts to be paid were determined at a time when the minimum wage was at a lower level. Underlying the criteria is the principle that an incentive should exist for active participation in the

[13] The rate of expenditure on active labor market policy is significantly lower in Israel than in other OECD countries.

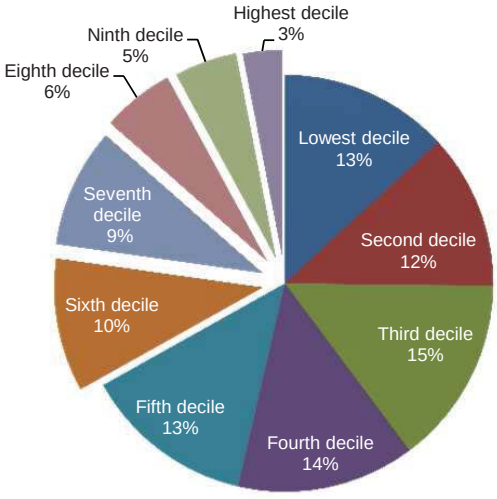
Figure 5.3
Distribution of income grant (EITC) recepients, by household income decile[a]



[a] Survey data from 2012 were adjusted to 2014 under various assumptions regarding the pace of wage growth and the changes in income from benefits and in taxes.

SOURCE: Based on Central Bureau of Statistics Household Expenditure Survey.

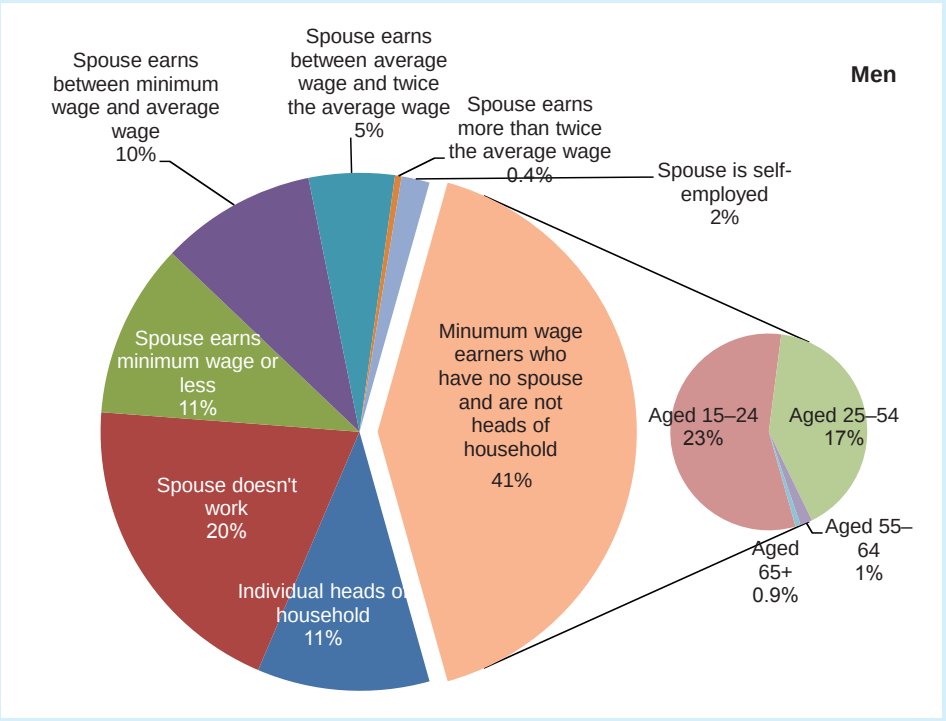
Distribution of minimum wage earners[a], by household income decile

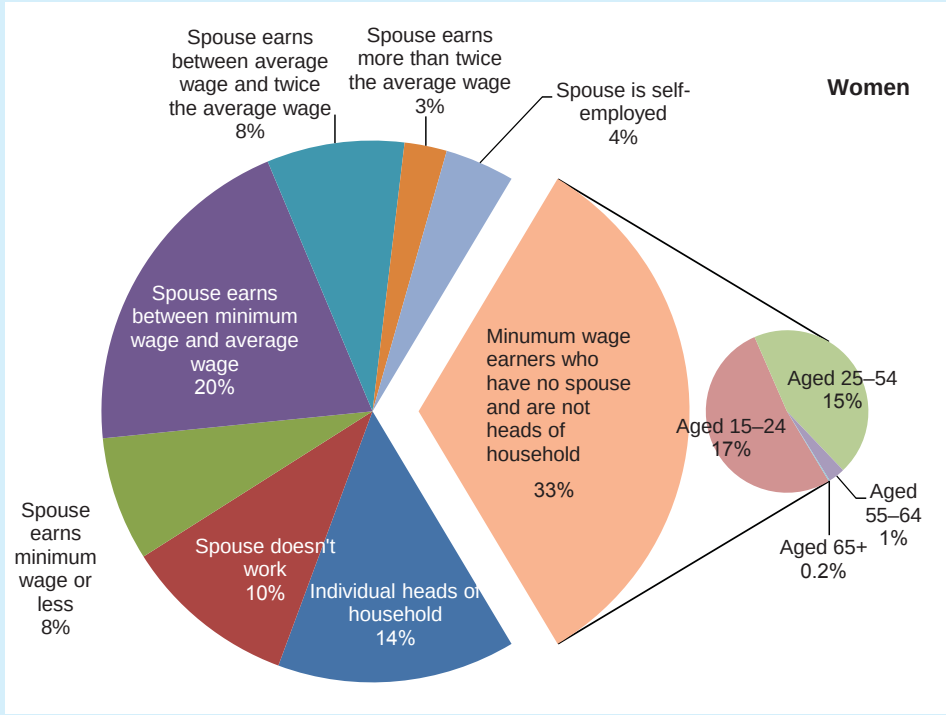


[a] Minimum-wage earners were identified by their hourly wage—up to 110 percent of the minimum hourly wage. Teachers' and public sector workers ' wages were adjusted by the scope of the position (whether it was full-time or part thereof). Survey data from 2012 were adjusted to 2014 under various assumptions regarding the pace of wage growth and the changes in income from benefits and in taxes.

SOURCE: Based on Central Bureau of Statistics Household Expenditure Survey.

Figure 5.4
Distribution of Minimum Wage Earners, by Spouses' Wages, 2012





SOURCE: Based on Central Bureau of Statistics Household Expenditure Survey.

labor market and therefore eligibility was made conditional on, among other things, working at least half-time. Since there is no administrative reporting of work hours, it was decided that the minimal wage for which a worker will be eligible to receive the negative income tax will be equal to about one-half of the monthly minimum wage, about NIS 2,000. In other words, in order to implement the principle of active participation, the increase in the minimum wage will require an increase in the minimal wage for negative income tax eligibility. However, due to the complex structure of the eligibility mechanism and the wage distribution, it is difficult to determine ahead of time how such a change and changes that may follow (for example, shifting the maximum wage for eligibility) will influence the levels of poverty and inequality, the take-up rate, etc.

We tested separately the direct effect of the scheduled increase in the minimum wage and the effect of increasing the negative income tax at a cost of NIS 800 million (Table 5.3).[14] In addition, we compared an increase in the negative income tax to an equivalent increase in the minimum wage. We found that on the assumption of full compliance, increasing the minimum wage raises about 4,000 households to above the poverty line and reduces the incidence of poverty by about 0.2 percentage points. This is because raising the minimum wage affects the poverty line—as a large proportion of minimum wage earners live in households whose income is close to the median, any increase in the minimum wage will raise the relative poverty line. If poverty is analyzed relative to the current poverty line, we find that about 3.5 percent of households that are currently under it will rise above it (a drop of 0.7 percentage points in the incidence of poverty among households). It should be remembered that the simulation estimates the influence of raising the minimum wage under some strong assumptions and in a static analysis, without consideration of the employment of the relevant workers and the effect on the extent of compliance.

When testing the effect of the most generous increase in the negative income tax (see footnote 14), we find that the incidence of poverty among households is reduced by about 0.3 percentage points, and among individuals by 0.6 percentage points. An increase in the negative income tax has almost no effect on the relative poverty line

[14] This test is based on the proposal to increase the negative income tax, which has several scenarios with different levels of budget expenditure. For purposes of comparison, we used the most generous of the scenarios, which involved increasing the budget expenditure to about NIS 800 million. We estimate the effect of changes in the minimum wage under the assumption that there is full compliance with the law (i.e., that those who reported in the survey that they earn less than the minimum wage will receive an income supplement up to the level of the minimum wage). In order to compare raising the minimum wage and increasing the negative income tax, we added a (hypothetical) scenario in which the minimum wage is raised by NIS 0.90 per hour (NIS 167 per month) which increases the minimum wage to NIS 4,467 per month. The total income supplement in this scenario (under the assumption of full compliance with the law and in comparison to the situation of full compliance and a minimum wage of NIS 4,300 per month) is NIS 800 million, which is similar to the income supplement inherent in increasing the grant from the negative income tax.

Table 5.3
Estimated effect of an increase in the minimum wage compared to an increase in the earned income tax credit

		The existing situation: Adjusted to 2014[a]	Comparison base: minimum wage equivalent to NIS 4,300 and full compliance	Change compared to a minimum wage the equivalent of NIS 4,300 and full compliance			4,467 (increasing minimum hourly wage to NIS 24, income supplement equal to that in the earned income tax credit)	Comparison base: earned income tax credit equal to its 2014 level[a]	Increasing the credit at a total cost of about NIS 800 million per year
				4,650	4,825	5,000			
Variable poverty line	Poverty line[b] (equivalized NIS per month)	2,333	2,381	18	35	46	4	2,336	0
	Individuals below poverty line ('000)	1,802	1,747	-7	-3	-16	-1	1,789	-45
	Households below poverty line ('000)	453	436	-1	1	-3	-1	451	-7
	Incidence of poverty[c] – individuals (percent)	24.3	23.6	-0.1	0.0	-0.2	0.0	24.1	-0.6
	Incidence of poverty –households (percent)	20.1	19.4	-0.1	0.0	-0.2	0.0	20.0	-0.3
	Income gap[d] (percent)	34.4	33.6	0.0	-0.1	0.2	-0.1	33.8	-0.6
Fixed poverty line (NIS 2,333 per month)	Individuals below poverty line ('000)	1,802	1,698	-20	-47	-61	-8.0	1,789	-45
	Households below poverty line ('000)	452.5	424.0	-5.1	-11.2	-14.7	-2.2	450.6	-7.0
	Incidence of poverty –individuals (percent)	24.3	23.1	-0.3	-0.6	-0.8	-0.1	24.1	-0.6
	Incidence of poverty –households (percent)	20.11	19.0	-0.2	-0.5	-0.7	-0.1	20.02	-0.3
	Income gap (percent)	34.4	33.6	-0.2	-0.1	-0.2	-0.1	33.8	-0.6
Distribution of income supplement recipients among the deciles[e] (percentage of all recipients)	1	13.2	7.8	7.5	7.5	7.4	8.3	15.2	13.7
	2	12.0	10.0	9.6	9.7	8.6	9.3	15.0	18.1
	3	14.6	13.8	13.8	13.1	13.2	14.0	18.4	20.3
	4	13.8	14.7	14.3	14.8	14.7	14.6	21.9	21.4
	5	13.3	13.0	13.0	12.5	13.1	13.3	14.1	13.1
	6	10.3	12.0	12.6	13.0	13.3	11.9	6.6	5.6
	7	9.2	11.6	11.3	10.9	10.7	11.3	4.1	3.9
	8	5.6	7.6	8.3	9.2	9.9	7.9	1.9	1.7
	9	4.9	5.9	5.9	5.8	5.6	6.0	1.9	1.4
	10	3.1	3.6	3.6	3.5	3.4	3.4	1.0	0.8
Distribution of total income supplement among the deciles[f] (percentage of total supplement)	1		5.0	5.8	5.5	5.4	6.4	17.4	22.2
	2		9.1	8.1	8.3	7.6	8.1	17.3	23.1
	3		11.7	12.9	12.0	12.4	13.0	19.9	21.3
	4		16.0	14.1	14.7	14.4	14.1	22.2	18.8
	5		12.2	14.0	13.1	13.1	14.6	11.6	7.5
	6		12.3	12.9	13.4	13.8	12.2	5.1	3.2
	7		13.6	13.1	12.6	12.0	12.9	3.0	1.8
	8		9.6	8.7	10.1	11.3	8.6	1.4	0.7
	9		7.0	6.6	6.5	6.3	6.4	1.6	1.0
	10		3.7	3.7	3.7	3.7	3.7	0.6	0.3

[a] The data are based on the Household Expenditure Survey for 2012, adjusted to 2014 based on assumptions regarding the rate of increase in wages in the various income deciles, and according to changes in benefits and income tax. In the case of the earned income tax credit, the adjustment to 2014 includes an income supplement to credit recipients (according to eligiblity criteria and to assumptions regarding the takeup rate), since the Household Expenditure Survey for 2012 contains no data on income from the credit.
[b] The relative poverty line—Half of the median equivalized income.
[c] The incidence of poverty—The share of the population below the poverty line.
[d] Income gap—The average distance of a poor household from the poverty line.
[e] Equivalized household income deciles. Each decile contains 10 percent of households.
[f] In order to calculate the income supplement, we summed the differences between the monthly wage after the change (increase in the minimum wage or the earned income tax credit) and the monthly wage before the change. The totals that appear below are the yearly totals (we multiplied the monthly supplement to the minimum wage by 12 and the monthly supplement to the credit by 10). The income supplement resulting from an increase in the minimum wage was calculated assuming full compliance with the law. The income supplement inherent in the credit was calculated in relation to the existing situation (after adjustment to 2014).
SOURCE: Based on Central Bureau of Statistics Household Expenditure Survey.

since it is focused on the lower deciles of the income distribution and has almost no effect on the median income.

When comparing how the two benefits divide up between the deciles of households (each decile includes 10 percent of households)—that is, when looking at the number of minimum wage earners who will benefit from the increase, and the amount they will receive, and comparing it to the number of workers who take advantage of the negative income tax and the amount they will receive, it can clearly be seen that the negative income tax is concentrated in the lower half of the income distribution, while the minimum wage and its increase have the greatest effect on the mid-deciles. This difference between the minimum wage and the negative income tax becomes more pronounced when comparing the distribution of the amount of the benefit—minimum wage earners in the lower income deciles are characterized not only by a low hourly wage but also by a low number of work hours, and therefore they receive less of the benefit. In contrast, the receipt of the negative income tax is subject to the income ceiling of the two spouses and near the ceiling the amount of the negative income tax declines. Therefore the largest benefits will be received by those with low wages and low family income.

It is not a simple task to compare the effectiveness of raising the minimum wage to that of other policy options that are intended to assist low wage earners, and particularly the negative income tax. The comparison is dependent first and foremost on the definition of the target. In other words, one must choose the goal according to which the effectiveness of the policies will be measured, whether it is the reduction of poverty and inequality, support for the middle class, increasing employment or some other goal. The negative income tax is more efficient in reducing poverty and inequality of income, but since it is a subsidy of employment it allows employers to continue relying on cheap labor and may reduce the incentive to increase efficiency. It is important to remember that the cost/benefit of these two policy measures is dependent to a great extent on the situation of the labor market—the tighter the market, the greater will be the benefit and the lower will be the cost. The two policy measures are also dependent on the scope and effectiveness of other policy tools, in particular active labor market policy—to the extent that an active labor market policy will raise productivity of workers at the bottom of the wage scale, it will reduce the gap between the minimum wage and productivity (if it is positive) and will reduce the negative effect that the negative income tax is liable to have on the incentive of employers to increase efficiency.

In conclusion, the negative income tax is a more efficient tool for reducing inequality and poverty. However, in order to ensure that it is efficient, it is important to set the minimum wage at an appropriate level, similar to the level of productivity of minimum wage earners. This may prevent employers from abusing their monopsonistic power or eroding the negative income tax.

2. RAISING THE AGE OF RETIREMENT AND ITS EFFECT ON INCOME

The aging of the population in the last two decades has had a major influence on the economic policy and budgets of many countries, including Israel. During this period, numerous changes have been made in polices governing pension savings, particularly the raising of the official retirement age for men and women.[15] This section surveys the changes that have occurred during the last decade in the income of the older population whose retirement age was raised, and examines how this population was affected by changes in the law.

The age of retirement was raised gradually but at a faster rate than in other countries.

The retirement age was raised in 2004: for men from 65 to 67 and for women from 60 to 62. The State implemented the change gradually between 2004 and 2008, though at a more rapid pace than in other countries.[16] Every few months, the age of retirement was raised for men and women by four months. The increase was reflected in the deferral of the age of eligibility for employment-related pensions,[17] as well as the old age allowance that is dependent on a means test.[18] In addition, the law also deferred the age at which employers can terminate, for any reason, the employment of the relevant workers and restricted the possibility of continuing to employ them in the public sector.[19]

We tested how these change affected the income of individuals whose retirement age had been raised: women aged 60 and 61 and men aged 65 and 66. This study was based on the Income Survey carried out by the Central Bureau of Statistics and compared the period in which the increase began (2003-04) to the period in which it was completed (2008-09).[20] We divided up the population of men and women into the following subgroups: non-employed, high-earning workers (their gross household income is greater than the median for households) and low-earning workers (whose

[15] The other reforms carried out during the last decade in the pension system include, among others: a shift from defined benefit pension plans to defined contribution pension plans; the focusing of tax benefits on long-term savings for the purpose of a pension annuity; a shift from investment in special government bonds designated for pension plans (designated bonds) to investment in the open market; a change in ownership of the long-term pension channel (transfer of pension funds from public to private ownership; and the transfer of provident funds from the ownership of the banks to that of investment houses and insurance companies) and the introduction of mandatory pension contributions.

[16] See Chapter 3 of the Bank of Israel Annual Report for 2003 for an international comparison of the rate at which the age of retirement was raised.

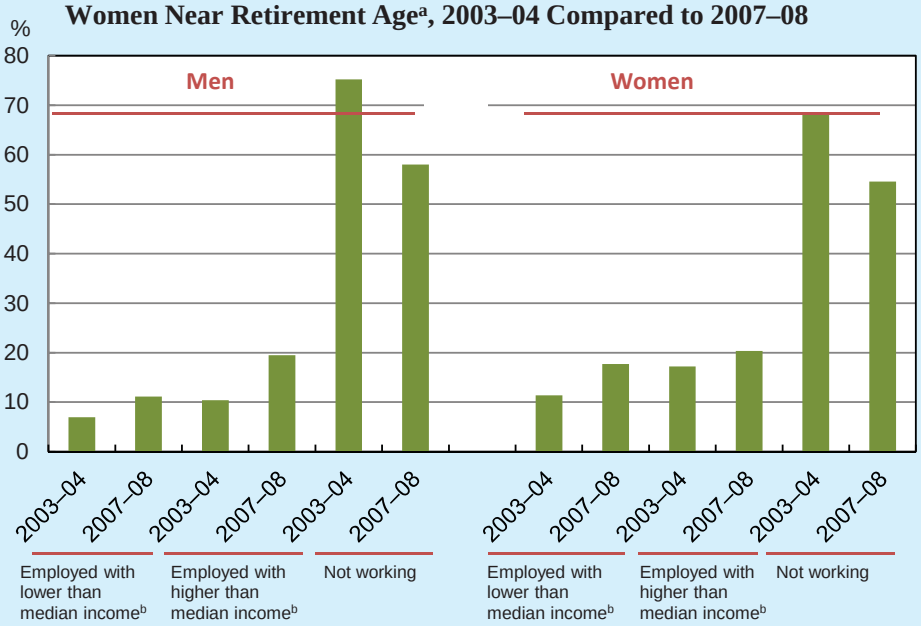
[17] Defined benefit pension funds allow retirement before the official pension age but at the cost of a reduction in the payment rate (the new funds are in any case based on previously defined contributions). The age for early retirement is 60 for men and women (which was gradually raised for women born before April 1955).

[18] The age of eligibility for an old age allowance that is not dependent on a means test is 70 for men; it was 65 for women until 2004 and is being raised gradually to 70 (by 2020).

[19] This aspect of the law does not apply to women aged 60-61 in the study but does apply also to women aged 65-67.

[20] The Central Bureau of Statistics Income Survey also includes self-employed individuals and family members who work for no pay. However, these groups are not included in the analysis based on the Income Survey because the relevant age groups have only a few observations in the sample. For self-employed men and women, there was a similar increase as that for male and female employees.

Figure 5.5
Changes in the Distribution of Employment Status Among Men and Women Near Retirement Age[a], 2003–04 Compared to 2007–08



[a] Men aged 65 and 66, and women aged 60 and 61.
[b] The median income in the individual's household.
SOURCE: Based on Central Bureau of Statistics Income Survey.

gross household income is lower than the median for households). The changes in the distribution of income that occurred between the two periods were the result of changes in the relative size of each group and the changes in each group's level of income.

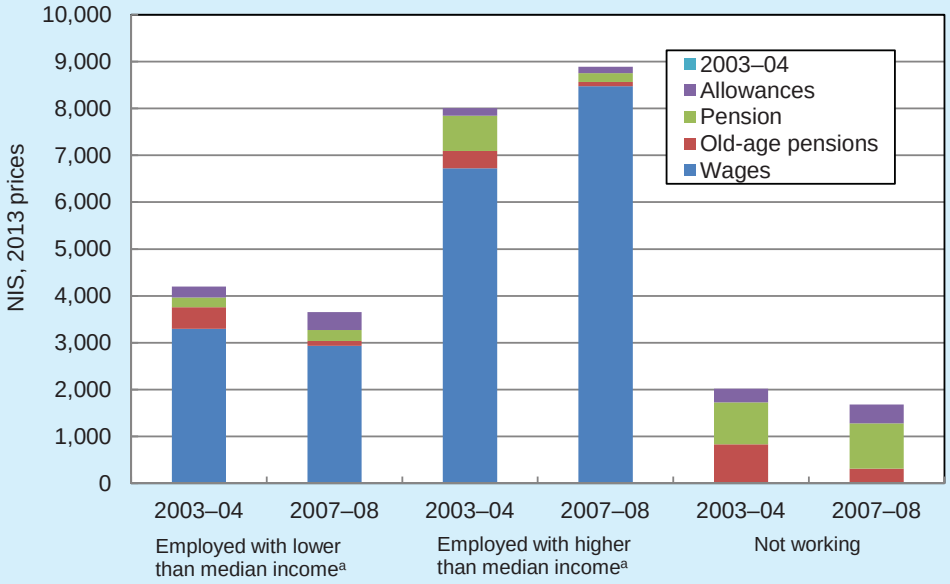
The proportion of workers in the population increased after the retirement age was raised.

Figure 5.5 shows how the proportion of workers grew between the two periods for each subgroup. The largest increase (from 10 to 19 percent) occurred among employed men with high incomes, while the smallest increase (from 17 to 20 percent) occurred among employed women with high incomes. Among men and women with low incomes, there were similar rates of increase. On the other hand, the proportion of non-employed individuals in the sample population dropped sharply (from about 70 to about 55 percent), among both men and women.[21]

In addition to the increase in the proportion of workers in the groups whose retirement age was deferred, their incomes also changed between the two periods, among both men and women. As expected from the implementation of the law, there was a drop in income from the old age allowance in all the groups. However, the average income of individuals in high-income households grew at a significant rate as

[21] As noted, the retirement age we looked at has a different meaning for men and for women; see footnote 19.

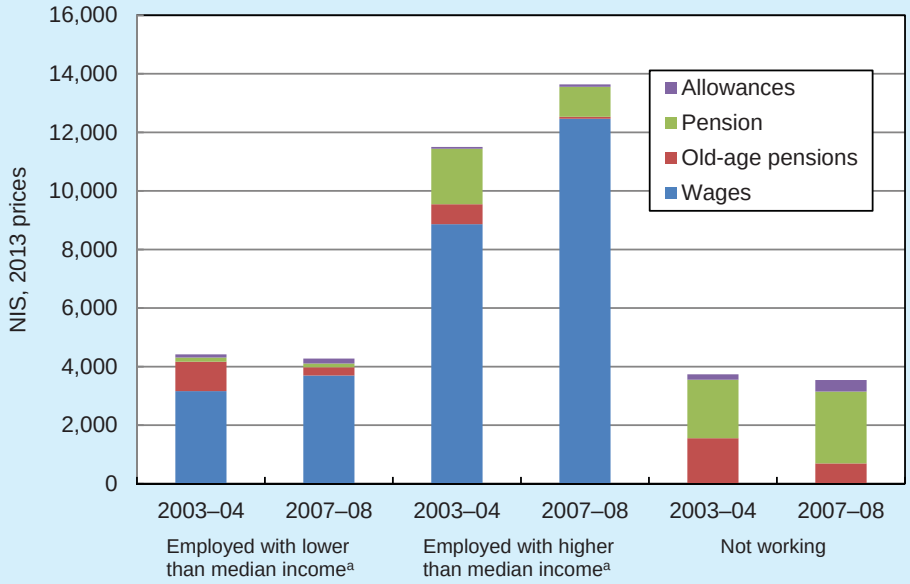
Figure 5.6
Changes in the Composition of Average Gross Monthly Income of Women Aged 60 and 61, by Employment Status, 2003–04 Compared to 2007–08



[a] The median income in the individual's household.

SOURCE: Based on Central Bureau of Statistics Income Survey.

Figure 5.7
Changes in the Composition of Average Gross Monthly Income of Men Aged 65 and 66, by Employment Status, 2003–04 Compared to 2007–08



[a] The median income in the individual's household.

SOURCE: Based on Central Bureau of Statistics Income Survey.

a result of the increase in their wages; the wage income of low-earning men remained almost unchanged while that of low-earning women fell; and the income of non-employed individuals fell because other social welfare benefits[22] did not make up for the loss of income from the old age allowance (Figure 5.6 and 5.7).[23]

The income distribution changed between the two periods: The wages of high wage earners increased significantly while the wages of low wage earners remained almost unchanged. The income of non-employed individuals declined as a result of the reduction in the payment of old age pensions.

However, it may be that the changes which occurred during the period, particularly in employment and in labor income, were not just the result of deferring the age of retirement but of other factors as well, such as the business cycle, the age of individuals and other changes in legislation that went into effect during the period. In order to isolate the effects of these factors, regressions were run in order to test how the probability of working and the wage profiles of older men and women were affected by the changes in the Age of Retirement Law.

We performed an empirical test using the panel data of the Israel Tax Authority. This panel includes a sample of about 10 percent of the workers in Israel and is more comprehensive than the Income Survey carried out by the CBS. The sample focuses on the years 2004-08 and includes older workers whose official age of retirement was deferred, i.e., women aged 60 and 61 and men aged 65 and 66.[24] In order to estimate the effect of raising the retirement age, we created treatment and control groups according to individuals' date of birth. The treatment group included individuals that were affected by the legislation, that is, all the workers whose date of birth is later than the date for which the new retirement age went into effect. The control group included all the workers born prior to that date. It was assumed that the determination of the date was not affected by the features of the workers that were born before or after it. We also assumed that the date of birth of these workers was not influenced by the knowledge that about 60 years later the age of retirement would change on a specific date. The identification strategy compares: (a) the probability of an individual whose retirement age has been deferred working in a particular month and (b) his real wage for the same parameters for an individual whose retirement age was not deferred, while controlling for the age of the individuals (year and month of birth),

[22] The other benefits include: income assurance supplements, surviving spouse compensation, workers' compensation, disability pension and other allowances. Since most of these benefits are dependent on family income and therefore appear in the Income Survey as income of the household, we divided the benefits of each household by the number of its members in order to obtain an estimate of the individual's income from social welfare benefits.

[23] It should be noted that although among the non-employed there has been somewhat of a rise in income from employment-related pensions, it is plausible that this is the result of a change in composition. Those who have an employment-related pension retired while the others continued to work. A similar picture is obtained when we compare different years, such as 2000–01 and 2010–11.

[24] The individuals in the sample include workers who worked at least one month during the year previous to the relevant period (women aged 59 and men aged 64). The results did not change qualitatively when the sample included only workers who worked at least 6 months during the previous year.

Table 5.4
The effect of raising the retirement age on the probability of working and on the wage path of men and women

	Men			Women		
	Total	Wage earners with below-median income	Wage earners with above-median income	Total	Wage earners with below-median income	Wage earners with above-median income
a. The effect of raising the retirement age on the probability of working	7.1	5.1	8.5	4.3	4.5	4.2
Forecast probability of working, for employees in the sample, after raising the retirement age	81	75	87	84	79	87
b. The effect of raising the retirement age on the wages of those who continue to work	931	212	1416	147	106	169

Notes: The dependent variable in the first part of the table is the probability of working in agiven month, where the estimation was made on a logistic regression model. The dependent variable in the second part is the wage of employed salaried workers. The treatment variable obtains the value of 1 if the individual's age (according to date of birth) is lower than the legal retirement age, and zero otherwise. The specifications include dummy variables for year, a dummy variable for the age group to which the individual belongs (according to month and year of birth) and other characteristics of the individual (a dummy variable for work in the public sector, a dummy variable for residence in an Arab community, number of children, marital status, the individual's average income and the spouse's average income in the year prior to the age at which the retirement age was raised). Individuals appear in the sample in they worked at least one month in the year prior to the age at which the retirement age was raised (women at age 59, and men at age 64). The regressions were run separately for men and women.

In order to assess how the increase in the retirement age affected the likelihood of individuals to work and their wage profile, we carried out a test based on taxpayer panel data from the Tax Authority.

their characteristics[25] and the year in which the observation appears in the sample.[26] We ran the regression for men and women separately.

The analysis indicates that the probability of working and the wage range increased more among women and men whose age of retirement was deferred than among individuals with similar characteristics whose age of retirement was not deferred. The deferment affects men more than women: the probability of working increased significantly more (7 and 4 percentage points, respectively), as did wages (the addition

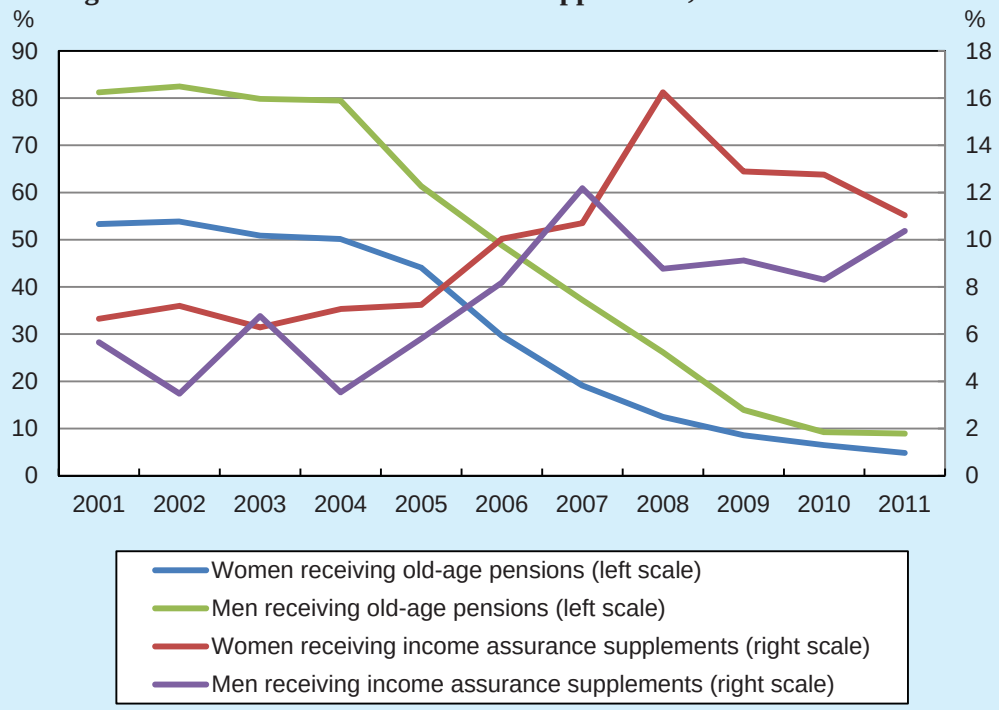
[25] The characteristics included in the regression: a dummy variable for employment in the public sector, a dummy variable for residence in an Arab town, number of children, marital status and the individual's average monthly wage income and that of the spouse during the year preceding the relevant period (women aged 59 and men aged 64).

[26] When one tests the correlation between the probability of being in the treatment group and the observed traits of the individuals, given their age (year and month of birth) and the year of the sample, one obtains confirmation for the research assumption that the allocation into treatment and control groups is random.

to the real monthly wage was NIS 930 and NIS 145, respectively).[27] Wages rose as a result of the deferment since the employment conditions of individuals whose age of retirement had been deferred changed less than the conditions of those whose age of retirement had not been deferred and this is supported by the finding that the probability of workers remaining with the same employer increased as a result of the deferment. When the population is segmented by household wage income, it is found that the deferment had a differential effect mainly on men while the differences among women were negligible. Among high-earning men, the probability of working rose more than among low-earning men (increases of 8.5 and 5 percentage points,

Raising the retirement age increased the likelihood that individuals work and their wage profile. The largest effect was felt among men, particularly high-earning men.

Figure 5.8
Men and Women Near Retirement Age[a] Among Those with Low Wages and Individuals Who Are Not Working: Those Receiving Old-Age Pensions and Income Assurance Supplements, 2001–11



[a] Men aged 65 and 66, and women aged 60 and 61.
SOURCE: Based on Central Bureau of Statistics Income Survey.

[27] The comparison of wages was carried out for workers that remained employed. Regressions in which the potential for selection bias was eliminated provided similar results, although they were somewhat higher. These regressions test for the treatment effect on the wages of all individuals in the sample (the wages of non-employed individuals were set to zero).

respectively) and this was also the case for wages (the addition to the monthly real wage was NIS 1,400 and NIS 200, respectively).[28]

The increase in the retirement age indeed had an effect on the distribution of income. It increased the labor supply and wages, particularly among high wage earners, and it reduced the total income of both low wage earners and non-employed individuals due to the decline in the number of individuals eligible for employment-related pensions and the old age pension.

The empirical test supports the hypothesis that much of the change in the distribution of income presented in the previous graphs was a result of raising the age of retirement, which substantially increased the supply of labor and wages of both men and women, although among men and in particular among high-earning men, the effect was larger. Since raising the age of retirement reduced the number of those eligible for the old age allowance and employment-related pensions, the average income from these sources declined in almost all the groups and the number of individuals eligible for a guaranteed income supplement increased, which raised the average income from "other social welfare benefits" among the weaker populations.[29] As can be seen in Figure 5.8, among non-employed individuals and also among workers from low-income households, the decline in the proportion of those receiving the old age allowance was greater than the increase in the rate of those receiving the income assurance supplement and therefore their total income fell. These changes indicate that the system of allowances for these ages has become more selective.

Since these effects are expected to reappear when it is decided to again raise the retirement age, it is worthwhile making the decision early on in order that the change can be made gradually, thus allowing employers and workers to prepare for it.

The immediate effect of the deferment of the retirement age therefore led to a significant increase in the number of employed people. However, while it increased the income of high-income individuals, it reduced the income of individuals in sectors that have difficulty finding employment at an older age (low-earning workers and non-employed individuals) since they were not able to prepare for the increase in the age of retirement ahead of time, among other reasons.[30] Since these effects were significant among both men and women, they are expected to reappear when it is decided to again raise the retirement age. Therefore, it is worthwhile to advance the decision, so that the increase can be gradual, thus enabling employers and workers to prepare.

[28] It is likely that part of the gender difference reflects the differences between the genders with respect to the legal implications of the age of retirement, since for men the right of employers to terminate a worker's employment for any reason was also deferred and in the public sector there is only a limited possibility of continuing their employment.

[29] The basic old age allowance for an individual was NIS 1,408 in 2009 plus an additional 2 percent of that amount for every year of work beyond 10 years, subject to a ceiling of 50 percent. The basic income assurance supplement for individuals aged 55+ was NIS 2,107 (in 2013 prices). During the period under study, there were few changes in these benefits, apart from the following: in 2006, the old age allowance was linked to the CPI instead of to some percentage of the average wage, and in 2009-11 it was increased moderately (the level of the income assurance supplement for individuals aged 55+ did not change during this period).

[30] These findings apply to the short-term effects of increasing the retirement age. Chapter 8 of the Bank of Israel Annual Report for 2012 presents an analysis of the rate of employment for the 55+ age group during the last decade. The analysis shows that in the groups which are near the new age of retirement. the proportions of workers that continue to work from one year to the next are similar to those for workers in their early 40s.

Box 5.1

Expansion of Palestinian employment in Israel and its characteristics

The expansion of Palestinian employment in the Israeli economy

In the past four years, the number of Palestinians residing in the West Bank and working in the Israeli economy has doubled, and in 2014 it reached around 92,000—about 2.2 percent of total employees in the Israeli economy. This estimate is based on labor force surveys of the Palestinian Central Bureau of Statistics (PCBS), and is in line with Israel Tax Authority data on work permit-holding Palestinian workers (Table 1).[1] The main increase in employment derived from the increase in the number of workers holding work permits—according to the estimate in the PCBS labor force survey, it reached 59,000 in 2014, and increased due to government policy intended to increase the supply of workers in the construction and agriculture industries as well as to assist the Palestinian economy. At the same time, employment of Palestinians without work permits also increased, which indicates that Palestinian demand for employment in Israel is greater than the number of permits, and that there is considerable demand in Israel for Palestinian workers, mainly in the construction industry. The size of Palestinian employment in the Israeli economy is expected

Table 1
Employment and wages of Palestinians employed in Israeli economy, 2007–14

	2007	2008	2009	2010	2011	2012	2013	2014
Employment, (thousands)								
Number of workers in average month, per ITA	31	34	36	39	41	45		
Number of workers in average week, per PCBS[a]	38	41	47	46	53	60	82	92
Of which: Workers with a permit	21	25	29	31	32	39	49	59
Workers without a permit	17	16	18	15	20	22	33	33
Share employed in construction industry (percent)	37	37	38	44	47	47	48	
Average monthly wage (NIS thousands):								
Workers with a permit, per ITA	2.6	2.6	2.8	3.2	3.4	3.6		
Workers with a permit, per PCBS[b]	2.4	2.5	2.6	2.9	3.1	3.3	3.5	
Workers without a permit, per PCBS[b]	2.0	1.8	2.2	2.4	2.7	2.6	2.7	

[a] Excluding residents of eastern Jerusalem and holders of foreign passports. Those groups are included in Palestinian Labor Force Surveys.
[b] Monthly wages per PCBS were calculated by summations of the individual product of daily wages and working days.
SOURCE: Israel Tax Authority (ITA); Palestinian Central Bureau of Statistics (PCBS).

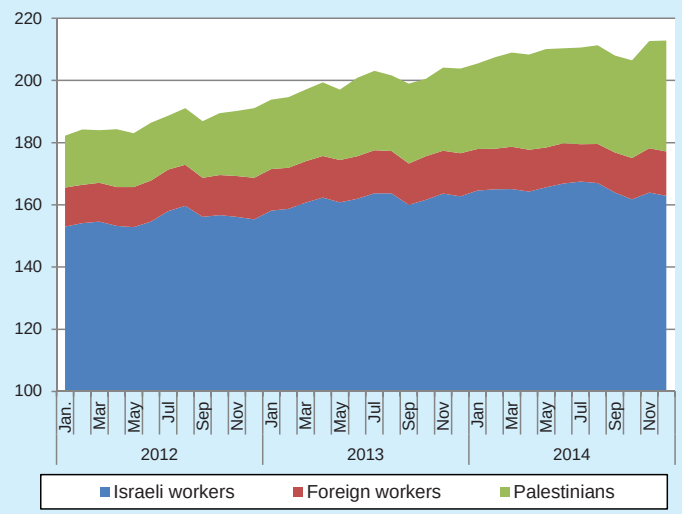
[1] Employment in Israel is important to the Palestinian economy: According to the Palestinian Central Bureau of Statistics (PCBS), in 2014, Palestinians working in the Israeli economy made up about 11.7 percent of the Palestinian workforce in the West Bank, and their total wages in 2013 were equal to 12.3 percent of West Bank GDP. PCBS estimates referred to here do not include residents of Eastern Jerusalem and holders of foreign passports, though those groups are included in Palestinian labor force surveys.

The Israel Tax Authority's estimate of the number of workers holding a permit is different than the parallel estimate of the PCBS, because each of those groups uses a different unit of measurement: the Israel Tax Authority (ITA) refers to the number of workers in an average month, while the PCBS refers to the number per average week. This means that if a worker holding a permit worked one week in a given month, he will definitely be included in ITA data, but there is only a probability of 25 percent of his being included in PCBS data. Another possible explanation is underreporting to the ITA—Israelis who employ Palestinians in Judea and Samaria only partially reported that, as Israeli labor laws apply to that area in only a partial manner and the reporting obligation was only imposed in 2009.

to continue to grow in the foreseeable future.

About half of the Palestinians who worked in 2014 in the Israeli economy were employed in the construction industry. Figure 1 indicates that the main increase in the past two years (2013–14) in reported employment (employee posts) in this industry derived from growth in the number of Palestinian workers, as the number of Israeli and foreign workers did not change markedly. The actual increase in Palestinian employment was even greater, as the industry also increased the number of workers who do not hold a work permit. The increase in Palestinian employment in the industry[2] reduces the incentive for investment in capital, in improved technology, and in workforce training.[3] To the extent that this increase is not accompanied by growth of activity in the industry, employment and wages of similar Israeli workers are liable to be adversely affected.

Figure 1
Number of Employee Posts of Palestinian, Foreign, and Israeli Workers, in the Construction Industry, 2012–14



Note: Data for November-December 2014 are not final.
SOURCE: Central Bureau of Statistics.

Regulation of the Palestinian employment in the Israeli economy

Employment quotas of Palestinians within the borders of the State of Israel are determined separately for each economic industry, and are set by government decision and in accordance with the recommendation of Government ministries and the defense establishment. In contrast, there are no quotas for work permits in Israeli settlements and industrial zones in the West Bank. A Palestinian worker is entitled to every work condition that a similar Israeli worker is entitled to by law and by relevant collective agreements. For example, a Palestinian worker in the construction industry is entitled to the minimum wage set in the industry's collective agreement. These agreements are intended to ensure the rights of Palestinian workers and to minimize the negative impact on similar Israeli workers.

2 In September 2014, the government decided to increase the number of permits for Palestinian workers by 4,600.

3 Evidence that there is substitution between Israeli and foreign workers can be found in Chapter 5 of the report by the Committee for Regulation, Supervision, and Enforcement in the Employment of Palestinian Workers in Israel (2011), in Chapter 5 of the Bank of Israel Annual Report, 2012 (pp: 79–82), as well as in the following research papers: Gotlieb, D. and S. Amir (2005), "Entry of foreigners and rejection of locals in Israeli employment", Planning, Research and Economics Administration in the Ministry of Trade, Industry and Labor, and Zussman, N. and D. Romanov (2003), "Foreign workers in the construction industry: the current situation and policy ramifications", Bank of Israel Discussion Papers.

However, as the State Comptroller has warned[4], in actuality Palestinian workers' rights are only exercised to a limited extent. This derives, to a certain extent, from the only partial awareness of Palestinian workers of their rights: Palestinian labor force surveys indicate that among Palestinians working with a permit in the Israeli economy, only a very small share claimed that they are employed through a contract and are eligible for pension allowances, sick days and vacation days—and this is even though the Population and Immigration Authority (PIA) sets such funds aside for them, as required by the law, and even though workers in the construction industry are covered by collective agreements.[5] Providing Palestinian workers with information about their rights may enhance the extent of utilization of these rights. Table 2 indicates that the state of workers without work permits is even more severe.

As the Israeli and Palestinian economies are differentiated by their level of economic development, there is a gap between the wage for a Palestinian worker in the Israeli and in the Palestinian economies. The minimum wage in Israel (NIS 198 per full work day) is markedly higher than the average wage in the West Bank (about NIS 91 per day in 2014). This gap creates an economic incentive for Israeli intermediaries, or the Palestinian heads of worker groups, to collect intermediation fees for a work permit in Israel. Such collection is made possible because the procedures provide the Israeli employer with the power, as they

Table 2
Characteristics of Palestinian workers in Israel: Those holding a permit and those not holding a permit, 2013

	Holding permit	Not holding permit
Average age (years)	38.2	28.8
Percentage married	90	48
Education (years of study)	9.6	10.1
Percentage living in villages	38	39
Share of males (percent)	99	99
Daily wage (NIS)	186	158
Number of workdays per month	19.0	17.1
Reporting having a written work contract/collective agreement[a] (percent)	2	1
Reporting having a verbal work contract[a] (percent)	40	27
Reporting having no work contract[a] (percent)	58	73
Reporting having funds set aside for pensions[a] (percent)	4	1
Reporting entitlement to sick days and vacation days[a] (percent)	11	1

[a] This question was answered by about 78 percent of permit holders, and about 60 percent of those not holding permits.
SOURCE: Based on Palestinian Central Bureau of Statistics.

[4] State Comptroller Report 65a, 2014, "Employment of Palestinian workers in Israel's construction industry".
[5] The partial awareness is probably related to the fact that transfers in respect of social allocations are only carried out once a year.

determine that the employer requests the permit for work in Israel on behalf of a specific Palestinian worker, and the employer can replace him by requesting a permit for another worker. The salary per worker that is reported by workers in the Palestinian labor force surveys is indeed similar to the wage reported to Israeli authorities.[6] Nonetheless, anecdotal evidence suggests that workers pay intermediation significant fees.

Permits for employment in Israel are granted to Palestinians of a specific age and older[7], and who are married. Therefore, permit holders are relatively older than those without a work permit, and an overwhelming majority is married, while among those without a work permit only about 50 percent are married. The average daily wage of workers without permits was around NIS 158 in 2013, and was markedly higher than the average daily wage in the West Bank (NIS 87), but lower than the average daily wage of workers holding work permits (NIS 186). The gap in average monthly wages is even greater, because workers without work permits worked fewer days per month.

The improvement in availability of Palestinian workers

Another notable phenomenon is indicated by the data in Table 3: the stability of employment among Palestinian workers holding permits increased. In 2006, only about one-third of them remained for two years with the same employer, while in 2012 that share increased to two-thirds and was only slightly lower than the share among Israelis who work in companies that employ Palestinians. The average number of annual work months of Palestinian workers also increased markedly, and approached the figure among Israeli workers in companies that employ Palestinians. In addition, in the second half of 2014, the Ministry of Defense increased the number of overnight-stay permits in Israel, from 10,000 to around 14,000, increasing the availability of Palestinian workers for work in Israel. A comparison between Israeli and Palestinian workers in companies that employ Palestinians finds that between 2008

Table 3
Employment persistence and availability: Israelis and Palestinians, 2006–12
(Males whose employment was reported to the Israel Tax Authority, excluding public sector)

		2006	2007	2008	2009	2010	2011	2012
Share of workers employed for two years at companies that employ Palestinians (percent)	Palestinians	33	52	59	60	60	67	67
	Israelis	73	74	75	59	74	78	72
Average number of months of work per year at companies that employ Palestinians	Palestinians	5.9	7.8	8.2	8.6	8.7	8.7	8.5
	Israelis	6.8	7.1	7.2	8.5	7.3	7.5	8.2

SOURCE: Based on Israel Tax Authority data.

[6] The Population and Immigration Authority (PIA) is working to switch to a regime in which Israeli employers will pay the gross wage to the PIA, which will then transfer the net amount to the worker's bank account, thus verifying that such worker's terms do not differ from what is set by law and by relevant collective agreements. Such a regime has been recommended by the OECD and by the State Comptroller (State Comptroller Report 65a, 2014), and is similar to the regime in place until 1995.

[7] The minimum age for receiving a work permit declined from 30 in 2010 to 24 in 2014.

and 2009—that is, the beginning of the global economic crisis—the share of Israelis working alongside Palestinians for two consecutive years declined by 15 percentage points, while the employment rates of Palestinians remained stable (Table 3). This phenomenon indicates that even during the period of the crisis, Israeli employers preferred to keep Palestinian workers.

The increase in the stability of employment of Palestinian workers and in their availability is an additional reason for an increase in demand by Israeli employers for Palestinian workers. The increase in the stability and availability of Palestinian labor has positive ramifications on industries employing Palestinians, as it reduces the waste of resources inherent in repeated searching and training of new workers, and in the uncertainty of workers' availability. Such waste was created in the past, as the availability of Palestinian workers was affected by fluctuations in political-security relations between Israel and the Palestinian Authority. It should be noted that in recent rounds of hostilities, including the period in which Operation Protective Edge took place, the defense establishment allowed most Palestinian workers to continue to enter Israel on a regular basis. This policy diminished one of the advantages that employment of foreign workers held over employment of Palestinian workers in the past.

The persistence of Palestinians in work in Israel comes with an increase in wage; the reported wage of Palestinians employed in Israel with the same employer from 2006 through 2012 was about 14 percent higher than the average monthly wage of Palestinians who began to work in Israel in 2012. This rate of increase is lower than the rate of wage increase of Israelis who remained in their place of work in companies that employed Palestinians (27 percent).There are marked wage gaps between Palestinian workers and their Israeli counterparts in those companies (Table 4). Part of the gap in monthly wages derives from the difference in labor inputs. For example, based on Labor Force Surveys for 2012, an Israeli employee in the construction industry worked 37.1 hours per week, on average, while a Palestinian employee worked only 29.1 hours per week. It is also plausible that they derive from Palestinians' professions being different than the professions of Israeli workers, and with a lower wage.

Table 4
Salary of Israeli and Palestinian workers, by length of tenure at place of work, 2012
(Salary in NIS thousands; Males whose employment was reported to the Israel Tax Authority, excluding public sector workers)

Years of tenure		1	2	3	4	5	6	7
First year of work		2012	2011	2010	2009	2008	2007	2006
Workers employed at companies that employ Palestinians	Palestinians	3.7	3.9	4	4	4.1	4.1	4.2
	Israelis	8.6	9.1	9.5	10	10.4	10.8	10.9
Workers at other companies	Israelis	8.8	9.6	10.2	10.7	11.2	11.8	12.6

SOURCE: Based on Israel Tax Authority data.