Chapter 4
Employment and Wages

The rate of increase of labor input slowed from more than 7.4 percent in 1995 to 3.6 percent in 1996. Average unemployment declined from 6.9 percent in 1995 to 6.7 percent, falling in January–June, remaining steady in July–September, and rising in the last quarter.

The number of foreign workers rose in 1996, as did their share of total employment. The labor input of workers from the Palestinian Autonomy and the administered areas and foreign workers constituted 9 percent of total labor input, the highest level ever.

The real wage per employee post increased by 1.4 percent. In the business sector it rose by 1.3 percent, its greatest increase since the start of the influx of immigrants (except for 1992, when inflation fell sharply).

These trends are the results of structural changes in the supply of labor and uneven developments in the demand for labor in 1996. Allowing the entry of foreign workers, who typically have a low level of education, together with the decline in unemployment to a lower environment than that prevailing prior to the large-scale immigration, meant an increase in the supply of less-educated labor on the one hand, and almost full employment of 'knowledge' workers (i.e., with higher education) on the other. In this context, the slower expansion of demand for labor, particularly in the traditional tradables industries (i.e., those not requiring labor with higher education), alongside growing demand for labor in high-tech industries, especially in the traded sector, resulted in an increase in the real wage and the number of those employed in the latter industries, and stable real wages and employment in the traditional industries.

1. MAIN DEVELOPMENTS

In the business sector the rate of increase of the number of employed persons fell in 1996, and the real wage rose.

The labor market was characterized by four main features during 1996. First, the rate of increase of the number of employed persons in the business sector fell from 7.3 percent in 1995 to 2.6 percent in 1996. Second, real wages in this sector (from the employee's point of view) rose by 1.3 percent. Third, unemployment continued to

Table 4.1
Principal Labor Market Indicators, 1993–96

(percent change from previous year)

	1993	1994	1995	1996
Population (annual average)	2.6	2.6	2.7	2.7
Working-age population	3.0	2.9	3.0	3.0
Participation rate[a]	52.8	53.6	54.1	53.7
Civilian labor force	4.8	4.3	3.5	2.2
Total number of employed	4.6	6.9	6.4	2.9
Israeli	6.1	6.9	5.2	2.4
Non-Israeli	-14.1	7.0	25.0	9.2
Public-sector employees	3.2	4.6	3.9	3.8
Business-sector employees	5.2	7.7	7.3	2.6
Israeli	7.2	7.7	5.6	1.9
Non-Israeli	-13.8	8.1	26.9	9.5
Business-sector labor input	5.4	9.6	8.2	3.7
Israeli	7.9	9.2	5.8	2.6
Non-Israeli	-16.2	14.7	33.7	13.2
Non-Israeli share of total	8.0	8.4	10.4	11.3
Real wage per employee post	0.6	2.5	2.1	1.4
Business sector	0.3	-0.4	0.7	1.3
Public services	1.1	9.8	5.8	1.6
Minimum wage	-1.5	1.8	1.9	2.7
Business-sector unit labor cost	1.5	2.7	0.0	2.3
Total productivity	-1.6	-0.8	0.5	-0.2
Net business-sector domestic product per man-hour	-1.9	-1.5	0.8	0.8
Unemployment rate[a]	10.0	7.8	6.9	6.7

[a] According to the new definitions and sample of the Central Bureau of Statistics, which came into effect in 1995. Thus, for purposes of comparison, according to the previous system the participation rate in 1995 was 53.8 percent, and unemployment was 6.3 percent.

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

decline, going from 6.9 to 6.7 percent, with a fall in January–June, stability in the third quarter, and a rise in the last quarter. Finally, the number of foreign workers, and their share in the total number of employed persons, grew. Their labor input reached about 11.3 percent of the business-sector total.

Three factors contributed to the above developments: the slower increase in the demand for labor, mainly in the traditional industries,[1] permitting the entry of foreign workers, and the approach to full employment among those with higher education.

[1] The traditional industries are: food, textiles, wood and wood products, hotels and restaurants, trade, construction, and agriculture.

The expansion of the working-age population stabilized at an annual rate of 3 percent, with the influx of immigrants contributing about one percentage point, the same as in 1993–95. The growth rate of the civilian labor force fell from 3.5 percent in 1995 to 2.2 percent in 1996, owing to a decline in the participation rate of males.

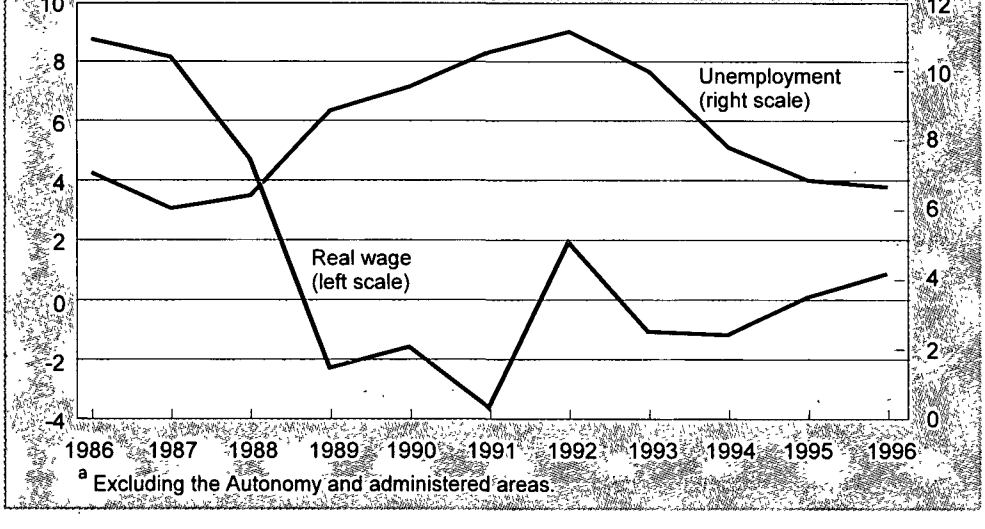
The entry of foreign workers led to a structural change on the supply side.

According to the estimates of the Central Bureau of Statistics (CBS), about 40,000 workers from the Palestinian Autonomy and the administered areas (henceforth referred to together, for brevity, as workers from the Autonomy) and 125,000 foreign workers (i.e., workers from overseas) were employed in Israel in 1996, about a third of them illegally. Opening the labor market to foreign workers, mainly in those industries in which there was a particularly high proportion of workers from the Autonomy (construction and agriculture), led to a structural change on the supply side: while the supply of human-capital-intensive labor is limited, despite the boost it received from immigration from the former Soviet Union, allowing the entry of foreign workers without higher education who swell the supply of labor to the traditional industries enables the number of employees in them to grow without a significant rise in the real wage. The entry of foreign workers thus makes the labor supply to the traditional industries very much more elastic.

Demand for labor in the traditional tradables industries slowed, while that for labor with higher education increased.

Demand for labor in the traditional tradables industries slowed markedly, in some cases leading to a decline in the number of employees for a second year running. On the other hand, in high-tech industries, e.g., electronics and computers, the number of employees grew faster than the working-age population, and their real wage rose. Thus, two distinct developments were evident in the labor market—a significant slowdown in demand for that labor whose supply became far more elastic, and in contrast expansion of demand for knowledge workers, for whom a full-employment situation was approaching.

Figure 4.1
Change in the Business-Sector Real Wage per Employee Post,[a] and the Rate of Unemployment, 1986-96



[a] Excluding the Autonomy and administered areas.

The number of public-sector employees expanded faster than did the civilian labor force and the working-age population.

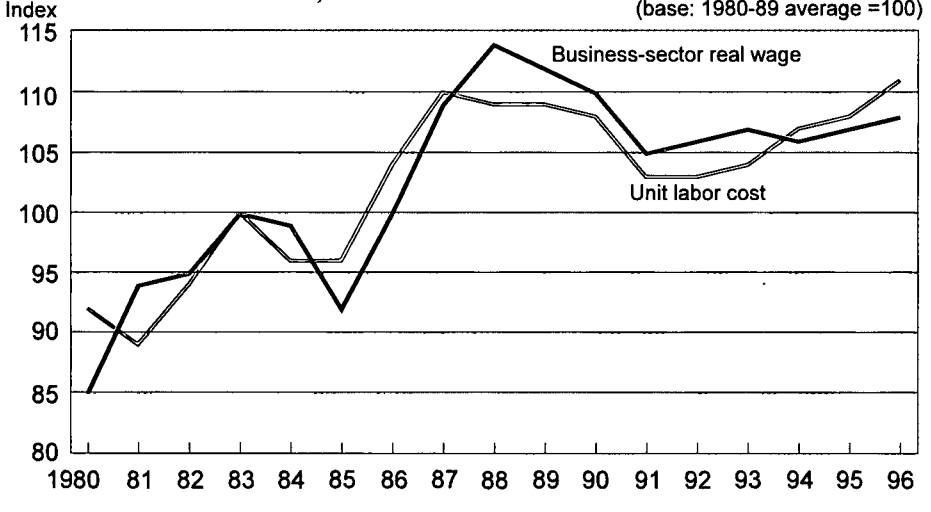
Public-sector demand for labor continued to expand in 1996, and the number of its employees rose faster than the civilian labor force. The main increase was in the number of employees in areas not requiring higher education. Real public-sector wages increased by 1.6 percent, after rising by a total of 15 percent in 1994–95. This increase occurred mainly in the areas of the public sector requiring higher education, such as education and public administration. At a time when the economy is approaching the supply constraint of knowledge workers and their wage is rising (Figure 4.1), public-sector wage increases may make it difficult for the private sector to compete for personnel with higher education.

Business-sector labor input rose by 3.7 percent, one percentage point higher than the civilian labor force.

The number of private-sector employees grew more slowly in 1996 than in 1995, as the economy came close to full employment, the rate of expansion of the civilian labor force declined, and the rise in demand for labor in the traditional industries slowed. The growth of business-sector labor input declined from an annual 8.2 percent in 1995 to 3.7 percent in 1996. The number of foreign workers and those from the Autonomy increased, as did their share in the business sector, enabling its labor input to rise by 3.7 percent, one percentage point above the increase in the (Israeli) civilian labor force.

Net labor productivity rose by 0.8 percent in 1996. Unit labor cost went up by 2.3 percent, the real wage per employee post in the business sector increased by 1.3 percent, and the business-sector hourly wage for Israelis rose by 2 percent after falling

Figure 4.2
Indices of Real Wage[a] per Employee Post, and Unit Labor Cost in the Business Sector,[b] 1980-96



[a] Real wage per employee post adjusted by the change in the CPI.

[b] Gross unit labor cost at prices of factors of production.

for three years. Thus, the rise in net labor productivity was accompanied by a significant increase in wages, consistent with the approach to full employment. In the traditional tradables industries, a 3 percent rise in the minimum wage, the reduction of demand for labor, and the entry of foreign workers resulted in a slight (one percent) increase in the real wage and a decline in the number of employees. In trade and services and construction, which have a large share of foreign workers, the real wage did not increase, despite a rise in the number of employed persons. In high-tech industries the real wage (from the employee's point of view) increased by more than 4 percent, and the number of employees also rose.

Wages in the business sector rose by more than the increase in productivity.

Average unemployment fell from 6.9 percent in 1995 to 6.7 percent in 1996. In the context of a rise of more than 2 percent in the real wage of Israeli employees, this reflects the increase of demand, mainly in high-tech industries, over and beyond the increase in the labor supply. During the year unemployment rose from 6.6 percent in the second and third quarters to 7 percent in the last, reflecting a general slowdown in economic activity in the last period (see Chapter 2).

2. STRUCTURAL CHANGES IN THE LABOR MARKET

Israel's economy has undergone structural changes in the current decade—arising from both the demand and the supply sides—and these have long-term as well as short-term implications. The influx of immigrants from the former Soviet Union—the first of several exogenous events—affected economic developments in general, and the labor market in particular, via domestic demand for output and the increase in the labor supply, especially of knowledge workers.

The influx of immigrants was the first of several events in this decade which caused structural changes in the labor market.

The peace process, which gained momentum with the Oslo Agreements, exposed the economy to increased world demand for its output, mainly high-tech, against the background of large-scale immigration. The combination of high quality, relatively cheap labor (compared with the advanced economies), with the reduced risk associated with investing in this region brought about a surge of domestic and foreign investment.[2] Liberalization was accompanied by constantly increasing exposure to goods imports, mainly consumer goods.

The peace process exposed the economy to increased world demand for its output, mainly high-tech.

Terrorist attacks in 1993 and the resulting closures of the administered areas at a time of rapid expansion of domestic demand—mainly for housing services, which had a high labor input from the Autonomy—prompted policy makers to allow the entry of foreign workers, particularly for such industries as construction and agriculture. This made a structural change possible on the supply side of the domestic labor market:

Terrorist attacks in 1993 resulted in foreign workers being allowed into Israel.

[2] Much of the capital flow in 1996 was not sensitive to interest differentials on financial assets (see Chapter 6).

Table 4.2
Wages and Employment in High-Tech Industries and Traditional Industries,[a] 1993–96

(percent change)

	High-tech industries			Traditional industries		
	Wage	Number of employees	Years of education[b]	Wage	Number of employees	Years of education[b]
Tradables						
1993	-0.3	3.6	14	2.6	3.7	11
1994	-0.9	4.7	14	1.7	2.9	11
1995	0.4	5.6	14	1.5	-1.7	11
1996	5.1	7.6	14	1.2	-6.4	11
Non-tradables						
1993	-0.9	10.0	14	0.8	6.9	11
1994	-2.5	8.3	14	-0.9	9.2	11
1995	-1.8	1.2	14	-2.1	7.7	11
1996	4.2	2.8	14	0.2	1.4	11

[a] The following two-digit industries were taken to represent the four categories:.

	High-tech	Traditional
Tradables	*in industry*: electronics and vehicles *in business services*: computer services	Textiles, food, leather goods
Nontradables	Banking and financial services, other business services (law, accountancy, etc.), electricity and water	Construction, trade, and restaurants

These industries encompass 840,000 employees, some 60 percent of total Israeli employees in the business sector in 1996.

[b] Average number of years of education per employee in these industries in 1991.

SOURCE: Central Bureau of Statistics.

whereas the supply of knowledge workers is limited despite the influx of immigrants, permitting the entry of foreign workers who join the labor supply in the traditional industries makes that supply far more elastic.

Demand can be divided into two types—that derived from the influx of immigrants, the effect of which is not long-term and focuses on the traditional industries, and that which is long-term, arising from Israel's comparative advantage. In view of this distinction and the structural change in the labor market, it is worthwhile examining

general economic developments, and in particular those in the labor market, comparing high-tech with traditional industries, and within each group, tradables with nontradables (Table 4.2).

This distinction reveals prominent features in employment and wages. The number of employees in the traditional tradables industries fell in 1995–96, the decline accelerating in 1996; the expansion of the number of employees in the traditional nontradable goods industries moderated; the growth in the number of knowledge workers in the nontradables sector slowed, while in the tradables sector it accelerated. These developments in employment occurred alongside a rise in the real wage in high-tech industries, in particular in tradables, where it increased—for the first time since the start of the influx of immigrants—by 5 percent, while remaining stable in the traditional industries.

The entry of foreign workers moderated wage increases in the traditional industries.

In the context of the entry of foreign workers, these results in the wages and employment fields indicate uneven developments in demand for labor. In the tradables high-tech industries it rose constantly, leading the way for a rise in wages in all industries requiring knowledge workers, while there was a slowdown in the rate of expansion of demand for labor in the traditional industries, both tradables and nontradables. In the traditional tradables industries, which have a high share of workers earning the minimum wage (which rose by 3 percent), and where foreign workers constitute a small part, the number of employees fell, and the real wage rose by about one percent, indicating that demand for labor in these industries declined. The increase in the number of foreign workers—most of whom work in the nontradables traditional industries—to about 125,000,[3] together with the significant slowdown in the rise of Israelis in these industries, suggests a certain substitution of foreign workers for Israelis in them. The entry of these foreign workers once again prevented the real wage from rising in these industries, despite the increase in the minimum wage and in the number of employed persons.

In light of the above, a continued upward trend in the number of public-sector employees over and beyond the natural population growth, alongside the persistent rise in the real wage of the knowledge workers among them, may contribute to a rise in the wage in industries requiring knowledge workers.

Note that allowing the entry of foreign workers at a time when the traditional industries are expanding more slowly may well cause a rise in unemployment among workers without higher education, reversing the steep downward trend of unemployment evident in the last few years.

[3] According to the CBS estimate.

3. THE BACKGROUND: UNEMPLOYMENT AND WAGES, 1992–95[4]

Unemployment among those with higher education at the end of 1995 was 3.6 percent.

Unemployment declined steeply from 11.2 percent in 1992 to 6.9 percent in 1995. Among those with higher education (fifteen years or more) unemployment went down to 3.6 percent; among those completing high school (i.e., with twelve years of schooling) the rate of unemployment, despite its rapid fall, was 9 percent in 1995, and the participation rate was low. Unemployment among immigrants went down steeply (quantitative absorption), although the match between their occupations and their educational level (qualitative absorption) is poorer than in the established population. Unemployment among immigrants with higher education plunged from about 30 percent in 1992 to less than 8 percent in 1995, while among other immigrants it stabilized at the same level as that of veteran Israelis. Quantitative absorption is faster among younger immigrants; among those aged 22-40 unemployment in 1995 approached that of the established population in the same age group (4.5 percent).

Qualitative absorption is no less important than quantitative. Efficient utilization of the immigrants' human capital is one way of raising total productivity. Qualitative integration may be assessed by examining the proportion of all employees with higher education who are employed in high-tech occupations. Tables 4.4 and 4.5 show that among immigrants this proportion rose steeply, although it is still below that among

Table 4.3
Rates of Participation and Unemployment, by Education and Seniority, 1991–95

(percent)

	Up to 12 years of education				13 or more years of education			
	Established population		Immigrants[a]		Established population		Immigrants	
	Participation rate	Unemployment	Participation rate	Unemployment	Participation rate	Unemployment	Participation rate	Unemployment
1991	45.4	11.8	33.5	37.1	70.7	5.7	52.3	39.7
1992	44.5	13.2	40.0	27.9	71.6	5.9	59.5	30.6
1993	46.1	12.7	41.4	20.7	71.0	4.1	61.9	15.7
1994	45.3	10.9	43.6	15.5	72.9	4.2	64.9	12.9
1995	45.6	8.9	42.1	10.0	72.3	3.6	62.6	7.9

[a] Immigrants from the former Soviet Union who arrived as part of the large influx which started in 1989.
SOURCE: The CBS Survey of Income of Employees (Individuals).

[4] This section is based on data from the Surveys of Income of Employees (Individuals), 1991–95. Micro-data from the Labour Force Surveys and Surveys of Income of Employees is received after a one-year delay.

Table 4.4
Absorption of Highly Educated Immigrants in Occupations Requiring Higher Education, 1992–95

(percent)

	Proportion of knowledge workers[a] employed in high-education occupations		Immigrants' relative wage[c]	Average seniority (years)	Unemployment rate
	Established population[a]	Immigrants[b]			
1992	71	31	35	1.5	29.4
1993	70	34	38	2.2	16.2
1994	70	38	44	3.0	11.6
1995	72	42	50	3.6	8.0

[a] In Israel before 1989.
[b] Immigrants from the former Soviet Union who arrived as part of the large influx which started in 1989.
[c] Immigrants' wage relative to that of established population.
SOURCE: The CBS Survey of Income of Employees (Individuals).

the established population.[5] An analysis of utilization of immigrants' human capital by the length of their time in Israel shows that their integration into high-tech employment is a continuous but lengthy process.

The share of highly skilled immigrants employed in suitable jobs increases with the length of their time in Israel, and is approaching that of the veteran population. The wage gap between these immigrants and the veteran population is also narrowing, but there is still a 30 percent gap between the wages of the first arrivals of the latest influx and those of the established population.

Unemployment among immigrants fell rapidly, but their occupations accord less well with their level of education than do those of the established population.

The qualitative integration of immigrants with higher education into the work force starts with occupations in which their education is unexploited, and continues with those in which their human capital is exploited to a great degree, and their output is high. The share of immigrants with higher education among those who in 1995 had been in Israel for six years is close to that of the established population, as is their unemployment rate. Note that for younger highly skilled immigrants the wage gap mentioned above has been eliminated: in 1995 the wage of immigrants aged 22–40 with at least 15 years of education who arrived in Israel in 1989 surpassed that of the comparable group in the established population. These findings provide a first indication that the qualitative integration of immigrants has started. Differences

The proportion of all immigrants with higher education who are employed in high-tech occupations is increasing quickly.

[5] Flug, Kasir, and Gur show that among immigrants from the Soviet Union in 1979–81, 65 percent of those who had worked in high-tech industries in their countries of origin, found similar employment in Israel. *The Absorption of Soviet Immigrants into the Labor Market from 1990 Onward*, Bank of Israel Research Department, 1992.

Table 4.5
Immigrants[a] with 15 or More Years of Education, 1995

(percent)

Number of years in Israel	Participation rate	Unemployment rate	Proportion in high-education occupations	Wage (NIS, at current prices)	Relative wage[b]
0	32.3	20.0	20.0	1,630	20.8
1	56.0	25.5	18.2	2,801	35.7
2	53.1	10.0	31.6	3,019	38.5
3	58.4	7.6	43.5	3,273	41.7
4	70.2	6.1	40.3	4,083	52.0
5	72.2	4.8	42.9	4,185	53.3
6	86.7	4.5	57.9	5,445	69.4

[a] Immigrants from the former Soviet Union who arrived as part of the large influx which started in 1989.

[b] As percentage of wage of established population.

SOURCE: The CBS Survey of Income of Employees (Individuals).

between the levels of qualitative integration of older and younger immigrants are consistent with the well-known economic contention that some human capital accumulated with experience is not transferable from country to country.

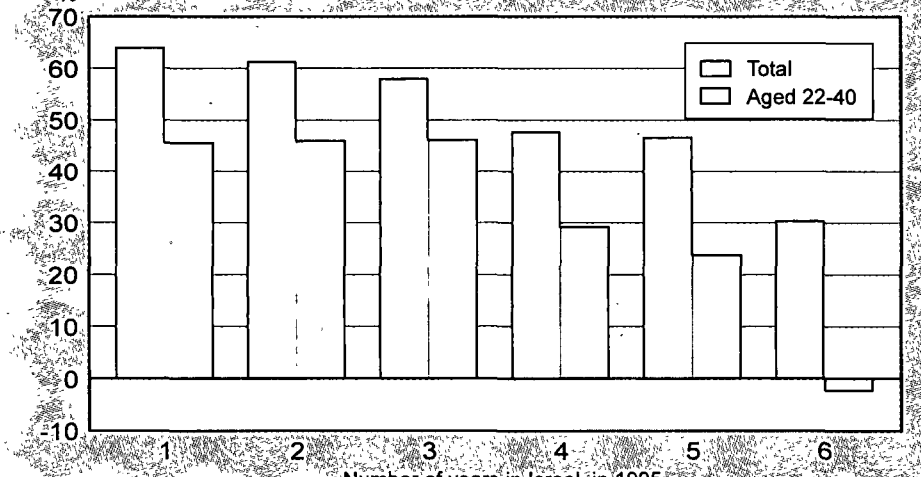
Indications regarding the effect of the influx of Soviet immigrants and the structural change in the labor market arising from the entry of foreign workers can be found in the development of wages of the higher educated compared to that of workers with up to 10 years of education in 1992–95 (Table 4.6).

In 1995 wage gaps among the established population widened further, due to a decline in the wage of those with only elementary education, and a rise in the wage of those with higher education.

Within the veteran population, the wage gap between employees with more than 15 years of education and those with up to 10 years widened in 1992, a finding consistent with incipient integration of immigrants into the labor market in unskilled occupations (Tables 4.4 and 4.5). In 1995 this gap widened further, as the real wage of the unskilled fell and of the skilled rose. The entry of foreign workers, whose numbers increased mainly in 1995, is consistent with this result.[6] A notable finding regarding immigrants was the rise of the wage of the highly skilled relative to that of the established population, while the rate of change of the wage of those with only elementary education converged with that of the comparable group in the established population. The wage of immigrants with higher education is rising faster than that of similar veterans, further proof of their qualitative integration. Among workers with up to 10 years of education the gap between the wages of immigrants and of veteran

[6] A similar phenomenon is described in a number of studies relating to the US labor market, e.g., Katz and Murphy, "Changes in Relative Wages, 1963–87: Supply and Demand Factors," *Quarterly Journal of Economics*, February 1992, pp. 35–78.

Figure 4.3
Wage Gap between Highly-Educated Immigrants and the Established Population,[a] by Number of Years in Israel, 1995



[a] With 15 or more years of education.

Table 4.6
Rate of Change of Nominal Wage per Full-Time Employee Post, by Education, 1992–95

	Total population		Established population[a]		Immigrants[b]	
	Years of education					
	0–10	15+	0–10	15+	0–10	15+
1992	12	22	15	26	21	10
1993	3	4	3	4	16	13
1994	13	24	15	18	12	37
1995	6	15	6	16	5	31

[a] In Israel before 1989.

[b] Immigrants from the former Soviet Union who arrived as part of the large influx which started in 1989.

SOURCE: The CBS Survey of Income of Employees (Individuals).

Israelis stabilized at about 20 percent. Thus, the widening of the wage gaps in the population in the last few years began when immigrants started working in the traditional industries, continued as they integrated into occupations requiring knowledge workers, while the relative wage of the highly skilled rose overall, and became even more pronounced in 1995 with the entry of a large number of foreign workers.

4. THE LABOR MARKET

The labor supply

The rate of increase of the civilian labor force slowed from 3.5 percent in 1995 to 2.2 percent in 1996, as the participation rate fell from 54.1 to 53.7 percent.

The population grew by an average 2.7 percent in 1996, similar to the rate since 1993, due to the stabilization of the number of immigrants. This rate of increase is about one percentage point higher than the rate prior to the influx of immigrants. The working-age population continued to rise, increasing by 3 percent in 1996, with immigrants contributing about a third of this. For the first time since the start of the immigration from the former Soviet Union, the participation rate declined, from 54.1 to 53.7 percent. Hence, the rate of increase of the civilian labor force went down to 2.2 percent.

Table 4.7
The Labor Supply: the Population, Working-Age Population, and the Civilian Labor Force, 1993–96

(percent)

	1993	1994	1995	1996
Total population				
Participation rate: men	43.4	44.7	45.7	45.6
women	62.8	62.8	63.0	62.2
Immigrants (post-1989)				
Working-age population (rate of change)	20.1	17.0	15.3	12.1
Immigrants' contribution to increase in working-age population	1.1	1.0	0.7	1.0
Immigrants' share in working-age pop'n	9.9	11.2	12.5	13.6
Participation rate: men	44.8	47.0	45.7	47.0
women	64.3	65.0	62.7	62.0
Unemployment rate	19.3	13.5	9.5	8.9

SOURCE: Central Bureau of Statistics.

The fall in the participation rate is due entirely to the decline in that of men, in the established population as well as immigrants, by 0.8 percentage points. The continuously rising trend of women's participation rate leveled off in 1996, despite the higher rate of female immigrants. The fall in immigrants' average rate of entry into the labor force may be due to the change in their age composition in the last few years, i.e., a higher share of those over 55 years old.

The demand for labor

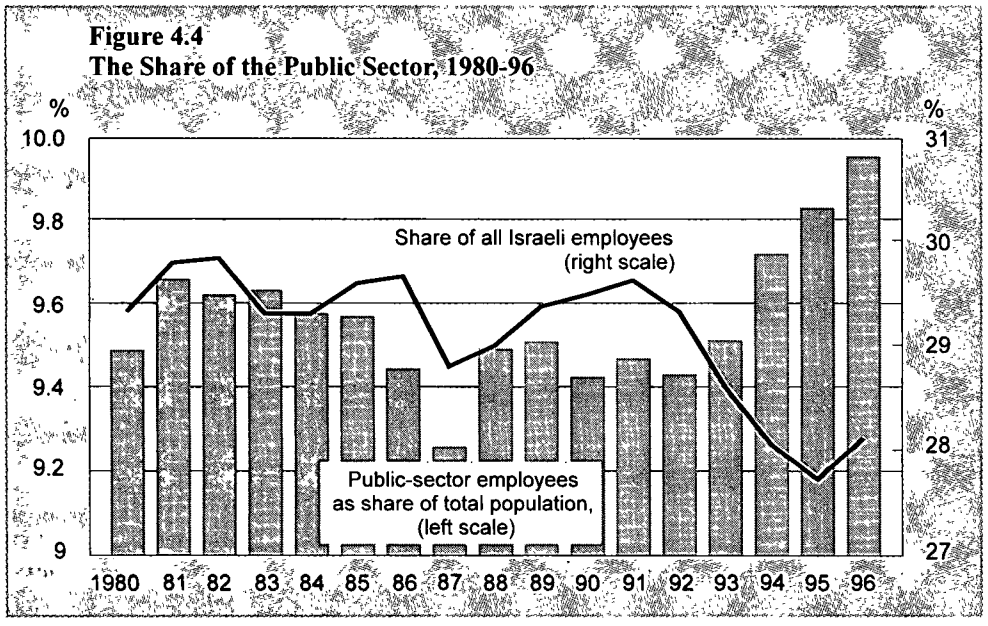
The number of public-sector employees gives a clear indication of the demand for labor in that sector, as it is relatively price inelastic. In contrast, changes in the number of employees in the business sector do not necessarily provide such an indication, and other indicators must also be used in order to obtain information about demand changes.

Public-sector demand

The number of public-sector employees rose again in 1996, by 3.8 percent, following a cumulative 12 percent increase in 1993–95. The increase in public-sector demand for labor again exceeded the rise in the civilian labor force, and was expressed in two ways—primarily in quantitative terms in industries which are not human-capital-intensive, and in terms of price (wages) in the highly skilled public-sector areas. Thus in 1996, once again, as the economy approached full employment, the public sector did not release labor input for the business sector.

Public-sector demand rose faster than both the civilian labor force and the working-age population.

Figure 4.4
The Share of the Public Sector, 1980-96



Real wages in the public sector rose by 1.6 percent in 1996.

Real public-sector wages rose by 1.6 percent in 1996, due to the wage increases of employees in the civil service, education, and personal and community services—the high-skill-intensive areas of the public sector. The rise in public-sector wages is the result of the wage agreements of 1993 (see Chapter 4 of the Bank of Israel *Annual Report*, 1995), but must also be seen in the context of competition for highly-skilled labor input, in which the economy is drawing close to full employment.

In the early years of the influx of immigrants (1990–91) the public sector expanded relative to the business sector (Figure 4.4). Since 1992 the reverse has been the case, indicating that most of the immigrants found employment in the business sector. In each year since 1993 the number of public-sector employees grew significantly faster than the population, and in 1996 the former expanded by one percentage point more than the latter.

The business sector

The indirect indicators of business-sector demand for labor—number of hours worked per employee, capital/labor ratio, total productivity, and GDP prices—do not all paint the same picture. On the one hand, there are signs of persistent expansion of demand, mainly in the high-skill-intensive industries, while on the other, there are early indications of a moderation in the rate of increase in some of the traditional tradables industries.

An examination of GDP prices[7] shows a persistent but uneven trend of price changes. Excluding the food industry,[8] the rise in prices of traditional tradables was less than the overall average.

Table 4.8
Nominal Wage and Number of Employees in the Public Sector, 1994-96

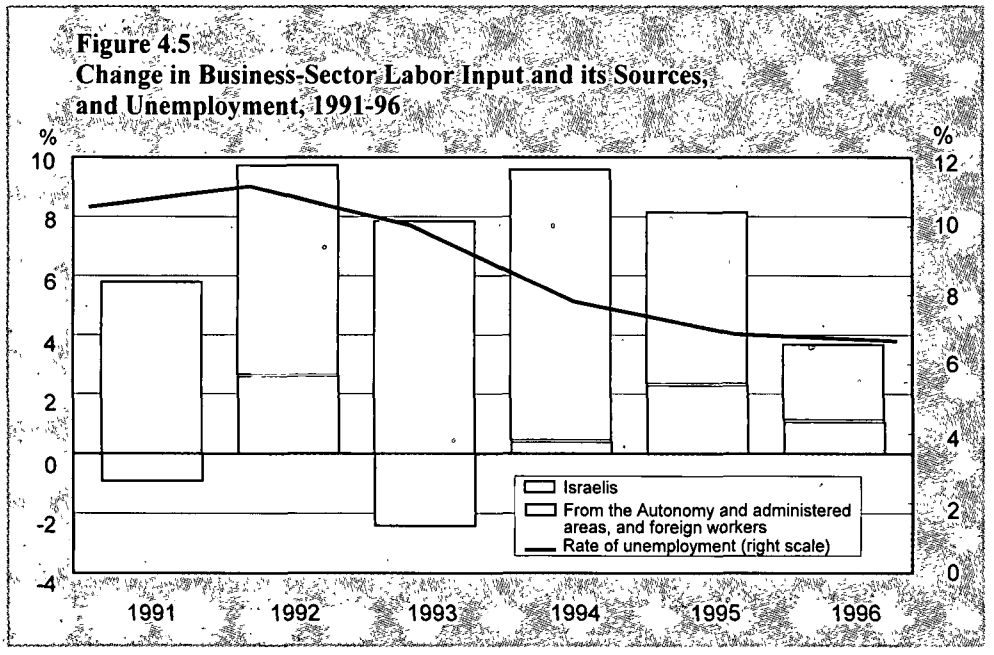
	1994		1995			1996		
	Wage (current NIS)	Share of all employees	Wage (current NIS)	Rate of change of wage	Share of all employees	Wage (current NIS)	Rate of change of wage	Share of all employees
Civil service	5,100	18.8	6,053	18.7	17.8	7,029		
Education	3,182	38.7	3,772	18.5	38.8	4,317	14.5	38.6
Health & social welfare	3,726	28.0	4,176	12.1	28.0	4,570	9.4	28.6
Community services	3,026	14.6	3,386	11.8	15.4	3,762	11.2	15.4

SOURCE: Based on Central Bureau of Statistics data

[7] In the absence of data on GDP prices, in some industries CPI prices have been used.

[8] In the food industry there is monopolistic competition, with the major manufacturers also being the main importers, which explains the steady rate of price rises on the domestic market alongside the falling share of domestic production.

Figure 4.5
Change in Business-Sector Labor Input and its Sources, and Unemployment, 1991-96



The sharp increase in the number of hours worked per employee in the business sector in 1993–95, particularly in the highly skilled areas, seems to have been a short-term solution to the labor-shortage problem, which in time can be solved by increasing the number of workers. The number of hours worked per Israeli employee did not decline in 1996.

Changes in capital stock are one of the indications of expected changes in the demand for labor: in 1995 the rate of increase of investment in all the principal industries moderated. This resulted from its stabilization at a high rate in the high-tech industries such as electronics (33.4 percent), and a reduction in the traditional tradables industries (11.4 percent in textiles, and in food and drink). This suggests that an uneven trend is developing in labor demand.

Data on total productivity clearly indicate a sharp reduction in the demand for labor in those industries, such as food and textiles, which are not human-capital-intensive industries , and where productivity fell for the first time, by 3.7 and 2.9 percent respectively. In the high-tech industries, too, the pattern varied: while in chemicals productivity increased, in electronics it did not. Note that total productivity rose moderately in the highly skilled industries where there was rapid expansion of investment, while, by contrast, productivity in the unskilled industries fell with reduced investment.

As in 1995, the prices of goods in some of the nontradables industries—such as construction and services—rose, indicating continued expansion of demand for labor. For the third successive year prices of clothing, footwear, and textiles rose more slowly than those of other goods, a partial indication of a reduction in demand for labor in those industries.

Changes in the labor market

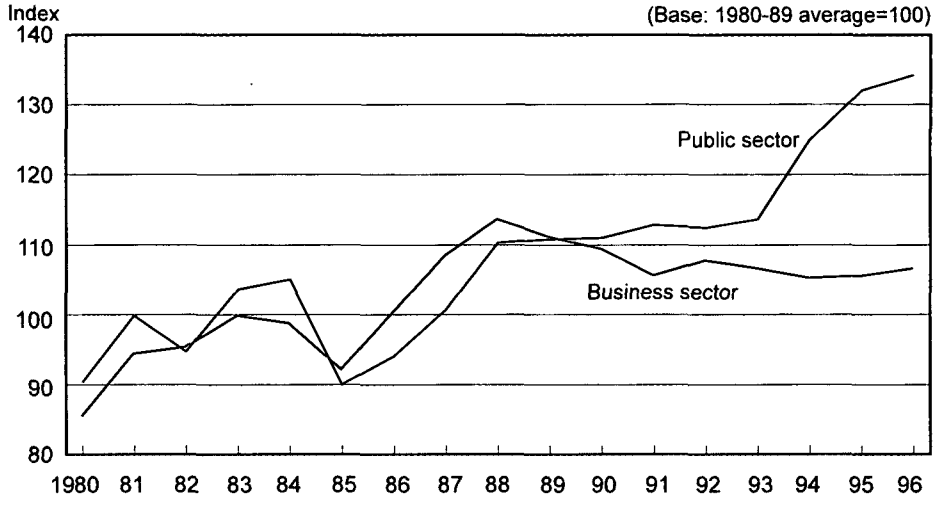
Developments in the labor market in 1996 had four major effects: the increase in the total number of employees, and particularly in the business sector, slowed considerably, from about 7 percent in 1994 and 1995 to 2.6 percent in 1996. Secondly, unemployment fell again, from 6.9 percent in 1995 to 6.7 percent in 1996. Thirdly, the real wage per employee post rose by 1.4 percent (1.3 percent in the business sector and 1.6 percent in the public sector); and finally, the number of foreign workers and their share in the business sector increased.

The growth in the labor supply in 1996 did not correspond to demand.

These results derived from two sources. On the supply side there were structural changes—opening the economy to foreign workers and approaching full employment, mainly among the highly skilled. On the other hand, demand for labor developed unevenly: it expanded in the highly skilled industries and contracted in the unskilled, mainly tradables, industries. Thus, within the separate components of the market, the increase in the labor supply did not match the rise in demand.

Labor input in the business sector went up by 3.7 percent, compared with 9.6 and 8.2 percent in 1994 and 1995 respectively. That of Israelis increased by 2.6 percent in 1996, compared with 9.2 and 5.8 percent in 1994 and 1995 respectively, and the number of hours worked per employee also rose. The contribution of foreign workers and workers from the Autonomy went down from 2.3 percent in 1995 to

Figure 4.6
Indices of the Real Wage per Employee Post in the Business and Public Sectors, 1980-96



about 1 percent, and their share of business-sector labor input reached a new peak of 11.3 percent. Labor input in the public sector continued expanding, faster than both the civilian labor force and the business-sector labor input of Israelis. The faster growth of labor input than the various components of the civilian labor force was reflected by the fall in the unemployment rate, to 6.6 percent in the second and third quarters, rising to 7 percent in the fourth due to the fall in the number of employees in hotels and restaurants and in some of the unskilled industries.

The real wage per employee post rose in both the public and the business sectors. For the first time since the start of the influx of immigrants,[9] the real wage in the business sector rose as the nominal wage accelerated, alongside the increase in the number and share of non-Israeli, particularly foreign, workers. In the public sector the real wage per employee post rose more moderately than in 1995, although here, too, the nominal wage increased by more than the upper limit of the inflation target.

Business-sector net domestic productivity went up by 0.8 percent, in line with the rise in the real wage in that sector, so that labor productivity was mainly reflected by wages. This indicates that the reason for the slowdown in the increase in labor input in 1996 was the approach to the supply constraint of highly skilled labor together with the slowdown in demand for labor in some of the unskilled industries.

The increase in wages in the business sector was led by the highly skilled areas—business services, banking, insurance and finance—and mainly the highly skilled areas of industry such as electronics. The real wage in these industries from the point of view of the employee, and the number of employees rose faster than the working-age population. In construction, trade and services, hotels and restaurants, i.e., unskilled nontradables industries, which employ about a third of business-sector employees, the real wage per employee post was stable. Allowing the entry of foreign workers enabled labor input in construction to rise by more than 6 percent (5 percent in the number of Israelis employed), without an increase in the real wage. In hotels and restaurants the number of Israeli employees declined, while in trade their number rose by 2.5 percent. This was caused by the larger share of foreign workers in these fields as well as by the terrorist attacks which affected hotels and restaurants by reducing tourism. In manufacturing, where foreign workers constitute a small share, the number of employees in certain unskilled areas such as food, textile, clothing and footwear, fell. In these industries, which account for about a quarter of the total number of employees in manufacturing and have a large proportion of employees receiving the minimum wage, the real wage increased by less than did the minimum wage.

[9] Except for 1992, when inflation plunged from an environment of 18 percent to one of about 10 percent.

5. FOREIGN WORKERS

The number of foreign workers in Israel in 1996 is estimated at about 125,000.

Employing non-Israeli workers is not a new phenomenon in Israel; it started after the Six-Day War in 1967. The peak number of workers from the administered areas was 115,000,[10] and their biggest share was 8 percent of the labor force. Importing labor input from areas other than these, i.e., foreign workers, is a new development which has spread since 1993, and has reached considerable proportions. According to CBS estimates, the number of foreign workers in 1996 reached 125,000, about a third of whom are employed illegally. In effect there has been a structural change in the supply of labor, in the form of easing the labor-supply constraint in the traditional industries.

Workers from the administered areas accounted for 10 percent of total business-sector employees in 1987, prior to the outbreak of the *intifada*, and in construction and agriculture constituted almost half of all employees. Most of these workers, who were employed in Israel with almost no restriction on their numbers for more than twenty years, were nearly all unskilled or experienced in industries which are not human-capital-intensive . There was no flow of skilled workers from the administered areas to Israel to capital-intensive industries, so that the returns to schooling among residents of the administered areas gradually declined.[11]

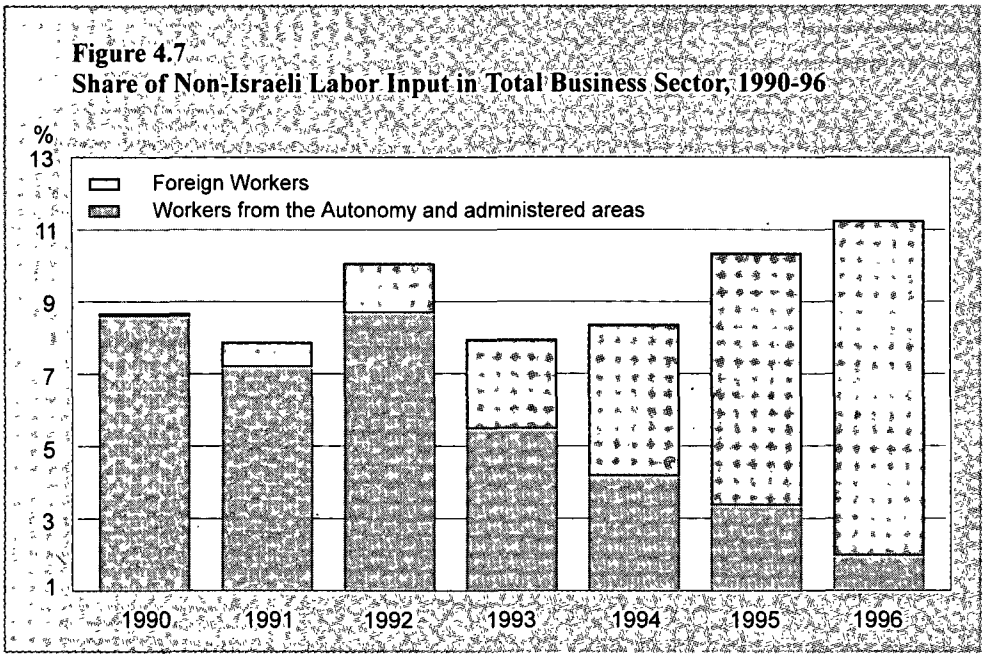
The *intifada*, the Gulf War, and terrorist attacks reduced demand for workers from the administered areas, diverting it to labor input imported from overseas.

There were three policy developments which started and then accelerated the process of reducing demand for workers from the administered areas, redirecting it to labor input imported from areas other than those under Israel's control. First, the *intifada*, which caused irregular flow of the labor force; second the Gulf War, during which there was a complete closure of the administered areas for more than a month; and lastly, the wave of terrorist attacks in 1992–93, leading to closures which imposed new costs associated with employing workers from the administered areas. All these united the demand side for labor and public opinion in Israel, and there was widespread public desire to reduce the employment of workers from the administered areas and replace them with foreign workers. Note that at that time Israel was absorbing large-scale immigration from the Soviet Union. This affected both the supply side of the labor market, by enabling some substitution of workers from the areas by immigrants in the early 1990s, and the demand side, mainly in construction, where most of the workers from the administered areas were employed. It is not a coincidence that with the completion of the initial stage of absorbing the major part of the large-scale immigration, in 1992–93, the demand-side pressures increased constantly, and there were many requests for permission to employ foreign workers not from the

[10] See E. Kleiman, "Does Israel Need Foreign Workers?" Maurice Falk Institute for Economic Research in Israel, Jerusalem, Discussion Paper No. A96.03, 1996. (Hebrew)

[11] J.D. Angrist, "The Economic Returns to Schooling in the West Bank and Gaza Strip," *American Economic Review*, December 1995, vol. 85(5), pp. 1065–87.

Figure 4.7
Share of Non-Israeli Labor Input in Total Business Sector, 1990-96



administered areas. Since 1993 the total number of non-Israeli workers (including those from the Autonomy and the administered areas) has risen steadily, as has their share of the total number of employees, side by side with the process of replacing those from the administered areas with workers from overseas.

Utility and economic cost of allowing the entry of foreign workers

In the short term the entry of foreign workers smooths the effect of excess labor demand on wages.

Whereas most of the utility of allowing foreign workers into Israel is short term, its cost is medium and long term. When there is full employment, short-term economic benefits derive from opening the market to the import of labor as this smooths the effect of excess demand on the price of that factor of production, and hence on the price of output. For example, the isolated, temporary rise in the demand for housing services due to the influx of immigrants resulted in excess demand for construction workers. This contracted relatively quickly when the import of labor was allowed, a development which would not have been possible in a closed economy. Hence, allowing the import of inputs, including labor, eases production constraints in the short run. The main cost associated with allowing the entry of foreign workers is the permanent nature of their presence: it is not certain that workers who come to Israel because of wage differentials will leave when there is a slump. Moreover, it may be assumed that even in a period of economic slowdown the wage differentials which brought the foreign workers to Israel do not disappear, so that market forces cannot be relied upon to make these workers leave. Most of them, who become part of the

Competition between foreign and Israeli workers, mainly from the weaker strata, will intensify at times of economic slowdown.

supply of those without higher education, compete with the weaker strata of Israelis—competition which becomes more intense during an economic slowdown, when there is no need for imported labor.

The entry of foreign workers when there is excess demand in the labor market alters the relative wages of skilled and unskilled workers. In the short and medium term (when the unskilled cannot become skilled), this supply of labor increases inequality between the groups. This may explain why inequality rose in 1994, when the influx of immigrants was not at its peak. In view of the permanent nature of the presence of foreign workers in Israel, their potential effect on the inequality of income distribution is not temporary.

Box 4.1: The Number of Workers from Overseas

The social and economic implications of foreign workers in Israel depend in the first instance on their numbers. The CBS estimates this at 125,000 in 1996, about one third of whom are employed illegally.

Other estimates of their number vary from the number of permits—105,000 at end-1995—to about half a million. Illegal workers enter Israel as tourists, so that their number may be estimated from the annual balance of tourists, i.e., the number of tourists entering Israel *less* the number who subsequently leave. Some of the difference is certainly due to errors and omissions in registration.

In 1996 the balance of tourists was 124,000—6 percent of the number of arrivals, compared with 1.3 percent in the 1980s—up from 85,000 in 1995, despite a 10 percent decline in the number of tourist entries into Israel. Since 1993 the balance of tourists has been about 100,000 per year, five times the numbers in 1990–91. The cumulative number of tourists who remained in Israel in 1993–96 is close to 400,000, almost equal to the total of those who have stayed in the forty-nine years since the State was established (bearing in mind that the numbers include errors and omissions).

The decision to permit the entry of foreign workers into Israel was due primarily to pressure from the construction industry. In 1991 Israelis constituted about half of the number of employees in construction; by 1996—according to the official figures—this had risen to above 60 percent, at a time when foreign workers were allowed to, and did, enter Israel.

In other words, based on the recorded numbers of tourists who have entered Israel since 1993 and who have not left the country, the CBS figure of 125,000 foreign workers appears to be a serious underestimate.

Figure 4.8
The Difference Between Tourists Arriving and those Subsequently Leaving, 1950-96