Chapter 8
Welfare Policy Issues

1. POVERTY AND THE POLICY FOR POVERTY REDUCTION [1]

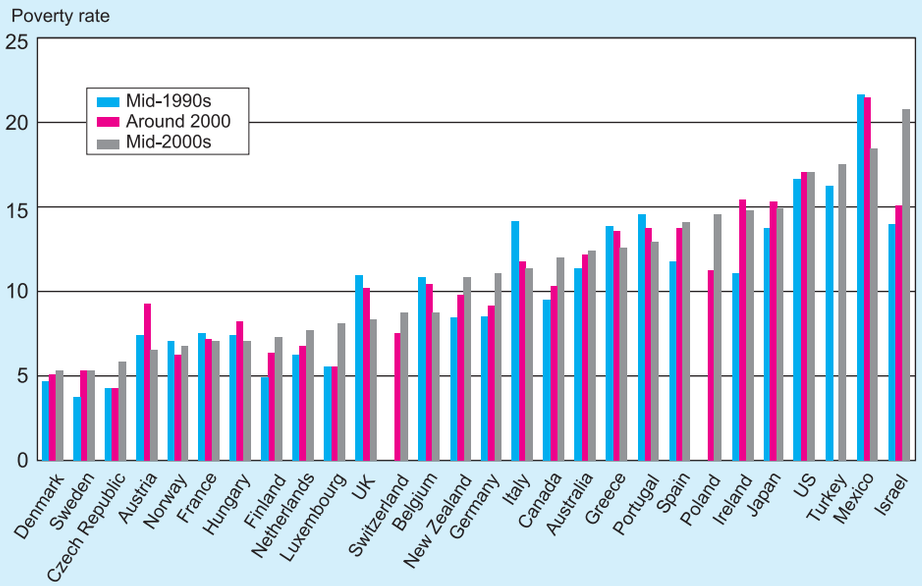
- In 2007 and the first half of 2008, the extent of poverty was reduced according to most of the accepted measures: the incidence of poverty, the SEN index and the proportion of the poor consuming below the poverty line. However, the extent of poverty still remains high, both in comparison to the OECD countries and in historical terms.
- The extent of poverty is especially high among the Arabs and the ultra-Orthodox, who are characterized by low levels of employment and high birth rates.
- The incidence of relative poverty has declined despite a rise of 4.2 percent in the poverty line. This was the result of an increase in per capita median income during the period, due to the high rate of economic growth. This led to an even larger reduction in poverty in absolute terms. (From 2006 until August 2007, the incidence of relative poverty fell by 1.5 percentage points, while it fell by 2.5 percentage points in absolute terms.)
- The reduction in the extent of poverty was primarily the result of an improvement in the relative situation of weaker populations in the labor market, particular their increased rate of employment, which reflects on the one hand the trickling down of growth to the weaker populations during this period and on the other hand the effect of the cutbacks in welfare benefits.
- The incidence of poverty before transfer payments and taxes fell to a level similar to that during the late 1990s. However, the direct effect of welfare policy through transfer payments remained limited in 2007, further to its continuous significant weakening since 2001. Therefore, the incidence of poverty after transfer payments and taxes was significantly higher in 2007/8 than during the late 1990s.
- During the last decade, the extent of poverty has increased among households with at least one income earner. This development reflects the entry of weaker segments of the population into the workforce and the inability of the welfare policy to ensure a reasonable level of welfare for workers. It is important to remember that the very entry into the workforce will have additional positive effects in the long term which will intensify as the new workers become better integrated in the labor market.
- In October 2008, an earned income tax credit was introduced in a number of locations in Israel. This will work to increase the welfare of low-earning workers and thus is in line with the overall policy of fighting poverty by increasing employment. The extension of the earned income tax credit (EITC) program to additional locations is expected to increase its positive effects.

[1] The section relates to welfare policy that directly or indirectly affects the problem of poverty. It will not discuss welfare policy in other important areas, such as education, health, personal security, housing, personal and community services, culture and entertainment, sports and religious services. A discussion of some of these areas appears later in this chapter and in Chapter 6.

The extent of poverty was reduced in 2007, but remained relatively high.

The incidence of poverty in terms of individuals[2] (according to the generally accepted relative definition) reached 23.6 percent in 2007/8,[3] which represents about 1.6 million individuals.[4] About 760 thousand of these are children, which represents 34.3 percent of all children in Israel in 2007/8. Although these figures represent a reduction in the incidence of poverty, they remain high both in comparison to OECD countries[5] and in historical terms (Figure 8.1 and Table 8.1).

Figure 8.1
Poverty Rates, International Comparison[a]



[a] According to the poverty line defined as half the equivalized monetary income weighted according to the OECD scale (the square root of number of family members). The weight of economies of scale according to the OECD scale is higher than that of the National Insurance Institute, so that the incidence of poverty shown in the figure is lower than that calculated by the National Insurance Institute. In the calculation of the incidence of poverty, observations of zero monetary incomes were omitted. The calculations for Israel do not include the Arabs of Jerusalem. The poverty rates for Israel were calculated for 1997 (as the middle of the 1990s), 2000, and 2005 (as the middle of the 2000s).

SOURCE: Based on OECD Stat and Income and Expenditure Surveys of the Central Bureau of Statistics.

[2] An individual is defined as poor if his disposable income is less than the poverty line. The incidence of poverty is equal to the proportion of poor people in the total relevant population.

[3] Most of the analysis in this chapter relates to data from the Income Survey and the Expenditure Survey. The last Income Survey published covered the period July 2007 to June 2008. Data from it will be referred to as data for the 2007/8 period. The last Expenditure Survey was published for 2007 and therefore data based on the Expenditure Survey are updated to 2007 only.

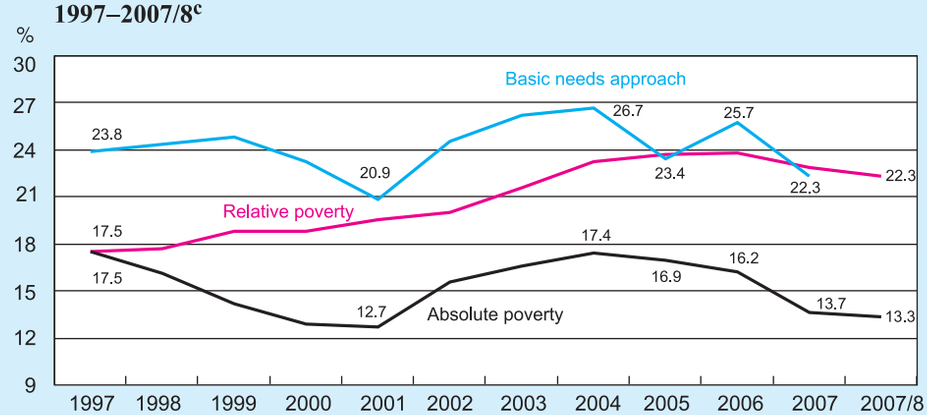
[4] Including Jerusalem Arabs. The rate of poverty not including Jerusalem Arabs was 22.3 percent in 2007/8, which represents about 1.5 million people. In this chapter, the data presented for 2007/8 relate to the total population, including Jerusalem Arabs, unless a long-term trend is being discussed. In these cases, the data do not include Jerusalem Arabs since there is no data on their incomes for the years 2000 and 2001.

[5] For a comparison of indices of poverty and social exclusion in EU countries, see Report on the State of Society No. 1, the Central Bureau of Statistics, October 2008.

The improvement in welfare was reflected also in other poverty indices.

The improvement in welfare, which was manifested in a reduction of poverty according to the relative index, was reflected to an even greater extent in other poverty indices.[6] Thus, the incidence of poverty measured in absolute terms (the fixed poverty index) fell by 2.5 percentage points in 2007 to a level of 13.7 percent and in 2007/8 to a level of 13.3 percent. The index of poverty according to basic needs, which reflects the ability to purchase basic necessities,[7] was subject to large fluctuations in recent years; however, it does indicate a large reduction in poverty since 2003 (Figure 8.2 and Table 8.1).

Figure 8.2
Incidence of Poverty among Individuals by Different Approaches,[a,b] 1997–2007/8[c]



[a] The **relative poverty line** is calculated according to half the median equivalized income. The **basic needs poverty line** is a combination of Canadian Market Basket Measure (MBM) and the American (NAS) measure. This includes essential spending on food, accommodation, education, transport and personal products. According to the basic needs approach, a household is defined as poor if its income from all sources, after deducting tax, essential family health expenses and expenses associated with going out to work, is below the poverty line.
The absolute poverty line is calculated relative to the real level of the poverty line in 1997.
[b] Not including Arabs of Jerusalem.
[c] The data are based on a survey conducted between July 2007 and June 2008.
SOURCE: Based on Central Bureau of Statistics' Income and Expenditure surveys.

The various indices for the measurement of the intensity of poverty present a mixed picture. On the one hand, the indices of the intensity of poverty fell in 2007: the income gap (as measured by the average difference between the level of income among the poor and the poverty line)[8] and the SEN index declined, as did the proportion of

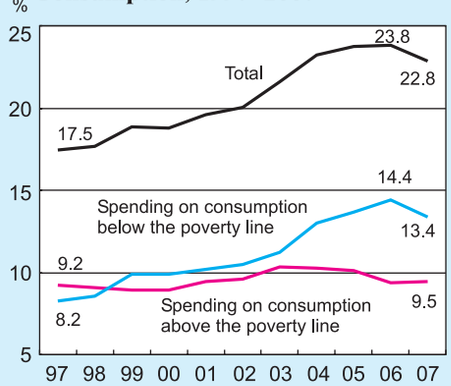
[6] For details on the various indices and their contribution to understanding poverty, see the Report of the Committee to Develop Additional Indices of Poverty, the Central Bureau of Statistics, February 2008.

[7] The calculation of the index of basic needs is based primarily on D. Gottlieb and R. Manor (2005) "The choice of a poverty index as a policy target", Discussion Paper Series, the Monaster Center for Economic Research, Ben Gurion University. See also Box 8.1 of the 2006 Bank of Israel Annual Report.

[8] The income gap which includes Jerusalem Arabs increased from 33.8 percent in 2006 to 34.3 percent in 2007 and to 34.8 percent in 2007-8.

the poor who are consuming under the poverty line (an index that reflects the "hardcore" poor).[9] On the other hand, the SEN index stabilized in 2007/8 and poverty gap widened. Furthermore, despite a certain decline in these indices in 2007, they remained at high levels in historical terms and most of the poor (58.6 percent) are still finding it difficult to maintain a reasonable standard of living (Table 8.1 and Figure 8.3).

Figure 8.3
Incidence of Poverty among Individuals,[a] by Spending on Consumption, 1997–2007



[a] Not including Arabs of Jerusalem.
SOURCE: Based on Central Bureau of Statistics' Income and Expenditure Surveys.

The decline in the extent of poverty in 2007 was a result of the improvement in the relative situation of the weaker segments of the population. However, according to the criteria set for the government's poverty target, the relative situation of the weaker segments of the population worsened in 2007, following a significant improvement in 2006.

The decline in the extent of poverty in 2007 was a result of the improvement in the relative situation of the weaker segments of the population. Thus, in 2007, the disposable income per standard individual in the lowest quintile rose by 4.4 percent as compared to an increase of 3.6 percent among the general population and a 4.2 percent increase in the median per capita income. However, according to the criteria set for the government's poverty target, the relative situation of the weaker segments of the population worsened in 2007, following a significant improvement in 2006. Thus, according to the cumulative poverty target, the real incomes of families in the lowest quintile need to grow 10 percent faster on average than the increase in per capita GDP from 2008 to 2010. This is necessary in order to reduce the gap between the incomes of the weaker segments of the population and the median income, which widened significantly during the first half of the decade.[10] The real income of a family in the lowest quintile rose by 1.9 percent in 2007 following an increase of 6 percent in 2006.[11] Per capita GDP grew by 3.5 percent in 2007 and by 3.3 percent in 2006. In other words, if the target had been adopted already in 2006, it would have been achieved on average during the period 2006–7, though not in 2007 on its own.[12] As part of the poverty target, it was decided that the proportion of labor income in the total income of the lowest quintile should rise by 2 percentage points to 45 percent. This decision was intended to ensure that the

[9] For details, see Chapter 8 of the 2006 Bank of Israel Annual Report.

[10] For additional details on social welfare targets and their rationale, see the Report of the Committee to Formulate Targets for Socioeconomic Policy in Israel for 2008–2010, August 2007.

[11] These rates of change were calculated according to the definition of the government poverty target, such that 20 percent of families are to be included in each quintile (in contrast to the calculation of quintiles according to 20 percent of individuals as in the other tables in this chapter). In addition, Jerusalem Arabs were also included in the data in accordance with the definition of the target.

[12] The Report of the Committee to Formulate Targets for Socioeconomic Policy in Israel emphasized that an average annual trend may be derived from the triennial target but there is no commitment to achieve this average in each and every year. Rather, it is the trend that is important and the chances of meeting the long-term objective.

poverty target would be achieved through integration within the workforce rather than through artificial means, such as an increase in welfare benefits. This part of the target was achieved already in 2006, which provides additional support for the conclusion that the decline in the rate of poverty during the last two years reflects a trickling down of growth to the weaker segments of the population and is in line with the government policy of poverty reduction through entry into the workforce. An additional social welfare target within the government's socioeconomic agenda concerns employment, according to which the rate of employment among 25–64-year-olds is meant to reach 71.7 percent in 2010 (similar to that in the OECD countries in 2006) as compared to 69.1 percent in 2006 (for a discussion of this target, see Box 5.2 in Chapter 5 of this report).

An analysis of the components of the change in the incidence of relative poverty among individuals (Figure 8.4) makes it possible to differentiate between the two main effects behind the change in the incidence of poverty from year to year, i.e. the relative effect, which is a result of the real change in the relative poverty line from the previous year, and the absolute effect, which reflects the change in the income distribution.[13] This analysis shows that the absolute effect (the increase in average income in the lowest quintile) worked to reduce the extent of poverty while the relative effect (the increase in the relative poverty line) worked to increase it, though it did not completely offset the absolute effect. In other words, although the poverty line rose, thus putting additional individuals below it, the change in the income distribution, particularly the increase in the income of the weaker segments of the population, had a larger effect and led to a decline in the incidence of poverty. It can thus be concluded that the purchasing power of the weaker segments of the population rose in 2007 and the first half of 2008 at a higher rate than the median of the total population.

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The analysis of the components of the change in the incidence of poverty shows that the positive effect of the income distribution on reducing the rate of poverty has gradually intensified since 2005 and reflects the trickling down of the benefits of growth to the weaker segments of the population. The year 2007 was the first in which the change in income was reflected in a decline in the incidence of relative poverty. In previous years, the increase in income at the bottom of the income ladder, which worked to reduce the incidence of poverty, was accompanied by a larger increase in median income and therefore by a rise in the poverty line which fully offset the effect of the rise in income.

The significant contribution of the changes in income distribution to the reduction of the poverty indices can also be seen from an analysis of changes in the incidence of poverty measured according to the absolute method (which sets the poverty line at its real level in 1997): over the last decade 'absolute' poverty has declined in all sectors of the population except for the ultra-Orthodox and households with more

[13] The change in the incidence of poverty from year to year includes three components: the relative component, the absolute component and a component that combines the other two. The size of the combined component is negligible and therefore was consolidated here with the relative component.

Table 8.1
Main Poverty Indicators, 1997 to 2007/8[a]

(percent)

	Average 1997-2000	2001	2002	2003	2004	2005	2006	2007	2007/8[b]
A. Poverty indices									
Relative index[c]									
Number of poor ('000)	1,012	1,158	1,207	1,323	1,451	1,507	1,541	1,503	1,481
Incidence of poverty (individuals)	18.2	19.6	20.0	21.6	23.2	23.7	23.9	22.8	22.3
Incidence of poverty (families)	17.4	17.7	17.7	19.2	20.3	20.3	20.2	19.5	19.3
Income gap[d]	25.2	26.2	28.8	30.2	33.3	33.5	33.3	32.8	33.6
SEN index[e]	0.067	0.074	0.082	0.093	0.109	0.111	0.110	0.104	0.104
Proportion whose consumption is below the poverty line	50.2	52.0	52.2	52.0	55.9	57.5	60.6	58.6	
Incidence of poverty according to fixed index[c]— individuals	15.2	12.7	15.6	16.6	17.4	16.9	16.2	13.7	13.3
Incidence of poverty according to basic needs[c]— individuals	24.1	20.9	24.5	26.3	26.7	23.4	25.7	22.3	
Change in real income of family in lowest quintile[f]			-8.0	-1.3	-2.0	5.1	6.0	1.9	0.2
Change in per capita GDP		-2.7	-2.6	0.0	3.2	3.3	3.3	3.5	
Change in median per capita real income[f]		2.4	-4.8	0.8	2.8	3.5	4.9	4.2	
Gini index	0.352	0.357	0.362	0.363	0.375	0.383	0.387	0.375	0.378
B. Incidence of poverty in selected groups									
Children	23.6	26.9	28.1	29.4	32.5	33.7	34.6	33.2	32.5
Aged 65+	24.8	22.7	21.1	25.2	26.5	25.6	24.8	24.4	23.0
Arabs	39.9	44.3	46.8	48.3	51.7	54.2	56.5	52.7	50.7
Ultra-orthodox[g]	44.0	54.2	51.5	50.3	59.3	64.1	58.8	57.7	61.0
Members of households with one earner	22.6	24.0	23.0	25.8	30.8	32.3	34.8	35.8	34.8
Members of households with two or more earners	2.3	2.5	2.6	3.2	3.6	3.8	4.4	3.8	4.2

Table 8.1 (Cont,)
Main Poverty Indicators, 1997 to 2007/8[a]

(percent)

	Average 1997-2000	2001	2002	2003	2004	2005	2006	2007	2007/8b
C. Policy Indices									
Incidence of poverty before transfer payments and direct taxes[h]—individuals	29.9	31.3	31.2	31.8	31.5	31.6	31.2	29.9	29.5
Contribution of policy (transfer payments and direct taxes) to the reduction of the incidence of poverty among individuals	39.1	37.4	35.8	32.3	26.4	25.0	23.6	23.6	24.5
Share of welfare expenditure in GDP	27.0	28.4	28.7	27.8	26.3	25.5	24.9	24.8	25.1[i]
Welfare expenditure per capita (NIS '000, at 2008 prices)	23.6	26.0	25.2	24.2	23.7	23.6	23.8	24.3	24.7[i]
Share of transfer payments to households in GDP[j]	9.2	10.1	10.1	9.6	8.7	8.3	8.1	7.7	7.8i
Transfer payments per capita (NIS '000, at 2008 prices)[j]	8.1	9.2	8.8	8.3	7.9	7.7	7.7	7.6	7.6[i]

[a] Not including Arabs of Jerusalem.

[b] Data based on a survey carried out between July 2007 and June 2008.

[c] The relative poverty line is calculated as half the median monetary income. The basic needs poverty line is calculated from a combination of the Canadian (MBS) approach and the American (NAS) one. It includes expenditure on food, housing, education, transport and personal items. According to this approach, a household is considered poor if its income from all sources, after taxes and essential health and work-related family expenditure, is below the poverty line. The absolute poverty line is calculated realtive to its real level in 1997.

[d] Average gap between the poverty line and the income of poor families.

[e] The Sen index combines the incidence of poverty, the income gap, and inequality among the poor.

[f] In this calculation the Arabs of Jerusalem are included. The quintiles are determined according to the disposable income per standard capita, and every quintile contains 20 percent of the families, in accordance with the definition of the government's target. The rate of change in 2007/8 is calculated compared with the equivalent period a year earlier—July 2006 to June 2007.

[g] There is a difficulty in identifying the ultra-orthodox in the Income Survey. They are identified here as families in which the last educational institute attended by a member of the family was a talmudic college.

[h] Transfer payments from individuals and from abroad are not deducted from disposable income; hence the above data differ from data published by the National Insurance Institute.

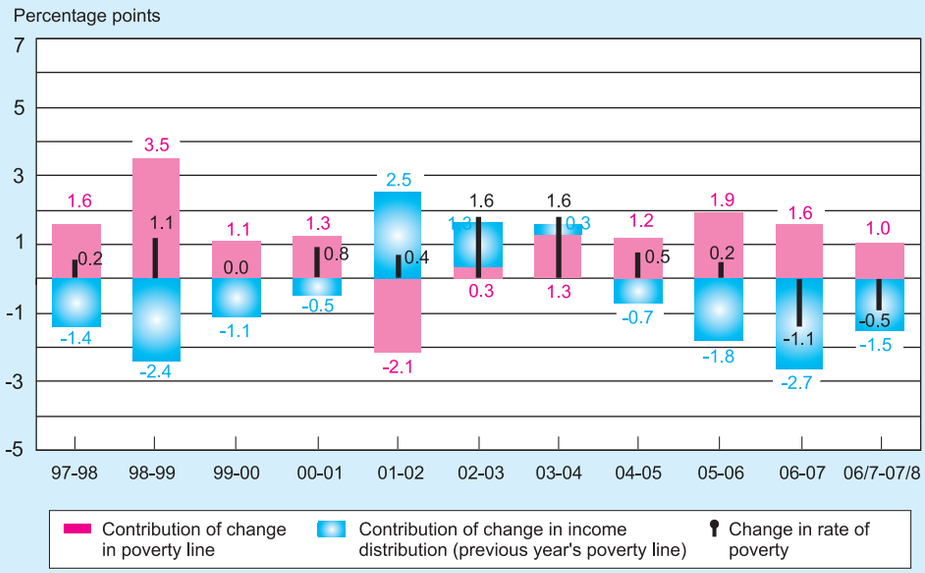
[i] This figure relates to the whole of 2008.

[j] Transfer payments minus actual pension payments to public sector retirees.

SOURCE: Based on Central Bueau of Statistics Income Surveys and Expenditure Surveys.

than seven members. This shows that the incidence of 'absolute' poverty was greatly affected by the rise in employment among the weaker segments of the population, which contributed to the rise in their labor income.

Figure 8.4
Contribution to Changes in Rate of Poverty among Individuals,[a,b] 1997–June 2008[c]

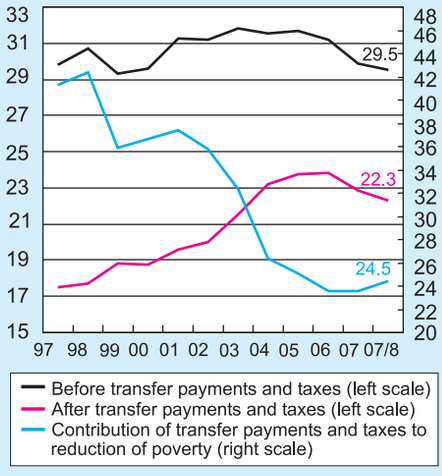


[a] The contribution of a change in the poverty line to the rate of poverty is calculated here as the difference between the total change in the rate of poverty and the change that stems from a shift in the distribution of income relative to the previous year's real poverty line.
[b] Data do not include Arabs of Jerusalem.
[c] The data are based on a survey conducted between July 2007 and June 2008.
SOURCE: Based on data from Central Bureau of Statistics and Income Surveys.

The developments in 2007 and up to July 2008 reflected, as already mentioned, the improvement in the relative situation of the weaker segments of the population in comparison to the median, which was attributed primarily to the improvement in the labor market and particularly the increase in the rates of employment. The increase in the average wage of the weaker segments of the population was similar to that among the rest of the population and therefore contributed to the increase in incomes, though not to the narrowing of gaps. These developments were primarily the result of cyclical factors, which included the increased demand for labor and the increasing scarcity of highly-skilled workers that contributed to the relative demand for unskilled workers. This represents a deviation from the long-term trend and contrasts with developments in previous years (see Chapter 5: The Labor Market). Some of the increase in the participation rates of the weaker segments of the population may also be attributed to cutbacks in transfer payments.

The increase in employment and wages among the weaker segments of the population has contributed to reducing the incidence of relative poverty before transfer payments and taxes, which reached a level of 29.5 percent in 2007/8, a level similar to that in the late 1990s (Table 8.1 and Figure 8.5). However, the significant cutbacks in transfer payments in 2002 and 2004 significantly reduced the direct contribution of government policy to reducing poverty. As a result and despite the relative stability in the incidence of relative poverty before transfer payments and taxes during the course of the decade, the incidence of poverty after transfer payments and taxes increased significantly. Thus, for example, in 2007/8, transfer payments managed to raise less than one quarter of the poor to above the poverty line, as compared to more than 40 percent about a decade ago (Table 8.1 and Figure 8.5).[14] (Nonetheless, in comparison to 2006 and 2007, the index rose somewhat in 2007/8.)

Figure 8.5
Incidence of Relative Poverty among Individuals and the Effect of Transfer Payments and Direct Taxes,[a,b] 1997 to 2007/8[c] (percent)



[a] Not including Arabs of Jerusalem.
[b] Transfer payments from individuals and from abroad have not been deducted from disposable income; this causes a difference between data in the figure above and those of the National Insurance Institute.
[c] The data are based on a survey conducted between July 2007 and June 2008.
SOURCE: Based on Central Bureau of Statistics Income Surveys.

Direct government intervention through transfer payments and direct taxes is progressive and works to reduce income inequality. The rate of government intervention, i.e. total transfer payments less direct taxes relative to disposable income, is higher in the lower income quintiles and negative in the higher income quintiles. However, the degree of the policy's progressivity has declined significantly during the course of the decade. The rate of direct intervention in the lowest quintile declined in 2007/8 (which continued the uninterrupted decline from a peak of about 60 percent in 2001 and 2002) to 44.8 percent (Table 8.2). The main source of the decline, as already mentioned, is the reduction in transfer payments that are directed toward weak segments of the population, including child allowances for large families, as well as an increased effort to enforce the eligibility criteria for income supplements (which was called for in any case). These steps also led to an increase in the rate of participation and employment among weaker segments of the population, which at a

Direct government intervention through transfer payments and direct taxes is progressive and works to reduce income inequality, but it has become much less progressive in the last ten years.

[14] This calculation did not take into account the effect of the tax and transfer payment system on behavior in the labor market and on the poverty line and therefore on the incidence of poverty according to economic income.

later stage acted to reduce the rate of government involvement, both directly (through increased income from labor which reduces the government share in total income) and indirectly (through the reduced dependency on welfare benefits). At the same time, the rate of government involvement in disposable income in the upper quintiles fell continuously since 2002, apart from a temporary rise in 2007.[15]

The major cutbacks in transfer payments also had positive effects, in that they constituted a significant incentive to enter the workforce for population groups that until then had depended on welfare benefits. However, despite the increase in the participation rates for these groups, the average participation rate in Israel remained significantly lower than in OECD countries, primarily due to the low participation rates among men with a low level of education.[16] A low number of income earners is the main reason for being under the poverty line[17] and low participation is one of the main reasons for the high rates of poverty in Israel relative to the OECD countries. The high rates of poverty and the severe negative effects of poverty on the Israeli economy and society underscore the need for a determined policy that will work to reduce poverty and improve the welfare of weak segments of the population. This should be accomplished primarily by increasing their earning ability (by encouraging them to enter the workforce and increasing their return on labor) but also by strengthening the social security net, which has weakened in recent years.

Table 8.2
Share of Government Intervention[a] in Disposable Income[b]

(percent)

Quintile	Average 1997–2000	2001	2002	2003	2004	2005	2006	2007	2007/8[c]
Lowest	56.2	59.9	59.6	56.3	51.1	50.2	47.2	45.0	44.8
2	22.9	27.1	26.5	27.7	26.5	25.8	24.5	22.0	20.7
3	3.6	4.2	3.5	3.9	4.3	3.2	4.2	2.0	2.0
4	-13.1	-13.6	-11.4	-9.8	-10.6	-9.3	-8.3	-9.6	-8.7
Highest	-37.8	-38.2	-39.0	-33.4	-31.7	-29.3	-28.2	-30.3	-29.7

[a] Government transfer payments *minus* direct taxes.

[b] Not including the Arabs of Jerusalem

[c] Data based on a survey carried out between July 2007 and June 2008.

SOURCE: Based on Central Bureau of Satistics Income Surveys.

[15] The reduced direct government involvement in the income of the upper quintiles reflects the long-term reduction in statutory tax rates which benefited mainly high-income earners. The temporary increase in 2007 occurred in spite of the reduction in the statutory tax rate, which may reflect the change in the composition of income among the upper quintiles, i.e. an increase in the share of labor income and a drop in the share of other income which is taxed at lower rates. An analysis by type of income indeed points to such a change.

[16] For more details on participation rates, see Chapter 5: The Labor Market.

[17] Karnit Flug and Nitsa (Kaliner) Kasir 2003, "Poverty and employment and the gulf between them", Israel Economic Review, 1, 55-80.

Social welfare policy in recent years has focused on the incentive to enter the workforce, primarily through significant cutbacks in welfare benefits; however, these steps were almost unaccompanied by an active policy in the labor market. As a result, simply joining the workforce is not sufficient to rise above the poverty line. Although various policy measures primarily aimed at populations with low participation rates have been undertaken in recent years (most of them in partnership with or at the initiative of NGOs), the scope of expenditure on these programs has been limited in comparison to other countries.[18] In addition, the enforcement of labor laws has been lax,[19] although in February 2008 the Knesset approved the first reading of a law to strengthen the enforcement of these laws. Furthermore, the number of foreign workers in the economy grew in 2007/8 following several years of a downward trend and despite the fervent declarations of policy makers to reduce their number. Thus, the proportion of non-Israeli workers in the total number of employed in the business sector resumed an upward trend.

During the last two years, important policy measures have been implemented in order to reduce poverty through encouraging growth, which is one of the main components of the socioeconomic agenda approved in 2007: the initiation in July 2007 of the pilot for the Visions for Employment program to integrate welfare recipients into the workforce; the Directive to Extend Comprehensive Pension Insurance that went into effect at the beginning of 2008, which requires employers to pay into pension funds for their workers; and the EITC program which was instituted in a number of locations in October 2008 (see below for further details).

The challenge of reducing poverty that faces economic policymakers intensified, as can be seen from the characteristics of the poor in Israel. The incidence of poverty is particularly high among Arabs and the ultra-Orthodox, who are characterized by low rates of employment and high birth rates. The intensity of poverty, as measured by the poverty gap and by the SEN index, is also more acute among these groups (Tale 8.3). Furthermore, over the last decade the extent of poverty has increased to a greater degree among these population groups (Figure 8.6) and their share of the total number of poor is double their share of the total population (Table 8.3). The high incidence of poverty among these population groups reflects a combination of two factors: the paucity of breadwinners, and large families. Policy that is focused on reducing poverty by increasing employment among these population groups will have to remove several barriers, some of which are common to both groups: a low level of education or education that does not increase the individual's income-earning

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[18] For details, see Chapter 5: The Labor Market

[19] For the recommendations of the Steering Committee for the Enforcement of Labor Laws, see the Report of the Steering Committee for the Enforcement of Labor Laws, Ministry of Industry, Commerce and Employment, June 2007. The State Comptroller found that these recommendations had not been fully implemented. See Report 58b for 2007 and Accounts for Fiscal Year 2006 of the State Comptroller. Labor laws apparently are not upheld in the public sector either. In 2008, the Accountant General found a large number of serious deviations from proper working conditions among subcontracted workers who provide services to the government ministries.

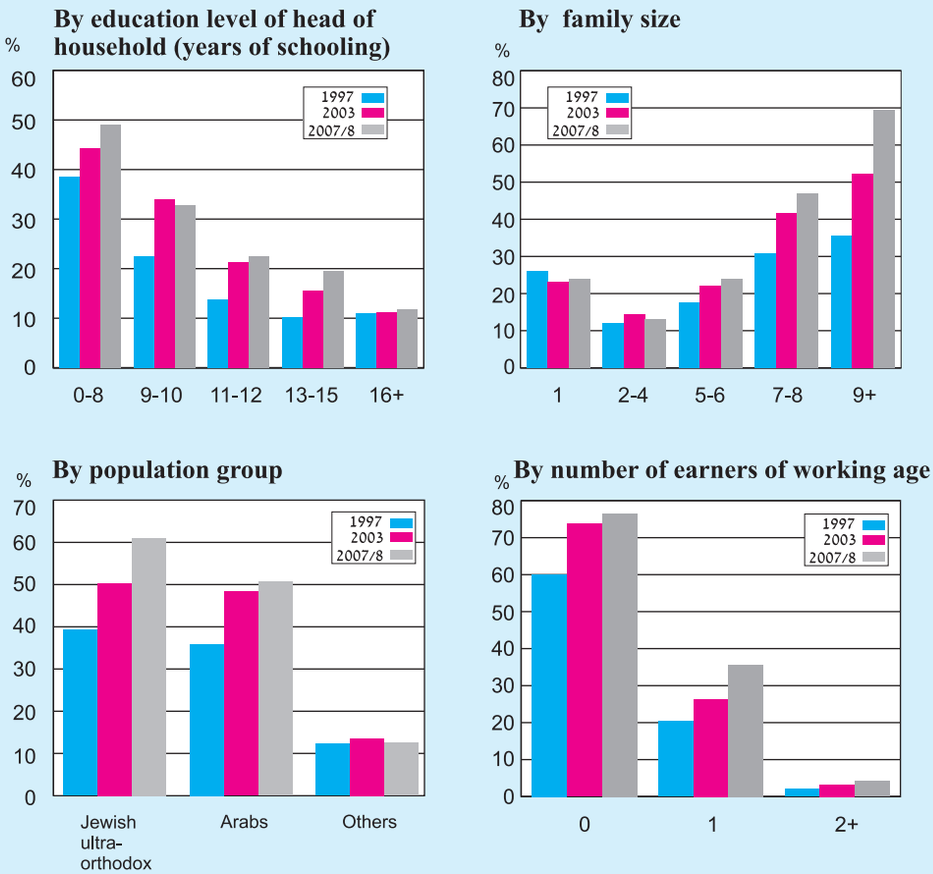
Table 8.3
Indices of Relative Poverty among Individuals by Various Characteristics and by Selected Sectors of the Population,[a] 2007/8[b]

	Poverty indices			Distribution	
	Rate of poverty	Income gap[c]	Sen index[d]	percentage of the poor	percentage of the population
	percent				
Total	24	35	0.114		
Years of education					
Up to 8	52	39	0.277	23	10
9–10	35	34	0.163	14	9
11–12	24	34	0.110	32	32
13–15	19	34	0.091	19	23
16+	12	34	0.057	13	25
Family size					
1 person	23	28	0.100	6	6
2–4 persons	14	32	0.062	28	49
5–6 persons	25	34	0.117	33	31
7–8 persons	50	39	0.261	20	10
9 or more persons	67	41	0.358	13	5
Number of wage earners[e]					
0	78	52	0.521	32	10
1	38	28	0.143	51	32
2+	4	23	0.013	8	50
Householder aged 65+	23	22	0.075	8	8
Population group					
Ultra-orthodox[f]	60	39	0.309	17	7
Arabs	54	37	0.273	45	20
Population excl. ultra-orthodox and Arabs	12	30	0.052	38	73
Single-parent families	36	38	0.188	7	4
Immigrants (since 1990)	18	26	0.067	12	16

[a] Including the Arabs in Jerusalem.
[b] Data based on a survey caried out between July 2007 and June 2008.
[c] Average gap between poverty line income and income of poor families.
[d] The Sen index combines the incidence of poverty, the income gap and inequality among the poor.
[e] In families where the head of the household is less than 65 years old.
[f] There is a problem regarding identifying the ultra-orthodox in the Income Survey. Here they are identified as families in which the last educational institute attended by one or more members of the family was a talmudic college.
SOURCE: Based on Central Bureau of Statistics Incomes Surveys.

ability; religious or cultural constraints regarding the workplace and its characteristics; cultural gaps and the lack of close familiarity with the labor market as a result of the closed nature of the communities; discrimination in the labor market; etc.

Figure 8.6
Rate of Poverty by Group,[a] 1997, 2003 and 2007/8[b]



[a] Not including Arabs of Jerusalem.
[b] The data are based on a survey conducted between July 2007 and June 2008.

SOURCE: Based on data from Central Bureau of Statistics and Income Surveys.

During the last two years, there have been signs of change among the ultra-Orthodox population. Programs that are designed to encourage employment in the ultra-Orthodox sector together with major cutbacks in transfer payments have worked to increase participation and employment rates among this community (primarily among women) and have contributed to the significant decline in the incidence and intensity of poverty in 2006 and 2007. Accordingly, there was a decline in the relative probability of an ultra-Orthodox individual being poor (exclusive of all other effects, including education and number of children; see Figure 8.7). In contrast to these positive developments, there has been a renewed decline in the relative probability

Table 8.4

Rate of Employment and Average Wage, by Segments of the Population, Selected Years

Rate of employment

	1997		2003		2005		2006		2007	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Total population	62.7	48.0	59.1	50.1	60.8	52.1	61.7	53.0	63.2	54.4
Arabs	64.4	18.5	55.5	16.5	55.4	15.9	56.5	16.7	58.3	18.4
Ultra-orthodox[a]	28.0	40.7	21.1	41.8	23.4	44.4	24.6	45.2	23.9	46.7
Other	64.7	55.1	63.3	57.8	65.6	60.8	66.8	62.0	68.6	63.4
0–8 years of education	55.9	21.7	46.7	19.3	45.9	21.0	46.6	20.8	47.7	21.3
9–10 years of education	59.2	45.8	53.7	44.9	56.0	44.9	57.3	45.1	58.7	46.3

Average wage

	1997		2003		2005		2006		2007	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Total population	6,639	4,067	8,428	5,247	8,611	5,441	8,740	5,549	9,263	5,957
Arabs	4,125	2,985	5,338	4,089	5,348	4,105	5,221	3,846	5,759	4,351
Ultra-orthodox[a]	5,280	2,908	6,333	4,165	5,932	3,681	6,368	3,875	6,582	4,279
Other	7,189	4,166	9,055	5,364	9,304	5,585	9,528	5,726	10,085	6,154
0–8 years of education	4,197	2,444	5,166	3,167	5,221	2,971	5,249	3,240	5,664	3,515
9–10 years of education	5,566	3,311	6,634	4,139	6,487	4,074	6,561	4,172	7,032	4,467

[a] There is a difficulty in identifying the ultra-orthodox in the Labor force Survey and the Income Survey. They are identified here as families in which the last educational institute attended by a member of the family was a talmudic college. This definition may create a bias with regard to people with a lower tendency to participate in the labor force.

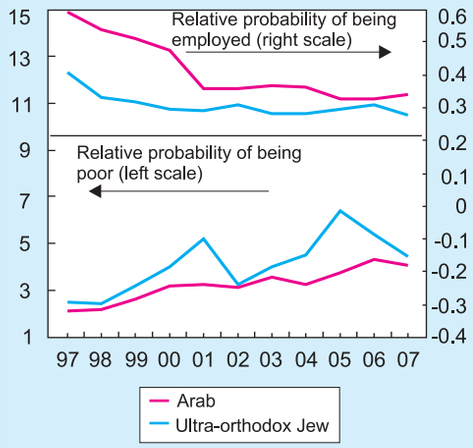
SOURCE: Based on Central Bureau of Statistics Labor Force and Income Surveys.

of being employed (exclusive of all other effects), which followed an increase during the period 2003–6, and a significant increase in the incidence of poverty among the ultra-Orthodox during the year ending in June 2008 (Table 8.1).

There was also a change in trend among the Arab population in 2007. The incidence of poverty in this sector declined significantly, following a prolonged increase over more than a decade. Their relative probability of being employed (exclusive of all other effects) rose somewhat following a prolonged downtrend and their relative probability of being poor declined somewhat. However, even after these changes, there is a very high incidence of poverty among this sector, in which more than half the population is poor, and the relative probability of being poor is more than four times that of non-ultra-Orthodox Jews. The direct effect of welfare policy on this population is particularly limited. Thus, the direct contribution of transfer payments and taxes to reducing the incidence of poverty in 2007 among this group was only 8 percent and the incidence of poverty was reduced by only about 5 percentage points as a result of these policies.

An analysis of the extent of poverty according to other characteristics (Table 8.3 and Figure 8.6) shows that, as expected, the incidence and intensity of poverty are

Figure 8.7
The Relative Probability[a] of Being Employed and of Being Poor in Certain Groups, 1997 to 2007



[a] Odds ratio derived from Logit multi-variable regressions over time. The ratio of the probability in each group and that among population excluding Arabs and non-ultra-orthodox Jews.

SOURCE: Based on Central Bureau of Statistics.

influenced to a large degree by level of education (via the effect of education on earning ability), number of income earners and the size of the family. High levels of poverty also exist among the elderly and single-parent families. An analysis of figures for the last decade reveals that the incidence of poverty has increased primarily among those populations among whom poverty was already predominant (Figure 8.6). As already mentioned, these populations are characterized by low rates of employment and therefore are affected less, and with a greater lag, by the business cycle relative to other populations. Therefore, during periods of growth, such as during the last four years, these populations benefited less from growth but it is possible that they will be less affected by the current economic crisis. Their dependence on transfer payments, in particular the child allowance, is the main factor in the sharp rise in the rate of poverty among this population following the cutbacks in transfer payments at the beginning of the decade.

The working poor

More than 950,000 poor individuals in 2007/8—representing about 60 percent of the total number—were members of households with at least one income earner.

The working poor constitute a population that is deserving of special attention. During the last decade, the scope of poverty has continually increased among households with at least one income earner and the incidence of poverty among this population stood at 16.3 percent in 2007/8. More than 950,000 poor individuals—representing about 60 percent of the total number—were members of households with at least one income earner. These developments reflect two opposing effects of welfare policy: on the one hand, government policy—and in particular the cutbacks in welfare benefits—has induced individuals who in the past relied on transfer payments to enter the workforce; however, on the other hand, the complementary policy measures undertaken were insufficient in order to ensure a reasonable standard of living to those individuals who had entered the workforce.

An analysis of employment, wages and poverty in 2007 (Table 8.5) shows that about 60 percent of poor individuals live in households with at least one breadwinner. About half of the working poor (in all levels of employment) are Arabs and about 15 percent are ultra-Orthodox, which is an indication of the complexity of this phenomenon and the policy measures that can be used to deal with it.

About 11 percent of the working poor belong to households with more than one fulltime income earner and about 3 percent belong to households with two fulltime income earners. These are low figures (though they are have risen continually during the last decade) but they indicate the need for complementary policies beyond those designed to reduce poverty by increasing employment. The contribution of direct government intervention through transfer payments and taxes to reducing poverty among various groups, including the working poor, was found to have declined significantly during the last decade, which had a major effect on the incidence of poverty among the working poor in all levels of employment. The need to formulate policy that will include additional strata has become more acute in view of the crisis expected to begin in 2009 and the perceived lack of employment security.[20]

The lion's share of the working poor belongs to households with only one income earner. Of these, the majority belong to households in which the income earner is employed fulltime. This finding is particularly characteristic of the Arab sector, in which 46 percent of the poor belong to households in which the income earner is employed fulltime. There are a variety of factors explaining the poverty in this type of household (Tables 8.5 and 8.6) though two predominate: the large size of the household and low earning ability. These factors are common to both ultra-Orthodox and Arab households, and also Jewish non-ultra-Orthodox households. Low earning ability is reflected in a low level of education or education that is not relevant to the demands of the labor market, low-salaried occupations and employment in low-wage sectors. All this leads to low wages for the working poor, which are about one half or less of the wages of other workers in this group. Furthermore, the working poor's wages are also low due to the lax enforcement of labor laws. Thus, poor workers whose status in the labor market is vulnerable and insecure find it difficult to demand their rights. This is manifested in, among other things, a high proportion of the working poor who earn less than the minimum wage, which points to the critical role of the enforcement authorities in this area.

With regard to the small population of salaried Jewish non-ultra-Orthodox fulltime workers (Table 8.6), almost half consume under the poverty line (which may be evidence of long-term poverty) and a significant proportion earn less than the minimum wage. The proportion of poor workers is particularly high in the construction, commerce and education sectors.

The increased scale of poverty among households with income earners indicates the existence of a growing segment of the population that is not benefiting from the fruits of growth. Technology-based growth, such as that which has characterized the Israeli economy in recent years, accompanied by a rapid process of globalization, contributes to the reduced relative demand for unskilled and uneducated workers. This reduction becomes more acute due to the economy's openness to the import of non-

[20] A comparison of perceived employment security in Israel to that in other countries appears in the Report on the State of Society published by the Central Bureau of Statistics and indicates that a particularly high proportion of Israelis feel insecure about their employment.

Table 8.5
Characteristics of Employment, Wages and Poverty,[a] 2007/8, in Households whose Head is Aged 25–64[b]

(percent*)

	Total	Arabs	Ultra-orthodox[c]	Population excl. Arabs and the ultra-orthodox
Total	**5,879,469**	**1,185,221**	**377,767**	**4,316,481**
Proportion of population	100.0	20.2	6.4	73.4
Number of poor	**1,341,982**	**646,096**	**230,267**	**465,619**
Proportion of all poor	100.0	48.1	17.2	34.7
Total number in households with at least one wage earner	**5,255,485**	**956,789**	**254,784**	**4,043,912**
Proportion of population	89.4	80.7	67.4	93.7
Incidence of poverty	16.3	45.1	45.6	7.6
Proportion of the poor in this group	63.8	66.8	50.5	66.2
Head of household self-employed	**689,813**	**157,894**	**22,383**	**509,536**
Proportion of population	11.7	13.3	5.9	11.8
Incidence of poverty	17.0	35.0	38.8	10.5
Proportion of the poor in this group	8.7	8.5	3.8	11.5
Head of household employee				
One wage earner (not employed full-time)	**410,843**	**58,854**	**102,912**	**249,077**
Incidence of poverty	49.0	62.5	69.4	37.3
Proportion of the poor in this group	15.0	5.7	31.0	20.0
Proportion earning less than minimum wage[d]	22.2	20.1	8.6	25.0
Averge hourly wage among the poor	28.1	33.8	34.3	24.2
Average hourly wage among other employees	44.0	53.2	47.5	42.9
Average number of children per poor household	2.3	2.5	4.3	1.5
Average number of children in other households	0.7	1.0	2.5	0.5
One wage earner (in full-time employment)	**1,333,062**	**476,117**	**54,728**	**802,217**
Incidence of poverty	33.2	65.8	43.7	13.1
Proportion of the poor in this group	33.0	48.5	10.4	22.6
Proportion earning less than minimum wage[d]	14.3	18.0	18.0	13.0
Averge hourly wage among the poor	22.4	23.0	24.2	20.5
Average hourly wage among other employees	48.3	35.3	41.4	50.4
Average number of children per poor household	3.1	3.3	4.0	2.5
Average number of children in other households	0.8	1.5	2.5	0.7
Two wage earners (at least one in full-time employment)	**2,044,939**	**169,561**	**41,143**	**1,834,235**
Incidence of poverty	3.3	11.4	10.1	2.4
Proportion of the poor in this group	5.0	3.0	1.8	9.5
Proportion earning less than minimum wage[d]	7.6	13.3	8.5	7.2
Averge hourly wage among the poore	18.5	19.4	32.6	17.4
Average hourly wage among other employees	53.8	34.8	45.9	55.1
Average number of children per poor householde	2.7	3.2	5.0	2.3
Average number of children in other households	1.4	2.0	2.6	1.3

* Unless stated otherwise.

[a] The average wage, and classification as self-employed or employee, Arab or ultra-orthodox, are determined based on the head of the household. The table does not show data relating to households whose head is both self-employed and an employee, as their number is small.

[b] The head of the household is the main wage earner in the household, i.e., the one working the most hours per week (including members of The professional army). If a household has more than one member that satisfies this criterion, or if the household has no wage earner, the interviewee determines who is the head of the household.

[c] There is a difficulty in identifying the ultra-orthodox in the Income Survey. They are identified here as families in which the last educational institutte attended by a member of the family was a talmudic college. This definition may create a bias with regard to people with a lower tendency to participate in the labor force.

[d] Those whose average hourly wage is less than 95 percent of the minimum hourly wage.

[e] Due to the small number of observations, these data are not statistically significant.

SOURCE: Based on the Central Bureau of Statistics Income Survey.

Table 8.6
Characteristics of Heads of Households in which One Member is an Employee in Full-Time Employment, 2007/8[a]— Non-Ultra-Orthodox Jews in the Main Working-Age Groups

	Poor	Not poor	Percent of poor in group
Total	137,850	807,150	14.6
		percent	
Year of education			
0-8	8.3	3.8	26.9
9-10	9.5	7.5	17.9
11-12	51.1	35.5	19.7
13-15	18.8	26.7	10.7
16+	12.3	26.2	7.4
Average	12.3	13.8	
Age			
25-34	33.8	29.5	16.4
35-44	38.3	29.4	18.2
45-54	25.8	25.3	14.9
55-64	2.0	15.8	2.2
Average	38.6	42.6	
Number of individuals in household			
1	1.4	11.3	2.1
2	4.2	20.3	3.4
3	12.0	24.1	7.8
4	14.5	19.0	11.5
5	17.0	14.9	16.4
6+	50.8	10.4	45.4
Average	4.6	2.6	
Average number of hours worked per week	44.7	47.8	
Consumption below the poverty line	49.0		
Earning less than the minimum wage[b]	31.6	8.4	
Occupation			
Occupations requiring higher education	3.8	15.5	1.1
Liberal and technical rofessions	11.0	12.7	3.7
Managers	1.4	9.6	0.6
Clerks	11.5	16.0	3.1
Salespersons and service providers	21.3	17.2	5.3
Skilled agricultural workers	1.3	0.5	9.3
Skilled manufacturing, construction and other workers	29.2	20.2	6.1
Unskilled workers	18.9	5.3	13.8
Industry			
Agriculture	2.3	0.8	11.8
Manufacturing	18.8	23.8	3.4
Construction	8.5	3.8	9.1
Wholesale and retail trade	14.9	12.3	5.1
Hotels and catering	3.3	2.9	4.9
Transport, storage and communications	7.4	7.5	4.2
Banking and insurance	2.2	4.4	2.2
Real estate	14.7	14.8	4.3
Public service	1.4	6.2	1.0
Education	12.0	6.0	8.2
Health services	6.0	7.2	3.6
Community services	3.0	3.4	3.8
Private services to households	2.6	2.3	4.9

[a] Data based on a survey carried out between July 2007 and June 2008.
[b] Those whose average hourly wage is less than 95 percent of the minimum hourly wage.
SOURCE: Based on the Central Bureau of Statistics Income Survey.

Israeli workers. Uneducated workers have difficulty finding their place in the labor market and have an even harder time demanding their rights and avoiding exploitation by employers. Although the increase in the relative demand for uneducated workers during the last two years had a positive effect on reducing poverty, the global economic crisis, which began to affect the Israeli economy in the second half of 2008, is expected to offset this effect. Although until now the main effect of the crisis has been felt in the hi-tech sectors and among educated workers (among whom the incidence of poverty is negligible), the effect on other industries and among all segments of the population is expected to be significant and widespread (see Chapter 1 for more details on the expected effects of the crisis).

These facts point to the need for a government policy designed to improve human capital among weaker segments of the population in general and among the working poor in particular (through education, vocational training and programs focused on particular groups) and to improve working conditions (through increased enforcement of labor laws, the earned income tax credit which will increase disposable income and a greater effort at reducing the number of foreign workers). Such a policy will also have an indirect effect in that it will improve the status of workers relative to individuals outside the workforce and thus will constitute an additional incentive for participation in the workforce and decreased dependency on welfare benefits.

The policy measures undertaken during the last two years are likely to have a significant impact on reducing poverty, both in the short and long terms, since they are based on increasing employment and earning ability among weaker segments of the population. These policies include the introduction of the earned income tax credit, a program to integrate welfare recipients in the workforce, compulsory pensions, an increase in the minimum wage and increased enforcement of labor laws, all of which are likely to increase the return on labor and accordingly to make dependence on welfare benefits less worthwhile. These policies are expected to have a major impact both in the intermediate and long terms by reducing the negative effects of poverty. However, the fact that some of these policy measures were implemented only on a small scale until now—both geographically and in terms of the allocated budget—may limit their impact.

The earned income tax credit was introduced in October 2008 in a number of locations where the Visions for Employment framework is operating. According to the law, the program will be expanded to include the whole country in 2010.[21] The program will entitle low-paid workers to an additional sum of up to NIS 400 per month, depending on their wage level, number of children, number of income earners in the household and age. The benefit will be paid directly to the worker by the tax authority without the intervention of the employer.

The earned income tax credit provides significant benefits to working individuals by improving the economic situation of households with low-salaried income earners

[21] The emergency economic program to deal with the crisis proposed that the expansion of the program be brought forward.

and has the potential to raise them above the poverty line. Studies in other countries have found that the earned income tax credit has a major impact in reducing poverty among working families. In addition, it increases the return on labor and therefore the incentive to work rather than being dependent on welfare benefits. Most studies have shown that an earned income tax credit also has a positive effect on the participation rate (although the question of to what extent this effect is offset by the reduction in number of hours worked has not yet been settled). In any case, it is clear that the effect of the earned income tax credit on employment is not negative. The reduction in poverty and the increase in employment also have added value as a result of the positive effect on the children of eligible individuals.[22]

A comparison to other countries with an earned income tax credit similar to Israel's shows that the net benefit provided in Israel is relatively low,[23] which may limit the effect of implementing the policy. Furthermore, an earned income tax credit may lead an employer to reduce the wage of an eligible worker, such that some of the benefit will be appropriated by the employer. The arrangement in which the earned income tax credit is paid directly to the worker without the intervention of the employer reduces this concern to some extent.

The Visions for Employment program was launched in July 2007 in a number of locations in Israel (as a pilot at this stage) and replaced the Mehalev program. It is designed to place welfare recipients aged 45 or less in appropriate employment and to facilitate a transition from dependency on welfare benefits to independence. The program includes services to increase the earning ability of participants (vocational training, improvement of "soft skills,"[24] work experience, assistance in opening a business, etc.) while making welfare benefits conditional on active participation in the program.[25] Recipients of welfare benefits aged 45 and over may participate in the program on a voluntary basis and within a reduced framework of hours. The system of incentives for the operators of the Visions for Employment program differs from that of the Mehalev program in that greater emphasis is placed on incentives for placement in long-term and high-quality employment and, in addition, participants have an incentive to persevere in their jobs. On the one hand, the program assists in removing barriers that make it difficult for individuals to integrate within the workforce and on

[22] For additional discussion of the effects of an earned income tax credit on poverty, participation and work hours, see Box 5.4: The effect of raising the minimum wage and the negative income tax on poverty among the working poor, 2006 Bank of Israel Annual Report.

[23] For additional discussion of earned income tax credit systems and an international comparison, see Bank of Israel (2008) "The negative income tax from an international perspective", Recent Economic Developments 122, Part B. For initial findings on the effect of the program, see Bank of Israel (2008) "The negative income tax: an interim report since implementation in September", Recent Economic Developments 123, Part B.

[24] These refer to basic life skills required for a worker to be absorbed in the labor market, over and above the professional skills; these include motivation, the ability to follow instructions and directives and to meet deadlines, the avoidance of numerous absences from work, good interpersonal qualities, and the ability to work in a team.

[25] The standard individual framework involves 30 to 40 weekly hours.

the other hand makes dependency on welfare benefits less worthwhile for those who are able to work. In this way, the program increases participation and employment rates and is in line with the government policy to increase the welfare of weaker segments of the population through participation in the workforce. In the long term, the program will lead to budget savings due to the reduction in the number of welfare recipients. (For additional discussion, see Chapter 5 in this report.)

At the beginning of 2008, the Compulsory Pension Law[26] went into effect. The Law requires that employers contribute to pension funds for their workers. In the long term, as pension savings increase, the Law will lead to a reduced incidence of poverty among the elderly and reduced dependency on welfare benefits. However, in the short run, compulsory pension contributions are liable to reduce the current income of workers whose incomes are already low.[27]

2. AN INTERNATIONAL COMPARISON OF EXPENDITURE ON SCHOOL EDUCATION AND THE POLICY OF AFFIRMATIVE ACTION IN ALLOCATING RESOURCES

- The national expenditure on education in Israel (excluding higher education) as a percentage of GDP is higher than in OECD countries due to the higher proportion of children in the population. In contrast, the expenditure per student in Israel relative to per capita GDP is smaller than in the OECD countries and the achievements of its students on international exams are lower.
- One of the goals of the education system is to provide equal opportunity to students suffering from educational deficits and its importance in Israel is even greater due to socioeconomic disparities.
- The lags in educational achievement among students from weak family backgrounds are conspicuous at all levels of education and are more pronounced than in Western countries.
- The education system has adopted a number of measures to strengthen weak students but the affirmative action policy in the allocation of teaching hours is limited.
- The main recommendations are as follows:
  - Reinforcement of affirmative action efforts at all level of education, with emphasis on the early stages. Sources of funding can come from a larger education budget and/or budget savings (for example, by combining small classes).

[26] Directive to Extend Comprehensive Pension Insurance in the Economy according to the Collective Agreements Law, 5717–1957.

[27] For a discussion of government policy and poverty among the elderly, see Chapter 8 of the 2007 Bank of Israel Annual Report.

- Increasing the scope of instruction in small groups and tutoring in underachieving schools, which is in line with the reform in elementary education.
- Implementation of the extended school day in kindergartens and schools that serve weak populations.
- Reduction in the number of students in overcrowded classes, primarily in lower grades and in underachieving schools. This is in contrast with the plan to reduce the size of overcrowded classes at all levels of education and in all schools.
- The adoption of financial incentives for teachers of students with a weak socioeconomic background. The size of the incentives will depend on the improvement in the students' achievements, among other things.

The acquisition of an education is a key factor in the successful integration of an individual in modern society.

The acquisition of an education is a key factor in the successful integration of an individual in modern society, is the main route to socioeconomic mobility. It raises the rate of participation in the labor market, yields a positive return in terms of earning ability, reduces the probability of unemployment and poverty, helps improve general health and the ability to make reasoned economic and other decisions, etc. As a result, it is not only the individual who benefits from the investment in education, but the economy and society as a whole, thus increasing social welfare. Heavy government involvement in the financing and provision of education services is desirable not only because of the external positive effect of the acquisition of an education, but also because of the difficulty for individuals to finance education and the need to ensure the quality of education. The goals of education are numerous and diverse: imparting universal values, the acquisition of necessary knowledge and skills, the achievement of equality of opportunity, etc.

Israeli students perform relatively poorly in international tests.

For some considerable time Israel's education system has been the subject of criticism, largely related the poor achievements of Israeli students in international tests.[28] In an era of global competition, and considering Israel's need to base itself on its comparative advantages, which derive mainly from its human capital and inventiveness, the poor results give rise to serious concern. Moreover, the wide gaps between achievements in Israel relative to those abroad indicate marked inequality in education.

All the above led to initiatives in the last few years for comprehensive reform of Israel's education system, and to the National Education Program ("Dovrat Report", Jan. 2005). Some of these initiatives have in fact reached the stage where they are gradually being implemented, such as the reorganization of institutions for training teaching staff and turning them into academic institutions and raising their entry requirements; the reform ("New Horizon") of wages and employment conditions in elementary and intermediate schools, as well as working with small groups of

[28] See the OECD (2008) for international comparison.

students; reducing the size of first and second grade classes in formal education when basic skills are being taught; the gradual extension of the Compulsory Education Law to eleventh and twelfth grades. The gradual reduction of the maximum number of students per class to thirty-two at all levels of official education is also planned, with the highest priority given to schools in socioeconomically weak localities.

A comprehensive analysis of the education system should include the following issues, as well as an assessment of their trends over time and a comparison to other developed countries: inputs – the size of expenditure and its allocation among the various levels of education and subjects (core subjects, academic versus vocational tracks, etc.) and among the various socioeconomic sectors; policy towards gifted students and students with learning disabilities; the characteristics of the teaching staff, i.e. their training, quality and conditions of employment, as well as pedagogical aspects; output – achievements according to various cross-sections; efficiency of the allocation of resources and the structure of incentives; and centralization versus dispersion in management and other areas.[29]

The national expenditure on education in Israeli schools equals about five percent of GDP and more than four-fifths of it is funded by the public sector. A discussion of the optimal size of the education budget and its share of the public sector encounters a number of difficulties and in any case cannot be decided objectively. Nonetheless, an international comparison of national expenditure on education is presented at the end of the chapter (Box 8.1)—which is important in itself given that the Israeli economy's relative advantages rest on human capital—together with a description of the expected trends in the education budget in coming years (which takes into account the implementation of reforms that have already been decided on). The comparison shows that the national expenditure on education (excluding higher education) as a percentage of GDP is about 5.3 percent, which is high relative to the OECD countries. However, the expenditure per student relative to per capita GDP is relatively low as a result of the larger number of children in Israel and the low rate of participation in the labor force (which reduces the sources of funding for expenditure on education). In addition, the achievements of Israeli students on international exams are low relative to the OECD countries. With the adoption of various programs, such as New Horizon, the budget expenditure on education is expected to increase in coming years by about 0.3 percent of GDP.

One of the goals of the Israeli education system is to bridge the gaps in scholastic achievement among students by providing equal opportunity also to those who have grown up in families with weak socioeconomic characteristics and who therefore suffer from educational deficits.[30] The disparities in achievement in Israel are more pronounced than in other industrialized countries and are evidence of significant

[29] A general overview of the education system and a brief discussion of some of the issues can be found in the Bank of Israel Annual Report 2004, Chapter 4, Section 2.

[30] The State Education Law, 1953 (Amendment 6 – 2003) states that the following are among the goals of State education: "to provide equality of opportunity for all children, to facilitate their personal development and to create an atmosphere that encourages individuality and support for the child."

inequality in education (which is a reflection of the inequality in society as a whole). This is despite the significant efforts made to strengthen weak segments of the population.

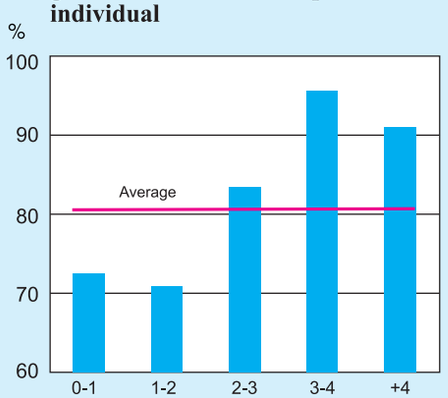
Therefore, and in view of the far-reaching effects of inequality in education on the welfare of future generations, we will focus in what follows on the policy of affirmative action in the allocation of resources among students. First, a survey of educational achievements according to students' characteristics is presented, which is followed by a description of the Ministry of Education's affirmative action policy. Finally, recommendations will be discussed.

Disparities in educational achievement

There are very wide disparities in educational achievements in Israel compared with those in other countries, indicating marked inequality in education.

The attendance rates for pre-school education among children from poor households is significantly lower than for other groups of children (Figure 8.8).[31] The disparities in educational achievement between schools according to socioeconomic status are significant[32] and this can be seen in international comparisons as well. These disparities appear already in the lower grades and persist (and even worsen in some cases) in higher grades. This is also reflected in admission to institutions of higher education and particularly to fields of study with a high rate of return in the labor market. Low educational achievement is common in the ultra-Orthodox and Arab education systems (and particularly in the Bedouin sector), in part because many of the students come from weak family backgrounds. (In the ultra-Orthodox sector, it is also explained by the curriculum which puts less emphasis on secular subjects.)

Figure 8.8
Proportion of children aged 3-4 in out-of-home childcare[a] in 2004, by gross household income per standard individual



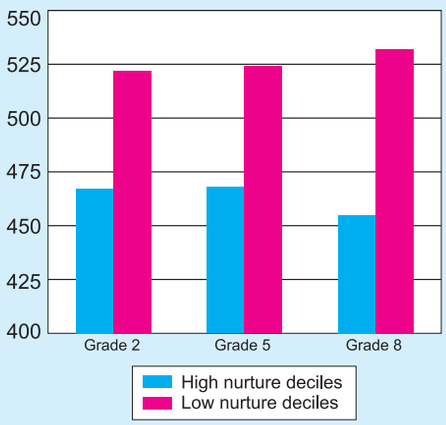
[a]Excluding childcare given by a nanny/relative free of charge.
Source: Based on Central Bureau of Statistics, Social Survey 2004.

The Meitzav national achievement exams measure the knowledge and understanding of students in the various grades in those subjects that constitute the necessary toolbox for a graduate of the education system, i.e. mother tongue, English, math and science/technology. With respect to mother tongue, students from weak socioeconomic backgrounds receive significantly lower scores and the disparity only increases as they grow older (Figure 8.9). The situation is similar for the other subjects as well.

[31] About four-fifths of the parents in poor families who did not send their 3-4-year olds to pre-school educational frameworks stated that the high cost had an influence on their decision (calculations from the 2004 Social Survey).

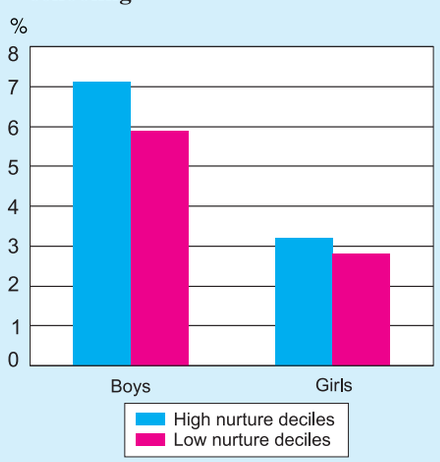
[32] For further details, see Bank of Israel (2005).

Figure 8.9
Average scores in Hebrew on Meitzav exams in the Hebrew education system in the 2007/08 school year, by grade and students' socioeconomic background[a]



[a]Socioeconomic background is defined according to Strauss Index nurture deciles - low: 8-10, high: 1-3.
Source: Based on National Authority for the Measurement and Evaluation of Education, Ministry of Education.

Figure 8.10
Average annual drop-out rates in grades 9-12 in the Hebrew education system during the 2001/02 school year, by gender and father's years of schooling



Source: Central Bureau of Statistics (2004).

These results are in line with the results of Israeli students on international exams (e.g. PIRLS, PISA and TIMSS).

The proportion of drop-outs from high school is higher among students from a weak background.

The proportion of drop-outs from high school is higher among students from a weak background (Figure 8.10) and among Arabs and immigrants. The effects of dropping-out from the system are measured not only by the reduced chances of achieving a matriculation certificate and continuing on to higher education, but also in social deviation, such as involvement in crime and drug abuse.

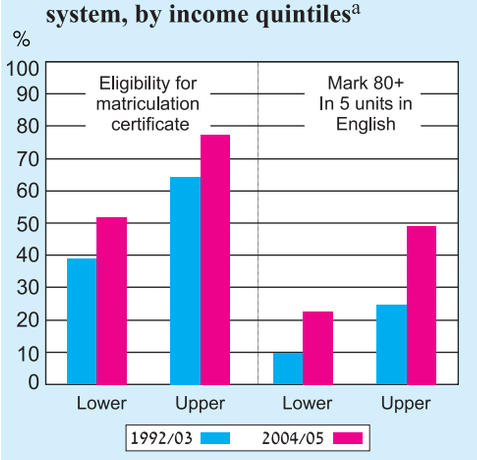
The achievements on matriculation exams of students from weak backgrounds are far lower than those of students from a strong background (Figure 8.11). This is reflected in both basic achievements, such as eligibility for a matriculation certificate, and in the quality of the matriculation certificate, which is likely to be a measure of excellence: high number of intensively-studied, high scores on the matriculation exams and fulfillment of university entrance criteria. Since the early 1990s, the disparity in basic achievements has remained unchanged or even declined; however, the disparity in the measures of excellence has widened.[33]

The partial success of students with weak socioeconomic characteristics on matriculation exams leaves them far behind other groups. Thus, only a small proportion of them reach university or college and most of them do not continue on to higher education (Figure 8.12).

An international comparison of the achievements of Israeli 15-year olds (most of whom were in Grade 10) on

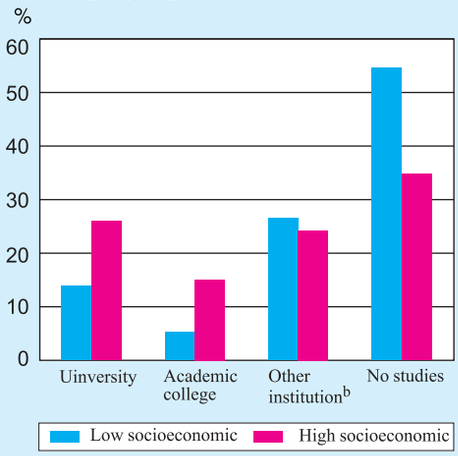
[33] Tsur and Zussman (2008).

Figure 8.11
Achievements in matriculation exams in the Hebrew State education system, by income quintiles[a]



[a]Net household income per standard individual quintile from salaried labor income and child allowances.
Source: Based on Central Bureau of Statistics.

Figure 8.12
Breakdown of educational outcomes for high school graduates in the 1997/08 school year within eight years of graduation, by socioeconomic grouping of place of residence[a]



[a] Low - groupings 1-4, high - groupings 7-10.
[b] Other - Teachers training colleges, Open University and other post-high-school educational institutions.
Source: Based on Central Bureau of Statistics.

the PISA exams in three subjects (reading, math and science) produces the following conclusions: the achievements of Israeli students are significantly lower than those of students in OECD countries and some of the other countries that participated in the exams;[34] a high proportion of Israeli students appear in groups with low levels of achievement and at the same time there is a low proportion of gifted Israeli students (Figure 8.13); and the variance in achievements within and between schools is among the highest among the Western countries (Figure 8.14).[35] In addition, the effect of an Israeli student's socioeconomic characteristics on his PISA exam scores is larger than in most developed countries (Figure 8.15), a finding that indicates the limited scope of affirmative action in Israel.

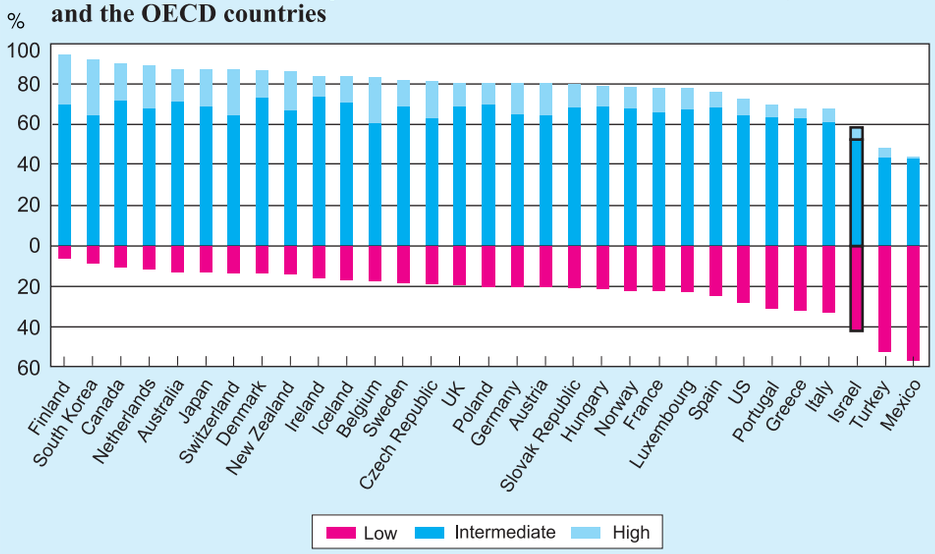
The large variance in scholastic achievement in Israel is partly the result of socioeconomic disparities.

The large variance in scholastic achievement in Israel is not surprising considering the extent of socioeconomic disparities in Israel. Students from a weak background suffer from educational deficits, which are a result of their parents' inability to provide them with support in a variety of areas: appropriate housing conditions; books, a

[34] Israeli students are ranked in the vicinity of 40th in the three subjects. The students in the Hebrew sector are no more than three ranks above that and the students in the Arab sector are in the vicinity of 50th.

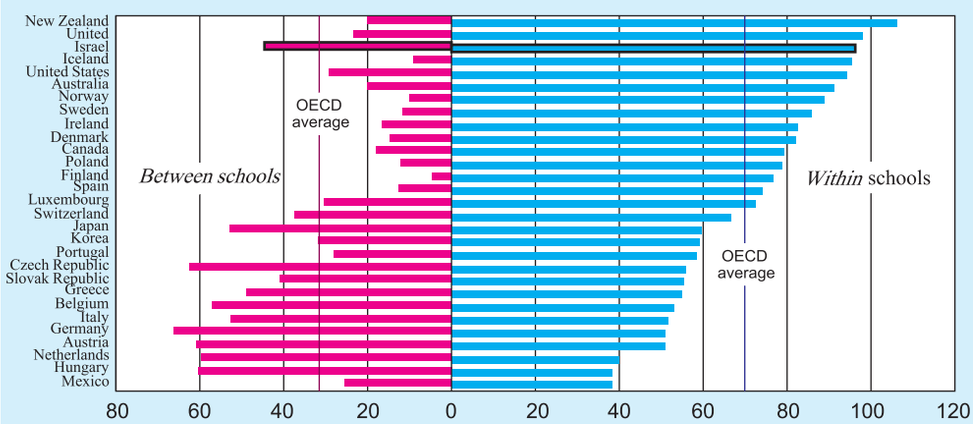
[35] It can be assumed that one of the reasons for a high variance in achievement within an Israeli school is related to the policy of integration in junior highs and high schools. Nonetheless, even in elementary schools there is still significant variance in achievement even though they are not subject to integration. The subject of integration as a mechanism of affirmative action requires a more in-depth analysis and is beyond the scope of this chapter.

Figure 8.13
Breakdown of students by scores on the 2006 PISA exams in math,[a] Israel and the OECD countries



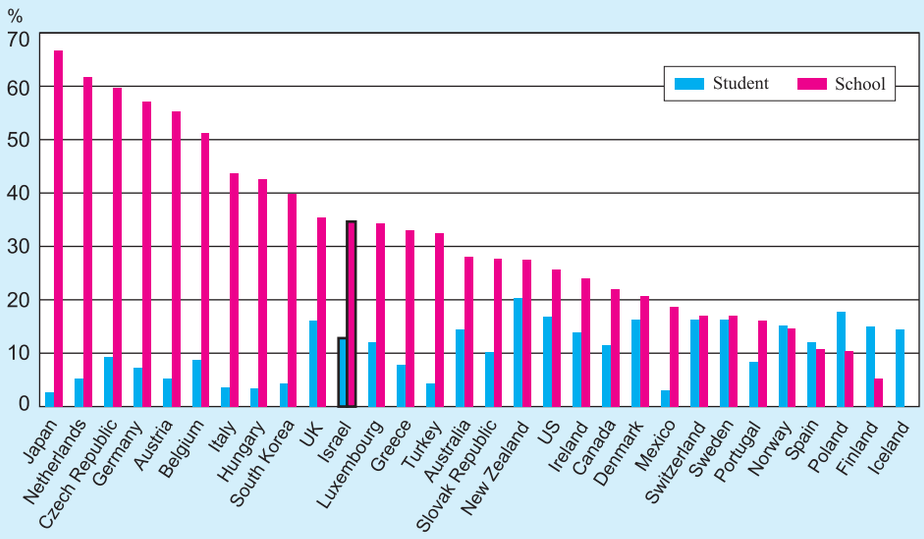
[a] Division into groupings as follows (in parentheses below: the average proportion, in percent, of students in the group in the OECD countries):
Low - Below Level 1 and Level 1 (21.3); intermediate - Level 2 to Level 4 (65.3); high - Level 5 and Level 6 (13.4).
Source: Based on OECD (2007).

Figure 8.14
Variance of scores on the 2006 PISA exam in science: Israel and the OECD countries (percentage of average variance of OECD countries)



Source: Based on OECD.

Figure 8.15
Contribution of student's and school's socioeconomic characteristics to Scores in the 2006 PISA exam in science: Israel and the OECD countries
(The difference in score due to half a standard deviation in socioeconomic background[a])



[a] Student - the difference in scores between students in the same school due to a gap of half a standard deviation in socioeconomic background between them. School - the difference in scores between students with *identical* socioeconomic backgrounds in different schools that results from a gap of half a standard deviation in socioeconomic background between the schools.
Source: Based on OECD (2007).

personal computer and other equipment; help in preparing homework; and funding of private lessons, extracurricular activity and the like. Thus, for example, private expenditure on the education of an elementary school student in the top quintile of household income per standard individual is five times greater that in the bottom quintile and the expenditure on private lessons, courses and extracurricular activities is sixteen times higher (Figure 8.16).

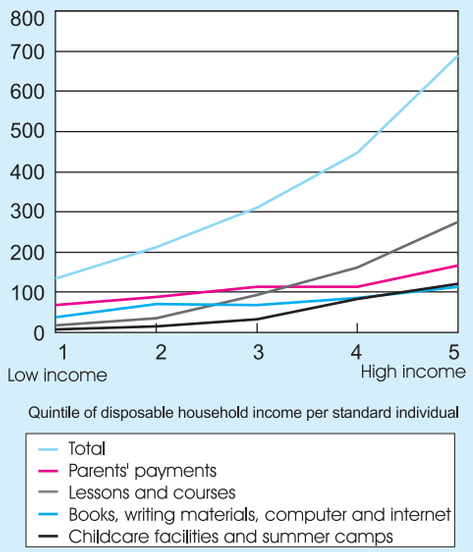
During the period 1993–2002 (for which there are comparable data), the proportion of households in the funding of current expenditure on elementary and post-elementary education rose by one percentage point to about 17 percent. This was the result of the sharp drop in the share of private expenditure on elementary education and the opposite trend in post-elementary education.

The increase in the proportion of private expenditure on education may partly be the result of the increase in household income, accompanied by the increased demand for education services that was not met by a sufficient increase in public expenditure on education and a lack of satisfaction among parents with the quality of education. These phenomena are apparently more common among educated and better-off households since in some cases the expenditure of the Ministry of Education allocated to their children has declined due to the policy of affirmative action to benefit weaker segments of the population.

Methods of intervention and the policy of affirmative action

The education system has several options for intervention in order to reduce inequality in education. Among them is affirmative action in the allocation of teaching hours and teachers in favor of students from weak socioeconomic backgrounds, the adoption of teaching methods that meet those students' needs and the like. Studies done in other countries show that increasing the number of teaching hours (which can be also be manifested in the reduction of the size of their classes) has some effect in improving students' scholastic achievements and is more effective among students in the lower grades and those from weak segments of the population.[36] Although it appears that the influence of a student's background characteristics, such as his parents' education, on his success in school is greater than that of the allocation of resources to education, the former is not, in general, within public policy's sphere of influence, at least not in the short run.

Figure 8.16
Monthly private expenditure on the education of a child in a regular elementary school, by quintiles of net disposable household income per standard individual[a] and type of expense, 2003
(NIS, average 2003 prices)



[a] Quintiles of disposable household income per standard individual for the population as a whole.
Source: Central Bureau of Statistics.

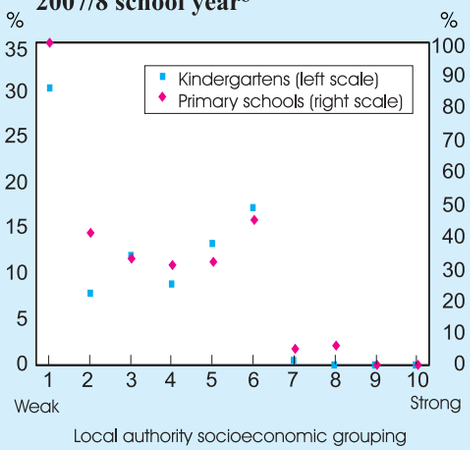
Numerous measures have been taken in the education system to strengthen weak populations, with clear and uniform criteria for the allocation of resources and affirmative action.

Numerous measures have been taken in the education system to strengthen weak populations accompanied by the creation of clear and uniform criteria for the allocation of resources and affirmative action. These include, among others, the gradual implementation of the Compulsory Education Law for ages 3-4[37] and an extended school day in pre-elementary and elementary education, with first preference for cities with a low socioeconomic ranking, disadvantaged neighborhoods, etc. However, the implementation of the extended school day ran into difficulties and its incidence is not sufficiently progressive (Figure 8.17) since weak local authorities find it difficult to implement, in particular because of the need to provide lunches. Some of the other measures include: extracurricular educational frameworks; system-wide intervention programs in weak cities and neighborhoods; assistance for students with weak backgrounds who are having difficulty in school and students who are at high

[36] For the Israeli case, see Angrist and Lavy (1999).

[37] Parents from weak socioeconomic backgrounds benefit from subsidized tuition in daycare centers that are under the supervision of the Ministry of Industry, Commerce and Employment.

Figure 8.17
Proportion of students benefiting from a government-funded extended school day, by local authority socioeconomic grouping,[a] 2007/8 school year[b]



[a] Local authority - municipality or local council. Socioeconomic ranking as of 2003.
[b] The data for number of students in kindergartens/elementary schools is correct for the 2004/05 school year/end of 2006. The number of students grew until the 2007/8 school year and therefore the percentages presented in the graph are biased upward. The extended school day was implemented for grades 1-6, but only a small proportion of elementary schools also include higher grades and as a result the percentages are downward biased.
Source: Based on Central Bureau of Statistics.

risk of dropping out; help for immigrant students; support for students with special needs; and incentives for teachers in Regions of National Priority.[38]

A significant step towards reinforcing affirmative action was taken during the 2003/4 school year with the initiation of the gradual transition to an allocation of teaching hours per student in elementary schools rather than per class. This involved a revision of the allocation system in the spirit of the Shoshani Report's recommendations (August 2002). An index of educational deficits was defined on the level of the student (the Nurture Index) which was used to calculate the differential allocation component per student and which took into account the student's background characteristics, as can be seen in Table 8.7. The students were divided into Nurture Index deciles, such that a student in the highest decile (from the weakest socioeconomic background) was meant to receive, according to this index, about 60 percent more teaching hours than a student in the lowest Nurture Index decile.

The Nurture Index did not take into account household income and at the beginning of 2006 the Supreme Court ruled that the use of the map of Regions of National Priority by the education system is not legal since it discriminates against the Arab sector (Supreme Court case 11163/03). As a result, the Ministry of Education designed a new Nurture Index for elementary education (the Strauss Index) by removing the components of residence in a Region of National Priority A and number of siblings and adding annual gross family income per standard individual, in addition to some other changes (Table 8.7). Overall, the Strauss Index allocated affirmative action teaching hours such that a student in the highest nurture decile will receive three times more hours than a student in the lowest decile. The new Nurture Index is similar to that proposed in the National Plan for Education (the Dovrat Report, January 2005) and is in line with an affirmative action policy which takes into account the contribution of a student's socioeconomic characteristics to his scholastic achievements.

[38] There are no evident differences within each educational sector in the characteristics of elementary school teachers, such as for example in their education or seniority, between schools with high and low socioeconomic ranking.

Table 8.7
Components of the Nurture Index and their weights for elementary school students according to the Shoshani Report and the recommendations of the Dovrat and Strauss Reports (percent)

	Shoshani Report	Dovrat Report	Strauss Index
Household income per standard individual decile		20	20
Mother's education	15	20	40[a]
Father's education	15	10	
Number of siblings	10	10	
Immigrant[b]	20	20	20
Immigrant from a developing country[b]	10	10	
Residence in a Region of National Priority A or on the Confrontation Line	20		
Distance from the Center[c]	10	10	20

[a] The highest Education between the two parents.

[b] The date of immigration for defining an immigrant: Shoshani Report – during the last 10 years; the Dovrat Report – during the last 6 years (for an immigrant from developing country – 11 years); Strauss Index – points between 0 and 4: one point for each parent and one point for a student not born in Israel and an additional point if any one of them was born in a developing country.

[c] The minimum distance of the student's place of residence from the three largest cities (Jerusalem, Tel Aviv and Haifa) weighted by 2/3 and the area's population weighted by 1/3.

SOURCE**:** The Report of the Committee to Examine the Budgeting of Elementary Education in Israel (Shoshani Report), August 2002; the National Plan for Education (Dovrat Report), January 2005; Ministry of Education.

As a result of the continuing cutbacks in its budget, the Ministry of Education claimed that it could not guarantee the minimum teaching hours per class and also adopt the new Nurture Index for all teaching hours to be allocated. Therefore, beginning in the 2007/8 school year, a new two-stage budgeting system was gradually introduced in elementary education. In the first stage, about 95 percent of teaching hours are allocated uniformly in order to ensure a minimum of 36 hours for each standard class (which represented an increase over the minimum number of hours up to that point). In the second stage, the remaining 5 percent are allocated according to the Strauss Index.

The result is that given the resources currently available and without a change in the internal allocation of resources within the Ministry of Education, the affirmative action policy in elementary education is rather limited. Furthermore, the full implementation of the new budgeting system is expected to shift resources from weak students to strong ones since the allocated minimum teaching hours represent an increase over the number of hours received until now by students with a strong socioeconomic background. Under these circumstances, it will be difficult to guarantee that elementary

In practice, the affirmative action policy in elementary education is rather limited, despite the adoption of the Strauss Index which takes students' socioeconomic characteristics into account in differential allocation of teaching hours.

school students with a weak socioeconomic background will receive an appropriate education.

The agreement signed between the Teachers Union and the government (which introduced the New Horizon program) specified that teachers in the elementary schools will spend 36 weekly hours in school,[39] of which 26 will involve frontal instruction and 5 will involve working with small groups or individual tutoring. (A similar system was adopted in the junior high schools.) These hours will likely be devoted to weaker students; however, in the elementary school system, most of the heterogeneity with respect to socioeconomic background is apparently between schools rather within each school. Therefore, the contribution of tutoring hours to reducing disparities in scholastic achievement is limited.

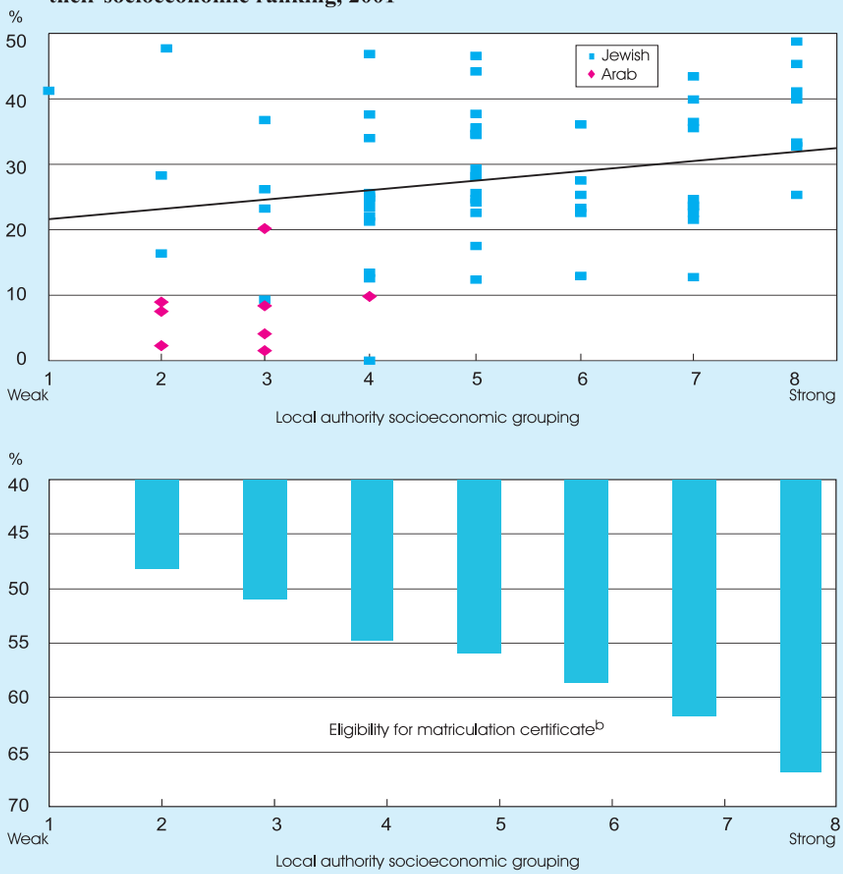
As an outcome of the labor dispute with the post-elementary teachers, the government decided (decision 3020/2008) to gradually reduce the maximum number of students in a class to 32 at all levels in the official education system. The annual cost of this decision is estimated at NIS 2.3 billion (not including the costs of building additional classrooms). Another step was to split all Grade 1 and 2 classes in the official education system that teaches basic skills by the 2011/12 school year, such that no class will exceed 20 students. This will cost NIS 0.4 billion per year when fully implemented. Preference in implementation would be given to, among others, schools with a low socioeconomic ranking and perhaps also those whose students have low achievements. Research has shown, as mentioned above, that reducing the size of a class is likely to improve scholastic achievement to some extent, primarily in the lower grades and among weak students. However, in the Israeli education system, most of the overcrowded classes are in the junior highs and high schools, particularly in the Hebrew State system in the more well-off cities and in the Arab system. Therefore, the full implementation of the policy to reduce the number of students in overcrowded classes will not achieve its goal and is liable to reduce the scope of affirmative action. On the other hand, if the policy of reducing class size is implemented only in schools whose students are on average in the lower third of the socioeconomic ranking (8^{th} to 10^{th} nurture deciles), it will apply to only about one-third of the planned classes and accordingly the budget expenditure will be reduced.

In both the elementary and post-elementary education systems, the Ministry of Education resources allocated to programs for the advancement of weak sectors of the population—that are not part of the framework of teaching hours included in the Nurture Index—have shrunk in size since the early 2000s, particularly in the case of the Branch for Education and Welfare Services. These resources now account for about 9 percent of the Ministry of Education budget.

Additional sources of funding for non-private expenditure on elementary education include the budgets of the local authorities, donations, etc. There is little information available on these sources and they constitute less than one-tenth of the total sources of funding for teaching hours in elementary schools. An analysis of the Ministry of

[39] As compared to the maximum of 30 hours prior to the reform.

Figure 8.18
Proportion of expenditure on education funded by the municipalities, by their socioeconomic ranking, 2001[a]



[a] A similar graph is obtained with respect to the proportion of parents' expenditure on education in the municipalities (not via municipal taxes), which represents an average of approximately one-third of the proportion of funding by the municipalities.
[b] The average rate of eligibility for a matriculation certificate among Grade 12 students living in Jewish municipalities in the 2000/01 school year, after second sitting.
Source: Based on Ministry of Education and Central Bureau of Statistics.

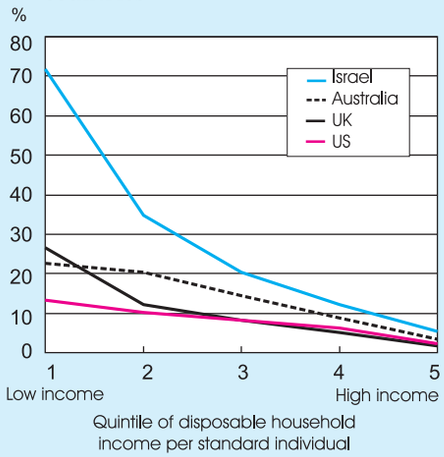
Education's internal auditing report shows that while the funding from local authorities is positively correlated with the socioeconomic status of its residents, the amount of funding from other sources is greater for students with a weaker socioeconomic background, which is evidence of affirmative action. The share of Ministry of Education participation in the education budgets of the local authorities (both for elementary and post-elementary education) is higher for weaker local authorities. In addition, the equalization grants from the Ministry of the Interior to the local authorities, which are calculated according to the "Gavish equation", are progressive and can be used by the local authorities to fund expenditure on education. Since the level of municipal services, including the quality of the local schools on the one hand and municipal taxes on the other hand are among the factors that affect an individual's choice of residence,

the expenditure of local authorities on education from their own resources is similar in nature to private expenditure.

In junior high schools, the scope of affirmative action in the allocation of teaching hours is more limited and in the high schools the allocation is to a large extent uniform.

In the junior high schools, the scope of affirmative action in the allocation of teaching hours is more limited and in the high schools the allocation is to a large extent uniform and dependent primarily on grade, educational track and course specialization. It has been found that a strong local authority invests significantly more in a student than a weak one, and the same with respect to the proportion of expenditure on education funded by the local authority (see Figure 8.18).

Figure 8.19
Proportion of disposable household income spent on education[a] in 2001, by quintile of net disposable household income per standard individual - Israel[b] and selected countries[c]



[a] The calculation in all the countries is based on the assumption that public expenditure on education at each level is identical for all students.
[b] In Israel - government expenditure on education.
[c] In the US - wealth-adjusted comprehensive income, which is similar to gross household income (not per standard individual), for the year 2000. The equivalence scale in Israel differs from those in Australia and Britain.
Source: Israel - Achdut et al. (2006); Australia and Britain - Harding et al. (2007); US - Wolf and Zachariah (2006); calculations of the Bank of Israel.

Although the scope of affirmative action per student in the education system is limited relative to needs, if account is taken of the close relationship between number of children in a household and its income level, as well as the rates of attendance in schools, where the achievements of students from a weak socioeconomic background are only somewhat lower than their classmates from a strong background,[40] then the public expenditure on education per household is highly progressive relative to household disposable income. In an international comparison, expenditure in Israel is highly progressive (Figure 8.19), particularly in view of the large number of children in poor households in Israel, which is far less common in Western countries.

One of the main characteristics of a highly successful education system is the investment of significant resources in schools and in students with low achievements.

Finally, a survey of the education systems in Western countries by McKinsey & Company (2007) showed that one of the main characteristics of a highly successful education system is the investment of significant resources in schools and in students with low achievements, with emphasis on an affirmative action policy in favor of students from a weak socioeconomic background, particularly in the lower grades. Identifying underachieving schools and students requires monitoring systems and intervention in the schools, which includes, first and foremost, teaching in small

[40] The disparities are relatively wide in pre-elementary education and in higher education.

groups during school hours and afterwards and even individual tutoring.[41] In a publication of the OECD, Field, Kuczera and Pont (2007) recommend, among other things, the following measures to increase equality in the education system: raising the proportion of children from a weak socioeconomic background in nursery schools and kindergartens; integration in the education system and restriction of compulsory tracking, particularly at a young age; affirmative action in the allocation of resources to educational institutions with students from a weak socioeconomic background, particularly in the lower grades; identification of students having difficulty in their studies and taking steps to improve their achievements, such as tutoring and assistance in preparing homework, within the framework of the school, following school hours, etc.; prevention of drop-outs, particularly at an early stage; and offering worthwhile alternatives for weak students in academic tracks.

Recommendations

- The significant disparities in scholastic achievement in Israel according to students' socioeconomic background and the importance of investment in education provide the motives for more intensive affirmative action in the schools at all levels, with emphasis on the lower grades, as is characteristic of outstanding education systems worldwide.
- Allocation of teaching hours in the junior highs and high schools according to a universal Nurture Index on the level of the student, as was recommended already in the National Plan for Education (Dovrat Report, January 2005).
- A significant increase in the number of teaching hours allocated to affirmative action in elementary education. On the assumption that the minimum number of teaching hours per class is maintained at its present level and that all teaching hours are allocated according to the Strauss Index, additional resources in the amount of about NIS 700 million per year are needed.
- The additional resources could come from an increase in the Ministry of Education budget and/or internal changes that would produce budget savings, such as:
  - A reduction in the high degree of variation in class size in the education system, particularly by increasing class size in ultra-Orthodox education, in State Religious education and in the rural sector of Hebrew State education.

[41] Students in Finland and Singapore have the highest achievements in an international comparison, which is partly due to wide-scale affirmative action programs. Thus, in Finland, the weakest 30 percent of students receive individual instruction, primarily in Finnish and math, from teachers who were specifically trained for this purpose. The high proportion of students who receive individual instruction, together with the occasional participation of stronger students, prevents the creation of a stigma. In Singapore, weak students receive additional lessons after the regular school hours and the weakest one-fifth of all Grade 1 and 2 students receive tutoring in separate classes.

  - Partial budgeting of schools which do not teach the full core curriculum, that screen students and that do not write the Meitzav national achievement exams.
  - A reduction in absences and tardiness among teachers and students, which occur at higher rates than in most other countries.
- Increased instruction in small groups in underachieving schools and a significant increase in the amount of tutoring for weak students in all the schools. The reform in elementary education (and the junior highs) is consistent with these proposals.
- Wider implementation of the extended school day in kindergartens and elementary schools and preference for educational institutions that serve weak segments of the population.
- Reduction in the number of students in crowded classes, primarily in lower grades and in underachieving schools. This is in contrast to the intention of gradually reducing the number of crowded classes at all levels of education and in all schools.
- Adoption of financial incentives for teachers of students with a weak socioeconomic background, which will be dependent on, among other things, an improvement in the students' achievements.

Box 8.1

International comparison of expenditure on education in Israel and the OECD countries[1]

The total public expenditure on education is the result of a socioeconomic/ political equilibrium. Although the ability to determine the optimal level of expenditure using only economic tools is limited, in an era of global competitive markets it is important to compare expenditure on education between countries, particularly with regard to Israel whose relative advantages rest on its high level of human capital.

An international comparison of expenditure on education involves several objective problems due to the differences between countries in demographic make-up, per capita income and price levels. As a result, the comparison can be made from many angles and the results can contradict one another.

The basic index is national expenditure on education as a percentage of GDP, which roughly reflects the proportion of resources allocated to education from

[1] The analysis does not include post-high school education unless stated otherwise.

the national pie. Figure 1b shows that in Israel this index is among the highest in the developed countries,[2] a not surprising result considering the high proportion of children in the population.

However, the national expenditure on education per student (in terms of purchasing power parity, PPP) is lower by some 27 percent in Israel than the average of the OECD countries (Figure 1b) and this is primarily due to the relatively limited expenditure on pre- and post-elementary education, while expenditure on elementary education is similar.[3] Another possible index, which avoids the problems in correcting for purchasing power, is the expenditure on education per student relative to per capita GDP, according to which, Israel is below the average of the countries in the comparison (Figure 1c). The expenditure on education, both in Israel and the world, involves primarily the payment of salary and therefore another possible index for an international comparison is expenditure per student relative to the average wage in an economy. This index is for the most part determined by two factors: the wages of teachers relative to the average wage in the economy and teaching hours per student, and therefore the index reflects to some extent one aspect of education's cost of production. While teachers' wages in Israel are far lower than those of their counterparts in the West, the number of teaching hours is higher than in most OECD countries (though class size is among the highest). Overall, the expenditure per students relative to the average wage in Israel is very low (Figure 1d).

In conclusion, the various indexes show that the expenditure on education per student in Israel is lower than what is common in the OECD countries. The main reason for this is the high proportion of children in the population, which requires greater total expenditure on education and which, together with the low rate of employment, limits the resources available for the financing of expenditure on education.

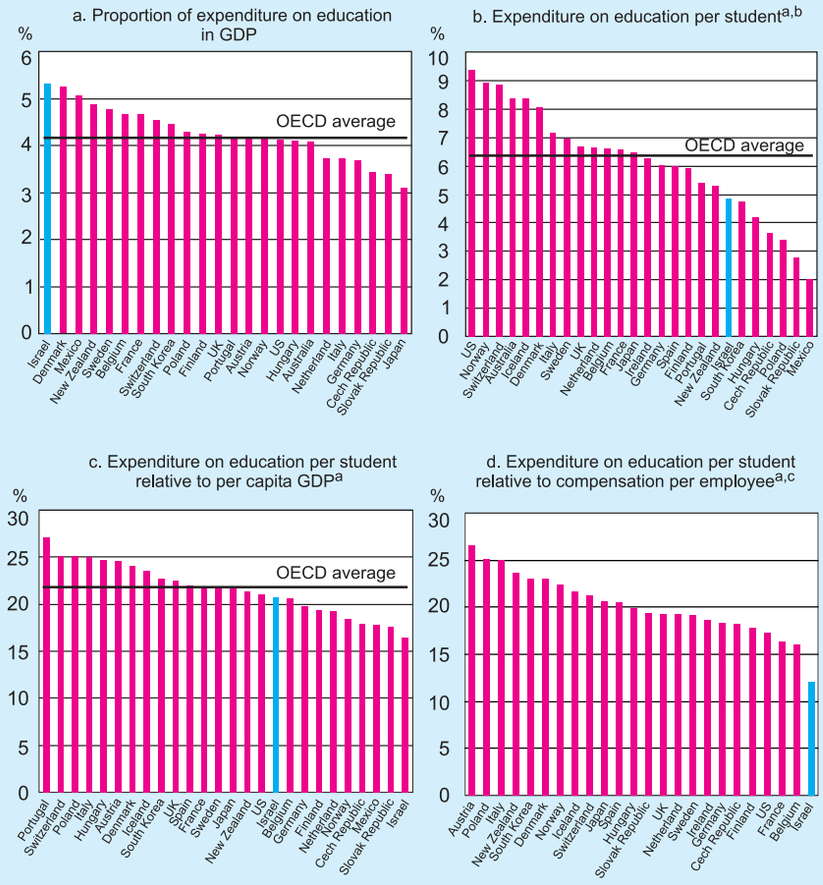
During the period 1995–2005, the real expenditure per student in school (and in pre-academic preparatory programs) grew by only about 5 percent which compares to an average rate of about 34 percent in the OECD countries. In addition, the proportion of the expenditure on education in GDP fell in Israel while in the OECD countries it remained stable. As a result of the gradual implementation of the reform in elementary education (New Horizon), the splitting of classes in the lower grades, the implementation of the Compulsory Education Law until age 18 and the (planned) reduction in the maximum size of a class, the budget expenditure on education (excluding higher education) is expected to rise until

[2] The private expenditure on education constitutes about 8 percent of the total expenditure on education in the schools (and in pre-academic preparatory programs) in Israel and also in the OECD countries on average and in Israel this rate is growing at a much faster rate.

[3] The index of cumulative expenditure per student during all his years of schooling paints a similar picture (thousands of US dollars, in PPP terms): Israel, 61.2; OECD average, 87.7.

the beginning of the next decade by about 0.3 percent of GDP. This will offset most of the decline in the proportion of the expenditure on education in GDP which has accumulated since the middle of this decade. The expenditure per student is therefore expected to increase in real terms by about one-seventh.

Figure 1
International comparison of expenditure on education in Israel and OECD countries, 2005



[a] Calculated according to the weighted expenditure per student (pre-elementary, elementary and post-elementary education) in each of the countries in the comparison, according to the breakdown of students at each level in Israel in 2005.
[b] Adjusted for PPP (purchasing power parity).
[c] Compensation per employee: employee compensation divided by total employees.
Source: Based on OECD (2008), *Education at a Glance 2008;* OECD (2007), *National Accounts of OECD Countries 1994-2005;* Central Bureau of Statistics.

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3. MODERATING CAR USAGE AS PART OF AN ENVIRONMENTAL POLICY

- Environmental issues are becoming increasingly prominent in public debate and in the policy formulation process in many countries. These issues must be addressed in order to improve well-being and the quality of life, while economic costs are incurred by ignoring them.
- One of the most important environmental issues concerns the use of cars. Presented in this section are analyses of three matters, which, if given due attention, could help to reduce this usage: the "company car" arrangement, taxation of parking spaces at the workplace, and planning policy regarding the establishment and expansion of small settlements.

Environmental issues are becoming increasingly prominent in public debate and in the policy-formulation process in many countries, especially in the developed ones. This results from: the visible worsening of certain related developments and their tangible impact; improved understanding of measures that could moderate them, and

Environmental issues are especially important in Israel because it is a small and crowded country.

an awareness that delaying the implementation of these measures could exacerbate them, sometimes irreversibly, and increase the cost of dealing with them; growing awareness not only of the harm to the environment caused by environmental problems, but also of their economic damage and damage to health and their adverse effect on the quality of life.

Environmental issues are particularly important in Israel because it is a small and crowded country, with a higher population growth rate than the developed countries.[42] These issues are also becoming increasingly important for Israel due to its entry into the OECD, which regards the issues as highly important, and in view of the possibility that it will be required to adopt environmental measures within the framework of international agreements.

Environmental issues cover a very wide range of subjects, in three dimensions: the effects on the environment, types of human activity that cause or increase these effects, and the desired policy measures. The environmental effects include the global warming process, pollution of the air, the ground and sources of water, the damage caused to open areas, natural habitats, the landscape and biodiversity, and the over-exploitation of natural resources.

Many types of human activity contribute to these phenomena. Such activity includes the burning of fuel to produce electricity, for transportation and for other purposes, which leads to the emission of greenhouse gases that accelerate global warming and to air pollution; the spread of built-up areas for housing, infrastructure and other requirements, which harms open areas and water sources; waste burial, which requires the allocation of open spaces and could pollute the ground and water sources. Since certain types of activity sometimes cause damage in numerous areas, the benefit obtained from reducing these activities could be very considerable.

The policy measures available are highly diverse, from several aspects. The problem can be confronted at four different stages: reducing the amount of activity that causes the problem (reducing electricity consumption or car usage); reducing the amount of the direct cause of damage which results from the activity (reducing emissions by using more efficient technologies and cleaner fuels, reducing the amount of waste); handling the direct cause of damage after it has already been produced (recycling, treatment of sewage and toxic materials); repairing damage that has already been caused (revitalizing streams and restoring abandoned quarries). Policy instruments could be economic, planning-oriented or process-oriented (the internalization of environmental considerations in the decision-making process), supervisory-related (legislation, the issue of standards and their enforcement) and educational. These instruments are intended to affect the behavior of individuals, the business sector, the public sector and policymakers.

[42] For an international comparison of Israel in a variety of environmental indices, see The World Bank (2008), Little Green Data Book. Much environmental data on Israel can be found in a special Central Bureau of Statistics publication: Environment Data Compendium 2006.

Economic policy plays a major role in coping with environmental issues, for several reasons: Environmental implications reflect the externalities of individuals' activity, implying a significant market failure that justifies intervention. Economic instruments—taxes and subsidies—may have a major impact on the behavior of consumers and manufacturers. Part of the environmental damage also involves serious, immediate or future, economic damage.

Economic policy plays a major role in coping with environmental issues.

One of the most important environmental concerns is to reduce the damage caused by car usage. This issue is so important because of the environmental implications of this usage as well as its negative non-environmental externalities.[43]

It is important to reduce the damage caused by car usage.

A major environmental effect of the use of cars is the emission of greenhouse gases and other air pollutants, which is also caused by the combustion of fuel for electricity generation and other purposes.[44] The need to reduce these emissions derives from both environmental and economic considerations. Air pollution has tangible health, economic and other effects. The emission of greenhouse gases in Israel may not appear to be a major problem for the country. This is because warming is a global process, in which Israel's share is negligible. In the future, however, it is likely that Israel will be required to reduce greenhouse-gas emissions or pay for them within the framework of international agreements.[45] It is also possible that countries which accept emission-restrictions, or that impose taxes on greenhouse-gas emissions by local manufacturers, will impose protective tariffs on imports from countries that do not impose such taxes, in order to prevent unfair competition with their own manufacturers.[46] Apart from that, Israel has a clear interest in restraining the consumption of energy, as reflected inter alia by the government resolution concerning the need for increasing the efficiency of energy consumption.

Car usage causes emission of greenhouse gases and other air pollutants.

Private vehicles are not the only source of emission of greenhouse gases and other pollutants. A major source of these emissions is electricity generation. Accordingly, an important way to reduce emissions is to adopt electricity generation technologies that use fuel more efficiently, and that use cleaner fuels (such as natural gas). Solar energy

[43] Estimates of the total cost of car usage in Israel are presented in the Report of the Inter-Ministerial Green Taxation Committee, the Ministries of Finance, Transport and Road Safety, Infrastructures and Environmental Protection, January 2008. For an extensive discussion of these costs, see also: Eldad Shidlovsky and Michael Sarel, "The Real Costs of Vehicle Usage and the Desired Policy," Israel Tax Quarterly, 32(127), pp. 19-80.

[44] The main greenhouse gas is carbon dioxide. In 2007 electricity generation was the source for 65 percent and transportation for 22 percent of the total emission of this gas in Israel, which derives from the combustion of fuels. The transport figure refers to all types of transportation, including public transport and trucks. The proportion of transport in other greenhouse gases and air pollutants varies according to the type of pollutant, and in some of them is considerably higher. For details, see Central Bureau of Statistics, *Statistical Abstract of Israel, 2008,* Chapter 27.

[45] Although Israel was not required to reduce greenhouse gas emissions in the 1997 Kyoto Protocol, it may be required to do so in future agreements, especially in view of its progress from the status of a developing country to that of a developed country.

[46] A recommendation that Israel should expedite its preparations for reducing carbon emissions for these reasons appears in Strategic Plan for Sustainable Development at the Ministry of Environmental Protection, Stage B Report, May 2007, p. 12.

can be used to some extent as an alternative to fuel combustion. Concurrently, the demand for electricity can be moderated by changing the price structure and adopting energy-saving technologies (such as "green construction" and power-saving electrical instruments).

The Green Taxation Committee recommended measures for reducing pollution caused by cars.

However, transportation, car usage in particular, is another major source of emission of greenhouse gases and pollutants. The awareness of the importance of reducing the pollution caused by private vehicles was clearly reflected in the report of the Green Taxation Committee.[47] Emissions from cars can be reduced by cutting down on the emissions per kilometer traveled and by reducing the overall amount of travel. The committee recommended detailed measures for reducing pollution per kilometer by encouraging the purchase of cars that emit less pollution and the use of cleaner fuels.

The overall amount (total mileage) traveled by car should also be moderated in order to achieve a significant reduction in pollution.[48] Mileage should be moderated also because the negative externalities of car use are much broader than the issue of pollution. These effects include additional environmental implications such as the negative effect of expanding the road system, e.g., the harm caused to open areas, habitats, and water sources. Non-environmental externalities include the economic costs of road congestion and road accidents. The necessity of travel-restraining policy is highlighted by the expected growth in the number of cars in Israel given the low rate of motorization compared with advanced economies, the continuing reduction in the purchase tax on new cars, the forecast increase in the population and the rise expected in the standard of living.

Car usage has negative effects apart from air pollution.

Three measures for reducing car usage are discussed.

Of the various measures of reducing the overall amount traveled by car mentioned in the Green Tax Committee's report, we present analyses with respect to three areas: the "company car," taxation of a parking space at the workplace and its cashing out, and planning policy that takes into account the impact of living in small localities on the use of cars.[49] Placing an emphasis on measures in these areas conforms to the committee's recommendation not to increase the taxation of gasoline, but rather to focus on other measures.

Reducing car usage obviously requires a clear preference for public transport, an improvement in the quality of this transport and substantial investment in the development of public transport infrastructure.[50] However, the measures discussed below are desirable even before such an improvement is achieved. Section a shows that the overall amount traveled by those driving a company car greatly exceeds that

[47] See reference in footnote 45. The report also specifies the amount of pollution caused by them and its costs.

[48] The plan mentioned in footnote 48 states that transport policy has so far placed an emphasis on reducing the pollution created by car travel, and does not make adequate reference to the need to reduce the amount of travel itself. See *ibid*, Stage A Report, pp. 59-60.

[49] The committee also referred to the payment of a car allowance, which is practiced as part of wage policy, principally in the public sector. For a quantitative analysis of this matter, see "Reducing the Incentives for Car Ownership," *Recent Economic Developments 121*, Bank of Israel, June 2008, pp. 30-34.

[50] Box B.5 in the Bank of Israel Report for 2007 discusses the policy required with respect to public transport and investment in it.

of drivers who do not benefit from that arrangement. The difference derives from the distortion inherent in the company car arrangement, rather than from the quality of public transport. Abolishing this distortion should reduce the amount traveled by company car recipients to a level similar to that of other car users. Section b discusses increasing the cost of car usage for traveling to work by taxing the benefit inherent in a parking space which the employer provides to an employee at the place of work, and the possibility of the employer granting a monetary benefit to employees who forego this parking place. Although the efficiency of such a measure will increase as public transport improves, it could actually reduce car usage even before then. This is apparent from experience abroad regarding the success of cashing out free parking in reducing car usage even in areas where public transport is not good. Section c shows that car usage is greater among those living in small localities. In this respect, a policy is required which will give preference to additional construction in large localities over the establishment of new localities and the expansion of existing small ones. Such a policy is intended not to induce car users to move to public transport, but to moderate the increase in the number of car users whose place of residence practically forces them to use a car.

a. Impact of the company car and the leasing arrangement on the overall amount traveled

The company car arrangement in Israel led to a substantial increase in the overall amount traveled.

This section presents a quantitative estimate of the surplus amount of car usage deriving from the existence of the company-car arrangement in the labor market, and especially leasing in hi-tech industry. It was found that the amount traveled by those holding a company car was 24 percent greater than the amount traveled by those in privately-owned cars. Among hi-tech employees, the difference reaches 30 percent and when estimated under the TSLS method, 61 percent.[51] This results from two undesirable incentives in the arrangement, which should be abolished: One incentive derives from the tax benefit implied in the receipt of a car from the employer as opposed to the purchase of a car—a tax distortion that will be gradually abolished from 2008 and by 2011.[52] The other incentive derives from the structure of the arrangement which in return for a fixed payment, allows unlimited travel in the car, thereby creating a zero marginal cost for car users, an arrangement that must be changed by means of regulation.

Car leasing constitutes an important service for private and business customers, mainly due to the reduced elements of risk and financing involved in the purchase of a car and its ownership by consumers. At the same time however and as stated, it involves an incentive for excessive car usage. This is because of the arrangement practiced in Israel which permits unlimited usage of a car in return for a fixed monthly

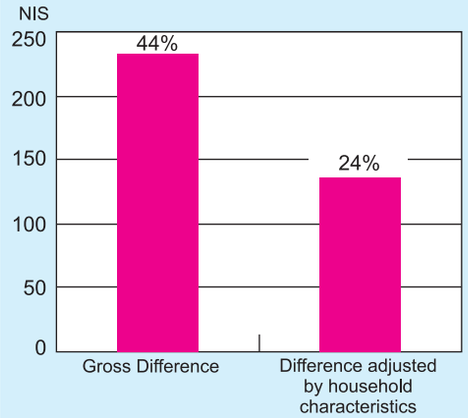
[51] The estimates quoted are exclusive of all household characteristics.

[52] See the State Revenue Administration's report for 2007, Chapter 13. This amendment is problematic, because it does not distinguish between employees using cars for work purposes and those who receive a car as a wage benefit.

Excessive company car usage derives from a zero marginal cost and from the tax benefit to company car holders.

payment. This feature might have led to a substantial reduction in the size of the leasing market: Since users perceive a zero marginal price of the overall amount traveled, they will use the car more than they would if they had paid a real price, meaning that leasing companies financing the surplus amount traveled will charge in advance a higher price, which will not be worthwhile for those whose car usage is low, with the result that they will be pushed out of the market. However, leasing has spread in Israel during recent years,[53] largely due to the fact that the structure of the tax system provides a substantial tax benefit of approximately a thousand shekels to the recipient of a car from an employer as compared to an individual who purchases a car privately.[54]

Figure 8.20
The Difference between Monthly Expenditure on Fuel on Company Cars and Privately Owned Cars



SOURCE: Based on Central Bureau of Statistics data.

In order to estimate the impact of the company car on the overall amount traveled, we use household expenditure surveys for the years 2003 to 2007. The surveys include data on the household's fuel expenses, the number of vehicles and their ownership, as well as demographic and other economic data. We also use the employee's sector of employment in order to identify workers in hi-tech industry.[55] It should be noted that household expenses on fuel according to the survey data correspond to an overall amount of travel of 13,900 kilometers, compared with an average of 16,000 according to the Central Bureau of Statistics' direct survey.

Company car holders drive 24 percent more than car owners.

Figure 8.20 presents the difference between monthly fuel expenditure on company cars and on privately owned cars, in NIS and as a percentage. The diagram shows the gross difference and the difference obtained after controlling for the effect of the demographic and economic characteristics that were observed among households.[56] After controlling for these features, it was found that the fuel expenses of those

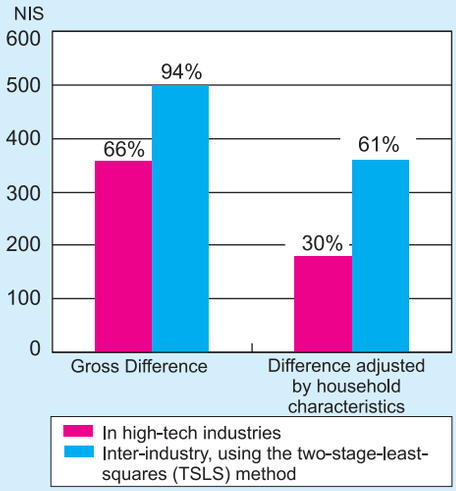
[53] Sixteen percent of cars in 2007 were company cars, two thirds of which were leased and a third of which were held under another arrangement.

[54] State Revenue Administration Report for 2007, Chapter 13.

[55] Hi-tech workers are defined as employees in the advanced technology industries 32-34 and in the advanced services industries—computer, research and development services. We also examined pollution according to the integration in these industries of those with a higher education, and the results were similar.

[56] The gross surplus expenditure is the simple difference between the averages. The characteristics were deducted on the basis of regressions that estimate the effect of the household's characteristics on fuel expenditure—family income, family expenditure, apartment ownership, number of persons, number of employed persons, education, age and area of residence.

Figure 8.21
The Difference between Monthly Expenditure on Fuel on Leased Cars and Privately Owned Cars



SOURCE: Based on Central Bureau of Statistics data.

holding a company car were NIS 140 or 24 percent higher than the fuel expenses of those actually owning a car.[57]

The comparison between those holding a company car and car owners is problematic to some extent. This is because of the unobserved features: Those holding a company car may need the car for work purposes, or choose this arrangement in advance because they want to travel more. In order to examine the assumption that the effect estimated is indeed causal, similar data on the advanced technology industry are presented. This industry has a number of characteristics that make the examination more reliable: Firstly, the company car arrangement is far more common among workers in that industry (52 percent of workers in the industry receive a company car compared with only 21 percent among other workers). Secondly, the company car arrangement in the hi-tech industries is clearly a benefit for employees and is not for work purposes, and the usual arrangement is the leasing arrangement whereby unlimited travel in the car is possible in return for a fixed payment. Figure 8.21 presents the difference between monthly fuel expenditure on leased cars and on privately owned cars, in NIS and as a percentage. The left-hand columns in each category represent the difference in expenditure within hi-tech industry between workers receiving a vehicle via leasing and workers who own a car, and the right-hand columns represent the difference between the industries as derived from TSLS estimates, in which the affiliation with hi-tech industry serves as an instrumental variable for the receipt of a company car.[58] The findings show that the effect of leasing is greater than the effect of a company car in the other industries—between 30 and 61 percent.

Hi-tech employees who receive a leased car drive 61 percent more than similar employees in other industries who do not receive a company car.

To conclude, it was found that company-car arrangements and especially leasing lead to a large increase in the overall amount traveled by their drivers. Based on the proportion of company cars and leased cars to total cars in Israel and according to the estimates obtained here, the overall amount traveled in Israel is 5 to 8 percent

The overall amount traveled in Israel is 5 to 8 percent higher because of the existence of company cars

[57] A difference of 4,000 kilometers traveled a year.

[58] The idea behind this method is that the decision concerning the holding of a leased car could be dependent on the desired amount of travel. But since employment in hi-tech industry does not derive from such considerations, it can serve as an auxiliary variable for examining the effect of leasing on the overall amount traveled.

higher because of the existence of company cars.[59] Accordingly and following the tax reform concerning the amendment of usage value for tax purposes of the company-car benefit, whose gradual application began in 2008, a change in the existing leasing arrangement by means of regulations is recommended, whereby drivers will pay the actual price for the use of a car.

b. Taxation of the parking benefit as a means for reducing commuting by car

Parking cost is one of the considerations affecting individuals' decision regarding the extent of car usage.

The cost of parking is one of the considerations that affect individuals' decision regarding the extent to which they use a car. When employees do not have to pay for parking at their place of work, this encourages them to travel to work by car. Travel to and from the workplace by car has particularly serious negative external effects because such travel is usually in conditions of congestion, at the busiest times and in the busiest areas when entering and leaving employment centers in the metropolises.

One of the methods for reducing the use of a car for the purpose of traveling to and from work is to make it less worthwhile for an employee to use the parking space which the employer provides for him. Under this method, the benefit implied in the parking space which an employer provides to an employee at the workplace is taxed, and the employer can also give a monetary benefit to employees who forgo their parking space (cashing out free parking).

(1) The existing situation—The tax policy that encourages car usage

Current tax policy encourages car ownership and usage in a number of ways, including non-taxation of the benefit to the employee implied in the supply of parking services.

The present tax policy encourages the ownership and use of a car in many ways, including the non-taxation of the benefit enjoyed by the employee in the supply of parking services.[60] Employers prefer to remunerate employees by providing parking services, rather than via remuneration in wages. For the employer, parking services are a recognized expense in the production of income, namely a tax-reducing expense, while the benefit is not charged to the employee and he does not pay tax on the benefit. Accordingly, tax policy effectively subsidizes the provision of parking spaces for employees to the extent of the marginal rate of tax. Moreover, employees who do not use parking services, usually those who use public transport, do not receive the benefit and thereby suffer discrimination.

[59] The estimates are derived from the percentage of surplus expenditure per company car and per leased car, which is estimated exclusive of household characteristics as shown in Figures 8.20 and 8.21, and from the distribution of cars by types of car: leasing, other company cars and privately-owned cars (State Revenue Administration's report for 2007, Chapter 13). The lower estimate is derived from the OLS estimate of the effect of leasing, and the upper estimate is derived from the TSLS estimate of the effect of leasing.

[60] Examples of other benefits for those using a car are: the wage policy currently practiced in many sectors of the economy and especially in the public sector, which encourages the purchase of a car, by for example payment of part of the wage components for the maintenance of a car and the "company-car" arrangement, which was discussed in the previous section.

(2) Experience abroad: Discouraging car travel by cashing out free parking

In various parts of the world a solution has been found for the parking problem—cashing out free parking. This is an incentive for reducing car usage by employers providing employees with the option to forgo their parking at the workplace in return for a monetary benefit.

In various parts of the world a unique solution has been found for the parking problem by the practice of cashing out free parking, which is an incentive for reducing the use of cars in favor of travel by public transport, walking, cycling or car-pooling. This is done by employers providing employees with the opportunity to forgo their parking rights at the workplace in return for a wage increment. The benefit which the employer provides must be sufficiently attractive in order to encourage the employee to forgo the parking space.

In 1992 California instituted regulations for cashing out free (employer-paid) parking which require the employer to offer a program that allows employees to choose between free parking and cash remuneration.[61] Free parking is not taxed, while the cash remuneration is taxed. The regulations refer to companies that employ over 50 workers and rent the parking place from a third party, meaning that the payment is made directly from the allocation for payment for use of the car park. The employer can offer the employee *inter alia* a choice between the parking benefit and a payment equal to or higher than its monetary value.

The table summarizes a number of studies on cashing out free parking in California. The studies show that the impact of the program is considerable and is felt even in areas where public transport is not good. In these areas, employees have organized car pools.

Table 8.8
Decrease in Parking Demand as a Result of Financial Incentives in the USA[a]

	Number of employees	Average monthly incentive in 1995 dollars	Decrease in demand for parking (percent)
Areas with little or no public transportation	13,780	47	24
Areas with fair public transportation	20,930	110	31
Areas with good public transportation	53,500	22	24
Total (weighted average)	88,210	46	26

[a] Results of ten case studies published in the 1990s.

SOURCE: http://www.moderntransit.org/cashout/cashoutresults.html

The proposed plan

It is proposed to employ policy measures in Israel for reducing the use of cars for traveling to and from work, primarily in areas of congestion, the metropolises. In the plan, the payment of tax for a parking benefit is proposed,[62] and for this purpose a normative value will be determined for the parking space. This value will be affected

[61] Because it conflicted with federal tax law, the law was not enforced until 1998.
[62] See the Inter-Ministerial Report on Green Taxation, January 2008.

It is proposed to employ policy measures in Israel for reducing car usage when traveling to and from work, primarily in areas of congestion. The payment of tax for a parking benefit is proposed.

by the firm's location, in a manner whereby the benefit for tax purposes in Tel Aviv and especially in the Tel Aviv business center will be higher than in other areas. If an employee uses a parking space at the place of work, the value will be charged to his taxable income. This conforms to a tax policy that reduces exemptions and taxes all benefits. The employee will be given the option of either foregoing the parking space or using the parking space on a daily basis. The tax charge will be made according to the number of days he uses the parking space in the course of the month. Since technological measures can be employed in order to detect the use of a parking space, the practice is simple to apply.

Taxation of the parking benefit can be applied within a short period of time to all employees and employers. For the future, cashing out free parking may also be considered. This will give the employee an opportunity to cash out his parking space: An employee who does not use a parking space will receive its value equivalent from the employer in the form of a wage increment. The advantage of taxing the benefit as opposed to providing a cash incentive for non-usage of a parking space is that the taxation is equitable, as it encompasses all employees who presently receive a free parking space, while at the initial stage at least, the incentive can only be granted to part of the employees. These would be employees at firms that rent car parks from a third party.

c. Small localities and overall car travel

Residence in a small locality involves far greater car usage.

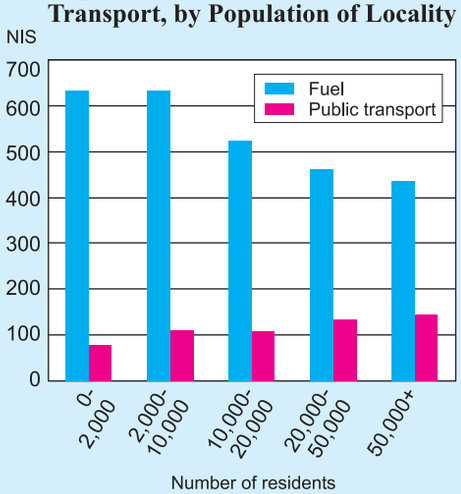
This section shows that households' expenditure on fuel for transport in small localities is considerably higher than that of households in large localities. Residence in a small locality therefore involves far greater car usage, even when differences in regional characteristics and households' characteristics are taken into account. Accordingly, policy that favors additional construction in existing large localities over construction in small and new ones will in the long term be able to moderate the increase in usage of cars and its negative effects on the environment.

The spatial distribution of the population is likely to affect the amount of car usage in two ways: Firstly, a large part of economic activity, like other aspects of human activity, is characterized by spatial concentration. As an example, employment, commercial, educational and cultural centers tend to be concentrated in cities. A person living in a small locality will thereby need to travel more often and larger distances than someone living in a city, close to the centers of activity. Secondly, efficient public transport relies on economies of scale, namely on a large number of users. In small localities therefore, this transport cannot be maintained at a frequency, quality and cost that will position it as a real alternative for car usage.

There is growing awareness of the negative environmental effects of the move from cities to small localities, including increased car usage.

Awareness that the migration from cities to small localities causes increasing car usage and exacerbates its accompanying negative environmental effects is apparent from diverse policy documents that were published during recent years in Israel and abroad. The authors of these documents emphasize the need to take account of transportation-related and environmental aspects when formulating planning,

Figure 8.22
Average Monthly Household Expenditure[a] on Fuel and on Public Transport, by Population of Locality



[a] NIS, at 2003 prices.
SOURCE: Based on Central Bureau of Statistics data.

construction and land-usage policy. For example, the Green Taxation Committee's report published in 2008 notes that low-density construction in existing and new small localities encourages urban sprawl processes, and could increase car dependence.[63] Similar reference is made in documents of the Ministry of Environmental Protection.[64] A recently published OECD report also warns of the implications of urban sprawl for energy consumption, car dependence and air pollution.[65] The report calls for these effects to be internalized in land-use policy, and notes that this policy sometimes affects transportation far more than transportation policy itself. The reports also mention that urban sprawl and the establishment of new localities involve excessive investment in roads and other negative effects on the environment, such as the waste of land resources, and damage to habitats and to the landscape.

A number of studies have found a significant relationship between spatial distribution and fuel consumption for transportation abroad. Newman and Kenworthy found a strong negative correlation between urban density and per capita fuel consumption for private transport purposes.[66] Brownstone and Golob show that the annual amount traveled and the fuel consumption of households in California in areas of low building density are significantly higher than those of households with similar characteristics in more crowded areas.[67]

The following analysis is based on the Central Bureau of Statistics' Household Expenditure Surveys in the years 2003-2006,[68] and refers to Jewish households where the head of the household is aged 25-65 and at least one of its members works. The analysis focuses on the working-age population. This is because travel to and from work accounts for a considerable part of the total amount traveled and is of special

[63] Report of the Inter-Ministerial Green Taxation Committee, the Ministries of Finance, Transport and Road Safety, Infrastructure, and Environmental Protection, January 2008.

[64] Strategic Plan for Sustainable Development at the Ministry of Environmental Protection, submitted to the Ministry of Environmental Protection, May 2007; Transportation Policy for Protecting the Environment, submitted to the Environment Ministry, October 1998.

[65] OECD Environmental Outlook to 2030, OECD 2008.

[66] P. Newman and J. Kenworthy (1999). Sustainability and Cities. Island Press Washington DC.

[67] D. Brownstone and T. Golob (2009). "The Impact of Residential Density on Vehicle Usage and Energy Consumption," Journal of Urban Economics 65, pp. 91-98.

[68] With the exception of 2005, which was left out because of a problem with the data.

interest for policy purposes, due *inter alia* to its significance in congestion problems.[69] The amount of car usage in this group differs from that in other age groups for additional reasons.

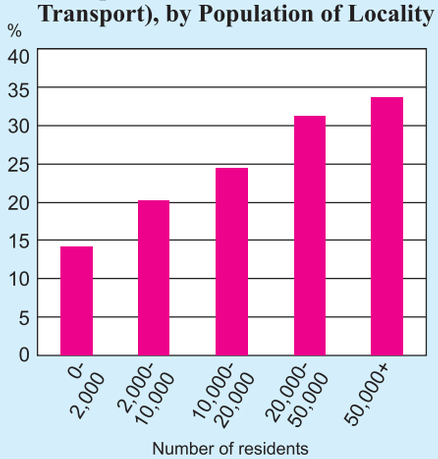
We examine the amount of car and public transport usage for all purposes: for commuting, for work itself, and for non-work purposes. This amount is estimated via household expenses on fuel.[70] The figure also reflects the amount traveled by households that use a company car because in the survey, fuel expenses are attributed to them according to the amount traveled.

Residents of small localities use cars extensively and make little use of public transport.

Figure 8.22 presents a household's average monthly expenditure on fuel by size of the locality (number of residents) in which it lives. It can be seen that this expenditure is lower, the larger the locality of residence, and that in small localities it is far greater than in large ones. This reflects not only the inherent need of people living in small localities to travel to a considerable extent, but also their low usage of public transport compared with residents of larger ones: The absolute expenditure on public transport of a household in a small locality is much lower than that of a household in a large one. The extent of dependence on a car of residents of small localities, and the relationship between the size of a locality and the ability to divert travel from a car to public transport is clearly expressed in Figure 8.23: The proportion of expenditure on public transport to total current spending on transportation (fuel and public transport) rises considerably as the size of the locality increases.

Clearly, apart from the size of the locality of residence, many other factors affect the amount of car usage, both regional and household characteristics. Differences in the amount of car usage may therefore derive not from the size of the locality, but from its location or the characteristics of its residents. Accordingly, a simple distinction between large and small localities may fail to take into account the fact that while most large ones are in the center of the country, many small ones are remote from

Figure 8.23
Average Monthly Household Expenditure on Public Transport as a Percent of Expenditure on Transport (Fuel and Public Transport), by Population of Locality

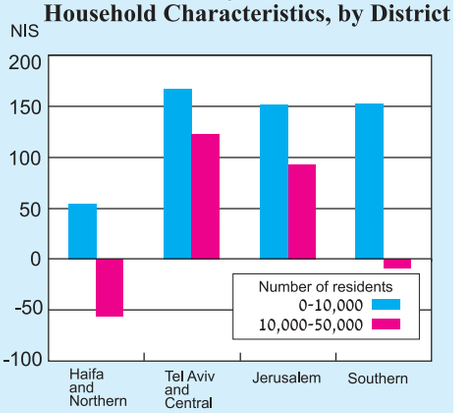


SOURCE: Based on Central Bureau of Statistics data.

[69] For a description of inter-regional commuting patterns in Israel, see R. Frish and S. Tsur (2008), Transport Infrastructure Investment, Commuting, and Wages, Discussion Paper Series 2008.03, Bank of Israel.

[70] Expenditure on fuel is the element most closely related to the amount traveled, as distinct from other car expenses, especially fixed costs, which are not directly dependent on the amount of usage. However, expenditure on fuel does not uniquely reflect the amount traveled because of differences in fuel consumption and the prices of different fuels (gasoline as opposed to diesel). These differences can be deducted to some extent by taking a number of factors into account, such as income and subdistrict, which will be discussed later.

Figure 8.24
Additional Expenditure[a] on Fuel in Small and Medium Localities compared with Expenditure on Fuel in Cities, Adjusted for Household Characteristics, by District



[a]NIS, at 2003 prices.
SOURCE: Based on Central Bureau of Statistics data.

it. A comparison must therefore be made between a large locality and a small one in the same region, in order to control for regional factors such as distance from the center, the spatial distribution of localities in the area, and the quality of roads and public transport there. With respect to households' characteristics, certain small localities (such as communal ones) are notable for their concentration of affluent families in which both partners work, characteristics that can be expected to increase car usage.

The expenditure on fuel of families living in small localities is 28 percent higher than that of similar families living in a big city in the same region.

A number of regressions were estimated in which the effect of the size of the locality on the household's fuel expenditure was examined, taking into account household characteristics and regional characteristics. The results show that locality size has a significant effect even when controlling for these characteristics: The smaller the locality, the higher the expenditure on fuel. This is particularly apparent in the smallest localities (up to 2,000 residents). The monthly expenditure on fuel of families living in these localities is an average of 28 percent higher than that of similar families living in a big city (over 50,000 residents) in the same region. The incremental expenditure on fuel (compared with that in a city) in localities whose population numbers 10,000-50,000 residents is only 10 percent—evidence of smaller localities' special impact on car usage.

Figure 8.24 presents the incremental expenditure on fuel in small and medium-size localities compared with big cities (over 50,000 residents) in different regions exclusive of the effect of households' characteristics. The diagram clearly shows that the effect of locality size on fuel expenditure encompasses the different regions, but to differing degrees. In this diagram, too, the relationship between residence in small localities and the amount of car usage is particularly evident. However, residence in medium-sized localities (10,000 to 50,000) residents in the south of the country does not involve additional expenditure on fuel compared with residence in big cities. In medium-sized localities in the Haifa and northern districts, this expenditure is actually lower than in the big cities in that region.

Planning policy can affect the amount of car usage.

To conclude, the analysis shows that in households in small localities, and especially in the smallest ones, fuel expenditure is considerably higher than in households with similar characteristics in the big cities in the same region. Residence in these localities therefore involves higher car usage. Accordingly, planning policy can affect car usage in the long term. This policy should take into account the effect on car usage of increasing the population of small localities and of establishing new ones.