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EMPLOYMENT AND INCOME TRENDS AMONG OLDER ISRAELIS

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איל קמחי וקיריל שרברמן

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Employment and Income Trends Among Older Israelis

Ayal Kimhi and Kyrill Shraberman*

Abstract

Demographic forecasts point to a sharp rise in the percentage of older Israelis over the coming years. It is unclear to what extent the country's social security and pension systems are prepared for this change. This chapter looks at the changes that occurred in the employment patterns and economic status of Israel's older adults between 2001 and 2011. The research indicates that the employment rates of people aged 55-64 rose over the course of this decade, particularly among new immigrants. The employment rates of people aged 65-74 rose as well. Per capita income for households headed by older adults increased significantly over the decade, due primarily to a rise in income from work, capital, and pensions. The findings indicate that the rising percentage of older Israelis in the population does not necessarily herald an increase in economic distress within this age group or a heavier burden on the social services. However, more flexibility is needed regarding terms of retirement, to enable those who wish and are able to continue working past the official retirement age. Moreover, an improved safety net should be provided for those who are not able to provide for themselves after retirement.

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The year 2010 was a demographic turning point in all areas related to Israel's older population. Up until that year, the dependency ratio of Israel's older adults (the number of those aged 65 and over relative to those aged 15-64) was relatively stable, remaining at levels of less than 160 older people per thousand working age population. In 2010, this ratio began to rise, and is expected to continue rising steadily; in 2030, it is expected to reach a level of 233 people over 65 years old per thousand population (Ben Moshe, 2011). Since the main cause of this change is an increase in life expectancy, policy makers are unsure whether they should be concerned about the ability of Israel's older population to maintain a dignified standard of living for longer periods than those originally anticipated, and about the economic robustness of the National Insurance Institute and pension funds that are supposed to assist this population financially into their older years.

Ideally, people would save money in a variety of methods during their years of employment, retire when their savings reach an adequate level, and live off their savings after retirement. In reality, though, the situation is quite different. Many people do not save for their retirement, whether due to a lack of awareness or because their income is too low. For this reason the government steps in through old-age pensions, income maintenance, and other National Insurance Institute benefits. In recent years, the Israeli government has also introduced mandatory contributions to private pension funds. The government also sets the retirement age in such a way as to enable the National Insurance Institute and the pension funds to meet their commitments. However, this policy in and of itself does not fully ensure the well-being of retirees. Unfortunately, public old-age pensions are too low, and the private pension contribution requirement is not fully enforced; regardless, the requirement was only recently instituted and its impact has yet to be entirely realized. For these reasons, many people experience a significant decline in their standard of living after retirement.

There are also other reasons for the lowered standard of living experienced by retirees. The rise in life expectancy was not entirely

anticipated – either by the pension funds or by the retirees themselves. This means that the savings accumulated in order to provide income to individuals upon their retirement must suffice for longer periods than originally expected. Pension fund values have also been hurt by low-to-nonexistent yields in the capital markets in recent years. A rise in healthcare costs has also weighed heavily on the population as a whole, and particularly on the older population (Chernichovsky et al., 2010). The response to these factors should be a deferment of retirement to a later age. Not only that, but due to rising life expectancies and improved health, people want to continue working past the age of retirement, even when their economic status renders this unnecessary. However, the system itself, as well as prevailing labor market conditions, pose difficulties in this regard. The retirement age is mandatory for many workers. Others are influenced by financial incentives to retire at the official retirement age. Members of both groups can seek other work upon retirement, but here they encounter obstacles as well. First, they are liable to lose some of their entitlements. Secondly, they find themselves in a labor market that does not value the skills and experience that they have accrued over the years and that prefers younger workers. If they do overcome these obstacles, they discover that the wages offered are much lower than those to which they are accustomed.

Retirement and retiree standard of living are not matters of concern solely in Israel; they have garnered considerable attention in the economic literature. Gruber and Wise (1998) showed that the demographic shift leading to a rise in the proportion of older adults in the population was observable in many developed countries at an earlier point than in Israel. At the same time, many countries witnessed a decline in employment among this group due, among other things, to generous welfare policies. In France, for example, the employment rate among those aged 60-64 dropped from 70 percent in 1962 to less than 20 percent in 1996. However, Gustman and Steinmeier (2009) found that between 1992 and 2004, the employment rate of older men in the United States actually rose – due, among other things, to changes in the

incentives provided by the social welfare system. Goda et al. (2011) found that Americans were reporting later retirement ages in 2008 than in 2006, and that one factor – though not necessarily the only one – behind this development was the weakness of the capital market. Helppie McFall (2011) found that the great recession had led to a rise in planned retirement ages in the United States, an effect that was reinforced by concerns that capital market yields would remain low. Stone and Rainville (2012) reported on expectations of later retirement in other Western countries as well – due more to uncertainty in the labor market than to the capital market crisis. Although Israel's capital market was largely unaffected by the global recession, it may, nevertheless, be assumed that uncertainty and concern for the future increased, which, in turn, could be an incentive for workers to defer their planned retirement. Nevertheless, Benitez-Silva et al. (2006) found that uncertainty regarding future pension conditions had actually reinforced a tendency toward early retirement in the United States. Gustman and Steinmeier (2000) noted that many of those retiring from their regular jobs were choosing to continue to work part-time or at jobs requiring less responsibility or effort.

This study will examine the changes that took place in employment rates among older adults in Israel during the decade of 2001-2011, and at changes in per capita income for households they head during that period. The study's data sources are the Central Bureau of Statistics Labor Force and Income Surveys. An analysis will also be presented of the factors leading to the changes in employment and per capita income rates.[1]

[1] The year 2001 was chosen as the base year due to changes that had been introduced over the preceding years in the Central Bureau of Statistics' survey sampling framework.

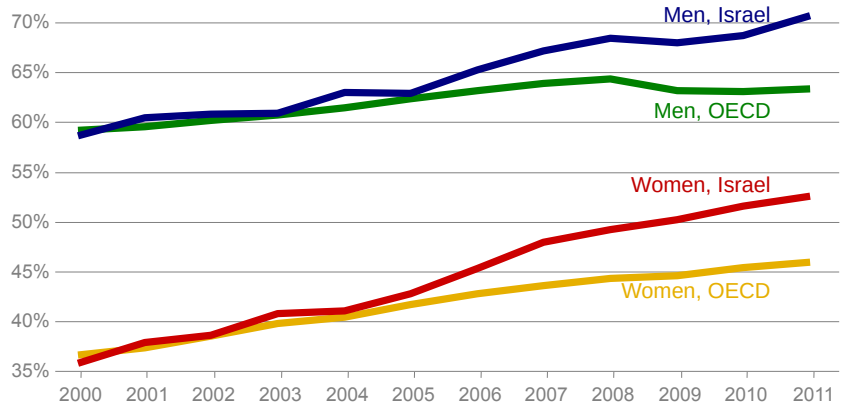
1. Employment Rate Trends Among Older Adults

Employment rates among Israeli men of primary working age (35-54) are significantly lower than in OECD countries, although the gap has narrowed somewhat since the first half of the past decade (Kimhi, 2011). For women, the picture is different. The employment rate of Israeli women in this age group was lower than that of OECD countries until the middle of the past decade, but has increased more rapidly since then and has now surpassed the OECD rate. Figure 1 indicates that Israeli employment rates for men and women aged 55-64 showed an upward trend and were similar to those of the OECD during the first half of the previous decade. Starting in the middle of the past decade, Israeli employment rates rose more quickly than did those of OECD countries, leaving a gap of over 6 percentage points in Israel's favor – among both women and men.

Figure 1

Employment rates – ages 55-64

Israel and the OECD, 2000-2011



Source: Ayal Kimhi and Kyrill Shraberman, Taub Center
Data: OECD

Figure 2 presents the employment rates of this same age group by population sector. One can see that among men, Jewish employment rates were significantly higher than those of Arab Israelis, although both groups exhibited a rise in employment rates over the years. Of particular note is an impressive increase in Arab Israeli employment rates starting in 2007. Among Jews, it should be noted that new immigrants are a unique group. At the beginning of the past decade, the employment rate among immigrant men was significantly lower than that of veteran Israeli men, but it rose rapidly and there was no significant difference between the two groups' employment rates by mid-decade.[2] Similar trends can be seen in the employment rates of women aged 55-64, although these rates are lower than those of men. This is particularly true in the Arab Israeli sector, where women's employment rates in this age group – though they doubled during this time period – nevertheless remain relatively low.

Figure 3 shows that among men aged 65-74, Israeli employment rates were similar to those of OECD countries up until 2004. From the middle of the decade onwards, the Israeli rates rose more steeply – translating into a gap of over 5 percentage points in Israel's favor by the end of the decade. This trend is similar to that observed for 55-64-year-olds (Figure 1), although the employment rates of 65-74-year-olds are over 50 percent lower than those of the 55-64 age group. The rise in employment rates among 55-64-year-olds has slowed in recent years, however, while that of the 65-74 age group has accelerated. A different picture is obtained for women aged 65-74. Although the employment rate for this group rose from 7 percent in 2001 to over 12 percent in 2011, the rates are still lower than the OECD average – although the gap began to close from 2008 on, reaching just 1 percent in 2011.

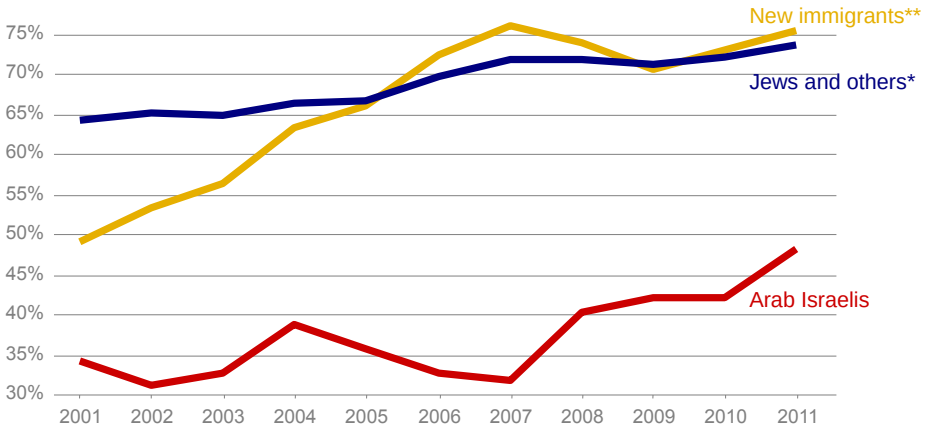
[2] When the focus is narrowed – new immigrants living in the periphery – it can be seen that they began the decade with even lower employment rates than those of the new immigrant population as a whole – yet still managed to close the gap by 2004.

Figure 2

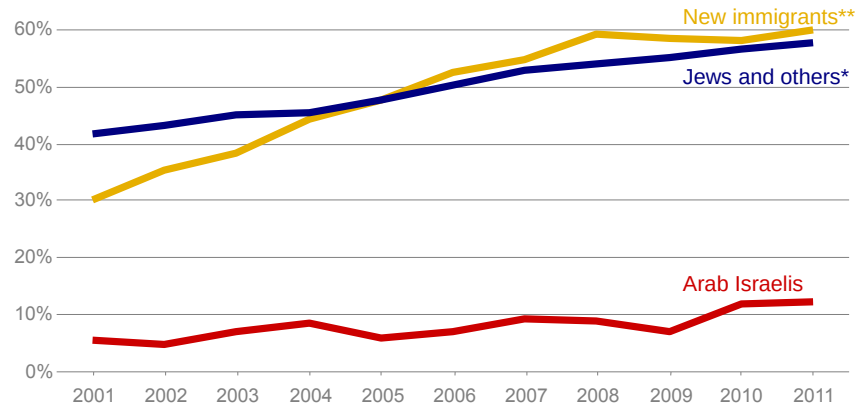
Employment rates for ages 55-64

by population groups, 2001-2011

A. Men



B. Women



* Includes those with a classification of "other" for religion

** Immigrated to Israel since 1990

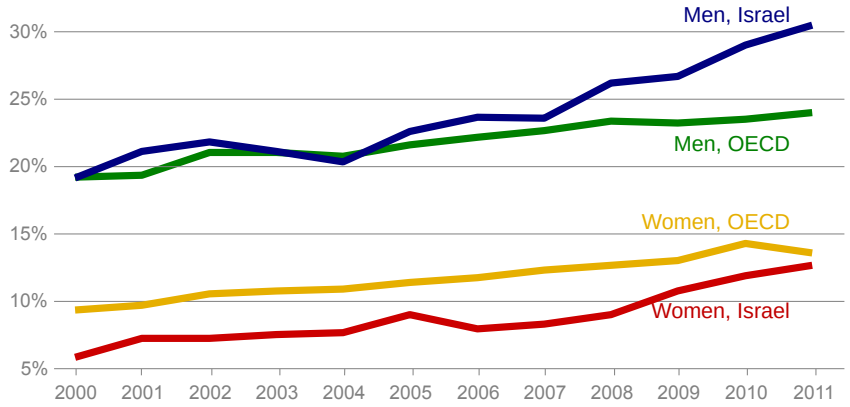
Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

Data: Central Bureau of Statistics, *Labor Force Survey*

Figure 3

Employment rates - ages 65-74

Israel and the OECD, 2000-2011



Source: Ayal Kimhi and Kyrill Shraberman, Taub Center
Data: OECD

Figure 4 presents the employment rates of those aged 65-74 by population group. For men in this age group, the Arab Israeli employment rate was significantly lower than the Jewish rate, and this gap widened during the first half of the past decade. The employment rate of new immigrants remained lower than that of veteran Israelis throughout the decade, and the disparity was not reduced.[3] Similar trends also exist among women aged 65-74. The employment rate of Jewish women rose significantly (from under 8 percent at the start of the decade to over 14 percent at its end), while that of Arab Israeli women did not rise above 2 percent (except in 2007). The gap between the new immigrant employment rate and the veteran Israeli rate in this age group remained unchanged.

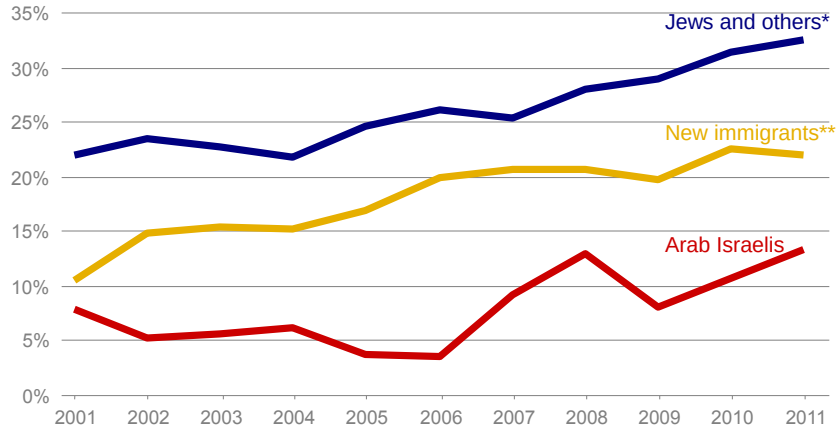
[3] The employment rate of immigrants living in the periphery was lower than that of immigrants living in central Israel, particularly during the recession years at the start of the past decade; however, the gap between the two groups narrowed considerably afterward.

Figure 4

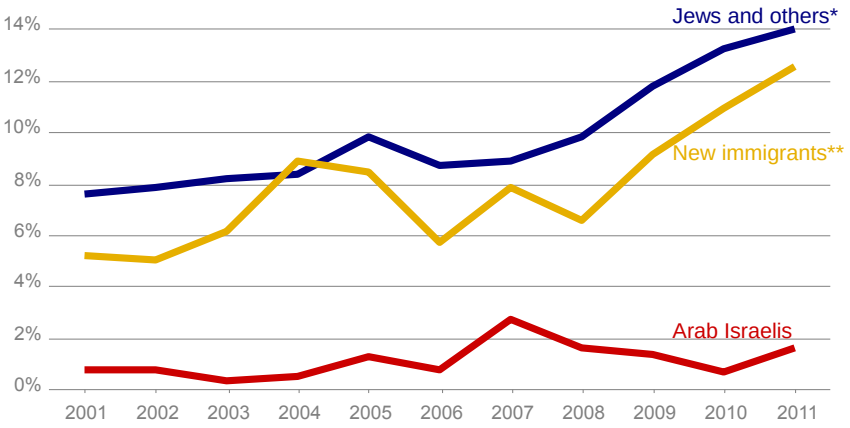
Employment rates for ages 65-74

by population group, 2001-2011

A. Men



B. Women



* Includes those with a classification of "other" for religion

** Immigrated to Israel since 1990

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

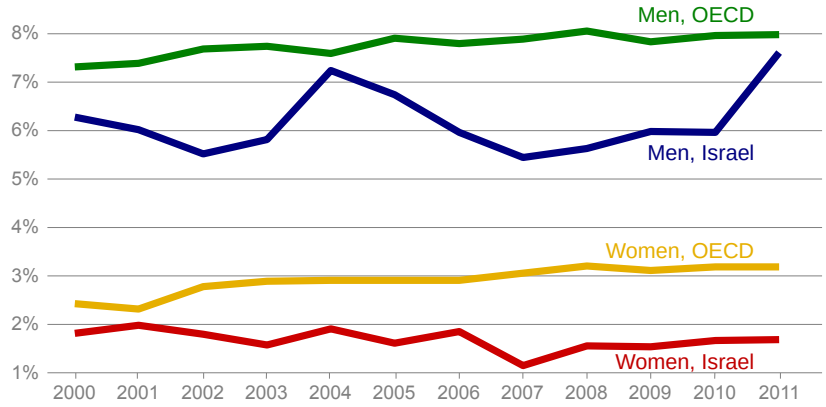
Data: Central Bureau of Statistics, *Labor Force Survey*

Figure 5 presents employment trends among those aged 75 and older. In contrast to the younger age groups, the Israeli employment rates for the 75 and over group were lower throughout the decade than those of the comparable population in OECD countries. In 2011, however, there was an increase of nearly 2 percentage points in the employment rate of Israeli men. A breakdown by population group (Appendix 1) indicates that, among men aged 75 and over, the Jewish employment rate ranged from 6 to 8 percent during the previous decade, while the Arab Israeli employment rate ranged from about 1 to 3 percent. The employment rate of new immigrants was similar to that of Arab Israelis, although an upward trend in the employment rate of immigrants, particularly during the second half of the decade, could be discerned. For women, no large employment rate disparities were found between Jews and Arab Israelis, and almost no new immigrant women were employed.

Figure 5

Employment rates - age 75 and over

Israel and the OECD, 2000-2011



Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

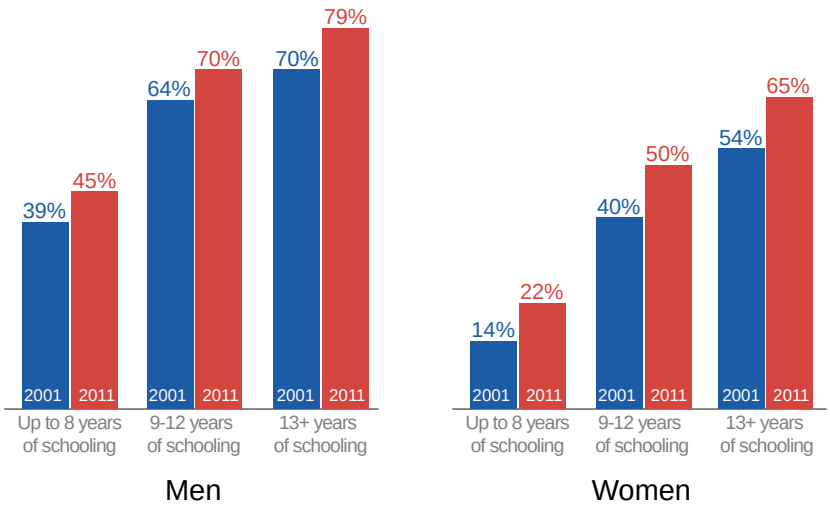
Data: Central Bureau of Statistics, *Labor Force Survey*

An earlier study (Kimhi, 2012) found that employment rate disparities in Israel are largely due to education disparities. This finding also exists regarding employment of older adults. Figure 6 presents changes in the employment rates of Israelis aged 55-64 by educational level. A significant gap can be seen between the employment rates of those with 9-12 years of schooling and the rates of those with up to 8 years of schooling, for both men and women. Employment rates continue to increase as educational levels rise to 13 years of schooling and above – although more slowly, particularly for men. It should be noted that the period 2001-2011 witnessed a rise in employment rates at all educational levels.

Figure 6

Employment rates - ages 55-64

by gender and years of schooling



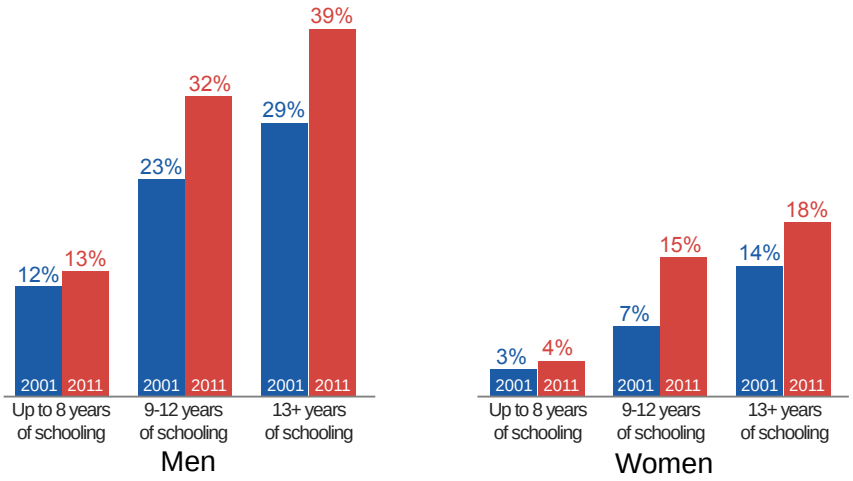
Source: Ayal Kimhi and Kyrill Shraberman, Taub Center
Data: Central Bureau of Statistics, *Labor Force Survey*

Figure 7 shows similar employment rate trends among Israelis aged 65-74, by educational level. One can see that the importance of education with regard to employment is even greater for this age group. One major finding concerning women is that the employment rates of those with up to 8 years of schooling increased only slightly, while the employment rates of those with 9-12 years of schooling more than doubled during the period 2001-2011.[4]

Figure 7

Employment rates - ages 65-74

by gender and years of schooling



Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

Data: Central Bureau of Statistics, *Labor Force Survey*

[4] Because the employment rates of Israelis aged 75 and over were negligible, there is little value in breaking them down by educational level. Nor can a distinction be made between Jews and Arab Israelis, due to the small number of cases in which Arab Israelis in this age group (mainly at the highest educational levels) were employed.

In order to assess the relative importance of different attributes (gender, age, number of years of schooling, nationality, residence in the periphery, and immigrant versus Israeli-born status) as factors underlying the higher employment rates among older adults, a statistical technique was used that makes it possible to distinguish between the relative effects on employment rate of each of these attributes (the technique is described in Appendix 2). Labor force survey data from 2001 and 2010 for people aged 65 and over was used. The employment rate of this population rose from 9.8 percent to 12 percent between those years. The most obvious factor that influenced employment is number of years of schooling: the increase of a single year of schooling on average led to a rise of 1 percentage point in the employment rate.[5] The rise in employment rates among new immigrants contributed slightly less than 1 percent to the total employment rate increase. These two factors account for 80 percent of the total rise in employment rates.

Figure 8 looks at differences in the percentage of employees among all employed persons. No significant change in the percentage of employees over time was found; however, the percentage of employees declines with age, and this decline is more substantial among men. What this means is that the decline in employment rates with age is greater among employees than among the self-employed. In other words, the self-employed tend to remain employed even at relatively older ages.[6] This finding is not surprising, given that the self-employed are not subject to retirement age rules or to employer decisions regarding their continued employment. Moreover, many self-employed people do not enjoy accrued pension benefits, meaning that they are more motivated to continue working. It is interesting to note that when employee percentages were broken down by population group, nearly all new immigrants (those who had immigrated since the 1990s) were found to be

[5] Libis (2013) also found that education has a significant impact on the chances of older adults being employed.

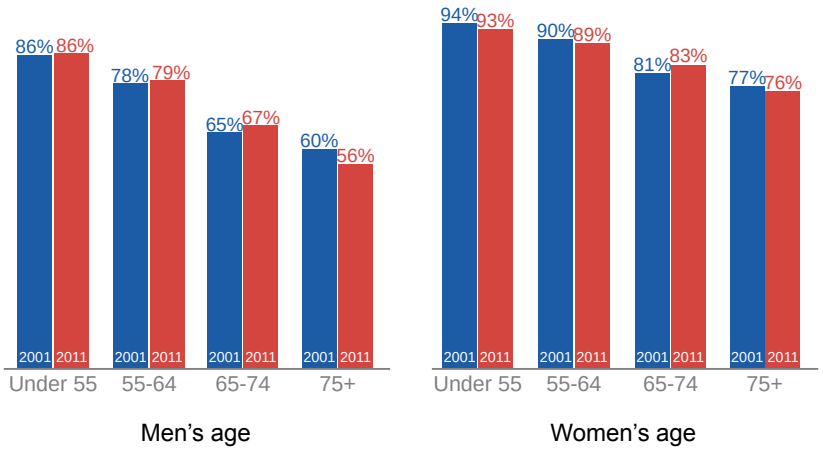
[6] Of course, it could also be the case that some employees turn to self-employment after retirement.

employees, and that the percentage of employees within this group remained nearly 100 percent even at older ages.

Figure 8

Percent of employees out of employed persons

by gender and age group



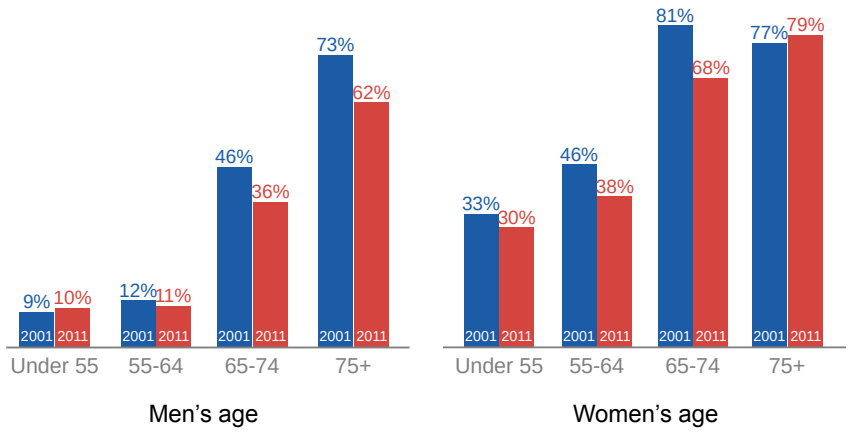
Source: Ayal Kimhi and Kyrill Shraberman, Taub Center
Data: Central Bureau of Statistics, *Labor Force Survey*

Finally, a rise in the employment rate does not ensure an increase in the average income, inasmuch as the employment intensity (part-time vs. full-time) and type of job are important as well. Figure 9 shows that trends in the employment intensity complement prevailing employment rate trends. Nearly all age groups exhibit a decline in the percentage of those employed in part-time jobs among the total number of employed persons during the period 2001-2011. This trend is particularly noticeable among men aged 65 and over, and among women aged 55-74. Based on this, it may be hypothesized that the income of workers in these age groups increased during the period in question.

Figure 9

Rates of part-time employment

as percent of all employed, by gender and age group



Source: Ayal Kimhi and Kyrill Shraberman, Taub Center
Data: Central Bureau of Statistics, *Labor Force Survey*

To conclude, the employment rates of men and women aged 55-64 and of men aged 65-74 were found to be higher in Israel than in the OECD countries, and to have increased relatively more rapidly over the past decade. The employment rates of women aged 65-74 and of men and women aged 75 and over were lower than those of OECD countries. For most age groups, an employment rate disparity was found to the disadvantage of Arab Israelis, while new immigrants gradually closed the gap between themselves and veteran Jewish Israelis. Rising employment rates were found across all educational levels, but a considerable gap between the different educational levels exists, as those with more years of schooling have higher employment rates. When a distinction was made between employees and self-employed persons, the self-employed were found to have a greater tendency to remain employed at relatively advanced ages.

Alongside the rise in employment rates observed among older adults over the years, a rise in employment intensity was found among employed persons within this age group.

2. *Income Trends Among Households Headed by Older Adults*

Figure 10 shows that the per capita income of households headed by people under the age of 65 did not increase at all during the period 2001-2011, and even declined slightly.[7] By contrast, households headed by people aged 65 and over enjoyed a more than 20 percent increase in per capita income. This testifies to an improvement in the relative status of households headed by older adults in Israel.[8]

One may ask whether the rise in per capita income is solely due to the rising employment rates in this age group. Regarding those aged 75 and over, this cannot be the case since their employment rates did not rise significantly during the period in question (Figure 5). Table 1 presents the rise in per capita household income by age of head of household and by source of income. One can see that for households headed by people aged 55-64, there was a rise in income from employment and from capital. By contrast, these households' income from pension and transfer payments decreased during the period 2001-2011, meaning that per capita income remained virtually unchanged. Households headed by people aged 65-74 enjoyed a much more significant rise in employment and capital income, while their pension income also increased. However, these households' primary source of income – transfer payments – did not

[7] A head of household is defined as the person whose contribution to the household income is the greatest.

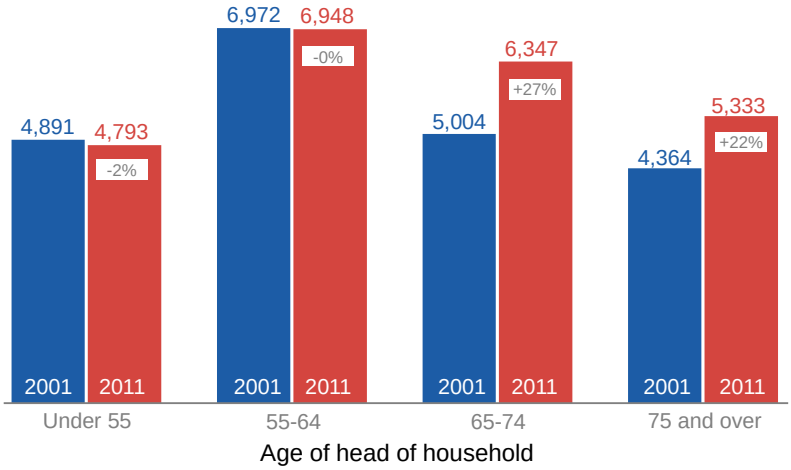
[8] When one looks at total household income (Appendix 3), the findings are slightly different, but the differences do not alter the conclusion. That is, the findings do not stem from relative changes in the mean household size of the various age groups.

actually rise during this period. Households headed by people aged 75 and over also enjoyed higher income from all sources, including transfer payments, which constitute their primary source of income. On the whole it appears that the rise in employment among those aged 55-64 led to an increase in employment and capital income, but that this increase was entirely offset by the decline in their pension and transfer-payment income. By contrast, the older age groups enjoyed a steeper rise in employment and capital income, as well as a rise in pension and transfer-payment income.

Figure 10

Gross per capita household income*

in 2011 shekels



* Average per capita household monthly income

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center
Data: Central Bureau of Statistics, *Income Survey*

Table 1. **Per capita income by source of income and age of head of household**

in shekels per month, 2011 prices

	Employees	Self-employed	Capital	Pension	Transfers	Total
Under 55						
2001	3,611	528	95	118	539	4,891
2011	3,590	510	114	109	470	4,793
Change	-1%	-3%	+21%	-8%	-13%	-2%
55-64						
2001	4,084	834	305	825	925	6,972
2011	4,408	834	341	644	722	6,948
Change	+8%	0%	+12%	-22%	-22%	-0%
65-74						
2001	613	516	248	1,622	2,006	5,004
2011	1,295	673	499	1,905	1,976	6,347
Change	+111%	+30%	+101%	+17%	-1%	+27%
75 +						
2001	92	47	228	1,856	2,141	4,364
2011	169	155	382	2,090	2,537	5,333
Change	+83%	+227%	+68%	+13%	+19%	+22%

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center
Data: Central Bureau of Statistics, *Income Survey*, 2000 and 2011

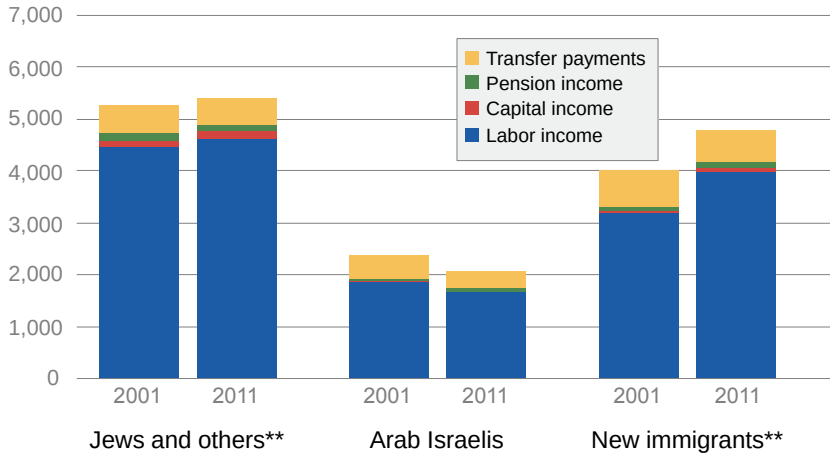
Two points are worth noting with regards to these findings. One is the rise in pension income enjoyed by households headed by older adults. There can be no doubt that during the decade in question public awareness grew regarding the importance of pension plans, due in part to the mandatory pension contributions instituted in recent years. This has caused the population's pension capital to grow over the years, and retiree pension income has risen accordingly. The other issue worth noting is the rise in transfer payments, most of which come from the National Insurance Institute, to the households of the oldest adults (those aged 75 and over). This rise accounts for nearly half of the total rise in per capita income enjoyed by these households, and this is the only household group that witnessed an increase in transfer payments.

Figures 11 A-D present the changes that have occurred in per capita income by source of income and by population group. The focus is on comparing Arab Israelis versus Jews and others, as well as on assessing the status of new immigrants. The per capita income disparities between Jews and Arab Israelis are particularly noteworthy, and they exist in all age groups. Moreover, these gaps widened over the period in question. Although Arab Israeli-sector households are larger than Jewish-sector households, this does not explain the substantial disparities in per capita income that prevail between the two sectors. Appendix 4 shows large gaps in mean total household income between the two sectors. Among households headed by people who are under age 54 (Figure 11A), Jewish per capita income is more than double that of Arab Israeli per capita income, and while Jews experienced a rise in per capita income during the period 2001-2011, Arab Israelis suffered a decline. The main Jewish-Arab Israeli disparity is in labor income, although a disparity in favor of the Jewish sector can also be observed regarding the remaining sources of income.

Figure 11A

Per capita household income*, head of household under 55

in 2011 shekels, by population group and source of income



* Average per capita household monthly income

** "Jews and others" includes those with a classification of "other" for religion; "New immigrants" are those who immigrated to Israel since 1990

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

Data: Central Bureau of Statistics, *Income Survey*

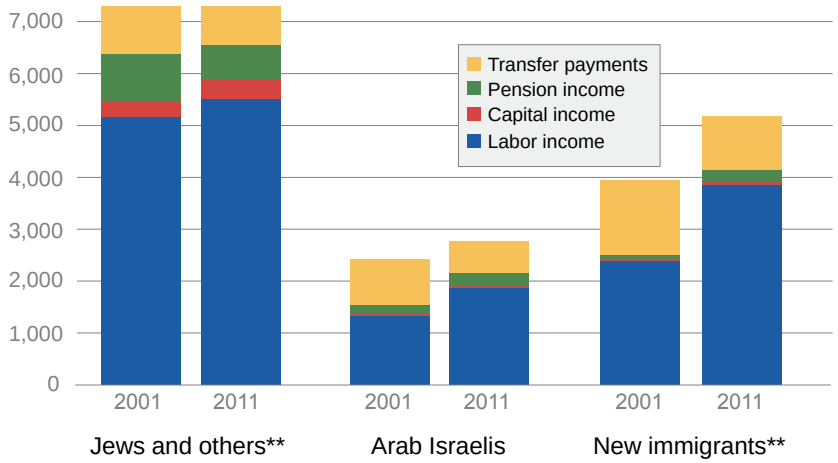
Among households headed by people aged 55 to 64 (Figure 11B, the Jewish-Arab Israeli gap is even larger, mainly because the per capita income for Jewish households in this age group is significantly higher than that of the younger age group, while for Arab Israelis the difference in per capita income between the two age groups is not large. Nevertheless, Arab Israeli per capita income grew between 2001 and 2011, while Jewish per capita income remained virtually unchanged – meaning that the gap between Jews and Arab Israelis narrowed somewhat. Here as well, the Jewish-Arab Israeli disparities exist for all income sources, although the transfer-payment gap is not large. Arab

Israeli households in this age group receive almost no pension payments, and their capital income is miniscule.

Figure 11B

Per capita household income*, head of household aged 55-64

in 2011 shekels, by population group and source of income



* Average per capita household monthly income

** "Jews and others" includes those with a classification of "other" for religion; "New immigrants" are those who immigrated to Israel since 1990

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

Data: Central Bureau of Statistics, *Income Survey*

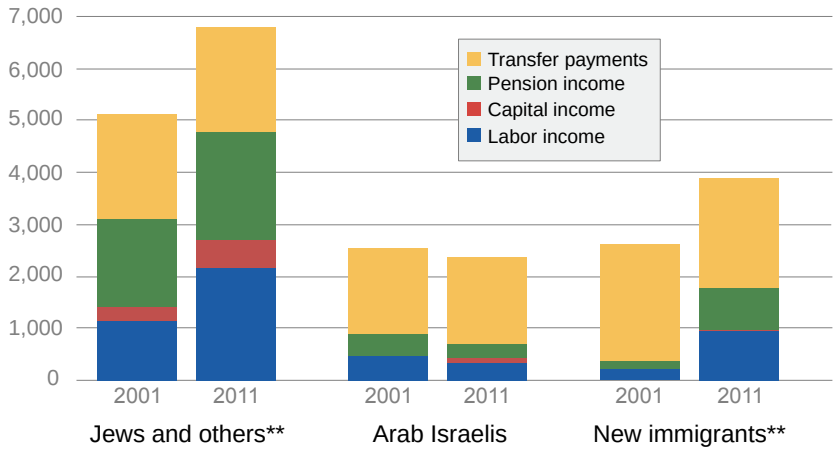
The picture changes somewhat when households headed by people aged 65-74 are examined (Figure 11C). In 2001, the per capita income of Jewish households in this age group was twice that of Arab Israeli households. By 2011, the per capita income of Jewish households had grown significantly, while that of Arab Israeli households had decreased,

meaning that the Jewish-Arab Israeli gap had widened greatly, reaching over 200 percent. Here as well, the per capita transfer-payment gap between Jews and Arab Israelis is not large; however, Arab Israelis have almost no capital income and their pension income is much lower than average.

Figure 11C

Per capita household income*, head of household aged 65-74

in 2011 shekels, by population group and source of income



* Average per capita household monthly income

** "Jews and others" includes those with a classification of "other" for religion; "New immigrants" are those who immigrated to Israel since 1990

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

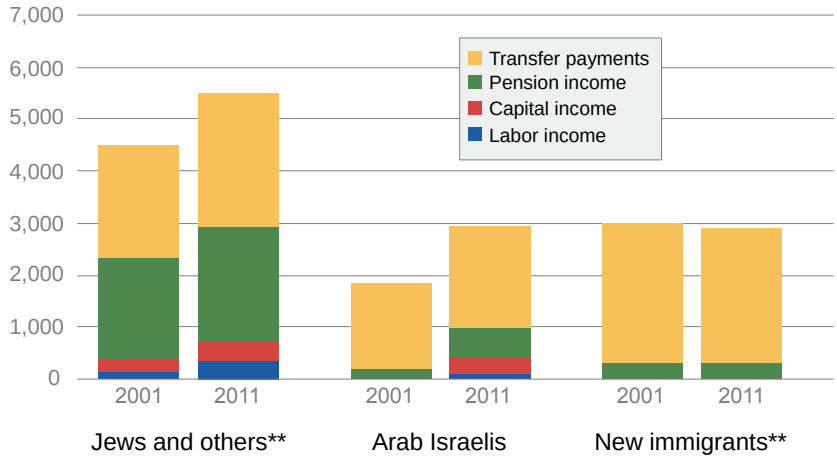
Data: Central Bureau of Statistics, *Income Survey*

Among households headed by those aged 75 and over (Figure 11D), per capita income in the Jewish sector was also more than double that of the Arab Israeli sector. This gap narrowed somewhat during the period 2001-2011, when Jewish income increased significantly and Arab Israeli income grew at an even higher rate.

Figure 11D

Per capita household income, head of household aged 75 +

in 2011 prices*



* Average per capita household monthly income

** "Jews and others" includes those with a classification of "other" for religion; "New immigrants" are those who immigrated to Israel since 1990

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

Data: Central Bureau of Statistics, *Income Survey*

The per capita income of new immigrant households is lower than that of the Jewish sector as a whole. Over the 2001-2011 period, a significant increase in the per capita income of new immigrants was observed in most age groups, due mainly to a rise in labor income. This increase helped narrow the gap between immigrants and the rest of the population, particularly in the relatively younger age groups. In households headed by people aged 54 and under, the per capita income gap between the entire Jewish population and the new immigrant population was greater than 25 percent in 2001, while by 2011 much of this gap had disappeared (Figure 11A).

Among households headed by people aged 55-64 (Figure 11B), the gap between Jewish Israelis as a whole and new immigrants is much larger; yet in this case as well it narrowed between 2001 and 2011. A similar trend can be observed for households headed by people aged 65-74. Here the gap between Jewish Israelis as a whole and immigrants is even larger than in the younger age groups, but has also narrowed over the years (Figure 11C), mainly due to a rise in pension income. Only among the oldest households did the gap between the Jewish sector as a whole and the immigrant sector not become smaller; in fact, it widened during the period 2001-2011 (Figure 11D). On the one hand, labor income for this group is insignificant; on the other hand, the rise in capital and pension income among immigrants was lower than that enjoyed by other Jewish-sector households. Nevertheless, the per capita income disparity between Jewish Israelis as a whole and immigrants in this age group was not as large as the gap among less elderly households, due to the fact that a significant portion of these households' income comes from transfer payments, which are relatively equitable.

The increase in labor income among most of the population groups could be the result of rising employment rates (Figures 1-5), changes in employment intensity (Figure 9), and/or a rise in wages. Figure 12 presents the gross hourly wage of employees by gender and age group.[9] Between 2001 and 2011, the real wage declined for every age/gender group. The decline was steeper for the 55-64 age group whose hourly wage is the highest. This translated into a smaller wage differential between the 55-64 and the 65-74 age groups; for men the differential entirely disappeared. The decline in real wages strongly underscores the importance of rising employment rates and employment intensity among older adults in terms of improving their standard of living.[10]

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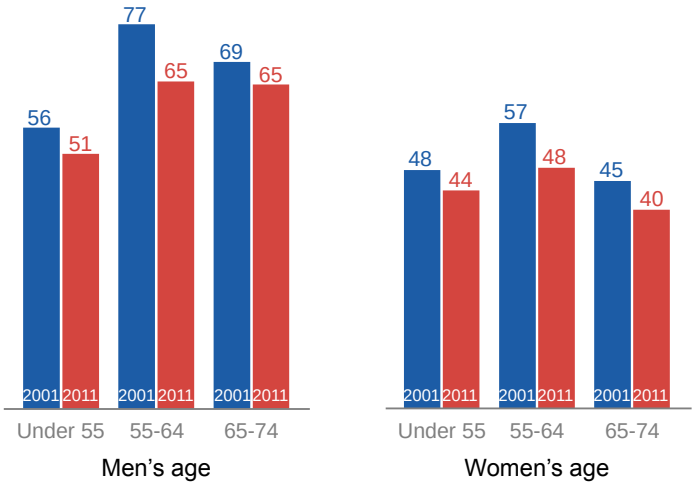
[9] The figure does not include the 75 and over age group, since the number of employees in this group is too small to yield reliable wage averages.

[10] These findings are misleading, as 2001 was a peak year in terms of men's and women's wages at all educational levels. An earlier study (Kimhi, 2012) showed that between 1998 and 2010 wages rose by 3 percent in real terms.

Figure 12

Gross hourly wage of employees

in 2011 shekels, by gender and age group



Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

Data: Central Bureau of Statistics, *Income Survey*

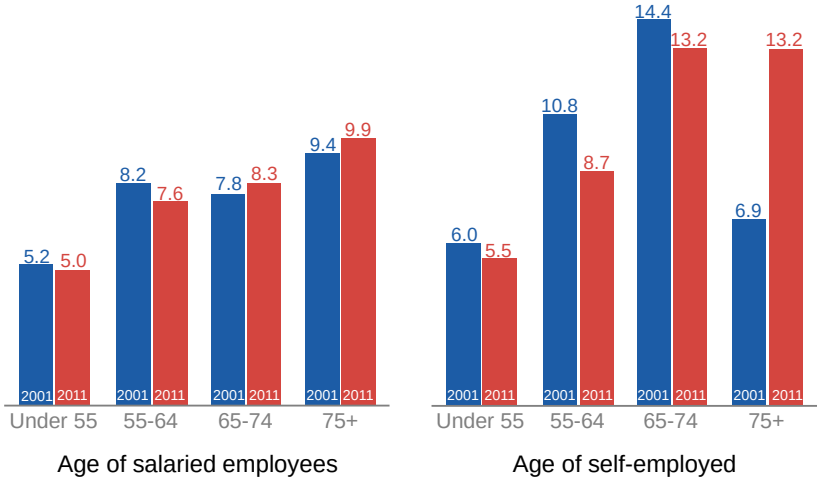
A breakdown by employment type of head of household (Figure 13) indicates that households headed by older adults improved their relative status – both those headed by employees and those headed by the self-employed. The per capita income of households headed by employees aged 65 and over increased during the period 2001-2011, while the per capita income of households headed by younger employees declined during these years. This phenomenon stems from a number of factors. Firstly, although the wages of older adults declined, they did so to a lesser degree than those of younger people (Figure 12). Secondly, the percentage of part-time employees among older employed persons declined more relative to that of the younger employed-person population (Figure 9). Finally, the data show a rise in the employment rate of older

adults during the period in question, though to a lesser degree than among those aged 55-64 (Figures 1 and 3). All of these factors indicate that the rise in the employment rate of older adults and their increased employment intensity offset the wage decline, resulting in a rise in per capita income.

Figure 13

Gross per capita household monthly income*

in 2011 thousand shekels, by employment status of head of household



* Average per capita household monthly income

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center
Data: Central Bureau of Statistics, *Income Survey*

The picture is slightly more complicated for the self-employed. The per capita income of households headed by self-employed people aged 55-64 declined significantly over the decade, while for self-employed persons aged 65-74 per capita income declined to a more moderate degree. The per capita income of households headed by self-employed

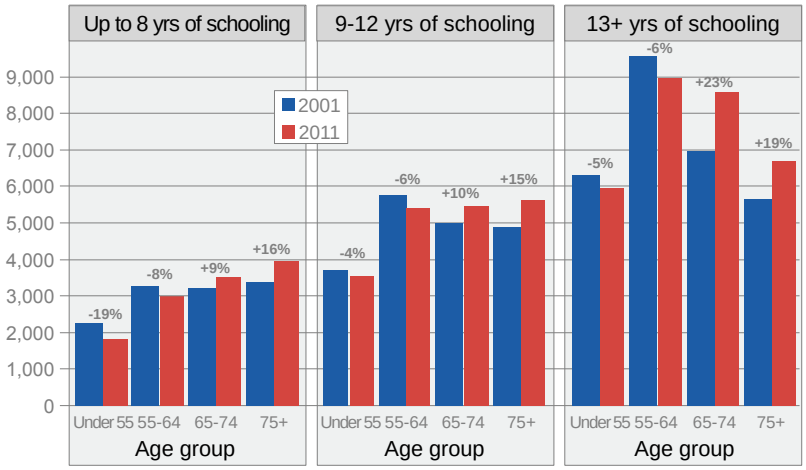
persons aged 75 and over nearly doubled, but it must be remembered that this is a relatively small population group.

Figure 14 presents per capita income by educational level of head of household. The most striking finding is that income rose along with educational level for all age groups. For example, among those aged 55-64 the per capita household income of people with 13 or more years of schooling is nearly two-thirds higher than that of people with 9-12 years of schooling, and three times higher than that of people with up to 8 years of schooling. The per capita income disparities between different educational levels among the older age groups are significant as well, though to a lesser degree.

Figure 14

Gross per capita household monthly income*

in 2011 shekels, by age and years of schooling of head of household



* Average per capita household monthly income

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center
Data: Central Bureau of Statistics, *Income Survey*

Another finding is that per capita household income grew over the past decade for those aged 65 and over while – by contrast – declining for the younger age groups. Figure 10 showed this finding with regard to the population at large; however, when one looks at each educational-level group separately, the relative improvement in the status of those aged 65 and over is more substantial. Within this age group the most meaningful per capita income gain was for those with higher education; what this means is that wage gaps by educational level grew within this group over the course of the past decade. Finally, a comparison of the different age groups indicates that per capita household income does not decline after retirement age for those with a high school education or less. For those with higher education, by contrast, per capita income was observed to decline, although this decline was more moderate in 2011 than at the start of the preceding decade.

In order to grasp the relative importance of the various factors behind the rise in per capita income among households headed by older adults, the same statistical technique used previously in connection with the employment rate was utilized (see Appendix 2). The technique was applied to households headed by people aged 65 and over in the years 2001 and 2011. The per capita income of this population rose by 22 percent between these years. As with the employment rate, it was found that the change in the various attribute means was responsible for only a small portion of the total rise in per capita income. Among the attributes, the most striking change was due to the rise in the number of years of schooling: an increase of less than a single year of schooling on average led to a nearly 4 percent rise in per capita income. In addition, the growing income gap between those with more and those with fewer years of schooling accounted for 11 percent of the rise in per capita income.

The conclusion to be drawn is that the rise in per capita income enjoyed by households headed by older adults can be explained primarily by educational level. The rise in number of years of schooling in these households, and the rise in return on education, led to a nearly 16 percent

increase in per capita income. However, the findings indicate that the growing share of relatively low-income households within the population – including Arab Israeli and new-immigrant households, as well as households headed by women – prevented a more significant rise in per capita income.

3. Summary and Interpretation of the Findings

Demographic changes leading to a continuous rise in the proportion of older adults in the overall population raise concerns regarding society's ability to ensure a continued, dignified standard of living for this group. However, these same demographic changes – and, in particular, the fact that older adults enjoy better health today than in the past – mean that they are able to remain in the labor force and support themselves longer. Another factor that is enabling older adults to continue working past retirement age is the modern labor market's changing occupational mix and the dwindling number of jobs that require physical effort. The globalization process is forcing Western economies to adopt more flexible employment conditions, which in turn enables older workers to extend their employment horizon. Moreover, rising life expectancies and low capital market yields are causing uncertainty among older people regarding their ability to support themselves after retirement, and they are therefore exhibiting a preference to continue working.

This study found that Israel's employment rate among older adults did trend upward during the first decade of the present millennium, both compared with OECD countries and compared with the younger population. Of particular note is the rise in employment rates among older new immigrants, who are narrowing the gap between themselves and veteran Israelis. By contrast, the Arab Israeli population was left behind in all areas related to employment, and the gap between the Arab Israeli and Jewish population is widening.

Rising employment rates among older adults are also reflected in their household income levels. The per capita income of households headed by older adults increased substantially during the first decade of the millennium, while that of other households did not increase in real terms. Labor income contributed significantly to the rise in per capita income, though households headed by older adults also enjoyed increases in capital and pension income. In this case as well the Arab Israeli population stagnated, and the already large disparities between it and the Jewish population continued to grow. By contrast, the per capita income gap between new immigrants and veteran Israelis is shrinking, except among the oldest age group.

One factor that has contributed significantly both to the rising employment rate of older Israeli adults and to this population's growing income is educational level. Since the coming decades are expected to witness an additional rise in educational level for the age cohorts joining the older population, one may expect these employment and income trends to continue. However, one should not necessarily infer from this that the authorities need not address the demographic changes. An effort should be made to ensure even greater flexibility in employment conditions, as well as tax credits to enable adults to continue working past the official retirement age – should they wish to do so. At the same time, solutions should be found for those population groups that have been left behind – the Arab Israeli population in particular, but also, to a certain degree, those whose educational level is low. If up to now it has been customary to talk of three post-retirement income sources – national insurance, pension funds, and private savings – a fourth source may now be added to the list, one whose importance is growing: labor income. However, for those population groups that lack the tools necessary to benefit from this fourth income source, the state should reinforce the first and second sources.

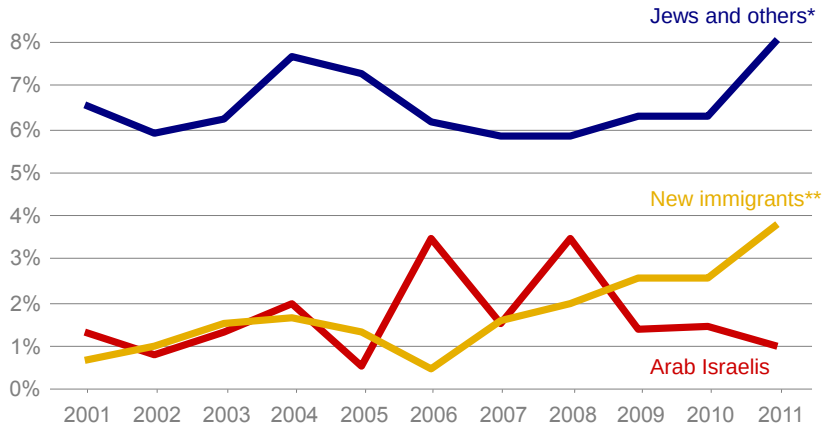
Appendix A

Appendix Figure 1

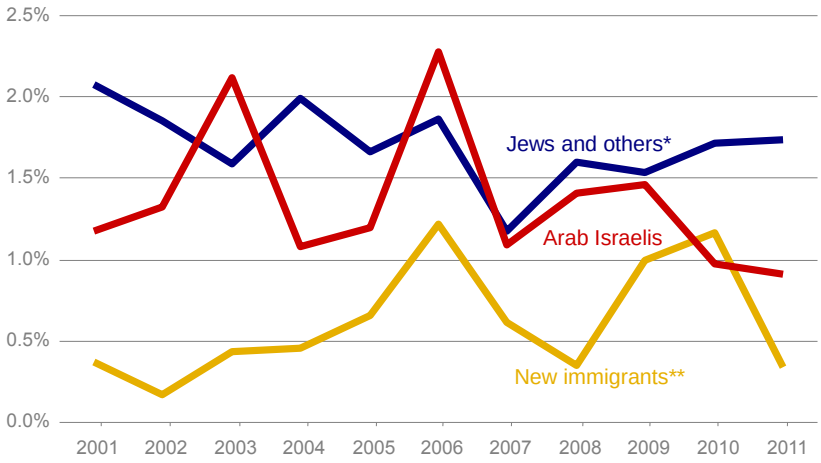
Employment rates for ages 75 and over

by population group, 2001-2011

A. Men



B. Women



* Includes those with a classification of "other" for religion

** Immigrated to Israel since 1990

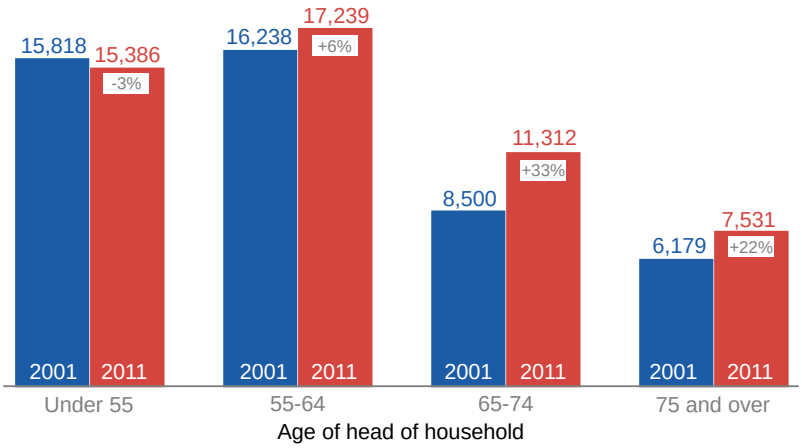
Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

Data: Central Bureau of Statistics, *Labor Force Survey*

Appendix Figure 2

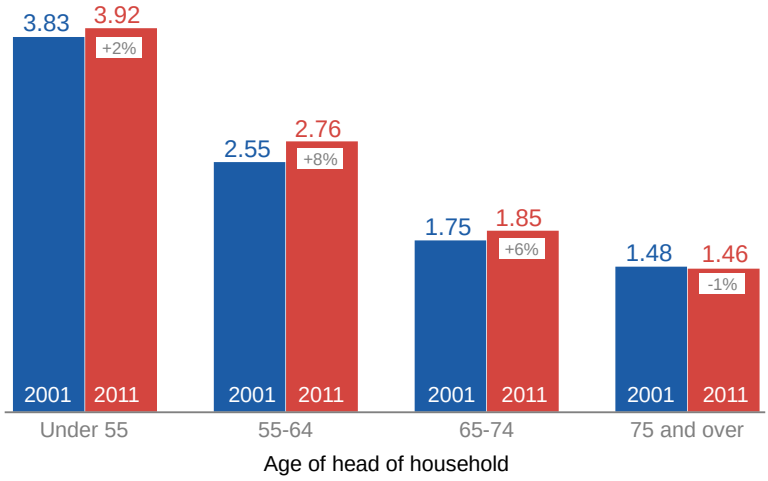
A. Gross household monthly income

in 2011 shekels, by age of head of household



B. Average household size

average number of household members, by age of head of household



Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

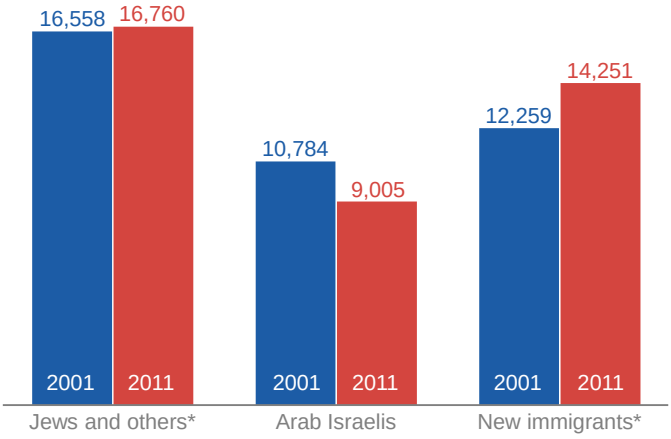
Data: Central Bureau of Statistics, *Labor Force Survey*

Appendix Figure 3

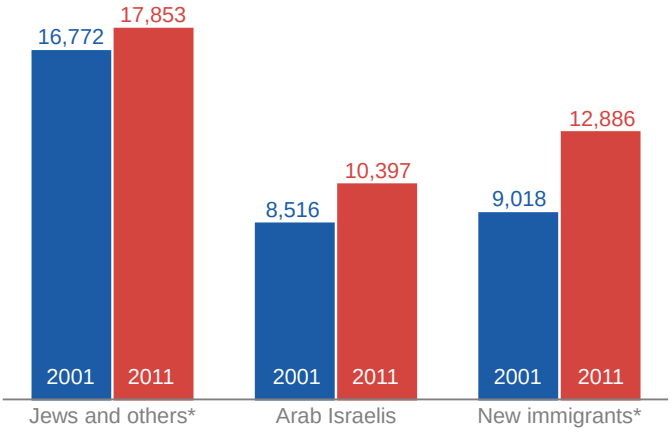
Gross household monthly income

in 2011 shekels, by population group

A. Head of household under age 55



B. Head of household aged 55-64



* "Jews and others" includes those with a classification of "other" for religion; "New immigrants" are those who immigrated to Israel since 1990

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

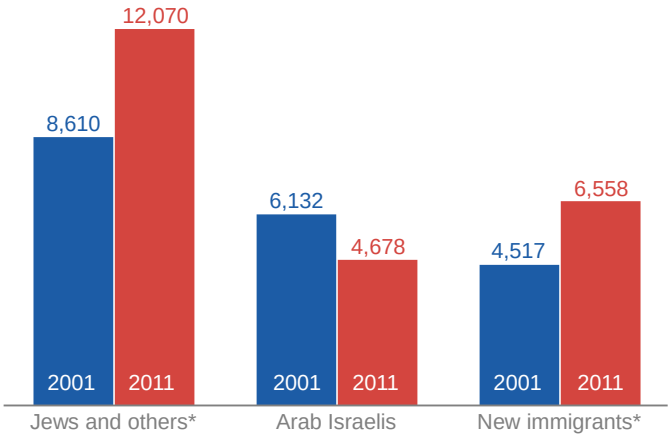
Data: Central Bureau of Statistics, *Income Survey*

Appendix Figure 3 (continued)

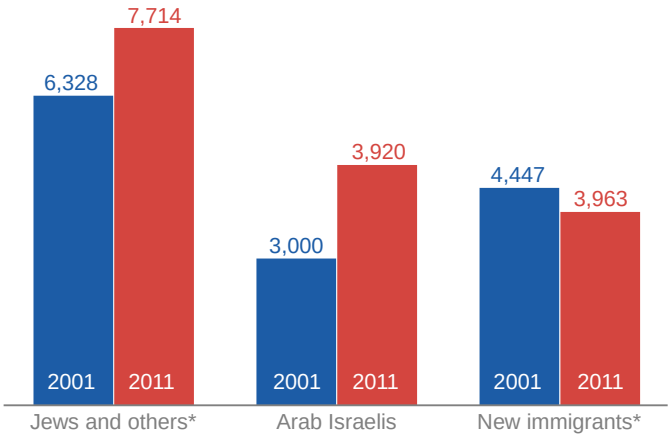
Gross household monthly income

in 2011 shekels, by population group

C. Head of household aged 65-74



D. Head of household aged 75 and over



* "Jews and others" includes those with a classification of "other" for religion; "New immigrants" are those who immigrated to Israel since 1990

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

Data: Central Bureau of Statistics, *Income Survey*

Appendix B

The Blinder-Oaxaca Technique for Decomposing Changes in a Variable Over Time

The technique was developed simultaneously by Blinder (1973) and Oaxaca (1973), but this chapter used a slightly different version developed by Daymont and Risani (1984). Y is defined as a dependent variable in a linear regression and Xj is defined as an explanatory variable where there exist J such variables (attributes). $\bar{Y}$ and $\bar{X}j$ are the sample means of Y and $\bar{X}j$, respectively. βj are the estimated regression coefficients, and β_0 is the constant. For each of the years one can express the estimated regression equation evaluated at the sample means in the following manner:

$$\bar{Y}^{2010} = \sum_{j=0}^{J} \beta_j^{2010} \bar{X}_j^{2010} \; ; \qquad \bar{Y}^{2001} = \sum_{j=0}^{J} \beta_j^{2001} \bar{X}_j^{2001}$$

One can easily demonstrate that the mean change in the dependent variable change can be expressed as the sum of three parts:

$$\begin{aligned} \bar{Y}^{2010} - \bar{Y}^{2001} = & \sum_{j=0}^{J} \beta_j^{2001} \left(\bar{X}_j^{2010} - \bar{X}_j^{2001} \right. \\ & + \sum_{j=0}^{J} \bar{X}_j^{2001} \left(\beta_j^{2010} - \beta_j^{2001} \right. \\ & + \sum_{j=0}^{J} \left(\bar{X}_j^{2010} - \bar{X}_j^{2001} \right) \left(\beta_j^{2010} - \beta_j^{2001} \right. \end{aligned}$$

The first part is the contribution of the change in the attribute means between the years, valued per the 2001 coefficients. This signifies the mean change that would have been obtained for the dependent variable had the attribute means changed and had the coefficients not changed. The second part is the contribution of the change in coefficients between the years, valued per the 2001 attribute means. This signifies the mean change that would have been obtained for the dependent variable had the coefficients changed and had the attribute means not changed. The third part is residual.

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