

The Herbert M. Singer
Annual Report Series

STATE OF THE NATION REPORT

**Society, Economy and Policy
in Israel**

2013

Dan Ben-David, Editor



TAUB CENTER
for Social Policy Studies in Israel

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Taub Center for Social Policy Studies in Israel

Jerusalem, November 2013

Taub Center for Social Policy Studies in Israel

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Editing and lay-out: Laura Brass, Inbal Gafni

Graphics: Yulia Cogan

Translation: Ruvik Danieli; Julie Rosenzweig/Sagir International
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Center address:

15 Ha'ari Street, Jerusalem, Israel

Tel: 972 2 567 1818 Fax: 972 2 567 1919

Email: info@taubcenter.org.il Website: www.taubcenter.org.il

Printed at Printiv, Jerusalem

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Society, Economy and Policy in Israel
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Foreword

This year's Singer Series *State of the Nation Report* focuses on several of Israel's primary socioeconomic issues, each from a number of different perspectives. Inequality and poverty in Israel are examined not just in terms of income but as they impact and are reflected in health and education. The country's elderly are looked at in terms of employment and incomes (Kimhi and Shraberman) and their levels of poverty (Ben-David and Bleikh). The Haredi (ultra-Orthodox Jews) sector is the focus for an examination of their education levels, employment, and wages (Regev), while material hardship and coping mechanisms in this group are compared to other population groups (Stier and Lewin). Other topics covered in this volume include: health (Chernichovsky and Regev) and mental health reform (Aviram); pupils and teachers (Blass), the link between school discipline and educational achievement (Blank and Shavit), and higher education in Israel (Ben-David); women in the labor force (Stier and Herzberg); educational opportunities and employment (Bar-Haim, Blank, and Shavit); productivity (Ben-David); and a macro view of issues in the Israeli economy (Yashiv). As in past volumes, the chapters in this year's *State of the Nation Report* are written by some of Israel's premier researchers in the social sciences.

This *Report* is not just about content but also about clarity in bringing complex issues out of academic and professional language into formats and graphics that are easily accessible and understood by wider audiences. As such, the *State of the Nation Report* has not only become a staple in university and college classrooms around Israel, it also sits prominently on the desks of some of the top policy makers and leaders of social organizations and businesses in Israel and abroad. Its findings are

widely reported in the electronic and print media worldwide. This unique accomplishment could not have been possible without the dedication – and many long hours – of the Taub Center’s Inbal Gafni, Laura Brass, and Yulia Cogan, whose editing, graphics, and layouts in both Hebrew and English were instrumental in making this volume what it is. Thanks also to Liora Bowers and Eitan Regev for their contribution in the final polish to the chapters.

As in past years, the chairs of the Taub Center’s Policy Programs, Professors Dov Chernichovsky from Ben-Gurion University (health policy), Ayal Kimhi from the Hebrew University (labor policy), Yossi Shavit from Tel Aviv University (education policy), Haya Stier from Tel Aviv University (social welfare policy), and Eran Yashiv from Tel Aviv University (economic policy) have all played significant roles in coordinating the Center’s work – not to mention providing major contributions to this volume.

The Taub Center is currently in the midst of a major upgrade of its research and dissemination capabilities. During this past year, the Taub Center’s full-time staff has been augmented by Gal Ben Dor (Director of Marketing and Communications), Liora Bowers (Director of Policy), Hadas Fuchs (Researcher), and Dr. Noam Gruber (Senior Researcher), all new positions. They have joined our colleagues on the great team that has enabled the Center to reach this new stage: Sagit Azary-Viesel, Nachum Blass, Haim Bleikh, Laura Brass, Yulia Cogan, Hedva Elmackias, Inbal Gafni, Dr. Asher Meir, Daniel Premisler, Eitan Regev, Kyrill Shraberman, and, of course, Kasanesh Ambao, Aharon Cohen, and the Center’s leadership team that includes Ayal Kimhi, Suzanne Patt Benvenisti, and Michal Rubin. The ranks of the Taub Center’s International Advisory Council have been augmented by Prof. David Autor, an internationally renowned economist from MIT.

Needless to say, the Taub Center’s financial ability to move into this next phase of development has been due to its committed supporters – joined this year by Dr. Shula Recanati and Jim Angell – who understand

joined this year by Dr. Shula Recanati and Jim Angell – who understand that philanthropy can be greatly leveraged by supporting the creation of non-partisan evidence-based research and viable policy options that can be adopted by decision makers to minimize problems, correct inequalities, and enhance public welfare on a national scale. We are deeply indebted to the Taub Center’s dedicated Board of Directors along with the individuals and foundations who have made all of this possible.

Dan Ben-David
Executive Director
Taub Center for Social Policy Studies

I. THE MACRO PICTURE

Poverty and Inequality Over Time

In Israel and the OECD

Dan Ben-David and Haim Bleikh*

Abstract

The focus here is on how rates of poverty and income inequality in Israel have evolved over recent decades and how they compare to other countries. Contrary to conventional wisdom, Israeli rates of poverty and inequality in disposable incomes are very high – compared with developed countries – even after excluding Haredim and Arab Israelis from the sample (though not particularly high in terms of market incomes). Israel's elderly population is the smallest in the West, and poverty among the elderly before welfare and taxes is among the lowest while after the social welfare net is spread, poverty rates in Israel are the highest in the developed world. Poverty among children after welfare and taxes is also the highest in the developed world. The share of national income received by the top 1 percentile is not particularly high in Israel, but the gap between individuals at the 90th income percentile and individuals with median incomes is the highest in the West – with the gap between individuals with median incomes and those at the 10th percentile even higher in Israel. A systemic plan to deal with the underlying problems and their symptoms is outlined here.

* Prof. Dan Ben-David, Executive Director, Taub Center; Department of Public Policy, Tel Aviv University; Research Fellow, CEPR, London. Haim Bleikh, researcher, Taub Center.

We would like to thank Liora Bowers, Ayal Kimhi, Daniel Premisler, and Kyrill Shraberman for their valuable comments and suggestions.

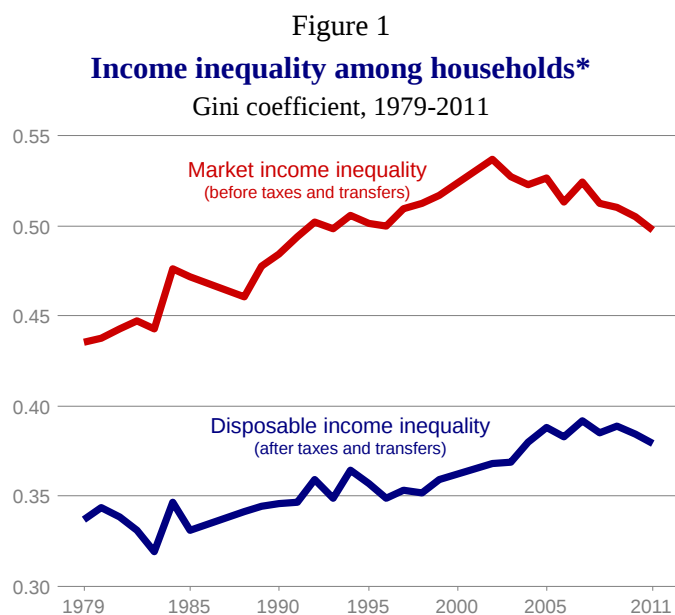
Which country today has the greatest equality? ... If we confine ourselves to the non-communist world, it has been suggested that the new state of Israel may lead the list.

Paul Samuelson, Nobel Laureate (1970)

During the first decades of its existence, Israel was unique in many respects. Though it suffered from severe economic challenges caused by waves of Jewish refugees and by wars that threatened its very existence, the country created some of the top universities in the world and exhibited high rates of economic growth that were unparalleled by other countries with similar levels of income (Ben-David, 2010a). It also earned the citation above by Paul Samuelson in what was once the number one economics textbook around the world. Today, Israel is 65-years-old, not an age that one would commonly associate with youth – and the list that it currently heads is not the egalitarian one.

It could be argued that a low rate of inequality in a country of refugees and native-borns with relatively meager resources was not much of an accomplishment when such a large segment of the population was poor. But this was also a country where the top leaders, political and military, also lived in tiny apartments or huts. That was then.

As Figure 1 indicates, income inequality in Israel rose steadily from 1979 – the earliest year that Israel’s National Insurance Institute, or NII (the formal name of the country’s social security institute), published data – through 2002. This figure highlights a number of issues that will be addressed here. The first is the need to look at problems from an altitude of 30,000 feet in order to see the forest for the trees. The analysis and understanding of long-run trends is vital for distinguishing between the more readily apparent symptoms and the fundamental core challenges.



* Including East Jerusalem from 1997 and chained for period before 1997

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: National Insurance Institute

A second issue is the need to broaden the spotlight of the public discussion on inequality and poverty. The common focus is invariably on disposable income – i.e., income after accounting for the effects of welfare and tax policies. Disposable incomes are the ultimate bottom line since they add welfare payments and other transfers to a person's market income while netting out the amount of taxes paid. This is what an individual has at his or her disposal to consume or to save. For this reason, public debate and social policies – not to mention academic research – tend to concentrate on rates of poverty and inequality in disposable income. After all, the arguments usually center on whether or

not welfare payments are sufficient, whether or not the tax burden is too heavy, and so on.

While this focus is important, it, nonetheless, masks an underlying picture that is crucial for understanding the actual magnitude of the problem. Rates of poverty and inequality in market incomes (incomes from labor, capital, and pensions) provide just such a perspective. They show what would have happened if the country's residents would have had to fend for themselves with their personal levels of human and physical capital. In other words, what is the extent of the problem that needs to be fixed through a social safety net comprising welfare and taxes because individuals are not receiving either the tools or the conditions to work in a modern economy – and is this underlying problem getting better or worse? One of the hallmarks of a modern society is its ability to transfer resources away from the relatively better off (using taxes) to the relatively worse off (using welfare payments). But knowing what is happening behind the scenes – i.e., in market incomes – gives an indication of the magnitude of the underlying problems that, if not dealt with decisively, needs to be addressed symptomatically through the social welfare system.

Figure 1 shows a very steady increase, of 23 percent, in market income inequality (as measured by the Gini coefficient¹) between 1979 and 2002, the height of the *intifada* wave of terror and Israel's worst recession in decades. The country's tax and welfare systems managed to substantially reduce the inequality in disposable incomes, though as will be shown, Israel still has some of the highest rates of disposable income inequality in the developed world. Not only is disposable income inequality considerably lower than market income inequality, the infusion of increased welfare payments also mitigated some of the underlying

¹ Gini coefficients ranges from 0 – the theoretical case of complete equality within a country – to 1, the similarly theoretical case of complete inequality within a country (i.e., one family receives all of the country's income). A rising Gini coefficient indicates rising rates of income inequality in a country.

inequality increases in market incomes – with disposable income inequality rising by “only” 9 percent during these same years.

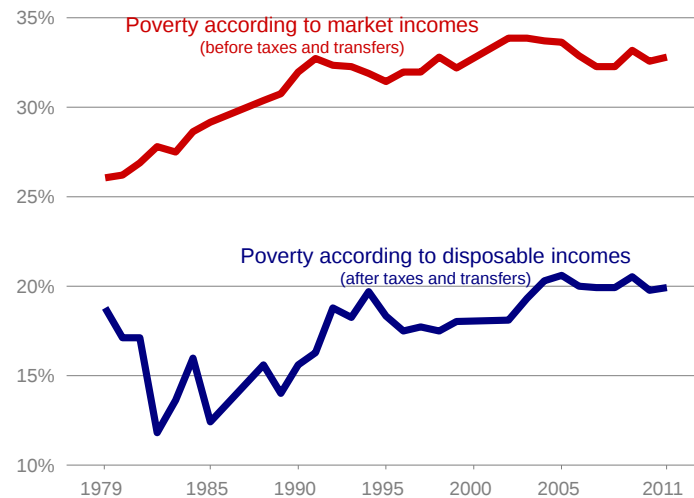
In the years since 2002, market income inequality fell by 7 percent, returning to mid-1990 rates by 2011. However, the terror wave at the beginning of the last decade required a major shift in resources away from social needs to defense. While market income inequality has been receding over the past decade, cuts in welfare led to an additional increase of 3 percent in disposable income inequality between 2002 and 2011.

The poverty picture in Figure 2 reflects a similar evolution over time. The share of Israeli families that would have lived under the poverty line in the absence of welfare and taxes was just over one-quarter in 1979. For the past decade plus, this share has been hovering at about one-third of the families. While rates of poverty in market incomes are substantially higher than they were over three decades ago, rates of poverty in disposable incomes are only slightly above where they were in 1979, at about one-fifth of Israel’s families (though they were substantially lower in the 1980s). Since 2002, at the height of the *intifada* and the lowest point of the accompanying Israeli recession, poverty rates according to market incomes have been relatively stable, falling slightly, by 3.2 percent. Poverty in disposable incomes has risen by 9.9 percent as the government sharply reduced welfare payments to cover higher defense expenditures during and immediately after the *intifada*.

That, in a nutshell, is the longest run view of poverty and income inequality in Israel. It is not without its problems. As Israel has grown and developed, so has its data. The surveys underlying the outcomes in Figures 1 and 2 have become increasingly more inclusive over the years – which is good – but they make long-run comparisons such as those in Figures 1 and 2 all the more challenging and imprecise. Creation of these figures required chaining of different datasets that involved ever-more sectors (e.g., the inclusion of self-employed from 1992 and the inclusion of East Jerusalem residents from 1997) and the accuracy of such chaining becomes all the more questionable. To avoid the need for such chaining,

the focus on Israel in the next section will be on the two decades spanning 1992 to 2011, with datasets that are comparable for the entire span. It will examine how different population groups in Israel affect the country's poverty and inequality picture and how these effects have changed over time.

Figure 2
Percent of households under the poverty line*
1979-2011



* Including East Jerusalem from 1997 and chained for period before 1997

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: National Insurance Institute

Section 2 provides an international comparison of poverty and income inequality between Israel and other developed countries in the OECD, of entire populations as well as of subgroups. The long-run and

international perspectives provided here yield benchmarks necessary for assessing how similar – or dissimilar – today’s Israel is to different times and to different countries. The final section presents an outline of a comprehensive plan to deal systemically with both the core problems underlying poverty and income inequality in Israel and their symptoms.

1. Poverty and Inequality in Israel: A Look Inside

Not all countries define poverty the same way, though nearly all developed countries adopt the notion of relative poverty – that is, the position of the poor relative to the rest of the population – rather than defining a specific basket of goods that can or cannot be purchased. The formal Israeli definition of the poverty line is one half of the median disposable income per standardized person.² The analysis in this section is based on income surveys produced by Israel’s Central Bureau of Statistics (CBS) and includes self-employed individuals beginning in 1992. As noted above, the CBS began including the population from East Jerusalem in 1997.

Poverty Among Haredim and Arab Israelis

When focusing on poverty within Israel, it is hard to ignore two particularly large population groups (together comprising over one-quarter of the country’s population) that stand out in terms of the extremely low level of education received by their children and the relatively low (in some cases, one could describe these as extremely low)

² The number of persons per household used in this calculation does not include the actual number but rather a decreasing weight for each additional person (for additional details, see the next section’s comparison of the weights that Israel uses versus those used by the Luxembourg Income Study in its international comparisons). In other words, calculations of poverty and income inequality focus on income per standardized person in each household.

rates of employment. These two groups, Haredim (ultra-Orthodox Jews) and Arab Israelis, have been examined extensively in past *State of the Nation Reports* (e.g., Ben-David, 2010b and Kimhi 2011 and 2012) as well as in other sections of this report within the education and employment contexts (Blass, “Trends in the Development of the Education System: Pupils and Teachers”; Regev, “Education and Employment in the Haredi Sector”). One result of the low levels of education and the attendant low levels of employment are very high rates of poverty within each of these groups.

Figure 3 shows that over two-thirds of the Haredi households and three-quarters of the Haredi individuals (not included in the figure) would have lived under the poverty line had Israel’s welfare and tax safety net not existed, i.e., according to their market incomes.³ The incidence of disposable income poverty among Haredi families is lower, 44 percent in 1992, but rising substantially – reaching 57 percent in 2011.

Poverty rates among Arab Israeli households are lower than among Haredim, but increasing much more sharply. Arab Israeli poverty rates according to market incomes rose from 47 percent in 1992 to 57 percent in 2011. The climb in Arab Israeli poverty rates according to disposable incomes was even more pronounced, rising by over one-third from 1992 (37 percent) to 2011 (50 percent).

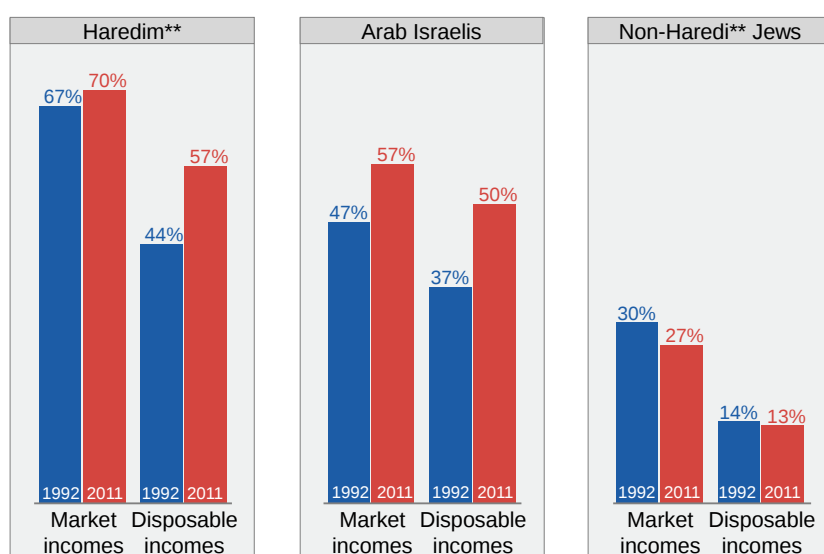
Given the large size of these two population groups, many Israeli’s tend to assume that the country’s high levels of poverty are due primarily to the inclusion of Haredim and Arab Israeli in the national data. Since 1997, Israel’s NII, which calculates the country’s formal poverty and income inequality measures, has also included the very large population of Arab Israelis living in East Jerusalem (124,000 in 1997, more than doubling to 288,000 in 2011). Consequently, the question is often raised regarding what Israel’s poverty rate would look like if these two groups, Haredim and Arab Israelis, were excluded from the sample.

³ Haredim are found in the data on the basis of the household head’s last place of study being a yeshiva. Data for both years excludes East Jerusalem.

Poverty in Non-Haredi and Non-Arab Israeli Populations

A simplistic – and deceptively misleading, as will be explained below – way of looking at poverty rates among the non-Haredi Jews is shown in Figure 3. Poverty rates in both market and disposable incomes are considerably lower and, in the case of disposable income, also relatively steady.

Figure 3
Percent of households under the poverty line*



* Using same national poverty line in all cases. Excluding East Jerusalem

** Haredi/m are ultra-Orthodox Jews

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Central Bureau of Statistics

There are two problems with the more simplistic approach to non-Haredi Jewish poverty rates as exhibited in Figure 3. The first is conceptual and the second is methodological. While this may be an interesting question from an analytical perspective aimed at understanding the extent of poverty as it pertains to different population groups within Israel, it is important to point out – particularly in light of much public debate that has taken place in recent years – the limitations of the analysis below from a conceptual policy perspective. *Haredim and Arab Israelis are an integral part of Israeli society and it is inconceivable to consider the national poverty problem as any less than it is just because poverty rates are not as low in the rest of society.* Furthermore, since the formal measure of poverty in Israel is a relative concept, it would be erroneous to simply look at the share of non-Haredi and non-Arab Israelis living below the national poverty line. This is because that poverty line would no longer be the relevant poverty line for the remaining subsample following the removal of any particular group. Following Dahan et al. (2006), a new poverty line needs to be calculated on the basis of half the median income of the new subsample in order to determine rates of poverty in that subsample.⁴

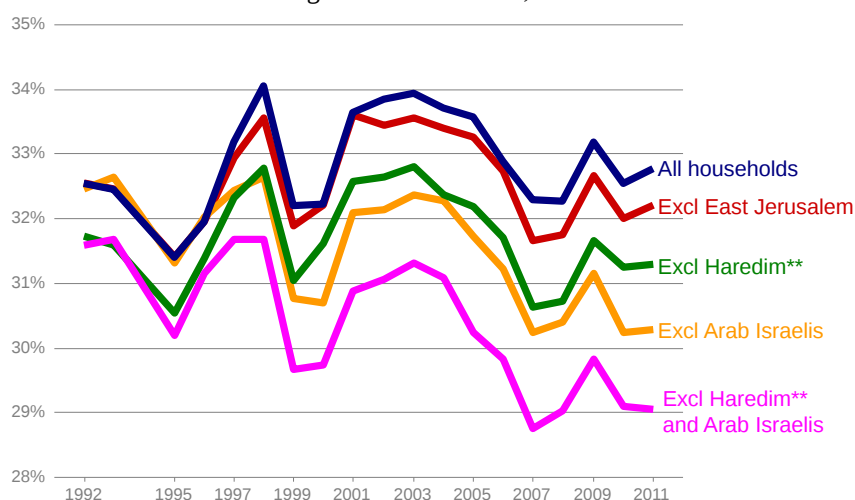
Figure 4 displays poverty rates according to market incomes in Israel between 1992 and 2011 with and without the various groups mentioned above. Poverty lines were recalculated in each of these cases to facilitate the determination of poverty rates in each of the subsamples.

Exclusion of Arab Israelis from the sample had no effect on national poverty rates from 1992 through 1996 (note that Arab Israelis from East Jerusalem were not included in the sample during these years and were

⁴ It should be pointed out that such a comparison still suffers from bias because Israel's existing welfare and tax systems currently take into account the Haredi and Arab Israeli populations and there is no way to know if the hypothetical subset of remaining Israelis would decide that taxes could be lowered if there was no need to support such large and disproportionately poor populations. On the other hand, this subset of the population could also hypothetically decide to simply divide the current pool of welfare benefits among the remaining poor by giving each more.

only added from 1997). But a growing gap developed thereafter. By 2011, overall market income poverty rates in Israel stood at 32.8 percent, but were a bit less, 30.3 percent, among the non-Arab Israeli population. Exclusion of the Haredim from the sample also led to a slight reduction in poverty rates among the remaining population. This ranged from just under 1 percentage point in the early 1990s to about 1.5 percentage points less in recent years. Exclusion of both Haredim and Arab Israelis from the sample yielded a drop in 2011 poverty rates from 32.8 percent to 29.0 percent, still a very high rate of poverty in comparison with developed countries (as will be seen).

Figure 4
Percent of households under the poverty line*
 according to market incomes, 1992-2011



* Poverty line recalculated after each exclusion. Data for 1992-1996 and 2000-2001 do not include East Jerusalem. No data available for 1994.

** Haredim are ultra-Orthodox Jews

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Central Bureau of Statistics

This finding of high poverty rates among the remainder of Israeli society is one that many Israelis need to comprehend and internalize. After all, these are poverty rates on the basis of market incomes, which reflect the tools and conditions available to each household – rather than on the basis of disposable income which also includes the effects of the social safety net. While it is crucial to bring down poverty in the Haredi and Arab Israeli sub-populations, it is just as important that Israelis understand that the poverty issue is pervasive even outside of these groups – and that a comprehensive, systemic, policy approach is needed to deal with the underlying causes of Israel’s extensive poverty problem.

Poverty Among Households Versus Poverty Among Individuals

Broadly speaking, there are two main approaches used in determining the extent of poverty within a country. One method is to focus on households – the approach adopted in Figure 4 – while the other method is to focus on individuals.⁵ There is no right or wrong involved, but the outcomes may vary considerably and it is important to recognize this possibility.

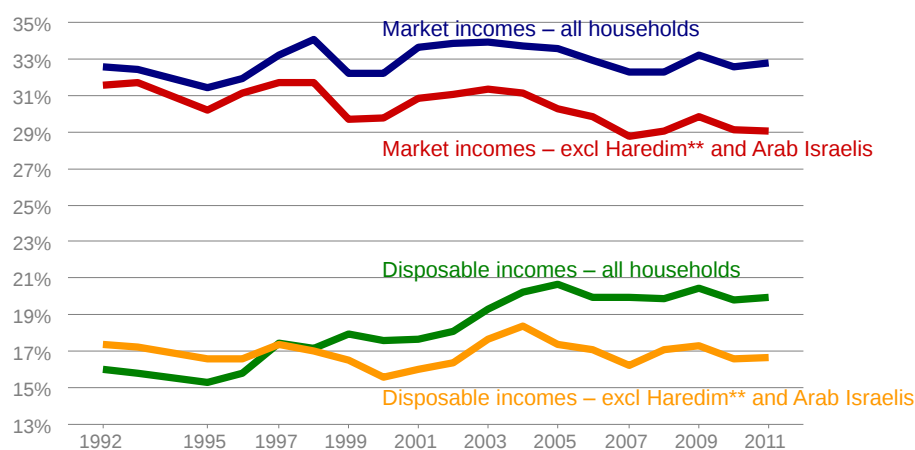
Panels A and B of Figure 5 highlight the different outcomes that are obtained when households are used versus when individuals serve as the basis for the analysis. Figure 5A redraws the market income poverty rates for households with and without Haredim and Arab Israelis. It also includes disposable income poverty rates for the national sample and for the subsample excluding these two groups. Figure 5B does the same, but is based on individuals rather than on households. The differences between both panels are clear.

⁵ Households are ranked in terms of income per person (actually, income per standardized individual) in each household. One approach is to determine the share of total households with incomes per person below the poverty line. The other approach is to determine the share of total individuals with incomes per person (on the basis of average household income per standardized individual) below the poverty line.

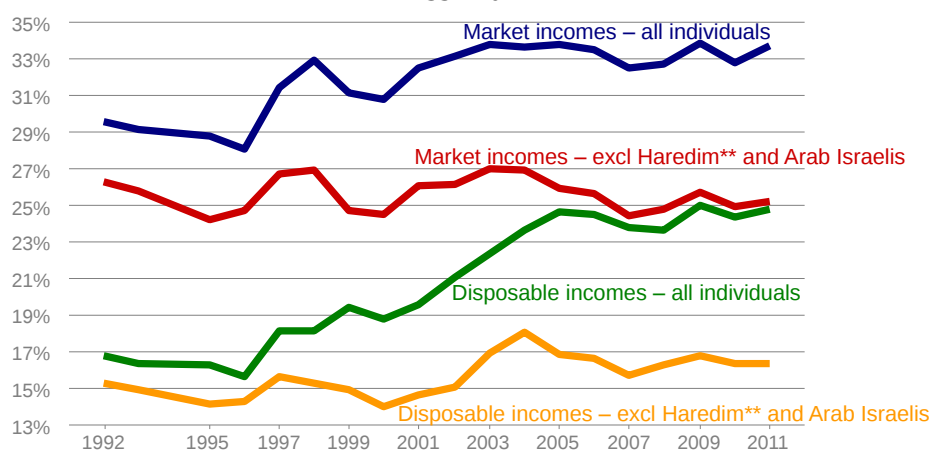
Figure 5

A. Percent of households under the poverty line*

1992-2011

**B. Percent of individuals under the poverty line***

1992-2011



* Poverty line recalculated after each exclusion. Data for 1992-1996 and 2000-2001 do not include East Jerusalem. No data available for 1994.

** Haredim are ultra-Orthodox Jews

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Central Bureau of Statistics

While market income poverty rates for the entire country fluctuate at around 33 percent during the entire sample period in Figure 5A (households), they are rising from roughly 29 percent in the first half of the 1990s to the same 33 percent during the past decade in Figure 5B (individuals). When the focus shifts to market income poverty rates for the subsample excluding Haredim and Arab Israelis, the differences are much starker with poverty rates reaching 29 percent in the households-based panel and 25 percent in the individuals-based panel. In fact, the difference between the national poverty rate and the subsample poverty rate grows from 3.7 percentage points in Figure 5A to 8.5 percentage points in Figure 5B. Since Haredi and Arab Israeli households tend to be large compared to other Israeli families and since poverty rates among these households tend to be higher than among other households in Israel, it is no coincidence that their exclusion from the sample reduces poverty among individuals by more than it reduces poverty among households.

The picture that emerges from the two panels differs even more when the focus shifts to rates of poverty according to disposable incomes. The biggest difference is in the rate of poverty in the nationwide sample. Disposable income poverty rates rose from 16.0 percent to 19.9 percent among households (Figure 5A), but rose from 16.8 percent to 24.8 percent among individuals (Figure 5B). On the other hand, changes over time in the subsample excluding Haredim and Arab Israelis were relatively negligible, with poverty rates reaching 16.6 percent (households) and 16.3 percent (individuals) in 2011.

The gap between the national poverty rate (24.8 percent) and the subsample poverty rate that does not include Arab Israelis and Haredim (16.3 percent) is substantial – 8.5 percentage points. This gap is identical to the difference in market income poverty rates depicted in the same figure. If one were to focus just on disposable incomes – as is common in poverty studies – then it might be possible to surmise that reductions in welfare assistance are the primary cause of the sharp increase in national disposable income poverty rates in Figure 5B. Alternatively, the fact that the dependent population (including large numbers of Haredim and Arab

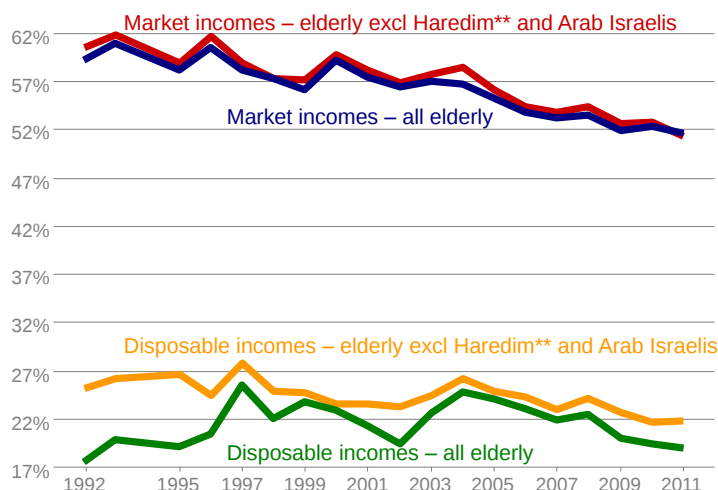
Israelis) has grown at a faster rate than the general population could have possibly resulted in a shifting of welfare benefits away from non-Haredi Jews. However, the fact that an identical gap also exists in market poverty rates between the two samples suggests that the poverty issue among Haredim and Arab Israelis is deeper than can be explained just by cuts or shifts in welfare spending. It also extends to the relatively deficient underlying education, skills, and conditions that these two groups have at their disposal to contend with Israel's increasingly competitive and open economy.

Poverty Among the Elderly and Children

Utilization of the poverty measure based on individuals also facilitates an examination of poverty among individuals of retirement age and children. These two groups are generally considered either above or below working age – although clearly some of both groups may be employed. Figure 6 focuses on the elderly. Rates of poverty based on market incomes for the entire country and for the subsample excluding Haredim and Arab Israelis are nearly identical.⁶ These rates are very high, though falling over time. Even with the decline in market income poverty rates, over half of Israel's elderly (51.2 percent) would have lived below the poverty line had the welfare and tax systems not intervened.

⁶ Since the share of Arab Israelis and Haredim among the elderly is smaller than their share in the general population, it is not particularly surprising that there are smaller differences between the subsample and the entire population.

Figure 6
Percent of retirement age individuals under the poverty line*
 1992-2011



* Age 60 and over for women; 65 and over for men. Poverty line recalculated after each exclusion. Data for 1992-1996 and 2000-2001 do not include East Jerusalem. No data available for 1994.

** Haredim are ultra-Orthodox Jews

Source: Dan Ben-David and Haim Bleikh, Taub Center

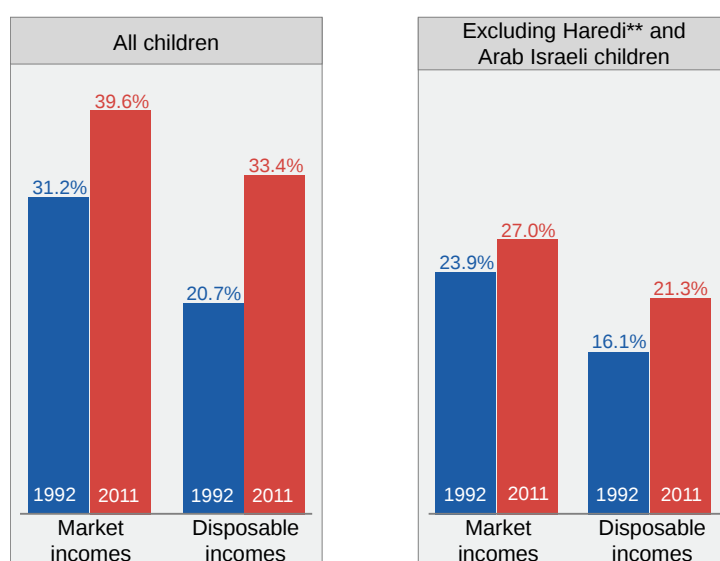
Data: Central Bureau of Statistics

Poverty rates according to disposable incomes in the entire elderly population rose from 17.4 percent to 18.4 percent between 1992 and 2011, while falling from 25.2 percent to 21.9 percent in the subsample excluding elderly Haredim and Arab Israelis. The fact that disposable income poverty rates are higher when Haredim and Arab Israelis are excluded (they are also higher – and similar to one another – when each group is excluded separately) could be due to higher income disparity among the non-Haredi elderly, resulting in a higher poverty line that leaves more elderly below it.

Rates of poverty among children are high, and they are rising rapidly (Figure 7). In the overall population, market income poverty rose by about one-third, from 31.2 percent in 1992 to 41.9 percent in 2011. While welfare and taxes reduced poverty in disposable incomes, their effectiveness fell over the two decades. Disposable income poverty among children increased from 20.7 percent to 35.6 percent, an increase of almost three-quarters.

Figure 7

Percent of children under the poverty line*



* Poverty line recalculated after each exclusion. Excluding East Jerusalem.

** Haredi are ultra-Orthodox Jews

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Central Bureau of Statistics

The incidence of market income poverty among children was considerably lower when Haredim and Arab Israelis were excluded from the sample – not surprising in light of the combination of high poverty rates within these groups and the large number of children in Haredi and Arab Israeli families compared to the rest of the Israeli families. Roughly one-quarter of the non-Haredi and non-Arab Israeli children were below the market income poverty line. The poverty rates in disposable incomes were considerably lower, 16.1 percent in 1992 and 21.3 percent in 2001, albeit a sizable increase of about one-third.

The issue of poverty among the elderly and among the children will be revisited later in this chapter – from a comparative perspective of Israel in relation to other developed countries.

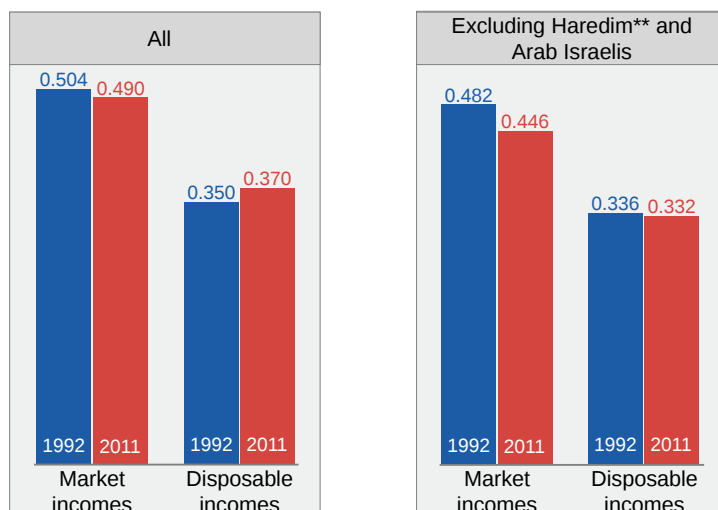
Income Disparity Within Israel

As shown in Figure 1, market income gaps in Israel rose steadily from 1979 through 2002 and have been declining since then. A comparison of 2011 to 1992 (Figure 8) indicates that the Gini coefficient on market income was slightly lower in 2011 than in 1992. Exclusion of Haredim and Arab Israelis from the sample does not have much of an effect on the degree of income inequality in Israel, although the decline in income gaps was a bit stronger in this case – about 7 percent.

While market income gaps in 2011 were lower than in 1992, the situation in disposable income gaps is the opposite, with small increases over the two decades for the entire population (Figure 8). Exclusion of Haredim and Arab Israelis has very little effect on the inequality and was at roughly the same levels in 2011 that were exhibited in 1992 – albeit, a little less.

The question is, how similar – or different – are rates of poverty and inequality in Israel to those in other developed countries? Section 2 focuses on these comparisons.

Figure 8
Income inequality
 Gini coefficient*



* Based on individual weights. Excluding East Jerusalem.

** Haredim are ultra-Orthodox Jews

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Central Bureau of Statistics

2. Income Inequality: International Comparisons

The following analysis is based on data from the Luxembourg Income Study Institute (LIS). The LIS database is harmonized to enable data calculations according to uniform rules and methodologies for each country. It is important to note that there are differences in rates of poverty and inequality based on LIS and OECD databases.⁷

⁷ As explained by Wang and Caminada (2011), "LIS micro data are predicated on different surveys across countries ... From those surveys, LIS staff refined

Consequently, the LIS provides a more consistent and comparable database for cross-country analyses. The countries chosen here are 22 developed countries with at least two observation years in the sample. Further clarifications regarding differences in methodology and measurement may be found in the Appendix.

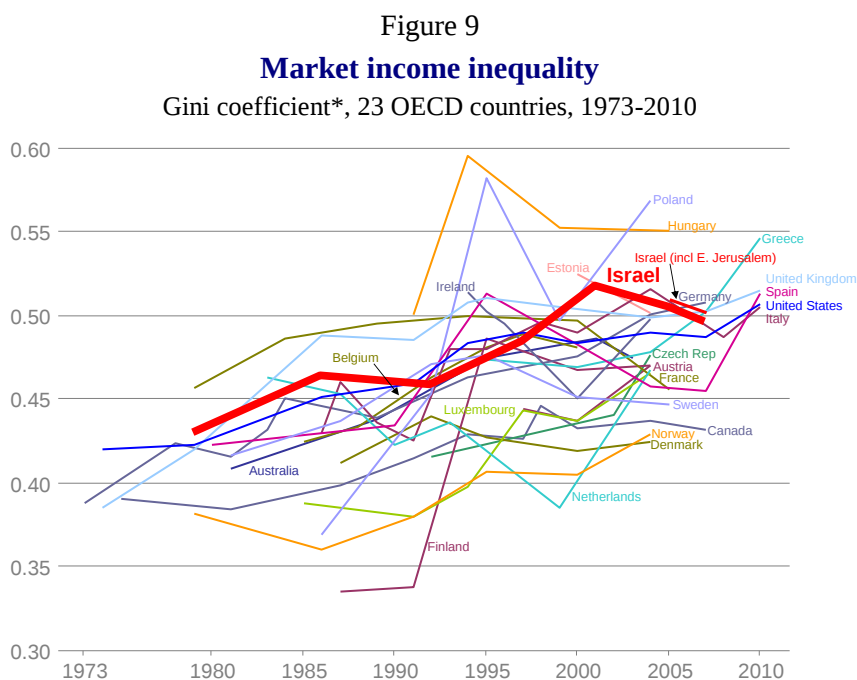
Long-Run Trends in Inequality

A comparison of long-run trends in market income inequality appears in Figure 9 (in this section's cross-country comparisons, the calculations for Israel do not include East Jerusalem).⁸ As is clear, nearly all developed countries have experienced increases in their market income inequality over several decades (for some countries, the data extends all the way back to the 1970s).

Market income inequality in Israel places the country near the top of the developed world's income inequality ladder (Figure 9). In recent years, with the onset of the major recession, market income inequality has exhibited sharp increases in the few countries for which data exist in the LIS statistics while it has continued to decline in Israel (as also shown in Appendix Figure 1).

and formalized rules used to classify variables, offering comparable micro dataset. Computations in OECD dataset are based on the OECD income distribution questionnaires. Therefore, the sample of surveys is not the same, leading to the different values of income inequality and the redistributive effect of taxes and transfers.”

⁸ One drawback to the LIS data is that it is not annual, and the length of the different time series varies from country to country. Israel's NII's weighting formula was used for all countries in this figure to ensure comparability.



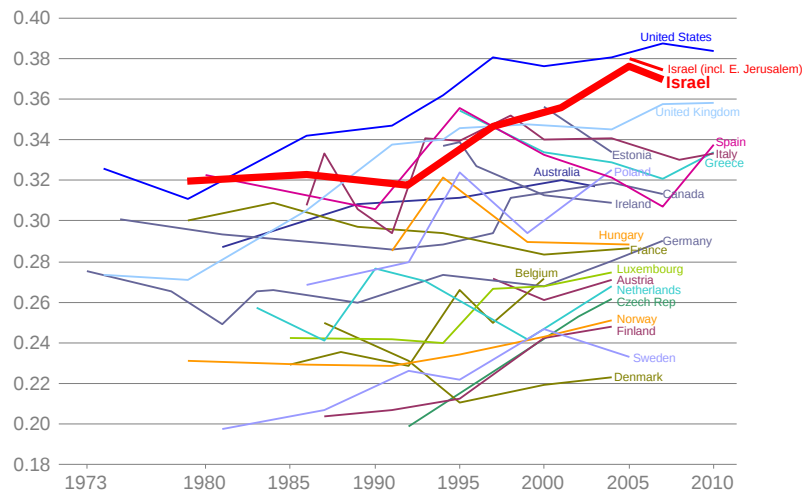
* Based on individual weights

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

When the focus shifts to disposable income inequality (Figure 10), Israel is second only to the US and has been steadily near the top relative to other developed countries as inequality has risen across the 22 OECD countries. The gaps between countries in the rate of income inequality are much greater in disposable incomes than they are in market incomes. This is due to the considerable variance in the social safety nets offered by the countries' different welfare and tax systems.

Figure 10
Disposable income inequality
 Gini coefficient*, 23 OECD countries, 1973-2010



* Based on individual weights

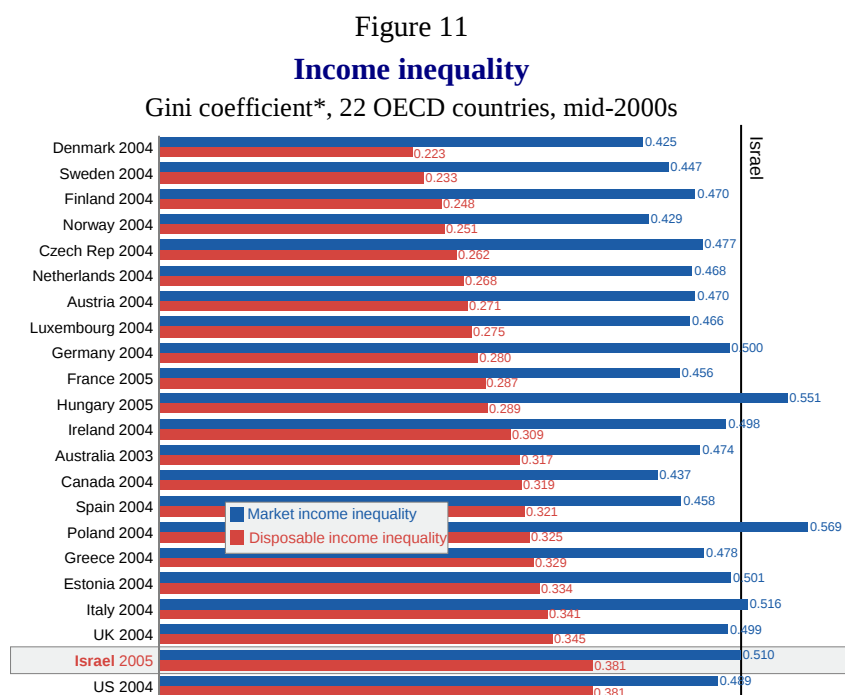
Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

Income Inequality in the Past Decade

To facilitate a clearer comparison between Israel and the developed world, the following analysis will use computations from around the middle of the past decade (specific years depend on data availability), which includes the greatest number of countries in the LIS dataset. As before, the Israeli weighting method and definitions were used for each of the other 21 developed countries in the comparisons below to make the international comparisons comparable to Israel.

Figure 11 compares all of the 22 OECD countries in the analysis. Israel – which includes East Jerusalem here and in subsequent international comparisons – is tied with the United States for the highest disposable income inequality, coming in fifth place with regard to market income inequality.



* Ginis calculated according to National Insurance Institute method.
Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

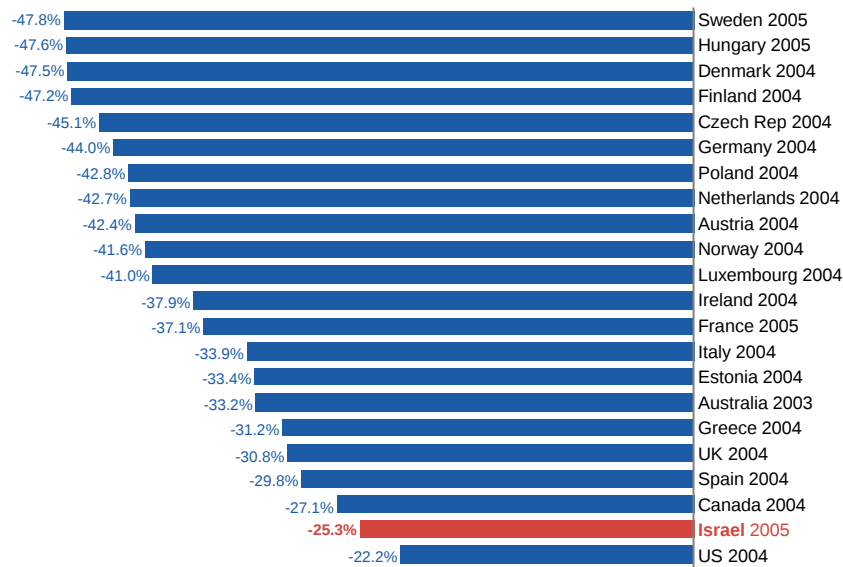
Data: Luxembourg Income Study

The impact of the welfare and tax systems in reducing income inequality in Israel (Figure 12) is the second smallest among all of the countries – second only to the United States. While the median drop in inequality among the other countries (from market incomes to disposable incomes) exceeds 40 percent, the Israeli decline in inequality reaches just 25 percent.

Figure 12

Percent reduction in income inequality*

from market income Gini to disposable income Gini, mid-2000s



* Ginis calculated according to National Insurance Institute method.
Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

Income Share of the Wealthy

Much of the public debate on income distribution in Israel focuses on the country's most wealthy and the high concentration of wealth at the very top of the income ladder. This issue is the subject of public debate in other countries as well. Alvaredo, Atkinson, Piketty, and Saez (2013) find that while many high income countries have experienced an increase in the top 1 percent income share, recent increases in English-speaking countries have been particularly sharp, with the income share accruing to the top 1 percent in the United States more than doubling over the past three decades.

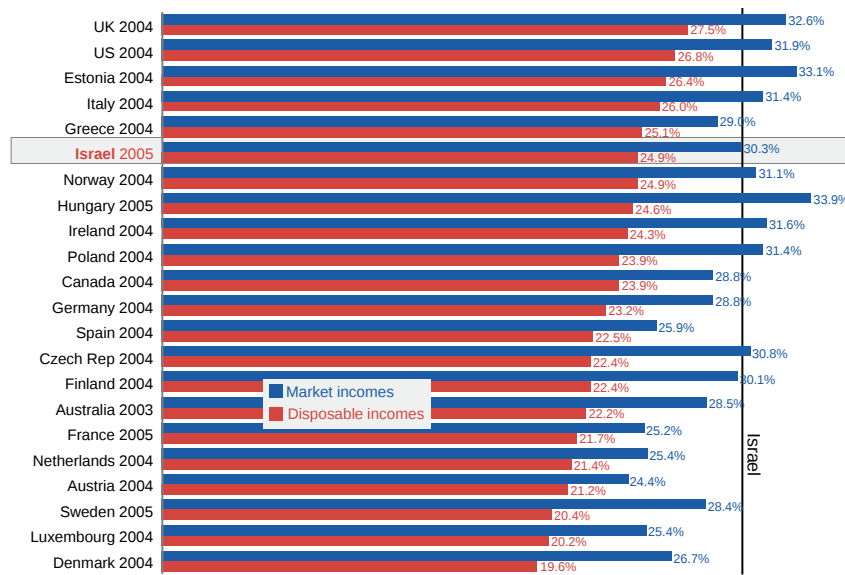
How does Israel compare with the developed world in this regard? Figure 13 compares the relative share of total income of the top income decile in all 22 countries.⁹ The countries are ranked according to the share of total disposable income going to the top income decile. The lowest disposable income share going to the wealthy is in Denmark, with the individuals in the top income decile receiving 19.6 percent of the total. The highest share is in the United Kingdom, with 27.5 percent of the country's disposable income going to the top income decile. The United Kingdom is followed by the United States, with a 26.8 percent share of income received by the top decile. Israel is situated in sixth place out of the 22 countries, with nearly a quarter (24.9 percent) of its total disposable income going to the top income decile.

In market incomes, before income taxes and welfare, the share going to each country's wealthiest is even greater – as would stand to reason. Hungary and Estonia top this list, with the top decile in each country receiving 33.9 percent and 33.1 percent, respectively, of total market income. These two countries are followed by the United Kingdom (32.6 percent) and the United States (31.9 percent). Israel is ranked in the tenth place overall – close to the middle position – among the 22 countries,

⁹ The income deciles are determined according to disposable income per standardized person. By definition, each decile accounts for 10 percent of all individuals.

with 30.3 percent of total income going to the top decile. Austria's wealthiest receive the lowest share of total market income, 24.4 percent, roughly what Israel manages to accomplish after taxes and welfare payments partially redistribute its disposable income.

Figure 13
Top income decile as a fraction of total income*
22 OECD countries, mid-2000s



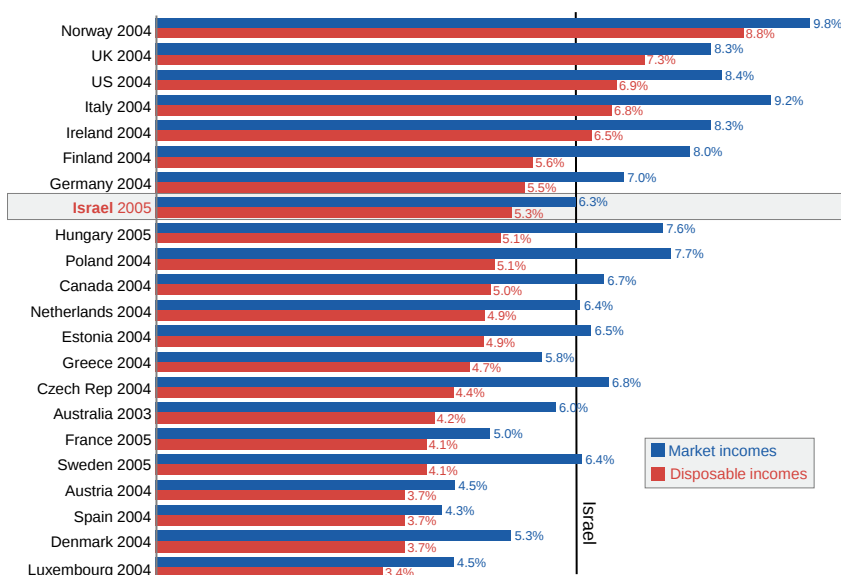
* Deciles calculated according to National Insurance Institute method. Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

A look at the concentration of wealth among the top 1 percentile in each country reveals even less of a concentration of wealth at the very top in Israel (Figure 14). Here, the range is from 8.8 percent (Norway) to 3.4 percent (Luxembourg) in terms of disposable income, with Israel ranked eighth from the top, with the wealthiest 1 percent of the Israelis receiving 5.3 percent of its total disposable income. Norway also tops the list with the share of total market incomes received by the top 1 percentile, reaching 9.8 percent. This is over a half more than fifteenth ranked Israel's 6.3 percent. Norway is followed by Italy (9.2 percent) and the United States (8.4 percent). Spain closes out the list, with its wealthiest receiving 4.3 percent of total income.

Figure 14
Top 1 percentile as a fraction of total income*
 22 OECD countries, mid-2000s



* Percentiles calculated according to National Insurance Institute method.
 Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

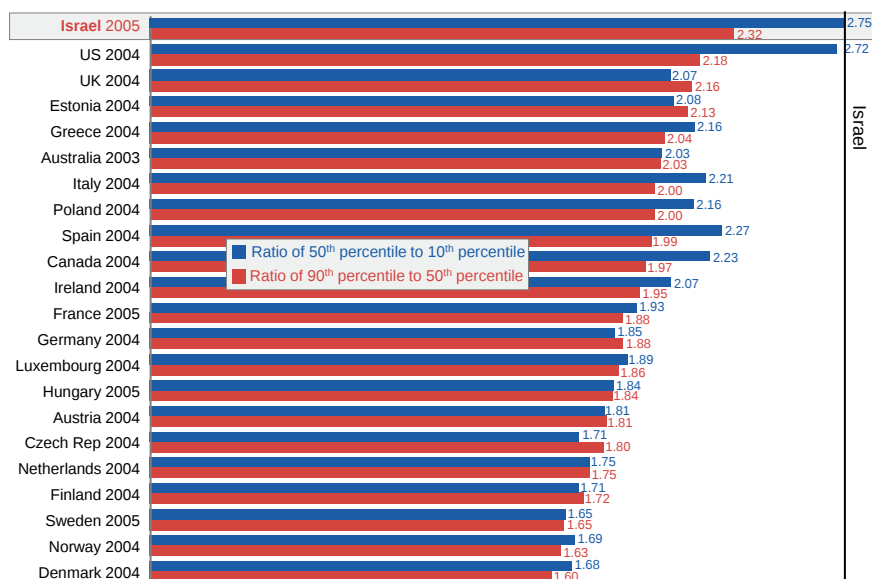
Income Gaps Without the Extremes

Removing the top and bottom income deciles eliminates the extremes from the inequality discussion and can sharpen the focus. Specifically, the ratio of disposable income per standardized person between the 90th percentile individual and the 50th percentile (i.e., median) individual gives a glimpse at the top income gap – between the top end of society (minus the very wealthiest) and its mid-point (Figure 15). The ratio of 2.32 places this gap within Israel above all of the remaining countries, including the United States (2.18) and the United Kingdom (2.16). The smallest gap between the 90th disposable income percentile and the 50th is in Denmark (1.60), with Norway (1.63) and Sweden (1.65) above it.

Figure 15

Ratios of disposable income percentiles, 90/50 and 50/10*

22 OECD countries, mid-2000s



* Percentiles calculated according to National Insurance Institute method.
Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

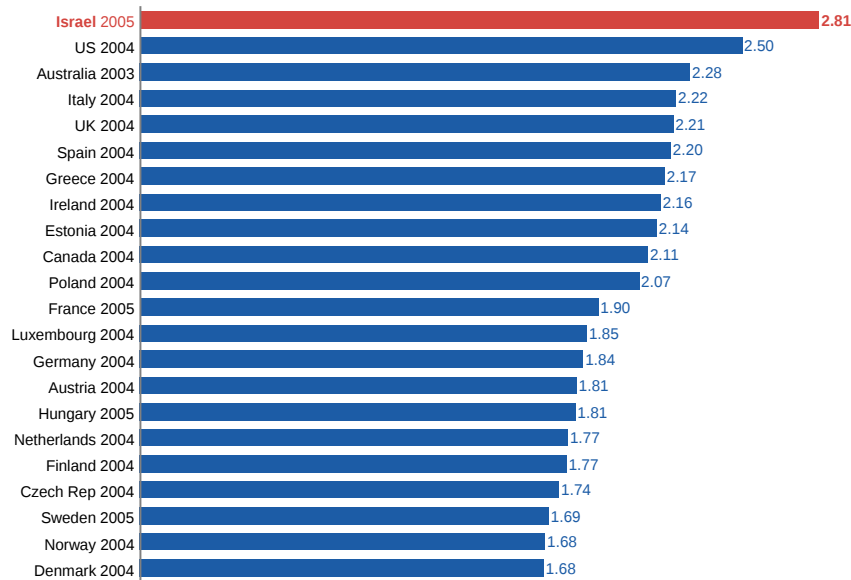
Data: Luxembourg Income Study

The income ratio between the 50th percentile individual and the 10th percentile provides an indication of the gap at the bottom rungs of disposable incomes – between the middle part of the income ladder and the bottom part of it (excluding the smallest incomes in the lowest income decile. Here too, Israel leads the list. Median Israeli incomes are 2.75 times the disposable income of the individual at the 10th percentile – a much larger gap than exists between the top and middle Israeli incomes. It is not a given that the bottom income gap is larger than the top income gap in all countries. In one-third of the cases (8 of the 22 countries), the top income gap is actually the larger gap.

In Israel's case, this is not just an issue between rich and poor. Even the gap between what could ostensibly be considered upper middle class and lower middle class is higher in Israel than in any of the other countries (Figure 16). The incomes of individuals at the 75th income percentile are 2.81 times the incomes of individuals at the 25th income percentile. This income gap is 12 percent greater than the number two country, the United States (with a 2.50 ratio), an almost a quarter more than Australia, the country with the third highest middle class income gap (2.28).

While Israel's income inequality problems appear to be endemic and cut across all sections of the income spectrum, they are less severe – relatively speaking – when it comes to income concentration at the very top (i.e., the top percentile, and even the top decile). The smaller income gap between the 90th percentile and the median, as opposed to the larger income gap between the median and the 10th percentile, suggest that the focus should move to a key component of Israel's income inequality – poverty at the bottom of the income ladder.

Figure 16
Ratios of disposable income percentiles, 75/25*
 22 OECD countries, mid-2000s



* Percentiles calculated according to National Insurance Institute method.
 Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

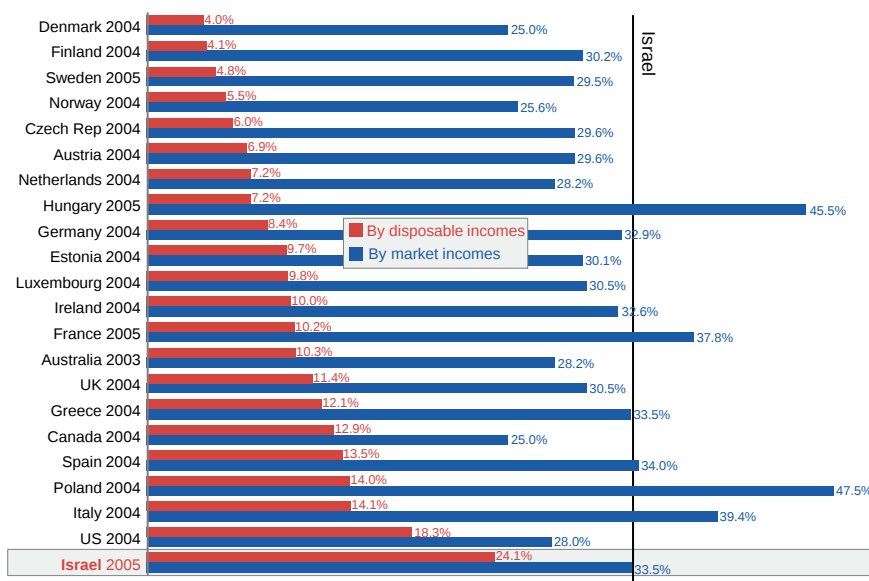
Data: Luxembourg Income Study

3. Poverty: International Comparisons

For comparison purposes, the poverty lines in each of the other 21 countries were calculated here in the same way that Israel calculates its poverty line – at 50 percent of each country's median disposable income per standardized person. In terms of disposable income, 24 percent of all Israelis live beneath the country's poverty line (Figure 17). That is nearly

one-third more than the number two country, the United States – and almost two and a half times the poverty rate in the middle countries of this sample, Luxembourg (9.8 percent) and Estonia (9.7 percent).

Figure 17
Percent of individuals under the poverty line*
22 OECD countries, mid-2000s



* Calculations according to National Insurance Institute method.
Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

A full one-third of Israelis would have lived under the poverty line had a social safety net not existed. While this rate of poverty in market incomes is high, it is even higher in 5 of the 21 remaining countries (Poland, Hungary, Italy, France, and Spain). This raises a question

regarding the effectiveness of Israel's combined welfare and income tax programs in reducing market income poverty compared to the other countries.

For comparison purposes, Appendix Figure 2 provides a comparison of poverty rates on the basis of households, as opposed to the Figure 17 comparison on the basis of individuals. Basing the calculations on households, shows that poverty rates in terms of market income are lower than individual poverty rates in all countries except in Israel. The difference between households and individuals is negligible: 33.1 percent versus 33.5 percent. In terms of disposable income poverty, the picture is reversed. For all of the countries with higher rates of disposable income poverty, poverty rates according to households are a bit lower than according to individuals, although in Israel's case, the drop is sharper – from 20.4 percent to 24.1 percent – which is still the highest among all of the countries. The reason for this difference is that there are many small, poor, elderly households in the other developed countries while in Israel there are many large, poor households with many children. As a result, Israel's market income poverty rate among households drops it in twentieth place among the 22 countries, compared to the sixth highest market income poverty rates when the basis is individuals.

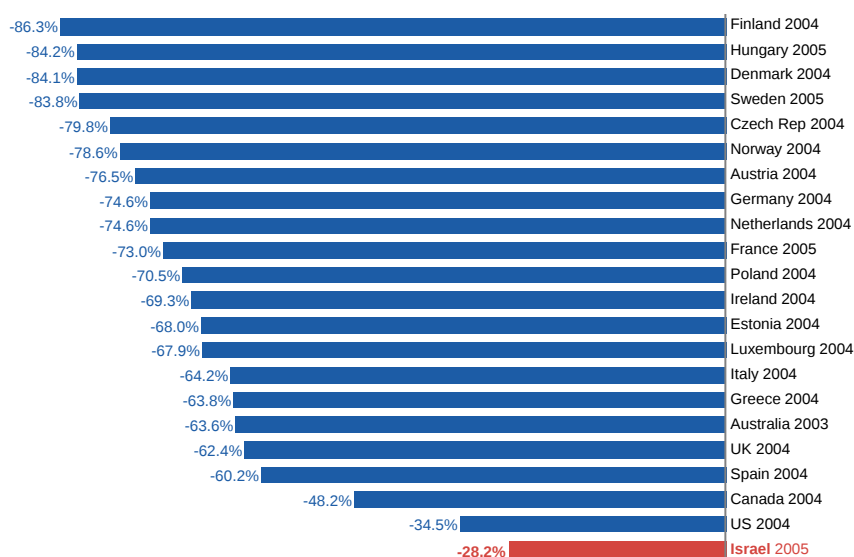
The reduction in Israeli poverty rates from market income to disposable income poverty (Figure 18) is in fact the slightest of the countries, with disposable income poverty rates only 28 percent below the market income poverty rates. The American combined tax and welfare programs – ranked second least effective here in reducing poverty rates – eliminate just over one-third of the market poverty rate in the United States. Canada's disposable income poverty rate is just over half the country's market income poverty rate, placing it in third place. The tax and welfare programs in nearly all of the remaining countries are

able to reduce market income poverty rates by two-thirds and up – reaching more than 80 percent reductions in Sweden, Denmark and Hungary (84 percent each). Finland's disposable income poverty rate of 4 percent is a full 86 percent below its market income rate of 30 percent.

Figure 18

Percent reduction in poverty rates*

from market income poverty to disposable income poverty, mid-2000s



* Calculations on the basis of individuals according to National Insurance Institute method. Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

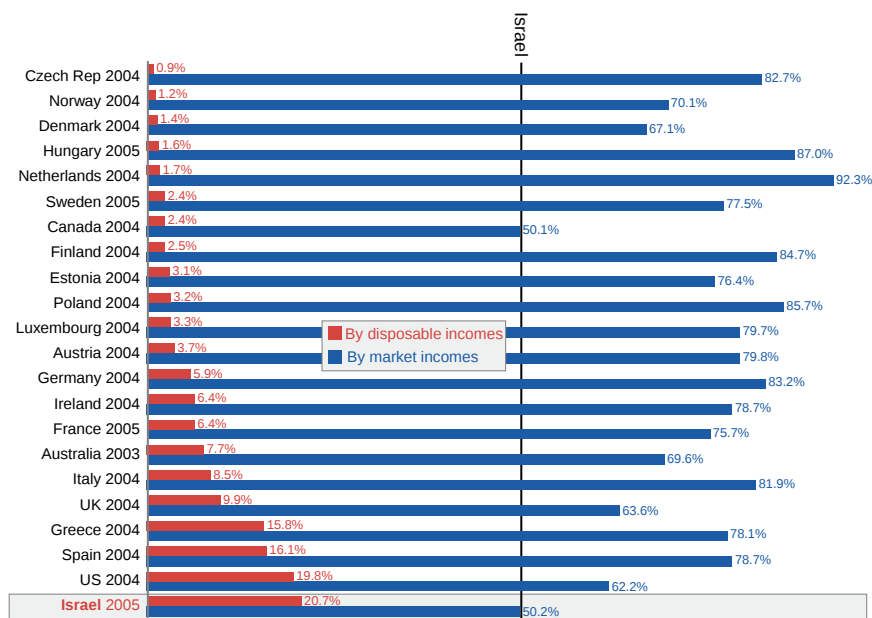
Data: Luxembourg Income Study

International Poverty Comparisons Among the Elderly

Not just in Israel are elderly and children two of the primary groups where poverty is concentrated. As noted previously, this is not surprising since these are groups that are generally either above or below the working age. The case of poverty among the elderly – those aged 65 and over, who are at or above what is generally still considered retirement age in most countries – provides what is perhaps the most striking illustration of the ineffectiveness of Israeli tax and welfare programs in reducing poverty. In a sense, the problem of poverty among the elderly is considerably greater in the rest of the developed world than it is in Israel. After the social safety net is spread, though, that is, after the steps that are put in place to improve the situation of the elderly are taken, the situation simply reverses and disposable income poverty among the elderly in Israel jumps to the top of the list among Western countries.

The share of elderly people living in poverty according to their market incomes is lower in Israel than it is in 20 of the 21 other countries. In fact, while 50.2 percent of Israel's elderly would have lived under the poverty line had they been dependent only on market income (Figure 19), over three-quarters of the elderly would have lived under the poverty line in 15 of the other 21 countries. In other words, a smaller share of Israel's population is elderly, and a smaller share – considerably smaller compared to some countries – of Israel's elderly would have lived under the poverty line if left to their own devices.

Figure 19
Percent of elderly under the poverty line*
 22 OECD countries, mid-2000s



* Calculations on the basis of individuals according to National Insurance Institute method. Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

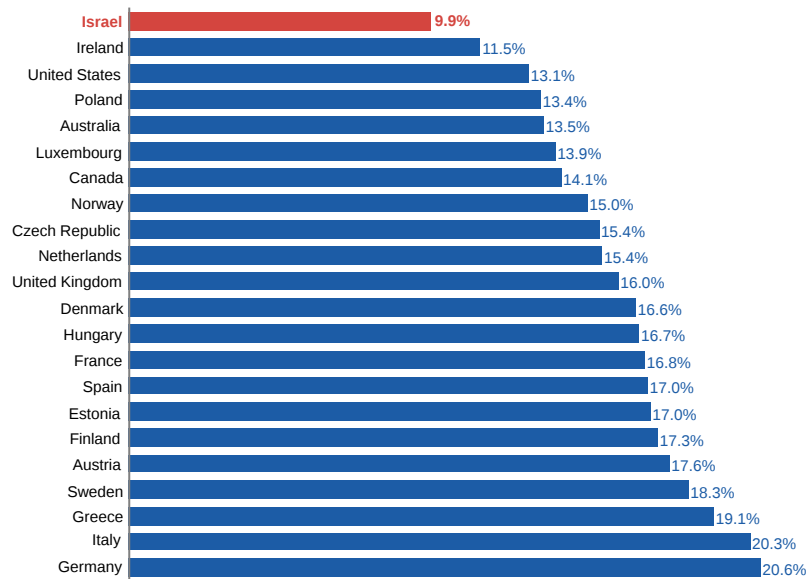
Data: Luxembourg Income Study

The paradox of social assistance to the elderly in Israel is even more striking since to begin with, the share of those aged 65 and over in the Israeli population is relatively low, only 9.9 percent (Figure 20). In each of the other 21 countries, this share ranged from 11.5 percent in Ireland to 20.6 percent in Germany, averaging 16.1 percent in all 21 countries. So if all else were held constant – i.e., if market income poverty rates were identical in each of the countries and all 22 countries desired to reduce

poverty by the same degree in disposable incomes – then it would cost less in Israel to achieve this goal because there are fewer individuals at that age (relative to the entire population) in need of assistance.

Figure 20

Percent of 65+ year-olds in the population, 2010

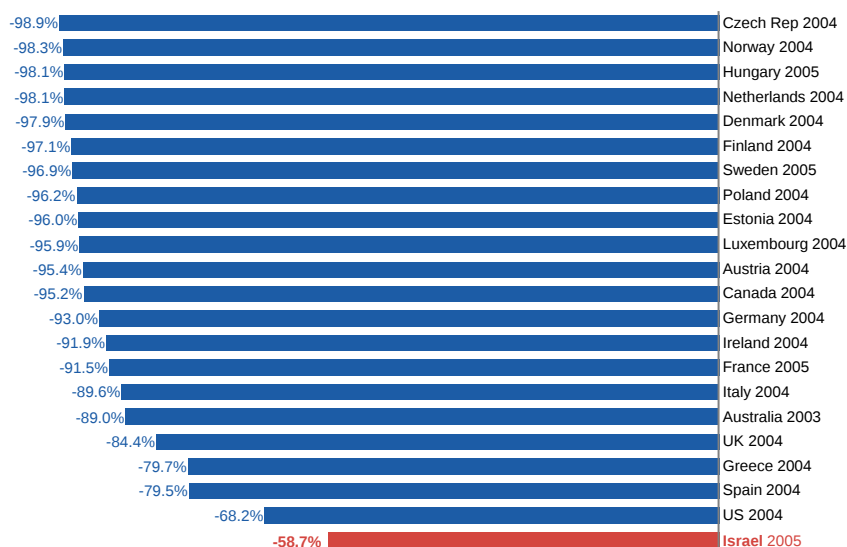


Source: Dan Ben-David, Taub Center for Social Policy Studies in Israel

Data: OECD

Despite the relatively large elderly populations in the other countries, the assistance provided to the elderly is substantially more effective in reducing poverty elsewhere than it is in Israel (Figure 21). The differences between Israel and the other countries regarding poverty reduction among the elderly are huge. Welfare and tax policies nearly eliminate poverty among the elderly in 12 of the 22 countries, with 95 percent and greater reductions in the rate of poverty from market incomes to disposable incomes.

Figure 21
Percent reduction in elderly poverty rates*
 from market income poverty to disposable income poverty, mid-2000s



* Calculations on the basis of individuals according to National Insurance Institute method. Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

All but two of the 22 countries – the United States and Israel – are able to reduce poverty rates among the elderly by at least 80 percent. By comparison, the United States reduced poverty among the elderly by 68 percent. Israel – with the smallest elderly poverty issue in terms of the extent of market income poverty rates and the relatively small size of the country's elderly population – only reduced its elderly poverty rates by 59 percent. Consequently, the share of elderly Israelis remaining under the poverty line after taxes and welfare is 21 percent, the highest in all of the countries.

There are a number of reasons for the large discrepancies between Israel's relative levels of market income poverty versus disposable income poverty among the elderly. As Bowers (2013) points out, Israel has traditionally had one of the highest rates of private pensions among OECD countries – about 50 percent of Israel's elderly had a private pension in the mid-2000s – which has contributed to the relatively low rates of market income poverty among them. Israel's average “replacement rates” (combining both private and public pensions) are slightly above the OECD average, meaning that the mean wage will yield a retired Israeli 78 percent of the pre-retirement wage, compared to an average of 69 percent in the OECD.

On the other hand, public pensions provide 20 percent of an average worker's earnings in Israel, compared to an average of 42 percent in the OECD. As Bowers notes, public transfers in the OECD contribute 61 percent of an elderly person's income – even more in Western Europe – and less than 50 percent in Israel.

Domestic politics play a double role in yielding these outcomes. First, the share of elderly in the entire poor population is substantially higher in the other developed countries than it is in Israel. So when the other countries implement welfare programs designed at reducing national poverty rates in disposable incomes, it is not surprising that they tend to focus more on reducing poverty among the elderly because that is where they see a more effective outcome for their investment.

A second aspect of the political dimension is that the demographics of the elderly are simply working against them in Israel. The large elderly populations abroad wield a sizeable share of the voting population, so it is probably no coincidence that they are able to channel this political power towards benefits that almost eliminate poverty among the elderly in some countries. Israel's elderly had a brief and very limited period of greater political influence between the rise and fall of a “pensioner's party.”

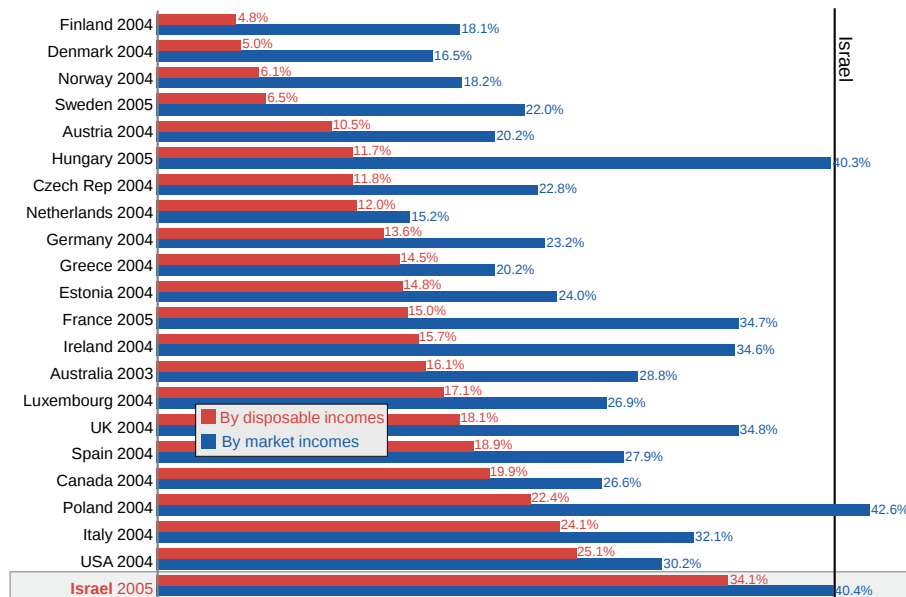
International Poverty Comparisons Among Children

While the average OECD family has 1.8 children – well below the 2.1 needed to maintain the same population over time – Israeli families have 3.0 children per family. In the 21 OECD countries other than Israel surveyed here, the share of 0-19-year-olds out of the population ranges from 18.6 percent in Germany to 27.5 percent in Ireland (with an average of 22.6 percent). In Israel, the share of 0-19-year-olds is 35.8 percent of the population – far greater than in any of the other countries.

Gornick and Jäntti (2011) note that many studies on childhood poverty focus on the relationship between household composition and children's likelihood of being poor, with single motherhood receiving the most sustained attention. Household composition is a major factor in Israel, too, with disposable income poverty rates in single mother families reaching 35 percent in 2004-2005 (Stier, 2011b), below the 45 percent in Canada and 42 percent in the United States – and above the 31 percent in the United Kingdom, 25 percent in Italy, and 10 percent in Sweden. That said, the share of single parent mothers out of all mothers was 8.9 percent in Israel, compared to 23.6 percent in England, 20.6 percent in Sweden, 18.9 percent in the United States, and similarly higher shares in most developed countries (though not all, with 8.6 percent in Switzerland, 7.1 percent in Italy and 6.0 percent in Spain).

The primary issue regarding poverty among children in Israel is a bit different than in most of the developed world. The country's birthrates are the highest in the developed world and many of these children are born to large, poor families. Consequently, 40 percent of Israel's children would have lived under the market income poverty line (Figure 22). Only Poland, with 43 percent market income poverty among children, had a more severe problem of market income poverty among children.

Figure 22
Percent of children under the poverty line*
 22 OECD countries, mid-2000s



* Calculations on the basis of individuals according to National Insurance Institute method. Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

After the effects of welfare and taxes are considered, poverty rates among children according to disposable incomes are by far the highest in Israel compared with the 21 remaining countries. Over a third of the country's children (34 percent) live below the poverty line, even after welfare assistance. The country with the second highest rates of child poverty is the United States – far below Israel – with a quarter of its children under the poverty line according to disposable income. The

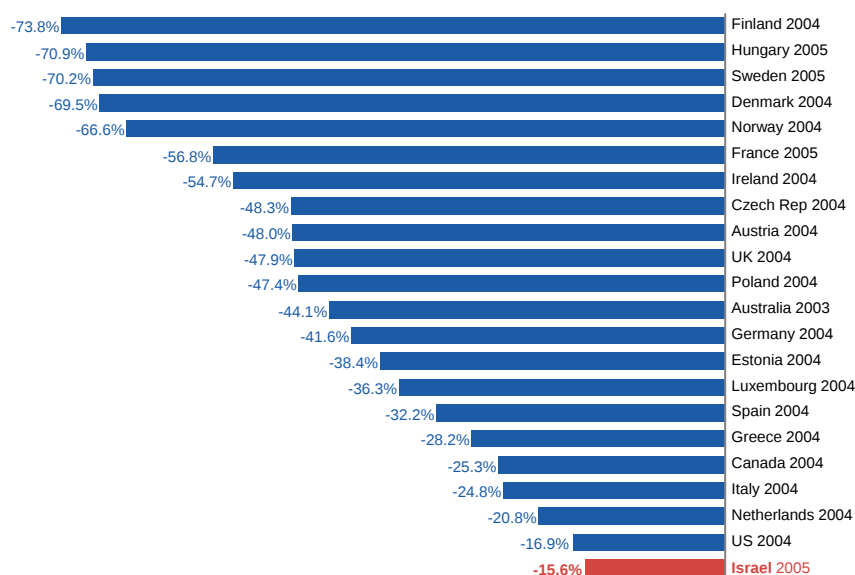
median rate of disposable income poverty among the 22 countries was 15 percent (in France and Estonia) – less than half of the Israeli share.

As was the case among the elderly, the reduction in Israel's poverty rates from market incomes to disposable incomes was the smallest of all the countries, 15.6 percent (Figure 23). By comparison, the two countries in the middle, Australia and Poland, reduced their poverty rates by 44.1 percent and 47.4 percent, respectively. Three countries managed to reduce poverty among children by over 70 percent: Sweden (70.2 percent), Hungary (70.9 percent), and Finland (73.8 percent).

Figure 23

Percent reduction in child poverty line*

from market income poverty to disposable income poverty, mid-2000s



* Calculations on the basis of individuals according to National Insurance Institute method. Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

4. A Plan for Dealing with the Core Problems Underlying Israel's Poverty and Income Inequality

Welfare and taxes provide a means for reducing poverty and income inequality at the symptomatic level, by dealing ex post with symptoms that already exist. While this social safety net is certainly a vital resource of last resort, the fundamental challenge is to reduce poverty and inequality at their source – that is, ex ante, in market incomes – by giving individuals the human capital and physical capital infrastructures that will enable them to find work and thrive in a modern economy.

The Israeli failure with regard to market income inequality is on two fronts. Domestic gaps in educational achievement in core subjects on international exams are consistently greater in Israel than they are in all of the world's developed countries (Ben-David, 2010c and 2011a).¹⁰ Economists often refer to the skill-biased technical change underlying the growth process as a primary factor driving up the demand for skilled and educated workers – and similarly, driving down the demand (in relative terms) for the relatively unskilled and uneducated. The resultant impact in Israel on employment and wages is clearly shown by Ben-David (2011b), Kimhi (2011, 2012), and others.

Herein lies the connection of the growth process to changes in income inequality – and the role for public policy in limiting increases in the gaps, and possibly even reducing them. As Goldin and Katz (2008) point out, the multi-decade accumulation of human capital in the United States, which manifested itself in an increased supply of skilled and educated workers, managed to initially meet much of the increase in demand and to offset much of the increase in income inequality that would have otherwise occurred. But they also add that decay in America's

¹⁰ Haredi boys, who do not study these core subjects, are generally excluded from participating in the international exams. Had they been included, the educational gaps in Israel would be shown to be even wider than is evidenced by the international exams.

educational institutions has been an important contributor to the more recent rise in inequality. This could equally be said of Israel, if not more so.

Alongside Israel's problematic human capital infrastructure is its long-neglected physical infrastructure. It has two and a half times the road congestion of other Western countries – although the number of vehicles per capita in Israel is only about half the OECD average. One of the smallest countries in the developed world has managed to create what have come to be referred to as “peripheries” at distances that would be considered “suburbs” in other countries. These fundamental problems – and others – are manifested in Israel's high market income inequality. The country also provides a social safety net that is the second least effective – after the United States – in reducing the core inequality reflected in market incomes to a substantially smaller disposable income inequality. Stier (2011a) provides evidence of a substantial increase in the number of “working poor” households in Israel since the mid-1990s.

Low wage jobs due to low and poor levels of education – and an accompanying decline in opportunities for low-skilled workers (Ben-David 2011b) – are a key underlying source of Israel's high rates of poverty and income inequality. Kimhi (2011) shows how differences in education have led to much larger wage gaps than are caused by differences in gender or in job experience/seniority – and these are growing more rapidly as well.

Also instrumental in heightening Israel's income inequality are inadequate surrounding conditions such as affordable childcare as well as a lack of a quick, efficient, inexpensive and reliable transportation infrastructure that would increase access to jobs. The prevalence of large families with a relatively low percentage of two earners also contributes to a considerable extent to the high incidence of poverty and income inequality. Barriers to employment, particularly among Arab Israelis, are not always due to low levels of education and poor access. Discrimination, although hard to quantify, certainly plays a role as well.

Goldin and Katz (2008) write that the decay in America's educational system underlies much of the increases in the country's income inequality. They point out that this is a straightforward policy issue that can be addressed – and, if implemented well, could contribute to a substantial change in the magnitude of inequality in the United States. Acemoglu and Autor (2012) conjecture that a major barrier to “reversing America's educational slide” that does not receive sufficient attention is politics. They write: “As it was politics that largely underpinned American schooling exceptionalism [in past decades], fundamental reforms and significantly expanded investments in the U.S. education system would only be possible if the political will is found to support them.” It is hard to overemphasize the importance of this conclusion with regard to Israel.

Israel is in urgent need of a fundamental shift in its national priorities, focusing on three primary policy spheres that are briefly summarized here in outline form. The likelihood of such a shift actually occurring is primarily a question of political wherewithal.

First Policy Sphere: Creating Incentives and Providing Tools

Increasing incentives to work and to employ

- **Replacing non-work incentives with incentives to work**

The share of employed prime working age Israeli men is low compared to other developed countries. Many families with prime working age parents receive sufficient support to facilitate the choice of non-work as a lifestyle. One example of a work incentive is a negative income tax, which has begun to be enacted in Israel, but needs to be made more substantive and barriers to its receipt need to be brought to a minimum.

- **Substantially reducing the number of foreign workers**

On one side of the dichotomy are individuals able to choose non-work lifestyles. On the other side are the many employers who are allowed

to avoid having to deal with the Israeli workforce by receiving permits to import large numbers of unskilled and uneducated workers, although these exist in abundance in Israel. The possibility to import foreign workers needs to be reduced considerably.

- **Providing tools and conditions – a comprehensive employment package**

A better employment incentive structure can only be successful in increasing employment if it is merged with a modular program that will improve the level of education and the skill set of the Israeli worker so that employment rates, productivity, and incomes will increase. This might include a “second chance” program for completion of high school and college, vocational training coordinated with the needs of the private sector, and job placements with incentives based on the workers’ success

Second Policy Sphere: Creating a Supportive Environment

Elements that help create a supportive environment

- **Extended school days and subsidized afternoon youth enrichment programs**

For those at the bottom end of the skill and wage ladder, the provision of incentives and skills will be only partially effective, if there is little or no arrangement for their children. Longer school days – post-reform, to ensure quality improvements rather than babysitting – with enrichment programs in the afternoon will not only release parents to work, but will serve to better prepare these children for their futures.

- **Substantial upgrade of the transportation infrastructure**

Provision of fast, cheap and readily available transportation throughout the country is necessary for increasing access from the periphery to jobs in the cities. Some progress has been made in this

regard in recent years, but it has proven to be much too little and much too slowly given the huge gap in infrastructure between the developed world and Israel that was allowed to dramatically increase since the 1970s.

The combination of longer school days and better schools in the periphery with a transportation infrastructure that will bring nearly all of Israel's population to within 30 minutes of one of its major cities will not only reduce the current housing crisis for young families by making larger apartments available for lower prices in areas that they would not consider living in today. It would also provide better schooling for those children already living in the periphery – with the potential of a better future for them – while providing their parents with greater access to jobs. This will not only reduce poverty and income inequality in market incomes today, it will also put the country on a path to their future reduction.

Third Policy Sphere: A Multi-Year Strategic Plan

While rear-guard actions of the type outlined thus far are essential, it is no less important to realign Israel's national priorities to favor the good of the general public over the long run rather than current prioritization of sectoral interests and short-run gains. The government budget needs to be redone from top to bottom, in accordance with budgetary requirements derived from a new national agenda that should include:

- **Significant increase in budgetary transparency**

It is not possible today to know what Israel's national priorities actually are, how much money is being allocated to whom, and on the basis of what criteria. This is a process that the Ministry of Finance can implement within months – if it so desires.

- **Comprehensive and system-wide education reform**

Such a reform should concentrate on determining a much more focused and uniform core curriculum for all of the nation's children. It should substantially improve the way teachers are trained and compensated. Such a reform needs to greatly improve the efficiency of the cumbersome and byzantine bureaucracy of the Ministry of Education.

- **Heightened law enforcement by upgrading and increasing efficiency of the police and court systems**

Roughly one half of Israeli's eligible for the minimum wage do not receive what they are entitled to by law. In addition, Israel's shadow economy is one of the largest in the developed world, accounting for about one-quarter of its GDP – over 200 billion shekels each year. A large number of transactions go unreported, court trials can last many years, and the resultant situation favors the unruly at the expense of those who abide by the laws – at a tremendous national cost.

- **Health system ensuring quality medical care for all**

While coverage is universal and life expectancy among the highest in the world, the conditions for patients in Israel's hospitals are poor, with the lowest number of hospital beds per capita in the developed world. Physicians who are among the best in the world are compensated far below what they could earn abroad, or in other professions requiring similar skill sets in the private sector. While the stock of physicians per capita is still relatively high – due to the massive immigration from the former Soviet Union in the 1990s – the annual flow of both new physicians and new nurses is quite low, indicating potential supply problems in the future.

- **Welfare policy ensuring a quality social safety net that will enable adequate living standards for those who truly need it**

Among its current inequities, the same social welfare safety net that leaves a greater share of Israelis above retirement age in poverty

(according to disposable incomes) also provides sufficient benefits for working age individuals to choose non-work lifestyles at rates unparalleled in the developed world.

These policy spheres comprise the three primary components of a systemic plan to deal with the fundamental causes of poverty and income inequality – as well as spurring productivity and economic growth – together with the symptoms after these problems have already manifested themselves. The primary idea is that policy makers need to see the big picture, understand the underlying problems and concentrate on reducing them over the long run, while utilizing the opportunities provided by short-term crises to deal with the deeper longer term problems. A specific example can highlight how this might work.

In the months following Israel's national elections in 2013, it became apparent that the new government faced a huge budget deficit reaching roughly NIS 40 billion. The common Israeli solution to such problems is to increase taxes while implementing across the board cuts in the budgets of the various ministries – with very little reprioritization. It is possible, however, to do things differently.

A case in point involves universal child benefits given to every family, regardless of the parents' income or work status. These benefits have a dual objective – to encourage childbirth and to reduce poverty in disposable incomes. Studies by Cohen, Dehejia, and Romanov (2007) and Toledano, Frish, Zussman, and Gottlieb (2009) show that the impact of the child benefits on fertility has not been evident anywhere except – in varying degrees – among Haredim and Bedouin Arab Israelis, two of the habitually poorest segments of Israeli society. In addition, there is a question regarding their effectiveness as a tool for reducing poverty – not to mention questions regarding their long-term impact.

Child benefits equal NIS 175 or NIS 263 per child each month (the size of the benefit depends on the total number of children in the household) and is provided universally to all families. While this translates into about NIS 6 or NIS 9 (roughly \$1.60 and \$2.40) per day per child, the entire program costs the country NIS 7 billion each year. In

light of the NIS 40 billion deficit that needs to be dealt with, this could be a prime time to rethink the entire child benefit issue.

As suggested in Ben-David (2013), the government could take NIS 2 billion from the NIS 7 billion to help reduce its deficit while redirecting the remaining NIS 5 billion exclusively toward the poorer Israeli neighborhoods and towns in the form of hot lunches in schools whose school days will be lengthened and lunchrooms built. This will mean considerably more money directed toward each child in these areas than would otherwise have reached that child, but it will be in the form of ensuring at least one nutritious meal a day. One additional vital requirement should be made: the schools must be a part of the systemic nationwide education reform outlined in the third policy sphere, and they must provide their pupils with a comprehensive core curriculum in the basic subjects. In this way, Israel will also begin to deal with the long-run issue of inequality in opportunities and incomes. Parents will no longer be able to choose to deprive their children of a basic education – as is currently the case in most Haredi schools – while receiving child benefits from the government that contribute to their ability to choose not to participate in the labor force.

5. Conclusions

Israel has some of the highest rates of market income inequality and poverty in the developed world. While the very wealthiest – the top percentile – in Israel receive a very high share of the country's total income, that share is not particularly large when compared to other developed countries. That said, the ratio of standardized per person incomes between the 90th income percentile and the median income (the 50th percentile) is the highest of all 22 developed countries examined here. The income gap between the median income and the 10th income percentile is even larger – and here too, it is the highest of the 22 countries.

The primary problems are manifested in low market incomes that are due to an underlying lack of necessary skills, education and surrounding conditions of a very large portion of Israeli society. These problems are particularly prevalent in the country's large and growing Haredi and Arab Israeli population groups – but they are by no means confined to these groups.

Israel's redistributive social safety net of welfare and taxes is not nearly as effective as the social safety nets in other developed countries in reducing poverty and inequality in disposable incomes. This is a major problem in general, and its severity is particularly striking in the case of the elderly. Israel's market income poverty rate among the 65 and over population is actually one of the lowest in the developed world and declining (although still very high compared to the general population). However, the disposable income poverty rate for this age group is by far the highest among developed countries. Most of these individuals are beyond the age where working is an option, so they are totally dependent on the system to keep them above the poverty line – and in Israel, this system has failed them more than in any other country.¹¹

Poverty among children has risen in Israel, both in market incomes and in disposable incomes. The severity of the problem and the magnitude of the increase have been much stronger for the entire child population than for the sub-population that excludes Haredim and Arab Israelis. In light of the low levels of human capital and physical capital currently being provided for these two groups, it is hard to see how the policies being enacted today will reduce this problem in the future when these children grow up and their share of the adult population will reflect existing proportions of the young population.

While the poverty and inequality problems are most severe with the inclusion of Haredim and Arab Israelis, it would be far too simplistic – and erroneous – to conclude that their existence in the rest of the

¹¹ Recent attempts at implementing a mandatory pension system are intended to allay this problem in the future, but are not relevant for those who have already reached retirement age.

population is minimal. It is not. Even without Haredim and Arab Israelis in the sample, Israel's rates of poverty and inequality in disposable incomes are very high in comparison with the developed world. So high, in fact, that a systemic reordering of Israel's national priorities needs to be considered and implemented. The key problems underlying Israel's severe poverty and inequality rates are the same human capital and physical capital problems underlying the country's very low levels of productivity, despite its international recognition as a "Start-Up Nation" – levels that have been rising more slowly than in the leading G7 countries since the 1970s.

Such a comprehensive set of policy priorities is suggested here. The primary theme underlying the proposed program is the tight relationship between its various aspects. Incentives to work are insufficient if the tools and conditions are missing. A good education in the periphery without a good transportation infrastructure will lead to a brain drain from these areas instead of a brain gain. Longer school days in a system that provides one of the worst educations in the developed world will be no more than an expensive babysitting service unless it is reformed to become an opportunity to provide children the skills to overcome what they may not be getting from home.

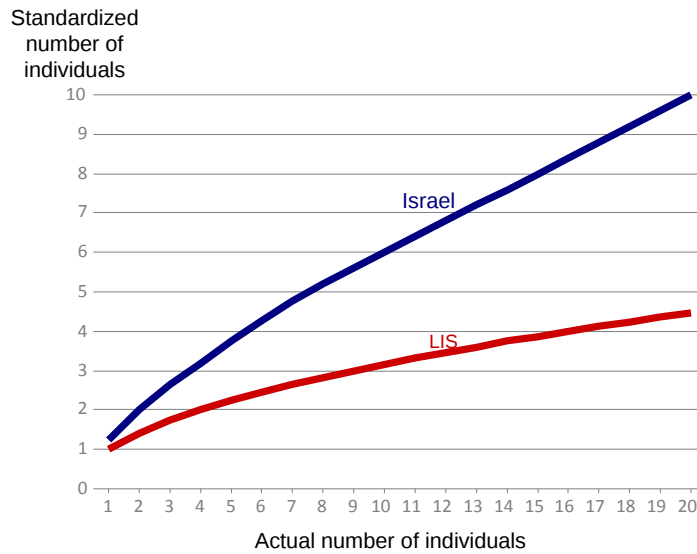
Israel is situated on socioeconomic trajectories that are not sustainable in the long run. Given the kind of neighborhood that Israel is located in, this predicament has major national security ramifications in the future. As the country's population grows and its internal distribution becomes increasingly weighted towards those who are not receiving the skills and conditions to work in a modern economy, the ability to democratically implement a program of the type outlined here will decline precipitously, with all that this implies for the future of Israel, unless comprehensive reforms are implemented while the window of opportunity is still open.

Appendix

Appendix Figure 1

Weights used for standardizing the number of individuals in households

LIS* weights versus National Insurance Institute weights

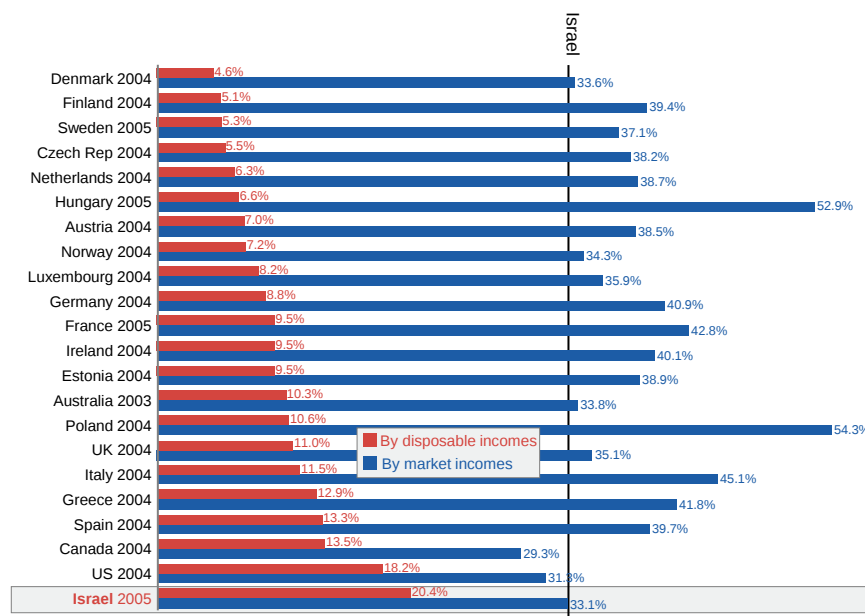


* Luxembourg Income Study.

Source: Dan Ben-David, Taub Center for Social Policy Studies in Israel

Data: LIS, National Insurance Institute

Appendix Figure 2
Percent of households under the poverty line*
 22 OECD countries, mid-2000s



* Calculations according to National Insurance Institute method.
 Israel includes East Jerusalem.

Source: Dan Ben-David and Haim Bleikh, Taub Center

Data: Luxembourg Income Study

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Israel's Economy

The Macro Perspective

Eran Yashiv^{*}

Abstract

This chapter surveys macroeconomic developments in Israel during the course of 2012, and discusses developments in the government budget over time and in comparison with the United States.

Data for 2012 and early 2013 point to a reasonable level of growth in GDP¹, a stable unemployment rate, and a continued increase in investment; all the while inflation remains low. Israeli macroeconomic activity continued to be in the shadow of the global slowdown. The government deficit grew, in particular due to a decline in tax revenues.

An analysis of fiscal policy over time indicates that while Israel is not, at present, deviating from its behavior of the past 20 years, it could potentially find itself treading a dangerous fiscal path. At the same time, it is difficult to see how the Israeli government will attain the one-percent-of-GDP deficit target that has long been on the agenda of policy makers. This chapter calls attention to several problematic aspects of the government budget management and presents ideas for reform.

^{*} Prof. Eran Yashiv, Chair, Taub Center Economics Policy Program; Associate Professor, The Eitan Berglas School of Economics and Chair, Department of Public Policy, Tel Aviv University; Research Fellow, CEPR, London.

I am grateful to Daniel Premisler for his extensive help in gathering and analyzing the data.

¹ In September 2013, after the completion of this chapter, the method for calculating GDP was changed. Note that all calculations in this chapter are based on the old method.

Israel ended 2012 with reasonable macroeconomic performance. Real economic activity was steady, and there was a decline in inflation. The worsening fiscal deficit cast a menacing shadow at year's end, as did uncertainty regarding future policy scenarios, particularly in light of the elections that took place on January 22, 2013.

Section 1 deals with economic developments in 2012. Section 2 discusses fiscal developments, and seeks to assess the government budget from an inter-temporal perspective and in comparison with the U.S. economy.

1. Current Developments in Israel's Economy

It should be remembered that the Israeli economy is highly open to international trade, both in terms of goods and services and in terms of financial capital. The on-going recession in many countries has, accordingly, had an impact on Israel's economy.

Real Economic Activity

Figures 1 and 2 indicate that in 2012 Israel's aggregate gross domestic product (GDP) and business sector (non-government) GDP grew by 3.1 percent, while per capita GDP rose by 1.2 percent (not shown). This constituted a decline compared with 2010 and 2011 growth rates. The decline was expected, and was largely caused by the global slowdown. During the final quarter of 2012, GDP growth slowed further to an annual rate of 2.4 percent due, among other things, to Operation Pillar of Defense.

Figure 1

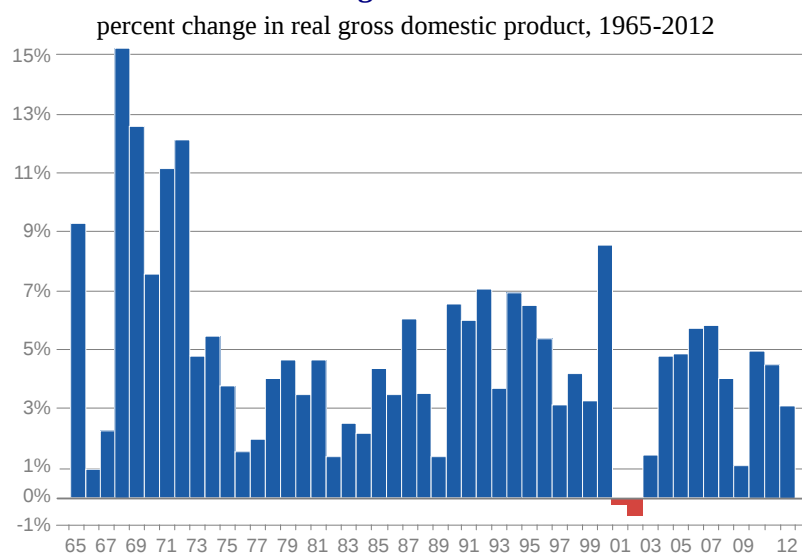
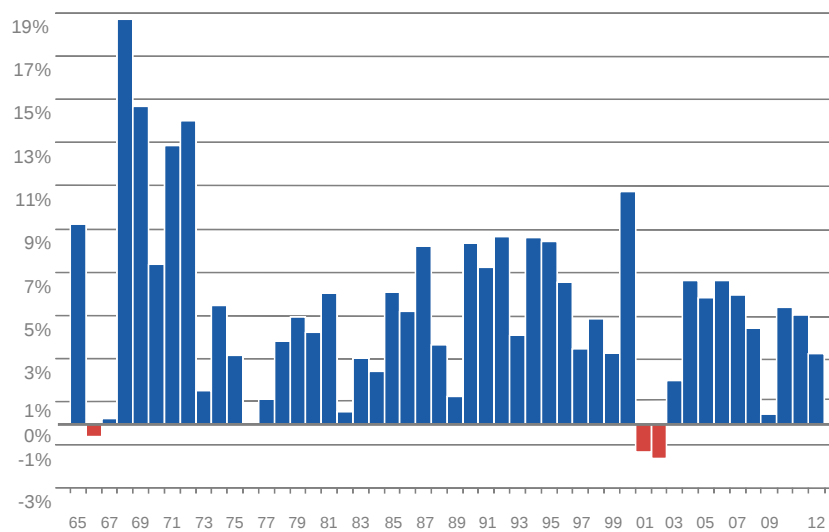
Annual growth in GDP

Figure 2

Annual growth in business sector output

percent change in real business sector output, 1965-2012

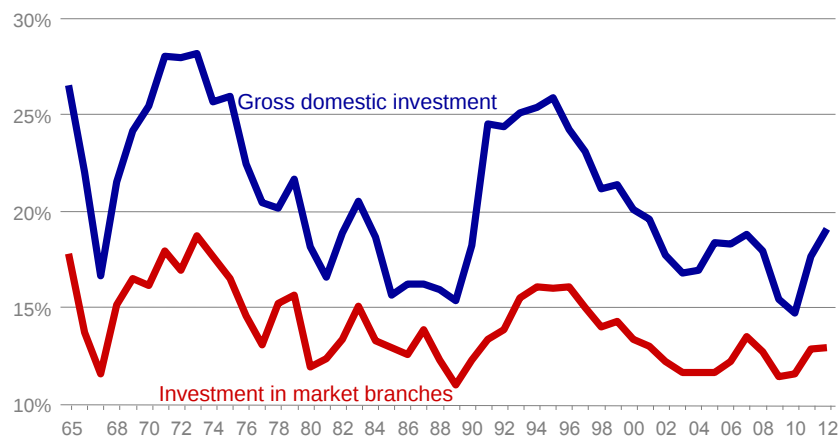


Source for both: Eran Yashiv and Daniel Premisler, Taub Center

Data for both: Central Bureau of Statistics, Bank of Israel calculations

Gross domestic investment, reflecting capital purchases (equipment, machinery, buildings, etc.) and investment in construction, is shown in Figure 3A. Investment has declined over the years, from 28 percent of GDP in the early 1970s to less than 20 percent in the early 2000s; however, data for the past year indicate a rise to 19 percent of GDP, continuing the rise observed in 2010 and 2011. Investment in market branches was stable in 2012 at a level of 13 percent of GDP, similar to the aggregate level of the past three decades. It is worth noting that this level is relatively low, particularly in light of the economy's infrastructure needs. Figure 3B shows Israel's relatively low standing within the OECD countries in terms of gross domestic investment.

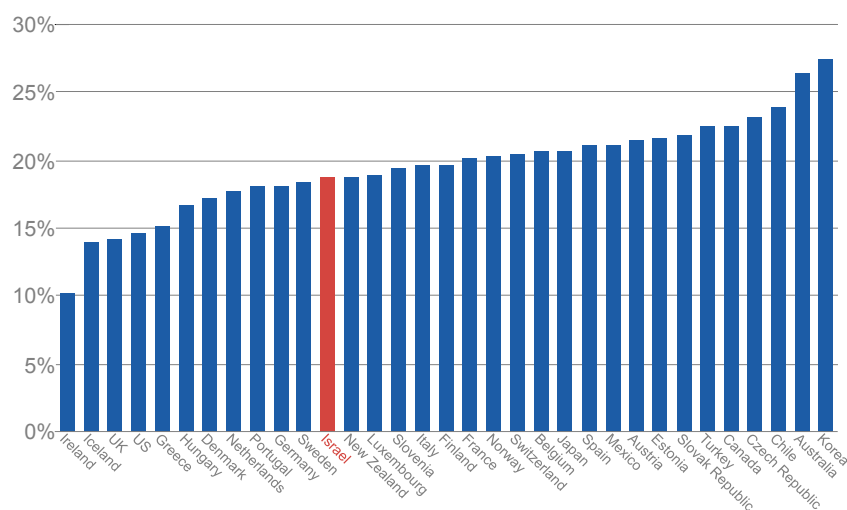
Figure 3A
Gross domestic investment
 as percent of GDP, 1965-2012



Source: Eran Yashiv and Daniel Premisler, Taub Center

Data: Central Bureau of Statistics

Figure 3B
Gross domestic investment in the OECD countries
 as percent of GDP, 2011

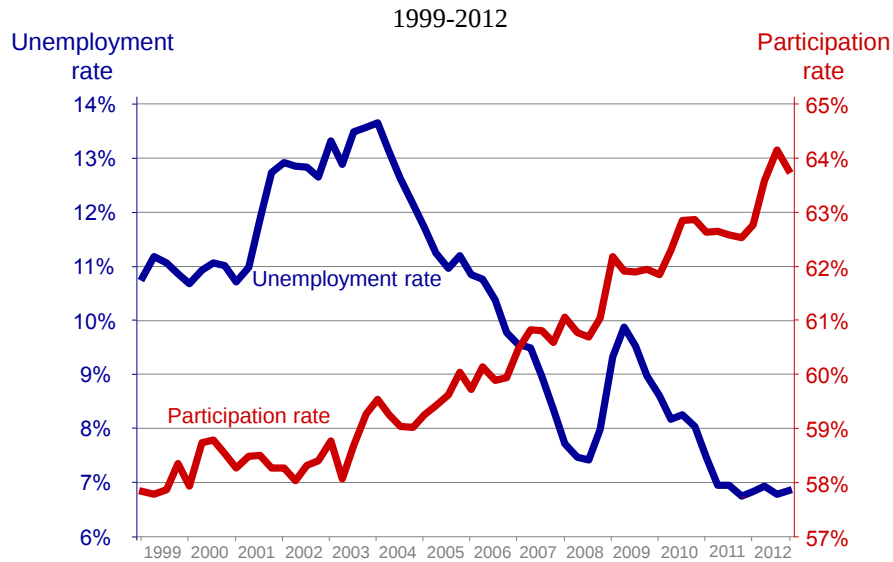


Source: Eran Yashiv and Daniel Premisler, Taub Center

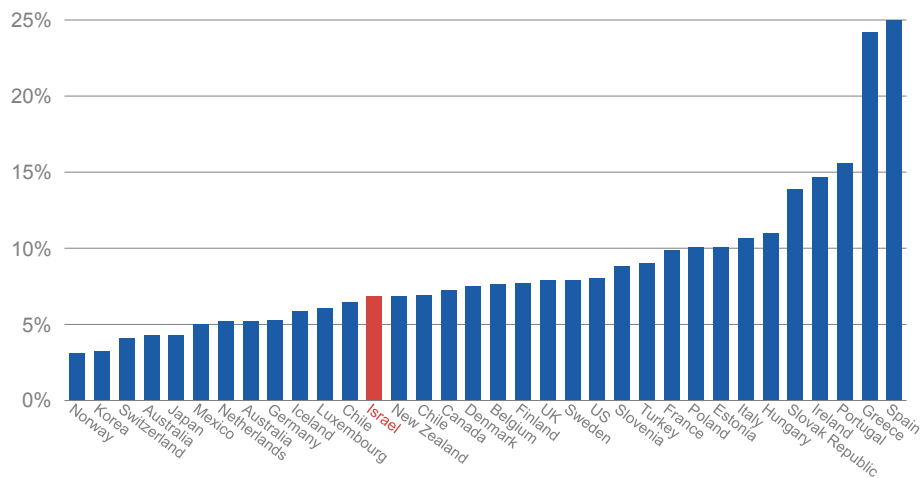
Data: OECD

In the labor market, unemployment and labor market participation rates remain stable, as shown in Figure 4A. Israel's unemployment rate remains relatively low compared with the rates of other countries, as shown in Figure 4B. Many European countries, as well as the United States, still have unemployment rates in the 8-9 percent range and even beyond, in the wake of the global crisis. In 2012, a rise in the average real wage in Israel – 1.2 percent – was also noted.

Figure 4

A. Rates of unemployment and labor force participation**B. Unemployment rates**

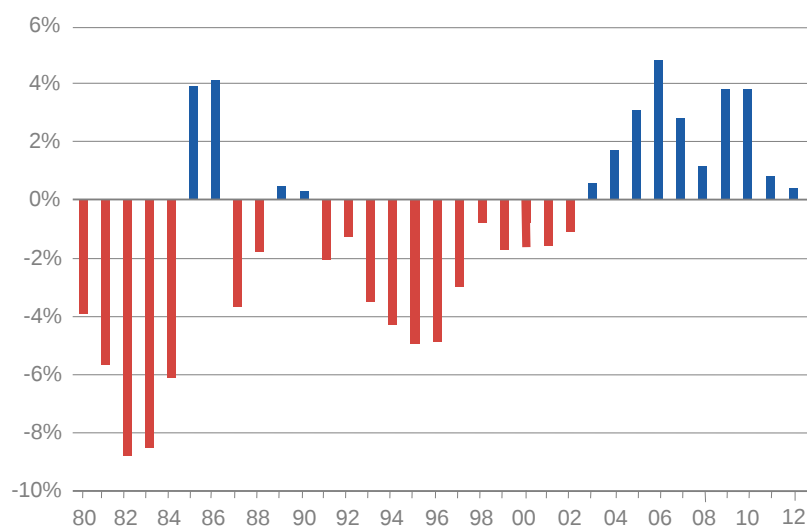
OECD countries, 2012

**Source for both:** Eran Yashiv and Daniel Premisler, Taub Center**Data for both:** Central Bureau of Statistics, Bank of Israel calculations, OECD

Foreign Trade

The current account represents the total value of exports minus the total value of imports, plus foreign transfers to Israel (e.g., U.S. foreign aid). Thus it represents the extent of Israel's foreign trade. Deficits and surpluses in the account generate the changes in Israel's total debts and assets vis-à-vis foreign economies. As shown in Figure 5, an improvement over recent years in the current account, as reflected in particularly large surpluses in 2009 and 2010, was followed in 2012 by a lower current account surplus of 0.8 billion dollars. This decline in the current account was due largely to a slowdown in exports, in the context of the continuing global crisis and the appreciation of the shekel, which made Israeli products sold abroad more expensive.

Figure 5
Current account in balance of payments
as percent of GDP, 1980-2012

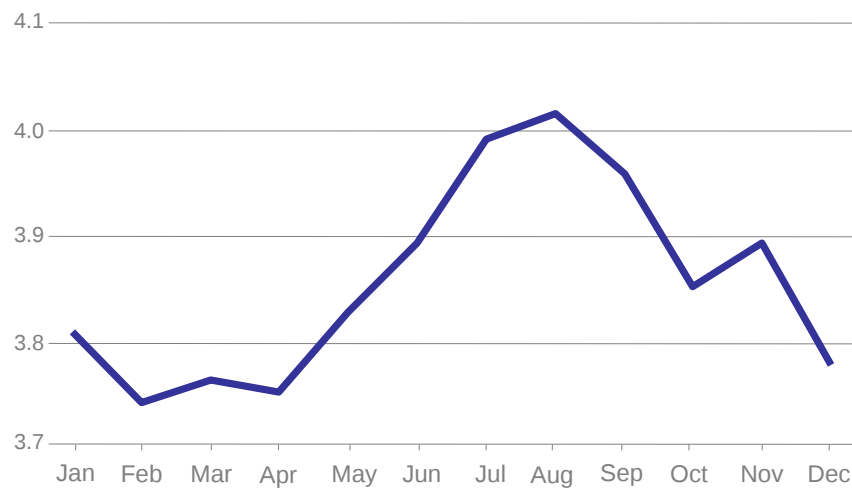


Source: Eran Yashiv and Daniel Premisler, Taub Center

Data: Central Bureau of Statistics, Bank of Israel calculations

Figure 6, which presents the shekel-dollar exchange rate, shows the year split into two halves: the shekel depreciated until summer 2012, at which point the trend reversed itself and the shekel appreciated from NIS 4 to NIS 3.75 to the dollar. These developments were driven by fears of a crisis in the Euro bloc, and concerns in the Israeli geopolitical sphere. During the first half of the year these concerns led shekels to be sold and dollars to be bought, while during the latter part of the year, as the fears subsided, the transactions reversed direction. In 2012 Israel's default risk premium as reflected in the credit default swaps (CDS) market declined, as average risk levels around the world dropped.

Figure 6
Shekel-dollar exchange rate, 2012



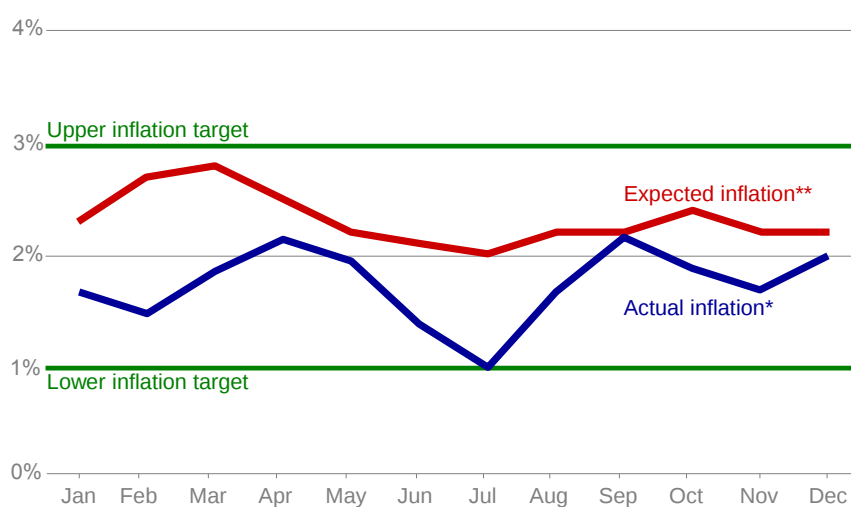
Source: Eran Yashiv and Daniel Premisler, Taub Center

Data: Bank of Israel

Inflation, Interest Rates, and Financial Markets

Israel's inflation rate (Figure 7) was relatively low in 2012. Throughout the year it remained at the lower end of the inflation target range (1 to 3 percent per year), for an annual rate of 1.7 percent. Expected inflation, derived from capital market data, ranged from 2 to 3 percent, and remained within this range in early 2013.

Figure 7
Inflation, 2012



* Inflation rate for the last 12 months (monthly averages)

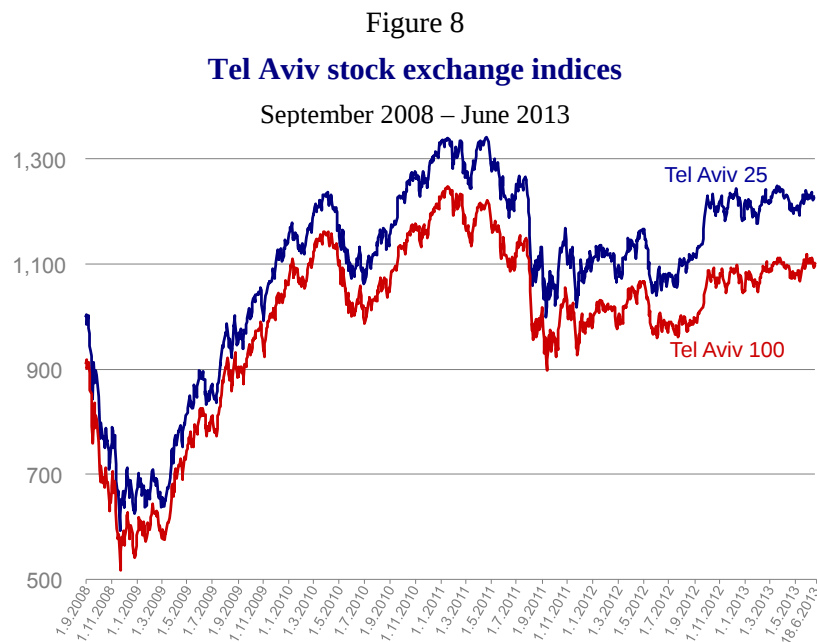
** Expected inflation for the next 12 months (monthly averages)

Source: Eran Yashiv and Daniel Premisler, Taub Center

Data: Central Bureau of Statistics, Bank of Israel calculations

The year 2012 witnessed three interest rate reductions by the Bank of Israel's new Monetary Policy Committee, from 2.75 percent at the end of 2011 to 2 percent. During the first half of 2013, the interest rate was lowered three times, to 1.25 percent. This policy was consistent with the decline in inflation. Major interest rates, the debitory rate and the 5-year SHAHAR (shekel government bond) yield, moved down with the Bank of Israel's interest rate policy.

The decline in inflation, interest rates, and risk levels around the world and in the Israeli economy, as well as the upturn in foreign stock markets, were complemented by increases on the Tel Aviv Stock Exchange. The TA-25 Index rose by 9 percent while the TA-100 Index rose by 7 percent during the course of 2012, as shown in Figure 8.



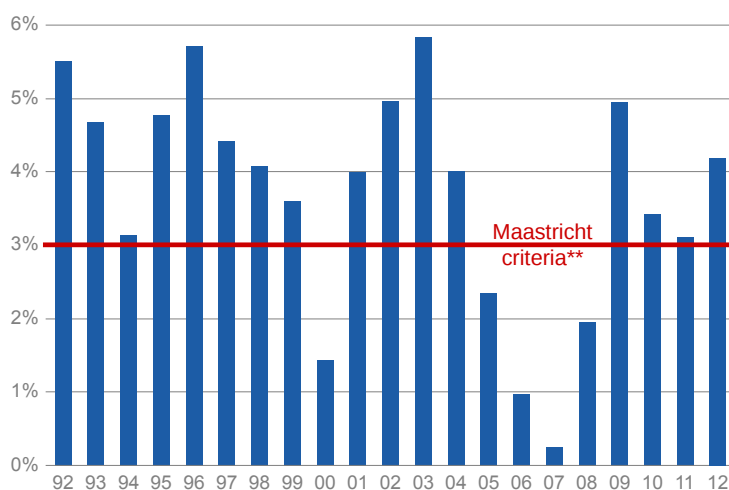
Source: Eran Yashiv and Daniel Premisler, Taub Center

Data: Tel Aviv Stock Exchange

The Government Deficit

Figure 9 shows the development of the government deficit. In 2012, total tax revenues were NIS 2.4 billion lower than forecasted at the beginning of the year and NIS 14 billion lower than the original forecast at the time the budget was approved in late 2010. The outcome was a 2012 deficit that exceeded the deficit target and forecast. Section 2 addresses this issue in depth.

Figure 9
Combined government deficit*
as percent of GDP, 1992-2012



* Combined government deficit includes central government, social security, national institutions, local governments, and public non-profit organization.

** Using the European Union's Maastricht criteria from 1991, the debt is not to exceed 3 percent of GDP. This agreement became accepted worldwide as a reasonable debt ceiling.

Source: Eran Yashiv and Daniel Premisler, Taub Center

Data: Central Bureau of Statistics, Bank of Israel calculations

To complete the current macroeconomic picture, on the positive side, GDP growth was reasonable, as were labor market and investment indicators. Inflation was particularly low, despite the depreciation of the shekel during the first part of the year. On the negative side, one can point to a slowdown in economic activity toward the year's end, the emergence of a current account deficit, and a budget deficit increase due to a drop in tax revenues in the wake of the slowdown.

2. Fiscal Policy

The government budget deficit rose to the top of the public agenda at the end of 2012, in the context of the call for early elections. The “fiscal hole” received widespread attention, from Bank of Israel reports to the election campaigns of the various political parties. This topic needs to be addressed with additional perspective and insight.

The first section addresses the deficit from an inter-temporal perspective and discusses the implications of recent developments. The second section compares Israel's fiscal situation with that of the United States, where the budget deficit has also risen to the top of the economic agenda. The final section several proposals are made for fiscal policy reform, in light of the discussions in the two previous sections.

Spotlight: Israel's Reduction of Deficit Law*

The Reduction of Deficit Law (1992), and its subsequent versions, determines the target size of the budget deficit. The target deficit, along with predicted revenues from taxes and other sources (royalties, Bank of Israel, and National Insurance Institute profits), determine the scope of permitted expenditure in the following year's budget. The 1992 Law specified the size of the government domestic deficit, excluding credit granted (the domestic deficit), as a percentage of GDP for each year. In 1996 the Law was changed to specify that, starting in 1997, the target would apply to the entire government budget deficit (excluding credit granted).

Public debt is composed of government budget deficits along with the deficits of local authorities, national institutions, or other public entities. Although the desire for public debt reduction was one of the main motivating factors behind the enactment of the Reduction of Deficit Law, The Law applies only to government budget and not to the public sector budget as a whole.

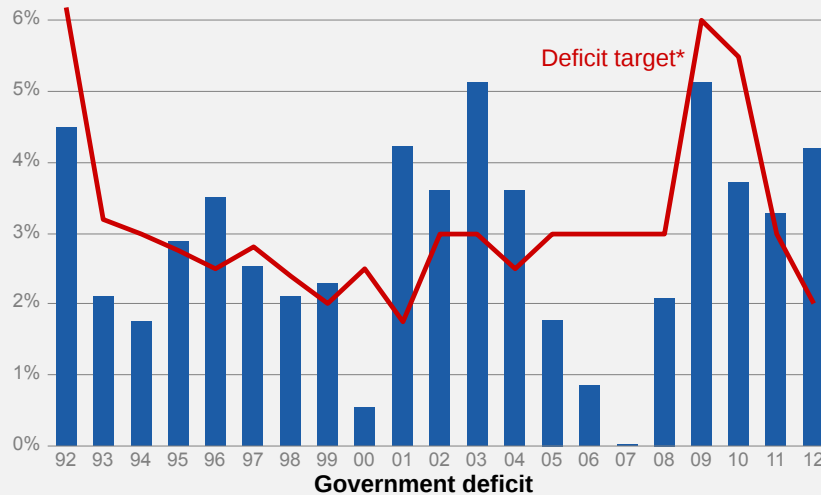
Figure 10 presents the deficit targets and actual deficits of the last 20 years. The figure shows the variation in the deficit target over time, and the gaps between target and actual performance, as discussed in the text.

(continued on next page)

* For more on this subject see Dar (2000) on which this section is based.

(continued from previous page)

Figure 10
Government deficits compared to official deficit targets
 as percent of GDP, 1992-2012



* According to the Reduction of Deficit and Limitation on Public Spending Law (1992) and various amendments

Source: Eran Yashiv and Daniel Premisler, Taub Center

Data: State Comptroller's Reports, Ministry of Finance

Israel's Fiscal Deficit Over Time

Figure 9 above shows the development of the total government deficit over the past 20 years. For five of those years the deficit was lower than the well-known Maastricht criterion of 3 percent of GDP. For all of the

remaining years the deficit ranged from 3.12 to 5.83 percent, with an average of 3.7 percent over the cited 1992-2012 period. The 2012 deficit was 4.2 percent of GDP, putting it near the average.

Over the course of these years, the fiscal rules guiding the Ministry of Finance changed several times. The deficit target changed, as did the spending rules. In particular, the deficit target – presented in Figure 10 – changed 13 times during the period in question.² For example, in 2009 the deficit target was on a declining trajectory, with the aim of reaching 1 percent of GDP in 2014; in 2012, a more moderate decline was established, with the target of 1 percent of GDP deferred until 2019.

In this context, two questions can and should be asked:

1. What happened to the government deficit before 1992, and why should fiscal developments be examined from that year on?
2. How did the government debt to GDP ratio behave in the years in question?

In answer to the first question, it should be recalled that the early 1990s witnessed the end of a period of significant declines in spending and taxes as a percentage of GDP, in the wake of the 1985 Israel Economic Stabilization Plan and the policies associated with it. It is worth noting that, prior to the Economic Stabilization Plan, government spending amounted to around 70 percent of GDP.

Regarding the debt-to-GDP ratio, it declined subsequent to the 1985 policy change, from 200 percent of GDP to half of that figure in the early 1990s. Since that time, debt has continued to decline more moderately, reaching 75 percent of GDP in recent years.

These developments indicate that Israel generally conforms to the Maastricht deficit criterion. Although it frequently deviates from the criterion, these deviations are generally not large. However, Israel is having trouble reaching the Ministry of Finance's deficit target of 1 percent of GDP. Counter-cyclical policy is also in evidence: during the

² For details, see Brender (2008)

crisis years of 2001-2003, and again in 2008-2010, the deficit grew; while during the rapid-growth years of 2005-2007, it was relatively low. Most of these counter-cyclical changes can be attributed to tax revenue changes resulting from slowdowns and expansions of economic activity, rather than to deliberate policy.

In a February 2013 publication³, the Bank of Israel set forth a deficit forecast for the coming years. The Bank emphasized that tax receipts had fallen below original projections, and that commitments to future expenditures were relatively high. The Bank predicted an increase in the share of government expenditures in GDP – from slightly more than 43 percent of GDP to nearly 47 percent of GDP by the end of the decade (2020). Based on plans adopted by the government and on the tax rates stipulated by existing legislation, the deficit is thus expected to rise from around 4 percent of GDP to 7 percent of GDP by the end of the decade. It should be noted that Israel reached similar deficit levels in 2002-2003.

³ Bank of Israel, 2013

Spotlight: The Impact of Demography

Beyond the spending commitments that the government has already undertaken and a decline in tax revenues due to the economic slowdown – factors that have produced a problematic deficit scenario – attention should be paid to more fundamental developments. The Central Bureau of Statistics' demographic forecasts indicate a decline in the population growth rate of the labor market's most productive age group – 25 to 64. This group's growth rate is expected to decline from 2.5 percent per year at the start of the 21st century to less than 1.5 percent per year by mid-century. Accordingly, the proportion of the elderly – ages 65 and over – within the general population will rise: from 10 percent at the start of the century to over 16 percent by mid-century.⁴

At the same time, a decline is anticipated in the non-Haredi (ultra-Orthodox) Jewish sector's share of the population – the sector that is currently most productive. This sector will decline from nearly 70 percent to 50 percent of the population over the first half of the 21st century, and is expected to reach even lower levels.

These demographic changes will lead to a growing burden on the budget if they are not accompanied by altered employment patterns among the elderly and/or within the Haredi and Arab Israeli sectors. Current employment patterns are expected to cause lower tax revenues and higher healthcare expenditures (for the elderly) and transfer payments (including welfare payments) to the country's poorer groups.

⁴ Ben Moshe (2011)

At this point in time, Israel does not appear to be deviating from its behavior of the past 20 years, but it could potentially find itself in a dangerous fiscal scenario. At the same time, it is difficult to see how the Israeli government might attain the deficit target of 1 percent of GDP that has for so long been on the policymakers agenda.

The key question is how Israel's fiscal policy might be managed so as to avoid the slippery slope. A comparison with fiscal developments in the United States will be of use in answering this question.

Lessons from the Fiscal Situation in the United States

An intense fiscal policy debate is currently taking place in the United States. On one side of the debate are the President and the Senate Democratic majority, and on the other, the Republican Congressional majority. The former are seeking to raise taxes, particularly for the wealthy, and to limit spending reforms, particularly in the area of long-term welfare and health spending. The latter want to cut spending, especially welfare spending, and reduce taxes, especially for the wealthy. This debate has led to a number of bitter clashes, particularly with regard to raising the public debt ceiling, approving the budget, and allowing (previously enacted) tax cuts and other "fiscal deadlines" to expire.

Several developments that have emerged in recent years are worthy of note:

- The budget deficit, having exceeded 10 percent of GDP in 2009, will be slightly over 5 percent of GDP in 2013, and is expected to range between 3 and 4 percent of GDP per year over the coming decade.
- The two sides have managed to agree on some issues and have had to contend with the results of disagreement on other issues – sequestration and the October 2013 government shutdowns being the most prominent.

- Throughout the fiscal crisis, and particularly since the credit rating agency Standard & Poor's downgraded the U.S. federal government credit rating in August 2011, U.S. Treasury bond yields have been at a historic low. For example, 10-year bond rates have been trading for a considerable period at levels of 2 percent per year (1.62 percent in the second quarter of 2012), while 30-year bonds have stood at 3 percent (2.7 percent in the second quarter of 2012).

The United States fiscal debate and the aforementioned developments should be seen against the background of the economic crisis that erupted in full force in September 2008 and brought "The Great Recession" in its wake; they should also be viewed in the context of forecasts for a continued rise in healthcare expenditures as a percentage of GDP. These developments drove policy in different directions: the Great Recession and the financial crisis led to a rise in government expenditures via the implementation of a major fiscal stimulus program in early 2009. The recession led to a decline in tax revenues and to an additional increase in the deficit and the government debt. As a result, concerns regarding excessively large deficit and debt increases and the forecasted rise in health spending have been driving fiscal restraint policies.

What useful lessons can be learned from this experience for Israeli policy? One conclusion that can be drawn is that Israel, like the U.S., is characterized by a notable lack of consensus in the fiscal sphere. Disagreement prevails, among other things, on such issues as the extent of expenditure, the tax mix and the desired deficit size. The United States also faces long-term dilemmas, in addition to current issues and the impact of the great economic crisis on fiscal policy formulation.

Another conclusion is that a fiscal dispute of this nature can have negative effects on the economy, as in the S&P credit rating downgrade. Nevertheless, the S&P downgrade did not stop the fall in yields on U.S. government debt.

Yet another important lesson to be learned relates to the practice of fiscal discussion. The impassioned fiscal dispute in the United States took place from the perspective of a decade in advance and a major

deficit reduction was achieved, albeit circuitously. In the U.S., both the political parties and the fiscal planning bodies discuss budget policy by taking long-term problems into account.

Proposals for Improving Israeli Fiscal Policy

This discussion highlights several problematic aspects of Israeli budget management. Here are some ideas for change in this area.

A multi-year core budget, with a single-year “envelope”

The Israeli budget process is conspicuously lacking in planning and fails to set long-term goals. This makes it difficult for the Israeli government to meet its own set deficit targets, which are then repeatedly modified. Nor is there a planning entity, either within the Ministry of Finance or outside it, that is capable of providing reliable forecasts – for example, with regard to tax revenue scenarios – or of formulating long-term policy. By contrast, the United States has created such planning bodies (the Congressional Budget Office and the Office of Management and Budget) that create plans for decade-long periods.

It would be desirable for intelligent budget planning spanning 10-year periods to be practiced in Israel as well. One example of such planning – though its execution is incomplete – is the Brodet Committee defense budget path. In 2007, the Brodet Committee formulated a 10-year budget path for the Ministry of Defense. Fiscal planning approaches similar to the Brodet framework could be introduced in the areas of education, health, welfare, infrastructure and more.

In order to retain active policy management capabilities, especially the ability to formulate counter-cyclical policy, these long-term planning frameworks could be defined as “core budgets,” while the overall “envelope” or encasing structure would be annual and flexible. The total budget would consist of the core budget and the envelope, with the latter enabling the budget to be adjusted in accordance with current developments.

Planning and forecasting bodies

Two notable features of the Israeli budget-formulation process could be improved through the creation of appropriate entities within the Ministry of Finance. One is the repeated failure to predict tax revenues; the other is the lack of planning on a longer basis than one to two years. Western countries have agencies whose role is to analyze the composition of the budget, propose alternatives to the expenditure and tax mix, conduct cost-benefit analyses of different alternatives, implement a “tax revenue model,” produce projections of spending and tax scenarios, and make it possible to engage in long-term budget planning. Bodies of this kind can be found within the U.S. Congress and the White House; in the U.K. they exist within the Ministry of Finance and in research institutes. Israel has no significant agencies either within or outside the Ministry of Finance that are capable of providing data, estimates, or forecasts of this nature or of the required scope. A first step in this direction could be the establishment of such an entity in the Ministry of Finance.

Creating a fiscal council

The aforementioned proposals relate to budget management and aim to foster intelligent long-term planning. The question is how to give actual substance to the planning possibilities. In recent years, and especially since the 2011 social protests, there has been fierce debate in Israel over budget priorities.

A fiscal council would make it easier to set fiscal policy priorities. Such entities exist in several Western countries and are composed of experts – from academia and elsewhere – with experience in fiscal policy (e.g., past and present Ministry of Finance and National Economic Council staff). A professional body of this kind could present the Minister of Finance and the Israeli government with budget policy options. The advantage of a fiscal council would be its professionalism and its ability to draw on the expertise of the aforementioned planning bodies when formulating budget strategies

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Labor Productivity in Israel

Dan Ben-David*

Abstract

Israel's economic growth over the past several decades reflects a unique – and unsustainable – blend of factors. The country is one of the developed world's leaders in innovation, a central component in the productivity growth that drives economic growth. However, its productivity is among the lowest in the developed world, and has been falling further and further behind other leading countries since the 1970s. This chapter focuses on some of common factors underlying Israel's low productivity and provides a sector by sector comparison of productivity, capital formation, and wages across countries.

Economic growth is driven by productivity growth, and productivity growth is dependent on innovation. As a country that is home to some of the world's top academic institutions (Kirsh, 2010), with more patents relative to country size – as measured by GDP – than the G7¹ country average (Ben-David, 2012) and one of the leading medical, bio-tech and high tech sectors internationally, Israel has been labeled “the Start-Up Nation” (Senor and Singer, 2011). The country has been the

* Prof. Dan Ben-David, Executive Director, Taub Center; Department of Public Policy, Tel Aviv University; Research Fellow, CEPR, London.

I would like to thank Haim Bleikh, Ayal Kimhi, Daniel Premisler, and Kyrill Shraberman for their valuable comments and suggestions.

¹ The G7 countries are the United States, Canada, the United Kingdom, France, Germany, Italy, and Japan.

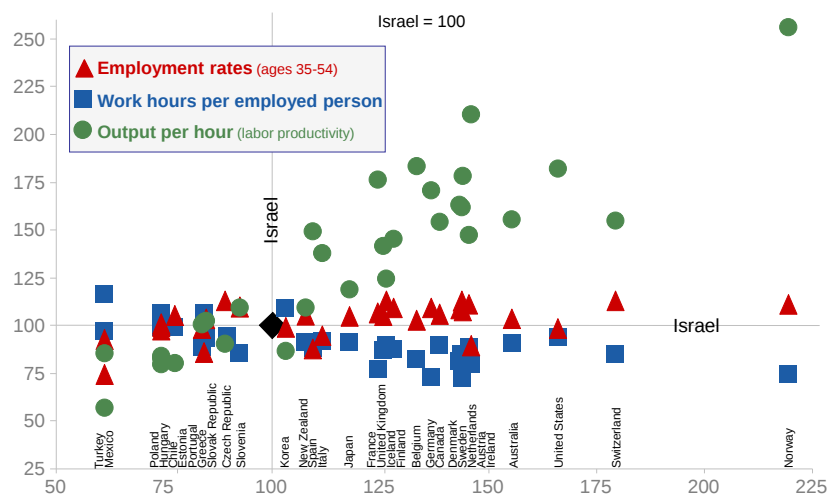
recipient of venture capital at a level higher than that of any other OECD country relative to GDP, together with large increases in foreign direct investments between 1990 and the onset of the recent world-wide recession (Ben-David, 2012).

1. Productivity, Employment, and Living Standards: An International Comparison

While innovation is a necessary condition for productivity growth, it is not a sufficient condition. The importance of labor productivity, as measured by GDP per hour worked, can be seen in Figure 1, which compares 2012 living standards in all of the OECD countries with some of the primary determinants of these living standards. In all of these comparisons, Israel is the base country in the graph (i.e., Israel = 100). The horizontal axis depicts GDP per capita – reflecting national living standards – in each of the countries relative to Israel. As can be seen in the figure, the majority of OECD countries have higher levels of income than Israel. The vertical axis measures three different GDP determinants.

Rates of employment among prime working age adults aged 35-54 are higher in nearly all of the countries than in Israel. On the other hand, the number of hours worked per employed person in the large majority of these countries is lower than in Israel. Neither one of these measures appears to be directly related to the level of GDP per capita. The relationship between the third determinant, labor productivity, and GDP per capita is readily visible in the figure. The higher the labor productivity, the higher GDP per person tends to be. In a sense, the evidence in Figure 1 suggests that when a greater share of the population is employed and when labor productivity is higher, then each employed person can work fewer hours while average living standards in the country will nonetheless be higher.

Figure 1
Living standards and the labor force, 2012
 32 OECD countries relative to Israel



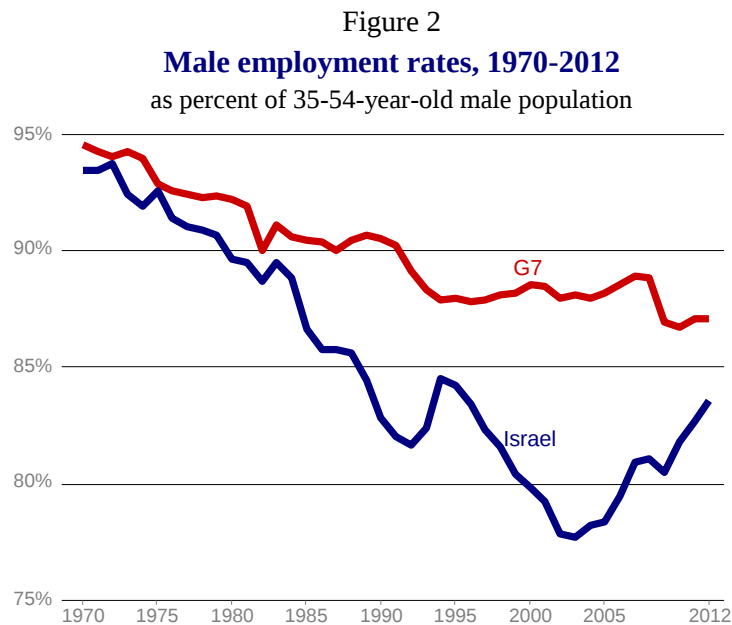
Source: Dan Ben-David, 2003b (updated)

Data: OECD

Little has changed with regard to Israel's relative position in terms of employment, hours, and productivity since 1997, as can be seen in a similar graph in earlier work by Ben-David (2003b). In the area of productivity, Israel has been – and continues to be – facing a major problem.

2. *Employment and Productivity: The Long-Run Comparative Picture*

Though Israel has been emerging from a severe recession that began at the beginning of the last decade – with rising rates of employment among its prime working age men as a result of this emergence – the overall, multi-decade, negative trend in Israeli male employment has been steeper than in the G7 countries (Figure 2).



Source: Dan Ben-David and Eitan Regev, Taub Center

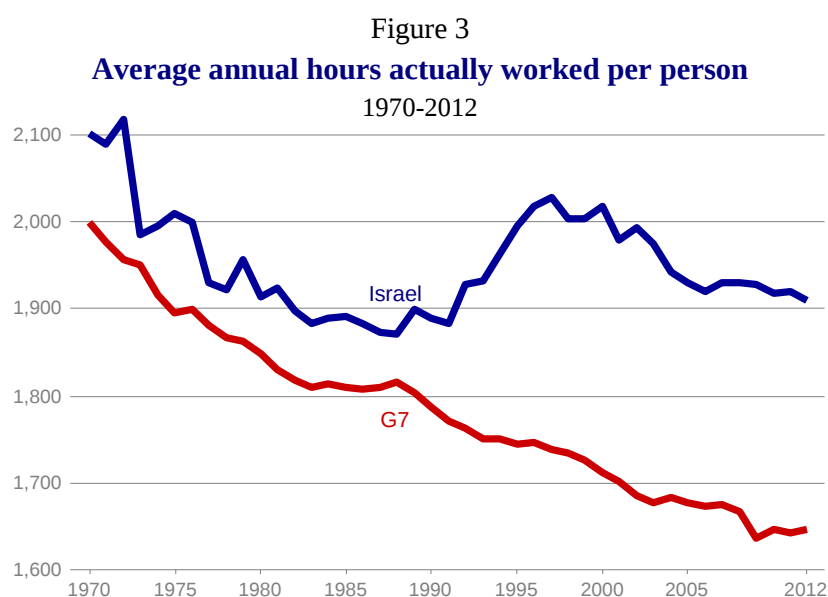
Data: Central Bureau of Statistics, OECD

Consequently, even though the G7 countries have not yet emerged from their deepest recession since the 1930s, the employment gap between the G7 and Israel has grown to 3.5 percentage points.² This

² Israel's Central Bureau of Statistics (CBS) substantially improved its labor force surveys in 2012, picking up a large number of labor force participants

contrasts with the nearly identical employment rates in the G7 and in Israel in the 1970s, nearly four decades ago.

A look at hours worked in Israel and in the G7 (Figure 3) provides further insight into changes in relative work habits since 1970. The number of annual hours worked per person in Israel and the G7 fell until the mid-1970s. Since then, the number of hours worked has continued to fall in the G7, while rising sharply in Israel during the 1990s and then declining. Following the fluctuations of the past several decades, the number of annual hours worked in 2012 roughly equaled the number of hours worked over three decades earlier, in 1980.



Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: Central Bureau of Statistics, OECD

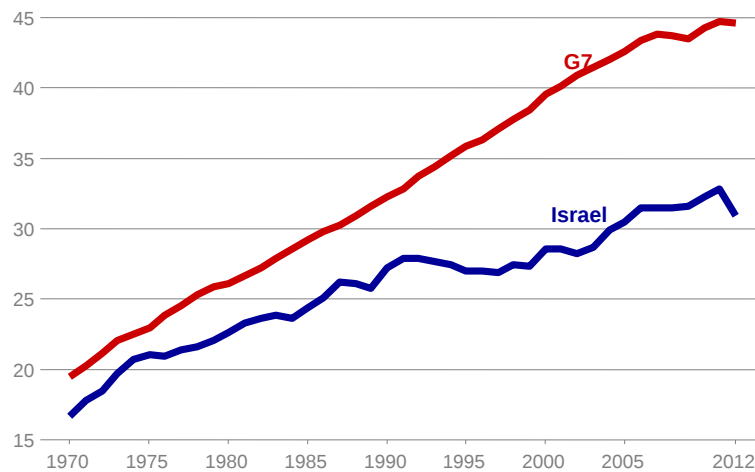
that had been unaccounted for in the past (Cohen, Burck, and Makovsky, 2013). Until the CBS publishes comparative data between the old methodology and the new one, it is not possible to know how much of the 2012 increase in employment is due to actual changes in employment and not simply reflecting improvements in survey methodologies.

In addition to the rising – over the long run – gaps in male employment and hours worked between Israel and the G7, and despite Israel's proven innovative abilities, the country's labor productivity is among the lowest in the OECD, as is evident in Figure 1. Here too, a gap has been developing over the past several decades. Israel's labor productivity has been rising at a slower pace than the increase in average labor productivity in the G7 countries for close to four decades (Figure 4) – with all of the attendant economic growth implications of falling further and further behind in relative terms.³

Figure 4

Labor productivity, 1970-2012

GDP per work-hour in 2005 PPP-adjusted dollars



Source: Dan Ben-David, *State of the Nation Report 2009*, Taub Center (updated)

Data: Central Bureau of Statistics, Bank of Israel, OECD

³ The fall in 2012 productivity is probably not reflective of an actual sharp decline in productivity but is more likely due to the higher employment numbers that year resulting from more accurate labor force survey methods implemented in 2012.

3. Some Common Factors Underlying Israel's Low Productivity

The productivity problem is widespread in Israel, as will be shown below, and while there are undoubtedly factors that are idiosyncratic to different business sectors that influence this outcome, there are also a number of economy-wide issues that are related.⁴ The problematic level of the country's human and physical capital infrastructures has been documented in Ben-David (e.g., 2003 and 2012). For example, the achievements of Israeli children in core curriculum subjects (such as mathematics, science, and reading) on international exams have been consistently below each of 25 relevant OECD countries since the late 1990s (and it is possible that this has been the case for quite a bit before then as well, though no representative national samples exist prior to 1999). This is compounded by the fact that even these exams do not include ultra-Orthodox boys, and many of the ultra-Orthodox girls, who do not study core educational material at all and today comprise 20 percent of Israel's primary school pupils.⁵ The education provided to

⁴ The fact that the share of Israel's shadow economy is one of the highest in the developed world (see Ben-David, 2011) means that there is a considerable amount of unreported economic activity in the country. However, this would presumably be reflected not only in a numerator (GDP) that should be larger, but also in a denominator (hours worked) that would likely be larger as well – so it is not obvious what kind of an effect this would have on productivity. In any event, unless the shadow economy share is changing over time, then this should be reflected primarily as a level effect and should not have much of an impact on the slope of the productivity path over time.

⁵ The recent TIMSS examination in 2011 indicates an 11.4 percent improvement in mathematics achievement since the previous exam was administered in 2007. A total of 4,699 eighth graders participated in the 2011 TIMSS exam. Also in 2011, an annual nationwide mathematics exam called MEITZAV was administered to 44,002 pupils – nearly all of the country's eighth graders. This exam was not given in 2007, so there is no way to compare overall improvement over this period. However, the exam was given in 2008 and there was a 4.4 percent improvement between 2008 and 2011. The MEITZAV exam was given again in 2012 – and the eighth graders' math

Arab Israeli children yields achievements not only below all of the developed countries, but also below many third world countries.

Ultra-Orthodox Jews and Arab Israelis comprise almost half of the country's primary school pupils, and these are not the only children in Israel receiving one of the worst basic educations in the Western world. During the decade between 2000 and 2010, there were enrollment increases of 37 percent in Arab Israeli schools and 57 percent in ultra-Orthodox schools that far exceeded the enrollment growth in the state-religious schools (11 percent) and in the state secular schools (0.3 percent). The current distribution of enrollment levels combined with the changes in enrollment that occurred over the past decade place Israel's overall human capital infrastructure at an increasingly lower relative level than that in other developed countries. Even if a share of the more gifted children continue on to university, the foundation of high-quality human capital that will subsequently be available in the labor market will be far less than the potential.

An influx of large numbers of relatively uneducated and unskilled foreign workers – at one point reaching a high of one out of every eight workers in Israel's business sector – only exacerbates the issue of low human capital in the labor market (Ben-David, 2010). Unlike many Western countries that need a young workforce to supplement their aging societies, Israel has an unusually young population compared to most developed countries. The relatively low skill level of a large portion of this local population eliminates the need for inundating the economy with additional workers from abroad who are similarly poorly educated. Nevertheless, large numbers of foreign workers continue to receive work permits in the country.

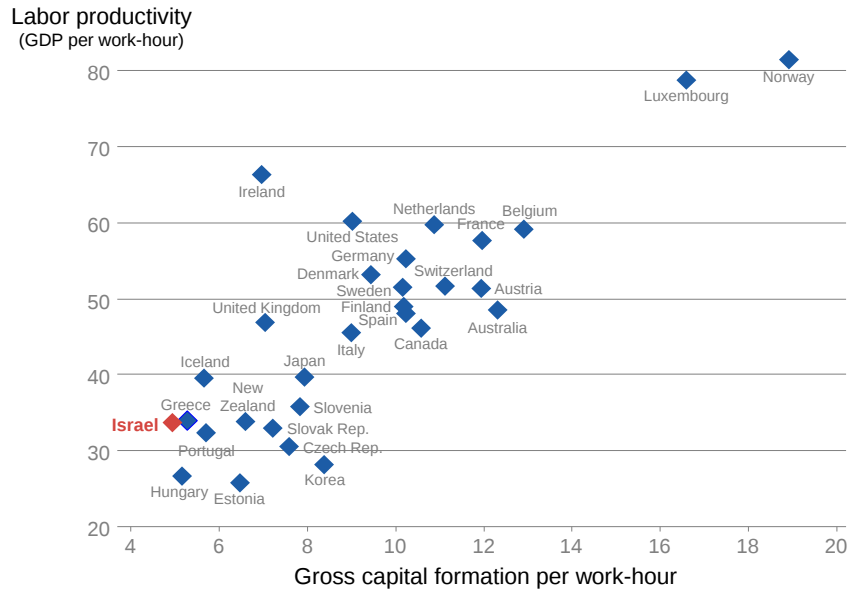
In addition, the country's transportation infrastructure has been neglected for decades. As shown in Ben-David (2012), the congestion on Israel's roads as measured by the number of vehicles per kilometer road

achievements returned to their 2008 levels, leaving a big question mark as to the meaning of the improvement that lasted only until 2011, the year of the TIMSS exam.

is 2.6 times the OECD average. At the same time, the number of vehicles per person is only half the OECD average, giving an indication of how out of balance the transportation infrastructure is with the country's needs. The more congestion on the roads, the more resources – drivers, trucks, etc. – are needed to transport the same products. The use of rail in Israel is even more limited in comparison with developed countries. Insufficient capital investment in roads and rail is a major inhibitor of productivity growth.

The positive relationship between capital formation, in general, and labor productivity is reflected in Figure 5. Israel's capital formation is on the low end of the OECD. So it should come as no surprise that a country with relatively low national levels of physical and human capital is exhibiting problematic productivity growth at the national level. Add to this a very cumbersome governmental bureaucracy and the implication is that even more resources need to be diverted away from actual production of goods and services.

Figure 5
Capital intensity and labor productivity in the OECD
 in 30 OECD countries, current PPP-adjusted dollars, 2011



Source: Dan Ben-David, Taub Center and Tel Aviv University

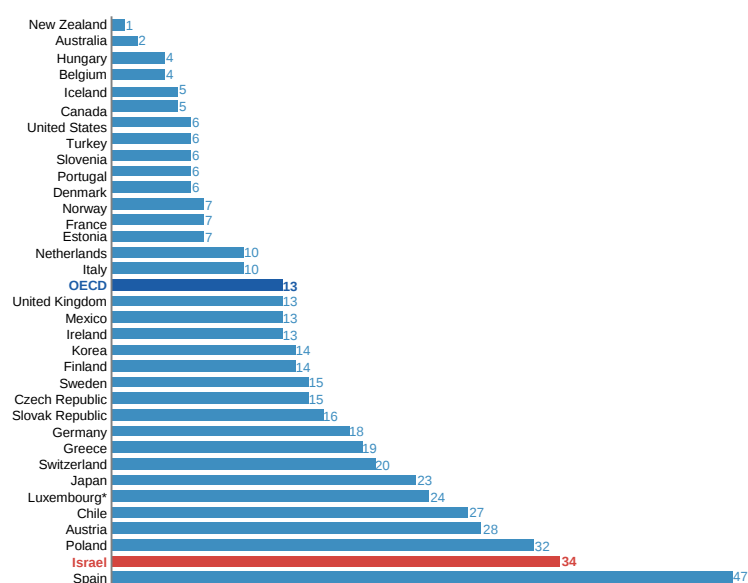
Data: OECD, World Bank

Figure 6 shows that the number of days needed to start a business in Israel (34 days) is the second highest in the OECD, and two and a half times the OECD average of 13 days. The country's small domestic market is concentrated in the hands of too few individuals,⁶ with too

⁶ One of the main recommendations by a recent governmental commission for increasing the economy's competitiveness (2012), led by former Finance Ministry Director-General Haim Shani, was a separation between control of firms focusing on the real side of the economy and firms focusing on its financial side.

much regulation,⁷ and insufficient competition – a crucial factor in spurring physical and human capital investments necessary for productivity growth. All of these factors combine to yield higher domestic prices that reduce the economic viability and attractiveness of Israel's economic environment even more.

Figure 6
Number of days needed to start a business in 2010
in all 34 OECD countries



* Luxembourg data is from 2009

Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: World Bank

⁷ Following the summer protests in 2011, the government's Commission for Economic and Social Change, headed by Prof. Manuel Trajtenberg, recommended a number of changes in government policies regarding regulation and enforcement aimed at increasing the level of competitiveness in the economy and lowering prices.

4. A Sector by Sector Productivity Comparison Across Countries

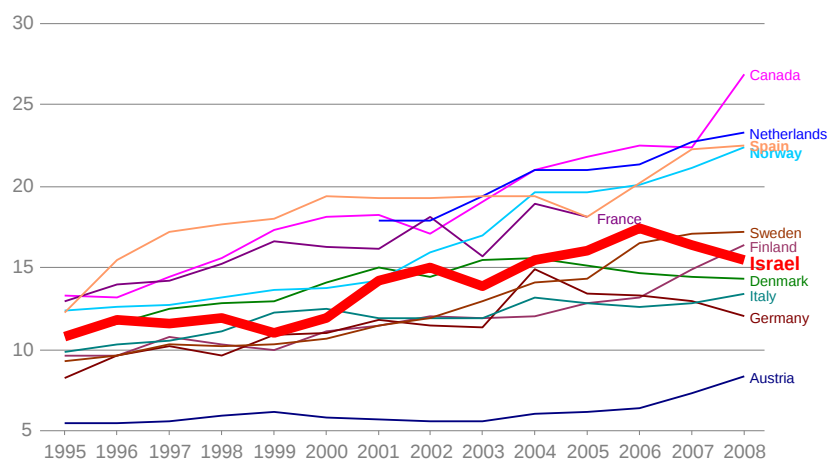
A sector by sector comparison with the OECD countries that have comparable data on labor productivity reveals a similar – and problematic – picture.⁸ In 1995, labor productivity in agriculture (Figure 7, panel A), one of the historical jewels in Israel's crown, was roughly in the middle of the OECD countries. Since then, labor productivity in agriculture has risen, though Israel remained in the middle range of the OECD countries in 2008.

In manufacturing (panel B), which includes high tech as well as more traditional industries, labor productivity was below the OECD countries for nearly all of the years since 1995. By 2008, Israel had exceeded only Italy and remained below the other countries. Labor productivity in financial intermediation, real estate, renting, and other business activities (panel C) went from second to last place in 1995 to being tied for last place in 2008. In the areas of wholesale and retail trade, repairs, transport, hotels and restaurants, Israel's labor productivity was below all of the OECD countries in panel D in 1995, and even further below all of these countries in 2008. In construction, a sector with very large numbers of unskilled foreign workers, labor productivity has been much lower, and remained much lower, than in the OECD countries appearing in panel E since 1995.

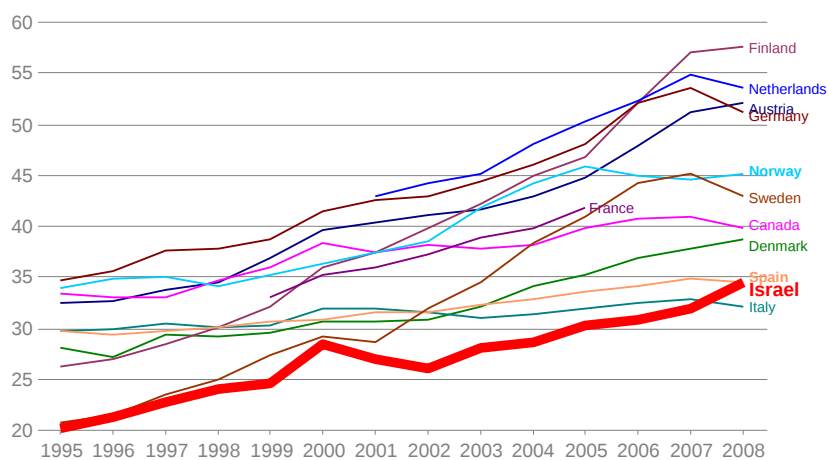
⁸ The within-sector comparison across countries is done here for all countries including Israel for which the OECD provides sectoral data and it uses national purchasing power parities. It would have been preferable, and more accurate, to conduct these comparisons using purchasing power parities by business sectors – but these are not available.

Figure 7
Labor productivity in Israel and OECD, 1995-2008
 GDP per work-hour in constant 2005 dollars*

A. Agriculture



B. Manufacturing



* Conversion to dollars using purchasing power parities

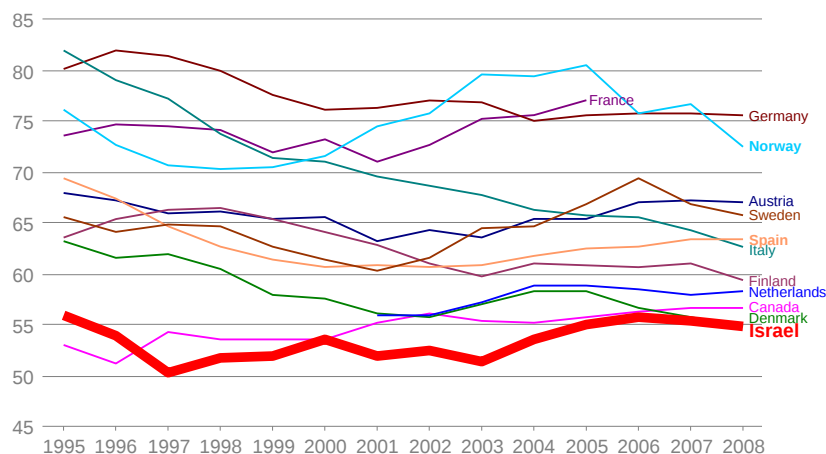
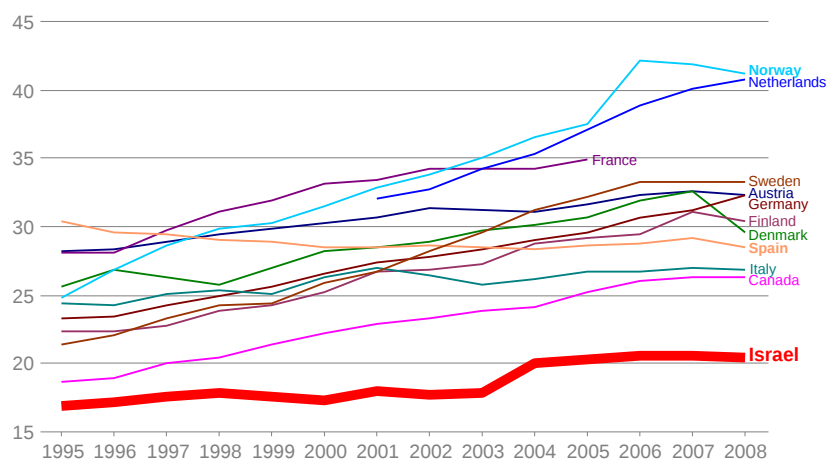
Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: Central Bureau of Statistics, OECD

Figure 7 (continued)

Labor productivity in Israel and OECD, 1995-2008

GDP per work-hour in constant 2005 dollars*

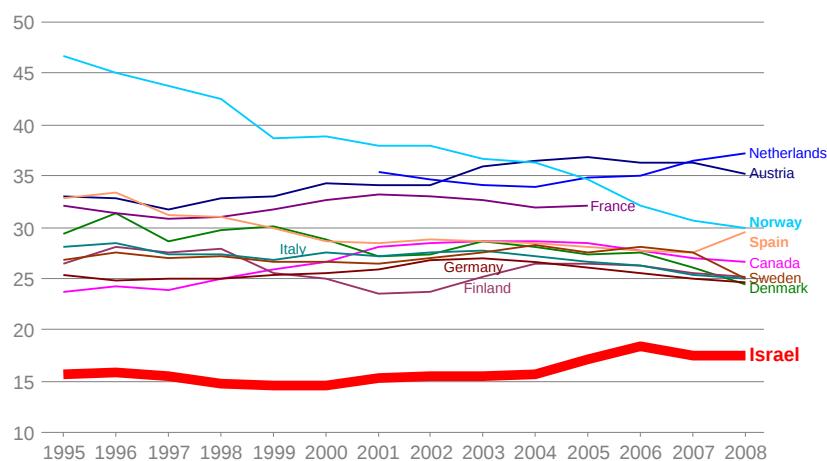
C. Financial intermediation; real estate, renting and business activities**D. Wholesale and retail trade, repairs; hotels and restaurants; transport**

* Conversion to dollars using purchasing power parities

Source: Dan Ben-David, Taub Center and Tel Aviv University**Data:** Central Bureau of Statistics, OECD

Figure 7 (continued)
Labor productivity in Israel and OECD, 1995-2008
 GDP per work-hour in constant 2005 dollars*

E. Construction



* Conversion to dollars using purchasing power parities

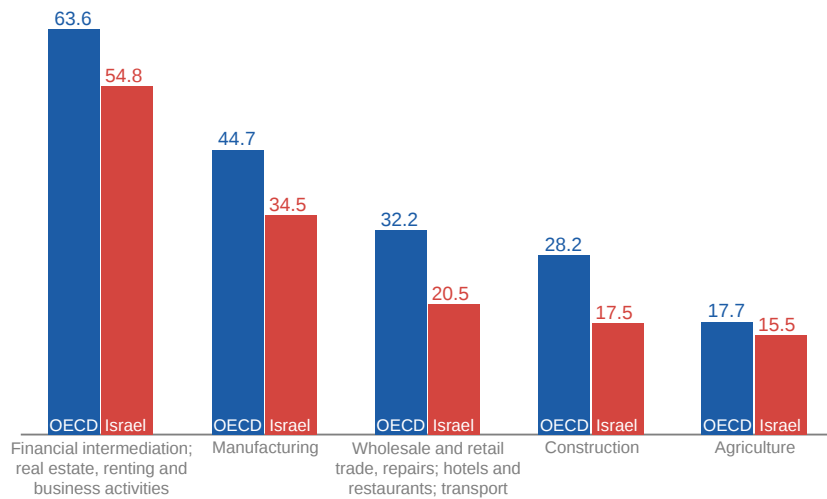
Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: Central Bureau of Statistics, OECD

Figure 8 summarizes the comparative picture at the sector level. Of all of the sectors, labor productivity is highest in financial services, real estate, renting, and other business activities, both in the OECD and in Israel. The average for the OECD countries is 16 percent greater than Israel's labor productivity in that sector. Labor productivity in manufacturing is the second highest among business sectors in the OECD and in Israel, with productivity in the OECD 30 percent higher than in Israel. In wholesale and retail trade, as well as in construction, labor productivity is progressively lower than in the other business sectors mentioned above, with gaps between the OECD and Israel rising to

roughly 60 percent. In agriculture, where Israel is the most similar to the OECD, labor productivity is the lowest of all the branches.

Figure 8
Labor productivity in Israel and OECD*, 2008
 GDP per work-hour in constant 2005 dollars**



* Average for Austria, Canada, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Spain, and Sweden

** Conversion to dollars using purchasing power parities

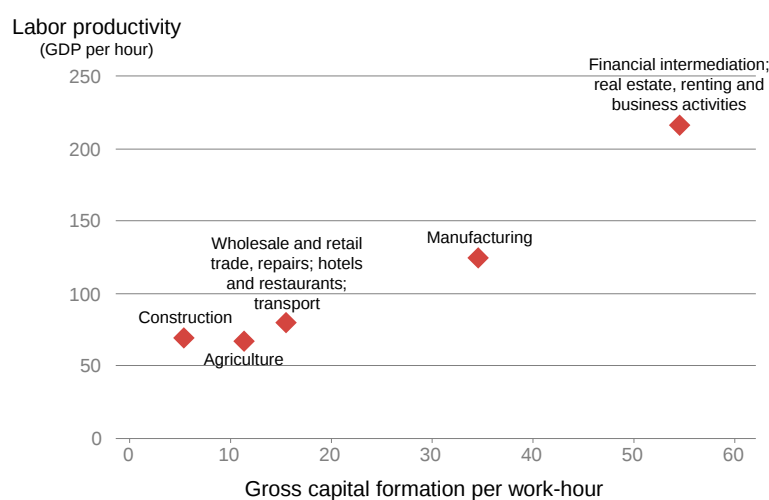
Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: Central Bureau of Statistics, OECD

5. Capital Formation, Productivity, and Wages at the Sectoral Level

The relationship between gross capital formation per hour worked and labor productivity across sectors within Israel (Figure 9) is similar to the positive relationship depicted between the two variables across countries in Figure 5. The more capital, the greater the labor productivity is in a given sector.

Figure 9
Capital intensity and labor productivity in Israel, 2008
in shekels

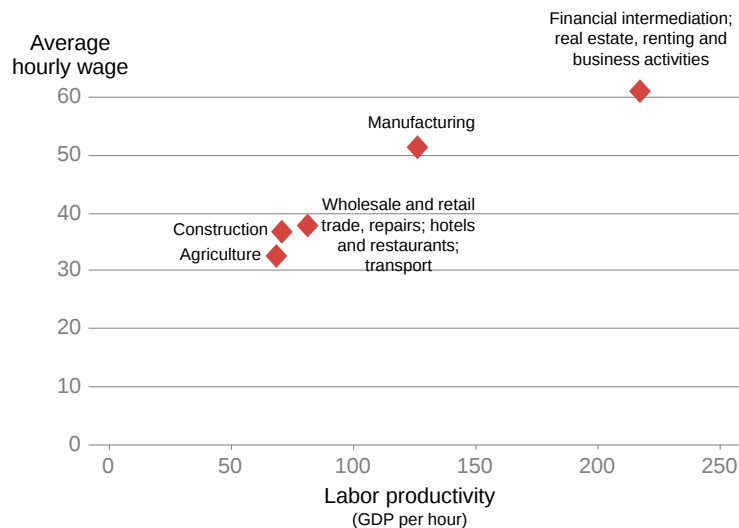


Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: Central Bureau of Statistics, OECD

The subsequent positive relationship across business sectors between labor productivity and wages can be seen in Figure 10, and it is no coincidence. The more that is produced per hour by a worker, the more that worker can be compensated. Consequently, the higher level of capital formation in the sector that includes financial intermediation, real estate, renting, and other business activities is related to higher labor productivity, which in turn is related to higher wages. At the other end of the spectrum, agriculture and construction have very little capital, hence very low labor productivity – and subsequently, they pay lower wages.

Figure 10
Labor productivity and wages in Israel, 2008
in shekels



Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: Central Bureau of Statistics, OECD

6. Conclusions

As one might surmise, the more educated the individual, the greater the opportunities abroad, the higher the rate of potential emigration – and that is certainly the case among Israelis (Gould and Moav, 2007). Among the most mobile group, university professors, Israel's brain drain is unparalleled among developed countries (Ben-David, 2008). To be able to pay competitive salaries to individuals vital to its future – engineers, physicians, academic researchers, that is, those who can easily relocate from one country to another – the country must be able to generate productivity at levels that are equal to or above those in other developed countries. In light of the exceptional caliber of talent currently available at the pinnacle of Israel's human capital pyramid, this is not an insurmountable obstacle.

But having the best and brightest at the top is not sufficient. The human capital pyramid's foundations need to be broadened and strengthened considerably. That can be done if the country overhauls its education system, upgrading its core curriculum and ensuring that it is provided at a high level in all of the country's schools to all of its varied populations. Such an overhaul also needs to include a major change in the way that the country selects, trains, and compensates its teachers, and in the way that the extremely cumbersome and inefficient Ministry of Education is run and managed.

In addition to boosting its human capital infrastructure, Israel needs to substantially improve its transportation infrastructure. The current state of its roads and rails provides a sad commentary on the country's national priorities. It is unconscionable neglect that has led a nation with only half the vehicles per capita to more than two and a half times the congestion of the OECD average. The increase in transportation infrastructure investment during the past decade has been to a level similar to the OECD average (Ben-David, 2012), so that the gap is not expected to continue to rise – but current investment levels are also insufficient for closing the gap.

continue to rise – but current investment levels are also insufficient for closing the gap.

Increasing competition is crucial for creating the pressure to invest and innovate, to create better products and services at lower cost. Current barriers to competition include high bureaucratic entry and exit costs for firms wishing to do business in Israel. Although protective regulation has been reduced, it continues to exist and to take a toll.

The provision of high-quality social services is an important goal and a hallmark of modernity. The ability to provide such services at the highest levels is very dependent on the relative wealth of a country. There is a tradeoff between wanting to provide as good and as plentiful a service to the public as possible, and not raising taxes to a point that makes the country less competitive, inhibiting its productivity growth and, ultimately, its rate of economic growth – which in turn will reduce the nation's ability to provide such services.

A country wishing to improve its quality of life must focus on the basics. It is no coincidence that the primary contributors to productivity growth are also the major elements underlying core treatment of poverty and income inequality. An improved educational system and physical infrastructure are vital for providing individuals currently in Israel's social periphery with the tools and conditions to lift themselves and their children out of the poverty cycle. As these individuals gain the necessary skills, they contribute directly to the country's overall capacity to assimilate and implement new ideas – the key to innovation, and the heart of productivity improvements.

Israel currently has all of the knowledge, know-how and resources needed to move to new socioeconomic trajectories that will bring it closer to the leading developed countries. But it needs to find the leadership and political wherewithal to initiate the policy changes that will in turn yield the structural, long-run, socioeconomic changes that Israel needs to excel, to flourish, to retain its best and brightest, and to attract its young professionals to return.

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II. EMPLOYMENT AND INCOME

Education and Employment in the Haredi Sector

Eitan Regev*

Abstract

This chapter sheds new light on several central issues concerning the integration of Haredim in the labor market, and in particular the relationship between education and employment and wages in the Haredi sector. A new and more precise method of identifying the Haredi population was developed, enabling a deeper analysis as well as a more comprehensive picture of employment and education patterns. The findings point to a significant positive effect of formal education on the employment rates and wage levels of Haredi men and women. Paradoxically, however, in recent decades there has been a gradual decline in formal education rates in this sector. An in-depth examination of the Haredi labor market reveals several irregularities concerning the supply and demand for manpower. Among Haredi men and women, there is both a considerable over-supply of manpower in the field of education and a lack of the tools and training that are necessary for integration in other fields. These trends coincided with a sharp rise in the rate of Haredi men studying in yeshivas, and in their average length of study. All of this indicates a gradual transition from the labor market to the world of Torah study. Entrenchment of these patterns makes the return to the labor market a significant challenge.

* Eitan Regev, researcher, Taub Center; Ph.D student, Department of Economics, Hebrew University.

In 2011, an expanded panel of Supreme Court judges deliberated over a petition submitted by Prof. Amnon Rubinstein, Prof. Uriel Reichman and Lt. Colonel (Res.) Elazar Stern, requesting that the law granting small yeshivas¹ an exemption from teaching the core curriculum that is mandatory for all Israeli pupils be found unconstitutional. The panel's judges rejected the petition, citing the difficulty of invalidating the law on constitutional grounds. Judge Elyakim Rubinstein explained the reason for the ruling as follows: "The assumption is that many of us would be glad to see the Haredi (ultra-Orthodox Jews) world embrace core studies, but the question is whether we have reached a point where we have to exercise our authority?"² The petitioners argued, on the other hand, that there should be a minimum level of basic education provided to every child in the Israeli educational system, because without it, it would be extremely difficult to manage in the modern world and this constitutes a violation of the right to education. The petition was rejected because the petitioners were unable to prove that failing to study the core curriculum actually harms Haredi youth's chances of integration in the labor market. On the face of it, the petitioner's argument seemed logical, but in reality it was difficult to offer evidence of the claim.

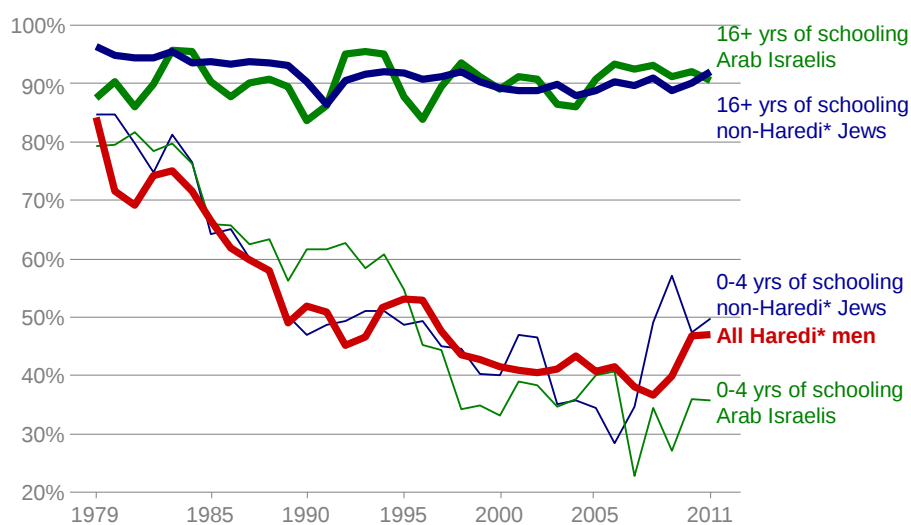
In the non-Haredi sector, there are those who think that this lifestyle is only a social phenomenon – a conscious choice, due to ideological considerations and social norms by the Haredi public, at the expense of integration in the labor market. This argument is insufficient, though, since it fails to explain why in the past the employment rates of Haredi men were much higher and very close to those of the general public. The *State of the Nation Report 2011-2012* shows an almost complete overlap between the trend of decline in the employment rates of Haredi men and

¹ Small yeshivas are Haredi educational institutions that teach boys from the eighth grade on. In this study, the term "great yeshiva" refers to both great yeshivas and *kollels*.

² Aviad Glickman, "High Court says law encourages Haredim not to learn core studies," *Ynet*, October 4, 2011, viewed: August 20, 2013, ynetnews.com/articles/0,7340,L-4131128,00.html

the parallel decline among non-Haredi men with only 0-4 years of education (Figure 1; Ben-David, 2012). This correlation provides an indication of the relationship between the type of education Haredi men receive and their integration opportunities in the modern labor market: it appears that without the core curriculum and academic studies, they find it difficult to enter the workforce.

Figure 1
Male employment rates, 1979-2011
ages 35-54



* Haredi are ultra-Orthodox Jews

Source: Dan Ben-David and Eitan Regev, Taub Center

Data: Central Bureau of Statistics

On the other hand, in the Haredi sector there are those who contend that the difficulty of integrating in the labor market stems from employers' discrimination against Haredim rather than insufficient education. This argument, too, fails to explain the decline in the employment rates of Haredi men over the years. In order to resolve this issue, a closer examination of the relationship between Torah studies, formal education, and employment in the Haredi sector has been conducted here.

This chapter presents estimates of the effect academic education has on employment rates and wage levels of Haredi men and women, with reference to the dominant trends in formal education and Torah studies in this sector. Towards that end, several databases were used, and a new and more precise method of identifying the Haredi population was developed. This method was successfully applied to the database of the 2008 population census, and the large number of observations allowed a deeper analysis. For the first time, it was possible to identify reliably a large number of Haredim with academic degrees (about 800 men and 1,200 women) and compare them to Haredim without academic degrees.

The new identification method, its advantages, and the reasons for its use are detailed in the appendices to this chapter. Most of the figures appearing in this chapter are based on the data of the 2008 population census and on the new identification method.³

³ In figures requiring a multi-year comparison, data from the Central Bureau of Statistics *Labor Force Survey 1979-2011* was used along with the Taub Center's previous identification method (with the exception of Figure 6, which is based on data from the Central Bureau of Statistics *Social Survey* where Haredim are self-identified).

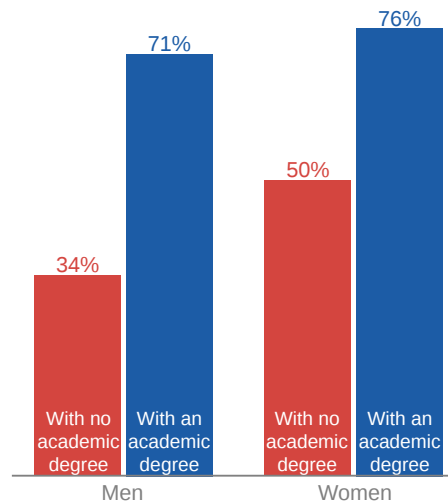
1. The Importance of Formal Education⁴ in the Labor Market

Employment, Wages and Household Income

Employment. Among Haredi men aged 25-64, the employment rate of those with an academic degree stands at 71 percent, as opposed to only 34 percent among those without an academic degree (Figure 2). There is a similar gap in each of the cities that have Haredi communities of significant size (Appendix Figure 1A). Among Haredi women, the gap is smaller but still very significant – 76 percent of degree holders are employed, as opposed to only 50 percent of those without a degree. In this respect, too, the gap between Haredi women with an academic education and those without remains fairly consistent across the various cities (Appendix Figure 1B). As can be seen, among Haredim with higher education the gap between the respective employment rates of men and women is relatively small (5 percentage points) while among those who do not have a degree the gap between the respective employment rates of men and women is much larger (16 percentage points). This stems from, among other things, the fact that most Haredi girls receive secondary education, whereas most Haredi boys begin studying in small yeshivas after concluding their primary education. It follows that the formal education level of Haredi women who do not hold academic degrees is generally higher than that of Haredi men without academic degrees, and this has an effect on their integration in the labor market.

⁴ Formal education – official studies that are not Torah study, i.e., primary school, secondary school and college degree. An “academic degree” refers to a college or university degree.

Figure 2
Haredi* employment rates by education level, 2008
 ages 25-64



* Haredi are ultra-Orthodox Jews

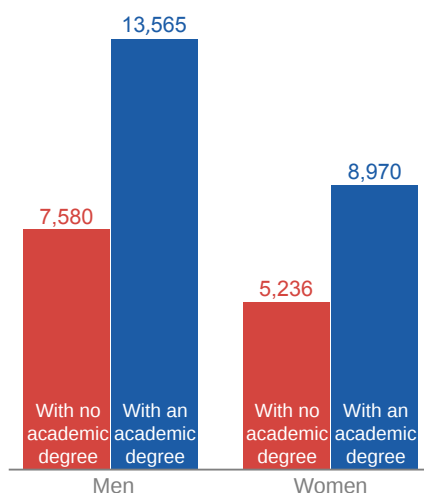
Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

It is important to note that in Haredi society, the role of primary wage earner generally falls to the woman, and, therefore, the employment rates of Haredi women are higher than those of Haredi men. As such, one can conclude that an academic education makes a significant contribution to employment opportunities for Haredi women, who – with or without this degree – seek employment to fill the role of primary wage earner.

Wages. In the Haredi sector, there are also large gaps in wage levels between those with an academic degree and those without (Figure 3). Among Haredi men aged 25-64 who are employed full-time, the average monthly pay of degree holders is about 80 percent higher than the pay of those without a degree.

Figure 3
Gross monthly wage by education level, 2008
 Haredim* in full-time employment, ages 25-64, in shekels



* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

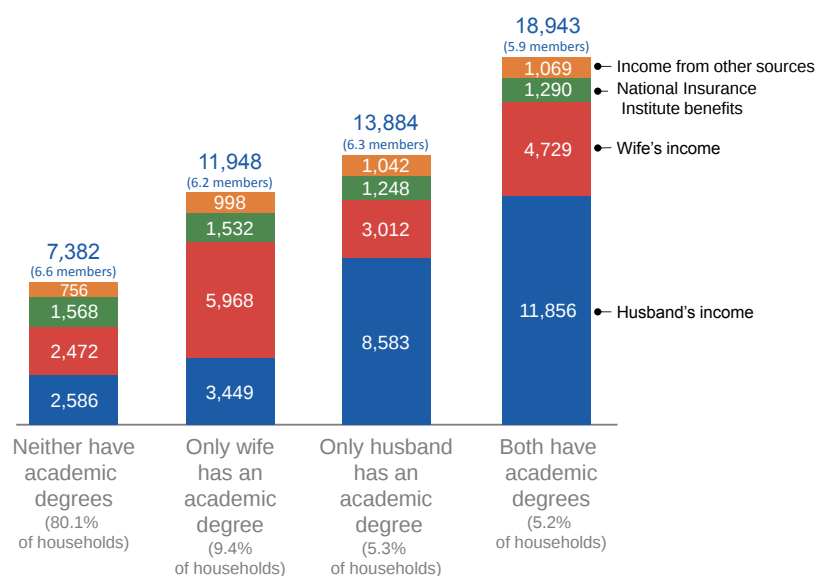
Data: Central Bureau of Statistics, *Population Census Data*

In the Haredi neighborhoods in each of the relevant cities, there is a significant gap in wages between Haredi degree holders and non-degree holders, with the largest gaps recorded in Bnei Brak and Beit Shemesh – 105 and 100 percent, respectively (Appendix Figure 2A). Among Haredi women aged 25-64 who are employed full-time, the average annual wage

of degree holders is 71 percent higher than the pay of those without a degree. As among the men, there was a significant gap in wages in each of the relevant cities, with the largest recorded in Bnei Brak and Beit Shemesh – 102 and 81 percent, respectively (Appendix Figure 2B). These gaps in wage levels may stem from differences between the jobs held by Haredim with and without academic degrees. As will be shown, Haredi degree holders benefit from better integration in those employment branches that are characterized by high pay.

Household income. An academic education significantly increases the income of households in the Haredi sector. Figure 4 presents the average gross monthly income (including National Insurance Institute allowances) of Haredi households. As can be seen, when only the husband has an academic degree, the household income is about 88 percent higher than the income of a household in which neither spouse has an academic degree. When only the wife has an academic degree, the household income is about 62 percent higher than a household in which neither spouse has an academic degree. When both spouses have an academic degree, the household income is about 157 percent higher than that of a household with no academic degree holders. In all of the relevant cities (with the exception of Modi'in Illit), when only the husband has an academic degree, the household income is higher than when only the wife has a degree (see Appendix Figure 3).

Figure 4
Monthly household income by couple's education level*, 2008
 married Haredim**, ages 25-64, in shekels



* Gross income including child allowances and NII benefits.
 Average number of household members is in parentheses.

** Haredim are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

In contrast to popular opinion, the wife's income does not necessarily constitute the largest share of a Haredi household income. The reason for this is simple: even though the employment rates of Haredi women are significantly higher than those of Haredi men (Figure 2), the pay of those men who are employed is (on average) much higher than that of women (Figure 3). Weighing these factors leads to the result shown in Figure 4:

in Haredi households where neither partner has an academic degree, the husband and wife's average wage levels are similar. Nonetheless, these averages are misleading, since in most of these households the husband does not work at all, while in others the husband works and earns more than his wife does.

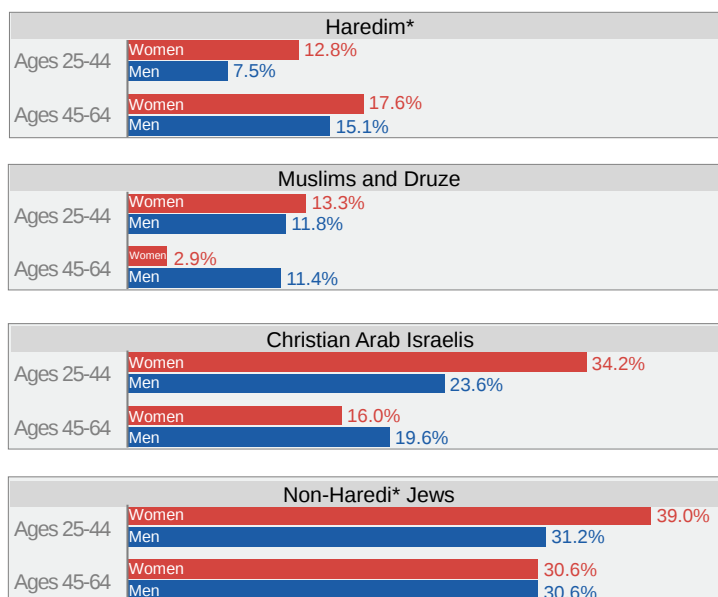
In households where only one of the partners has an academic degree, that partner is generally also the primary wage earner. In households where both partners hold academic degrees, the husband's income is the main source, since as noted, Haredi men's average wage is higher.

It is important to note that these figures also include child allowances and other transfers provided to households by the National Insurance Institute. This means that even after government allowances and benefits are accounted for, household incomes of Haredim with an academic education are much higher than those of Haredim without an academic education. In other words, an academic degree has a significant influence on a Haredi family's chances of escaping poverty.

Formal Studies and Torah Studies

Academic degree holders. Figure 5 shows that the percentage of academic degree holders among both Haredi men and women is much lower than the percentage among non-Haredi Jews. As was shown in Figure 2, this situation significantly reduces the chances of Haredi integration in the labor market. In contrast to the trend among all other sectors, the share of academic degree holders among younger Haredim (ages 25-44) is significantly lower than the share among older Haredim (ages 45-64). These findings may indicate a decline in the rate of degree holders in the Haredi sector in recent decades, and additional indicators of this trend will be presented later. It is nonetheless possible that some Haredim acquire an academic education at a later stage in their lives; but even if this were the case, it means that the tools required for integration in the modern labor market are acquired at a very late stage (if at all).

Figure 5
Share of academic degree holders, 2008
 by gender, religion, and age group



* Haredi/m are ultra-Orthodox Jews

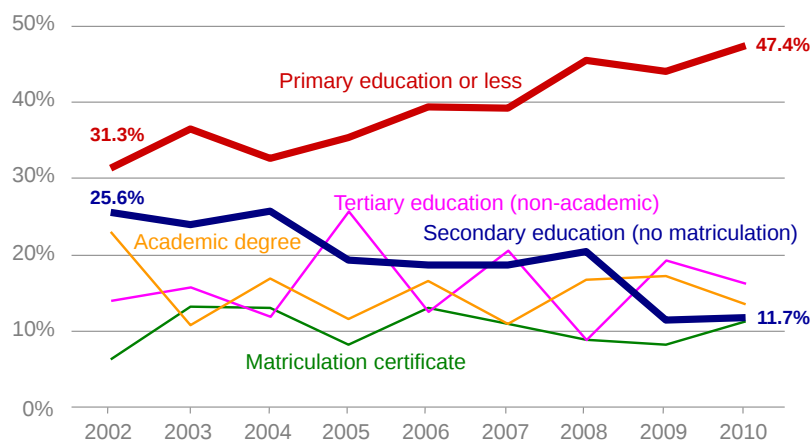
Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

Formal studies. A worrying trend that is evident in the Haredi sector in recent decades is a decline in the length of formal studies. Figure 6 shows that during the years 2002-2010, the share of individuals with a primary school education and below among Haredi men of the primary working ages (35-54) rose from 31 to 47 percent. In parallel, the share of those completing secondary education among the same group dropped from 26 to 12 percent – i.e., there has been a consistent and significant

decline in the extent of secondary studies and in the average total length of formal studies. This phenomenon, documented here for the first time, is unique to the Haredi sector and completely contrary to the trend of rising education levels among the rest of the population in Israel and other developed countries. As will be shown, the main reason for this phenomenon is the gradual transition from secondary school studies to Torah studies. More and more Haredi youth have begun to study at small yeshivas upon concluding their primary education, at the expense of secondary school studies.

Figure 6
Highest formal certificate earned, 2002-2010
 Haredi* men aged 35-54



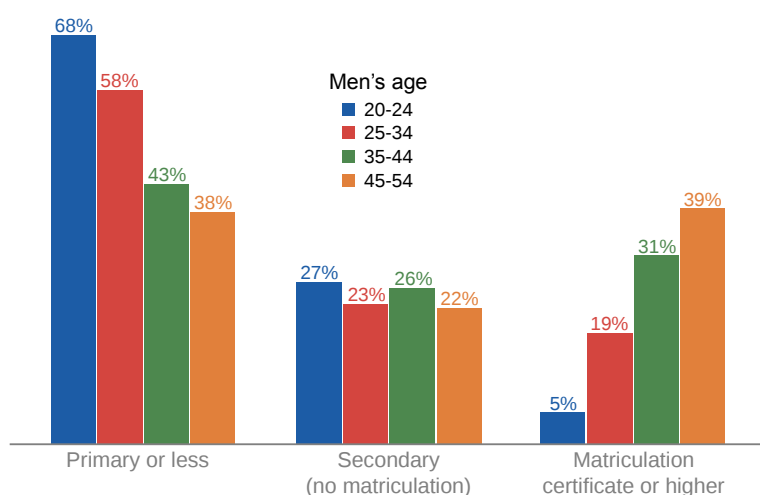
* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Social Survey*

Further proof of this phenomenon can be seen upon examination across various age groups (Figure 7). The formal education of 68 percent of Haredi men aged 20-24 consists of primary school level or lower, as opposed to only 38 percent among those aged 45-54. Only 5 percent of those aged 20-24 have a matriculation certificate⁵ or higher, as opposed to 39 percent among those aged 45-54.

Figure 7
Highest formal certificate earned by Haredi* men
as percent of all Haredi* men in each age group, 2008



* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

⁵ Matriculation examinations and certificate or bagrut assess knowledge on subjects studied in high school. It is often compared to the New York State Regents' Exams and ETS Advanced Placement (AP) tests. Bagrut scores represent an average of the test score and the grade received on that subject in school. Subjects are tests at study unit levels ranging from 1 to 5 units, calculated by the number of class hours devoted to the subject.

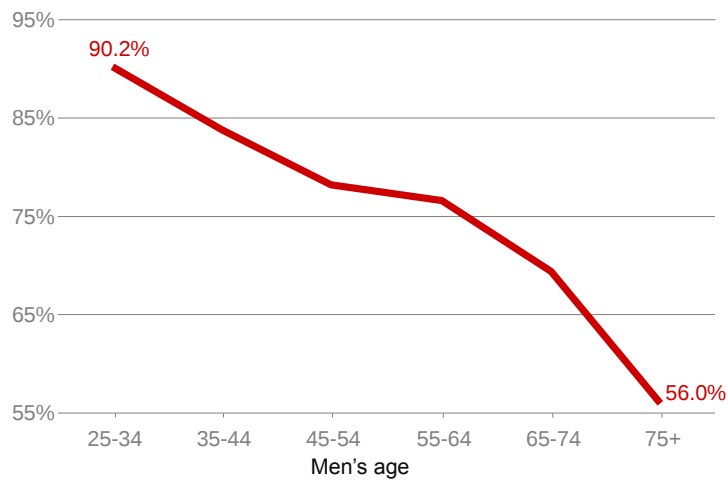
It is important to note that some Haredi youth may conceivably complete their matriculation at a later stage in their lives; however, in contrast to other sectors where the younger groups are more educated, the opposite holds true in the Haredi sector (Figure 5). These gaps between the older and younger Haredim provide an indication of the significant decline in recent decades in the share of Haredi men attending formal studies and in their average length of study.

Yeshiva studies. In parallel to the declining rates of formal education, in recent decades there has been a significant rise in the percentage of Haredi men studying in great yeshivas as well as in their length of study in these institutions. As Figure 8 shows, 56 percent of Haredi men ages 75 or older attended a great yeshiva, as opposed to 90 percent of Haredi men aged 25-34. In other words, the share of Haredi men studying at a great yeshiva rose by about 61 percent in the last four decades.

Figure 8

Haredi* men who are studying or have studied in a great yeshiva

as percent of all Haredi* men in each age group, 2008



* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

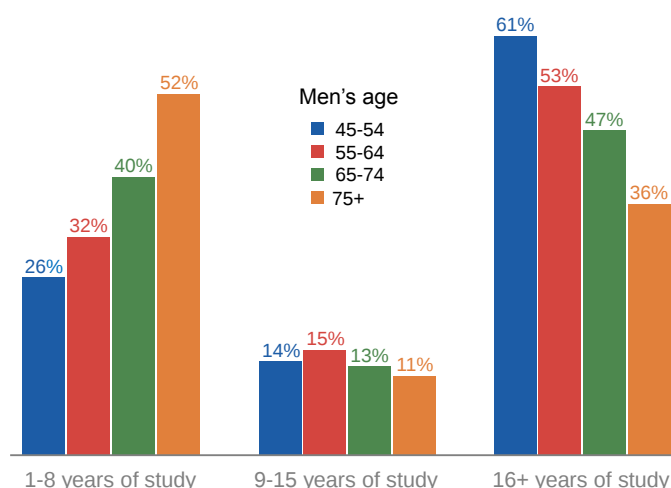
Data: Central Bureau of Statistics, *Population Census Data*

Furthermore, the average length of study at a great yeshiva also rose considerably – about 46 percent of Haredi men aged 45-54 attended a great yeshiva for at least 16 years, as opposed to only 16 percent of Haredi men aged 75 or older. Even when Haredi men who never studied at a great yeshiva are removed from the analysis, and a comparison is made only between those who actually attended a great yeshiva, a similar picture emerges – only 36 percent of Haredi men aged 75 or older who attended a great yeshiva did so for 16 years or more, as opposed to 61 percent among those aged 45-54 (Figure 9). Thus, even a conservative analysis that only examines actual attendees indicates that there has been a significant rise in the average length of study at great yeshivas in recent decades.

Figure 9

Years of study in a great yeshiva, by age group

Haredi* men who studied for at least one year in a great yeshiva, 2008



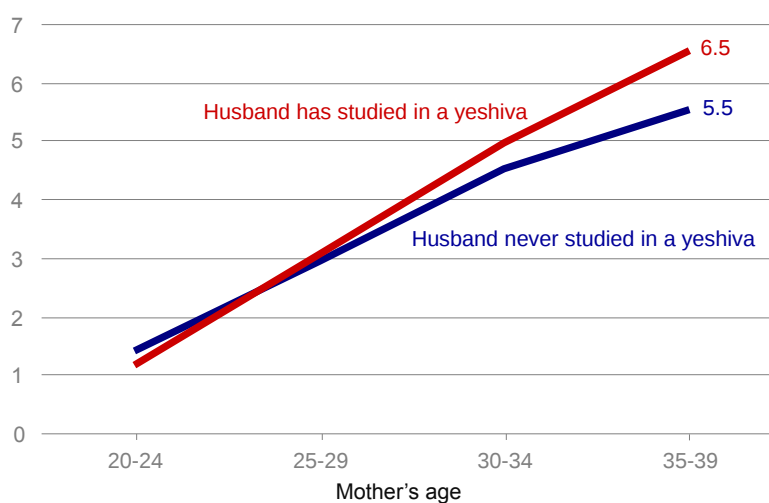
* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

Yeshiva studies also have a significant effect on the number of children in a Haredi family. On average, Haredi women whose husbands did not attend a great yeshiva gave birth to one less child than Haredi women whose husbands did attend a yeshiva (Figure 10). Possible explanations for this are ideological factors or religious beliefs – Haredim who attend great yeshivas might be more exacting and stricter in their observance of all the commandments, including to be fruitful and multiply. Another possible explanation relates to social and economic pressures and community norms, which may be more incumbent upon yeshiva students, since they are more dependent on community support for livelihood and mutual assistance. In other words, yeshiva students are possibly more reliant on economic assistance from the community, and a large number of children may signal their commitment to the community and their being “worthy” of support (Berman, 1999).

Figure 10
Average number of children in Haredi* families, 2008
 by mother's age



* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

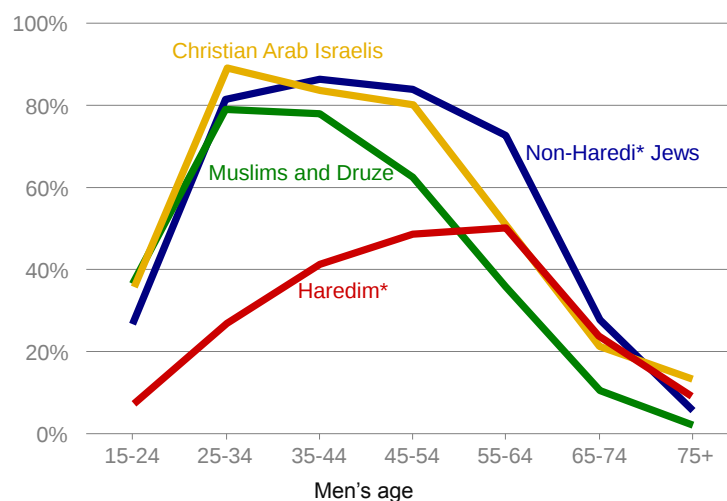
In summation. The findings presented in part 1 lead to the conclusion that the decline in employment rates and average length of formal studies among the Haredim in the last few decades is a product of a gradual adoption of a way of life that places greater emphasis on religious studies, at the expense of work and formal studies. It is not surprising that the increase in attendance rates at great yeshivas, and in length of study there, took place in parallel to the sharp drop in employment rates; it was a gradual transition from the labor market to the world of Torah. But were the causes of the transition solely ideological, or did it also stem from a lack of choice due to the growing difficulty of integration in the modern labor market without the appropriate tools? If it were simply a social or ideological phenomenon, unrelated to the type of education Haredi youth receive, it is unlikely that such large differences between the employment rates of Haredi academic degree holders and non-degree holders would be seen. Although it is reasonable to assume that Haredi men who hold an academic degree are characterized by a greater willingness to integrate into the labor market (hence their efforts to obtain an academic degree), that alone is insufficient to explain such large gaps. In this context, it is important to remember that for Haredi women, who as noted are the primary wage earners in most households, an academic education provides a significant advantage in the labor market. This factor indirectly provides an additional indication that with respect to men as well, the differences are not just a matter of motivation to work, but rather, a real and significant advantage in the labor market that Haredim with an academic degree have over those without.

2. Haredim in the Labor Market

Age of Employment and Employment Branch

Employment by age. In contrast to other sectors, Haredi male employment rates reach their highest level only as men reach their fifties, and even then, the rates are rather low (only about 50 percent). These patterns are in sharp contrast to those of Christian and Muslim Arab Israelis, who reach much higher levels of employment (80-90 percent) already in their twenties, and among non-Haredi Jews, who reach a similar peak in their thirties (Figure 11). This phenomenon is the result of the long periods of time that many Haredi men devote to Torah studies at the expense of joining the labor market.

Figure 11
Male employment rates, 2008
by religion and age group



* Haredi/m are ultra-Orthodox Jews

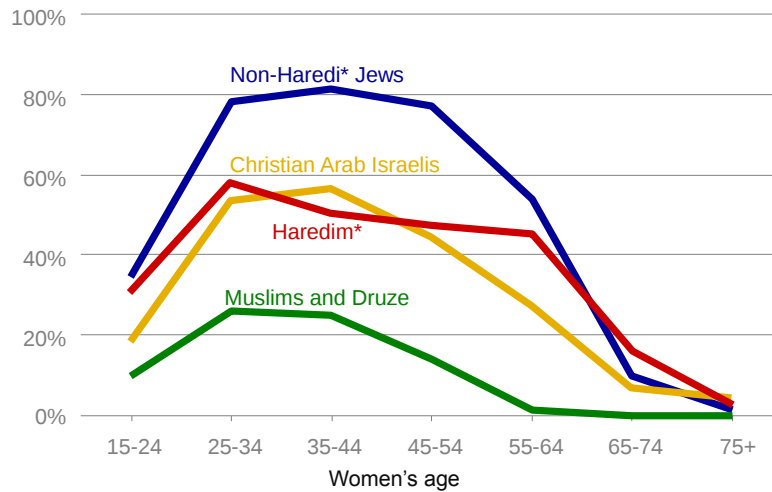
Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

A comparison of the employment distribution of Haredi men to Muslim and Druze men by age group yields interesting insights. In both of these sectors, the level of formal education is low relative to the general population – a factor that harms the chances of finding work and limits employment options. From a young age many Muslim and Druze men tend (for lack of a better option) to engage in demanding physical labor, which becomes increasingly difficult with advancing age. Hence, their employment rates drop steeply at older ages. In contrast, most Haredi men do not work at all in the first decades of their life, and begin working only at a much later stage. What this means is that for many young Haredi men, non-employment stems also from a personal choice and not only from a lack of employment options. The large gap between the employment rates of young Muslims and the rates among young Haredim indicates that the lack of formal education is not the only factor that accounts for the low employment level of Haredi men and that, in many cases, this way of life is a choice. This is made possible by virtue of other sources of funding, including the wife's income (especially in the early years of marriage).

In contrast to the employment rates of Haredi men, those of Haredi women reach their highest level by their twenties. Nonetheless, the employment rates of non-Haredi Jewish women in this age group are about 20 percentage points higher. Furthermore, while the employment rates of non-Haredi Jewish women continue to rise, remaining at a high level through their thirties and forties, the employment rates of Haredi women drop rather consistently during these decades (Figure 12). This drop stems from the larger family size and the consequent increased time investment in child rearing – factors that make it difficult for Haredi women at these ages to continue working as they did before their families grew. A similar phenomenon is also observed among Muslim and Druze women, although in these sectors (as opposed to the Haredi sector) women are not considered the primary wage earners, and their employment rates are very low at younger ages as well.

Figure 12
Female employment rates, 2008
 by religion and age group



* Haredi/m are ultra-Orthodox Jews

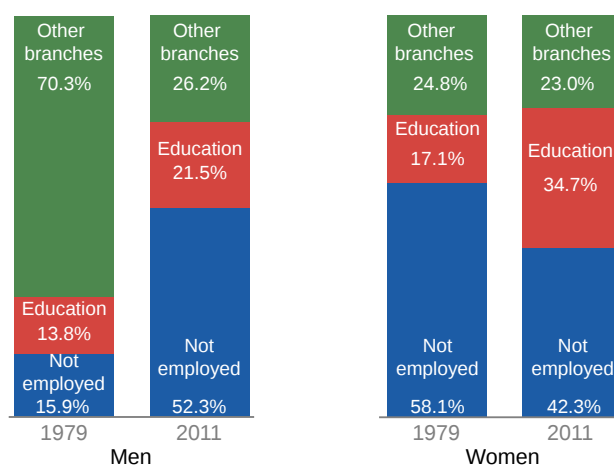
Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

Employment branches. As Figure 13 shows, the rate of those employed in the education field among Haredi men of the primary working ages (35-54) rose from 13.8 percent in 1979 to 21.5 percent in 2011 – even though during these years there was only a 15 percent increase in the birthrate in the Haredi sector. The rise in the rate of those employed in education is extraordinary, particularly in light of the steep drop in the rate of Haredim employed in other employment branches (from 70.3 percent in 1979 to 26.2 percent in 2011). Among Haredi women of the primary working ages, in the past three decades there has been an even

more significant rise in the share of those employed in this field. In 1979, that share stood at 17.1 percent, rising to 34.7 percent by 2011, i.e., the share of Haredi women working in education doubled.

Figure 13
Distribution of Haredi* population
 by occupation type, ages 35-54, 1979 and 2011



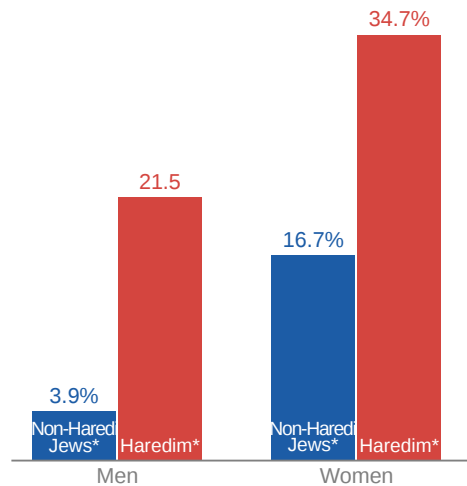
* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

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

The percentage of Haredi men aged 35-54 who are employed in the education field is extraordinarily high (21.5 percent) – five times the corresponding share among non-Haredi Jewish men, which stands at only 3.9 percent (Figure 14).

Figure 14
Share employed in education, 2011
 by gender and population group, ages 35-54



* Haredi/m are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

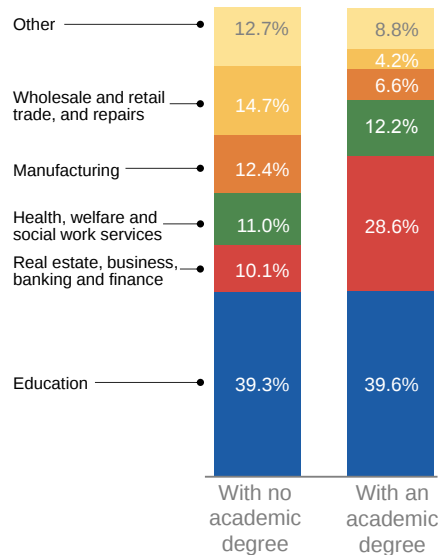
Data: Central Bureau of Statistics, *Labor Force Survey*

Although the higher birthrates in the Haredi sector require more workers in the education field, this factor alone cannot explain such large gaps. As may be inferred from Figure 11, some of the gap stems from the fact that the employment rates of younger Haredim (age 34 and below) are especially low, and, therefore, most Haredi teachers belong to the age group 35-54, whereas among non-Haredi teachers, the age distribution is more balanced. However, Figure 12 suggests that this explanation is not valid with respect to Haredi women, since the employment rates of younger Haredi women are high relative to older women. Even so, the rate of Haredi women aged 35-54 employed in the education field is double that of non-Haredi Jewish women (34.7 percent versus 16.7

percent). These disparities point to a significant difference between the respective labor markets in the Haredi sector and in the non-Haredi sector, especially in the education field

Distribution by employment branch. A comparison of the distribution of employment branches between Haredi men with and without a degree (Figure 15) shows that the percentage employed in the education field is almost identical in these two groups (about 39 percent). This may indicate that in the Haredi sector, an academic degree does not necessarily improve a man's chances of finding employment in the education field. This is not surprising in light of the fact that a large percentage of these men are employed at yeshivas rather than formal education institutions. On the other hand, the rate of those employed in real estate and commercial and financial services is almost three times higher among Haredim with an academic degree than those without (28.6 and 10.1 percent, respectively). This may indicate that for Haredi men, an academic education opens new opportunities in the labor market, especially in the business and financial fields.

Figure 15
Occupational distribution of Haredi* men
 by education level, ages 25-54, 2008



* Haredi are ultra-Orthodox Jews

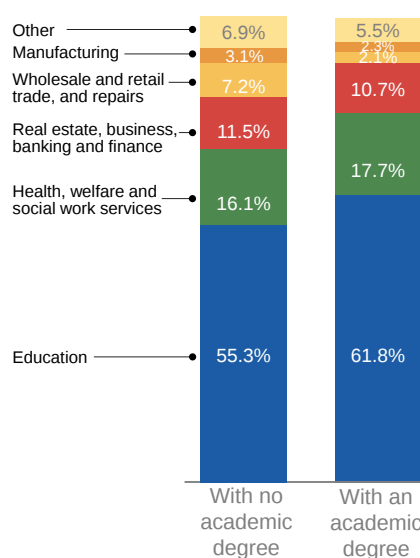
Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

In contrast, no significant differences in employment branches are found between Haredi women with an academic degree and those without – except in the education field, where degree holders seem to have a slight advantage (Figure 16). This is because most Haredi women with higher education obtain degrees with an orientation to the field of education, and few study other fields. Many academic and non-academic educated women obtain a teaching certificate and aspire to find work as a school or preschool teacher. Consequently, the Haredi sector has an abundance of female education workers competing for a limited number

of jobs. As will be shown, in the past three decades this has manifested in a disproportional increase in the number of female school and preschool teachers relative to the increase in the number of pupils, with a parallel decline in the average number of work-hours per position in the education field. These findings highlight the need to create alternative training and employment channels that will improve Haredi women's chances of integration in the labor market and serve to diminish the excess demand for jobs in the field of education.

Figure 16
Occupational distribution of Haredi* women
 by education level, ages 25-54, 2008



* Haredi are ultra-Orthodox Jews

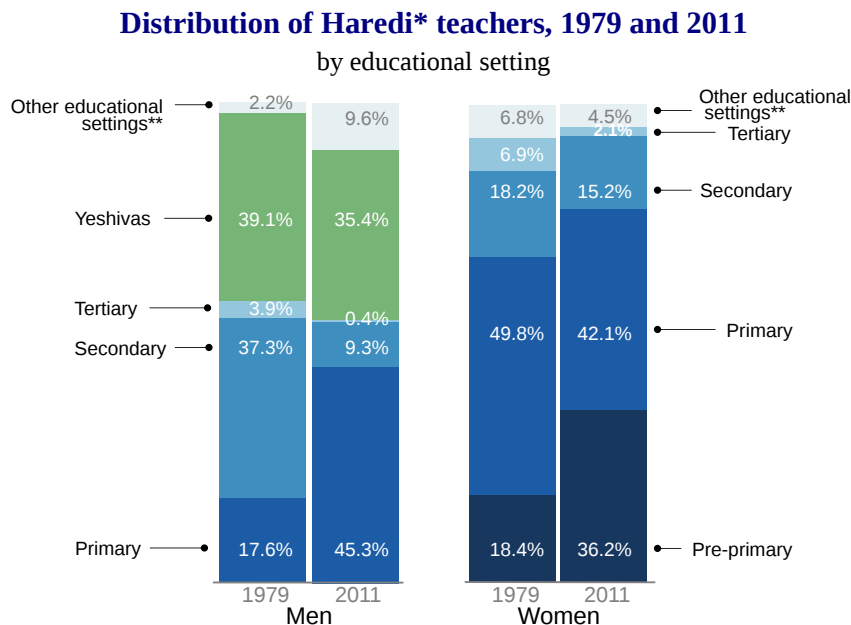
Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

The Education Field in the Haredi Sector

In light of the rise in recent decades in the rates of Haredi men and women engaged in education, the question arises as to what their employment settings are and what changes have occurred in recent years. Figure 17 shows that among Haredi men, the principal shift occurred in primary and secondary schools. In 1979, only 17.6 percent of male Haredi teachers worked in primary schools, but by 2011, the share had risen to 45.3 percent, i.e., the share of male Haredi teachers employed in primary education (out of all male Haredi teachers) grew almost threefold in the last three decades. In contrast, the share of male Haredi teachers employed in secondary education today is one-quarter of what it was in 1979. This aligns with the drop registered during these years in the average length of formal studies among Haredi children.

Figure 17



* Haredi are ultra-Orthodox Jews

** Educational institutions and schools that are not classified in a specific setting

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

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

Today, the vast majority of Haredi boys do not attend secondary schools, and begin studying in small yeshivas at the age of 13. It is, therefore, not surprising that there has been a steep drop in the share of male Haredi teachers working in secondary schools. On the other hand, as noted, there has been a very significant rise in the share of male Haredi teachers working in primary schools, which may attest to a shift of manpower from the secondary to the primary setting.

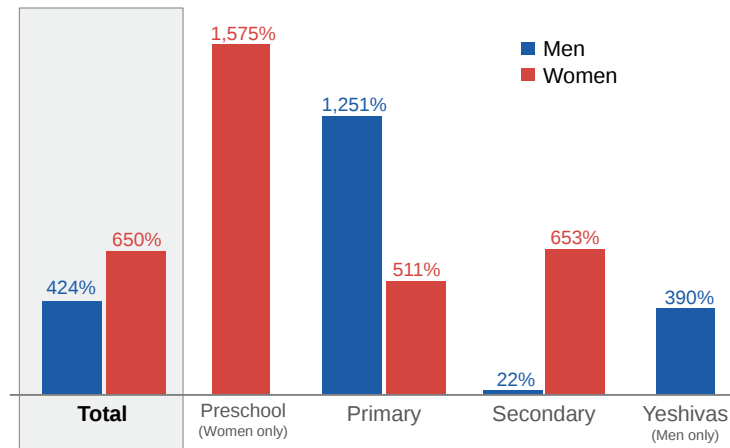
The distribution of Haredi female teachers by educational setting shows that only 18.4 percent worked in pre-primary education (kindergartens and preschools) in 1979. This rate almost doubled to 36.2 percent in 2011. As noted, this may attest to an excess supply of Haredi female teachers who are seeking employment in pre-primary institutions.

Figure 18, which presents the rate of growth in the number of persons employed in each setting, shows that in the last 30 years there has been a disproportionate increase in the number of Haredi men employed in primary schools – 1,251 percent, as opposed to a rise of only 424 percent in the number of Haredi men employed in the entire education field.

Figure 18

**Cumulative growth in the number of employees
in the education field, 1979 and 2011**

by educational setting, Haredi* men and women ages 25-54



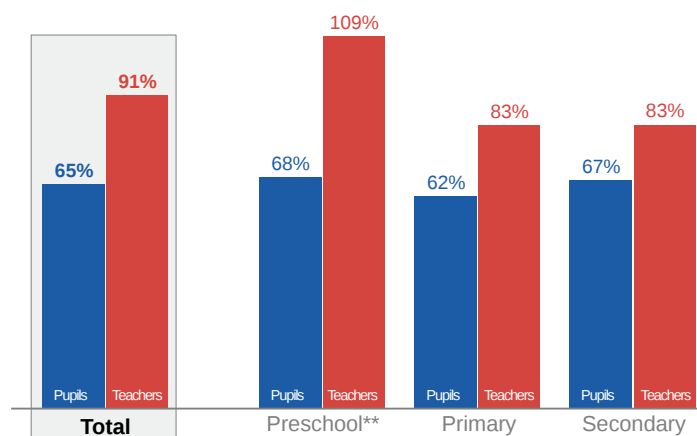
* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

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

The rate of growth in the number of Haredi women employed in the education field was even more significant: 650 percent. As can be seen, the most significant increase was registered in the pre-primary setting: during the years 1979-2011 the number of Haredi women employed in preschools increased by 1,575 percent, as opposed to 511 percent among those employed in primary schools and 653 percent among those employed in secondary schools. The rise in the rate of those employed in preschools – which includes both certified teachers and nannies – is extraordinary and disproportionate, and as Figure 19 shows it cannot be attributed solely to the increase in the number of children in Haredi preschools.

Figure 19
Cumulative growth in the number of female teachers and pupils
 Haredi* women aged 25-54, 2000-2010



* Haredi are ultra-Orthodox Jews

**Data on cumulative growth in the number of preschool pupils relates to both boys and girls because female Haredi preschool teachers also teach boys (Haredi men do not work as preschool teachers). The figure for preschool includes both certified teachers and nannies.

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

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

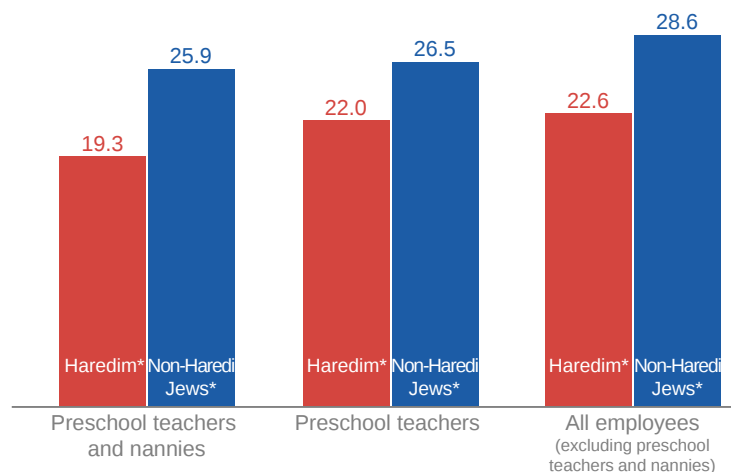
When the rate of growth in the number of female Haredi teachers is compared to the rate of growth in the number of female pupils in the Haredi education system, significant disparities are found (Figure 19). During the years 2000-2010 there was an increase of some 109 percent in the number of Haredi women employed in preschools. However, the number of children (boys and girls) in Haredi preschools grew by only 68 percent – a much lower rate. This implies that there has been a drop in

the average number of work-hours per position among Haredi preschool employees and/or a reduction in class size in Haredi preschools.

Another finding that aligns with these findings and which may also indicate a disproportionate increase in the number of Haredi preschool teachers comes from a comparison between Haredi and non-Haredi preschool employees' average weekly work-hours (Figure 20). Haredi preschool teachers and nannies work about 19 hours a week on average, as opposed to about 26 hours among non-Haredi Jewish women. This is a low number of weekly work-hours even in comparison to the average among all other employed Haredi women (22.6 hours). These figures are further evidence of the over-supply of employees in the education field in the Haredi sector, and especially among Haredi women in pre-primary education. It is, therefore, important to create alternatives and new training channels to direct this over-supply to other employment branches.

Figure 20

Weekly work-hours of female Jewish preschool employees, 2011



* Haredi/m are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

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

3. Conclusions

The findings presented in this chapter point to a strong positive correlation between formal education and employment in the Haredi sector. The employment rates and average wages among Haredim with an academic education are much higher than among those without. The income of Haredi families in which both spouses hold an academic degree is 2.6 times higher than the income of Haredi families in which neither spouse has an academic education (even when National Insurance Institute allowances and benefits are taken into account). The obvious conclusion is that giving Haredi children a formal education is the most effective means of breaking the cycle of poverty.

Despite that, and entirely contrary to the decades-long trend among the rest of Israel's population, a steep drop has been registered in the length and extent of formal studies in the Haredi sector (especially among men). This is a unique and worrying phenomenon, unparalleled anywhere else in the Western world. It means that young Haredim have fewer tools for integration in the modern competitive labor market even relative to their parents. This may have serious consequences in the near future, especially in light of this population's rapid growth rate.

At the same time, there has been a sharp rise in the rate of Haredi men attending yeshivas and in the average length of their studies. This has caused a significant delay in the age of entry into the labor market.

The picture that arises is one of a gradual transition, over the course of 30 years, from the labor market to the world of Torah study. These processes have distorted the Haredi labor market and prompted its concentration around the education field, which has swelled to disproportionate dimensions. Among Haredi men and even more so among Haredi women, there is excess demand for positions in the field of education and insufficient tools and training to enable integration in other employment branches. Due to this demand, several people may share a single position and have reduced work hours. This, too, is a relatively new phenomenon, which was not evident in this sector in the past.

Paradoxically, despite the over-supply of teachers in the Haredi sector, Haredi pupils' formal education level is very low.

Taking all of these findings into account, it can be concluded that the steep drop in Haredi male employment rates in recent decades stems from a combination of three main factors that reinforce each other: a rise in the importance of formal education in the modern labor market; a drop in the rate of those acquiring formal education in the Haredi sector; and, a gradual entrenchment of the social norm granting preference to Torah studies over work. The last of these factors has led to a significant increase in the rate of those who study and the average length of their studies in yeshivas.

If this way of life were the result of ideological choices alone, it is unlikely that there would be such a large change in Haredi employment rates over time. This change confirms that in addition to ideology, the lack of formal education was a central factor behind the sharp drop in employment rates.

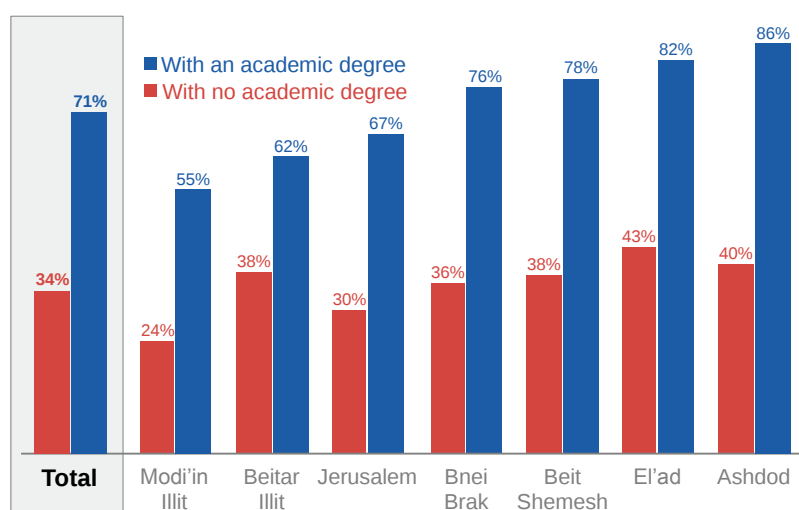
These findings clearly point to the great importance of formal studies for increasing employment and economic welfare in the Haredi sector in Israel. The state would, therefore, do well to reexamine its position with respect to mandating core curriculum studies in this sector⁶ and consider adopting a more active policy, which ensures that Haredi children are given the tools required for integration in the modern labor market. The state should also consider increasing its involvement in the professional guidance and training of Haredim, in order to open new alternatives for them and additional employment channels beyond the education field.

⁶ In July, 2013, the Knesset Education Committee approved a law which made the continued budgeting of Haredi Exempt institutions (where about 45,000 pupils study in grades 1-8) conditional on teaching core curriculum material and participation in the MEITZAV exams. However, no significant steps were taken in instituting these studies in post-primary settings (grades 9-12). Furthermore, in the primary school settings where some 200,000 Haredi pupils study, there is, as yet, no effective supervision for implementation of the core curriculum in practice.

Appendix A

Selected Figures

Appendix Figure 1A
Employment rates of Haredi* men,
by city and education level
 ages 25-64, 2008

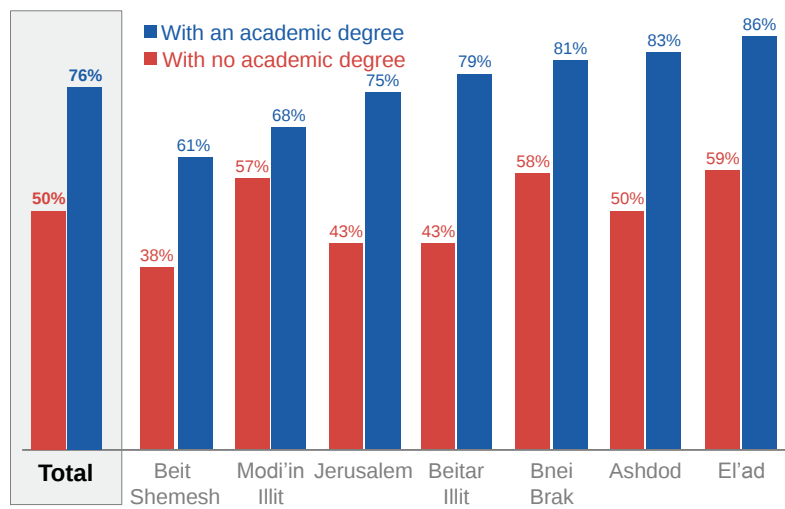


* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

Appendix Figure 1B
Employment rates of Haredi* women,
by city and education level
 ages 25-64, 2008



* Haredi are ultra-Orthodox Jews

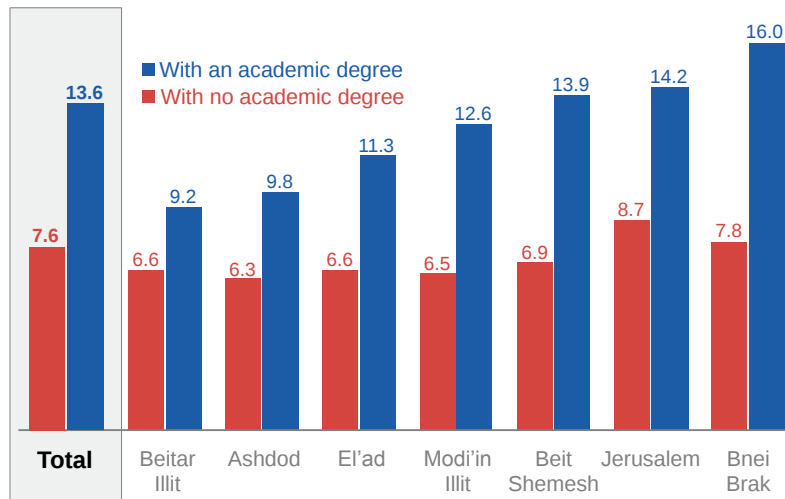
Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

Appendix Figure 2A

Gross monthly wages by education level, 2008

Haredi* men in full-time employment, ages 25-64, in thousand shekels



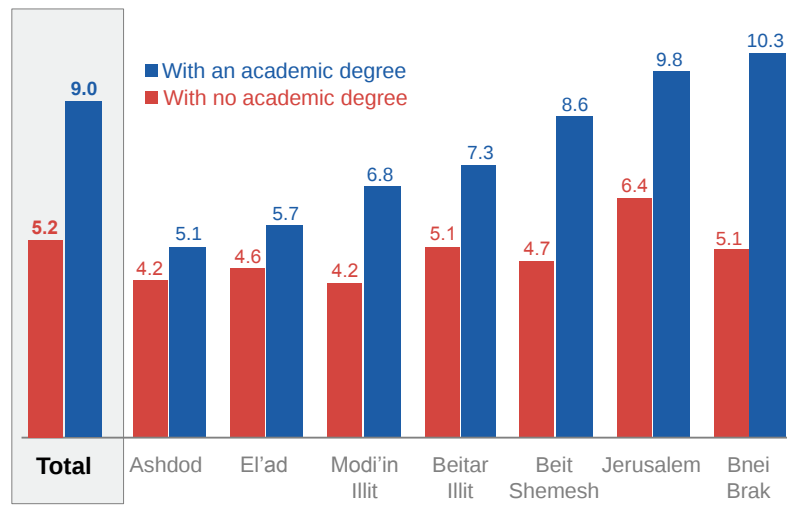
* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel**Data:** Central Bureau of Statistics, *Population Census Data*

Appendix Figure 2B

Gross monthly wages by education level, 2008

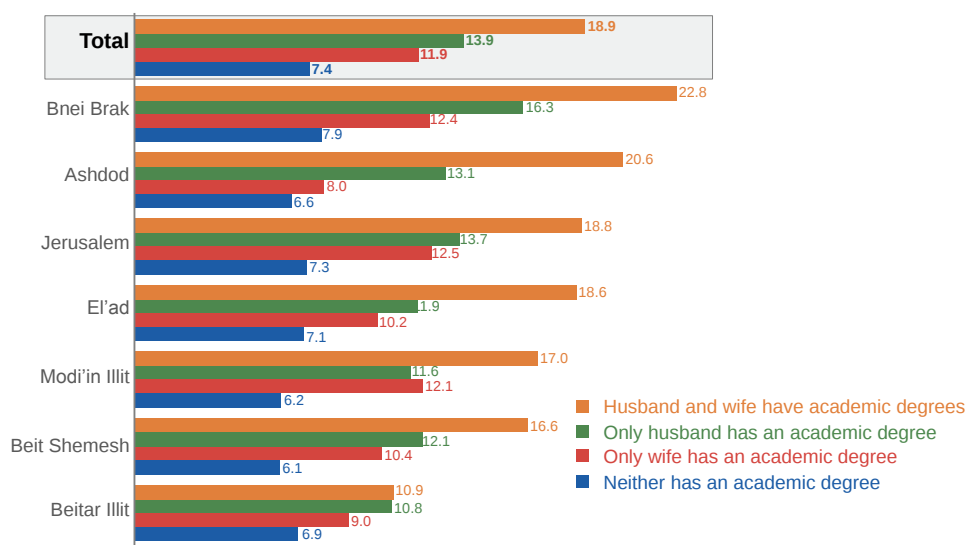
Haredi* women in full-time employment, ages 25-64, in thousand shekels



* Haredi are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel**Data:** Central Bureau of Statistics, *Population Census Data*

Appendix Figure 3
Haredi* household monthly income, 2008**
 married Haredim*, ages 25-64, in thousand shekels



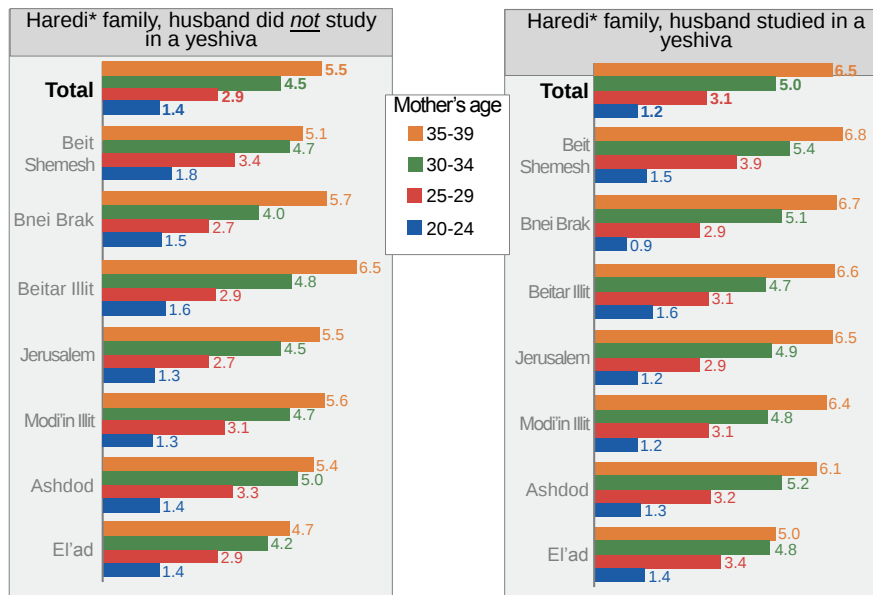
* Haredi/m are ultra-Orthodox Jews

** By city and couple's education level, gross income including child allowances and NII transfers

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

Appendix Figure 4
Number of children, 2008
 by city and mother's age



* Haredi/m are ultra-Orthodox Jews

Source: Eitan Regev, Taub Center for Social Policy Studies in Israel

Data: Central Bureau of Statistics, *Population Census Data*

Appendix B

New Methodology for Identifying the Haredi Population

In order to properly examine the effect of academic education on employment and wages in the Haredi sector, it is necessary to compare Haredim with an academic education to Haredim without this level of education. For this purpose, an identification method is required that identifies Haredi individuals with academic degrees (and not only those whose last place of study was a yeshiva), and at the same time filters out non-Haredi degree holders. The methods of identification currently practiced fail to meet these two conditions and are, therefore, unsuitable for examining this issue.

Existing identification techniques and their drawbacks

For the purpose of identifying the Haredi population in labor force surveys, identification techniques were based on the last educational institution of men in Jewish households.

According to the Taub Center method, in the first stage, Jewish men who are heads of their households or the spouse of the head of household and whose last place of study is a great yeshiva are identified. In the next stage, the other members of those men's households (their wives and children) are identified. In the final stage, Jewish men who are neither heads of households nor their spouses, but who last attended a yeshiva are identified. The total population identified over these three stages is defined as the Haredi population.

The Central Bureau of Statistics (CBS) employs a similar method. In the first stage, Jewish men who last attended a yeshiva (even if they are not heads of their households) are identified; in the next stage, the other members of those men's households (their wives, children, parents, and siblings) are identified; in the third stage, those households in which at least two adult men did not last attend a yeshiva are excluded; in the fourth stage, those households in which at least two men and/or women served in the army are excluded; and in the final stage, the entire (adult)

population living in Modi'in Illit and Beitar Illit is added.⁷ The total population identified over the five stages is then defined as the Haredi population (Fridman et al., 2011, pp. 9-11).

These methods have two main disadvantages:

1. The identification is partial and biased: Almost all of the men identified by these methods as Haredim last attended a yeshiva, i.e., Haredi men who attended an academic institution after their yeshiva studies and Haredi men who never attended a yeshiva at all fail to be identified. Fridman et al. (2011, p. 27) show that for 28 percent of Jewish men age 20 and over who define themselves as Haredi, a great yeshiva was not the last educational institution - 17.5 percent never attended a yeshiva at all.
2. The identification is imprecise: Many yeshiva students belong to the "religiously observant" sector rather than the Haredi sector, i.e., some of the men identified by the previous methods are not Haredi at all. Fridman et al. (2011) show that 24 percent of the Jewish men aged 20 and over who last attended a yeshiva do not even consider themselves as Haredi (16 percent define themselves as religiously observant, and 8 percent as "other").

It can be concluded that these identification methods are unsuitable for examining the effect of academic education on employment and wages in the Haredi sector. When the focus is only on men who last attended a yeshiva, identifying academic degree holders among them is difficult, and a significant portion of those identified (both men and women) is not actually Haredi, but religiously observant. This has a special impact on the figures for women: the rate of academic degree holders among religiously observant non-Haredi women is much higher than among Haredi women.⁸ It is reasonable to assume then, that many of the female

⁷ In Modi'in Illit and Beitar Illit, steps 1-4 are skipped as the entire population of these cities is included.

⁸ Among the men, too, there is a significant gap between the rate of religiously observant degree holders and that of Haredi degree holders, but since almost

degree holders identified by the existing methods are actually religiously observant (rather than Haredi) and that would prevent any valid comparison between Haredi women with and without academic degrees.

The new identification method

The new method developed for this study is based on the 2008 population census⁹ – a database with over one million observations (ten times more than in the CBS' Labor Force Surveys). The advantage that this large number of observations offers is the possibility of performing deeper analyses, especially with respect to matters concerning academic education in the Haredi sector.

Stages of identification:

The first stage is based on a methodology developed by Gurovich and Cohen-Kastro (2004) for the purpose of identifying localities and statistical areas (neighborhoods) in which the Haredi population lives. This methodology makes use of the voting figures for Haredi parties in elections to the Knesset in order to identify areas in which the Haredi share of the population is particularly high. Gurovich and Cohen-Kastro rated these areas by level of Haredi homogeneity: areas where the Haredi share of the population is highest are classified as Homogeneity Level 1 and areas where their share is relatively low as Homogeneity Level 12. In areas not classified at any homogeneity level, the Haredi share of the population is nil or negligible.

After the 2009 elections, this methodology was implemented anew by the Central Bureau of Statistics, and the list of relevant areas was updated. Fridman et al. (2011) show that about 64 percent of the total

all of the men identified by the older methods last attended a yeshiva, most of them are not identified as degree holders (even where religiously observant men are concerned), and, therefore, the gap is narrower.

⁹ The new identification method was designed to be implemented on the population census however applying certain adjustments (with the assistance of the CBS) would enable its implementation on other data sets, for example, the Household Expenditures Survey.

Haredi population reside in areas classified as Homogeneity Level 1-6, and that in these areas only 20 percent of the population do not define themselves as Haredi. Thus, in the first stage of the new identification method, the entire Jewish population residing in areas classified as Homogeneity Level 1-6 was identified in the population census.

The second stage was designed to eliminate the non-Haredi population residing in areas classified as Homogeneity Level 1-6. To this end, it was necessary to find a unique attribute or variable that distinguishes Haredi from non-Haredi households. Such an attribute was indeed found: possession of a television set at home. An analysis of the data from the CBS 2011 Social Survey – in which the subjects were asked directly whether they define themselves as Haredi – reveals that about 91 percent of all Haredim do not watch television at all, and another 7 percent watch television less than an hour a day (perhaps outside their homes). As opposed to that, only 6 percent of non-Haredi Jews declared that they do not watch television at all. It follows that excluding the households in which there is no television will serve to remove most of the individuals who are not Haredi, and leave the vast majority of the Haredi individuals.¹⁰ Therefore, the households having a television set in those areas identified as Homogeneity Level 1-6 were excluded from the research population.

When all the above factors are weighed, it is estimated that under the new identification method, about 98.5 percent¹¹ of the final research

¹⁰ The census population also includes a small number of institution residents for which this kind of filtering is irrelevant. Therefore, institution residents (who reside in areas 1-6) and also attend yeshivas were identified as Haredi. That is, yeshiva students who reside in an institution (yeshiva) located in a Haredi neighborhood were identified as Haredi. The vast majority are not employed, bachelors, younger than the age of 25, and less than 1 percent of them have an academic degree. This population has a negligible effect on the outcomes of the research – which mainly focuses on those aged 25 and over.

¹¹ $98.5\% = (95\% \cdot 80\%) / ([6\% \cdot 20\%] + [95\% \cdot 80\%])$. The calculation assumes that in 95 percent of Haredi households there is no television set. This, as mentioned previously, is based on the assumption that some of the Haredim

population are indeed Haredi. As noted previously, the Central Bureau of Statistics' method has only a precision level of about 76 percent. Furthermore, under the new method, Haredim who last attended an academic institution are also identified, which was impossible to do using the old methods. The final research population under the new method comprises about 10,000 Haredi men (roughly 800 of them academic degree holders) and about 10,000 Haredi women (roughly 1,200 of them academic degree holders).

In summary, it can be said that the new research population meets three necessary conditions for a proper comparison between Haredim with and without an academic education: a high level of precision in identification; efficient identification of Haredim with academic degrees; and a large number of observations.

As noted, meeting these conditions also facilitated a deeper analysis of the Haredi labor market, with a concomitant examination of the various employment branches and the attributes of those employed in them (age group, educational level, place of residence, and so on).

who watch television less than an hour a day do not keep a television set in their homes, but watch randomly when they are away from home. Nonetheless, even if a more cautious approach is taken, assuming that in only 91 percent of Haredi households there is no television set, a similar outcome is obtained: $98.4\% = (91\% * 80\%) / ([6\% * 20\%] + [91\% * 80\%])$.

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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.

* Prof. Ayal Kimhi, Taub Center Deputy Director and Chair, Taub Center Labor Policy Program; Sir Henry d'Avigdor Goldsmid Professor of Agricultural Economics, Hebrew University. Kyrill Shraberman, researcher, Taub Center.

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

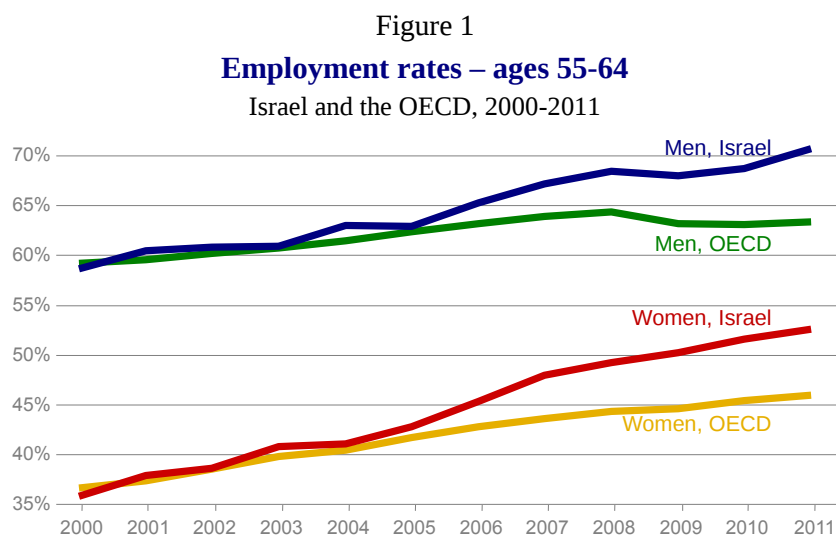
incentives provided by the social welfare system. Goda et al. (2011) found that Americans were reporting later retirement ages in 2008 than in 2006, and that one factor – though not necessarily the only one – behind this development was the weakness of the capital market. Helppie McFall (2011) found 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.



Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

Data: OECD

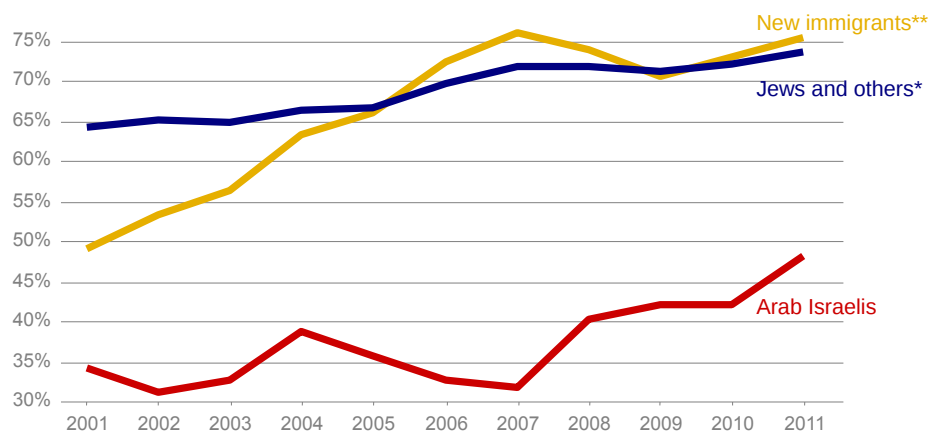
Figure 2 presents the employment rates of this same age group by population sector. One can see that among men, Jewish employment rates were significantly higher than those of Arab Israelis, although both groups exhibited a rise in employment rates over the years. Of particular note is an impressive 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.

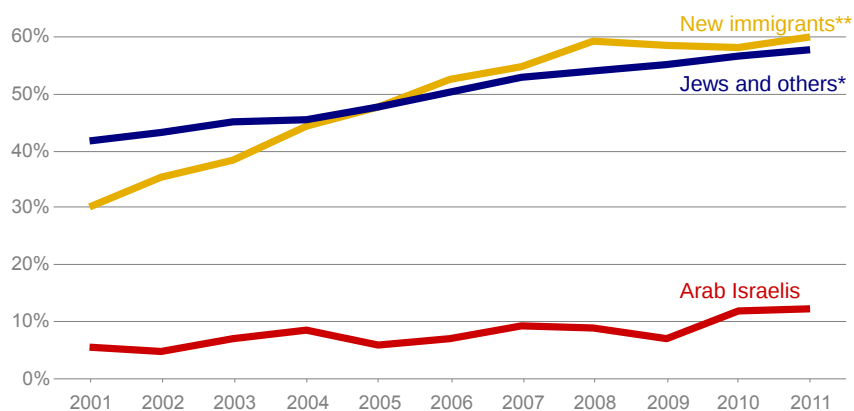
² When the focus is narrowed – new immigrants living in the periphery – it can be seen that they began the decade with even lower employment rates than those of the new immigrant population as a whole – yet still managed to close the gap by 2004.

Figure 2
Employment rates for ages 55-64
 by population groups, 2001-2011

A. Men



B. Women



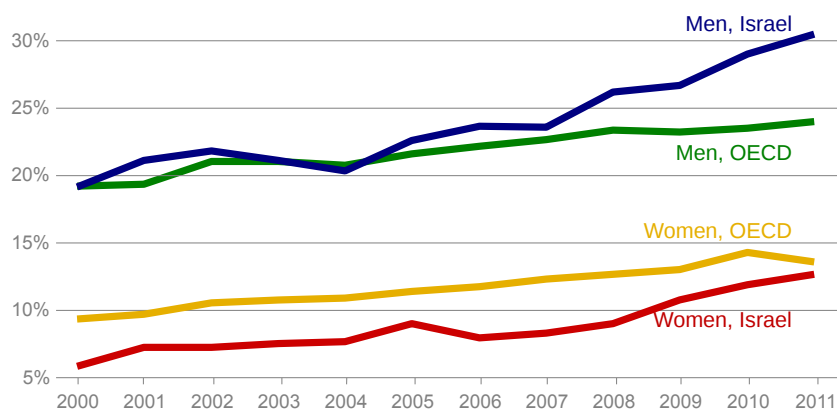
* Includes those with a classification of “other” for religion

** 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

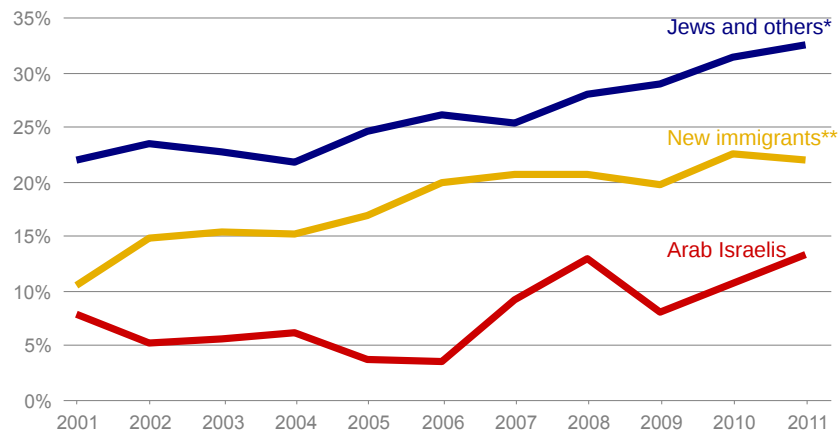
Data: OECD

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.

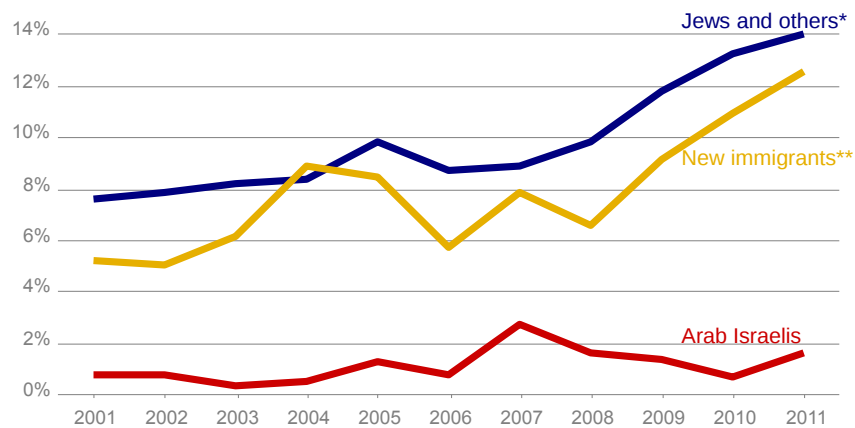
³ The employment rate of immigrants living in the periphery was lower than that of immigrants living in central Israel, particularly during the recession years at the start of the past decade; however, the gap between the two groups narrowed considerably afterward.

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

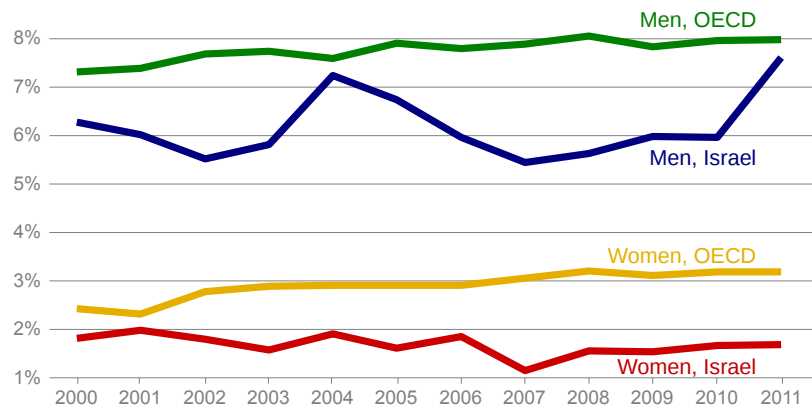
** Immigrated to Israel since 1990

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.

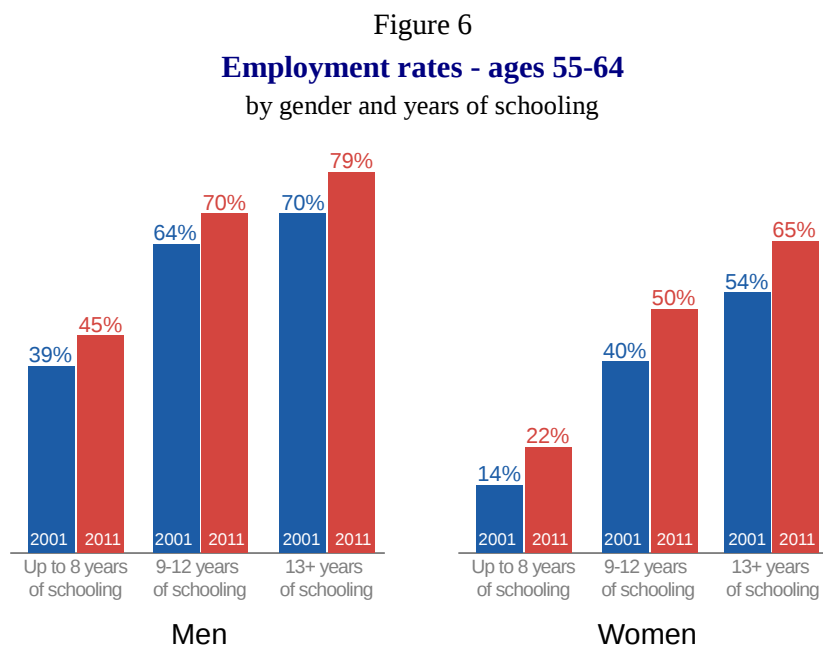
Figure 5
Employment rates - age 75 and over
Israel and the OECD, 2000-2011



Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

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

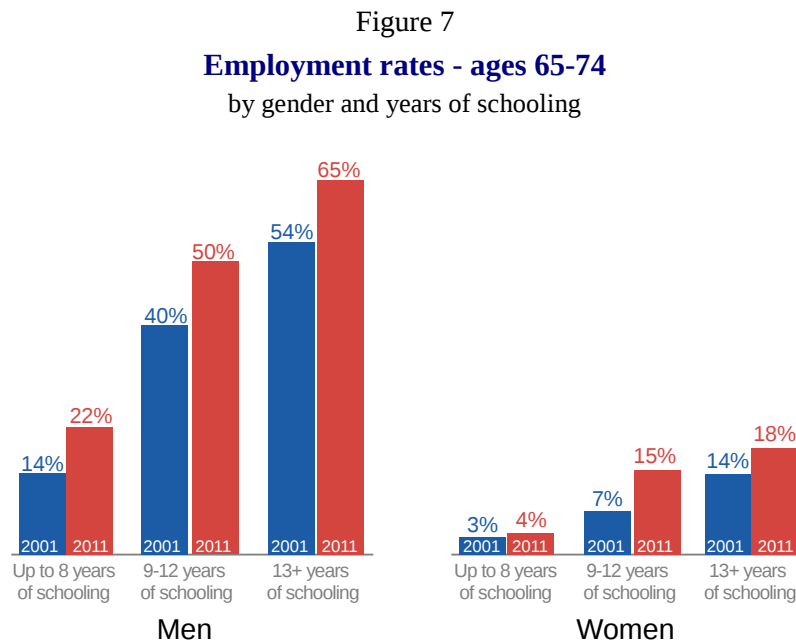
An earlier study (Kimhi, 2012) found that employment rate disparities in Israel are largely due to education disparities. This finding also exists regarding employment of older adults. Figure 6 presents changes in the employment rates of Israelis aged 55-64 by educational level. A significant gap can 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.



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



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.

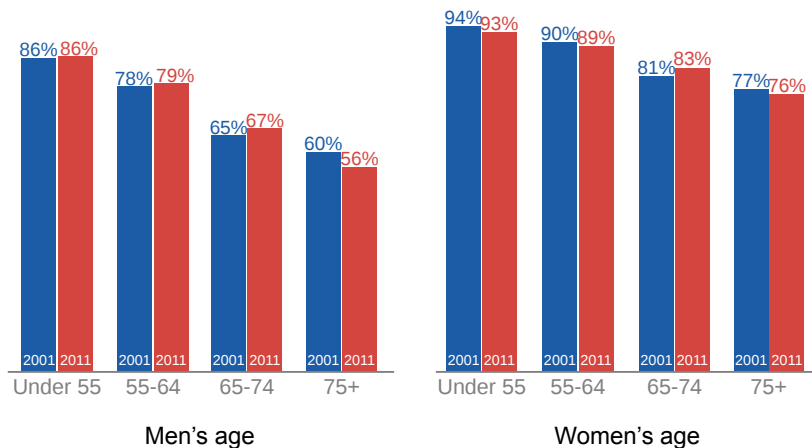
Figure 8 looks at differences in the percentage of employees among all employed persons. No significant change in the percentage of employees over time was found; however, the percentage of employees declines with age, and this decline is more substantial among men. What this means is that the decline 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.

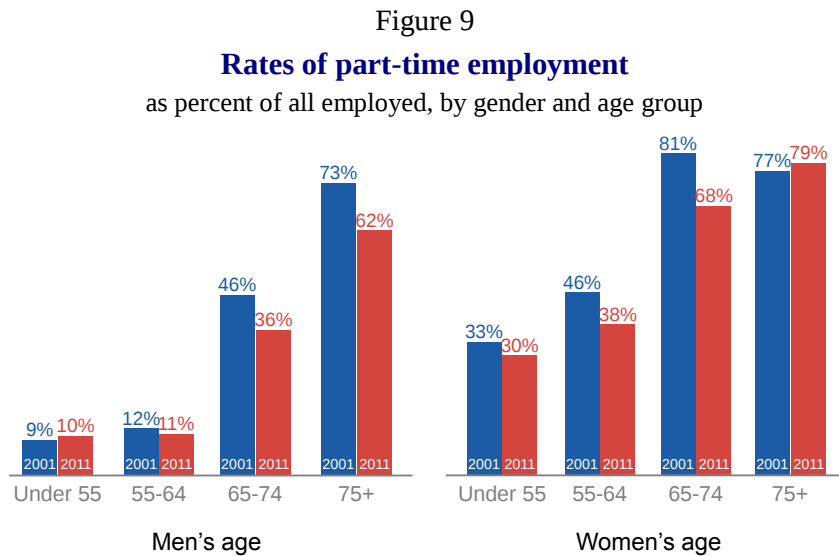
Figure 8
Percent of employees out of employed persons
by gender and age group



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.



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

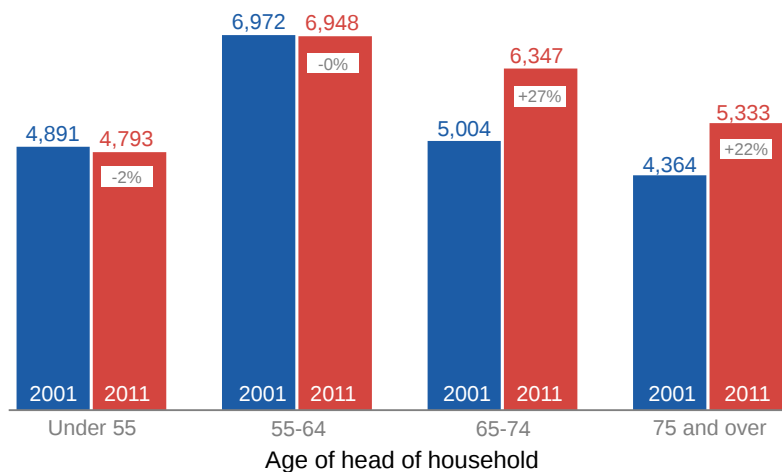
One may ask whether the rise in per capita income is solely due to the rising employment rates in this age group. Regarding those aged 75 and over, this cannot be the case since their employment rates did not rise significantly during the period in question (Figure 5). Table 1 presents the rise in per 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

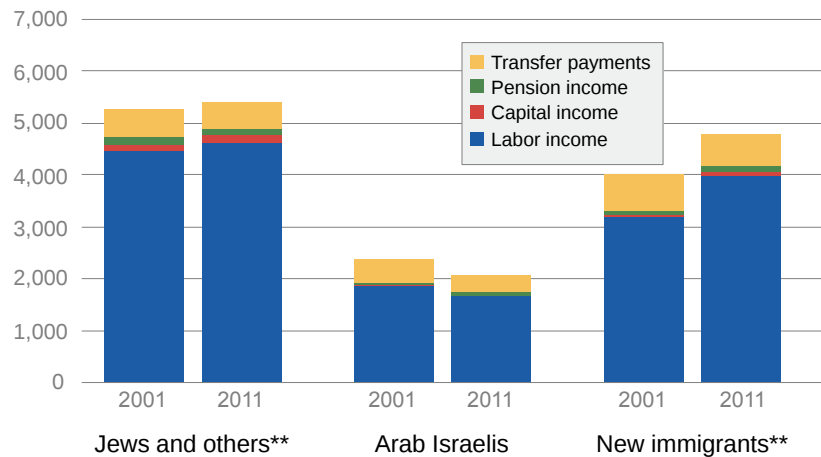
Two points are worth noting with regards to these findings. One is the rise in pension income enjoyed by households headed by older adults. There can be no doubt that during the decade in question public awareness grew regarding the importance of pension plans, due in part to the mandatory pension contributions 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

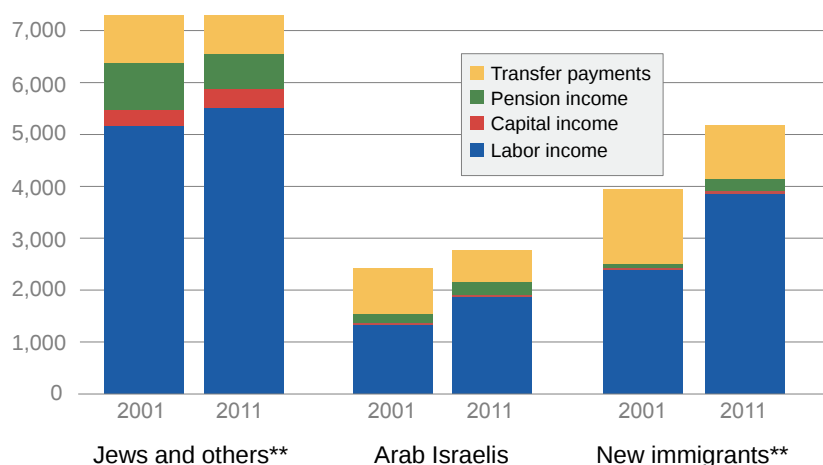
** "Jews and others" includes those with a classification of "other" for religion; "New immigrants" are those who immigrated to Israel since 1990

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

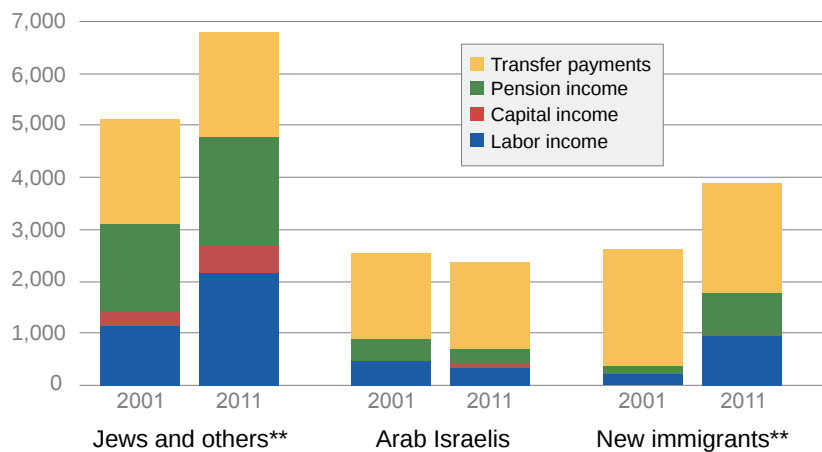
Data: Central Bureau of Statistics, *Income Survey*

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

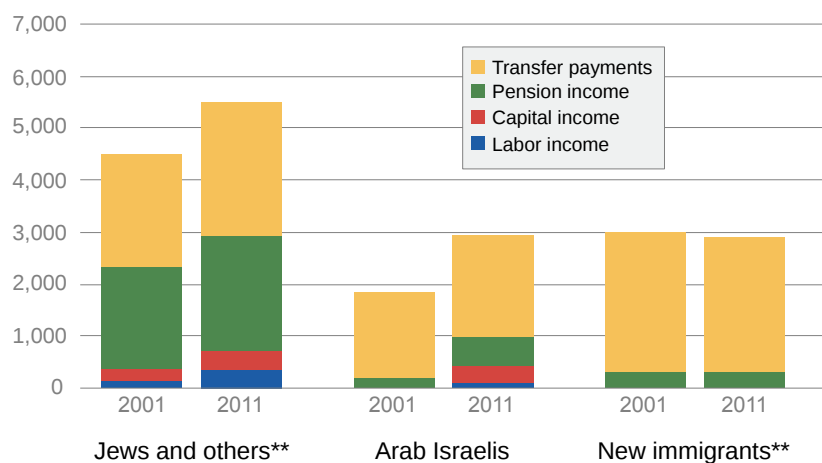
** "Jews and others" includes those with a classification of "other" for religion; "New immigrants" are those who immigrated to Israel since 1990

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

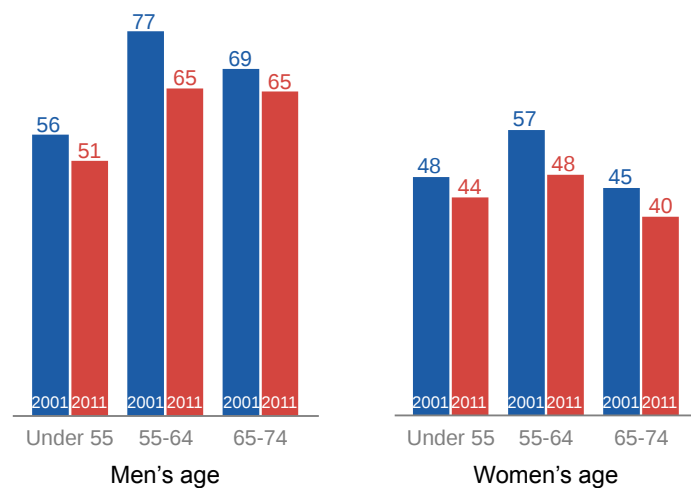
⁹ The figure does not include the 75 and over age group, since the number of employees in this group is too small to yield reliable wage averages.

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

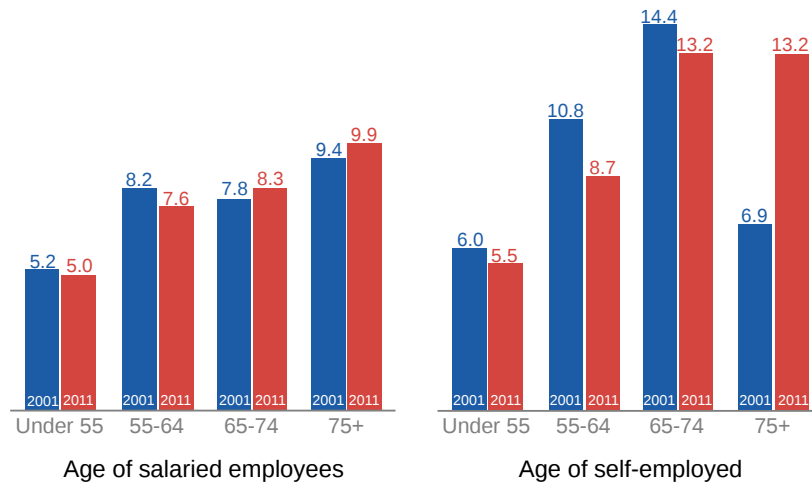
in 2011 shekels, by gender and age group

**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

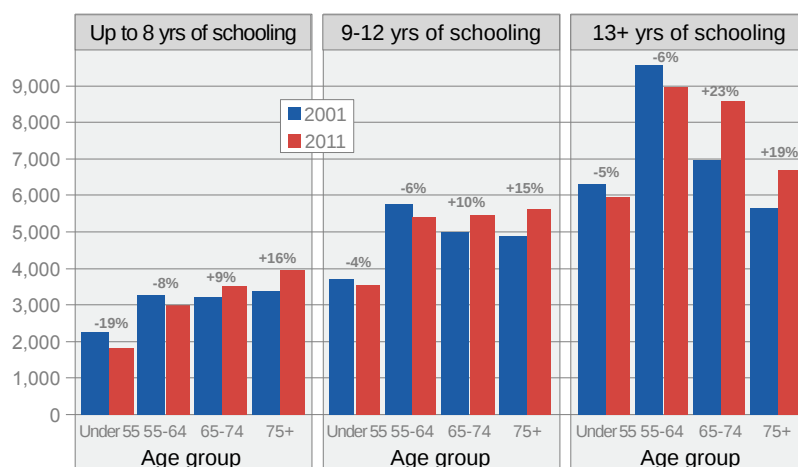
persons aged 75 and over nearly doubled, but it must be remembered that this is a relatively small population group.

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.

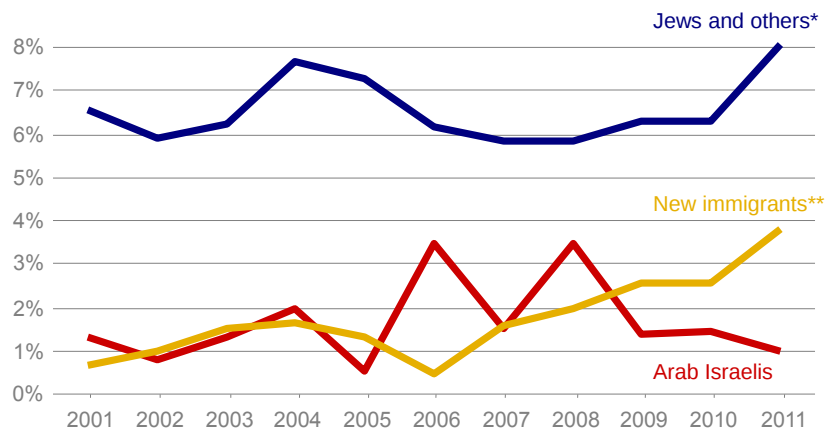
Rising employment rates among older adults are also reflected in their household income levels. The per capita income of households headed by older adults increased substantially during the first decade of the millennium, while that of other households did not increase in real terms. Labor income contributed 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.

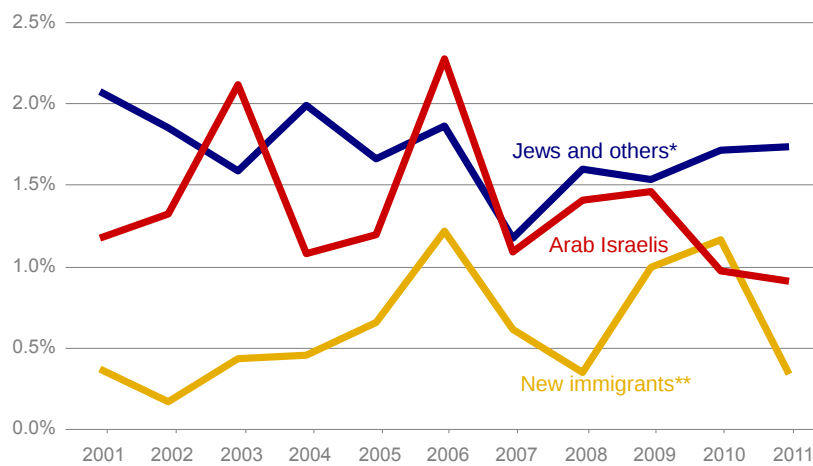
Appendix A

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

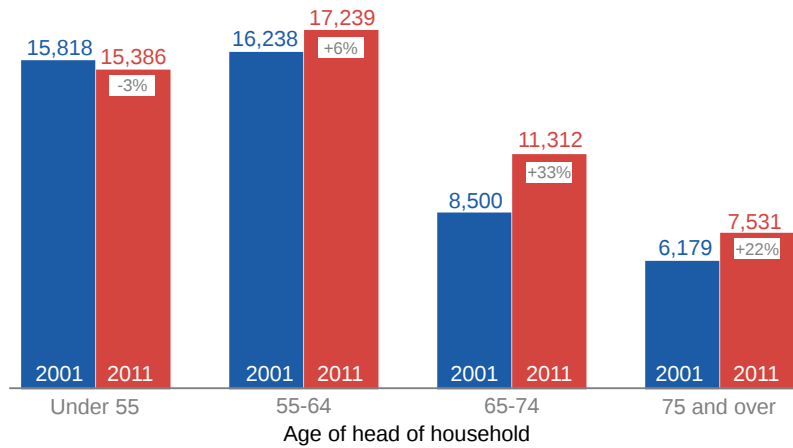
Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

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

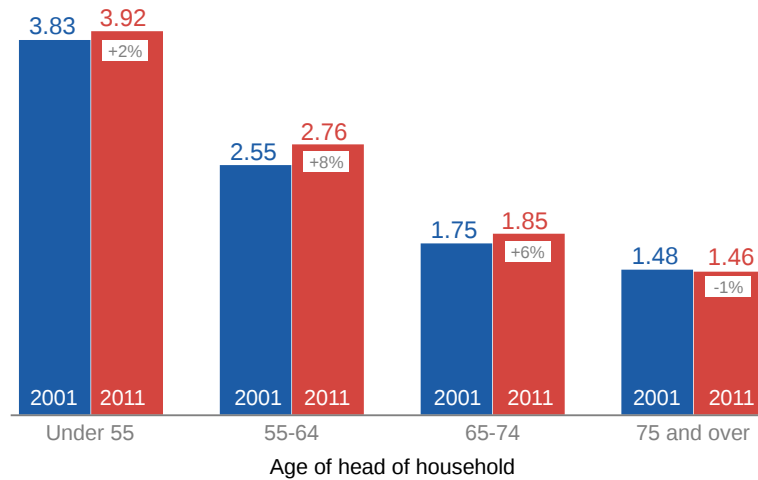
Appendix Figure 2

A. Gross household monthly income

in 2011 shekels, by age of head of household

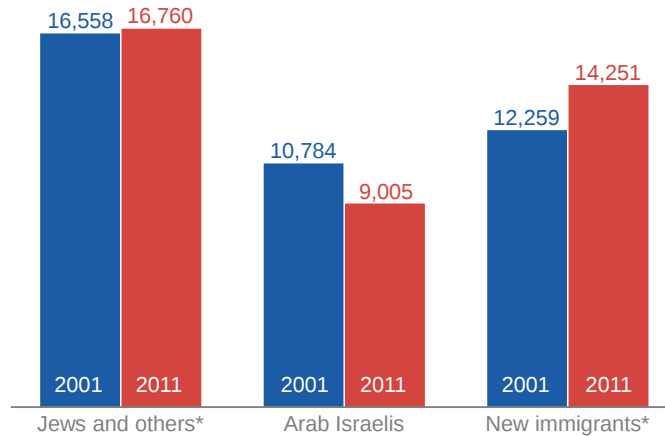
**B. Average household size**

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

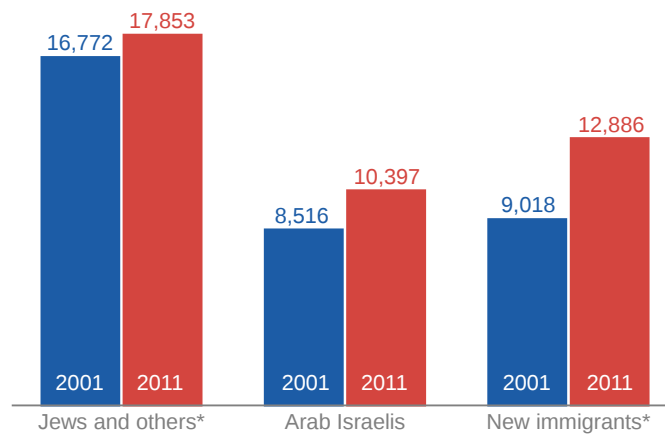
**Source:** Ayal Kimhi and Kyrill Shraberman, Taub Center**Data:** Central Bureau of Statistics, *Labor Force Survey*

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



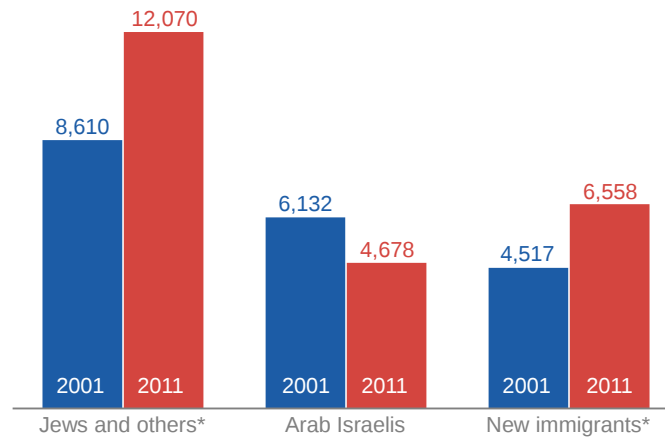
* “Jews and others” includes those with a classification of “other” for religion; “New immigrants” are those who immigrated to Israel since 1990

Source: Ayal Kimhi and Kyrill Shraberman, Taub Center

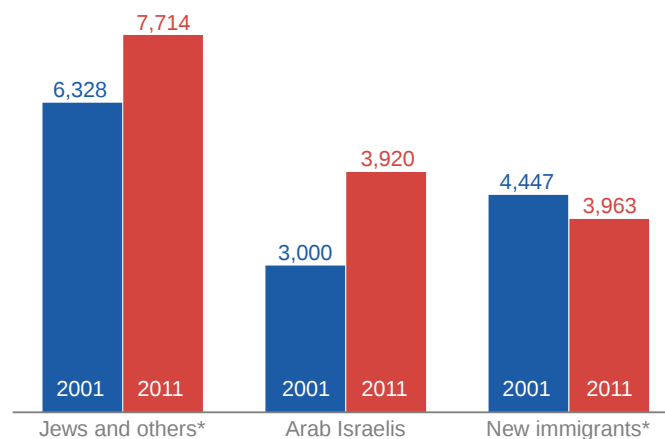
Data: Central Bureau of Statistics, *Income Survey*

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 X_j 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. β_j 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:

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

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

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

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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Women in the Labor Force

The Impact of Education on Employment Patterns and Wages

Haya Stier and Efrat Herzberg*

Abstract

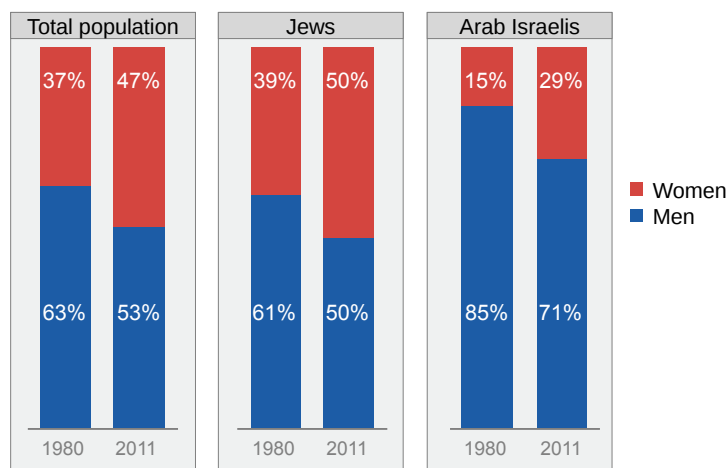
This chapter looks at changes that have taken place in Israel's female labor force over the past 30 years, with a focus on education and its impact on women's labor force involvement. Education plays a major role in explaining women's labor force participation patterns as well as the changes that have occurred both in women's economic activity and in the composition of the labor force. Although there has been a rise in the total female labor force participation rate, the economic activity of less-educated women is declining. This situation is leading to polarization between highly-skilled women – who enjoy many employment opportunities and suitable working conditions – and women of lower skill levels. At the same time, a significant rise in higher education rates has not necessarily created new employment opportunities. Some academic-educated women have managed to enter traditionally male professional and administrative occupations that offer good working conditions, opportunities for advancement, and a high relative wage. However, the growth rate of higher education appears to be exceeding that of demand for professional occupations, and many highly-educated women are settling for occupations that formerly required lower levels of skill.

* Prof. Haya Stier, Chair, Taub Center Social Welfare Policy Program; Departments of Sociology and Anthropology and Labor Studies, Tel Aviv University. Efrat Herzberg, Department of Labor Studies, Tel Aviv University.

In recent decades, the Western world's female labor force, including that of Israel, has been trending upward. Currently, 54 percent of all Israeli women aged 15 and over participate in the labor force, compared with 29 percent at the beginning of the 1970s. Jewish women exhibit an even higher participation rate (58 percent). Men's participation rates are higher, but when attention is focused on Jews of prime working age (25 to 54) one finds that the difference is miniscule: 83 percent of all women and 84 percent of all men take part in the labor force. These changes are generally attributed to a significant rise in women's education levels, increased demand for female labor reflecting expansion in the service and white-collar sectors, and a concomitant rise in the wages offered to them (Kimhi, 2011). Yet another factor is the changes that have occurred in the family sphere, in terms of age at first marriage and, in particular, at birth of first child, as well as in terms of gender related division of labor between paid and unpaid work. Most of those who are currently joining the labor force are married women and mothers of young children. In most Israeli families, as well as families in the majority of industrialized countries, both partners participate in the labor force (Stier, 2010).

The rise in women's labor force participation rates has significance both in terms of labor force composition and in terms of the attributes of women in the labor force. The large-scale influx of women into the labor force changed the gender composition of the labor force in a significant way: from a minority group that constituted only one-third of the labor force 30 years ago, women have come to account for almost half of today's labor force, as shown in Figure 1 – that is, the labor force has become more balanced in terms of its gender breakdown. Within the Jewish population, whose female participation rates are higher, the labor force is fully balanced in terms of gender, while among Arab Israeli workers, despite an increase in women's relative labor-market share, women are still a minority (29 percent).

Figure 1
Israeli labor force, by gender
 1980-2011



Source: Haya Stier and Efrat Herzberg, Taub Center

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

1. *Changes in Women's Employment Over Time*

As noted, women's labor force participation rates in recent decades have risen significantly. Figure 2 presents participation rates by sector for the female population during the period 1980-2011.

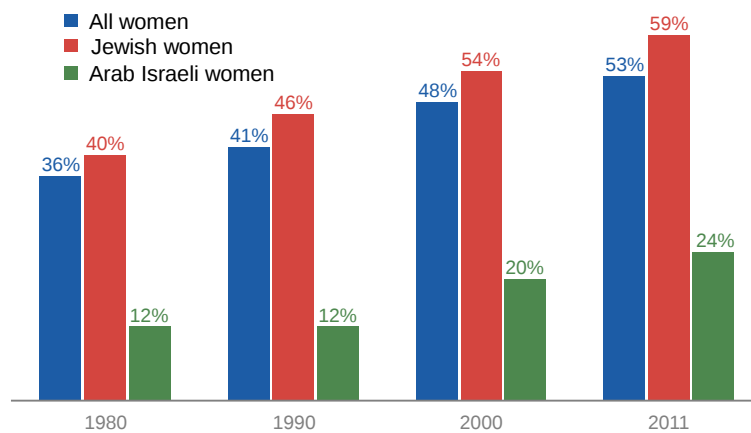
Figure 2 shows that, over the period in question, labor force participation rates of all women aged 15 and over increased: while one-third of all women participated in the labor force in 1980, 53 percent are in the labor force today. When the figures for Jewish and Arab Israeli women are compared, there is a very significant disparity throughout the period: in 1980,

40 percent of all Jewish women participated in the labor force, versus 12 percent of Arab Israeli women – a gap of 28 percentage points. Despite the increase experienced by both groups – the Arab Israeli women’s participation rate has actually doubled over the past 30 years – the gaps have continued to widen, reaching 34 percentage points in 2000 and 35 percentage points in 2011.

Figure 2

Female labor force participation rates by sector

as a percent of all women* in each population group, 1980-2011



* All women aged 15 and over

Source: Haya Stier and Efrat Herzberg, Taub Center

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

As noted, despite the differences between the two groups, the rise in labor force participation characterizes Israel’s entire female population. It is related to changes in the composition of women’s human capital (especially the rise in education levels), but also to structural changes in the labor force, in household organization, in the economic situation and in gender-role norms (Stier, 2010). The most obvious change is the rise in women’s

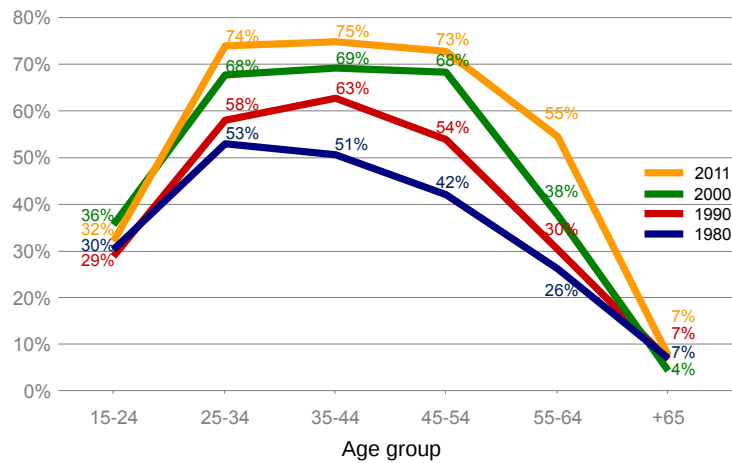
education levels, especially their entry at high rates into the higher education system (Shavit and Bronstein, 2011). At the same time there have been changes in the structure of the industrial sector: growth in the social service and white-collar sectors, as well as a transition to high-tech industries, has increased demand for skilled female labor (Stier, 2006). These processes have emerged in most industrialized countries, alongside legislation and institutional arrangements, particularly ones aimed at increasing gender equity and improving the labor force's accessibility to mothers. The increased demand for female labor, as well as the rise in education levels and in the number of opportunities open to women, explain not only the rise in women's labor force participation, but also the pattern of their lifetime labor force participation.

Nevertheless, women's employment patterns are still influenced by family constraints, particularly the presence of children. These constraints are reflected both in the pattern of women's labor force involvement over the course of their lives and in the intensity of that involvement.

Figure 3 presents labor force participation rates of different age groups throughout the period under examination – inasmuch as age is closely related to the family's life stage, and especially to the presence of young children. Age is also an important attribute in the measurement of women's employment stability throughout their lives. In the past, many women exited the labor force after their children were born. The rise in education levels and economic opportunity, as well as employment-supportive policies embraced by most industrialized countries, has made it more worthwhile for women to join the labor force even when their children are young. As employment stability is increasing for women throughout the Western world, most return to the labor force a short time after their children are born.

Figure 3 reflects an upward trend in the labor force participation of all female age cohorts, and especially those of prime working age (25-54). Since 2000, the participation rates of the three age groups between 25 and 54 have remained steady, indicating women's willingness and ability to be a part of the labor force throughout their prime working years.

Figure 3
Female labor force participation rates by age
 as a percent of all women in each age group, 1980-2011

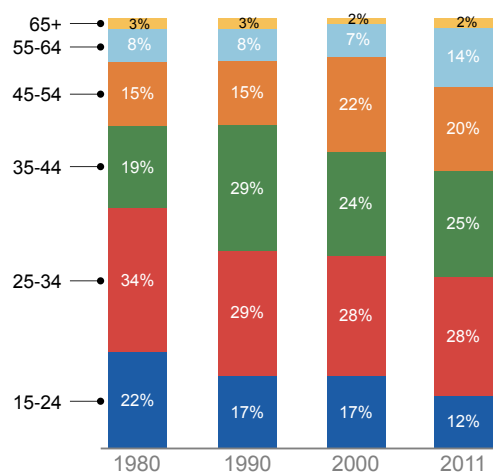


Source: Haya Stier and Efrat Herzberg, Taub Center

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

When the female labor force's age distribution is examined (Figure 4), it shows that the labor force is aging: the proportion of young women in the labor force (aged 15-24) dropped from 22 percent to 12 percent – due, apparently, to an increased share of those enrolled in institutions of higher learning and to the deferred labor force entry that characterizes the entire labor force (men and women). There has also been a decline in the relative share of women aged 25-35 (from 34 percent to 28 percent), while the 35-64 age group increased its share.

Figure 4
Distribution of female labor force by age, 1980-2011



Source: Haya Stier and Efrat Herzberg, Taub Center

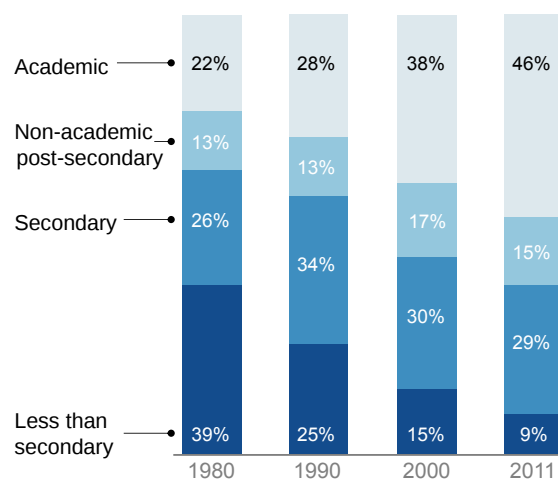
Data: Central Bureau of Statistics, *Labor Force Survey*

2. Women's Employment and Education

Education is of great importance as it is linked to entry into the labor force, to employment intensity, and to the quality of the economic opportunities that are open to women. While the influence of age on women's labor force participation rates since 2000 has been exceedingly stable, this is not the case with regard to education level. As noted previously, Israeli women's education levels rose significantly over the period in question. A particularly steep rise occurred in the percentage of those studying in institutions of higher education since the early 1990s, a period characterized by an overall expansion of the higher education system (Addi-Raccah and Mcdossi, 2009; Shavit and Bronstein, 2011). These trends are also reflected

in the female labor force's educational composition, as shown in Figure 5. In 1980, 39 percent of all women in the labor force had less than a secondary education, while today this group accounts for only 9 percent of the female labor force. The percentage of those with an academic education rose from 22 percent to 46 percent between the two points in time. The relative proportion of the two in-between groups – those with full secondary education and those with non-academic post-secondary education – changed very little between 1980 and 2011.

Figure 5
Distribution of female labor force by education, 1980-2011



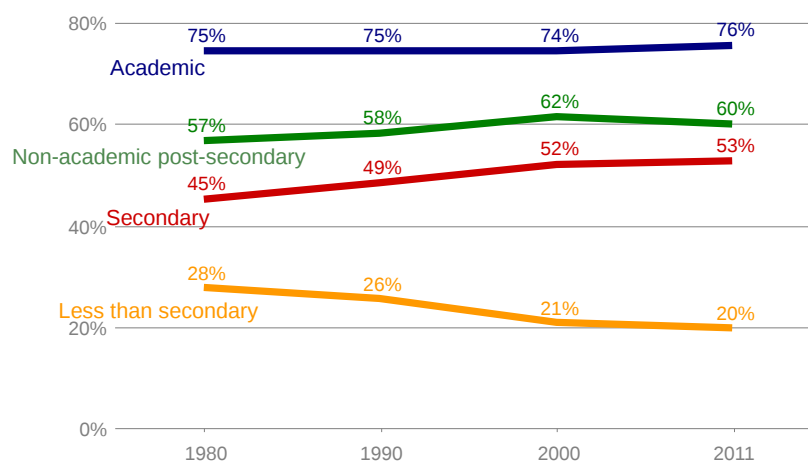
Source: Haya Stier and Efrat Herzberg, Taub Center

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

Although the change in the labor force's educational composition reflects the overall rise in Israeli higher education rates, it also stems from differences in women's participation rates across education-level groups. Education, particularly for women, is the main factor that explains the

degree of labor force involvement. Higher education is linked to relatively higher wage levels. Women, due to their role in the household and as primary childcare providers, weigh the advantages of paid work against the cost of alternative care for children and home (family or center-based child care, paid housework help, etc.). For women with higher education and high labor force wages, it is more feasible to participate in the labor force, as their earnings exceed the costs of domestic help and alternative childcare. Moreover, as noted, structural changes that have taken place in the labor force have enhanced the opportunities enjoyed by women with higher education to an even greater degree and, by contrast, limited the opportunities available to women with lower education levels – to the point that today there is not much demand for their labor. The participation rates of women with various levels of education can be seen in Figure 6.

Figure 6
Female labor force participation rates by education, 1980-2011



Source: Haya Stier and Efrat Herzberg, Taub Center

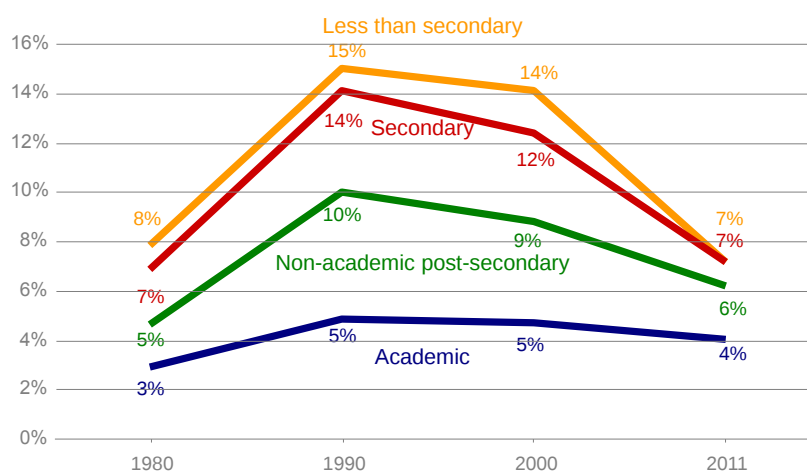
Data: Central Bureau of Statistics, *Labor Force Survey*

The data presented in Figure 6 indicate interesting differences between the groups from a long-term perspective. As may have been anticipated, throughout the period in question the labor force participation rate of women with a secondary education and higher increased, while the participation rate of less-educated women declined. Moreover, there was a change in the degree of the disparities between women in the different education-level groups. Throughout the period under study, more-educated women participated in the labor force at higher rates than did less-educated women. For example, during the 1980s three-fourths of all women with an academic education participated in the labor force, versus 28 percent of all women with less than a secondary education and 45 percent of all women with a secondary education. Over time, the gap narrowed between women with a secondary education and those with a post-secondary education: in 2011, 53 percent of women with a secondary education, 60 percent of women with non-academic post-secondary education, and 76 percent of women with higher education participated in the labor force. By contrast, the participation rate of less-educated women dropped; at present, only one-fifth of women with less than a secondary education are part of the workforce. In other words, the economic activity of women of different education levels has undergone a polarization, the main disparity being between women who have completed at least 12 years of schooling and those who have not.

It should be remembered that not all women who wish to do so manage to find work. It is possible that as demand for unskilled labor drops, less-educated women will face greater employment difficulties. Figure 7 presents unemployment rates by education level over the period in question. It can be seen that, throughout this time period, the unemployment rate of women with higher education is very low: 3 percent for those with an academic education and 5 percent for those with post-secondary education at the beginning of the period (1980). During the 1990s, unemployment rates rose, particularly among women with post-secondary education (10 percent in 1990). As unemployment declined in the economy as a whole, the unemployment rates of women in this group dropped as well, to 6 percent in 2011 (and to 4 percent for those with academic education). This pattern

shows that women with academic backgrounds, who enjoy high demand in the labor force, have been less affected than other workers by economic changes and fluctuations in the total unemployment level.

Figure 7
Female unemployment rates by education, 1980-2011



Source: Haya Stier and Efrat Herzberg, Taub Center

Data: Central Bureau of Statistics, *Labor Force*

This conclusion is reinforced when unemployment rates of women with a secondary education and less are examined. At the beginning of the period in question, the unemployment rates of both groups were similar and relatively high – 7 percent for women with secondary education and 8 percent for women with less than secondary education in 1980. In 1990, unemployment rose sharply to 14 percent among those with a secondary education and to 15 percent among those with less than a secondary education. By the end of the first decade of the 2000s, however, there had been a dramatic decline in unemployment – in that year 7 percent of both

those with less than a secondary education and those with a secondary education were unemployed.

In summary, education level has a significant influence on levels of economic vulnerability. The demand for female workers with secondary education or less is highly sensitive to fluctuations in the economy as a whole, hinting at lower stability and lower levels of occupational security. During periods of economic growth and overall decline in unemployment, the gaps between the various groups of women become smaller, but when the total unemployment rate rises, the gaps widen.

3. The Impact of Family on Women's Employment

Women's labor force participation rates are affected by family constraints, particularly the presence of young children. A lack of suitable day care centers and their high cost, along with the need to invest time in intensive childcare, all affect parental employment patterns, and particularly those of women. In Western countries, it is women who engage in caregiving activity; dozens of studies that examined time allocation within families (e.g., Bianchi et al., 2007) showed that women are the ones who shoulder the burden of childcare and housework. The presence of young children limits women's ability to work, and explains, to a large degree, why women's employment rates are still lower than those of men and why women's part-time employment rates are still exceedingly high. In this context, it is interesting to consider how the family influences women of differing skill levels, and whether the impact exerted by the presence of young children has changed over the period in question.

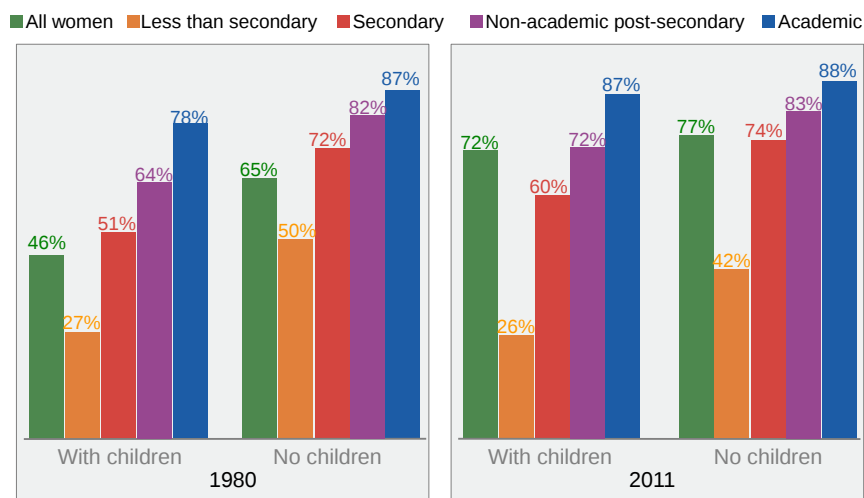
As noted previously, skills can mitigate the impact of family with regard to opportunity costs for childcare or housework. It is possible that less-educated women, who earn lower wages and whose employment opportunities are limited, will be less inclined to participate in the labor force or will allocate fewer work-hours to the market, inasmuch as the cost of care for young children outside the home often exceeds these women's

earnings. By contrast, highly skilled women with opportunities for developing lucrative careers will be less affected by the presence of children, as their relatively high wages and expectations of increased future wages enable them to purchase care for their children.

Accordingly, the participation rates of two groups of women aged 25-45 were examined: those with children aged 4 and under and those with no children under age 4. Figure 8 presents the participation rates of these groups within the total population and for four education-level groups: less than secondary, secondary, non-academic post-secondary, and academic. Two main conclusions may be drawn from Figure 8. Firstly, as might have been expected, the impact of children on mothers' employment status is linked to education level. In 1980, only 27 percent of less-educated women who were mothers of young children participated in the labor force, compared with 50 percent of women at the same education level who did not have young children. Among women with a secondary education, the gap between those with and without young children was significant as well – half of women with young children versus 72 percent of women without young children participated in the labor force. A similar disparity was found among women with a non-academic post-secondary education: 64 percent of mothers with young children participated in the labor force versus 82 percent of women without young children. The gap was smaller among academically-educated women – 78 percent of women with and 87 percent of women without young children participated in the labor force. That is to say, the impact of education on labor force participation intensifies for women with young children, and larger education-related employment disparities are found among mothers of young children. These gaps grew even wider in 2011, when, as noted, labor force participation rates increased for the population as a whole. Among all mothers of young children, participation rates rose from 46 percent to 72 percent, while for women without young children, rates increased from 65 percent in 1980 to 77 percent in 2011. As such, the gap between mothers of young children and other women narrowed greatly in 2011, nearly to the point of disappearing. However, the participation rates of the entire female

population conceal considerable variation by education level. The participation rate of less-educated women with young children remained as low as it was in 1980; only 26 percent of the women in this group participated in the labor force. By contrast, the corresponding figure for less-educated women without young children was 42 percent.

Figure 8
**Female labor participation rates by presence of children
 in the home* and education**
 as a percent of women aged 25-44, 1980 and 2011



* Children under the age of 4 in the home

Source: Haya Stier and Efrat Herzberg, Taub Center

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

The data show that children do, indeed, have less of an impact on labor force participation the higher the mother's education level is: among women with secondary schooling, the gap between the two groups was smaller than

it was among less educated women (60 percent versus 74 percent for those with and without young children, respectively). Among women with a post-secondary non-academic education, the gap narrowed to 11 percent (72 percent versus 83 percent for those with and without young children, respectively), while among women with an academic education the gap all but disappeared – 87 percent of women with young children and 88 percent of those without participated in the labor force.

To conclude the discussion of this topic: although the presence of young children exerts an influence on women's labor force participation, education moderates this influence. The participation rate disparity and employment rate stability over time among less-educated women (and, in certain cases, the decline in those rates) underscores the fact that these women are doubly disadvantaged: firstly, their opportunity cost of non-participation is lower from the outset and they work less than their more-educated counterparts. Furthermore, this negative effect has intensified over time: it is now harder for them to combine work and family than it was in the past, whether due to the nature of occupations available to them or to the low wage they earn.

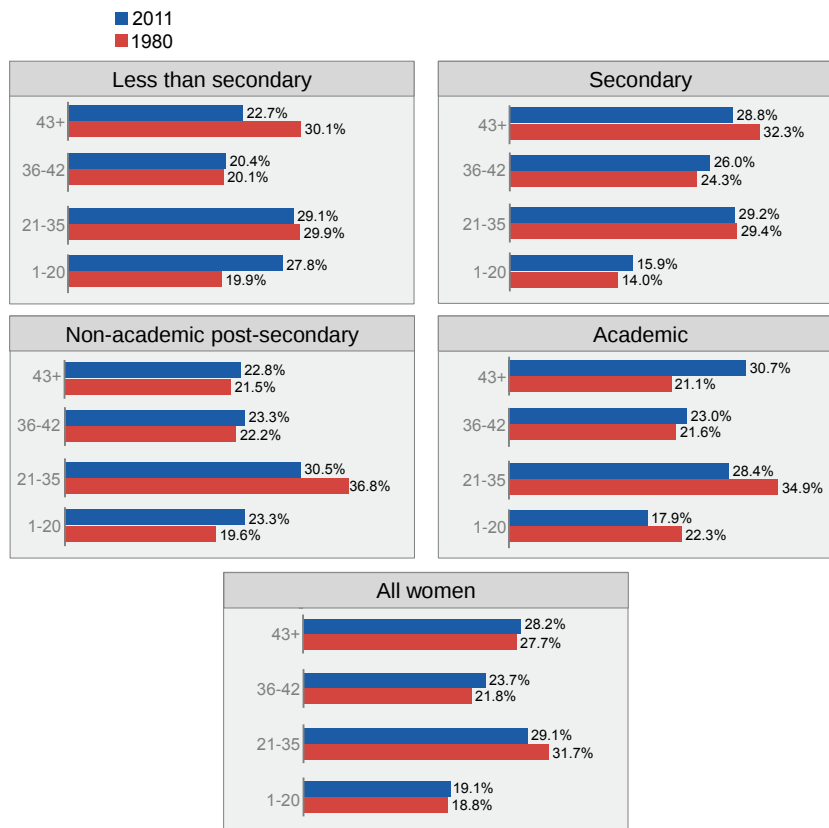
4. The Impact of Education on Women's Employment

Education is linked not only to entry into the labor force, but also to employment patterns, employment intensity and the types of employment in which women engage. The following section of this chapter will examine these issues exclusively with regard to employed women (unless indicated).

Women's work-hours remained quite stable throughout the study period, as may be seen in Figure 9. In 1980, half of all women (51 percent) worked fewer than 36 hours per week, (a level generally regarded as part-time). Since then, there has been a slight drop in the percentage of women employed part-time, to 48 percent in 2011. It is important to note that among those jobs defined as part-time (similar to those defined as full-time) there is considerable variance. Twenty percent of all employed women worked jobs that were very distinctly part-time in nature (fewer than

21 work-hours), and this pattern of limited labor force involvement remained markedly stable. By contrast, at the other end of the spectrum, 28 percent of all women worked long hours (more than 43 hours per week). The proportion of this group within the entire group of employed women also remained stable throughout the period in question.

Figure 9
Distribution of women's weekly work-hours
by education, among working women, 1980 and 2011



Source: Haya Stier and Efrat Herzberg, Taub Center

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

Does this picture of relative stability in labor force participation level change when women of differing education levels are examined? This is an important question for understanding inequity among women, inasmuch as work-hours are linked to remuneration levels. Beyond the issue of wage, however, work-hours are also linked to occupation type, to the degree of compatibility between family and labor-market commitments, and to well-being in general, on both economic and personal dimensions. In fact, a comparison of the distribution of work-hours by education level yields several interesting findings for each group over the time period in question.

In 1980, the percentage of women employed in part-time jobs (fewer than 36 hours) was higher among those with higher education – 57 percent for both women with academic backgrounds and for those with non-academic post-secondary schooling. By contrast, only half of employed women with less than secondary schooling and 43 percent of those with a secondary education worked part-time jobs. In 2011, this picture is reversed: the percentage of women employed part-time dropped to 46 percent among the academically-educated and rose to 57 percent among those with less than a secondary education. Between these extremes, a small rise in part-time employment was observed among women with a secondary education, and a slight decline among those with post-secondary education.

Studies on part-time employment in Israel (Stier, 1995; Stier, 1998) note that existing part-time jobs are of high quality, both because many of them are in the public sector, where worker rights are safeguarded to a high degree, and because of “expansion orders” (a certain kind of labor regulation) that bring working conditions and employee benefits into conformity with the economy as a whole. A fair number of part-time jobs have become concentrated in “feminine” occupations such as teaching, nursing, and other service fields. These jobs offered shortened work-hours, although in some cases they have actually come to be defined as full-time jobs (as in the teaching field). These kinds of jobs were highly characteristic of the occupations that were once open to women with higher education (Stier, 1995). Today, however, demand for workers in these fields appears to have changed, or it may be that more educated women are less willing to

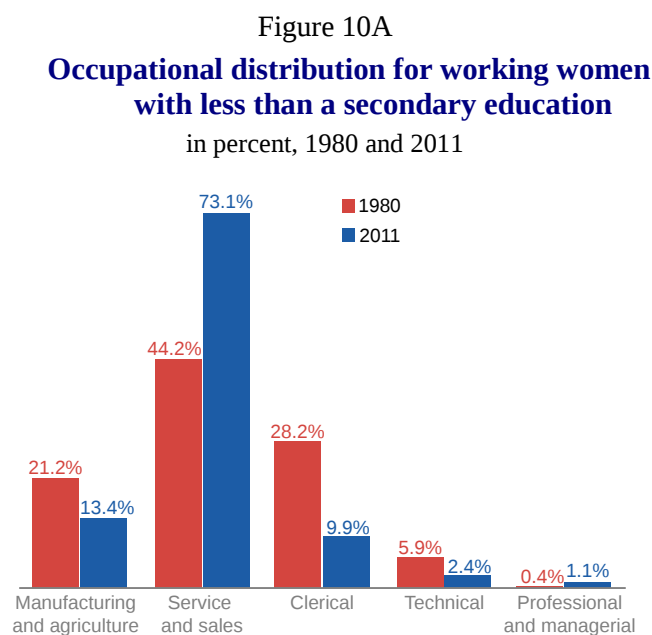
work in these occupations as they enter other occupations that pay better but which do not necessarily offer part-time work.

Nevertheless, as demonstrated earlier, the number of hours women work varies greatly even among jobs that are defined in the same way (full- or part-time) – and within this sphere as well there is variation between the different education-level groups. There has been a rise over the years in the percentage of women with low education who are employed in positions where very few hours are required (fewer than 21 hours per week) – from 20 percent to 28 percent. Among women with an academic education, in contrast, the percentage of those employed at this low level of intensity declined from 22 percent to just 18 percent by 2011. A small increase in the prevalence of this employment pattern, effectively signaling low-level involvement in the labor force, was also observed among women with a secondary education and non-academic post-secondary education.

And what about jobs that entail long hours? Here, as well, significant changes occurred over the course of the period in question (Figure 9). In 1980, about 30 percent of all women with secondary schooling or less worked in jobs characterized by long hours (over 43 hours per week), compared with about 20 percent of women whose education level was higher. Over the relevant time period the percentage of those employed in jobs requiring long hours declined among less-educated women: in 2011, only 23 percent of women with less than secondary schooling and 29 percent of women with secondary schooling worked these types of jobs. Among women with non-academic post-secondary schooling there was no meaningful change in the percentage of those working jobs requiring long hours: a rise from 22 percent in 1980 to 23 percent in 2011. By contrast, among women who had pursued higher education, an increase in the percentage of those working long hours was observed: in 2011, 31 percent of these women were employed in such jobs. In other words, the data on long-hour jobs point to a convergence of the first three groups and, conversely, to a significant change in the employment pattern of academic-educated women.

To what may these changes be attributed? One possible explanation relates to the type of occupations in which women of the various groups are employed. Consider, for instance, the influx of women with an academic education into professional and managerial occupations where women were sparsely represented in the past: this phenomenon may well explain the rise in number of work-hours inasmuch as these fields require longer hours than do occupations such as teaching and nursing that are regarded as “feminine” (and that are associated with women who have post-secondary schooling). On the other hand, the migration from manufacturing jobs to service occupations – such as cleaning and cooking, which generally offer few work-hours per day and a work-week that is not always full – may explain the increased percentage of lower-educated women employed in part-time jobs, which are particularly characteristic of this group.

Figures 10A-D present the employment distribution of women in the four education-level groups (less than secondary, secondary, non-academic post-secondary and academic) across the main female occupational sectors at two points in time – 1980 and 2011.



Source: Haya Stier and Efrat Herzberg, Taub Center

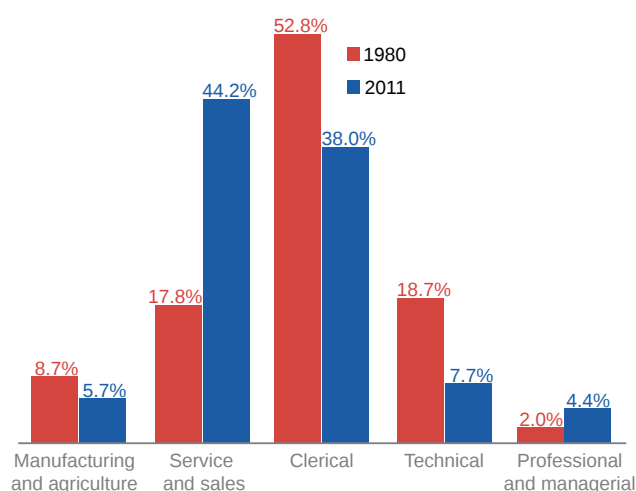
Data: Central Bureau of Statistics, *Labor Force Survey*

An examination of the occupations in which women with low education levels (less than secondary) engaged in points to significant changes in the type of occupations open to them (Figure 10A). Over the course of the period in question, most of these women were employed in the service and sales occupations – 44 percent during the 1980s and over 70 percent at the end of the first decade of the 21st century. These service occupations comprised, mainly, domestic service work (cleaners, cooks, caregivers, etc.). In addition to service jobs, low-skilled women were notably employed during the 1980s in manufacturing and agriculture – particularly in the textile field (one-fifth of all less-educated women), as well as in clerical occupations (28 percent of women in this group). By contrast, over the past decade the number of less-educated women employed in these two fields declined considerably: in 2011, only 10 percent of the women in this group were employed in clerical occupations, and just 13 percent in manufacturing. The major change that took place in clerical occupations was due primarily to a demand for higher skill levels in these fields – and as will be seen later, this demand is now being met to an ever-greater degree by women with higher education levels. The steep decline in demand for manufacturing workers was due to a contraction that occurred in the manufacturing sector – particularly in areas that were formerly characterized by a female-intensive labor force, such as the textile industry.

The manufacturing sector offered full-time jobs, and most women employed in it were union members whose rights were safeguarded. The clerical field also offered better working conditions than the occupations currently open to unskilled female workers in the labor force. In contrast, service occupations, to which most less-educated women have moved, are characterized by more difficult work conditions, a lack of protections and legislated benefits, low wages, short work-hours, and occupational instability.

Similar changes (though of a somewhat different character) also took place among women with a secondary education (Figure 10B). During the 1980s, the majority of these women were employed in clerical jobs (over 50 percent), while a minority worked in fields defined as “technical” (semi-professional) or in service and sales occupations.

Figure 10B
**Occupational distribution for working women
 with a secondary education**
 in percent, 1980 and 2011



Source: Haya Stier and Efrat Herzberg, Taub Center

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

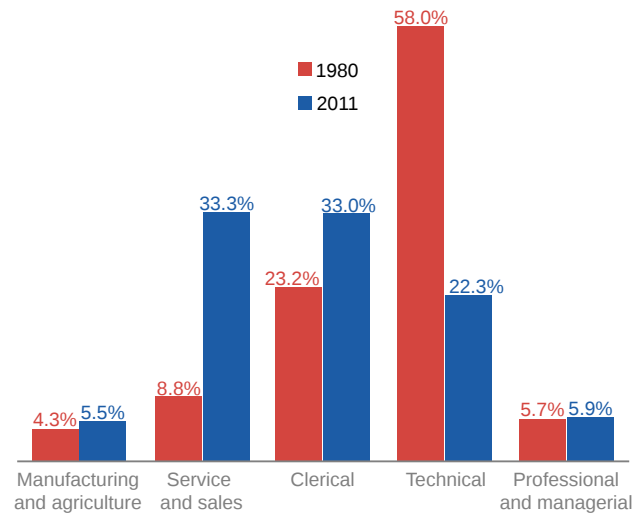
The growing demand for high skill levels, which characterizes the Israeli labor force as a whole, hurt this group of women as well. Firstly, their representation in technical occupations declined considerably. These occupations (that include teaching, preschool teaching, and nursing) underwent professionalization and most of them now require higher

education levels than in the past. At the same time, the percentage of women with secondary schooling employed in the clerical field declined as well, from 53 percent in 1980 to 38 percent in 2011. Today, 44 percent of women in this education-level group are employed in service and sales (compared with 18 percent in the past), indicating a significant drop in demand for women with a secondary education who formerly filled white-collar occupations, and who are now unable to work in them.

And what is happening with women of higher education levels? As noted previously, the share of these women in the labor force (especially academic-educated women) has grown over the years. They now account for over half of the female labor force (compared with one-fifth in the 1980s). Did new opportunities open up for these women, or did they enter existing occupations, thereby replacing women with lower skill levels? In the past, women with non-academic post-secondary education were employed mainly in technical occupations, including traditionally feminine occupations such as teaching and nursing (Figure 10C).

As with the secondary-education group, the proportion of these women in teaching and in nursing declined significantly due to professionalization of the relevant occupations and more stringent training requirements; today only one-fifth of women in this group enter such fields. In the wake of this change, the non-academic post-secondary education group has become the province mainly of women who have not gone on to complete an academic degree, or whose training is in fields other than teaching, nursing, and related occupations. This group has experienced a rise in the percentage of those employed in clerical/office work (23 percent in 1980 versus 33 percent in 2011), but most (a third of the women in the group) find work in the service and sales occupations.

Figure 10C
**Occupational distribution for working women
 with non-academic post-secondary education**
 in percent, 1980 and 2011



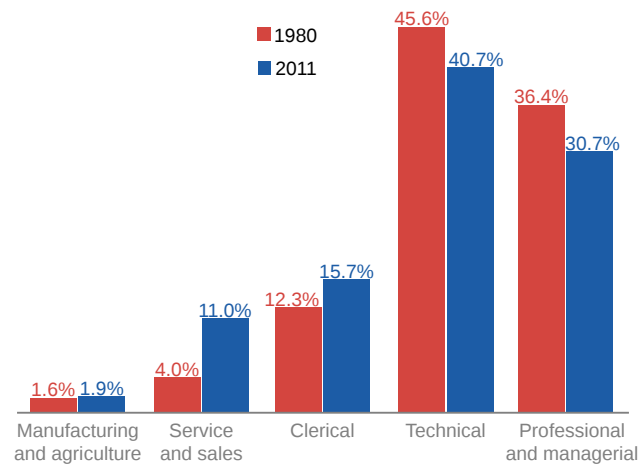
Source: Haya Stier and Efrat Herzberg, Taub Center

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

Figure 10D shows the employment distribution of women with an academic education. Most of the women in this category are employed in white-collar occupations that enjoy a measure of prestige – academic or technical fields. A comparison of the two years examined reveals a decline in the representation of academic-trained women in professional and managerial occupations: from 36 percent in 1980 to 31 percent in 2011. An in-depth look at the specific occupations in which professional women engage (not presented in the figure) shows that women have been entering law and managerial occupations at high rates, and that they have also substantially increased their representation in engineering. By contrast, their relative representation in teaching and in humanities-oriented occupations

requiring academic education has declined. Their representation in technical occupations has also dropped to a notable degree: from 46 percent of academic-trained women in the 1980s to 41 percent today. This figure may indicate that, in addition to the professionalization undergone by these occupations, the percentage of women employed in them is declining over time. This change helps explain the increase in women's work-hours, inasmuch as these occupations traditionally offered women shorter hours and part-time jobs (Stier, 1995), while professional occupations that have been attracting academic-educated women, particularly those in the managerial sphere, require many more work-hours.

Figure 10D
**Occupational distribution for working women
 with an academic education**
 in percent, 1980 and 2011



Source: Haya Stier and Efrat Herzberg, Taub Center

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

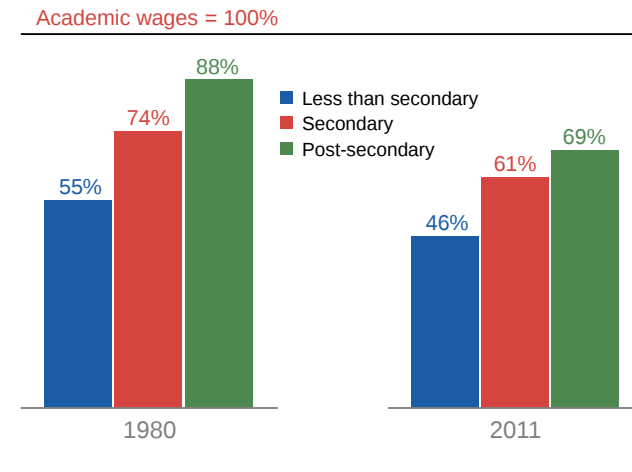
Because the percentage of women with higher education has risen greatly, but without a corresponding rise in the percentage of such women who are employed in the professional occupations, many academically-trained women have entered occupations that formerly required lower levels of skill – clerical and office work. At present, 16 percent of women with an academic education are employed in clerical occupations, and another 11 percent in service and sales occupations. These patterns may indicate that both technical and professional occupations have become saturated, meaning that women with higher education are forced to seek work that is not commensurate with their skills, or that formerly would have required lower skill levels.

In summation, two conclusions may be drawn from the data in Figures 10A-D. Firstly, supply and demand have had a significant impact on the type of occupations in which women are employed. Rising education levels have, to a great degree, caused academic-trained female workers to run in place, since this rise was accompanied by higher entry requirements for occupations that previously had been suited to women with lower skill levels. Whether due to substantive changes in occupational requirements, employer preference for better-educated workers (who are also more productive), or a lack of other opportunities for academic-educated women, the rise in education levels had only a limited impact in terms of creating new opportunities for women. Secondly, the forces of supply and demand also led to a growing polarization between the different groups of women. On the one hand, women with higher education have opportunities in more prestigious and lucrative occupations. It is also likely that wages in other occupations that these women have entered have risen in accordance with the women's skills. On the other hand, because the significant increase in higher education outstrips demand for professional occupations, the overall rise in skill levels has pushed women with less than an academic education out of white-collar occupations in which they were formerly employed and into the lower end of the employment scale – the service occupations.

In order to understand how changes in education level and occupational distribution have affected wages, and to determine whether there has been a polarization in this area as well, the ratio of the wage earned by academic to non-academic-educated women in 1980 and in 2011 was examined (Figure 11). The wage levels and the changes in wage that took place over the years also reflect the type of occupations in which women were employed, as well as their employment intensity; as shown previously, academic-educated women increased their work-hours more than did other women. Some higher-educated women have successfully entered in more prestigious and highly-remunerated occupations, while lower-educated women tend to work fewer hours and in less desirable occupations than they had formerly.

In 1980, women with less than a secondary education earned, on average, 55 percent of the wage earned by higher-educated women, while in 2011, they earned less than half of the academic wage (46 percent). An even more significant decline in this indicator was experienced by women with secondary education for whom, as noted, many employment opportunities that were previously available became closed due to the demand for higher skills. In 1980, women in this group earned, on average, 74 percent of the wage earned by women with an academic education, while in 2011, this figure dropped to just 61 percent. The wage earned by women with non-academic post-secondary schooling, which in the past had been quite close to that of academic-educated women (88 percent in 1980), is now only 69 percent of the wage earned by women with higher education. It should be noted that the wage gaps among all three groups of non-academic-educated women (a calculation that is not presented here) remained at past levels or narrowed slightly.

Figure 11
Working women's wages as a percent of academic wages
by education level, 1980 and 2011



Source: Haya Stier and Efrat Herzberg, Taub Center

Data: Central Bureau of Statistics, *Income Survey*

Figure 11 points clearly to a growing wage disparity between women with and without an academic education. From this perspective it may be concluded that there is indeed a growing polarization of wages in the labor force based on education.

To conclude, the processes that have taken place in the Israeli labor force, as in the entire Western world, are reflected in women's changing employment characteristics. The transition to knowledge-intensive industries raised demand for skilled labor in a variety of occupations; by contrast, there was a drop in demand for low-skilled manpower. Even occupations that in the past did not require higher education have now adapted to market demands, meaning that the demand for academic-educated women in these occupations is rising as well. These changes are expressed in the financial remuneration that women receive for their education level; women with an academic education enjoy higher wages

than do women in the other groups inasmuch as they are more productive and possess required skills that align with the directions in which the labor force is developing.

5. Summary and Discussion

This chapter surveyed changes in the female labor force over the past thirty years, with a focus on education and its impact on women's involvement in the labor force. As earlier studies had shown (Kimhi, 2012), education plays a central role in explaining women's labor force participation and the changes observed both in women's economic activity and in the composition of the labor force. Although there has been an overall rise in women's labor force participation rates, the economic activity of women with lower education levels is contracting and they are becoming a small minority of the total female labor force. This group also reduced the intensity of its involvement in the labor force in terms of work-hours, and was pushed into service occupations with a particular emphasis on domestic service – cleaning, childcare, and cooking. As in many countries, less-educated Israeli women previously worked not only in the domestic service sphere, but also in manufacturing. However, following a contraction in the labor-intensive industrial sectors where demand for female manpower was high (e.g., the textile industries), low-skilled women now have few occupational prospects. In general, they provide services to better-educated women who allocate more of their time to the labor force. From this point of view, the labor force offers women with low education levels jobs that are less stable than in the past, characterized by fewer work-hours and low wages.

This situation is leading to a polarization of the labor force between highly-skilled women – who enjoy many employment opportunities and suitable working conditions, especially in the public sector – and women of lesser skills. However, the female labor-force picture appears to harbor even greater complexity: rising higher-education rates caused an increase in

women's labor force participation rates, but without necessarily creating new employment opportunities. On the one hand, some academic-educated women have succeeded in penetrating traditionally male, professional and managerial occupations from which they were formerly absent. These occupations offer good working conditions, opportunities for advancement and a high relative wage. On the other hand, the rate of increase in higher education is outpacing that of demand for professional occupations, and many highly-educated women are settling for occupations that in the past required lower levels of skill. Academic-educated women have, accordingly, been entering clerical occupations that formerly employed women with secondary schooling. It is very likely that these occupations changed in character alongside changes in the knowledge-intensive labor force, and now require workers with higher levels of skill and productivity – meaning that wages paid to academic-educated women employed in such occupations is higher as well. However, it may also be that the female labor force is now suffering from inadequate employment, reflected in over-qualification for the occupations available. From this perspective, Israeli women's human capital is not being effectively utilized and women are not obtaining suitable positions in the labor force. This situation may also explain why the income gaps between men and women have not narrowed over time, as a number of studies have shown (Kimhi, 2012). Also, inasmuch as academic-educated women are taking jobs that were previously filled by women with secondary education, the latter are experiencing even greater marginalization and dwindling available opportunities.

The lack of opportunities that lower-educated women face is also leading to greater inequality among the various education-level groups. The great emphasis that is placed on the pursuit of higher education is not necessarily producing a reduction in social disparities or education-appropriate positions in the labor force. It is particularly worth noting that higher education in and of itself does not confer access to all professional occupations, and one may hypothesize that the "seepage" of highly-educated women into office jobs is due to occupational segregation within the labor force, and to the difficulties that women still experience in establishing themselves in various

professions. These problems are rooted in the type of occupations that women tend to train for within the higher education system, and also in the difficulty of balancing family and work. Women, as their families' primary caregivers, are still often obliged to work part-time and fewer hours than men, which keeps them from entering occupations characterized by long hours. In the absence of any meaningful structural change in either the higher-education system or the labor force – change that would increase gender parity in terms of the occupations men and women train for within the higher-education system while also easing the family-work balance for both sexes – it will be difficult to effectively utilize women's growing human capital and to improve their status within the labor force.

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Educational Opportunity, Employment, and Income: 1995-2008

Eyal Bar-Haim, Carmel Blank, Yossi Shavit*

Abstract

This chapter examines educational opportunity and the changing relationship between education, employment, and income in Israel between 1995 and 2008. The following questions are addressed: Did the expansion of the Israeli education system during this period contribute to more equal educational opportunity among socioeconomic groups? And did the returns to education, in terms of income and occupational prestige, increase or decrease? The study is based on aggregate census data for two periods, 1983-1995 and 1995-2008. The sample included native-born young Israelis, both Jewish and Arab Israeli. The data show that despite considerable educational expansion, educational inequality among different socioeconomic groups increased significantly. Moreover, occupational prestige at all education levels except the very lowest decreased on average, especially at the highest levels of education. The latter change is explained by the fact that the demand for professional, academic, technical, and managerial workers grew only modestly leaving many newer graduates out of the field. A more encouraging finding is that the average income for young Israelis grew during the period. Much of this growth was due to the expansion of higher education, which increased the proportion of high-earning, highly educated individuals in the overall population. Nevertheless, the higher educated earn less today (relative to those without an education) than they did in 1995, that is, the economic returns to education have declined.

* Eyal Bar-Haim, Department of Labor Studies, Tel Aviv University. Carmel Blank, Policy Fellow, Taub Center Education Policy Program; Department of Sociology and Anthropology, Tel Aviv University. Prof. Yossi Shavit, Chair, Taub Center

The 1990s were a turning point for secondary and post-secondary education in Israel. Reforms implemented early in the decade came to fruition in the mid-1990s, leading to impressive growth in education levels among Israelis. The Bagrut¹ (matriculation) Reform, known popularly as the “lottery reform,” took various forms since its inception in 1995, but its basic principle remained the same: a reduction in the content on which pupils taking the bagrut exams are tested. As Ayalon and Shavit (2004) have shown, the reform increased the overall percentage of pupils attaining the bagrut certificate and decreased the disparities in bagrut eligibility between pupils from different socioeconomic and ethnic groups. It did not, however, decrease the disparities in the likelihood of attaining a bagrut certificate of the level required for admission to university.

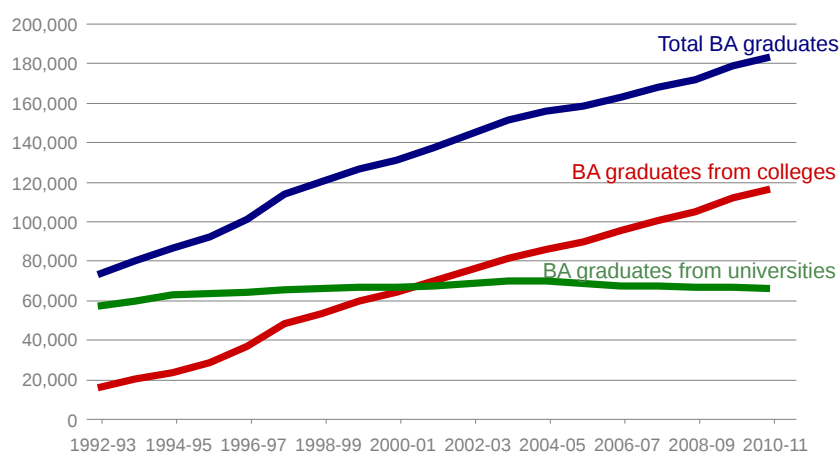
The Bagrut Reform coincided with the massive expansion of Israeli higher education. The latter consisted of the establishment and expansion of alternatives to the system of research universities, including public regional colleges, private colleges, foreign university extensions, and academically accredited teacher training colleges. The result was a significant increase in higher education enrollment, especially at the baccalaureate level. As Figure 1 shows, the number of students studying for a first degree at institutions of higher education more than doubled between 1992 and 2011.

Education Policy Program; Department of Sociology and Anthropology, Tel Aviv University; President, Israeli Sociology Society. The authors thank Yasmin Alkalay for her helpful advice on the data analysis. The authors are also grateful to Michael Shalev, Dan Ben-David, Ayal Kimhi, and the entire staff of the Taub Center Education Policy Program for their helpful comments. This study was partly funded by a grant awarded to Michael Shalev and Yossi Shavit by the Israeli Ministry of Science and Technology. The authors would like to thank the staff of the Israeli Central Bureau of Statistics for preparing the data files used in this study.

¹ Bagrut or matriculation examinations assess knowledge on subjects studied in high school. They are frequently compared to the New York State Regents’ Exams and ETS Advanced Placement (AP) tests. Bagrut scores represent an average of the test score and the grade received on that subject in school. Subjects are tested at study unit levels ranging from 1 to 5 units, calculated by the number of class hours devoted to the subject.

Most of the expansion was in non-research-oriented colleges, while the number of university students remained fairly constant.

Figure 1
Bachelor's degree graduates from higher education institutions



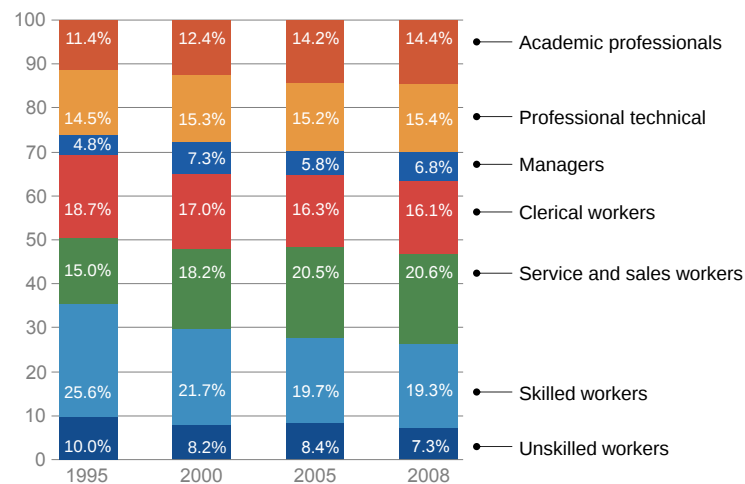
Source: Bar-Haim, Blank, and Shavit, Taub Center

Data: Council for Higher Education

Whereas the number of bagrut certificate and academic degree holders grew significantly over the years, the distribution of occupations in the Israeli labor force changed relatively little. As Figure 2 shows, professional and managerial employment – the occupations that employ most of those with a high education level – increased by only 6 percentage points between 1995 and 2008, suggesting that some of the newly highly educated went into non-professional (free occupations), non-managerial employment. This may be due partly to the fact that some occupations traditionally defined as non-professional (e.g., sales, administrative assistance, miscellaneous services) now require higher levels of training and education. However, it may also

be due to the failure of the labor market to expand sufficiently to admit the increasing numbers of highly educated candidates, forcing many to settle for lower-paying, lower prestige jobs.

Figure 2
Distribution of occupations in Israel
1995-2008



Source: Bar-Haim, Blank, and Shavit, Taub Center

Data: Central Bureau of Statistics (authors' calculations)

1. The Impact of Changes in Education and Employment on Equal Opportunity

According to Bernardi and Ballarino (2012), massive educational expansion can impact the labor market and the economic value of education in three different ways. Which of the three becomes a reality largely depends on the

extent to which the labor market can absorb the new graduates of the expanding education system.

Best-Off Scenario. Educational expansion decreases educational opportunity inequality, i.e., education becomes more accessible to previously excluded socioeconomic groups. The labor market concurrently expands sufficiently to admit all new graduates. As a result, the returns on education rise or remain constant.

Trade-Off Scenario. In this scenario, educational expansion also serves to decrease disparities in educational opportunity. However, the supply of professional jobs stagnates, leading to an inflation of job candidates with higher education, which results in a decline in returns on education that serves to cancel out the gains from improved educational opportunities.

Worst-Off Scenario. This scenario occurs when there is high demand for education amongst the stronger socioeconomic groups. The latter enjoy material, cultural, and cognitive resources which give them an advantage in benefiting from the newly expanded educational opportunities. As a result, inequality in educational opportunity remains stable or even grows. At the same time, the labor market does not grow sufficiently to admit all those with higher education. In this case, inequality of educational opportunities does not narrow, and the economic returns on education decline.

2. Methodology

Research Questions

The aim of this study is to find which of the above three scenarios occurred in Israel in the period between 1995 and 2008. To do this, three main research questions are posed:

- 1. Did educational inequality change between 1995 and 2008, and if so, how?**
- 2. In these years, was there a change in the contribution of education to occupational achievements in the labor market?**
- 3. Did the economic returns on education change over this period?**

Data

The analysis is based on a data file generated specifically for the present study by the Israeli Central Bureau of Statistics. The file aggregates census data for 1983-1995 and 1995-2008. More specifically, the data are from a questionnaire distributed during each census to about one-fifth of the Israeli population aged 15 and over, with questions about education, occupation, income, and ethnic and religious origin. To learn about the respondents' socioeconomic family background, the 1995 data of individual respondents was linked to the household data from 1983. This allowed identification of respondents' parents and a measurement of their socioeconomic characteristics. In the same way, data for 2008 was linked to parental data from 1995.

The sample was limited to those aged 15-21 at the time of the 1983 and 1995 censuses. Those in the first group were 27-33 in 1995; those in the second were 28-34 in 2008 (the one-year age difference is due to the unequal intervals between censuses). The sample's lower age limit was chosen because by the age of 27 most Israeli students have completed or are near completion of their higher education studies (only 10 percent of 27- to 28 year-olds are currently studying). For those who are younger, it is difficult to predict what their educational attainments might be. The sample's upper age limit was chosen due to technical limitations: over the age of 21 the rate of young people leaving their parent's home rises and it becomes increasingly difficult to identify their families of origin. The sample was, therefore, limited to those who were no older than 21 in 1983 or 1995, i.e., no older than 33 or 34 in 1995 or 2008, respectively.

The sample excludes those not born in Israel, since social mobility among immigrants sometimes occurs prior to immigration and differs from social mobility patterns among native-born groups. This meant that the majority of immigrants from the former Soviet Union are not included in the analysis. The sample includes 9,969 respondents from the 1995 census and 17,630 respondents from the 2008 census.

Variables

The main research variables are:

Education. Six categories of education are distinguished based on the highest level of education attained by the respondents: (1) primary education or lower; (2) secondary education (12 years, without the bagrut); (3) secondary education with the bagrut; (4) non-academic higher education; (5) bachelor's degree; (6) advanced degree (master's or higher). The analysis controlled for respondents still in school at the time of the censuses, who are mostly advanced degree students.

Income. Average monthly income from work for employees and the self-employed, adjusted to the September 2008 consumer price index.

Occupation. Respondents' occupation is represented by the International Social Economic Status Index (ISEI) (Ganzeboom and Treiman, 1996), an established tool in sociological labor market research. The index weighs education and median occupational income, with values ranging from 1 to 100. The ISEI is highly correlated with subjective measures of occupational prestige and has proven to be stable over time and across different countries (Hauser and Warren, 2008).

In addition to these variables, some of the analyses control for ethnic origin, labor market seniority, and gender. Ethnic origin is defined by the paternal grandfather's continent of origin. Categories include Asian/African; European/North American; third-generation Israeli; and Arab Israeli. Labor market seniority (an established variable in income equations) was not included in the censuses; it was therefore calculated based on

respondents' age and education, using the well-established Mincer Function (1974).² Gender is defined dichotomously.

3. Changes in Educational Inequality and Occupational and Economic Achievement by Education

As background to more complex analyses, Table 1 presents changes over the decade in the educational distribution of young people and their labor market achievements. The data reinforce earlier findings about educational expansion in Israel. Between 1995 and 2008, the percentage of native-born Israelis in the relevant age groups with secondary education or below fell from 48 to 33 percent; the percentage of those with the bagrut increased slightly; and the percentage of those with the bachelor's degree nearly doubled, as did the percentage of those with advanced degrees. Comparisons also show that the average occupational prestige among young people rose slightly over the years, and average real income increased by almost 25 percent.

² The Mincer Function assumes that individuals begin school at age six and study without interruption until they enter the labor market. The model thus calculates labor market seniority as the difference between age and [the number of school years completed + 6]. The model is far from suitable to Israel, where many young adults serve in the military and very few study without interruption. It was, nevertheless, used to generate approximate estimates in the absence of more accurate data on labor market seniority patterns.

Table 1. **Educational distribution and average occupational prestige and salary, 1995 and 2008***

	1995	2008
Highest degree (share of degree holders)		
Less than secondary	22.2%	16.0%
Secondary	25.7%	16.6%
Bagrut	21.3%	26.0%
Post-secondary non-academic	13.2%	11.6%
Bachelor's degree	14.3%	24.0%
Master's degree and higher	3.4%	5.7%
Labor force achievement (average)		
Occupational prestige (1-100)**	46.4	48.6
Income (in shekels per month)	5,440	6,765

* Among the sample population

** According to the ISEI scale, range 1-100 where 1 is the lowest prestige and 100 is the highest

Source: Bar-Haim, Blank, and Shavit, Taub Center

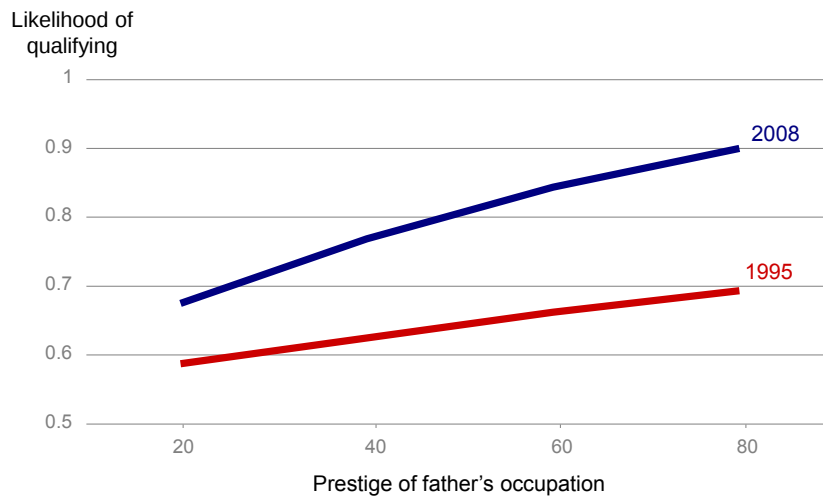
Data: Central Bureau of Statistics (authors' calculations)

Changes in Educational Inequality Among Socioeconomic Groups

To see whether educational expansion impacted inequality in educational opportunity, the influence of father's occupation on the respondent's level of

education in 1995 and 2008 was examined.³ Figure 3A presents the likelihood of someone who has been in secondary school attaining a bagrut certificate by prestige of father's occupation in each year (controlling for origin and gender).

Figure 3A
**Likelihood of a secondary school pupil earning a
 bagrut certificate**
 by prestige of father's occupation*, 1995 and 2008



* According to the ISEI scale, range 1-100 where 1 is the lowest prestige and 100 is the highest

Source: Bar-Haim, Blank, and Shavit, Taub Center

Data: Central Bureau of Statistics (authors' calculations)

³ The analysis was done using a multinomial logit regression model to analyze the relationship between education levels and the father's occupation at the time of the census, controlling for ethnic origin and gender. The probabilities shown in Figures 3a-3c are for native-born, second-generation Jewish women, but similar patterns were found for men and individuals with other ethnic origins as well.

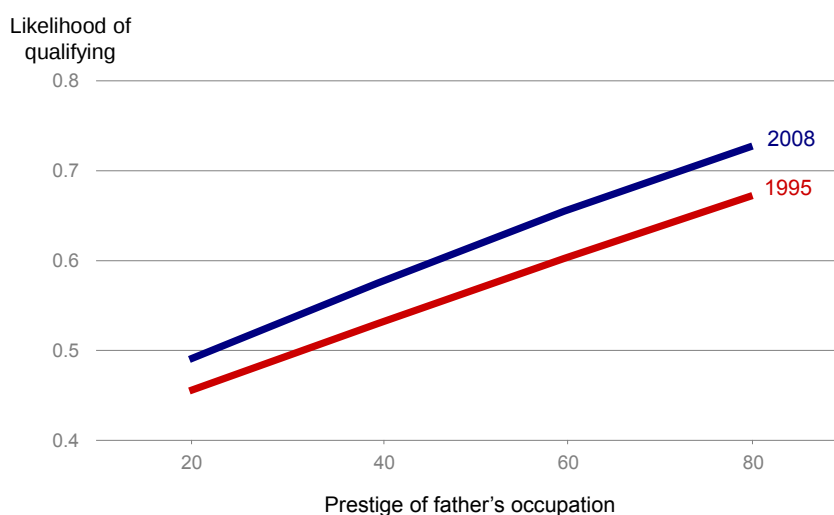
Between 1995 and 2008, the likelihood of someone obtaining a bagrut certificate grew, although this growth was primarily amongst the higher socioeconomic classes. The significance of this is that the rise in the rates of bagrut certification was accompanied by a substantial rise in inequality between socioeconomic groups.

Figure 3B shows the probability of a high school graduate with a bagrut certificate continuing to attain a bachelor's degree as the highest degree. Here as well, the probability increased over time, accompanied by a small increase in inequality in favor of the higher socioeconomic groups.

Figure 3B

**Likelihood of earning a bachelor's degree
among bagrut certificate holders**

by prestige of father's occupation*, 1995 and 2008



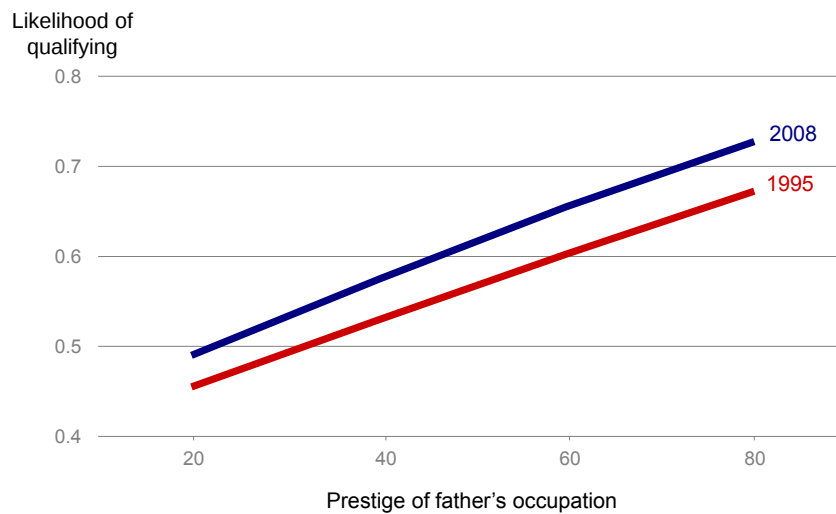
* According to the ISEI scale, range 1-100, where 1 is the lowest prestige and 100 is the highest

Source: Bar-Haim, Blank, and Shavit, Taub Center

Data: Central Bureau of Statistics (authors' calculations)

Figure 3C shows the probability of a secondary school graduate with a bagrut certificate attaining an advanced degree (master's or higher). The data shows a substantial growth in this likelihood over time as well as in the growth of inequalities.

Figure 3C
**Likelihood of earning a master's degree
 among bagrut certificate holders**
 by prestige of father's occupation*, 1995 and 2008



* According to the ISEI scale, range 1-100, where 1 is the lowest prestige and 100 is the highest

Source: Bar-Haim, Blank, and Shavit, Taub Center

Data: Central Bureau of Statistics (authors' calculations)

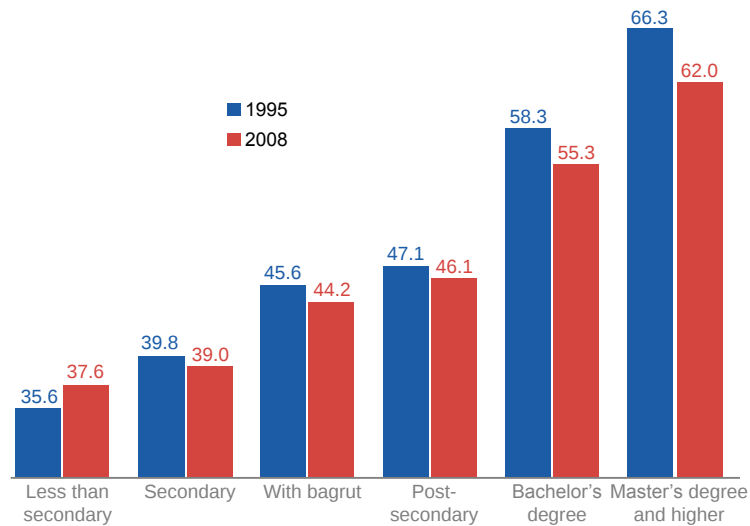
Changes in the Occupational and Economic Returns on Education

The research focuses on two central returns on education: occupational prestige and income. To examine returns on education, multivariate analysis was used to measure occupational prestige and income for individuals with different education levels in 1995 and in 2008.⁴

Figure 4 shows the positive correlation between education and occupational prestige. Between 1995 and 2008, occupational prestige fell for all education levels except the very lowest. The most drastic decline was experienced by the highly educated. This suggests that the expansion of higher education during this period exceeded the expansion of employment suitable for the highly educated. Thus in 2008, those with higher education were forced to settle for less prestigious jobs on average than those in the preceding decade. The overall increase in occupational prestige presented in Table 1 is due, therefore, to the increased share of the highly educated (within the total population), whose occupational prestige fell over the years but remained higher than that of the less highly educated.

⁴ The predicted values are based on two linear regressions, one to predict occupational prestige, the other to predict log income. Both regressions controlled for father's occupation, year of census, education level, gender, and school completion status (student or graduate). As in Mincer's Function, the income regression also controlled for labor market seniority and seniority squared. The relationship between education and census year, father's occupation and census year, and education and father's occupation were also examined.

Figure 4
Occupational prestige at different education levels*
 1995 and 2008



* According to the ISEI scale, range 1-100, where 1 is the lowest prestige and 100 is the highest

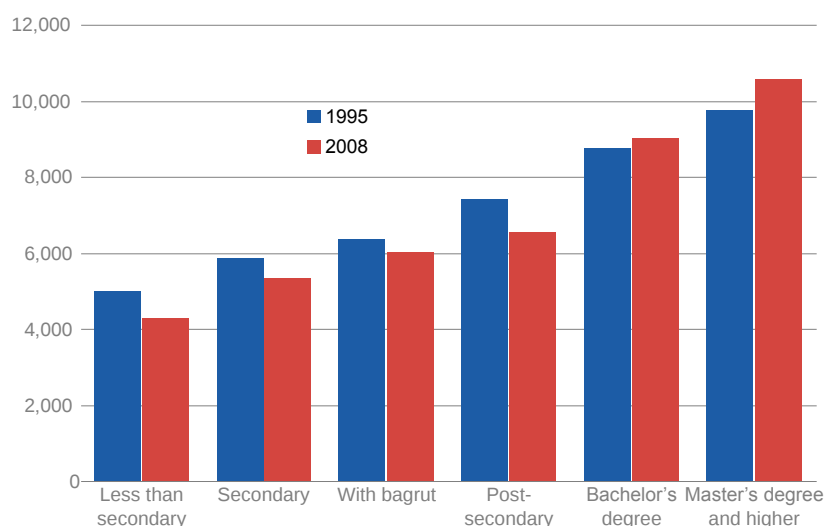
Source: Bar-Haim, Blank, and Shavit, Taub Center

Data: Central Bureau of Statistics (authors' calculations)

Figure 5 shows the average real incomes of those with different education levels in 2008 versus 1995. As expected, as education rises so does income. As opposed to the aggregate data in Table 1, which shows an almost 25 percent increase in average real income over the years, Figure 5 shows a decline in income among those with primary education, secondary education, a bagrut certification, and even among those with non-academic higher education. By contrast, those with a bachelor's degree saw modest increases, and those with advanced degrees enjoyed an increase of about 9 percent. These developments are typical of periods of economic growth

characterized by a growing demand for highly-educated, highly-skilled workers and a falling demand and lower wages for less highly educated workers (Goldin and Katz, 2008; for Israel, see Ben David, 2009; Kimhi, 2010). The impressive increase in average income shown in Table 1 seems to be largely due, however, not to the modest increase in income experienced by the highly educated, but to the rising share of the highly educated (among the total population), which almost doubled over the period in question (see Table 1).⁵

Figure 5
**Gross monthly average income for different education levels,
 1995 and 2008**
 in 2008 shekels



Source: Bar-Haim, Blank, and Shavit, Taub Center

Data: Central Bureau of Statistics (authors' calculations)

⁵ For simplicity, Figure 5 presents the raw data. These are similar, however, to the pattern indicated by the income regression.

4. Summary and Conclusions

On the basis of the findings, the research questions can be answered:

Did educational opportunity inequality change between 1995 and 2008, and if so, how?

The bagrut and higher education reforms of the 1990s and 2000s have resulted in significantly higher levels of education. However, they have been accompanied by rising inequalities in educational opportunity between socioeconomic groups. A declining share of the newly educated came from weaker socioeconomic groups. This is a familiar phenomenon in the sociological literature. Members of higher socioeconomic groups enjoy greater economic, cognitive, and cultural resources, and so are better able to take advantage of the new opportunities offered by an expanding education system. As a result, such expansion is associated with an increase in inequality (Bar-Haim and Shavit, 2013).

It is possible to conclude from this that educational expansion alone is not an effective tool in narrowing inequalities. The formal expansion of educational opportunity is not enough: it must be complemented by policy efforts to compensate for economic, cultural, and cognitive deficits that underlie educational inequality. Longer school days, financial aid, individual tutoring and support, small classes, and other programs may help level the educational playing field across different socioeconomic groups.

Did the economic returns on education change over this period?

Occupational prestige declined during the period in question for those at all education levels (except the very lowest) and especially for the highly educated. As Figure 2 shows, this is probably due to the fact that professional, academic, technical, and managerial employment grew only marginally during this period, not enough to provide for all highly educated job seekers; many of the latter, therefore, had to accept less prestigious employment. These developments appear to have followed Bernardi and

Ballarino's Worst-Off Scenario, in which rising educational inequality is coupled with declining occupational prestige for the highly educated.

The highly educated of 2008 must have been disappointed at the lack of sufficient growth in the Israeli labor market and by its failure to offer them the prestigious job opportunities enjoyed by the highly educated of earlier generations. This disappointment probably contributed to the middle-class unrest at the heart of the 2011 social protests in Israel. Israel is similar in this respect to other countries (Egypt, India, and Spain) where the status of the educated swelled while the economy failed to provide sufficient suitable employment. An expansion of education that is not accompanied by sufficient expansion of appropriate opportunities in the labor market is bound to result in disappointments.

Did the economic returns on education change over this period?

The most encouraging finding is that the average income of younger Israelis grew between 1995 and 2008. The growth was related to the expansion of higher education, which increased the percentage of educated individuals with high salaries relative to the overall population. The share of individuals with an academic degree doubled and reached some 30 percent of the country's native-born population in the age groups studied. Despite the increase in the number of those with a first degree, their incomes did not decline (unlike their occupational prestige). The income of those with advanced degrees rose slightly (around 9 percent); however, due to the group's small size, this growth has had little effect on Israel's overall income distribution.

It would be wrong to conclude without highlighting that from an economic standpoint, the main losers have been those excluded from higher education even after the recent expansion. In 2008, this group comprised no less than 70 percent of all native-born Israelis aged 28-34, the majority of whom originate in the lower socioeconomic strata. They have become worse-off economically, because their bargaining position in the labor market has become weaker relative to the increasing number of college and university graduates. Their fate underscores the rule: educational expansion

on its own is not an effective tool for narrowing gaps. Educational expansion may improve the lot of those lucky enough to enjoy its benefits, yet it often harms those who are not so fortunate. Furthermore, the economic and occupational returns to education may diminish even for those with higher education.

Thus, while educational expansion can contribute to productivity and economic growth, it is not an effective policy towards the reduction of inequality in either educational, occupational, or income attainment. For education to make a contribution in these regards, the association between social origins and educational attainment must be weakened. The association between origins and educational attainment is largely due to differences between social strata in economic condition (Duncan et al. 1998), cultural resources (Lareau and Weininger 2003) and the availability of quality education (Rumberger and Pallady 2005). Social policy that is targeted at the reduction of the association between social origins and educational attainment should aim to reduce inequalities between strata in these resources rather than hope that expansion will do the job.

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III. EDUCATION

“It Disturbs the Whole Class”

Disciplinary Infractions in the Classroom and Their Relation to Pupil Achievement

Carmel Blank and Yossi Shavit*

Abstract

In recent years, academics and policy makers, as well as parents and teachers, have become concerned with disciplinary infractions in the education system. Pupils spend the majority of their time in the classroom, and yet, the assumption that disciplinary infractions in class reduce learning time and are harmful to pupil achievement has not been examined empirically. The aim of this study is to examine how various class and school characteristics contribute to the level of disciplinary infractions in the class, and how these problems impact pupil achievement. The study's findings indicate that there are differences among classes within the same school with regard to the level of disciplinary infractions. It was also found that disciplinary infractions in class have a significant negative effect on pupil achievement, regardless of the pupil's behavior or past achievement level. From this it follows that an improvement in a school's disciplinary enforcement policy coupled with improvement in the teachers' treatment of pupils can contribute to the reduction of disciplinary infractions in class and lead to an improvement in achievement levels.

* Carmel Blank, Fellow, Taub Center Education Policy Program; Department of Sociology and Anthropology, Tel Aviv University. Prof. Yossi Shavit, Chair, Taub Center Education Policy Program; Department of Sociology and Anthropology, Tel Aviv University.

This chapter is dedicated with gratitude to Dov Lautman (z"l). The subject of education was very close to his heart and his generosity enabled the writing of this chapter.

Disciplinary infractions and violence in the education system have long concerned researchers and educators but in recent years interest in these issues has mounted (Nachshon-Sharon and Blass, 2010; Anderson and Kincade, 2005; Gregory et al., 2010; Kane, 2008; Kindiki, 2009; National School Climate Center, 2010; Van de Werfhorst et al., 2012).

The Taub Center's *State of the Nation Report 2010* published the results of an international study linking the low achievements of Israeli pupils in the 2003 TIMSS tests to the proliferation of disciplinary infractions in Israeli schools (Shavit and Blank, 2011). In the wake of that article, former Knesset member Dr. Einat Wilf put a proposal on the agenda for the Knesset plenum, saying:

The topic I wish to raise is the connection between discipline and the learning atmosphere in school on the one hand and pupil achievement on the other. For many years I have contended that instead of searching for the solutions and problems in things like class size, or how many teaching hours are delivered, or even the overall accusations sometimes leveled at teachers – my contention has been that the solution, and the problem of course, lies in the learning atmosphere in the schools.

To this, then-Minister of Education Gideon Sa'ar replied:

Fostering a secure climate, increasing discipline and reducing violence are defined as some of the primary goals that are being pursued by the education system in the current term [...] No one disputes the importance of establishing discipline in class. A class in which disturbances occur is one in which it is impossible to learn, and the achievements of the pupils in it are bound to suffer accordingly.¹

¹ The quotes from past MK Einat Wilf and Minister Gideon Sa'ar are taken from their speeches to the Knesset from December 7, 2011.

Policy reports from around the world also claim that disciplinary infractions in the classroom cut down on learning time for all pupils and thus harm achievement (Dinkes et al., 2007; Gottfredson et al., 2000).

Is this really the case? Surprisingly, despite the extensive research on disciplinary infractions and their relation to pupil achievement, their impact at the class level is almost unknown. This is the case even though the greatest part of the learning process takes place inside the classroom, and there are findings indicating that classroom characteristics have a greater effect on the learning experience and on pupil achievement than do those of the school (Hill and Rowe, 1996; Scheerens and Creemers, 1989). Until now, it has not been known whether there are differences among classes within the same school in the extent of disciplinary infractions and, if so, what may explain these differences.

The aim of the present study is to examine how various class and school characteristics contribute to the level of disciplinary infractions in the classroom, and how these infractions are related to pupil achievement. The study is based on a multilevel analysis that makes it possible to consider simultaneously the characteristics of the pupil, class, and school, and to examine the unique contribution of each level to achievement (i.e., the contribution of a pupil's personal disciplinary infractions, as opposed to disciplinary infractions of the class or school). This facilitates a comprehensive review of the issue in a context that follows the learning experience – pupils inside classes inside schools. Furthermore, the model takes into account the pupil's past achievement levels, thus controlling for the selection of relatively strong pupils in schools or classes with certain characteristics and weaker pupils in schools or classes with other characteristics.

1. Background: The Findings of Previous Studies

Factors that Affect Disciplinary Infractions

With regard to individual pupils, the factors related to the level of disciplinary infractions are gender, ethnicity, socioeconomic status, and age. Studies indicate that girls are less involved in disciplinary infractions and violence than boys (Benbenishty and Astor, 2005; Vaillancourt et al., 2008). In addition, the higher the pupil's socioeconomic status, the lower the level of disciplinary infractions (Gregory et al., 2010; Kinsler, 2013). Immigrants and minority group members tend to exhibit a higher level of disciplinary infractions (Shavit and Blank, 2011; Farkas et al., 2002). While some studies have found that disciplinary infractions decrease with advancing age or grade (Laufer and Harel-Fisch, 2003), others indicate to the contrary that the level of disciplinary infractions rises with advancing age or grade (Van de Werfhorst et al., 2012).

It has also been found that there is a relation between the composition of a school and the level of disciplinary infractions in it: the higher the socioeconomic status, the lower the level of disciplinary infractions, and the higher the percentage of immigrants or minority group members, the more disciplinary infractions there are (Barbieri and Scherer, 2012; Coleman and Hoffer, 1987; Khoury-Kassabri et al., 2009). While some studies have shown that school size contributes to the level of disciplinary infractions, others have found no such relation (DiPrete et al., 1981; Khoury-Kassabri et al., 2009 and 2005). In schools where the disciplinary policy is perceived to be clear, fair, and enforced, there are fewer disciplinary infractions, and support and fair treatment on the part of teachers can reduce involvement in disciplinary infractions and violence (Way, 2011; Arum, 2003; Esposito, 1999).

As noted, there are only a few findings regarding the effects of class characteristics on the level of classroom disciplinary infractions. Lavy and Schlosser (2007) found that a high percentage of girls in a grade level

raises average pupil achievement and also reduces the amount of disciplinary problems. Lazear (1999) contends that since almost every pupil engages in disturbances to a certain extent, it may be assumed that the larger the class, the more disciplinary infractions there will be. All the same, this hypothesis was not tested empirically.

The Relationship Between Disciplinary Infractions and Pupil Achievement

Over the years it has been found that pupil achievements were higher in schools where the disciplinary climate and pupil behavior were positive, and that the achievements of pupils who are well-behaved is higher on average (Arum and Velez, 2012; Coleman et al., 1982; Lee and Bryk, 1989). However, there is some debate amongst researchers regarding the causal relation between discipline and achievement. Whereas some argue that discipline is a precondition for effective learning and so disciplinary infractions inevitably harm achievement, others contend that low achievement arouses feelings of frustration and alienation toward school which are then expressed in disciplinary infractions (Jenkins, 1995; Oakes et al., 1992; Simmons and Blyth, 1987; Weinstein, 1989).

It has also been found that the disciplinary climate in a school and the number of disciplinary infractions in it can have an effect on pupil achievement, regardless of the pupil's personal behavior (Bulach et al., 1995). Possible explanations for this are that high levels of undisciplined behavior wear down the teachers, and also damage the ability of all pupils to concentrate (Burke et al., 1996; Gottfredson et al., 2000). In addition, pupils' perceptions of the fairness of disciplinary enforcement at a school as well as perceptions of teacher fairness also have an effect on achievement (Benbenishty et al., 2005; Arum and Velez, 2012).

In this matter, too, little is known about what happens at the classroom level. Carrell and Hoekstra (2010) found that the addition of a single child with behavioral problems to a class brings pupil grades down by almost 0.2 percent. Others have contended that disciplinary problems are

likely to make teachers develop a negative attitude toward a specific class, and it is that negative attitude that harms pupil achievement (Hastings and Bham, 2003).

The present study seeks to examine several questions:

1. Are there differences in the level of disciplinary infractions among different classes in the same school?
2. Which class and school characteristics explain the disciplinary infractions in a class?
3. Are disciplinary infractions in a class found to harm pupil achievement even when controlling for the respective effects of the pupil's personal disciplinary infractions, disciplinary infractions in the school, and the pupil's past achievement?

2. Methodology

The study is based on an analysis of the MEITZAV (Measures of School Efficiency and Growth) tests and the school climate questionnaires, which are administered by RAMA – the National Authority for Measurement and Evaluation in Education. The MEITZAV tests are meant to examine the proficiency level of pupils in primary school (second and fifth grades) and middle school (eighth grade) in four core subjects of the educational program: language skills (Hebrew or Arabic), English, mathematics, and science and technology. Each year, about 25 percent of all the pupils are tested on each of the four subjects. A few months after the test, school climate is measured in participating schools.

In addition to the MEITZAV and school climate questionnaire data, the study is based on the Ministry of Education's pupil files that include pupil background data (parental education level, ethnic origin, etc.), as well as on class and school files that provide information on class size, school size, the sector the school belongs to, and its socioeconomic

classification.² With the help of a unique identification code assigned to each pupil and each school by the Central Bureau of Statistics, the various files were merged to create the database for the present study. In these files it was possible to locate pupils who were in the eighth grade in 2009 and in the fifth grade in 2006, and to construct longitudinal data and measure the achievement of each pupil at two points in time – in the fifth grade and in the eighth grade. Due to the unique sampling method of the MEITZAV tests, measurements at two points in time are not available for all the pupils, but only for about a quarter of them (about 10,000 pupils each year); tests show, however, that there are no notable differences between those who were tested at two points in time and those tested only once.

The questions on the school climate questionnaires concerning the class, including the disciplinary infractions in a class, relate only to the homeroom class, and so, this study focuses on pupil achievement in language skills. (This is the only subject that is studied in the homeroom class, as opposed to English and mathematics where students are grouped by their level of proficiency, and as opposed to sciences, which in some schools are studied in laboratories.)

The analysis focuses on Jewish schools only for two reasons. First, schools in the Jewish sector are tested in Hebrew, whereas schools in the Arab Israeli sector are tested in Arabic, making it problematic to include both sectors in the same analysis. Furthermore, the large differences between schools in the two sectors are deserving of a separate analysis. Likewise, the analysis was restricted to non-religious state schools, since the literature shows that there are large differences between religious and non-religious state schools in pupil composition, the level of disciplinary

² The classification is based on the Strauss Nurture Index which is used by the Ministry of Education to help decide on the allocation of resources to schools. The index is based on whether or not the school is located in the periphery or center of the country, on the average levels of pupils' parental education and income, and on the percentage of immigrants in the school from developing countries.

infractions and how such problems are handled. These differences require a separate analysis.

The analysis dealing with the variables that affect disciplinary infractions in class includes 768 eighth grade classes from 191 schools in the Jewish non-religious state sector in 2009. In the second part of the analysis, which deals with the effect of disciplinary problems on pupil achievement, the sample includes only pupils in Jewish non-religious state education who were tested in Hebrew in 2009 and in 2006, when they were in the fifth grade. This sample includes 2,422 pupils from 181 classes in 64 schools.

The Study Variables

Pupil, class, and school characteristics

Variables examined for pupils were gender, age, average parental education (in years of study), number of siblings, and achievements in Hebrew in the fifth and eighth grades. Pupils were also distinguished by whether they were born in Israel or elsewhere. A pupil's personal disciplinary infractions were measured by the number of absences and late arrivals as self-reported in the previous month (in the climate questionnaires).

Classroom variables were the percentage of girls in a class, average parental education, class heterogeneity (according to the standard deviation in parental education), and class size. The perceived level of teacher fairness in the class was examined employing the class average in agreement with the following statements: "In my class, there are pupils who no matter what they do, the teachers will never treat them nicely," and "In my class, there are pupils who the teachers favor over other pupils."

The school variables that were examined were school size and its socioeconomic standing (see footnote 1).

Discipline variables

Disciplinary infractions at the class level were estimated as a principal component factor of class averages of pupils' agreement with the following statements: "The pupils in my class treat the teachers with respect," "Very often the pupils make noise and commotion in class and disrupt study," "In my class there are pupils who are insolent toward the teachers," and "The teachers have to wait a long time at the start of class until the pupils stop making noise."

Disciplinary infractions at the school level were estimated as a principal component factor of the averages (for seventh and eighth grade pupils) of disciplinary infractions in class, the level of vandalism and bullying at the school (measured by agreement with the statement: "In school there are gangs of pupils who act violently, annoy, and hurt other pupils"), and the level of pupil victimization (pupil reports on how frequently they have been beaten up, cursed, shoved, or ridiculed).

Disciplinary enforcement policy at the school was estimated as a factor of the school average of pupils' agreement with the following statements: "In school many activities are undertaken to prevent violence and to deal with it," "During recesses there are always teachers in the yard whose task is to supervise so no violence occurs," and "When there are incidents of violence at school the teachers know about it."

All the variables at the class and school levels were also controlled for at the pupil level, to ensure that the context was measured (e.g., the disciplinary infractions in the class) and not a pupil's subjective perception (e.g., individual perception of disciplinary infractions in the class).

3. Disciplinary Infractions in the Class and Their Influence on Pupils: Findings

Are There Differences in the Level of Disciplinary Infractions Between Different Classes in the Same School?

Since most of the studies dealing with discipline and achievement have focused on either pupils or schools, it is necessary to examine whether there are any differences at all in the level of disciplinary infractions between classes in the same school, or whether all the differences are between schools. A hierarchical analysis of the data shows that about two-thirds of the difference in disciplinary infractions is related to the attributes of a specific class (e.g., the number of pupils in it) and not those of the school (e.g., the number of pupils in a school, which is the same for all the classes).

Thus the assumption of most researchers that the focus should be on the school while ignoring the class is incorrect. A school's attributes do appear to have a significant part in explaining the disciplinary infractions in a class, but those problems depend mainly on the unique characteristics of each class within the school.

Which Class and School Characteristics Explain the Disciplinary Infractions in a Class?

Contrary to expectation, no statistically significant differences were found in the level of disciplinary infractions in classes between schools that differ in size or on the Strauss Nurture Index. Class size or the percentage of girls among all the pupils also had no effect on the level of disciplinary infractions. However, the extent of disciplinary infractions and the enforcement policy at a school have an effect on the level of disciplinary infractions in a class: the more disciplinary infractions there are in the school, the more infractions there are in the class; and, the

stricter the enforcement policy, the fewer the number of disciplinary infractions in the class.

Differences in the level of disciplinary infractions were also found between classes differing in their socioeconomic composition. The level of discipline is higher in classes of pupils from a higher socioeconomic background, i.e., whose parents are more educated.

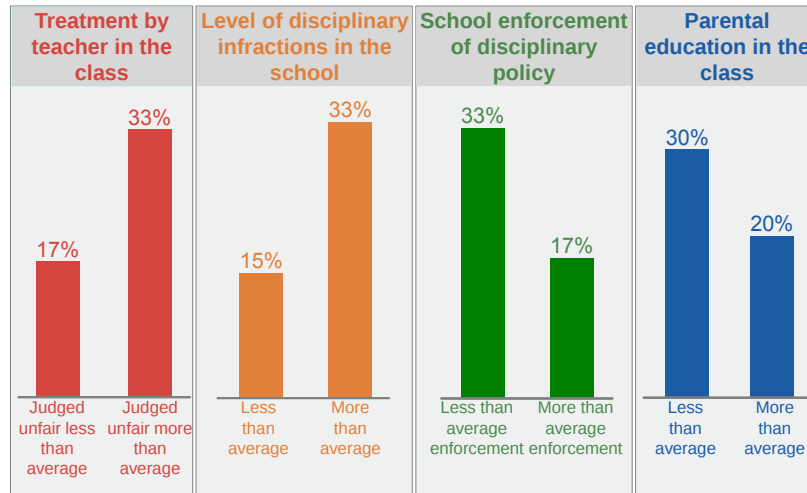
The pupils' perception of the teachers' treatment of them as unfair has the opposite effect: the less fair that attitude is perceived to be, the higher the level of disciplinary infractions. The heterogeneity of a class is positively related to the level of disciplinary infractions: the more heterogeneous the class is in terms of the background of its pupils, the more disciplinary infractions there are in it.

Figure 1 shows the effect of the different class and school characteristics on the disciplinary infractions in a class. It presents the percentage of undisciplined classes (classes located in the upper quartile of disciplinary infractions) among various schools and classes with different characteristics.³

The figure indicates that in schools with a relatively strict disciplinary enforcement policy, the percentage of undisciplined classes is about half the rate of schools with a less strict enforcement policy. In parallel, when the teachers' attitudes are perceived to be unfair, the rate of undisciplined classes rises to double what it is in classes where the teachers' treatment is perceived to be fair.

³ This figure is based on descriptive statistics only, but the various classes and school characteristics were found to be distinctive also in a multivariate hierarchic regressive analysis, in which the class and school characteristics (class size, school size, etc., as described above) were controlled for.

Figure 1
Percentage of undisciplined classes*
 out of all classes in the study



* Classes in the upper quartile in terms of disciplinary infractions

Source: Yossi Shavit and Carmel Blank, Taub Center

Data: RAMA (authors' calculations)

Do Disciplinary Infractions in the Class Harm Pupil Achievement Even When a Pupil's Own Disciplinary Infractions and Past Achievement Are Taken into Consideration?

From the study's analysis it emerges that about 80 percent of the differences in achievement depend on the pupil's personal characteristics. Only 10 percent of the differences in achievement are related to the school attributes, and another 10 percent to the specific class attributes.

In this part of the study, the effect of characteristics at three levels – the pupil, the class, and the school – on the pupil's MEITZAV score in Hebrew were examined. At the pupil level, the findings correspond with what is already well-known: girls' achievements are higher on average than those of boys, and a pupil's achievements improve the more educated the parents are and the higher the pupil's past achievement. At the school level, only school size was found to have a significant negative effect on pupil achievement. The effect of school size is entirely explained by the degree of disciplinary enforcement: the negative effect of large schools stems from a lesser degree of control and supervision over disciplinary infractions and violence.

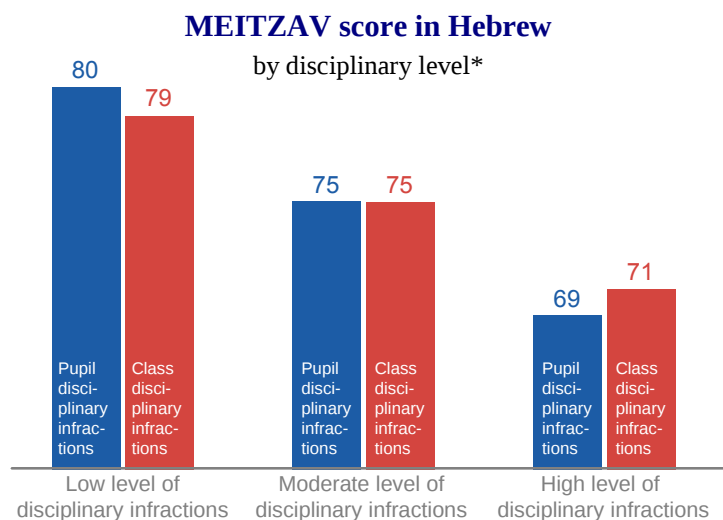
The study's central finding is that disciplinary infractions in a class have a significant negative effect on pupil achievement, even when past achievement is controlled for. In other words, the achievements of pupils in a class rife with disciplinary infractions are lower than those of pupils in well-behaved classes, regardless of the pupil's personal behavior or past achievement level. As opposed to the disciplinary infractions in a class, class size – as also the percentage of girls and average parental education in a class – has no significant effect on pupil achievement. Class size is not the factor that affects pupil achievement but the opposite: pupils with high achievements are placed in larger classes relative to pupils with low achievements.^{4,5}

⁴ Nonetheless, it should be kept in mind that the optimal way of handling the selective placement of pupils in classes with different characteristics is by using an experimental model, and therefore the study's findings do not provide unequivocal proof that class size or composition is not relevant to a pupil's achievements.

⁵ Neither did the teachers' treatment of pupils in a class have an effect on pupil achievement. Interestingly, while the teachers' behavior at the class level had no effect on pupil achievement, a pupil's subjective perception of the teachers' behavior did have an effect. That is, the less fair a pupil perceives the teachers' behavior to be, the lower pupil achievement tends to be. It is, however, difficult to determine whether a negative attitude on the part of the teacher leads to a drop in a pupil's achievements, or whether pupils with low achievements perceive the teachers' behavior in class as less fair.

In addition to disciplinary infractions in classes, the achievement of pupils with numerous disciplinary infractions are lower than those of pupils who behave well; on the other hand, there are no differences in achievement between pupils in schools with varying levels of discipline, or with different enforcement policies. Figure 2 shows that MEITZAV scores are negatively related to disciplinary infractions of pupils and at the level of classes. The figure shows that the effects of disciplinary infractions at the pupil level and at the class level are rather similar. The difference in achievement between an especially well-behaved pupil (two standard deviations below the average disciplinary problems) and an extremely undisciplined pupil (two standard deviations above the average) comes to 11 points (a grade of 80.4 versus 69.4 on average). The difference in achievement between a pupil who studies in an especially disciplined class and one in an extremely undisciplined class comes to 8.4 points (79.1 versus 70.7, respectively).

Figure 2



* Differences in disciplinary infractions were measured in terms of standard deviations, starting from two standard deviations below the average (of the pupil or in the class) up to two standard deviations above the average.

Source: Yossi Shavit and Carmel Blank, Taub Center

Data: RAMA (authors' calculations)

4. Summary and Conclusions

The topic of discipline in schools has drawn considerable attention from both academics and the general public. Policy makers in Israel and around the world are searching for ways to improve the disciplinary climate in schools and reduce the number of disciplinary infractions and violent incidents in order to facilitate a better learning environment and improve pupil achievement. Studies have found correlations between pupil characteristics and school characteristics on the one hand, and disciplinary infractions and achievement, on the other hand. Only a handful of studies have focused on the class as the unit of analysis, even though a pupil spends the bulk of the learning time in the classroom. The present study offers an analysis that takes into account the pupil level and the school level, but focuses on the class level to examine both the characteristics that affect disciplinary infractions in a class as well as their contribution to pupil achievement.

This study presented three central research questions. The first was whether there are differences in the level of disciplinary infractions between different classes in the same school, and the answer was found to be affirmative. About two-thirds of the difference in disciplinary infractions between classes is related to class characteristics – such as its size or perceived teacher fairness – and not to school attributes. It, therefore, seems that examining only the school attributes is not enough to explain the level of discipline in the classroom.

With regard to the second research question – which class and school characteristics explain the level of disciplinary infractions in a class – it seems that lower level of disciplinary infractions in a school and fair treatment by class teachers, as well as a strict enforcement policy at the school level can improve the class discipline. Likewise, in classes whose pupils come from a stronger socioeconomic background, there are fewer disciplinary problems.

In answer to the third research question, it seems that disciplinary infractions in the class harm pupil achievement, even when a pupil's personal disciplinary infractions and past achievement, as well as disciplinary infractions in the school, are taken into account.

It is important to note that of all the class and school attributes that were examined, only disciplinary infractions in the class were found to have a statistically significant effect on pupil achievement. It would appear that ignoring the class level, as most research has done, makes it difficult to understand the complex relations among institutional attributes of the school, class attributes, disciplinary infractions, and pupil achievement.

It seems, then, that the policy makers' assertions that it is difficult to study in a class that has disciplinary infractions is correct. A high level of disciplinary infractions harms pupil achievement, regardless of the pupil's personal behavior. The expected disparity in achievement between a pupil in a well-behaved class and one in a poorly-behaved class is approximately ten points – almost the same as the disparity between a pupil who is frequently absent from school and late to class and one who is not. It is also important to bear in mind that disciplinary infractions in the class not only affect achievement; they are liable to affect also the overall learning process, the emotional welfare of a pupil, and pupil relations with the teachers. These variables were not examined in this study, but it would be worthwhile to consider them in future studies focusing on the class level.

A central finding of this study, which may help policy makers in improving the disciplinary climate in classes, is that the disciplinary enforcement policy at a school, as well as the teachers' treatment of pupils, can affect the level of disciplinary infractions in the class. Accordingly, providing training and tools to help teachers and schools deal with disciplinary problems and enforce the rules of conduct fairly can contribute to a more positive disciplinary climate, and thus contribute also to improving pupil achievement.

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Trends in the Development of the Education System Pupils and Teachers

Nachum Blass*

Abstract

This chapter deals with two main topics: trends in the pupil population's demographic composition and the characteristics of the teacher population following the New Horizon education reform agreement. The chapter first presents the continuing slowdown in the growth rate of Haredi (ultra-Orthodox) education and Arab Israeli education, as opposed to the rise in the growth rate of official Jewish education. It goes on to describe the effect of the decision to implement the Compulsory Education Law for Ages 3-4 on the number of pupils in public preschools. Lastly, the chapter examines the effect of the signing of the New Horizon agreement on various characteristics of the teacher population, such as average age, job intensity, and wages.

1. Prominent Demographic Trends Among Israeli Pupils¹

In 2011, the trends observed in previous years continued (see “Trends in the Educational System’s Development” in the *State of the Nation Report*

* Nachum Blass, Taub Center researcher and Policy Fellow, Education Policy Program

¹ This section of the chapter was written together with Haim Bleikh.

2011-2012) with a rise in the share of younger age groups within the Jewish population and a drop in these groups' share within the Arab Israeli population (Blass, 2012). The difference between the sectors in fertility rates and the relative decline of the younger age groups among the Arab population has yet to be expressed through a decrease in Arab Israeli pupils' share of the total pupil population. Nonetheless, between 2010 and 2011, the share of Jewish children attending preschools rose from 78.2 to 78.8 percent, and the share of those ages 0-4 rose from 75.1 to 75.6 percent.

The demographic differences between various groups in the Jewish sector, especially fertility rates and the number of children per family, also affect the composition of the education system. These differences are reflected by changes in the distribution of pupils by educational streams (e.g. state secular, state-religious, Haredi), which differ from each other mainly in level of religious observance.²

Preschool Education

In 2011, the government began to move forward on the Trajtenberg Committee recommendation to expedite the implementation of the Compulsory Education Law for Ages 3-4. In the wake of the implementation of this recommendation, between 2012 and 2013 the number of children attending preschools under the supervision of the Ministry of Education grew by 21,500, which is 5 percent of the total. If it is assumed that all of the children joining the education system did not attend a preschool (public or private) in the past, this means the integration of a little under half of all the children in the age cohort were integrated according to the law. (If it is assumed that the children who

² It is easy to follow the changes in the Jewish educational sector because the division among the religious streams is anchored in the educational system's organizational structure. In Arab Israeli education, although the great majority of schools are included in state education, there has been an expansion of religious frameworks among the Muslims and a preference for Church-run schools among the Christians.

attended private preschools in the past also need be integrated, then this is only one-third of all children to be integrated) (Blass and Bleikh, 2013). Note also that between 2011 and 2012, the number of preschool age children grew by 11,500; accounting for the natural growth in the age groups over the two previous years, the effect of the start of implementation was an increase of 2-3 percent between 2010 and 2012.

In keeping with expectations (Blass and Bleikh, 2013), the most significant rise in the number of pupils (it is important to distinguish between number of pupils and number of children) and the most significant rise in growth rate occurred in Jewish state education (12 percent). That is not surprising, since in this population group the share of children not benefiting from the Compulsory Education Law was the highest. Since the Ministry of Education figures do not include private preschools, it is difficult to determine whether the matter concerns a population of children who did not previously attend preschool, or whether some of them attended private preschools in the past. It may also affect children who attended Haredi (ultra-Orthodox Jews) frameworks in 2012 due to the low tuition or the long school day, but transferred to the state sector after implementation of the law.

The growth in state-religious education was similar to that seen in Jewish state education, albeit less prominent. This may be explained by the fact that the population served by state-religious education is weaker socioeconomically, and it is likely that large segments of this population already benefited from past exemptions from preschool tuition that boosted their preschool attendance rates.

An interesting and surprising development occurred among the population of Haredi preschool pupils, which dropped after the beginning of full implementation of the Compulsory Education Law for Ages 3-4. This may be attributed in part to the transfer of Haredi children to preschools in state and state-religious education. In addition, it is important to note that there is an ongoing process of significant decline in this population's growth rate, which decreased from an annual 7 percent rate between 2000 and 2005 to 3 percent from 2005 to 2012.

The population of Arab Israeli pupils in preschools grew at a very rapid rate (53 percent) during the years 2000-2005, but at a much slower rate (6 percent) during the years 2005-2013 (Table 1 in the Appendix). Of more interest, though, is the change in the distribution between Official education and Recognized education³ among this age group in this sector (Table 2 in the Appendix). The rapid growth in Recognized education that is not official slowed considerably after 2005 (from over 100 percent growth between 2000 and 2005 to only 40 percent growth between 2005 and 2010) then came to a complete stop, and even declined. It appears that actions undertaken by the Ministry of Education in order to increase accessibility to preschools under its supervision, e.g., expeditious construction, seem to have reversed the trend in unofficial education.

In sum, state and state-religious education's share of all preschool education on which the Ministry of Education reports rose from 51 percent in 2005 to 56 percent in 2013.⁴ Although the entire age group is not yet attending preschool, by 2012, before implementation of the Trajtenberg Committee's recommendations, 98 percent of five-year-olds attended preschool, as did 96 percent of four-year-olds and 90 percent of three-year-olds, altogether about 95 percent. This number is significant in light of the fact that in recent years it was commonly thought that the share of preschool pupils in Haredi and Arab Israeli education would rapidly exceed 50 percent.⁵

³ The educational laws in Israel recognize three types of educational institutions according to the measure of state supervision they are subjected to: Official, Recognized, and Exempt institutions.

⁴ In 2000, the state and state-religious streams' share was 60 percent, but this was before the selective application of the Compulsory Education Law for Ages 3-4, in the wake of which mostly Haredi and Arab Israeli pupils joined the system.

⁵ The latest forecast by the Central Bureau of Statistics (CBS) regarding the number of pupils in primary schools for 2014-2019, which in the author's view is biased to some degree towards increasing Haredi and Arab Israeli

Primary Education (Grades 1-6)

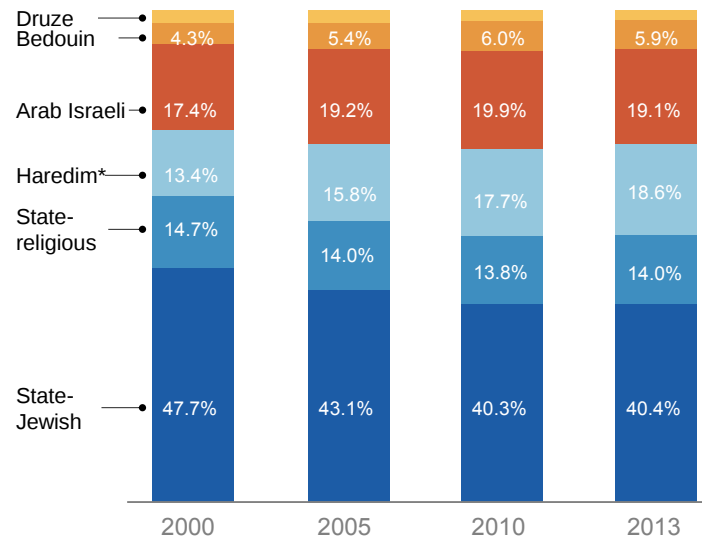
Table 1 details the distribution of pupils between the various educational levels by sector in selected years since 2000. The trends in preschool education – most of which stem from changes in birthrates, and little from changes among various populations in patterns of registration to preschools – are only partially observed due to its non-compulsory nature as opposed to trends that are more readily observed in primary education.

It is important to note that primary education is composed of a different number of grades in Israel's various educational streams. For the sake of comparison, the emphasis here is on grades 1-6 across all of the streams. The main changes can be seen in Figures 1 and 2, and they include:

- A. The number of children and growth rate of Jewish state education has risen, and the decline of its share in the entire educational system has stopped.
- B. The growth of state-religious education has stopped, but its relative share of the entire system remains the same.
- C. The growth rate of Haredi education has declined significantly, but its share of the pupil population in the education system remains almost the same.
- D. Arab Israeli education in general has maintained its relative share of the pupil population, but the growth rate is steadily declining.

pupils' share, also predicts that their share will not surpass 50 percent but reach "only" 49 percent.

Figure 1
Distribution of pupils in grades 1-6
 by sector and supervisory authority



* Haredim are ultra-Orthodox Jews

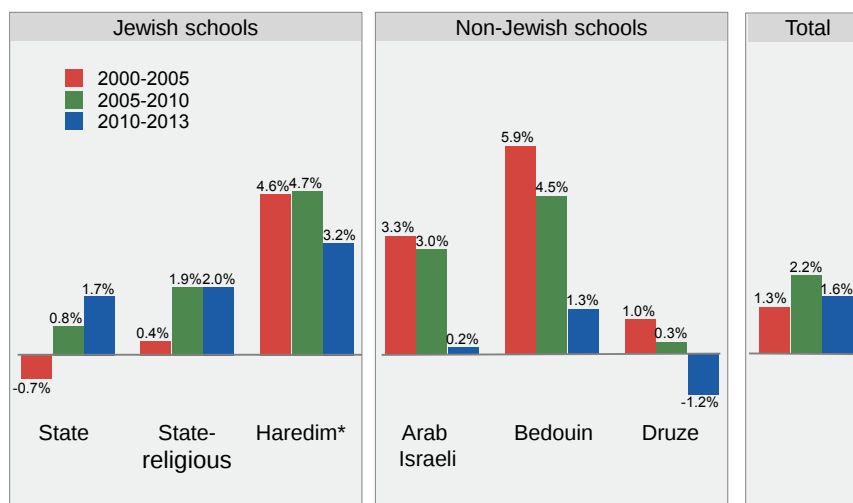
Source: Nachum Blass and Haim Bleikh, Taub Center

Data: Ministry of Education

Another phenomenon reported Blass (2012) is the strengthening of Recognized education in the Arab Israeli sector, which continues to be evident also in the past year: Recognized education's share rose from 10 percent in 2000 to 18 percent of all Arab Israeli education in 2013 (Table 2 in the Appendix). This should be of concern to the state's official educational system, because it reflects a lack of trust in state education among most of the Arab Israeli population. The topic requires further study to understand the reasons for the phenomenon, its geographic and locational distribution, the characteristics of the population that is

inclined to seek Recognized education, and the educational and social ramifications of the trend.

Figure 2
Number of pupils in grades 1-6, average change



* Haredim are ultra-Orthodox Jews

Source: Nachum Blass and Haim Bleikh, Taub Center

Data: Ministry of Education

Secondary Education

The trends that characterize grades 1-6 are evident also in secondary education. In grades 7-9, the end of the decline and the beginning of a rise in the number of pupils in Jewish state education is seen, as is the acceleration in the growth of state-religious education and deceleration in the growth of Haredi education. Despite the deceleration, Haredi education is still growing at a rate double that of state-religious education

and almost four times as fast as state education. Arab Israeli education continues to grow at a rapid rate, but slower than in the initial period examined, and the same can be said of Bedouin education.

The situation in grades 10-12 differs to some extent from that in the rest of the education system. The number of pupils in Jewish state education in 2013 is still lower than in 2000, and its share of all education in 2013 is only 48 percent, as opposed to 59 percent in 2000. Nonetheless, evident in grades 10-12, too, is the transition from a negative to a positive growth rate in state education, a rise in the growth rate of state-religious education and a sharp drop in the growth rates of Haredi, Bedouin, and Druze education.

Table 1. **Number of pupils by sector and educational stream**
in thousands, selected years

	Bedouin	Druze	Arab Israeli	Haredim*	State- religious	State	Total
Pre-primary							
2000	9.3	7.4	37.6	58.3	48.1	123.7	284.3
2005	18.5	7.9	57.9	81.7	50.7	125.1	341.6
2010	16.8	7.8	62.3	94.3	58.3	140.3	379.9
2012	17.5	8.8	60.7	99.9	62.4	150.9	400.2
2013	17.1	8.6	63.3	97.6	66.5	168.6	421.7
Grades 1-6							
2000	29.1	17.0	117.8	90.8	99.3	322.4	676.4
2005	38.7	17.8	138.9	113.7	101.3	311.5	722.0
2010	48.2	18.1	160.7	143.1	111.5	324.8	806.5
2012	50.3	18.1	163.3	158.3	115.9	336.3	842.1
2013	50.1	17.5	161.5	157.3	118.2	341.6	846.2

* Haredim are ultra-Orthodox Jews

Table 1. **Number of pupils by sector and educational stream**
(continued)
in thousands, selected years

	Bedouin	Druze	Arab Israeli	Haredim	State- religious	State	Total
Grades 7-9							
2000	10.0	7.1	48.5	33.2	47.5	182.6	329.0
2005	14.0	8.0	62.7	43.4	47.6	168.5	344.2
2010	18.7	8.4	72.5	53.2	48.4	165.9	367.0
2012	20.2	8.1	76.3	58.5	50.4	169.7	383.1
2013	21.2	8.3	79.1	59.7	51.2	171.6	391.1
Grades 10-12							
2000	6.3	5.4	34.9	29.9	42.0	172.5	290.9
2005	9.1	6.0	45.6	39.5	43.0	173.0	316.2
2010	12.1	7.1	56.3	47.3	44.0	162.7	329.5
2012	13.1	7.1	60.8	49.9	44.5	161.8	337.2
2013	13.9	7.2	63.8	50.5	46.2	164.4	345.9
Total – Pre-primary through grade 12							
2000	54.7	36.9	238.8	212.2	236.9	801.2	1,580.6
2005	80.3	39.7	305.1	278.3	242.6	778.1	1,724.0
2010	95.8	41.4	351.8	337.9	262.2	793.7	1,882.9
2012	101.1	42.1	361.1	366.6	273.2	818.7	1,962.6
2013	102.3	41.6	367.7	365.1	282.1	846.2	2,004.9

Source: Nachum Blass, Taub Center for Social Policy Studies in Israel

Data: Ministry of Education

2. Teachers: Changes in Work Patterns, Working Conditions, and Wages Following the Implementation of the “New Horizon” Agreement

This part of the chapter analyzes the changes in primary education in the wake of the signing of the New Horizon wage agreement.⁷ Before the signing of the agreement, a full-time teaching position was 30 hours, all of which were supposed to be spent in frontal teaching.⁸ The New Horizon agreement requires teachers to work 36 hours a week: 26 hours in frontal teaching, 5 hours at school, and 5 hours in individual instruction.⁹

There were numerous reasons for the change in job hours. The expectation was that the New Horizon agreement would result in teachers devoting more of their time to instruction, and some policymakers (certainly some members of the Dovrat Commission, whose recommendations regarding the structure of teaching jobs constituted the basis for the agreement) thought it would enable a reduction in the number of teachers as well as wage increases. Other policymakers feared that due to the change in working conditions, many teachers would retire

⁶ The New Horizon Reform was a national program for reform of primary and lower secondary school education. It was initially implemented in 2008 and has been adopted by 72 percent of all state primary and lower secondary education in Israel.

⁷ The discussion focuses on primary education, since implementation in preschools and middle schools began later. Implementation of the *Oz le-Tmura* Reform, which resembles New Horizon in its major components but is focused on secondary schools, began only this year on an experimental basis, and there are as yet no meaningful data regarding it.

⁸ In effect, because of homeroom hours, reduced hours based on teacher's age and for new mothers, a full-time position was only about 27 hours.

⁹ Here, too, there are reduced hours based on teacher age and for new mothers, but there is no reduction due to homeroom hours. A full-time position is about 35 hours.

while others who were satisfied with their former wage levels would scale down their hours accordingly.

Since the implementation of the New Horizon agreement, several studies have examined various aspects of the reform. Shaul Cohen (2011) examined the characteristics of teachers who joined the agreement. David Ma'agan (2000) examined changes in patterns of entrance into and retirement from teaching in the wake of the agreement's signing. Researchers at RAMA (National Authority for Measurement and Evaluation) have followed the reform from the outset, publishing studies mainly concerning teacher and principal satisfaction and with the ways in which the reform is being implemented in schools (Freeman and Ben-Arzi, 2008; RAMA, 2010; Pas and Lapid, 2012; Shemesh et al., 2012).

The discussion here focuses on several points concerning the changes that have occurred among primary school teachers, which previous research has not addressed.

Has There Been a Trend Towards Retirement Among Teachers Since the Reform?

In order to examine whether the reform has encouraged a trend towards retirement, it is necessary to compare the actual number of teachers to the number of full-time job equivalents before and after the reform, and also relative to the number of pupils. The figures to be compared are for the years 2000, 2007 and 2012. The year 2000 was chosen to provide sufficient time before New Horizon was signed to allow for identification of trends unrelated to the agreement; 2007 was chosen as the reference year as it was the last year before the agreement went into effect (according to CBS); and 2012 is the latest data available at this time.

As is clearly shown in Table 2, the number of teachers in Jewish education rose by 16 percent between 2007 and 2012, while the number of pupils grew by only 12 percent. The corresponding figures in Arab Israeli education are 27 and 9 percent, respectively. The number of full-

time teaching positions rose by 21 percent in the Jewish sector and by 23 percent in the Arab Israeli sector. It is clear that not only did the number of teachers not drop in the wake of the reform, but it grew significantly in excess of the increase in the number of pupils, i.e., the mass departure of teachers that was feared has not materialized.

Table 2. **Selected data on primary education, before and after the New Horizon Reform, 2000, 2007, and 2012 and change between 2008 and 2012**

	2000	2007	2012	Change 2007-2012
Jewish education				
Full-time equivalent teaching positions	31,845	35,066	42,438	+21%
Number of teachers*	43,426	46,610	54,198	+16%
Classes	22,763	24,354	27,638	+20%
Pupils	558,640	598,029	670,631	+12%
Avg pupils per class	24.5	24.6	24.3	-9%
No of pupils per teacher	17.5	17.1	15.8	-9%
Arab Israeli education (including Bedouin and Druze)				
Full-time equivalent teaching positions	8,977	13,351	16,437	+23%
Number of teachers*	11,001	15,209	19,362	+27%
Classes	6,130	7,898	9,502	+20%
Pupils	181,640	231,268	251,621	+9%
Avg pupils per class	29.6	29.3	26.5	-9%
No of pupils per teacher	20.2	17.3	15.3	-8%

* All teachers, regardless of how much they work

Source: Nachum Blass, Taub Center for Social Policy Studies in Israel

Data: Ministry of Education

Has There Been a Drop in the Average Tenure and Education Level of Teachers Since the Reform?

The fear that the reform would trigger the massive departure of experienced outstanding teachers, to be replaced by younger, inexperienced teachers, has not materialized (Table 3). Teachers' age continues to rise – albeit the rate of increase in the Jewish sector in recent years is slower than in the Arab Israeli sector. The percentage of teachers who have an academic-level education is rising in both sectors as well.

Table 3. **Selected characteristics of teachers in primary education, 2000, 2007, and 2012, by sector**

	Jews			Arab Israelis		
	2000	2007	2012	2000	2007	2012
Age						
Under 29 (%)	18.2%	11.9%	13.2%	33.5%	31.2%	22.1%
50 + (%)	16.6%	25.4%	25.9%	8.3%	12.2%	13.7%
Academic education (%)	50.2%	66.0%	79.7%	37.9%	69.5%	86.7%
Avg yrs of seniority	14.3	16.0	15.9	12.5	11.7	13.1
Avg weekly work hours	22.6	21.1	27.0	24.9	23.4	29.9
Avg job position*	0.75	0.70	0.75	0.83	0.78	0.83

* Job position is calculated by dividing the average number of hours by the hours in a full-time position (30 hours in 2000 and 2008, 36 hours in 2012).

Source: Nachum Blass, Taub Center for Social Policy Studies in Israel

Data: Ministry of Education

Does this mean that in the wake of the reform, the quality of teachers is higher? In this matter two things can be said: a) a rise in teachers' tenure and education level is a trend that was already observed prior to

the reform; b) the relationship between teachers' tenure and education and their quality is unclear. Such a correlation has not been proven by the many studies conducted abroad (Blass, 2008). In Israel, this question is further complicated by the fact that a large share of teachers obtained academic degrees at branches of overseas universities that flourished in Israel during the late 1990s and early 2000s, or completed their B.A. studies in one year after undertaking the major portion of their studies at teacher training institutions. Since academic supervision of foreign university branches and one-year studies towards the completion of a B.A. was not stringent, the positive effect of obtaining a degree on the quality of teaching in these cases is doubtful.

An interesting point concerning the rise in the rate of teachers who have an academic-level education is the difference between the Jewish and Arab Israeli sectors. As of 2012, the rate of teachers who have an academic-level education in the Arab Israeli sector was higher than in the Jewish sector. That raises several questions to be addressed in further studies, such as:

- Does this phenomenon stem from a surplus of teachers with academic degrees, and therefore schools have more choice of teachers in the Arab Israeli sector?
- Do the teacher training processes and tracks in the Arab Israeli sector differ in essence from those in the Jewish sector?
- Will the process of academization that is nearly complete in the Arab Israeli sector have an effect on pupil achievements in this sector?

Regardless of the quality issue, it should be emphasized that even if the effect of teacher tenure and education on pupil achievements remains unclear, its effect on education expenditures is unequivocal. Teacher's wages are linked to tenure and education level, and a proliferation of academic-level educated teachers pushes wages upward.

Despite the rise in teachers' average age, the average tenure does not exceed 16 years in the Jewish sector and 14 years in the Arab Israeli sector. Likewise, more than 75 percent of teachers are under 50 years of age. This means that contrary to any impressions from the data concerning the rise in teachers' average age, the vast majority of teachers will not be retiring within the coming decade. This is of great importance to a discussion about the possibilities of any overall improvement in the quality of teaching personnel.

Will Teachers Be Satisfied with Their Previous Wage Levels and Prefer to Reduce Their Job Position (from Full-Time to Part-Time Positions) Following the Reform?

The New Horizon agreement requires full-time teachers to work 36 hours (26 hours in frontal teaching, 5 hours in individual instruction, and 5 hours onsite), as opposed to 30 hours under the former wage agreement. Since the average teaching job has risen from a 70 to 75 percent position in the Jewish sector and remained stable in the Arab Israeli sector – 83 percent – this means that the number of working hours (teaching + other hours) for teachers has risen from 21.1 to 27 in the Jewish sector and from 23.4 to 29.9 in the Arab Israeli sector.¹⁰

The fact that teachers have met the requirement to increase their number of working hours indicates, at least on the face of it, that the Ministry of Education's demand was justified – that is, of course, if the teachers work the hours they are required to work. This appears to be the case according to the figures of the above table.

No less interesting than the question concerning the agreement's effect on teachers' working hours is the question concerning its effect on actual hours spent teaching. In a study conducted by the Ministry of

¹⁰ The increase in the job position (in the years 2007-2012) within the Arab Israeli sector contradicts the argument that the Ministry of Education is contending with the surplus of teachers in the Arab Israeli sector by reducing their teaching hours and employing many teachers in less than full-time positions.

Education prior to the signing of the agreement, it turned out that the actual number of teaching hours in a full-time position was about 27 hours a week, as opposed to the 30 required by the old agreement.¹¹ As noted previously, in the framework of the new agreement, teachers in a full-time position are committed to 26 hours of frontal teaching and 5 hours of individual instruction. The arrangement for reduced hours for new mothers and for age have not been eliminated, and therefore the number of actual teaching hours is approximately 30 teaching hours – 26 of them in frontal teaching, and 4 in individual instruction.

Frontal teaching declined by only a few percentage points, but it must be taken into consideration that even before New Horizon, some teachers, in the framework of their positions, taught individual students or small groups. Furthermore, teaching in small groups requires no less effort and professionalism than frontal teaching – in fact, there is evidence that teachers who have become accustomed to the frontal teaching mode find it very difficult to transition to individual instruction.

Have Teachers' Real Wages Risen?

Comparing teachers' wages before and after the agreement is complicated due to an overall change in the wage structure, transition from a promotion system based on tenure and education only to promotion according to pay grades, and a change in the benefits policy. Nonetheless, it is possible to compare the wages of a teacher with a B.A. degree at various tenure levels before and after the agreement (Table 4).

¹¹ In the former wage agreement there was no distinction between frontal teaching hours and working with individuals or small groups, although such hours were indeed part of the framework of non-frontal class hours.

Table 4. **Wage comparison according to wage scales, in 2012 shekels**

	2008	2012	Change 2008 to 2012 (%)
BA, 1 year of seniority	3,298	5,677	72%
BA, 15 years of seniority	5,179	6,923	34%
BA, highest seniority level	7,043	8,532	21%

Source: Nachum Blass, Taub Center for Social Policy Studies in Israel

Data: New Horizon Agreement

And what happens when teachers' wages in Israel are compared to teachers' wages in OECD countries? The OECD's publications for the years 2012-2013 (OECD; 2012 and 2013) reveal three interesting points. The first is that the change in teachers' wages in Israel from 2007 to 2011 was the highest in all of the OECD countries (26 percent in primary education, 14 percent in middle schools, and no change in high schools, as opposed to 2 percent, 1 percent and no change, respectively, in the OECD). The second point is that actual wages in Israel are much higher than the wages according to the salary tables (i.e., formal wages, without the various supplements and benefits that are added to salary). According to 2011 OECD data, the yearly wages for teachers with ten years' tenure in primary education in Israel, according to the salary tables, amounted to \$27,174 (in terms of relative buying power), while the average wage including various supplements was \$30,829.

The problem with such a simple comparison of value in dollars is that it fails to take into account that the standard of living in general in Israel is also lower. The third interesting point is that the problem of comparisons and the differences in standard of living is resolved by dividing average wages (according to the salary tables) by per capita GDP (which reflects the standard of living in the country). On this measure, Israel begins to approach the OECD average in primary

education (1.07 in Israel versus 1.23 in the OECD, a difference of 15 percent), whereas in secondary education, where the OECD data still reflect the former wage agreement, the ratio stands at 0.88 for Israel versus 1.23 for the OECD, i.e., a 40 percent gap (OECD, 2012). It goes without saying, however, that it should be remembered that teachers' wages in Israel lagged sorely behind that of teachers in the OECD in previous years.

3. Summary

This chapter has discussed two issues that are of constant concern to the education system. The first is the demographic composition of the pupil population; the second is the characteristics of the educational personnel and the relationship between those characteristics and work and pay conditions, as expressed in the wage agreements signed by the teacher unions.

The discussion of the first issue has shown that the growth in the Arab Israeli and Haredi pupil populations' share of the education system has declined considerably in recent years. Across all Arab Israeli education (from preschool at the age of 3 to grade 12), the growth rate has dropped from 5 percent between 2000 and 2001 to 2 percent between 2012 and 2013, and the phenomenon is especially prominent in the younger age groups. Across all Haredi education, there was a decline from 7 percent growth between 2000 and 2001 to zero growth between 2012 and 2013. Among the Haredim, too, the phenomenon is particularly striking in the younger age groups – in first grade, the growth rate in the number of pupils reversed, from positive 5 percent between 2000 and 2001 to negative 5 percent between 2012 and 2013 (according to the data on the Ministry of Education's "Broad View" website).¹²

¹² Particularly interesting is the dichotomy between the high natural reproductive rate of the Haredi population and the slowdown in the growth rate of the pupil population and the stability, even slight decline, in this population's

Nonetheless, there is no doubt that in the coming decade Haredi and Arab Israeli pupils' share of the entire pupil population will approach 50 percent. The question of whether it will reach 50 percent or drop to about 45 percent is entirely secondary. The important fact is that nearly half of the pupil population in the country is today receiving – and will continue to receive in the foreseeable future if there is no dramatic change in government and Ministry of Education policy – education that fails to provide them with the necessary tools for successful integration in the Israeli economy and society in the first half of the twenty-first century.¹³

The discussion of the second issue has shown that the main contribution of the New Horizon wage agreement's implementation has been a substantial increase in teaching hours per class. This stems mainly from the fact that contrary to expectations (and intentions) it was not accompanied by a reduction in the teaching staff following the increase in the number of frontal teaching hours per teacher. The fear of massive and selective retirement of veteran academically educated teachers from the system has not happened; even if there have been more retirees, the recruitment of new teachers has largely compensated for them. Furthermore, by virtue of the agreement, teachers' wages have matched the wages of other professionals with similar academic education, and the wage relative to per capita GDP for a teacher in Israel is similar to that of other OECD countries. Time will judge the impact of the agreements on education and the teaching profession; with implementation only recently completed, the short time elapsed does not yet allow for full examination and conclusions to be drawn.

representation in the Knesset, which has dropped since the 1999 elections (from 22 to 18 representatives). Does this point to an as yet undocumented phenomenon within the Haredi population? The answer is unknown, but clearly the topic deserves deeper examination.

¹³ These populations lack educational tools not only in the sciences and English, but also in civics, history, and the other social sciences and humanities. This knowledge base is vital to building the human infrastructure of a Jewish and democratic state as envisioned in Israel's Declaration of Independence.

Appendix

Appendix Table 1. **Number of children aged 3-5 in preschool in the Arab Israeli education system**

	Pre- Kinder- garten ages 3-4	Mixed preschool ages 3-5	Kinder- garten age 5	Total	Total Change (%)	Annual Change (%)
Total						
2000	13,525	5,681	17,897	37,103		
2005	26,109	8,840	21,891	56,840	53.2%	8.9%
2010	27,145	12,530	20,613	60,288	6.1%	1.2%
2012	24,910	13,001	20,454	58,365	-3.2%	
2013	25,169	16,158	19,735	61,062	4.6%	**0.4%
Official education*						
2000	9,985	1,813	16,455	28,253		
2005	15,075	4,511	18,550	38,136	35.0%	6.2%
2010	11,038	7,735	15,270	34,043	-10.7%	-2.2%
2012	10,785	8,391	15,175	34,351	0.9%	
2013	10,643	12,162	14,984	37,789	10.0%	**3.5%
Recognized education*						
2000	3,540	3,868	1,442	8,850		
2005	11,034	4,329	3,341	18,704	111.3%	16.1%
2010	16,107	4,795	5,343	26,245	40.3%	7.0%
2012	14,125	4,610	5,279	24,014	-8.5%	
2013	14,526	3,996	4,751	23,273	-3.1%	** -3.9%

* The educational laws in Israel recognize three types of educational institutions according to the measure of state supervision they are subjected to: Official, Recognized, and Exempt institutions.

** Percent change from 2010 to 2013

Source: Nachum Blass, Taub Center for Social Policy Studies in Israel

Data: Ministry of Education

Appendix Table 2. **Distribution of pupils in primary school in the Arab Israeli sector by school supervision (Recognized or Official*)**

Years	Recognized	Official	Total
In thousands			
2000	11.7	106.1	117.8
2005	16.1	122.8	138.9
2010	24.7	136.0	160.7
2013	28.7	132.8	161.5
As percent of total			
2000	10%	90%	100%
2005	12%	88%	100%
2010	15%	85%	100%
2013	18%	82%	100%
Percent change			
2000–2005	38%	16%	18%
2005–2010	53%	11%	16%
2010–2013	16%	-2%	0%

* The educational laws in Israel recognize three types of educational institutions according to the measure of state supervision they are subjected to: Official, Recognized, and Exempt institutions.

Source: Nachum Blass, Taub Center for Social Policy Studies in Israel

Data: Ministry of Education

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Update on the State of Israel's Universities and its Researchers

Dan Ben-David*

Abstract

After creating some of the world's leading research universities during its first two and a half decades of existence, Israel dramatically changed course. Over the next four decades, the country's universities steadily receded from the Israel's national priorities. The number of students per professor more than doubled, while the universities increasingly outsourced the teaching to non-research, external lecturers.

Israeli's often refer to "lost decades." Conventional wisdom has it that the high- to hyper-inflation years between the Yom Kippur War in 1973 and the implementation of the Stabilization Plan in 1985 were a lost decade for Israeli growth. As can be seen in Figure 5 in Ben-David (2012), that lost decade stretched into nearly four decades of fairly steady – and relatively slow – growth in GDP per capita. There have been no fundamental changes in the country's long-run trajectory from 1973 to this day.

* Prof. Dan Ben-David, Executive Director, Taub Center; Department of Public Policy, Tel Aviv University; Research Fellow, CEPR, London.

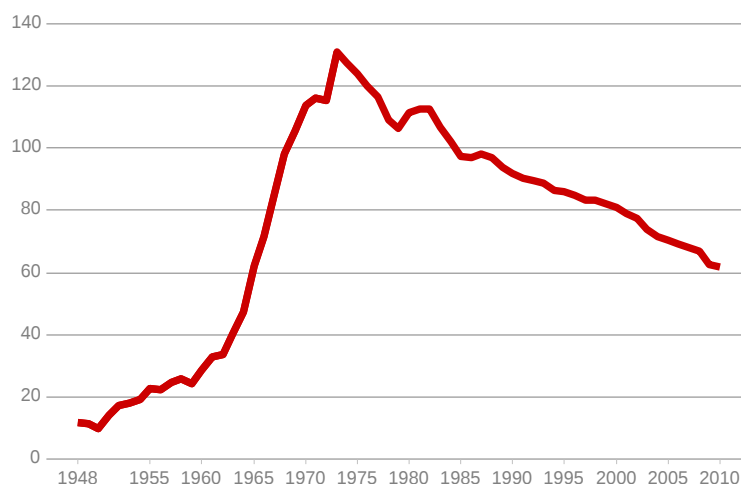
Many thanks to Nachum Blass, Ayal Kimhi, and Yossi Shavit for their comments.

Such is the case with regard to higher education in Israel. Many refer to the first decade of this millennium as a “lost decade” for the country’s universities. However, as shown in Ben-David (2008a) and updated in this chapter, the long-run policies towards Israel’s universities have actually been quite steady since the mid-1970s. The massive shift in Israel’s national priorities – and their ensuing implications for the country’s research universities – could not be starker than the numbers depicted in Figure 1.

1. Changing National Priorities

During the quarter century between achieving independence in 1948 and the Yom Kippur War in 1973, Israel was inundated with Jewish refugees and immigrants from European and Arab countries who arrived with no more than the clothes on their backs. The period included food rationing in the 1950s and repeated all-out wars. The economy was in its infant stages, with a considerable distance between it and developed country status. Yet despite the massive external pressures and internal budgetary limitations, Israel had seven major research universities by the end of this period. The number of senior faculty members per capita shot up and reached levels similar to those in the United States. Since then, the number of senior faculty per capita in the U.S. has risen. As Figure 1 shows vividly, though, that number has been steadily declining in Israel not just during the purported “lost decade,” but for a period spanning nearly four decades.

Figure 1
Senior research faculty in universities*
 senior research faculty per 100,000 people, 1948-2010



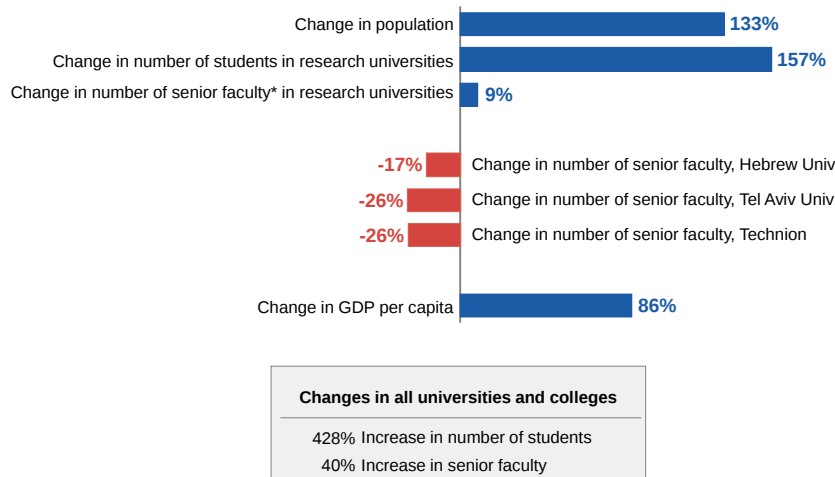
* Senior research faculty includes full professors, associate professors, senior lecturers, and lecturers

Source: Dan Ben-David (2008a updated)

Data: Central Bureau of Statistics, Council for Higher Education Planning and Budgeting Committee

In 1973, there were 131 senior faculty members per 100,000 population. By the 2010-2011 academic year, this number had fallen to 62 senior faculty members, a drop of 53 percent. During these years, Israel's population increased by 133 percent (Figure 2) while the student population in its research universities expanded by 157 percent as an increasing share of the population discovered the importance of attaining a higher education. During these 37 years, the number of senior faculty in the research universities rose by just 9 percent.

Figure 2
Changes from 1973 to 2010



* Senior research faculty includes full professors, associate professors, senior lecturers, and lecturers

Source: Dan Ben-David (2008a updated)

Data: Central Bureau of Statistics, Council for Higher Education Planning and Budgeting Committee

In fact, the size of the academic faculty in Israel's two flagship universities has actually declined over the past three and a half decades. There were 17 percent fewer faculty positions in 2010 at the Hebrew University than there were in 1973 – and 26 percent fewer positions at Tel Aviv University. The high tech revolution that has enabled Israel's economy to keep its nose above water became possible as a result of investments made in the country's research universities decades before. Israel's leading university in this sphere – and one of the world's leaders – is the Technion, which recently reached an agreement with Cornell University to open a campus in New York City. The Technion has lost

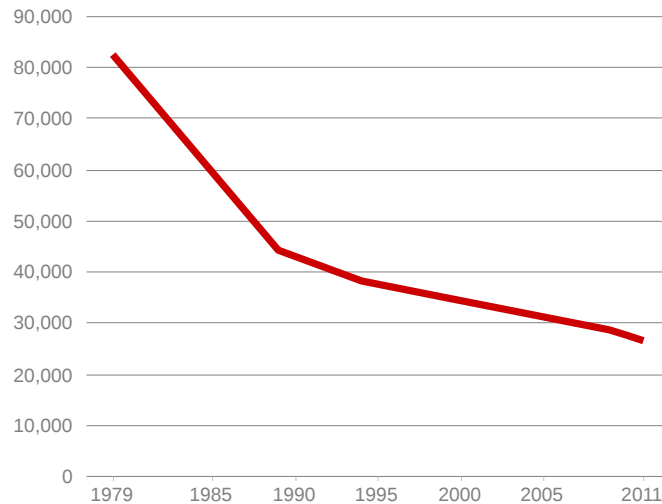
over a quarter (26 percent) of the faculty positions that it had nearly four decades ago.

While the research universities were moved to a considerably lower rung in the nation's priorities, there was a huge boom in the creation of non-research colleges during the 1990s, in an attempt to make higher education more accessible to a greater share of the population. When these colleges are included in the analysis, it turns out that the number of students in Israel's entire higher education system rose by 428 percent – while the overall change in senior academic faculty in all of the colleges and universities rose by just 40 percent.

2. Budgets, Students, and Academic Staff

This discrepancy between the large population changes and the huge increases in the demand for higher education on the one hand, and the relatively meager increases in academic staff on the other hand, was not due to a lack of national resources. Israel's standard of living – as measured by its GDP per capita – rose by 86 percent in real terms (i.e., net of inflation), so Israelis today are considerably better off than they were nearly four decades ago. Public expenditures on higher education per student, on the other hand, were reduced by over two-thirds (Figure 3), from NIS 82,400 in 1979 to NIS 26,500 in 2011 (in 2010 prices, i.e., net of inflation). Part of this is undoubtedly due to the creation of the considerably cheaper non-research colleges, which reduce the average cost per student. But that is not the entire story.

Figure 3
**Public expenditure per student in higher education,
 1979-2011**
 current budget, in 2010 shekels*



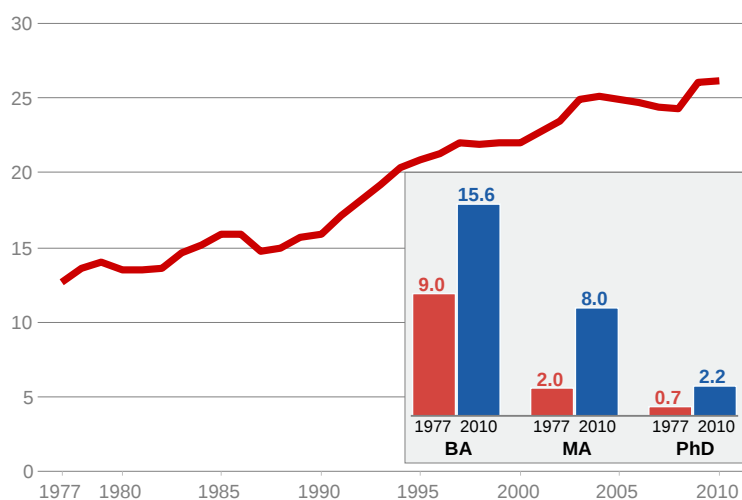
* Deflated by the price index for public civilian consumption

Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: Central Bureau of Statistics, Ministry of Finance

It is Israel's cutting-edge research universities that keep the country at the frontiers of human knowledge. Their importance is not only in pushing the envelope, but also in their ability to convey this knowledge to future generations. That ability has steadily diminished since the 1970s. As indicated in Figure 4, the number of students per senior faculty member more than doubled between 1977 and 2010, from 12.6 students per professor to 26.1.

Figure 4
Students per senior faculty in universities, 1977-2010



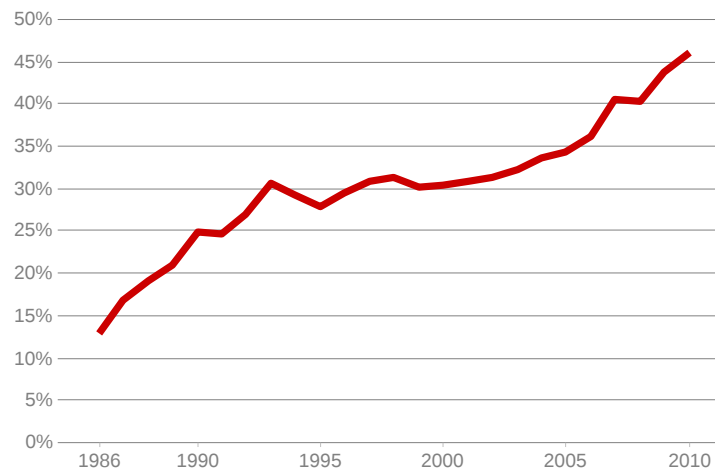
Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: Council for Higher Education Planning and Budgeting Committee

The situation is considerably worse than reflected in these numbers when it comes to the issue of relaying state-of-the-art findings to the next generation of researchers – who are today's graduate students. The number of PhD students to professors rose from less than one student per faculty member to over two students per professor while the number of MA students to professors rose four-fold, from 2 to 8.

To fill the teaching void, the research universities essentially outsourced. They brought in external lecturers in rapidly increasing numbers to replace the tenured and tenure-track research faculty (Figure 5). In 1986, the external teachers represented 13 percent of the senior research faculty. By 2010, this ratio had risen to 46 percent.

Figure 5
**Ratio of external lecturers to senior faculty
in the universities, 1986-2010**



Source: Dan Ben-David, Taub Center and Tel Aviv University

Data: Council for Higher Education Planning and Budgeting Committee

This low-cost solution to the public's declining interest in funding research universities has had two important negative ramifications. The first is the declining quality of instruction that students are receiving from individuals not actively engaged in cutting-edge research. The second is that many of these individuals may have intended to proceed along the research route, but the increasing lack of tenure and tenure-track positions – relative to available graduates – in Israel's research universities has caused many to either drop out of the research path, or to find research positions abroad.

3. Conclusion

In recent years, several windows of opportunity have opened from different directions. The deep recession in the United States has led to a decline in employment possibilities and compensation alternatives there. In addition, there has been an awakening within Israel as to the extent of the dangers faced by the country's research universities. This has resulted in the evolution of a program designed to create "excellence centers" to attract top Israeli researchers.

The government has promised to substantially increase its funding of higher education through the creation of these programs. Key features underlying these centers include heightened degrees of freedom that they receive with regard to the levels of compensation and reduced teaching requirements that they can offer. If such features are considered essential for competing with top American universities, then there is a question why they are limited to the new excellence centers and are not part of a comprehensive reform of Israel's entire university system.

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IV. SOCIAL SERVICES AND EXPENDITURES

Material Hardship in Israel

Haya Stier and Alisa Lewin*

Abstract

This study focuses on material hardships faced by the poor in Israel, and the manner in which various groups of poor people, primarily Arab Israelis and Haredim, deal with these economic difficulties. The study, based on the Central Bureau of Statistics Social Survey data, reveals that a large number of Israelis experience economic difficulties in buying food, paying for basic needs, and obtaining medical care and prescribed drugs. As was expected, those who suffer from poverty also suffer material hardship, although economic difficulties are not limited to the poor. It was found that different groups of the poor are distinguished by the number of concessions they are forced to make. Poor Arab Israelis consistently experience more severe material hardship than Haredim, since many of them also grew up in poverty and they have fewer support networks relative to Haredim. These findings have important implications for social policies, especially due to the long-term consequences of economic hardship on health and the inter-generational transmission of poverty and they draw attention to the need to lessen material hardships among the poor.

* Prof. Haya Stier, Chair, Taub Center Social Welfare Policy Program; Department of Sociology and Department of Labor Studies, Tel Aviv University. Dr. Alisa Lewin, Policy Fellow, Taub Center Social Welfare Policy Program; Department of Sociology and Anthropology, University of Haifa.

This study was inspired by the argument made by Nobel laureate (economics) Amartya Sen (1999) that “poverty must be seen as the deprivation of basic capabilities rather than merely as lowness of incomes, which is the standard criterion of identification of poverty” (p. 87). Although income is an important determinant of family well-being as well as access to services and basic needs, studies show that it does not fully capture the extent of material hardship faced by families (Beverly, 2001). Poor people are more likely than others to experience material hardship and deficiency but “there is no one-to-one match between the aspects of poverty and aspects of material hardship” (Iceland and Bauman, 2007, p. 391). Therefore, this study sets out to investigate material difficulties among the poor in Israel, with a special focus on the relationship between economic deficiencies and poverty income (half of the median per capita income). This study also focuses on a comparison between social groups – primarily Haredim (ultra-Orthodox Jews) and Arab Israelis, which are two particularly poor groups in Israel – in order to understand the differences in the way in which each group copes with economic difficulties. This examination of economic hardship may give insights into the more subjective significance of inequality and poverty, and it may be possible to use these insights in policy planning directed towards narrowing the sources of specific distress (such as food insecurity and health inequalities).

1. Definition of Poverty: Difficulties and Problems

In most countries, poverty is determined by household income. Focusing only on poverty income, though, does not reveal the wide variation in the living conditions of families in poverty. Indeed, families with similar levels of income per capita may experience different living conditions, and they may have varying needs due to differences in their life situations. Older families face a different set of needs than young families with children. Similarly, families with sick or disabled family

members have to allocate their resources differently from healthier families. Moreover, people with strong ties to the community may have additional sources of support and may find alternate ways of meeting their needs, while others may have to struggle or give up some of their basic needs in order to make ends meet. Savings, for example, allow families to purchase goods and services and thus to cope with economic difficulties. Property may be sold and may facilitate access to credit which can be used to finance consumption in a period of shortage. In addition, goods and services can be obtained without income, through social networks, public resources, and self-production. Focusing on material hardship, therefore, can shed light on the living conditions of individuals, families, and social groups in a more direct way than can be captured through an examination of income alone.

Poverty studies in Israel (e.g., National Insurance Institute (NII), 2012; Stier, 2011) have documented the concentration of poverty among certain groups in Israeli society – mainly Arab Israelis (53.5 percent are below the poverty line), Haredim (54.3 percent are below the poverty line), and single mothers (30.8 percent are below the poverty line). According to the recent poverty report (NII, 2012), about one-fifth (19.9 percent) of Israeli families lived below the poverty line¹ in 2011. This figure has been relatively stable during the last decade. Interestingly, in 2011, the elderly, who were at a higher risk of poverty than the overall population during the 2000s, had the same rate of poverty as the general population due to increased government support and the rise in the age of retirement.

Though illuminating, these figures tell very little about the actual material conditions in which the poor live, and how these conditions may vary across different social groups.

¹ The poverty line is measured in standardized per capita disposable income – that is, after accounting for welfare transfers and taxes.

2. Conceptualizing Material Hardship

What Is Material Hardship?

While official poverty in most developed countries is still defined in relative terms (half of the median per capita income (NII, 2012)), researchers have long searched for alternative measures and recent surveys have started to include questions about economic difficulties in meeting basic needs.² Still, there is no uniform standard as there is for the measure of income poverty and there is no agreement as to which questions should be asked or how material hardship should be measured. In general, studies have identified different dimensions of hardship. For example, a study in the United States found four dimensions: health hardship, food insecurity, bill-paying difficulties, and housing hardship (Heflin et al., 2009). A study comparing countries in the European Union identified three dimensions: consumption deficiencies, household facilities, and neighborhood environment (Whelan et al., 2008). This study joins these efforts by identifying two dimensions of material hardship in Israel: one includes the consumption of basic needs (food and utilities) and the other relates to health needs.

Who Suffers from Material Hardship?

Initially, policy makers were interested in material hardship because it was thought to distinguish between long-term and temporary poverty, but more recently studies have shown that material hardship is not limited to long-term poverty. Indeed, families experiencing temporary poverty may also experience material hardship. For example, families who suddenly fall into poverty may not have had time to make adjustments to their

² There were several attempts to refine and change the official measures of poverty, both in Israel and other countries. However, none of these measures (e.g., Alfandari, 2005) looked at the direct measure of difficulties in making ends meet.

standard of living to prevent material deficiencies. Social policies may alleviate economic difficulties by subsidizing necessities such as food and home utilities for the poor and by providing public health care. Social networks, friends, and family may alleviate economic pressures by providing resources, gifts, and loans to pay for basic needs in times of need.

Unsurprisingly, there is a relationship between the risk of poverty and the risk of material hardship (e.g., Iceland and Bauman, 2007). Studies found that families with a large number of children, single mothers, the unemployed, and those with lower education have a higher likelihood of suffering from poverty and material difficulties than other families (Endeweld et al., 2012; Whelan et al., 2004). The strength of this relationship, though, may differ across social groups or along the life course. For example, in their study of economic hardships along the life course, Mirowsky and Ross (1999) found that younger people suffer more hardship than the elderly. This finding seems surprising given the differences in labor force participation by age, and the strong relationship between work and poverty. Moreover, poverty rates tend to be higher among older people. Mirowsky and Ross (1999) provide two explanations for their findings. First, there are policy differences in programs aimed at the young and the old in the United States. Social policy in the U.S. (Social Security, Medicare) reduces the economic burden for the elderly, but fails to care for the very young groups. Second, economic hardship is an income-to-needs measure, and the elderly have fewer needs because they generally have fewer household members to support. They are also more likely to have fewer housing expenses because they may have already paid for their homes. Although the elderly are likely to have more medical expenses than younger adults, U.S. policy provides universal health care to the elderly, thus reducing hardship among older families compared to younger families.

There is only limited information in Israel regarding economic difficulties and deficiencies. A recent study conducted by the Israeli National Insurance Institute focused on food insecurity (Endeweld et al.,

2012) and found that almost 19 percent of Israelis experienced food insecurity, with half of them reporting significant insecurity. This study also documented a high correlation between food insecurity and poverty as measured officially by disposable income. As found in the United States (Mirowski and Ross, 1999), the Israeli study shows that food insecurity is lower among the elderly in comparison to younger people.

The main objective of the current study is to identify families most likely to experience material hardship. The study also sets out to explore areas of severe insecurity. Finally, the study points to strategies families employ to cope with these difficulties. For example, some groups may have better support systems and more political clout than other groups, thus they may have access to different resources in times of crisis.

3. Methodology

The study draws from Israel's Social Survey 2007, conducted by Israel's Central Bureau of Statistics. In that year the survey focused on the issue of poverty and welfare. This data set is a large representative sample of Israel's population and includes more than 7,000 respondents with detailed socioeconomic information. It is particularly suited for the current study because it has questions on material difficulties. In addition, the data set also includes several questions on poverty at earlier points in the respondent's life course as well as some questions about social support. Hence, this data set allows an examination of the long-term effect of poverty on current material hardship, and the role of social support in alleviating economic hardships.

Material difficulties are measured using two sets of questions. The first set of questions related to the purchase of basic services. Respondents were asked whether, due to financial difficulties over the last 12 months, they had: (1) refrained from purchasing food; (2) refrained from heating or cooling their apartment; (3) had their electricity or telephone services disconnected. The second set of

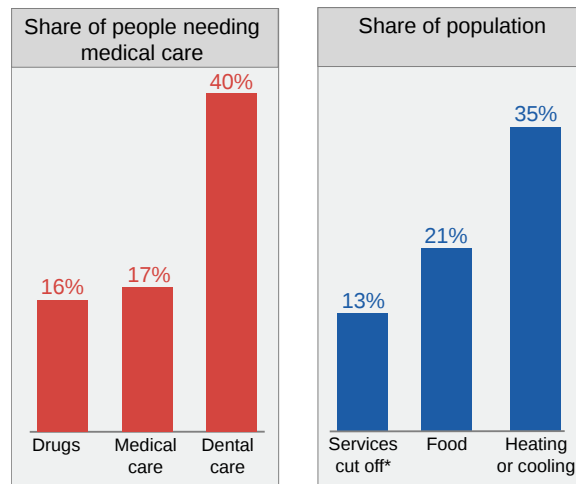
questions dealt with the issue of health services. Respondents were asked whether, during the last 12 months, they needed medical or dental treatment, and whether they needed prescription drugs. Those who needed treatment were then asked whether due to economic difficulties they had refrained from: (1) seeking medical treatment; (2) seeking dental treatment; (3) purchasing prescribed medications.

These questions refer to basic goods and services, which are less likely to be affected by personal preferences than other goods, and, therefore, it is assumed they reflect actual difficulties. The following analysis presents a comparison of the various measures in order to reveal different family strategies for dealing with economic deficiencies. Some families may reduce their expenditures on food, some forgo dental treatment, and some may be ready to live in more difficult housing conditions. Next, economic difficulties among poor people from different social groups will be examined.

4. Material Hardship Among Israelis: Findings

To what extent do Israeli citizens suffer from material hardship? Figure 1 shows that 21 percent of respondents reported difficulties in purchasing food due to a lack of money, about 13 percent had their phone or electricity disconnected, and almost 35 percent did not heat or cool their apartments because of economic difficulties. Of those who needed medical treatment, 17 percent were unable to obtain it due to economic difficulties, a similar number did not purchase prescribed drugs, and 40 percent of those who needed dental care refrained from seeking care. A composite measure of the three basic necessities that counts the number of areas in which respondents had to make concessions (not including medical needs) indicates that 19 percent had difficulties in only one area, 14 percent in two of them, and about 7 percent could not afford all three: food, heating or cooling utilities, and electricity or phone services.

Figure 1
Percent forgoing basic necessities, 2007



* Telephone or electricity

Source: Haya Stier and Alisa Lewin, Taub Center

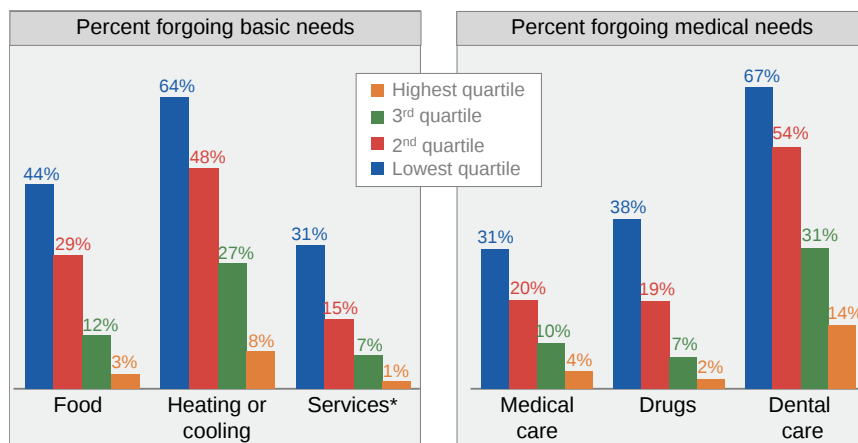
Data: Central Bureau of Statistics, *Social Survey*

In order to understand how economic difficulties are related to poverty, Figure 2 presents the percent of people who make concessions in the different areas by per capita income quartiles.³ As expected, the lowest income category (first quartile), which is close to the poverty line, experiences the most economic hardship. Even those whose income

³ Income quartiles divide households into four equal-sized groups on the basis of their net household income from all sources standardized for household size. The first quartile is the lowest income group and the fourth quartile is the highest income group. Although this is not an accurate measure of the poverty line, it identifies those households with incomes that fall close to the poverty line.

places them in a higher income category, though, suffer a substantial amount of material hardship. For example, some 44 percent of those in the lowest income quartile (the first quartile) did not buy food because of financial difficulties. This means that almost half of the poor in Israel suffer from some level of food insecurity. The numbers are also relatively high, though, for the second quartile where 29 percent refrained from buying food. Similarly, 31 percent of the poor and 15 percent of those in the second quartile had their electricity or phone disconnected while most of the lowest quartile (almost two-thirds) and nearly half of the next quartile did not heat or cool their homes.

Figure 2
Percent forgoing basic and medical needs, 2007
 by per capita income quartiles



* Telephone or electricity

Source: Haya Stier and Alisa Lewin, Taub Center

Data: Central Bureau of Statistics, *Social Survey*

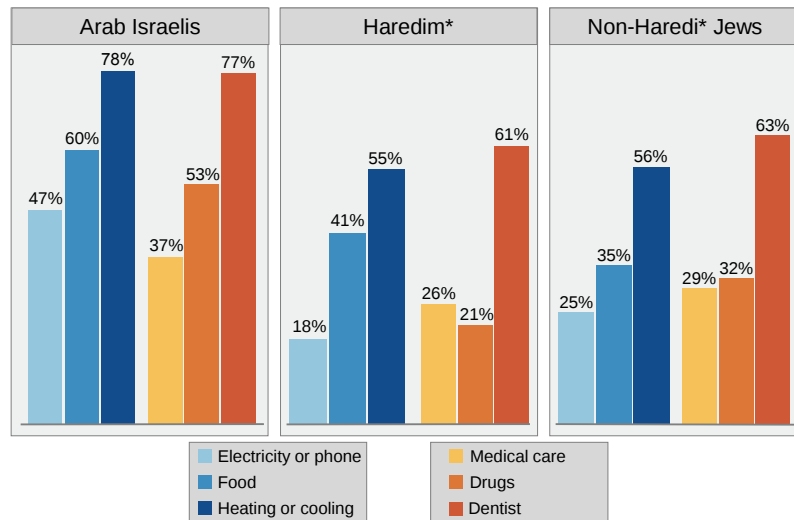
Although most people in Israel are covered by health insurance, not everyone can afford medical treatment. Again, forgoing medical care is related to poverty, but it is not restricted to the poor. A third of those in the lowest quartile who needed medical treatment could not afford it, and 38 percent could not purchase prescribed medications. The numbers are also high for those in the second quartile where about a fifth could not afford medical care or had to forgo prescribed drugs.

Apparently, a high percentage of those in need of dental care tend to forgo it: more than two-thirds of those with low income, more than half of those in the second quartile, and almost a third of those in the third quartile who needed dental treatment refrained from treatment due to financial difficulties. The high percentage of people forgoing dental treatment points to the high cost of private dental care and to the need to include dental care in more general and accessible insurance. It also may be viewed as a counterfactual argument suggesting what would happen if universal national health insurance were not available in Israel.

Economic Difficulties Among Different Social Groups

Poverty is not randomly distributed among social groups in Israel. Studies have shown that Arab Israelis and Haredim have the highest level of poverty among social groups in Israel: 57 percent of Arab Israelis and 61 percent of Haredim are in the lowest income group. However, it is not clear whether all poor people experience material deficiencies in the same way. Figure 3 shows a comparison of the tendency to forgo basic needs among three groups in the lowest income quartile: Arab Israelis, Haredim and non-Haredi Jews. The data show that the Arab Israelis experience substantially higher levels of economic hardship than the Haredim or the general low-income population in Israel.

Figure 3
Percent forgoing basic and medical needs, 2007
 among the lowest income quartile, by population group



* Haredi/m are ultra-Orthodox Jews

Source: Haya Stier and Alisa Lewin, Taub Center

Data: Central Bureau of Statistics, *Social Survey*

The findings show consistently that Arab Israelis experience more economic deficiencies than Haredim, in all areas considered. Almost half of the Arab Israelis with low income had difficulties in paying for telephone and electricity compared to 18 percent of the Haredim and one-quarter of the non-Haredi Jews. More than half of Arab Israelis in the lowest income quartile had difficulties buying food, compared to 41 percent of the Haredim and 35 percent of the non-Haredi Jewish population. Similarly, Arab Israelis refrained more than others from heating or cooling their homes (78 percent compared to 55 percent among the Haredim).

There is a similar pattern regarding difficulties in accessing medical and dental treatment. Interestingly, buying prescription medication varies considerably among the poor groups in Israel. Again, Arab Israelis have a higher rate of concession: 53 percent compared to almost one-third of non-Haredim. Among Haredim, 21 percent reported refraining from buying prescribed drugs.

The comparison of Arab Israelis and Haredim is particularly illuminating because they share some similarities in demographic characteristics: they are relatively young, have large families, and both groups have employment difficulties. Nevertheless, it seems that Haredim are more similar to the overall Jewish population in their level of material deficiencies than Arab Israelis, who seem to experience the highest levels of hardship. Why are the two groups so different?

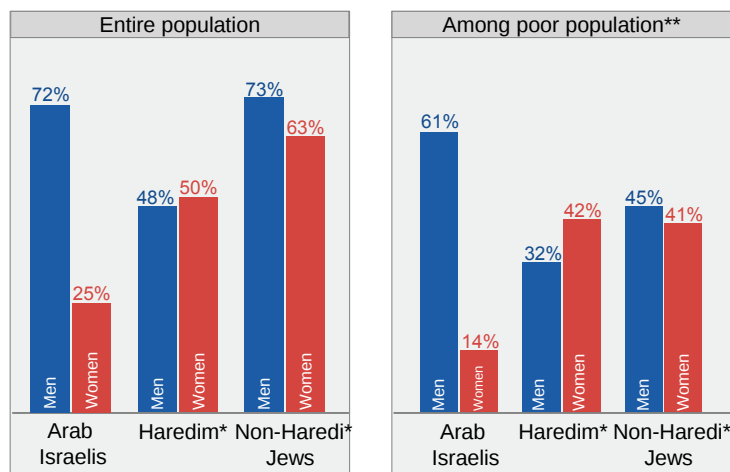
In order to better understand the differences between Arab Israelis and Haredim, the two poorest groups in Israel, it is necessary to ask whether they differ on important characteristics that lead to economic hardship. A closer examination of the demographic and socioeconomic characteristics of these groups reveals important similarities and differences that may account for their different levels of hardship.

Figure 4 presents the percent of workers among Arab Israelis, Haredim, and non-Haredi Jews in the overall population and in the lowest income quartile. The figure shows that non-Haredi Jews and Arab Israeli men have the higher labor force participation rates than Haredi men: 73 percent and 72 percent respectively compared to 50 percent of the Haredim. The comparable numbers for the poorest group are 61 percent for Arab Israeli men, 45 percent for non-Haredi Jews, and 32 percent for Haredi men.

Among the Haredim, the percent of women who work (50 percent in the overall population, 42 percent among the poor) is high compared to Haredi men (50 percent and 32 percent, respectively) or Arab Israeli women (25 and 14 percent, respectively). Haredi women's incomes complement their household income in light of the very low Haredi male labor force participation. As a consequence, the household income of

Haredim and Arab Israelis in the entire population and in the lowest quartile is quite similar. The average monthly household income of poor Arab Israeli families is about NIS 3,900; poor Haredim have an average monthly income of NIS 4,100; and the average monthly income of non-Haredi Jews is only NIS 3,300. Due to differences in family size, Arab Israelis and Haredim have similar income per standardized person (NIS 1,056 and 1,067 respectively) while non-Haredi Jews in the lowest income quartile have almost NIS 1,323 per capita.

Figure 4
Labor force participation rates by gender, 2007
 age 20 and over



* Haredim are ultra-Orthodox Jews

** Lowest income quartile

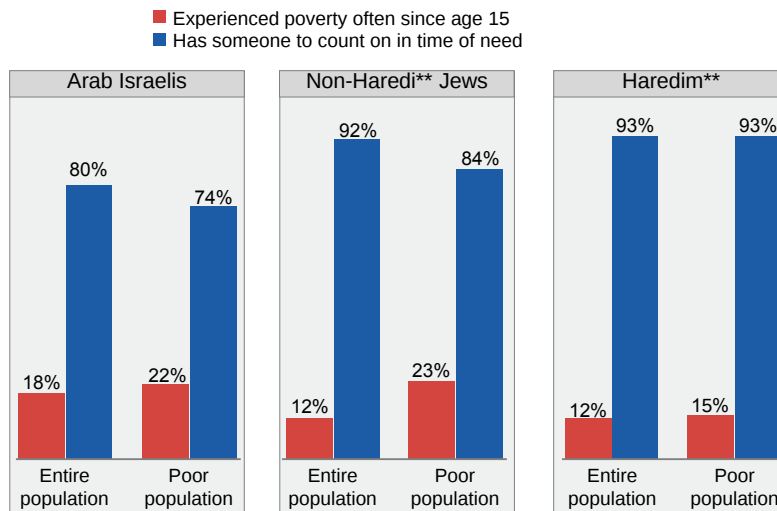
Source: Haya Stier and Alisa Lewin, Taub Center

Data: Central Bureau of Statistics, *Social Survey*

These figures mean that work activity and income do not explain the differences in economic difficulties experienced by the different groups living in poverty. It is possible that the groups differ in other characteristics that are closely related to the ability of poor people to make ends meet. As mentioned, people with low income may have different living conditions and different access to resources. These other resources could be their own assets or social networks that provide help and support in times of need.

All respondents to the 2007 Social Survey were asked whether their family of origin experienced poverty when they were growing up and whether they have anyone to count on in times of need. Figure 5 presents the differences on these characteristics. The figure shows that the Arab Israelis tend to come from somewhat poorer family backgrounds than others (18 percent compared to 12 percent of the Haredim and 12 percent in the non-Haredi Jewish population).

Figure 5
Selected characteristics of poverty and support networks, 2007
 by population groups, in the entire population and among the poor*



* Lowest income quartile

** Haredi/m are ultra-Orthodox Jews

Source: Haya Stier and Alisa Lewin, Taub Center

Data: Central Bureau of Statistics, *Social Survey*

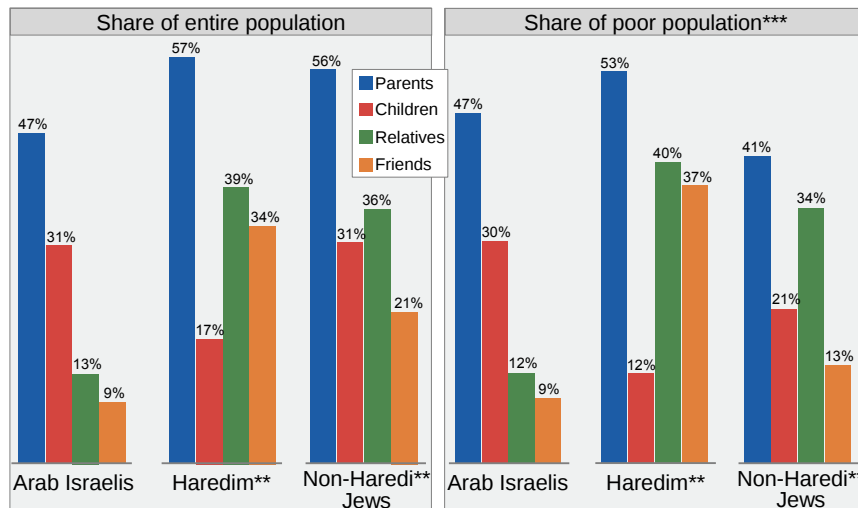
The difference in poverty background is more pronounced when comparing those in the lowest income quartile. Poor Arab Israelis and poor non-Haredi Jews are more likely than Haredim to have experienced poverty as they were growing up – 22 percent and 23 percent of the two former groups compared to 15 percent among the Haredim. These findings suggest that Haredim are the “new poor,” a status that may have implications on their ability to draw support from their family and social networks.

Indeed, the most substantial difference between Arab Israelis and Haredim seems to be in their social networks. Almost all of the Haredim (93 percent) said that they have someone to count on in times of emergency and need, compared to only 80 percent of the Arab Israelis and 92 percent in the rest of the population. Examining Arab Israelis, Haredim, and non-Haredi Jews in the lowest income quartile reveals further that almost all poor Haredim (93 percent) have someone to count on in times of need, whereas only 74 percent of poor Arab Israelis and 84 percent of non-Haredi Jews had this social support.

In light of the findings presented in Figure 5, one possible explanation for the difference in material difficulties experienced by Arab Israelis and Haredim is suggested: the supportive nature of the Haredi community and the culture of *ezra hadadit*, or reciprocal social support. This culture of social support may not be sufficient to bring poor people out of poverty, but it may reduce the level of material hardship they experience by providing food, medicine, and other necessities.

More information on support systems is provided in the 2009 Social Survey, conducted by the Israeli Central Bureau of Statistics that included data on family relations and religiosity. In this survey, respondents were asked whether they could get financial support from family, relatives or friends, if they needed to urgently raise a sum of NIS 5,000. Figure 6 presents the results and depicts the main differences between Arab Israelis, Haredim and non-Haredi Jews. As can be seen, Haredim are much more likely to be able to get immediate financial support from their parents, relatives, or friends, while Arab Israelis are less likely to have these sources of support. Instead, they are more likely to rely on their children for help. This pattern is evident both in the overall population and among the low income group.

Figure 6
Potential sources of urgent financial support
 by population groups, 2009



* Possible sources to immediately raise NIS 5,000

** Haredi/m are ultra-Orthodox Jews

*** Lowest income quartile

Source: Haya Stier and Alisa Lewin, Taub Center

Data: Central Bureau of Statistics, *Social Survey*

Since more currently poor Arab Israelis come from poor family backgrounds than currently poor Haredim, as was shown in Figure 5, they are less likely to be able to rely on their parents, relatives, or friends, who are likely to be poor as well. Haredim, in contrast, tend to be the “new poor” and may rely on their parents, relatives, and friends who are likely not to be poor.

Figure 6 sheds light on cultural differences between social groups in Israeli society. The tight networks of Haredim and their obligation to

support each other probably helps them make ends meet even though they are poor, have many children, and have low levels of male labor force participation (Cohen, 2006). Since Arab Israelis come from a poor background, their networks are poor as well, and their ability to lean on others in hard times is limited. Moreover, they also have more obligations than Haredim to support their parents, an additional financial burden when resources are limited.

It is also possible that Haredim are less likely to report material hardship than Arab Israelis, either because they do not consider such complaints legitimate or because they have access to food and medical services that are cheaper than for the rest of the population.

5. Conclusions

This study set out to shed light on the material hardship characterizing life in poverty. The inquiry was guided by Sen's (1999) notion that the "relation between low income and low capability is variable between different communities and even between different families and different individuals [...]" (p. 88). The study compared the material hardships of three specific social groups in Israel.

Although it was not surprising that the poor suffer more material hardship than others, it was interesting to find that economic difficulties are not limited to the poor. The second income quartile, which is not poor in official terms, suffers a substantial amount of material deficiency, as well. This finding has important policy implications, especially with regard to food insecurity and forgoing medical treatment and medicine.

The findings also point to another dimension of inequality in Israel. They show that poor Arab Israelis experience higher levels of material hardship than poor Haredim. Poor Arab Israelis also are more likely to have grown up in poverty than poor Haredim. That is, according to the survey findings, in contrast to Haredim who are the "new poor," a higher percent of Arab Israelis reported having grown up in poor families. This

poor background may also explain the finding that Arab Israelis have smaller social networks on which to draw in times of need, and they are more likely than Haredim to give money to their parents and less likely to receive money from their parents. These differences may help explain the different levels of material hardships experienced by two groups that are characterized by similar incomes and labor force participation rates (for each household).

These findings have important policy implications because they demonstrate that low income quartiles experience substantial material hardship. Even with Israel's highly subsidized public medical insurance, people with low incomes have difficulties paying for the medical care and the medications they need. These findings also demonstrate the importance of having subsidized public medicine. If healthcare were not public, the situation would be much worse, as evidenced by the high percentage of individuals forgoing dental treatment, which is not included in Israel's public health insurance.

Experiencing material hardship may also have more important long-term consequences for health and the inter-generational transmission of poverty than income poverty alone. Forgoing medical treatment and experiencing food insecurity have long-term implications for health and employment, and they also have long-term effects on children's health and school achievement. Beyond the need to reduce income inequality in a society with growing inequality, these findings call attention to the need to reduce material hardship among the groups that experience it the most.

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Public Expenditure Tables

Yulia Cogan

*The Taub Center Appendix tables
are available as Excel files
on the Center website:
www.taubcenter.org.il*

*The tables include complete
and continuous time series'*

Table 1. **Social services expenditures**
in percent

	as percent of		
	Government expenditures		GDP
	Total	excl. interest payments and debt repayment	
1. Total budget: current and development			
1980	23.9	31.7	17.8
1985	18.2	32.1	15.5
1989	26.1	42.0	16.4
1996	36.8	53.2	19.9
2000	38.4	54.9	18.1
2005	35.3	51.6	16.4
2006	34.3	50.6	15.1
2007	34.3	50.8	14.6
2008	34.8	51.4	14.5
2009	35.9	51.7	14.8
2010	36.1	53.1	14.9
2011	35.9	53.4	14.7
2012	35.9	53.7	14.9
2013	36.7	53.5	15.0
2014	36.7	53.5	14.7
2. Current budget			
1980	26.4	30.4	15.1
1985	24.6	32.3	14.4
1989	34.0	42.8	15.6
1996	43.4	51.3	16.9
2000	45.9	54.2	16.4
2005	43.9	52.1	15.4
2006	43.3	51.3	14.4
2007	43.7	51.4	13.9
2008	45.1	52.5	13.9
2009	46.0	53.2	14.3
2010	47.6	54.9	14.4
2011	48.1	55.5	14.3
2012	48.5	55.8	14.4
2013	48.9	56.0	14.5
2014	49.1	56.4	14.2

Table 2. **Government expenditures**
by main component (in percent)

	Total	of which: Interest payments and debt repayment	Total excluding interest and debt repayment			
			Total	Social services	Defense	Other
1. Total budget: current and development						
1980	100.0	24.5	100.0	31.7	39.5	28.8
1985	100.0	43.4	100.0	32.1	40.2	27.7
1989	100.0	37.8	100.0	42.0	33.1	24.9
1996	100.0	30.8	100.0	53.2	24.5	22.3
2000	100.0	30.0	100.0	54.9	24.0	21.1
2005	100.0	31.6	100.0	51.6	25.3	23.1
2006	100.0	32.1	100.0	50.6	25.7	23.7
2007	100.0	32.5	100.0	50.8	25.8	23.4
2008	100.0	32.3	100.0	51.4	24.8	23.8
2009	100.0	30.6	100.0	51.7	23.8	24.4
2010	100.0	32.0	100.0	53.1	23.3	23.6
2011	100.0	32.8	100.0	53.4	22.5	24.1
2012	100.0	33.2	100.0	53.7	22.0	24.3
2013	100.0	31.4	100.0	53.5	20.0	26.5
2014	100.0	31.3	100.0	53.5	19.0	27.6
2. Current budget						
1980	100.0	13.3	100.0	30.4	44.5	25.0
1985	100.0	24.1	100.0	32.3	43.6	24.1
1989	100.0	20.6	100.0	42.8	35.4	21.8
1996	100.0	15.5	100.0	51.3	27.6	21.0
2000	100.0	15.4	100.0	54.2	26.1	19.7
2005	100.0	15.8	100.0	52.1	27.2	20.7
2006	100.0	15.7	100.0	51.3	27.4	21.3
2007	100.0	15.0	100.0	51.4	27.5	21.1
2008	100.0	14.1	100.0	52.5	26.4	21.1
2009	100.0	13.5	100.0	53.2	25.4	21.4
2010	100.0	13.3	100.0	54.9	24.8	20.3
2011	100.0	13.2	100.0	55.5	24.0	20.5
2012	100.0	13.0	100.0	55.8	23.6	20.7
2013	100.0	12.7	100.0	56.0	21.6	22.4
2014	100.0	13.0	100.0	56.4	20.7	22.9

Table 3. **Social services expenditures**
by main component (in percent)

	Total	Income maintenance	In-kind services			
			Total	Education	Health	Other *
1. Total budget: current and development						
1980	100.0	30.7	69.3	30.9	21.1	17.3
1985	100.0	41.0	59.0	28.6	19.9	10.5
1989	100.0	42.4	57.6	28.4	19.0	10.1
1996	100.0	33.4	66.6	30.3	17.4	18.8
2000	100.0	39.3	60.7	30.4	15.0	15.3
2005	100.0	39.5	60.5	30.4	17.2	12.9
2006	100.0	40.2	59.8	30.4	17.4	12.0
2007	100.0	39.8	60.2	31.7	16.2	12.4
2008	100.0	40.3	59.7	31.3	16.7	11.7
2009	100.0	41.1	58.9	31.3	16.6	11.0
2010	100.0	41.0	59.0	31.9	17.0	10.1
2011	100.0	41.2	58.8	32.3	16.5	10.0
2012	100.0	40.2	59.8	32.8	16.5	10.5
2013	100.0	38.8	61.2	32.9	17.2	11.1
2014	100.0	38.0	62.0	33.1	17.5	11.4
2. Current budget						
1980	100.0	36.0	64.0	34.5	23.7	5.8
1985	100.0	44.2	55.8	30.2	20.9	4.8
1989	100.0	44.5	55.5	29.3	19.7	6.6
1996	100.0	39.1	60.9	33.9	19.3	7.7
2000	100.0	43.3	56.7	32.3	16.1	8.3
2005	100.0	42.0	58.0	31.7	18.1	8.2
2006	100.0	42.2	57.8	31.3	18.0	8.5
2007	100.0	41.8	58.2	32.7	16.8	8.6
2008	100.0	42.1	57.9	32.0	17.2	8.7
2009	100.0	42.7	57.3	31.8	16.9	8.6
2010	100.0	42.2	57.8	32.0	17.1	8.6
2011	100.0	42.3	57.7	32.4	16.6	8.6
2012	100.0	41.5	58.5	32.9	16.8	8.8
2013	100.0	40.1	59.9	33.3	17.5	9.1
2014	100.0	39.3	60.7	33.4	17.8	9.5

* Primarily personal social services, absorption, and housing

Table 4. **Social services expenditures**
by main components*

	Total	Income main- tenance	In-kind services						Housing
			Total	Education	Health	Welfare	Employ- ment	Absorp- tion	
1. Total budget: current and development (in million shekels, 2012 prices)									
1980	54,591	13,044	41,547	19,740	13,520	2,328	331	372	5,256
1985	54,998	17,011	37,987	19,010	13,179	2,038	318	418	3,025
1989	63,843	22,846	40,997	20,526	13,761	2,838	464	891	2,516
1996	114,296	35,421	78,875	35,535	20,432	4,305	594	2,401	15,609
2000	124,824	46,944	77,880	38,489	18,946	5,755	753	2,665	11,272
2005	119,644	46,466	73,177	36,712	20,717	6,612	921	1,497	6,720
2006	120,136	47,949	72,187	36,712	20,980	6,789	1,141	1,595	4,970
2007	123,711	48,872	74,839	39,456	20,112	7,368	1,234	1,406	5,262
2008	124,929	49,951	74,979	39,360	21,062	7,634	1,294	1,409	4,219
2009	132,271	53,314	78,957	41,988	22,259	8,173	1,327	1,382	3,828
2010	137,370	55,519	81,851	44,280	23,580	8,670	1,303	1,393	2,625
2011	140,133	56,960	83,173	45,685	23,344	8,873	1,373	1,394	2,505
2012	147,638	59,410	88,228	48,359	24,391	9,451	1,554	1,380	3,093
2013	153,942	60,031	93,911	50,432	26,327	10,154	2,048	1,359	3,590
2014	154,945	59,385	95,560	50,914	26,922	10,458	2,350	1,339	3,577
Average annual percent change									
1980-1985	1.2	5.5	-1.8	-0.8	-0.5	-2.6	-0.8	2.4	-10.5
1985-1989	3.8	7.7	1.9	1.9	1.1	8.6	9.9	20.8	-4.5
1989-1996	8.7	6.5	9.8	8.2	5.8	6.1	3.6	15.2	29.8
1996-2000	2.2	7.3	-0.3	2.0	-1.9	7.5	6.1	2.6	-7.8
2000-2005	-0.8	-0.2	-1.2	-0.9	1.8	2.8	4.1	-10.9	-9.8
2005-2010	2.8	3.6	2.3	3.8	2.6	5.6	7.2	-1.4	-17.1
2010-2014	3.1	1.7	3.9	3.6	3.4	4.8	15.9	-1.0	8.0

* Income maintenance expenditure is deflated by the Consumer Price Index. All other expenditures in the Current Budget are deflated by the Public Civilian Consumption Price Index; the Development Budget expenditures are deflated by the Construction Price Index.

Table 4. **Social services expenditures** (continued)
by main component

	Total	Income main- tenance	In-kind services						
			Total	Education	Health	Welfare	Employ- ment	Absorp- tion	Housing
2. Current budget (in million shekels, 2012 prices)									
1980	48,561	13,044	35,517	19,145	13,148	2,290	331	372	230
1985	51,593	17,011	34,583	18,700	12,937	2,009	318	418	201
1989	61,216	22,846	38,370	20,244	13,590	2,814	464	891	366
1996	96,115	35,421	60,694	33,813	19,224	4,248	594	2,401	414
2000	111,695	46,944	64,752	36,932	18,356	5,708	753	2,665	338
2005	112,186	46,466	65,720	35,964	20,495	6,591	921	1,497	253
2006	114,431	47,949	66,483	36,044	20,682	6,774	1,141	1,595	247
2007	117,723	48,872	68,851	38,746	19,870	7,357	1,234	1,406	237
2008	119,901	49,951	69,950	38,638	20,770	7,617	1,294	1,409	221
2009	127,413	53,314	74,099	41,139	21,870	8,149	1,327	1,382	231
2010	133,190	55,519	77,671	43,067	23,038	8,633	1,303	1,393	237
2011	136,183	56,960	79,224	44,534	22,834	8,852	1,373	1,394	237
2012	143,056	59,410	83,646	47,032	24,035	9,415	1,554	1,380	230
2013	148,752	60,031	88,720	49,274	25,914	9,935	2,048	1,359	189
2014	149,755	59,385	90,370	49,757	26,509	10,239	2,350	1,339	176
Average annual percent change									
1980-1985	1.2	5.5	-0.5	-0.5	-0.3	-2.6	-0.8	2.4	-2.7
1985-1989	4.4	7.7	2.6	2.0	1.2	8.8	9.9	20.8	16.2
1989-1996	6.7	6.5	6.8	7.6	5.1	6.1	3.6	15.2	1.8
1996-2000	3.8	7.3	1.6	2.2	-1.1	7.7	6.1	2.6	-4.9
2000-2005	0.1	-0.2	0.3	-0.5	2.2	2.9	4.1	-10.9	-5.6
2005-2010	3.5	3.6	3.4	3.7	2.4	5.5	7.2	-1.4	-1.3
2010-2014	3.0	1.7	3.9	3.7	3.6	4.4	15.9	-1.0	-7.2

Table 5. **Social services expenditures per capita**
by main component

	Total	Income main- tenance	In-kind services						
			Total	Education	Health	Welfare	Employ- ment	Absorp- tion	Housing
1. Total budget: current and development (in shekels, 2012 prices)									
1980	14,078	3,364	10,714	5,091	3,487	600	85	96	1,356
1985	12,993	4,019	8,974	4,491	3,113	481	75	99	715
1989	14,130	5,056	9,074	4,543	3,046	628	103	197	557
1996	20,105	6,231	13,874	6,251	3,594	757	104	422	2,746
2000	19,847	7,464	12,383	6,120	3,013	915	120	424	1,792
2005	17,264	6,705	10,559	5,297	2,989	954	133	216	970
2006	17,032	6,798	10,234	5,205	2,974	962	162	226	705
2007	17,230	6,807	10,423	5,495	2,801	1,026	172	196	733
2008	17,093	6,834	10,259	5,385	2,882	1,044	177	193	577
2009	17,670	7,122	10,548	5,609	2,974	1,092	177	185	511
2010	18,019	7,283	10,737	5,808	3,093	1,137	171	183	344
2011	18,045	7,335	10,710	5,883	3,006	1,143	177	179	323
2012	18,664	7,510	11,153	6,113	3,083	1,195	196	174	391
2013	19,135	7,462	11,673	6,269	3,273	1,262	255	169	446
2014	18,938	7,258	11,680	6,223	3,291	1,278	287	164	437
Average annual percent changes									
1980-1985	-1.6	3.6	-3.5	-2.5	-2.2	-4.3	-2.5	0.6	-12.0
1985-1989	2.1	5.9	0.3	0.3	-0.5	6.9	8.1	18.9	-6.0
1989-1996	5.2	3.0	6.3	4.7	2.4	2.7	0.2	11.5	25.6
1996-2000	-0.3	4.6	-2.8	-0.5	-4.3	4.8	3.4	0.1	-10.1
2000-2005	-2.7	-2.1	-3.1	-2.8	-0.2	0.8	2.1	-12.6	-11.6
2005-2010	0.9	1.7	0.3	1.9	0.7	3.6	5.2	-3.3	-18.7
2010-2014	1.3	-0.1	2.1	1.7	1.6	3.0	13.9	-2.7	6.2

* Income maintenance expenditure is deflated by the Consumer Price Index. All other expenditures in the Current Budget are deflated by the Public Civilian Consumption Price Index; the Development Budget expenditures are deflated by the Construction Price Index.

Table 5. **Social services expenditures per capita** (continued)
by main component*

	Total	Income main- tenance	In-kind services						
			Total	Education	Health	Welfare	Employ- ment	Absorp- tion	Housing
2. Current budget (in shekels, 2011 prices)									
1980	12,523	3,364	9,159	4,937	3,391	591	85	96	59
1985	12,188	4,019	8,170	4,418	3,056	474	75	99	47
1989	13,549	5,056	8,492	4,481	3,008	623	103	197	81
1996	16,907	6,231	10,676	5,948	3,382	747	104	422	73
2000	17,760	7,464	10,296	5,872	2,919	908	120	424	54
2005	16,188	6,705	9,483	5,189	2,957	951	133	216	36
2006	16,223	6,798	9,425	5,110	2,932	960	162	226	35
2007	16,396	6,807	9,589	5,396	2,767	1,025	172	196	33
2008	16,405	6,834	9,571	5,287	2,842	1,042	177	193	30
2009	17,021	7,122	9,899	5,496	2,922	1,089	177	185	31
2010	17,471	7,283	10,188	5,649	3,022	1,132	171	183	31
2011	17,536	7,335	10,202	5,735	2,940	1,140	177	179	31
2012	18,084	7,510	10,574	5,945	3,038	1,190	196	174	29
2013	18,490	7,462	11,028	6,125	3,221	1,235	255	169	24
2014	18,304	7,258	11,045	6,081	3,240	1,251	287	164	22
Average annual percent change									
1980-1985	-0.5	3.6	-2.3	-2.2	-2.1	-4.3	-2.5	0.6	-4.4
1985-1989	2.7	5.9	1.0	0.4	-0.4	7.0	8.1	18.9	14.4
1989-1996	3.2	3.0	3.3	4.1	1.7	2.6	0.2	11.5	-1.5
1996-2000	1.2	4.6	-0.9	-0.3	-3.6	5.0	3.4	0.1	-7.3
2000-2005	-1.8	-2.1	-1.6	-2.4	0.3	0.9	2.1	-12.6	-7.4
2005-2010	1.5	1.7	1.4	1.7	0.4	3.6	5.2	-3.3	-3.1
2010-2014	1.2	-0.1	2.0	1.9	1.8	2.5	13.9	-2.7	-8.8

Table 6. **Income maintenance expenditures**
by main component*

	Total	Old-age and survivors	Child allowances	General disability	Unem- ployment	Income support	Other NII	Nazi victims
In million shekels, 2012 prices								
1980	13,044	5,862	3,939	1,434	237	0	1,158	413
1985	17,011	7,842	4,399	2,221	444	567	1,209	330
1989	22,846	9,961	5,264	2,655	1,704	694	2,044	524
1996	35,421	14,018	7,859	4,250	2,453	2,086	3,639	1,117
2000	46,944	17,542	9,031	6,454	3,849	3,740	4,826	1,501
2005	46,466	19,482	5,373	8,983	2,388	3,308	5,446	1,486
2006	47,949	20,146	5,836	9,507	2,297	3,079	5,556	1,527
2007	48,872	20,331	5,805	10,235	2,052	2,825	5,968	1,658
2008	49,951	20,569	5,704	10,414	2,054	2,670	6,440	2,099
2009	53,314	21,554	6,027	10,789	3,272	2,682	6,731	2,259
2010	55,519	22,937	6,527	11,351	2,667	2,659	7,005	2,374
2011	56,960	23,663	7,010	11,482	2,541	2,516	7,212	2,535
2012	59,410	24,569	7,245	12,134	2,839	2,493	7,640	2,490
2013	60,031	25,246	6,311	12,474	3,098	2,653	8,010	2,239
2014	59,385	26,087	4,614	13,074	3,298	1,682	8,392	2,239
Average annual percent changes								
1980-1985	5.5	6.0	2.2	9.1	13.3	...	0.9	-4.4
1985-1989	7.7	6.2	4.6	4.6	40.0	5.2	14.0	12.3
1989-1996	6.5	5.0	5.9	7.0	5.3	17.0	8.6	11.4
1996-2000	7.3	5.8	3.5	11.0	11.9	15.7	7.3	7.7
2000-2005	-0.2	2.1	-9.9	6.8	-9.1	-2.4	2.4	-0.2
2005-2010	3.6	3.3	4.0	4.8	2.2	-4.3	5.2	9.8
2010-2014	1.7	3.3	-8.3	3.6	5.5	-10.8	4.6	-1.5

* Deflated by the Consumer Price Index

Table 7. **Income maintenance expenditures**
by main component (in percent)

	Total	Old-age and survivors	Child allowances	General disability	Unem- ployment	Income support	Other NII	Nazi victims
1980	100.0	44.9	30.2	11.0	1.8	0.0	8.9	3.2
1985	100.0	46.1	25.9	13.1	2.6	3.3	7.1	1.9
1989	100.0	43.6	23.0	11.6	7.5	3.0	8.9	2.3
1996	100.0	39.6	22.2	12.0	6.9	5.9	10.3	3.2
2000	100.0	37.4	19.2	13.7	8.2	8.0	10.3	3.2
2005	100.0	41.9	11.6	19.3	5.1	7.1	11.7	3.2
2006	100.0	42.0	12.2	19.8	4.8	6.4	11.6	3.2
2007	100.0	41.6	11.9	20.9	4.2	5.8	12.2	3.4
2008	100.0	41.2	11.4	20.8	4.1	5.3	12.9	4.2
2009	100.0	40.4	11.3	20.2	6.1	5.0	12.6	4.2
2010	100.0	41.3	11.8	20.4	4.8	4.8	12.6	4.3
2011	100.0	41.5	12.3	20.2	4.5	4.4	12.7	4.5
2012	100.0	41.4	12.2	20.4	4.8	4.2	12.9	4.2
2013	100.0	42.1	10.5	20.8	5.2	4.4	13.3	3.7
2014	100.0	43.9	7.8	22.0	5.6	2.8	14.1	3.8

Table 8. **Education expenditures in current budget**
by main component*

	Total	General	Pre-schools	Primary	Secundary	**Post-secondary	Tertiary	Vocational training	Yeshivas
In million shekels, 2012 prices									
1980	19,145	2,000	742	5,445	4,795	876	4,292	660	335
1985	18,700	1,762	886	4,785	5,115	944	3,862	633	713
1989	20,244	1,531	1,022	5,329	5,946	1,152	3,671	625	969
1996	33,813	2,413	1,876	9,018	9,977	2,020	6,061	972	1,476
2000	36,932	2,616	2,286	9,805	10,751	2,213	6,796	955	1,510
2005	35,964	2,582	2,657	10,573	10,366	1,859	6,490	688	748
2006	36,044	2,390	2,794	10,910	10,119	1,988	6,407	615	820
2007	38,746	2,433	2,818	12,314	10,325	2,106	7,031	599	1,119
2008	38,638	2,290	3,039	12,548	10,622	2,115	6,396	531	1,097
2009	41,139	2,445	3,263	12,788	10,830	2,170	7,675	603	1,366
2010	43,067	3,200	2,868	14,556	10,962	1,994	7,463	679	1,345
2011	44,534	3,217	3,006	15,462	11,467	1,959	7,489	684	1,249
2012	47,032	3,230	3,316	15,896	12,403	2,476	7,782	730	1,199
2013	49,274	3,104	5,131	17,128	13,242	1,191	7,872	745	862
2014	49,757	3,075	5,100	17,484	13,699	1,165	7,849	775	611
Average annual percent change									
1980-1985	-0.5	-2.5	3.6	-2.6	1.3	1.5	-2.1	-0.8	16.3
1985-1989	2.0	..	..	..	..	..	-1.3	-0.3	8.0
1989-1996	7.6	6.7	9.1	7.8	7.7	8.3	7.4	6.5	6.2
1996-2000	2.2	2.0	5.1	2.1	1.9	2.3	2.9	-0.5	0.6
2000-2005	-0.5	-0.3	3.1	1.5	-0.7	-3.4	-0.9	-6.3	-13.1
2005-2010	3.7	4.4	1.5	6.6	1.1	1.4	2.8	-0.3	12.5
2010-2014	3.7	-1.0	15.5	4.7	5.7	-12.6	1.3	3.4	-17.9

* Deflated by the Consumer Price Index

** Including teacher training and continuing education

Table 9. **Health expenditures out of current budget**
by main component*

	Total	Gov't financing of health insurance			Direct expenditures				
		Parallel tax	Co-payments	Other transfers	**General hospitals	Psychiatric care	Long-term care	***Public health and other	****
In million shekels, 2012 prices									
1980	13,148	5,345		2,116	1,491	1,032	562	800	1,802
1985	12,937	7,036	228	1,546	610	731	521	645	1,618
1989	13,590	8,721	998	380	184	822	675	566	1,245
1996	19,224	9,872	2,615	1,476	262	1,423	1,000	887	1,690
2000	18,356	0	11,493	705	217	1,423	1,305	1,386	1,828
2005	20,495	0	12,702	991	203	1,821	1,448	1,235	2,095
2006	20,682	0	13,055	799	207	1,720	1,510	1,261	2,129
2007	19,870	0	12,061	739	161	1,809	1,528	1,214	2,358
2008	20,770	0	12,585	951	83	1,820	1,552	1,312	2,467
2009	21,870	0	12,994	802	152	1,917	1,642	1,626	2,737
2010	23,038	0	13,836	810	269	1,928	1,576	1,670	2,948
2011	22,834	0	13,954	814	577	1,974	1,518	1,057	2,941
2012	24,035	0	14,434	960	657	2,136	1,580	1,070	3,199
2013	25,914	0	16,149	928	571	1,743	1,756	1,075	3,692
2014	26,509	0	16,178	1,253	558	1,737	1,755	1,076	3,951
Average annual percent change									
1980-1985	-0.3	5.7	..	-6.1	-16.4	-6.7	-1.5	-4.2	-2.1
1985-1989	1.2	5.5	44.6	-29.6	-25.9	3.0	6.7	-3.2	-6.3
1989-1996	5.1	1.8	14.7	21.4	5.2	8.2	5.8	6.6	4.4
1996-2000	-1.1	..	44.8	-16.9	-4.7	0.0	6.9	11.8	2.1
2000-2005	2.2	..	2.0	7.0	-1.3	5.1	2.1	-2.3	2.9
2005-2010	2.4	..	1.7	-3.9	5.8	1.2	1.7	6.2	7.5
2010-2014	3.6	..	4.0	11.5	..	-2.6	2.7	..	..

* Deflated by the Consumer Price Index

** Since 2011 this item includes "general administrative expenditures" without inpatient hospitalization.

*** Since 2011 this item includes "public health expenditures" only.

**** Includes government health expenditures in non-Ministry of Health budgets

Table 10. **Investment expenditures**
as percent of total Education and Health budgets

	Education	Health	Total Education and Health
1980	4.7	4.3	4.5
1985	2.3	2.6	2.4
1989	1.8	1.6	1.7
1996	4.6	5.6	4.9
2000	3.6	2.8	3.4
2005	2.0	1.0	1.6
2006	1.8	1.4	1.7
2007	1.9	1.2	1.6
2008	1.9	1.4	1.7
2009	2.0	1.8	2.0
2010	2.7	2.3	2.6
2011	2.5	2.2	2.4
2012	2.7	1.5	2.3
2013	2.2	1.5	2.0
2014	2.2	1.5	1.9

Definitions and Sources

Definitions

Government social services expenditures includes all expenditures on education, health, income maintenance, welfare (personal social services), housing, employment, and immigrant integration by government ministries and agencies and by the National Insurance Institute. The analysis in this book includes the current budget (current expenditures) and the development budget (investments). Government expenditures are treated in net terms, i.e., total expenditures less earmarked revenues from outside agencies (such as co-payments from recipients of services).

The focus is on total government expenditures on in-kind services provided by the government (public consumption) and on subsidies and transfers such as National Insurance allowances, government support of non-governmental health institutions and support of non-governmental schools. Thus, the data reflect the activity of the government as a funding agent for the various social services, irrespective of the agency that delivers them.

The expenditures pertain to fiscal years that correspond to calendar years (January-December).¹ Data are shown in constant 2012 prices. The absolute figures were deflated by the Consumer Price Index or by an implicit price index for Civilian Public Consumption, as the case may be. Investment expenditure, implemented through the development budget was deflated by the Construction Inputs Price Index.

¹ Until 1990, the fiscal year began on April 1 and ended at the end of the following March. For the transition period – fiscal 1991 – a nine-month budget (April-December) was approved. To facilitate comparison with data from previous years, the 1991 budget expenditures were “translated” into full-year terms by linear extrapolation.

Classification of Social Expenditures

Social service expenditures were functionally classified by main fields (education, health, etc.) irrespective of the agency that delivers the service. This classification is different from that used conventionally in the government budget and in the annual reports of the Accountant General, which categorize expenditures by administrative units (e.g., ministries and departments). Below is a detailed list of items included in each field.

Education. Education expenditures include Ministry of Education outlays for school systems (pre-primary, primary, secondary, post-secondary), general expenses for the education system, government participation in higher education budgets, and government expenditures for vocational training (Ministry of Industry, Trade and Labor). Transfers to secondary schools from education levy receipts were also included until this was abolished in 1987.

Health. Health expenditures include Ministry of Health outlays for health services (general inpatient, long-term, and psychiatric care; vocational training; public health services; government participation in the funding of National Health Insurance; and transfer payments to public medical institutions), including Defense Ministry participation in the Health Ministry budget. The National Insurance Institute health expenditures (inpatient maternity care, medical care for work accidents, health outlays under the Long-Term Care Insurance Law, and transfers to the health funds from Parallel Tax receipts until this tax was abolished in 1997) are also included as well as the health expenditures of the Unit for Care of Victims of Nazi Persecution. To facilitate comparison with previous years' data, the health tax that citizens pay through the State Health Insurance Law is treated as a substitute for the sick fund dues that households remitted directly to the sick funds in earlier years and thus not considered here government expenditure. In 2011 there was a structural change to the budget of the Ministry of Health. The change is expressed in two appendixes of direct expenditures – the general inpatient line no

longer includes inpatient hospitalization expenditures rather spending on general administration and the public health service outlays no longer includes additional outlays.

The Social Security System. Social Security System expenditures include all transfers from the National Insurance Institute (with the exception of reserve duty compensation and expenditures explicitly included in other social service fields) and benefits for victims of Nazi persecution.

Other social services. These include government outlays for personal social services (expenditures by the Ministry of Social Affairs and Social Services for the care of children, the elderly, the disabled, and the mentally disabled; community work; and, most expenditures by the National Insurance Institute on account of the Long-Term Care Insurance Law); housing (expenditures by the Ministry of Construction and Housing); employment (expenditures by the Ministry of Economy for labor relations, personnel planning and referral, and occupational safety, employment grant programs); and immigrant integration (expenditures by the Ministry of Immigrant Absorption).

Sources

The data on government expenditures for social services are based on the government's financial statements, prepared by the Accountant General of the Finance Ministry (the 2013-2014 data are budget data) and on the *Quarterly Statistics* of the National Insurance Institute. The explanatory notes attached to the state budget and the Bank of Israel *Annual Report* for the years at issue were also used. To compute real expenditures, the appropriate price indices supplied by the Central Bureau of Statistics were used.

Bank of Israel, *Report of the Bank of Israel*, various years.

Central Bureau of Statistics, *Statistical Abstract of Israel*, various years.

Central Bureau of Statistics, *The Central Database*, various volumes.

Ministry of Finance, *Budget Proposal and Explanatory Notes*, various years.

Ministry of Finance, The Accountant General, *Financial Statements*, various years.

National Insurance Institute, *Annual Survey*, various years.

National Insurance Institute, *Quarterly Statistics*, various periods.

National Insurance Institute, *Working Budget and Explanatory Notes*, various years.

Taub Center for Social Policy Studies in Israel, *Israel's Social Services*, various years.

V. HEALTH

Trends in Israel's Healthcare System

Dov Chernichovsky and Eitan Regev*

Abstract

This chapter reviews developments in the Israeli healthcare system over the past year, and finds that the health status of the population, and particularly of the country's minorities, continues to improve, and that the population is reasonably satisfied with the system. However, the healthcare system continues to play a role in widening income gaps; it also continues to exhibit a loss of efficiency evident in the rise in healthcare costs that exceeded the rise in the consumer price index. These trends are related to an ongoing policy of substituting public funding with private funding of the system, and to promotion of private service-provision arrangements via supplemental insurance. Continued decline in the share of public funding of the health system is liable to further impair the public system's ability to address increases in need of a wealthier and fast-aging population – rather than reinforcing the system especially during a period of economic crisis and worsening income disparities, which are known health risk factors. In light of this, the chapter also discusses possible supplemental insurance arrangements that might improve the situation.

* Prof. Dov Chernichovsky, Chair, Taub Center Health Policy Program; Department of Health Systems Management, Ben-Gurion University of the Negev. Eitan Regev, researcher, Taub Center; Ph.D student, Department of Economics, Hebrew University.

Developments in Israel's healthcare system in 2013 were overshadowed by the change of government that took place during that year. A few reform initiatives of the previous government, mainly in the mental health sphere, are moving forward (see the chapter by Aviram, "The Law for Rehabilitation in the Community of Persons with Mental Disabilities" in this report). On other issues, however, such as long-term care, a freeze is in place.

In terms of general policy, one can hardly avoid observing the absence of any long-term policy addressing the system's fundamental problems – those relating to, on the one hand, widening disparities and growing demand and, on the other hand, a reduced supply of the personnel and infrastructures needed to meet these demands, particularly within the public healthcare system.

Within this overall context the chapter discusses the issue of supplementary insurance, with special attention to the blurring of boundaries between those healthcare services that are provided as part of the public entitlement and services provided in the framework of various privately funded packages.

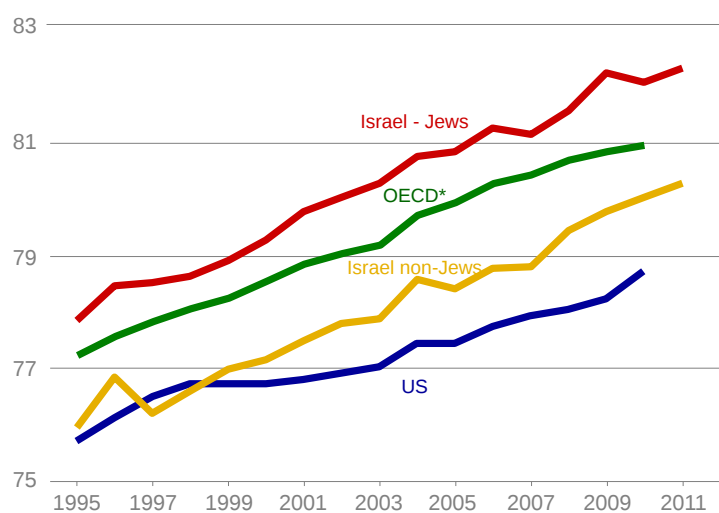
1. The System's Achievements

The achievements of Israel's healthcare system are measured in terms of two main perspectives: the population's health and satisfaction with health services. Several secondary principles that impact the main perspective are measured as well: equity, cost containment and sustainability, efficiency of services, and extent of choice.

The Population's Health Status: Life Expectancy and Infant Mortality

The Israeli population's consistent rise in life expectancy has continued, and Israel's showing in this area remains higher than that of the average of the developed OECD countries (Figure 1). The greatest relative improvement in life expectancy was shown by the non-Jewish population: from 80.0 in 2010 to 80.3 in 2011. The Jewish population also showed a rise in life expectancy, though slightly less: from 82.1 in 2010 to 82.3 in 2011.

Figure 1
Life expectancy at birth, 1995-2011



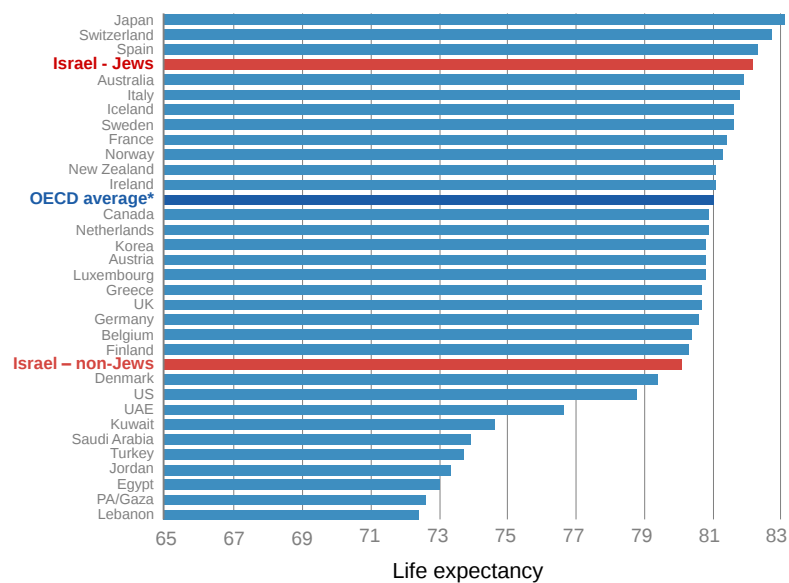
* Average of the 23 most developed OECD countries (excluding the U.S.)

Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

It is worth noting that the life expectancy of non-Jewish Israelis, by and large Arab Israelis, is higher than in the Arab and Muslim world – at least those in Israel's vicinity (Figure 2). Nevertheless, it is still lower than that of the Jewish population and most Western countries. That is to say, this population's improved life expectancy embodies a more general potential for improved Israeli life expectancies overall.

Figure 2
Life expectancy at birth, 2010



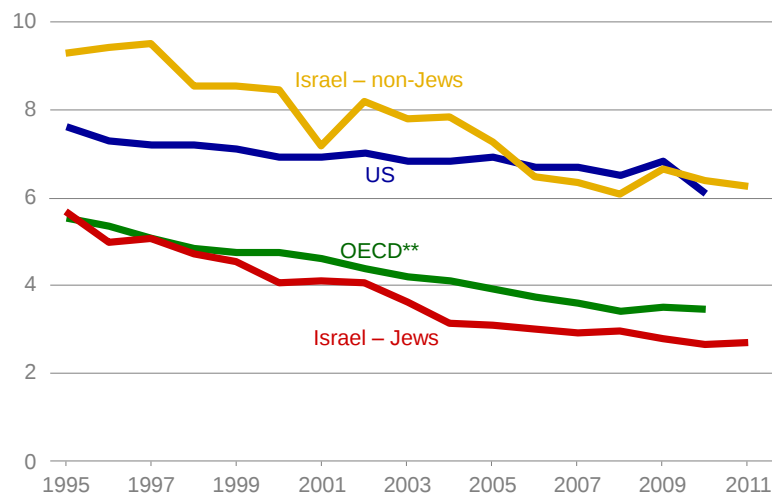
* Average of the 23 most developed OECD countries (excluding the U.S.)

Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

Most of the potential for improved life expectancy lies in the infant mortality rate. In this sphere a slight improvement was found within the non-Jewish population, while the Jewish population displayed no meaningful improvement – as might have been expected given the latter population's already-low infant mortality rate. However, the gaps between the sectors in this area are still large (Figure 3), and reducing them remains a major challenge for the healthcare system.

Figure 3
Infant mortality over time*, 1995-2011



* Infant mortality up until age 1 per 1,000 live births

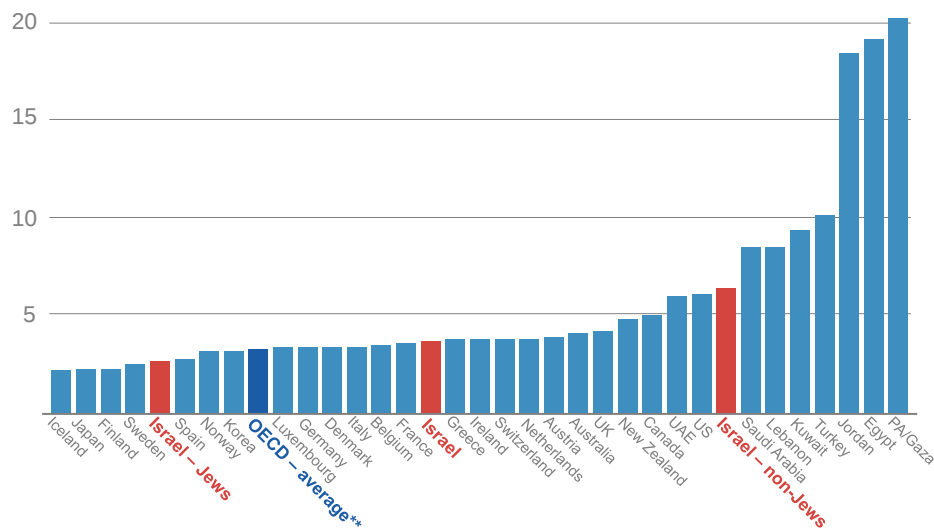
** Average of the 23 most developed OECD countries (excluding the U.S.)

Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

An international comparison of infant mortality rates shows that Israel continues to improve its standing (with regard to the population as a whole), and its rate is similar to the OECD average (Figure 4).

Figure 4
Infant mortality across countries*, 2010



* Infant mortality up until age 1 per 1,000 live births

** Average of the 23 most developed OECD countries (excluding the U.S.)

Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD, The World Bank

The Population's Satisfaction with the System

It is difficult to compare levels of satisfaction with the various parts of the healthcare system, due to a lack of comparable data. Surveys conducted in recent years by the Taub Center and by the Myers-JDC-Brookdale Institute (2012) found an improvement on most service-quality parameters that were assessed for the health funds. In general, the percentage of respondents who were satisfied or very satisfied with the healthcare system is relatively high (69 percent in 2009 and 63 percent in 2007). It should, nevertheless, be noted that levels of satisfaction with the healthcare system as a whole are lower than levels of satisfaction with the services provided by the health funds (in the community) – 90 percent of the respondents stated that they were satisfied or very satisfied with the health funds in general.

These findings are consistent with the fact that most services are provided in the community. Compared with hospitalization, service in the community is faster, lines are shorter, and the patient load is lighter. (One reason for this may be that, within the framework of community-based service, fewer patients are referred for treatments funded by supplemental insurance.)

Bramli-Greenberg et al. (2011) find relatively high levels of satisfaction with the healthcare system among Arab Israelis (85 percent) and the elderly (76 percent). These groups are characterized by a socioeconomic profile that is lower than the overall population average; satisfaction with the healthcare system provides a positive indication that they are receiving service at an appropriate level. At the same time, however, the finding may indicate that these groups are more dependent on the public healthcare system, given the high cost of private alternatives, meaning that they are unable to compare the care provided by the private system with that provided by the public system – and may thus be unaware of the potential for a different level of care.

The Healthcare System's Medium-Term Socioeconomic Objectives

The system's medium-term objectives, reflecting its underlying principles, relate to equity, cost containment and sustainability, service-provision efficiency, and extent of choice. In addition to their functional aspects in improving the population's health and satisfaction with care, these principles also have intrinsic value, particularly with regard to equity and extent of choice.

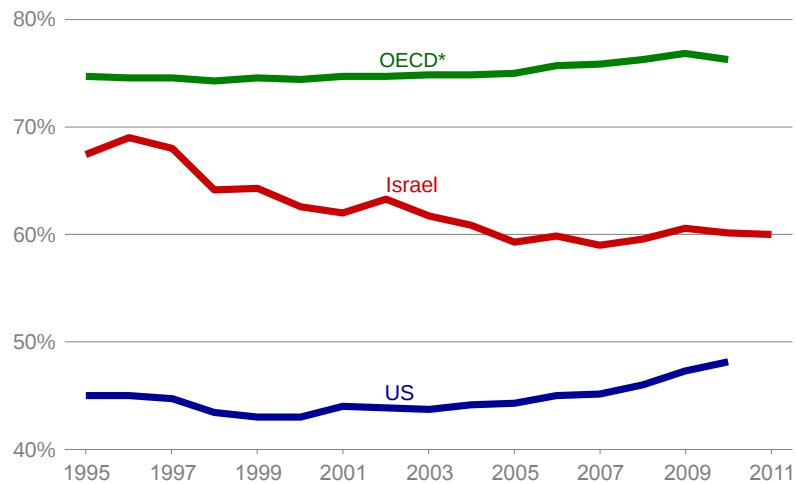
Equity. Equity here relates to two issues: (a) the progressivity of healthcare financing, which aids in reducing income disparities by protecting household incomes from unexpectedly high health service expenditures; and (b) improved access to healthcare, especially in terms of weakening the link between access to care and the ability to pay for it. Failings in both of these spheres ultimately result in health gaps between populations of differing economic levels, and this is happening in Israel as well, especially since growing income disparities in themselves are health risk factors (Chernichovsky and Chinitz, 2013).

Progressivity is expressed primarily in the share of public funding in the system, given the dominant share of the progressive income tax underlying this funding. The share of public funding in Israel's total national health expenditure has had a downward trend: in 2011 public funding accounted for 60.0 percent of the total expenditure, compared with 67.4 percent when the healthcare system reform was instituted in 1995, 76.3 percent in the OECD countries, and 48.2 percent in the United States. When one compares Israel with the United States and the other OECD countries, one finds that the trend in recent years in the U.S. and the OECD countries has been opposite to that of Israel: they have shown a rise in the share of public funding as a percentage of the national health expenditure (Figure 5).

Figure 5

Public expenditure on healthcare services

as percent of national expenditure on healthcare services, 1995-2011



* Average of the 23 most developed OECD countries (excluding the U.S.)

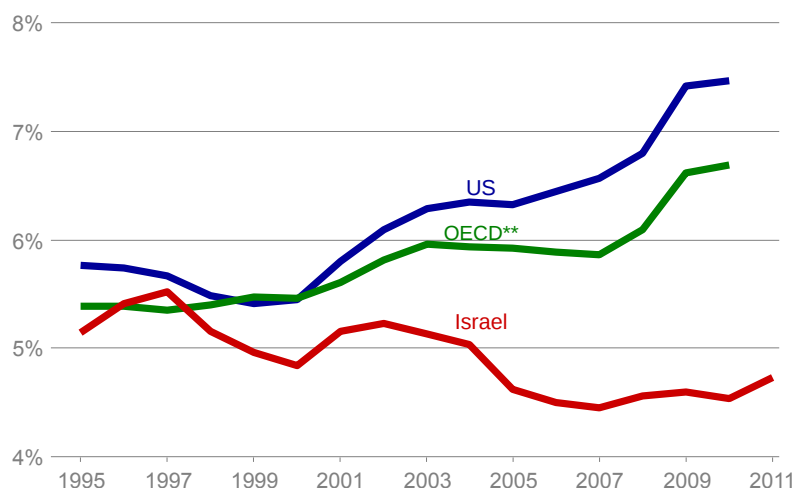
Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

The declining share of public funding of the system that, as noted, is peculiar to Israel, stands out all the more sharply when public funding is measured as a proportion of the GDP.¹ As may be seen in Figure 6, the share of public healthcare funding in Israel's GDP has declined, and despite a modest rise in 2011, it remains low relative to all of the countries with which Israel is identified politically and economically – even after adjustments for the age factor in other countries.

¹ It is worth noting that the expenditure's percentage of GDP represents the healthcare expenditure per capita compared with the economy's production capability.

Figure 6
Public expenditure on healthcare services
 as percent of GDP*, 1995-2011



* Adjusted for standardized person in Israeli risk adjustment terms (old capitation method) as percent of regular GDP

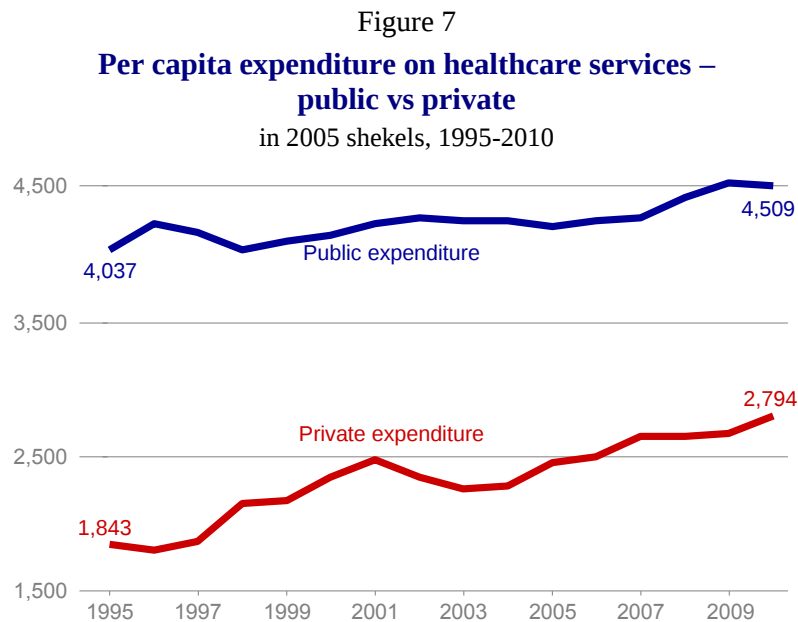
** Average of the 23 most developed OECD countries (excluding the U.S.)

Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: OECD

In terms of healthcare expenditure per capita, during the period 1995-2010 Israel's public expenditure grew by just 11.7 percent: from NIS 4,037 to NIS 4,509 (2005 prices) and was characterized by a high degree of fluctuation – point-specific budgetary increases followed by long periods of gradual erosion. Major budgetary increases were authorized only once every few years, usually in response to crises arising from these periods of budgetary erosion. At the same time,

private per capita expenditure grew steadily during the same period, for a total of 51.6 percent: from NIS 1,843 to NIS 2,794 (Figure 7).



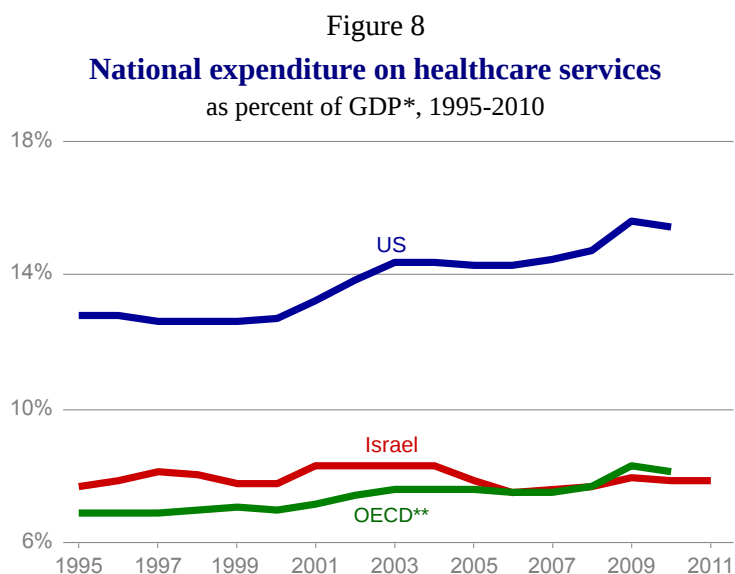
Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: OECD

The regressive nature of Israeli healthcare financing is reflected in household budgets: the increase in private funding of healthcare translates into a worsening disposable-income distribution situation (after payments for health care) and deeper poverty among sectors that were already poor. It also results in less accessibility to services among these groups, due both to a decline in their ability to pay the rising prices and to a lack of availability of healthcare services (Navon and Chernichovsky, 2012).

Ultimately the large gaps in access to healthcare, and the role played by private funding in widening these gaps, are liable also to increase health-status polarization between Israel's stronger and weaker populations – and, thereby, to limit the potential for improving the mean health level of the overall Israeli population.

Cost containment and sustainability. Israel's national healthcare expenditure – including both public and private expenditure – was NIS 67.4 billion in 2011, accounting for 7.9 percent of GDP. Taking into account the differing age distributions of the countries compared (the percentage of young people in Israel's population is relatively high), Israel has a low rate of expenditure relative to other Western countries – placing Israel below the average of the OECD's 23 most developed countries (8.1 percent) – except for the U.S., which continues to deviate with its high rate of health expenditure as a percentage of GDP: 15.5 percent (Figure 8).



* Adjusted for standardized person in Israeli risk adjustment terms (old capitation method) as percent of regular GDP

** Average of the 23 most developed OECD countries (excluding the U.S.)

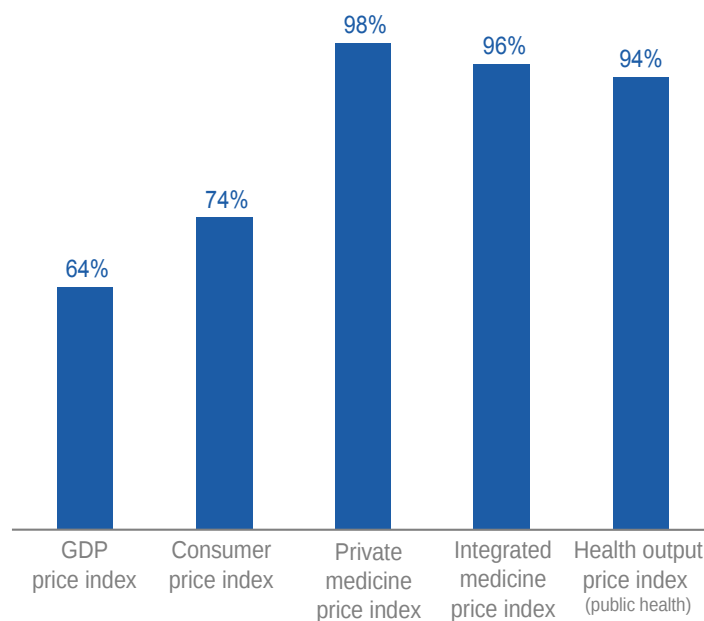
Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

In 2011, there was a slight rise in Israel's rate of national expenditure on healthcare. However, due to a decline in public expenditure relative to GDP, the total nominal healthcare expenditure as a proportion of GDP remained the same. This is not the situation when real expenditures which are determined in terms of the change in healthcare cost relative to the change in the GDP price index are examined. In this context, Israel's healthcare system is losing its ability to contain the increase in healthcare expenditure due to inflation relative to the cost of services.

As may be seen in Figure 9, the composite healthcare price index rose by 96 percent and the private healthcare price index rose by 94 percent from 1995 to 2011, while the GDP price index rose by only 64 percent. What this means is that in terms of the services available healthcare's share of the GDP declined to a degree beyond that indicated by the percentages in the figure.

Figure 9
Changes in the price indices, 1995-2011

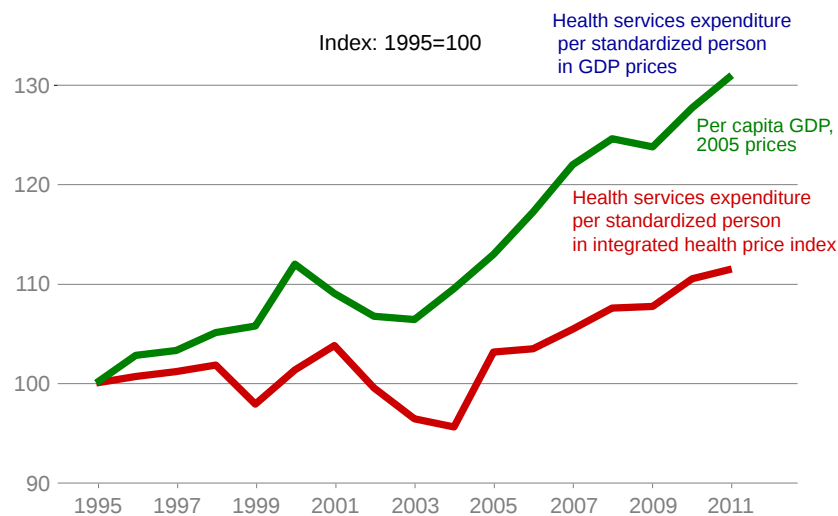


Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, Ministry of Health

The ramifications of the rise in prices may be seen in Figure 10. Since 1995 there has been a real increase of just 11.6 percent in healthcare purchasing power parity per standardized person in Israel – despite the fact that the real GDP per capita rose by 33 percent during the same period.

Figure 10
**Healthcare expenditures per standardized person*,
1995-2011**



* Adjusted for standardized person in Israeli risk adjustment terms (old capitation method) through 2010

Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics

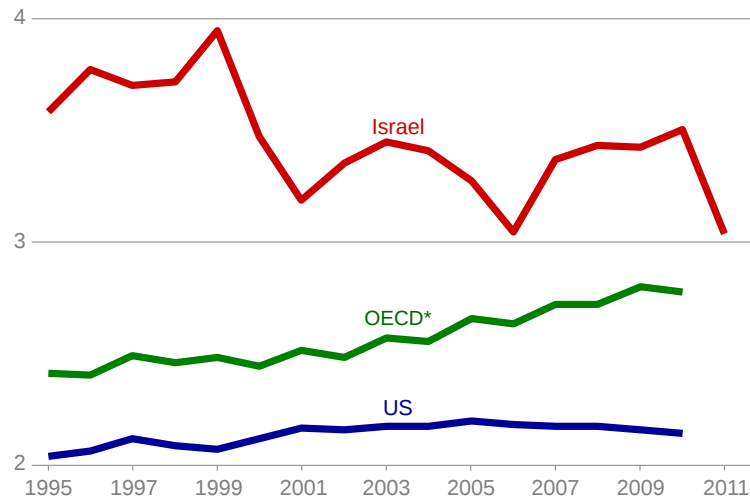
2. Structural Issues and the Lack of a Long-Term Policy

A lack of long-term planning and strategy in Israel's healthcare system is reflected in relatively little investment in both manpower and infrastructure, despite the fact that an aging population and rising income levels are expected to bring about a rise in demand for medical services. The growing gap between demand and supply is leading to a rise in demands within the privately funded system and to inflated service prices. These trends have worsened in light of the diversion of supplemental insurance funds to private healthcare.

Supply of physicians. Over the years, Israel has enjoyed a high physician-to-population ratio compared with other developed countries and the United States. A significant increase in this ratio occurred during the early 1990s due to the large number of physicians who came to Israel in the great wave of immigration from the former Soviet Union.

However, by the late 1990s, a downward trend could already be discerned in Israel's physician-to-population ratio, and the gap narrowed between Israel and the OECD countries (per thousand people). As a result of this trend, Israel's ratio of physicians per thousand people has declined to 3.0 versus 3.4 in the OECD countries and 2.4 in the United States (Figure 11). In this context, it is important to note, however, a lack of age-adjusted population data; when Israel's high proportion of young people compared with the OECD countries is taken into account, Israel's situation is actually better than that indicated by the figures.

Figure 11
Physicians per 1,000 standardized persons, 1995-2011



* Average of the 23 most developed OECD countries (excluding the U.S.)

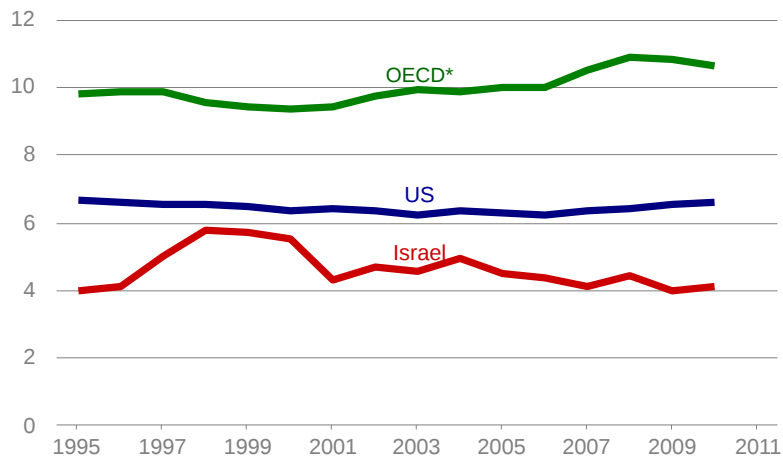
Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

The reason for this trend can be seen in Figure 12, which presents the number of newly-licensed physicians per year in Israel, the United States, and selected OECD countries.

Moreover, in recent years, Israel's ratio of medical school graduates has been 4 per hundred thousand people, compared with 5 graduates per hundred thousand people in the United States and 11 graduates in the OECD. This trend is worrisome, and is now the main factor behind the drop in Israel's physician-to-population ratio.

Figure 12
Medical school graduates per year
 per 100,000 population, 1995-2010



* Average of the 23 most developed OECD countries (excluding the U.S.)

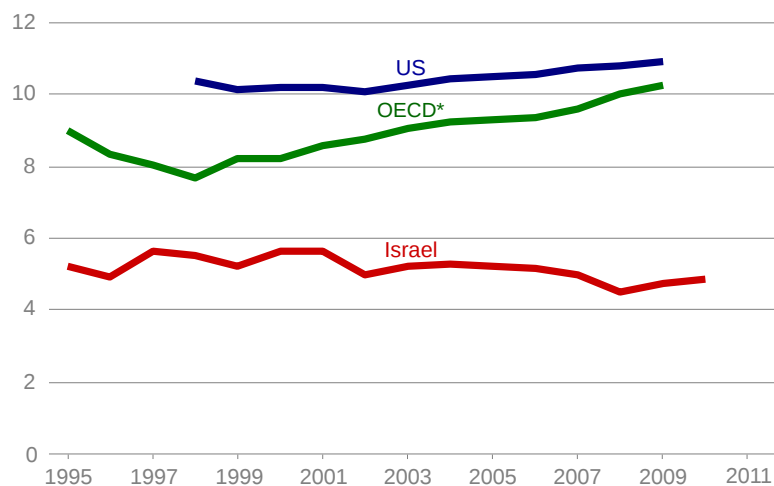
Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

The data do not, of course, reflect relative shortages in specific medical specialties or in the distribution of Israeli physicians between public and private healthcare or between Israel's geographic center and the periphery. It is well known, however, that physician manpower, particularly specialists, are being siphoned out of the public system and into the private market, and that the relative shortage of physicians in the public system is worsening, especially in terms of specialists. As noted, at the core of the process lies the replacement of public funding with supplemental insurance, which creates ever-greater demand outside of the public system.

Nursing manpower. The situation with regard to nursing manpower is even more troubling than that of physicians. In contrast to an upward trend in the ratio of nurses per thousand population seen in recent years by the United States and the rest of the developed OECD countries, Israel has shown an opposite trend: the ratio of nurses per thousand population declined throughout the past decade. In 2011, Israel had only 4.9 nurses per thousand people, versus 10.3 in the OECD, and 11.0 in the United States (Figure 13). In other words, the Western-country nurses-per-thousand-people ratio is over twice that of the Israeli ratio – and is trending upward relative to the Israeli rate.

Figure 13
Nurses per 1,000 population, 1995-2010



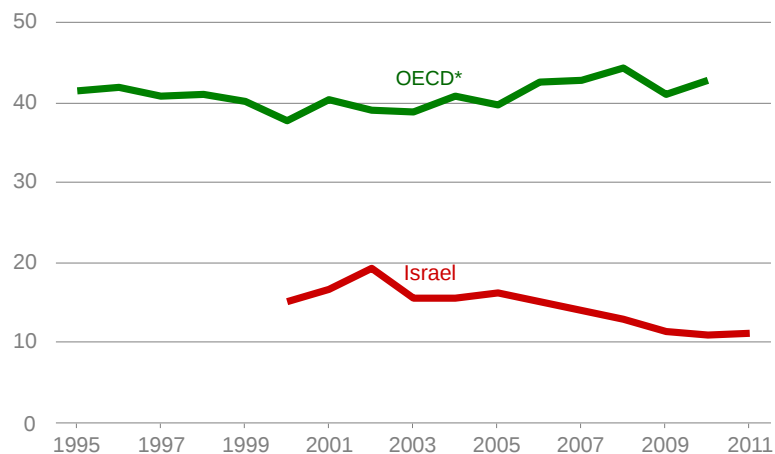
* Average of the 23 most developed OECD countries (excluding the U.S.)

Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

As is the case with physicians, the decline in the nurse-to-population ratio stems from an ongoing decline in the annual graduation rate of new nurses (Figure 14). In 2011, Israel's annual qualified nurse graduation rate (per thousand population) was only 11.2, compared with 42.8 in the OECD (nearly four times the Israeli figure). No less troubling is the fact that, during the past decade alone, Israel's annual graduation rate for nurses dropped by 43 percent. This decline is rooted in two main, mutually reinforcing factors – wages that do not constitute an adequate incentive for prospective new nurses, and an excessive workload due to the nursing manpower shortage. These factors have made the profession less attractive and have been a major catalyst for the worrisome trend (Nirel et al., 2010).

Figure 14
Nursing graduates per year
 per 100,000 population, 1995-2011



* Average of the 23 most developed OECD countries (excluding the U.S.)

Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

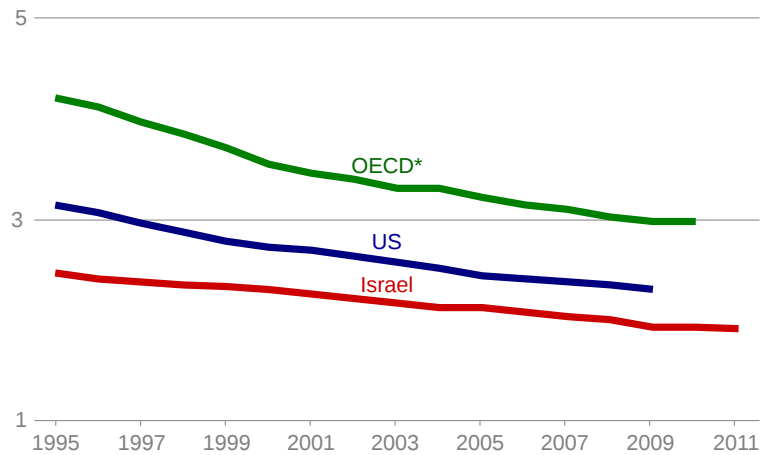
As noted, these trends have resulted in a serious manpower crisis especially in the publicly-funded system that is reflected in heavy nursing workloads and long, exhausting shifts. Moreover, due to the declining rate at which new nurses are earning their qualifications, the average age of Israeli nurses has risen substantially: half are now 45 or over. That is, today's nurses are both older than in the past, and carry heavier workloads. It is, therefore, not surprising that a nurses' strike was declared in late 2012, aimed at improving Israeli nurses' wage conditions. The strike ended after a month-long struggle with the signing of a new wage agreement featuring significant increases. It is to be hoped that this will be sufficient to increase the rate at which new nurses enter the field (Nirel et al., 2010).

Infrastructure – hospital beds. Concurrently with the worsening manpower situation, Israel's healthcare system also experienced a trend toward the erosion of other resources. The 2011 ratio of inpatient beds per thousand standard people continued to decline, and remained significantly lower than the ratio in the OECD's most developed countries and the United States: just 1.91 beds per thousand people in Israel, versus 2.30 beds in the U.S., and 2.98 beds in the OECD countries (Figure 15).

Figure 15

General hospital beds

per 1,000 standardized persons, 1995-2011



* Adjusted for standardized person in Israeli risk adjustment terms (old capitation method)

** Average of the 23 most developed OECD countries (excluding the U.S.)

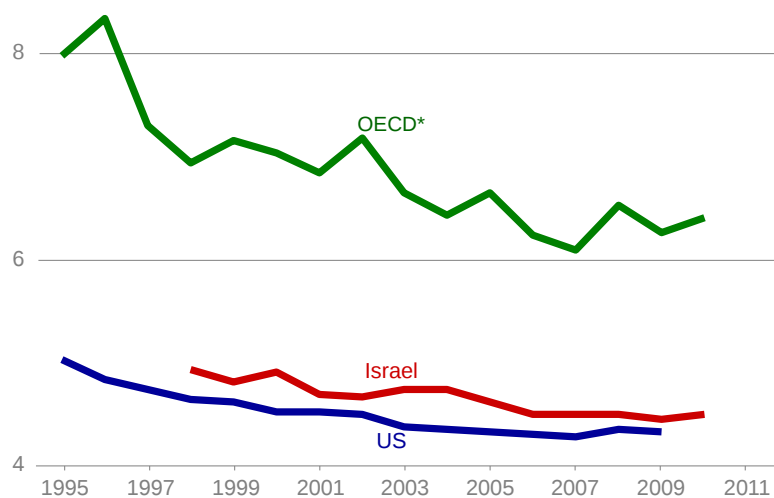
Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

The downward trend of recent decades in general of acute care inpatient bed numbers, observed in the United States and the rest of the developed OECD countries as well, appears primarily to reflect technological developments that have led to a decline in the mean number of hospitalization days per capita. However, while the OECD's mean number of hospitalization days (per standardized person) is 6.4, and that of the United States is 4.3, the Israeli figure is 4.5 days (Figure 16). This suggests that when the number of hospital beds relative to the population is taken into account, Israel is slightly more efficient than the OECD and

the United States in how its inpatient bed numbers per capita are utilized in terms of hospitalization days. This, along with relatively large manpower numbers, aid the Israeli system in compensating, to some degree, for its inpatient bed shortage, and in maintaining its performance level.

Figure 16
Average length of hospital stay in days, 1995-2010
per standardized person



* Average of the 23 most developed OECD countries (excluding the U.S.)

Source: Dov Chernichovsky and Eitan Regev, Taub Center

Data: Central Bureau of Statistics, OECD

3. Supplemental Insurance in Israel: Ideas for Organizing the System Along the Dutch and British Models

Supplemental insurance is a major structural issue within the Israeli healthcare system given the diversion of the funds obtained from this insurance – which are public in character – to the funding of medical care provided by privately-owned institutions. The consequences of this situation are discussed at length in earlier Taub Center reports, as well as in the present chapter. The issue was also the main topic of a conference held by the Taub Center in February 2013, with the participation of international experts and senior figures in Israel's Ministry of Health. This portion of the present chapter is based, among other things, on the presentations of an expert from the United Kingdom, Mr. Mark Bassett, and an expert from the Netherlands, Professor Wynand van de Ven. Both conclude that the way in which Israel defines its basic healthcare basket is not adequate in terms of clarifying resident rights, and that the system lacks the information and competitiveness needed to safeguard rights where the basic basket is concerned.

In this section several main points are covered with the aim of presenting the issue from the broadest possible perspective. In order to do this, Israeli supplemental insurance will be compared, not with specifics, but rather with the general approaches to supplemental insurance that prevail in the Dutch and British healthcare systems. The main focus of these approaches is not the party offering the services covered by private insurance, but rather the question of how the citizen can exercise his rights in the most effective and intelligent manner.

At the heart of Bassett and van de Ven's criticism of Israeli supplemental insurance lies the argument that this kind of insurance is insufficiently regulated, and that it therefore leads to a blurring of boundaries between entitlements included in the basic basket of services and entitlements conferred by the supplemental basket. Beyond the regressive manner in which supplemental insurance is funded, this

blurring of boundaries is causing a rise in inequity both in terms of access to the basic basket and in terms of declining service efficiency, reflected in inflation – as demonstrated in the discussion above.

Supplemental Insurance: General Background

Supplemental insurance aims to achieve two interdependent objectives. Firstly, it is meant to provide the population with freedom of choice that the publicly-funded system cannot offer. Secondly, it aims to reduce the pressure to fund services through the public budget.

Resident rights. From the service-recipient's viewpoint, the main issue with supplemental health insurance is a prevailing lack of clarity regarding the possibility of maximizing one's rights within the basic insurance framework, before paying for supplemental insurance. The lack of clarity enables both insurers and service providers to often fund, via supplemental insurance, services that, on the face of it, ought to be funded via general taxation and the health tax.

The Netherlands found a solution to this problem in the framework of a personal insurance policy between insurer and citizen – for basic insurance as well. The policy sets forth in detail the citizen's rights with regard to each type of insurance – basic and supplemental (should the citizen choose the latter).

The policy's main features regarding the basic service package must be set forth clearly and address the following points:

1. Types of diagnosis and treatment to which the citizen is entitled through each of the two insurance formats.
2. Minimum standards for treatment provision, especially with regard to maximum waiting times for care.
3. Designation of the service provider who is required to provide service (in order to prevent situations where the same provider offers the same service via both private and public funding).

4. Quality of care criteria.
5. Criteria regarding legal responsibility for care.

In addition, criteria must be defined in a number of areas relating to supplemental insurance so as to establish the coverage obligation framework and the group premium that characterizes this form of insurance:

1. Develop a clear and unambiguous list of the diagnoses and treatments covered by supplemental insurance.
2. Develop a list of authorized service providers.
3. Set maximum care prices and co-payments, if needed.

Although the Dutch solution to the problem of supplemental insurance constitutes a revolution in practical terms, it is not revolutionary in terms of its overall outlook. From this point of view there can be no doubt of its suitability for Israel as well.

Increasing competition. The Israeli system is based on managed competition among four health funds (Israeli health funds are similar to HMOs) and suppliers. In this context the small number of Israeli health funds should be noted, which places the market's degree of competitiveness in question while casting doubt on the wisdom of maintaining a health-funds-based system (rather than a single fund along the lines of the U.K.'s National Health Service). Against this background one should remember that the Netanyahu Commission recommended raising the number of health funds to eight, in order to increase competition for service provision in Israel.

Increasing competition by adding health funds to the system, so as to bring the health fund-population ratio closer to that of the Netherlands²,

² In the Netherlands there are 40 health funds serving a population of 17 million people. There is no research pointing to economies of scale for health funds on the Israeli order of magnitude, but if economies of scale should be found on the orders of magnitude for the Israeli funds – particularly *Clalit* Health

might aid in motivating the health funds to improve the basic service basket as well as any supplemental baskets offered.

Information. Information is a basic condition of fair and effective managed competition. Governmental activity aimed at disseminating clear and accessible information on resident rights and quality of care, especially with regard to the basic healthcare basket and the health funds' performance in providing it, is essential in enabling residents to make informed choices – to select health funds that assure optimal service provision to their members, especially regarding those services that are part of the entitlement.

Services, the largest of the funds – then it would be worth considering a single national health fund, i.e., a national health service consistent with the British model.

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The Law for Rehabilitation in the Community of Persons with Mental Disabilities

An Interim Appraisal

Uri Aviram*

Abstract

The purpose of this chapter is to present the Mental Health Rehabilitation Reform, and to analyze the challenges it faces at the start of the second decade of its implementation. Besides reviewing the reform's accomplishments and its contribution to the changes that have occurred in mental health services, the article also assesses the dangers it has to contend with. The analysis focuses on the system's clients, budget, personnel, and services – and on its functional environment. In the course of the decade, the mental health rehabilitation services have considerably expanded, resulting in significant savings to the state; nevertheless, rehabilitation services cover only about one-fifth of the target population and many of those entitled to a rehabilitation service package fail to secure it. It also bears mention that there has been erosion in the average budget per rehabilitation recipient. In order for the reform

* Professor (Emeritus) Uri Aviram, Policy Fellow, Taub Center Health and Welfare Policy Programs; School of Social Work and Social Welfare, Hebrew University; Professor, Ruppin Academic Center. This article is based on a presentation to the Taub Center's Health and Social Welfare Policy Programs in February 27, 2013. For more on this topic, see Aviram (2012).

to achieve its objectives, the services and budget must be adapted to the changing character of the mentally disabled, as well as to the special needs of specific population groups. Such problems as the quality and training of personnel in the rehabilitation network and market failure and loss of control by the regulators over a system should be dealt with and avoided. Lastly, the chapter discusses the mutual dependency between the rehabilitation service system and the Insurance Reform, due to start in 2015, emphasizing the importance of the rehabilitation system's efficient and effective functioning to the success of that reform and to improvement of the mental health services in general.

The Rehabilitation in the Community of Persons with Mental Disabilities Law was enacted in 2000 and first budgeted in 2001. This important social law is based on innovative approaches for the rehabilitation in the community of persons with serious mental illness and their integration in society, and is considered one of the most advanced of its kind in the world (Aviram, 2011; Drake, Hogan, Slade, and Thornicroft, 2011). Already in the first decade of the law's implementation, there have been dramatic changes in the field of rehabilitation of psychiatrically disabled persons in the community.

The rehabilitation reform is a significant component in the State of Israel's attempt to shift the locus of treatment and care from psychiatric hospitals to the community – an attempt that began four decades ago (Aviram, 2007). The aims of the reform were to integrate mental health services with general healthcare, to improve the quality of service, and to make it more efficient. To a large extent the reform can be credited with several changes in the system of mental health services in Israel, such as the dramatic drop in the rates of psychiatric beds per the general population and shortening of the average psychiatric hospital stay (Aviram, 2012).

Persons with mental disorders are extremely handicapped from medical, functional, and social aspects. The incidence of physical disease among them is higher than among those who do not suffer from mental illness, and their mortality rate is much higher than among their age cohort in the general population (Weinberger, Wiener, and Leor, 2008). The World Health Organization has ranked mental illness alongside heart disease and malignant diseases on the scale of Global Burden of Disease, and they are among the ten leading causes of disability in the world (Murray and Lopez, 1996). Furthermore, the rate of those married and those formerly married (which can serve as a measure of the level of social support) and the labor market participation rates among individuals with mental illness are low in comparison to other populations that receive National Insurance Institute disability allowances (Pinto, 2012). This population suffers from poverty and social stigma and exclusion as well (President's New Freedom Commission, 2003).

The overall outlay imposed on society because of mental illness and its economic consequences have yet to be measured in Israel. That expenditure far exceeds the government budget devoted to mental health services, which today amounts to about NIS 2 billion. To that must be added, among other things, the health fund (Kupat Holim – similar to HMOs) budgets devoted to mental health, the disability allowances provided to about 70,000 individuals with mental illness by the National Insurance Institute, the funds devoted by local authorities, the housing support provided by the Ministry of Housing, and the not inconsiderable sums paid for treatments through the private sector (Shamir, 2006). The economic burden on families caring for the mentally disabled due to the loss of workdays and other expenses must be taken into account, along with the mental and economic costs of the higher incidence of disease among caretaker families (Gallagher and Mechanic, 1996). On the basis of an estimate of the social and economic costs of mental illnesses in Britain (The Sainsbury Centre, 2003), adjusted to the population size and standard of living in Israel (according to gross domestic product, or GDP), the annual cost of mental illnesses to Israeli society reaches

\$13 billion. The rehabilitation of individuals with mental illness and their integration in the labor market can save society considerable sums, in addition to the personal benefit to the individuals and the improvement in their quality of life. In this matter, too, no proper estimate has been conducted in Israel. However, in accordance with the results of a study by Kessler et al. (2008) in the United States (adjusted to the population size and GDP in Israel), the loss to gross domestic product due to the non-employment of those with mental illness in Israel is estimated at \$2.5 billion a year. Although these estimates may be imprecise, they undoubtedly highlight the social and economic benefits to be gained by contending properly with mental illnesses and rehabilitating these individuals in the community.

1. The Rehabilitation in the Community of Persons with Mental Disabilities Law

The Rehabilitation in the Community of Persons with Mental Disabilities Law (2000; hereinafter: the Rehabilitation Law) is based on two principles:

- A. Individuals suffering from disability due to mental illness are entitled to rehabilitation.
- B. The rehabilitation services package allocated to persons with mental disabilities will be based on professional judgment.

The law also states that the rehabilitation services package is provided on the basis of a personalized rehabilitation plan, one that places the individual and her/his aspirations at the focus.

Anyone aged 18 or above that is found to have a mental illness following a psychiatrist examination and determined to suffer from at least 40 percent medical disability according to National Insurance Institute criteria is entitled to request rehabilitation services from the regional rehabilitation committee. The rehabilitation committee, which is

comprised of professionals in the rehabilitation field, examines the individual's needs and allocates rehabilitation services out of the rehabilitation basket of services set by law. The basket includes vital rehabilitation services ranging from sheltered housing, occupational rehabilitation services, completion of education and social activities for leisure hours, to dental care, assistance to families of those with mental illness, and treatment management services.

According to the law, the basket is determined by the Minister of Health in consultation with the Minister of Finance. The legislature, in its desire to ensure that the implementation authority would not be able to make changes in the composition of the basket by itself, determined that any change requires confirmation by the Knesset's Labor, Welfare and Health Committee (Rehabilitation Law, 2000).

Much can be learned from the process that led to the law's enactment, not only about reforms in the field of mental health, but also about reforms in the field of health and welfare in general. The present chapter will not expand on the topic, since the factors and circumstances leading to the law's enactment have been discussed at length elsewhere (e.g., Aviram, 2012; Elizur et al., 2004; Haver et al., 2006; Shershevsky, 2006). However, it bears mention that its enactment stemmed from a combination of factors, including the leadership and determination of a group of people headed by then-Knesset member Tamar Gozansky, seizing of opportunity and cooperation by the administrative establishment in the Ministry of Health, support (albeit qualified and conditional, but vital) of the Ministry of Finance, and special circumstances that at the time enabled the legislation of privately proposed laws of such a financial scope. That possibility has since been made impossible due to the enactment of the Arrangements Law passed in 2002 and 2003.

The Law's Target Population

Although the law clearly describes the entitled population, defining, locating, and measuring the distribution of mental illness in the population is far from simple. Issues related to defining mental illness, its psychiatric diagnosis and validation, and the epidemiology of mental illness have already been discussed at length in the literature (e.g., Mechanic, McAlpine and Rochefort, 2013), and there is no need to reiterate them here.

According to the National Insurance Institute's 2012 figures, the number of those receiving a disability allowance due to psychiatric diagnoses totaled about 70,000 at the end of 2011. This figure underestimates the total target population as it includes only those who have applied to the committees and have not only met the criterion of medical disability, but have been classified as having lost the ability to earn a livelihood.

The group of individuals with mental illness comprises one-third of the recipients of disability allowances, and is the largest category. It is also the largest group that receives transfer payments of 75 percent and above the maximum disability allowance.

According to various estimates, it can be concluded that the number of people in Israel suffering from serious and prolonged mental illness currently totals about 100,000 (Aviram, Zilber, Lerner, and Popper, 1998; Struch, Shershevsky, Naon, Daniel, and Fischman, 2009). This is the main target population of the rehabilitation services. Close family members who care for the mentally disabled must be added to this, since the physical, mental, and economic burden of treating and caring for a family member suffering from mental illness is great (Gallagher and Mechanic, 1996). According to the estimates of the Central Bureau of Statistics (CBS), the number of mentally disabled and close family members caring for them totals about 350,000, equivalent to the population of a medium-sized Israeli city.

2. The Rehabilitation Reform and Structural Changes in Mental Health Services Over the Last Decade

In the Rehabilitation Law's first decade of implementation, there were already dramatic changes in the rehabilitation services designated for persons with mental disabilities. According to the figures of the Ministry of Health (2001, 2008, and 2013), the number of people with mental disability who receive rehabilitation services grew from 4,000 in 1999 to 16,000 in 2009, and is currently approaching 20,000 (as reported by the head of the mental health rehabilitation services of the Ministry of Health). The rehabilitation services are delivered through about 600 different programs, all of them provided by not-for-profit organizations (NGOs) and private entrepreneurs. The government budget for the rehabilitation of the mentally disabled in the community has grown eight-fold (in fixed prices) and currently totals about half a billion shekels. The rehabilitation budget's share of the overall mental health budget, which at the start of the period was less than 4 percent, reached one-quarter by the end of the first decade of the law's implementation (Aviram, Ginath, and Roe, 2012).

The rehabilitation reform was one of the main factors enabling the dramatic changes that occurred in the hospitalization system. In the decade from 1999 to 2009, the number of psychiatric beds dropped by 50 percent. The yearly number of days spent in hospital at the end of the period was 43 percent lower than at the beginning. The average hospital stay was significantly shortened, the share of long-term hospitalizations fell appreciably, and the duration of stay in the community of those released from hospital before needing to be hospitalized again lengthened on average substantially (Aviram, 2010b, 2012; CBS, 2002, 2011; Hornik-Lurie, Zilber, and Lerner, 2012; Ministry of Health, 2002, 2009, 2013).

Without diminishing from the significance of the changes brought about by the so-called “structural reform,” analysis of the data reveals some disturbing facts. As opposed to other countries that implemented mental health reforms, where the reduction in the number of psychiatric beds was accompanied by the closing of government hospitals for the mentally ill (see, e.g., Goodwin, 1997; Mechanic and Rochefort, 1990), not even one government hospital was closed in Israel. Furthermore, most of the reduction in the number of psychiatric beds in Israel stemmed from a reduction in the number of beds in private (for profit) hospitals and from the closing of some of those hospitals.

It bears mention that a considerable share of the beds in private hospitals that were ostensibly eliminated were actually converted and defined as treatment residences and intensive treatment residences – as happened in the United States, where alternative beds were opened in various nursing facilities instead of beds being eliminated in psychiatric institutions (Lerman, 1982; Segal and Aviram, 1978). In Israel, this phenomenon of converting beds to treatment residences occurred not only because it was impossible to rehabilitate the population that had been committed to private hospitals who were seriously handicapped in terms of a community framework, but also because the government wanted to change the financing arrangements to make caring for this population cheaper, which was realized through a reclassification of the beds. In most cases, the beds even stayed in the same facility, and only their categorization changed.

The processes that transpired in the framework of the structural reform and the rehabilitation reform also aligned with the government’s policy of reducing the personnel employed by the government and cutting costs. The figures in the state budget proposals for the decade 1999-2009 show that whereas the number of employees in the Ministry of Health rose during the course of the decade, the number of employees in mental health services dropped by about 10 percent during the same period. These changes also led to substantial savings in treatment costs, since the average cost of a one-day hospital stay in treatment residences or a

one-day stay in sheltered residences in the community is much lower than the cost of a stay in government or private hospitals for the mentally disabled.

A common argument, especially among Ministry of Finance officials, is that the allocation for rehabilitation is “new money,” i.e., an addition to the budget above and beyond what was previously allocated to mental health services. But closer scrutiny of budgetary trends reveals that this argument has no basis in fact. Indeed, the budgetary section allocated in the mental health services for rehabilitation services and the monies that have flowed to these services were new. Generally, however, not only has the state not added any money to the mental health budget, but it has also saved considerable sums over the past decade since the law’s implementation. Without the rehabilitation services, especially the various sheltered residences, it would not have been possible to reduce the number of hospitalized patients significantly – and due to their high cost, the state would have had to spend at least another NIS 1 billion beyond the so called “new funds” that it invested in rehabilitation services in the community (Aviram, Ginath, and Roe, 2012). The implication is that the state did not use all the money that it saved due to the reduction in hospital stays towards the benefit of rehabilitation services for the mentally disabled in the community.

3. The Rehabilitation Law’s Second Decade of Implementation: Challenges and Opportunities

In examining the challenges that face those responsible for implementing the Rehabilitation Law, reference should be made to the critical elements that define the system: the target population, the financial sources for the rehabilitation network’s operation, the personnel devoted to its operation, the organization of the operating system, and the tools and services at its disposal by law. Since the actual operation of the rehabilitation network is influenced by and even dependent on its functional environment,

i.e., the organizations and interested parties impacting the rehabilitation network, they must also be taken into account.

The Attempt to Change the Rehabilitation Law

The uniqueness of the Rehabilitation Law and, to no small extent its power as well, stems from the fact that it is anchored in legislation. A change to the law is liable to seriously damage it, and the Ministry of Finance seems likely to pursue such a change.

Towards the end of the first decade of the Rehabilitation Law's implementation, when the government tried to complete the legislation for the Insurance Reform in mental health – which transfers responsibility for mental health inpatient and ambulatory services over to the health funds – an attempt was made to change the Rehabilitation Law and in effect uproot one of its foundations. The Ministry of Finance conditioned its support for the insurance reform in mental health services on the introduction of an article in the proposed law which, among other things, was intended to restrict entitlement to rehabilitation services and place them under a budgetary limit – i.e., set a maximum sum to be allocated to the rehabilitation package regardless of the number of those entitled to rehabilitation services according to medical criteria.

In general, throughout the decade, the Ministry of Finance was concerned about the budgetary ramifications of the entitlements granted by the Rehabilitation Law. Although the government recently abandoned its attempt to pass the insurance reform through legislation and, instead, approved it by administrative order in 2012 without the article that changes the Rehabilitation Law, the danger to the law has not disappeared. The Ministry of Finance, in its desire to control the state's budgetary commitments, may repeat its attempt to change the Rehabilitation Law, either by means of legislation or by administrative and budgetary means, as detailed below.

Target Population

At the end of the law's first decade of implementation, it emerged that the rehabilitation network was far from serving the majority of the potential population to be rehabilitated. Figures of the *Mental Health in Israel: Annual Statistical Reports* published in 2013 show that the number of people who received a rehabilitation package at the end of 2010 amounted to only 15-20 percent of the estimated population entitled to rehabilitation services. Even if it is taken into consideration that only some of those potentially entitled will want to receive a rehabilitation package, this still means that most of the entitled population remains outside the circle of those benefiting from the law.

The Ministries of Health and Finance have planned for a maximum of 22,000 individuals in rehabilitation (when the system reaches a steady state) which does not align with even the most conservative estimates of 100,000 by experts familiar with the actual situation. Undoubtedly, one of the challenges facing the system is to increase the number of entitled mentally disabled persons that actually receive rehabilitation services, and also to take into account the changes required in planning and resource allocation due to the demographic increase of the general population.

In addition to the number of those in rehabilitation, characteristics of the rehabilitation network's target population demands attention as well. Whereas the first wave of individuals in rehabilitation included many who had been released from psychiatric hospitals after prolonged periods of hospitalization, today many of the applicants are young people at the start of what is called their "psychiatric career." The problems and needs of this population differ from those of the mentally disabled in rehabilitation who were released from institutions after prolonged hospitalization. The professional literature makes it clear that the rehabilitation intervention methods are quite different from those for populations at the beginning of the process, and that the costs of treatment and rehabilitation for the current population are higher than those of the first wave.

Any planning of the rehabilitation network must take into account specific population sectors and distinct age groups, relying on knowledge of such topics as morbidity rates, the nature of illnesses and disabilities, as well as the characteristics of this population group. The system will also have to devote special attention to the geriatric population, among whom the rate of those suffering from mental disability is higher than among younger age groups.

Budgets

As explained previously, in the law's first decade of implementation the rehabilitation budgets grew impressively, and their share of the overall mental health services budget grew as well. These changes may be misleading, however, because at the start of the period the allocation for rehabilitation was minimal, and also because it does not mean that the funds allocated to establishing and developing the rehabilitation network conform to the requirements of the law and the needs of the system. Furthermore, in the original planning, the legislature assumed that budgets for rehabilitation would grow also through the pooling of budgets from other sources. What in fact has happened is that local authorities that previously provided services to individuals with mental disabilities in the framework of their social services budget, now refer the needy to the rehabilitation network and have stopped allocating funds from their own budgets.

Whereas during the law's first five years of implementation, in accordance with the agreement between the Ministry of Finance and the Ministry of Health (2001), the rehabilitation services budget was based on a multi-year plan, since 2006 the budget has been based on yearly additions determined by annual (and lately even biannual) negotiations. Even the State Comptroller, in his Annual Reports for 2009-2010, took note of this, stating that the principles according to which the budget is updated annually are unclear and not based on multi-year planning that is open to professional and public scrutiny.

Since it has been estimated that the population receiving rehabilitation services is only one-fifth of the population entitled to the rehabilitation package, the budget should make it possible to increase the share of those in rehabilitation until at least 50 percent of the target population is reached. Furthermore, the budget has to reflect demographic growth and the changes in the character of this population, as well as special problems of the geographic and social periphery. All of these necessitate increasing the average budget per person in rehabilitation services. However, analysis of the government budget for rehabilitation for the second half of the law's first decade of implementation indicates that as opposed to what is needed, and despite the expected increase in the number of individuals in rehabilitation, the average budget per person has shrunk and is far from meeting the system's needs satisfactorily.

Housing services are a central and vital component of the rehabilitation package. As emerges from the data of the *Mental Health in Israel: Annual Statistical Report* for 2013, about 60 percent of rehabilitation package recipients are awarded sheltered housing. Likewise, most individuals with mental illness living in sheltered housing also receive a rent subsidy from the Ministry of Housing. However, due to the relatively low level of the subsidy for housing and the low disability allowance that most mentally disabled people receive from the National Insurance Institute, many are unable to find housing in the location of their choice and near their family members. In addition, they often find it difficult to move to less intensive, less restrictive sheltered housing arrangements (as their mental conditions allow), because of the additional expense. These factors compel many of those in rehabilitation to seek housing in the periphery and in the social and geographic margins. This situation is liable to give rise to "ghettos" of mentally ill persons, as has happened elsewhere in the world (Aviram and Segal, 1973; Isaac and Armat, 1990), infringing on their rights, and harming their quality of life and their rehabilitation in general.

One of the reasons for the damage to the quality of rehabilitation is the unrealistic pricing in the tenders for rehabilitation services. Without reasonable pricing, many potential entrepreneur service providers avoid participating in the tenders. This leads to the reduction or absence of competition among potential service providers and results in the government's dependence on a few providers – who themselves are forced to reduce the quality of their service so as not to lose money – since the government must be in compliance with the law and ensure rehabilitation services.

In light of all this, the topic must be reexamined and the budgets set in a way that allows high quality standards for service providers and enables real competition. At the same time, proper supervision and oversight must be ensured while preventing market failures, which would be harmful to the quality of the rehabilitation services and infringe on the target population's rights.

No discussion on matters relating to the rehabilitation services budget can be concluded without referring to the Insurance Reform in mental health, which is planned for implementation in 2015.

The Insurance Reform in Mental Health and Budgeting of Rehabilitation Services in the Community

The Insurance Reform, i.e., transfer of responsibility for mental health ambulatory and inpatient services to the health funds, is meant to lead to an improvement in services, bring down the number and duration of hospitalizations, and increase the demand for rehabilitation services in the community among those entitled who have not yet received the necessary services. However, if the rehabilitation services are unable to adequately address the situation, the Insurance Reform is unlikely to succeed. Was the growing need for rehabilitation services taken into account when the Insurance Reform was planned?

The Insurance Reform is also meant to improve the mechanism for the budgeting of mental health services. A Supreme Court ruling from

June 21, 2012 determined that the standards in light of which the health funds' budget is updated need to be changed, and the state is supposed to improve the mechanism for determining the budget channeled to the health funds and in effect increase it. The question that should worry all those concerned about the level of mental health services is whether these changes will also be reflected in a real increase in the budget channeled to mental health services.

There is no certainty that all the moneys channeled to the health funds for the purpose of accommodating mental health services will, indeed, be put to that use, since the moneys channeled to the health funds are not earmarked for specific fields (e.g., mental health) and their use is at the health funds' discretion. Due to competition among the health funds over services in various fields, there is a danger that some of the mental health money will be diverted to other services that are more attractive to the funds' insured clients, to other fields of expertise, and to stronger lobbies. In light of this, the state must ensure that at least in the initial period – for a decade or two after the reform, until the mental health services are stabilized and have an opportunity to develop a powerful professional, administrative, and public lobby – the funds meant for mental health are earmarked, and there is supervision over how they are spent. It may be assumed that an improvement in ambulatory and hospitalization services in the wake of the reform may also improve the rehabilitation services in the community.

Since the rehabilitation services remain the state's responsibility, it must be ensured that they are updated taking into consideration demographic changes, price rises in the economy, and additional moneys required due to innovations in proven intervention technologies, as well as the special needs of specific populations in the state's social and geographical periphery.

Personnel

The personnel operating the services are a vital component that determines their quality, and even a measure of the level of the implementation of the law itself. The State Comptroller, in reference to the deployment of personnel in the course of the Rehabilitation Law's first decade of implementation in his reports for 2007 and 2010, noted that the personnel that administer the services, operate the rehabilitation committees, and are involved in supervision, monitoring and control of the services are far from sufficient to run the rehabilitation network properly.

Since most of the system of services is operated by private service providers, and in the absence of government requirements for high-level professional personnel to operate the services, it is not surprising that the personnel are often not of the professional level required to perform rehabilitation tasks. Importantly, in order to change the situation the state must insert stricter requirements for suitable manpower in its tenders, with all that entails from a budgetary aspect.

In light of the fact that the rehabilitation of individuals with mental illness is a relatively young field, it is necessary to develop programs for training personnel, either in the framework of the effort to develop a profession devoted to dealing with mental health community rehabilitation (Roe et al., 2011), or in the framework of existing professions. The effort to develop appropriate professional training, both at the academic level and in the framework of various programs that do not lead to an academic degree, must be accelerated.

In this matter, the importance of training the disabled, and of course employing them, bears emphasis. Although in the course of the last decade not insignificant efforts were made in this field, and there have been some notable accomplishments (Dudai and Hadas-Lidor, 2009), the situation is still far from ideal, especially with respect to the employment of people suffering from psychiatric disability in the free market.

Services

Since the Rehabilitation in the Community of the Mentally Disabled Law was designed in the Knesset in the 1990s, the rehabilitation basket has not been evaluated, nor have any changes been introduced into it. Such decisions need to be made on the basis of empirical evaluations of the existing basket, accumulated knowledge on the topic from Israel and around the world, as well as defined budgetary considerations and priorities. Importantly, although determining priorities needs to be based on knowledge, it also involves social considerations and demands public debate with the participation of experts, professionals in the field, legislators and, of course, the family members and the disabled themselves.

Several issues have emerged already in the law's first decade of implementation as requiring attention, including the "hostelization" phenomenon: the difficulties in moving to less restrictive housing in the community that the mentally disabled encounter; problems in the assertion of their rights and choice of services; the low rate of rehabilitation in the Arab Israeli sector; the long waiting period for housing solutions, low rent subsidy rate, and lack of choice in certain areas; an absence of suitable regard for and cultural sensitivity toward special populations; flaws in continuing ambulatory treatment after hospitalization, and in the coordination between clinical and rehabilitative systems; partial and insufficient coverage of case-management services; and difficulties of occupational and employment solutions in the framework of the free market. Additionally, opportunities must be widened for individuals who are studying to complete their undergraduate academic degrees, and for youth below the age of 18 to complete their education.

As emerges from data published by the mental health services, which also appeared in the State Comptroller's Reports, one of the topics requiring immediate attention is the fact that many individuals do not avail themselves of the rehabilitation package allocated to them. On the basis of analyses that were conducted, between one-quarter and one-third

of those for whom a rehabilitation package was approved do not avail themselves of even a single component of the rehabilitation services allocated to them, and many others avail themselves of only part of the basket of services. The reason for this may be problems in the service allocation processes and the personnel responsible for services, and the topic must undoubtedly be examined.

Since the various elements of the mental health services system are interconnected, the rehabilitation network is dependent on the functioning of the inpatient and ambulatory systems, as well as on the health system and the social services. The ongoing adverse effect of the continuous budgetary reductions of the community clinic system (Aviram, 2010) and lack of efficient cooperation with physical healthcare, the clinical mental health network, and local welfare services will no doubt have negative consequences for the functioning of rehabilitation in the community and damage its ability to fulfill its intended role. The Insurance Reform, due to come into effect in 2015, is supposed to correct this situation, but it is still too early to say whether the change will actually occur.

Rehabilitation in the Community of Persons with Mental Disabilities and the Upcoming Insurance Reform in Mental Health

The major problem the Rehabilitation Reform will have to contend with during the implementation of the Insurance Reform stems from the fact that while the mental health inpatient and ambulatory services are being transferred to the responsibility of the health funds, the rehabilitation services will remain the state's responsibility. The health funds will have a therapeutic and financial incentive to transfer anyone suitable for rehabilitation in the community to the government rehabilitation network, but that network will depend on the government budget and other authorities with regard to its ability to provide the required services. On the other hand, the efficient functioning of ambulatory and inpatient services, especially the coordination required between the clinical

services and the rehabilitation services to ensure continuity and quality of treatment and care, will not be under the government's complete and efficient control. The rehabilitation network, then, will be caught between opposing organizational and budgetary forces, and its functional environment (i.e., the organizations and existing networks which interact with it and influence its functioning) will have interests that do not necessarily align with or contribute to the proper functioning of the rehabilitation network.

4. Summary

The achievements of the Rehabilitation Reform in its first decade of implementation are indeed impressive, but its continued success is not to be taken for granted. This chapter has noted quite a few problems and issues that require attention. The flaws and problems must be examined, the services rendered must be evaluated, the manner in which they are supplied and their outcomes must be reviewed, and action must be taken to correct problems. In this matter, of prime importance is the development of an information network to enable monitoring, control, and outcomes evaluation. Despite repeated declarations by the mental health services and the Ministries of Health and Finance regarding the importance that the government attributes to evidence-based research on the results of rehabilitation, to date very little has been done in this field.

Evaluation research on rehabilitation processes and their outcomes are important not only from professional and budgetary perspectives, but from the public perspective as well. They are important for strengthening the public legitimacy of the field, which is especially vital in light of the powerlessness of the population on behalf of which the Rehabilitation Law was enacted. As such, it would be worthwhile to adopt the arrangement pertaining to the National Health Insurance Law, according to which a certain percentage of the budget is devoted to research and evaluation. The allocation should be anchored in legislation, or at least in

an administrative arrangement. Likewise, it is important to determine priorities for research and evaluation, and to ensure that the funds are allocated to researchers in a manner not dependent on the operational system, but rather on the basis of absolutely independent scientific evaluation.

Another topic that deserves careful scrutiny is the question of the rehabilitation system's position within the government ministries: should it remain the responsibility of the Ministry of Health, or be transferred, for example, to the Ministry of Social Welfare and Social Services? This is one of the tasks the government will have to contend with in the law's second decade of implementation and in light of the implementation of the Insurance Reform, and it is important that this examination be guided by professional and organizational considerations.

As noted in this chapter, the efficient and beneficial functioning of the mental health system is of great importance not only with regards to the rehabilitation and quality of life for the system's users, i.e., the disabled and their family members, but also from a social and economic perspective. This field should benefit from the improvement in the standard of living in Israel, like other fields in society. The data may show that the government budget for mental health indeed did not change substantially and was not adjusted to reflect improvement in the economy in the last decade, but, as noted by Chernichovsky and Regev in this report ("Trends in Israel's Healthcare System"), overall public healthcare spending still fell far short of reflecting GDP growth and the rise in standard of living in Israel, nor did it correspond to improvements in other social service areas during the same period.

Although some of these problems can be fixed with the help of the body that performs the rehabilitation itself, a considerable share is dependent on other systems and factors over which the rehabilitation network has no control. In the wake of changes that have occurred since the Rehabilitation Law was enacted, cracks have appeared in the coalition supporting the law. The Ministry of Finance, which was vital to the success of the law at the start of its implementation, is now seeking to

restrict it, either through legislation or by budgetary means. The frequent postponements of the implementation of the Insurance Reform in mental health since the late 1990s and the ongoing attrition of ambulatory services may also damage the rehabilitation network. Additionally, of course, there is great uncertainty regarding the final implementation in two years' time of the Insurance Reform and how this will affect the Rehabilitation Reform.

Regrettably, the topic of mental health, including the rehabilitation of individuals with mental illness in the community, is at the margins of public interest. The fact that it concerns a powerless population, which suffers from stigmatization and social exclusion, impacts that population's ability to influence any change of policy. A weighty moral and professional responsibility therefore lies on the shoulders of the professionals who treat this population and those social agents, few as they may be, who are concerned about the mentally disabled and their quality of life. An effort must be made to organize a political and public lobby, and with the help of the disabled and their family members, to place the topic on the public agenda and take action to preserve, develop, and advance the rehabilitation reform. This will undoubtedly have consequences for the future implementation of the Insurance Reform, and ultimately for the usefulness, significance and quality of all mental health services in Israel.

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