

POLICY PAPER SERIES

ISRAEL'S LABOR MARKET

TODAY, IN THE PAST AND IN COMPARISON
WITH THE WEST

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סדרת ניירות מדיניות

שוק העבודה – היום, בעבר ובהשוואה למערב

דן בן-דוד

נייר מדיניות מס' 2010.05

בזמן ששיעורי האבטלה בישראל דומים לממוצע ה-OECD, שיעורי אי-התעסוקה בקרב גברים הינם גבוהים מאוד. לא כך הייתה התמונה לפני שלושה עשורים. הפרק מראה כיצד השתנו – לפעמים, השתנו מאוד – דפוסי העבודה בקרב יהודים לא-חרדים, יהודים חרדים וערבים. לא כל מה שנהוג לחשוב על שוק העבודה בישראל מתברר כנכון. הפרק מתאר את הקשר בין חינוך לתעסוקה ולהכנסה ומספק מאפיינים של ממדי החינוך בקרב קבוצות אוכלוסייה שונות על פי מגדר, מגזר ומידת הדתיות. תופעת העובדים הזרים נסקרת ונערכת השוואה בין תכנית מס ההכנסה השלילי בישראל והתכנית בארה"ב.

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דן בן-דוד הוא מנהל מרכז טאוב לחקר המדיניות החברתית בישראל ופרופסור באוניברסיטת תל-אביב. כל הטעויות הן של המחבר. הדעות המובאות להלן הן של המחבר ואינן בהכרח משקפות את דעות מרכז טאוב לחקר המדיניות החברתית בישראל.

מותר לצטט קטעי טקסט קצרים – שאינם עולים על שתי פסקאות – ללא הסכמה מפורשת, ובלבד שיינתן אזכור מלא למקור הציטוט.

Israel's Labor Market

Today, in the Past and in Comparison with the West

Dan Ben-David*

Abstract

While unemployment rates in Israel are similar to the OECD average, rates of non-employment among Israeli men are much higher. Three decades ago, Israeli rates of non-employment among men were very similar to those of the OECD. This chapter shows the change – sometimes, substantial– in work patterns among non-ultra-Orthodox Jews, ultra-Orthodox Jews and Arab Israelis. Not all of the conventional wisdom on Israel's labor market turns out to be correct. The relationship between education, employment and income is described here while the extent of education and employment among different population groups is detailed according to gender, religion and degree of religious observance. The phenomenon of foreign workers in Israel is examined and the negative income tax programs in Israel and the United States are compared.

* The initial debt for this chapter is owed to my father, Prof. Shaul Ben-David. He organized the labor force surveys of the Central Bureau of Statistics (CBS) from the 1960s until today so that we could both diagnose and analyze long-term trends in the data. After joining the Taub Center, it was possible to continue the project with Kyrill Shraberman on labor force surveys, Haim Bleikh on income surveys and Sagit Azary on both surveys and comparative

1. *Introduction*

This chapter links Israel's macro picture of high poverty, high income inequality and low steady-state economic growth (compared to Western countries) to the country's education and welfare systems. Specific chapters in this report focus on each of these issues separately. The focus here is on how some (though, not all) of the primary factors – education and welfare – translate through Israel's labor market into its macroeconomic outcomes. Education and welfare can have a considerable impact on the scope of employment and on the income levels of the working age population, which in turn affect rates of poverty, income inequality and economic growth.

Variables that are commonly used for cross-country comparisons do not always provide a very accurate picture when it comes to Israel and may lead to some incomplete interpretations that can sometimes be misleading. In light of the rather unique composition of Israel's population, with its distinctive relative weights of ethnic and religious groups, age groups and education levels, there is a need for additional perspectives when making comparisons and identifying trends.

The purpose of this chapter is to sketch a broad picture of the Israeli labor market's key characteristics and show how they tie into the state of the country's society and economy. The emphasis here is on providing a descriptive account of the facts that can serve as a launching pad for further research – by researchers at the Taub Center as well as elsewhere – that will identify the major causes of phenomena presented here. To the extent possible, conjectures regarding possible explanations will be provided, but the testing of such hypotheses is left for future research.

data from the OECD and the United States. This special team developed skills calculating and deriving unique time series' that provide a new look at Israel's labor market, and I thank them very much for their assistance. I would like to also thank Dr. Avner Ahituv, Nachum Blass, Yulia Cogan, Prof. Ayal Kimhi, Prof. Noah Lewin-Epstein, Dalit Nachshon-Sharon, Prof. Yossi Shavit, and Prof. Haya Stier for their comments and suggestions.

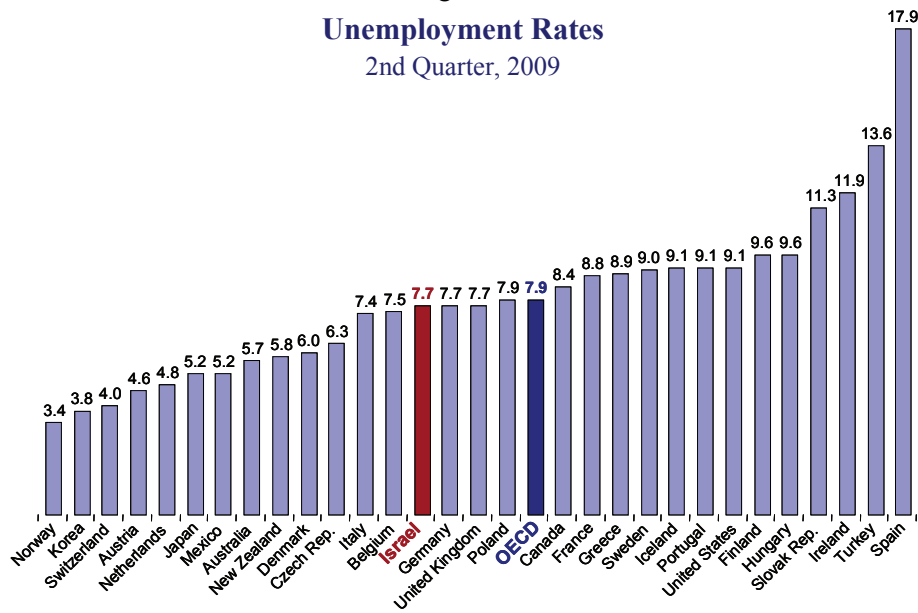
2. Recent Times

For many years, unemployment rates in Israel were higher than the Western average. Even before the wave of terror and recession of the early 2000s, the rate of unemployment in 2000 – a year of prosperity in Israel – reached 8.8 percent, compared with 6.1 percent on average in the OECD (the Organization for Economic Cooperation and Development – comprising the world's leading industrialized countries). With the outbreak of the terror wave and major recession that accompanied it, unemployment in Israel rose to 10.7 percent of the civilian labor force. Since then – and prior to the full impact of the current global recession that may or may not have ended – unemployment rates began declining toward those of OECD. In 2008, unemployment rates in Israel were almost equal to the OECD: 6.1 percent in Israel and 5.9 percent in the OECD.

The picture was reversed as the world entered the recent deep recession. Figure 1 shows that by the second quarter of 2009, unemployment rates in Israel were below the OECD average for the first time in decades: 7.7 percent in Israel versus 7.9 percent in the OECD. In fact, unemployment in Israel was lower than in most OECD countries, as some of them reached double-digit unemployment rates of up to 11.9 percent in Ireland, 13.6 percent in Turkey and 17.9 percent in Spain.

Ostensibly, Israel's labor market is beginning to look like a typical Western labor market. But the actual picture is very different. While unemployment rates are considered one of the most common indicators for examining economic activity, they illuminate only part of the labor picture. The working age population is composed of two groups, those who participate in the labor force and those who do not. The majority of those participating in the labor market find employment and become employed, while others are unable to find work and become "unemployed."

Figure 1
Unemployment Rates
 2nd Quarter, 2009



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

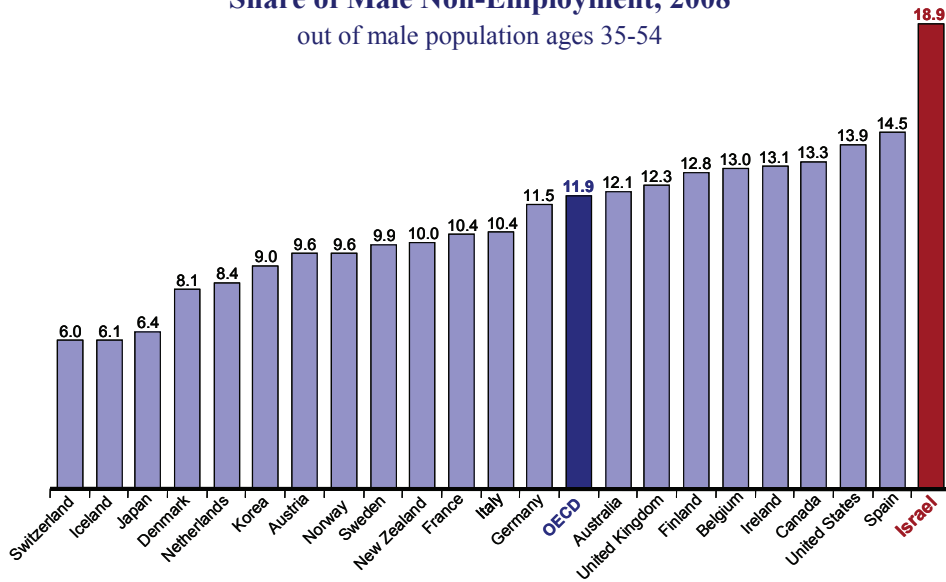
While Israel's unemployment rates are currently similar to those of the OECD, non-employment rates of the working age population (as opposed to just the labor force) are quite different – and herein lies the main problem of Israel's labor market. A very large share of the country's working age population does not participate in the labor force. While unemployment rates are based only on those who participate in the labor force, rates of non-employment reflect the ratio of all non-employed – whether the individual participates in the labor force and is unable to find a job or does not participate in the labor force at all – to the general working age population. Therefore, the emphasis here will be on rates of non-employment.

Another distinguishing characteristic of the following comparisons revolves around the definition of the working age. Age compositions in the population vary from country to country, and there are large differences in non-employment rates between age groups. For example, many people retire in their 60s. Hence, in populations with a high proportion of people aged over 65, non-employment rates will tend to be higher than in countries with a relatively young population. Similarly, very young people typically have relatively high rates of non-employment. This is not necessarily a negative phenomenon. Since the official working age in Israel is 15, then it is to the benefit of both the individual and society if the person stays in school instead of working.

To minimize the effects of age and schooling on comparisons between countries and over time, it is customary to compare employment rates by focusing on prime working age adults between the ages of 25 and 54. In contrast with most other Western countries, where it is common for individuals to continue their studies towards an academic degree with little or no time off after completion of secondary school, young Israelis face compulsory military service when they turn 18. Consequently, the Israeli road to higher education is not continuous as it is in the West, with a non-negligible number of Israelis enrolled for undergraduate studies while in their mid-twenties. Hence, cross-country comparisons of non-employment rates among 25-54 year olds may not be accurate when Israel is included in the sample. For this reason, some of the comparative analyses below focus on the 35-54 age group, which are peak employment years in all countries.

Figure 2 shows rates of non-employment of men aged 35-54 in Israel and most OECD countries for 2008. While non-employment rates in the OECD fluctuate around an average of 11.9 percent, the corresponding rate in Israel reached 18.9 percent. Even Spain, the unemployment leader in Figure 1, is far below Israel in terms of non-employment. The picture regarding women in Israel is better. While the OECD average is 32.0 percent (Appendix Figure 1), the rate of non-employment among Israeli women is 31.0 percent.

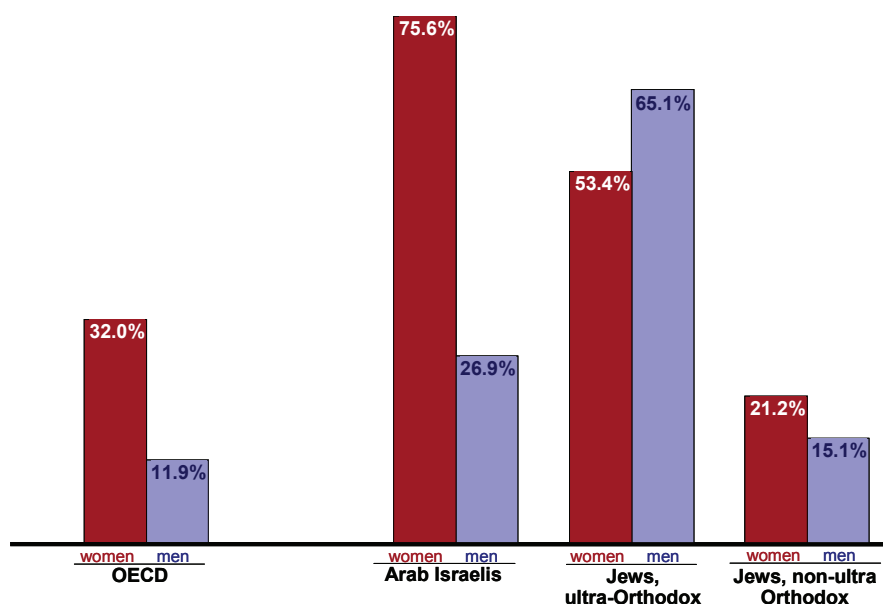
Figure 2
Share of Male Non-Employment, 2008
 out of male population ages 35-54



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
 Data: Israel Central Bureau of Statistics (CBS), OECD.

Who is not employed in Israel? Local prevailing wisdom is that the issue begins and ends with ultra-Orthodox Jews and Arab Israelis. Non-employment rates in these population groups are indeed high. However, most of Israel's population is neither ultra-Orthodox nor Arab. As shown in Figure 3, even after controlling for these two groups, the 15.1 percent non-employment rate among non-ultra-Orthodox Jewish men is still more than one-quarter greater than the OECD average rate of 11.9 percent. This reflects a substantial difference between the large part of Israeli society and much of the West. The picture differs considerably for non-ultra-Orthodox Jewish women, where the 21.2 percent non-employment rate is notably lower than the 32 percent average for women in OECD countries.

Figure 3
Rate of Non-Employment in Population, 2008
 ages 35-54



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
 Data: CBS, OECD.

Rates of non-employment in the Arab Israeli and ultra-Orthodox sectors are much higher than is common in Western countries. While the 26.9 percent non-employment rate amongst Arab Israeli men is two and a quarter times the OECD average, the 75.6 percent non-employment rate among Arab Israeli women is two and a third times the OECD average of 32.0 percent.

These are very large differences, but the picture is not uniform across all segments of the Arab Israeli population. Christian Arab Israeli men aged 35-54 are characterized by an 18.1 percent non-employment rate, which is 20 percent higher than Jewish Israeli men and 54 percent higher than the OECD average for men. Rates of non-employment are much

higher among Muslim and Druze men: 27.8 and 29.8 percent, respectively.

The similarity of non-employment rates among Muslim and Druze men raises an interesting question regarding job discrimination against Muslims in Israel. While discrimination is illegal, it is often claimed that some employers require past military service as a method to avoid hiring Muslims. While Muslims and Christian Arabs do not serve in the Israeli army, the Druze do serve and are subject to the compulsory draft. On the other hand, rates of non-employment among Muslim and Druze are very similar and very high while non-employment rates among the Christian Arabs are much lower. Hence, it not obvious that the primary cause of the high rates of non-employment is discrimination. In fact, it may be low levels of education and skills that are the main factors limiting the ability of Muslim and Druze men – whose levels of education are considerably below those of Arab Christian men – to cope in the modern job market.

Non-employment rates among Christian Arab Israeli women aged 35-54 are 49.1 percent, 2.3 times that of Jewish women and 53 percent more than the OECD average. Among Muslim and Druze women the rate is much higher – 79.4 and 77.3 percent, respectively. In other words, while one-third of women aged 35-54 in the Western world and one-fifth of same age non-ultra-Orthodox Jewish women in Israel are not employed, this status typifies over three-quarters of Muslim and Druze women in Israel.

The non-employment picture among ultra-Orthodox men is much different than what is common among other men in Israel and abroad.¹

¹ The determination of ultra-Orthodox Jews – or *haredim*, as they are referred to in Israel – in the data is problematic. The group is not officially classified as such in the data and the common method of determining who is an ultra-Orthodox Jew – adopted here with slight variations – is not without its problems. Ultra-Orthodox Jews are defined here using the variable “last place of study,” as reported in the Labor Force Surveys of Israel’s Central Bureau of Statistics (CBS). Men for whom *yeshiva* (an institution for the advanced study of Jewish religious texts) is indicated as the last place of study are labeled here as ultra-Orthodox Jews. Of course, this is not necessarily the case. For

The rate of non-employment among ultra-Orthodox Jewish men aged 35-54 is 65.1 percent – five and a half times the Western average in the same age group. While rates of non-employment among women in Israel and in OECD countries tend to be higher than those among men, the picture is reversed among Israel's ultra-Orthodox Jews. Non-employment rates among ultra-Orthodox men are so high that they even exceed those of ultra-Orthodox women, whose non-employment rate of 53.4 is still two-thirds greater than the average OECD rate of female non-employment.

With such high rates of non-employment, it is not obvious how these families – which also tend to be very large – are able to survive economically. It is possible that substantial portions of these population groups may indeed be working, but receiving their salaries in a shadow – or underground/undeclared – economy. To the extent that this is the case, then it does not reflect a better situation but one that is in many ways much worse. Those who work, but do not declare their income, do not share in the tax burden, leaving others to bear it alone. In addition, these same individuals increase the burden on others when they appear in the records as non-employed and in need of assistance. It is not obvious that false employment declarations are more prevalent among ultra-Orthodox

example, those who study in a *hesder yeshiva*, serve in the army and may later pursue academic studies are labeled as ultra-Orthodox, even though this does not accurately reflect reality. That said, even when such non-ultra-Orthodox Jews are included, the results are sufficiently extraordinary as to indicate the presence of atypical characteristics in this population. Since ultra-Orthodox women do not attend *yeshivas*, they are defined here as ultra-Orthodox if they belong to households in which either the head of household is defined as ultra-Orthodox or the spouse of the head of household is defined as ultra-Orthodox. Some definitions of ultra-Orthodox women include women in households with an ultra-Orthodox man of any family relationship, even if he is only a sibling rather than the head of household or the spouse of the household head. This definition was not adopted here because it may include women in religious families that are not necessarily ultra-Orthodox, or in which a single member of a family may have become ultra-Orthodox but was not necessarily followed by the rest of the family. As noted above, in the absence of a better way to classify ultra-Orthodox systematically and over time, the method outlined above was selected as the best of the available alternatives.

Jews and Arab Israelis than among the rest of the population. In any case, it is unlikely that changes over time in their non-employment rates – of the magnitude shown below – stem from changes in the proportion of those who work and do not declare their income.

3. Demographic Changes

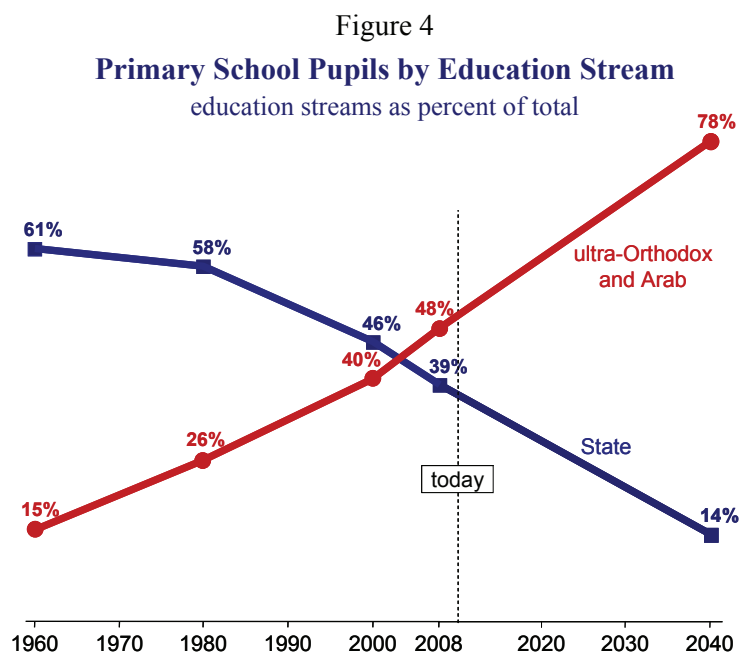
When the ability to choose non-employment as a way of life is made possible through government assistance, and when the share of the population making this choice is growing steadily, then the country's ability to fund such lifestyles becomes increasingly limited. What is the magnitude of the various population shares and how quickly is the composition of Israel's population changing?

3.A. Schools

One way to examine the demographic changes is through the distribution of pupils within the education system, which is divided into four sectors: State, State-Religious, Arab Israeli, and the ultra-Orthodox. All Israeli children must attend primary schools, so an examination of school enrollment patterns can provide an indication of the magnitude of each sector and of its rate of change. Figure 4 shows the share of primary school pupils in the ultra-Orthodox, the Arab and the State sectors.²

In 1960, 15 percent of all primary school pupils in Israel were enrolled in the ultra-Orthodox or Arab Israeli schools. Twenty years later, in 1980, their share increased to 26 percent. These children comprise a good part of today's adult population whose non-employment rates are shown in Figure 3. If the children of today's adults will have rates of non-employment that are similar to their parents', then what can be expected in the future?

² Pupils in the fourth sector, the State-Religious schools, complete the percentage to 100.



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

By 2000, the proportion of primary school pupils in the ultra-Orthodox and Arab Israeli sectors reached 40 percent and by 2008 it had climbed to 48 percent. The Central Bureau of Statistics (CBS) projects that by 2013 more than half of Israel's primary school pupils will be enrolled in ultra-Orthodox or Arab Israeli schools. While the share of Arab Israeli and ultra-Orthodox pupils has grown steadily, the share of the non-religious State education sector has fallen considerably. Primary school enrollment in the State schools – where nearly all of the Israel's leadership (from the left to the right of the entire political spectrum) studied since the State's founding – comprised 61 percent of the country's total enrollment in 1960. By 2008, this share had declined to just 39 percent of all the primary school pupils in Israel.

Figure 3, in the chapter “Israel’s Education System – A Domestic Perspective,” shows how enrollment in the country’s primary school system has changed over the past decade. These changes range from a three percent decline in the non-religious State schools through an eight percent increase in the State-Religious schools, a 33 percent increase in the Arab Israeli schools, and an enrollment increase of 51 percent in ultra-Orthodox schools in just one decade. If the changes of this past decade in each of the four education sectors are indicative of future changes in enrollment – or, put differently, if enrollments will continue changing at these same rates for another three decades – what will be the face of Israel’s primary school system in 2040? It is important to note that the right side of Figure 4 is only an illustration of the long-term consequences of trends that characterized Israel during the past decade. If these trends continue for another thirty years, then 78 percent of all primary school pupils in Israel will be in either ultra-Orthodox or Israeli-Arab schools while just 14 percent will study in the non-religious State schools.

It is improbable that the scenario described in Figure 4 will play itself out. Either the share of ultra-Orthodox and Israeli-Arabs in the overall pupil population will be smaller or it will be larger. A minority might be able to choose non-employment as a way of life, but when a majority adopts such a lifestyle, then this situation becomes unsustainable. It is inconceivable that the non-employment rates shown in Figure 3 will characterize the children in Figure 4 when they become adults. If non-employment rates decrease in both populations, then their birth rates are likely to decline as well.

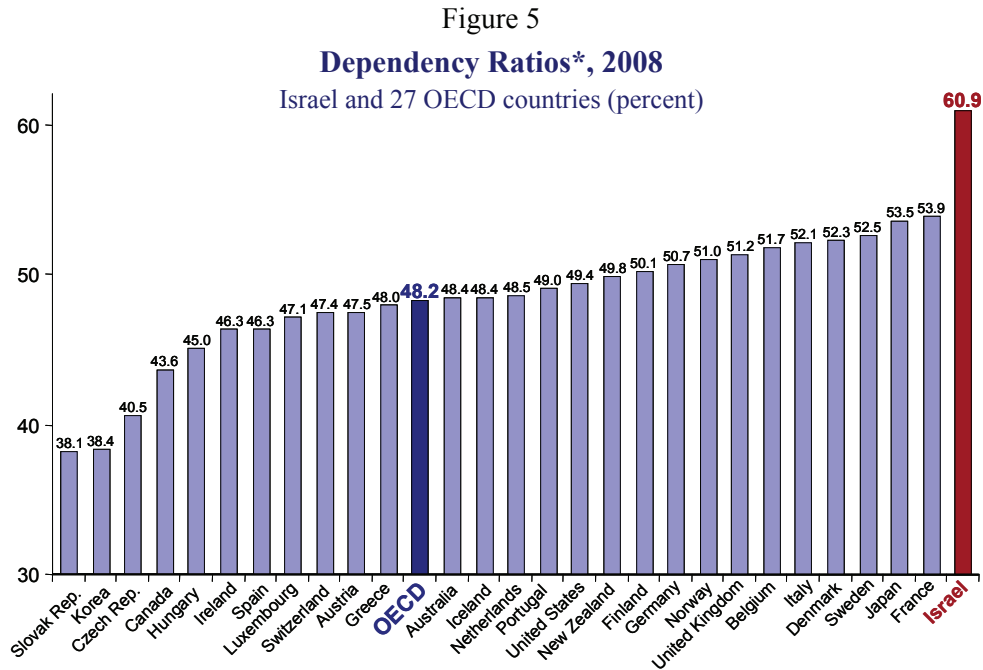
On the other hand, if their rates of non-employment do not decline, then there is a question whether the rapidly shrinking minority who send their children to State schools and State-Religious schools will be able to continue to bear the country’s financial and defense burdens. In certain fields – higher education, medicine, engineering, etc. – the top individuals will have no difficulty finding work outside the country. If this happens, the share of those who stay behind in Israel and continue

sending their children to State or State-Religious schools could be even lower than indicated in Figure 4. Under such a scenario, it is unclear how an Israel that desires to remain a part of the modern world will be able to do so – and this is without even considering the existential question of who will bear the burden of physically protecting Israel, given the severity of the threats that continue to be made against its very existence?

3.B. Dependency Ratios and Birth Rates

In some respects, Israel's demographic composition looks brighter than that of many Western countries. Dependency ratios reflect the ratio of dependents – as defined by the sum of children (ages 0-14) and retirement-age individuals (ages 65+) – to working age population (ages 15-64 years). The average dependency ratio in OECD countries is 48.2 percent (Figure 5), ranging from 38 percent in Slovakia and Korea to 54 percent in France and Japan.

Israel's dependency ratio of 60.9 percent is considerably higher than in all OECD countries. This was not the case 50 years ago. In five of the countries listed in Figure 5 (Korea, Iceland, Ireland, New-Zealand and Canada), dependency ratios were higher than in Israel. Since then, Israel's dependency ratio declined from its 1960 level (69.3 percent). But dependency ratios also fell in all of the OECD countries, leaving Israel alone at the top in 2008, as shown in Figure 5.



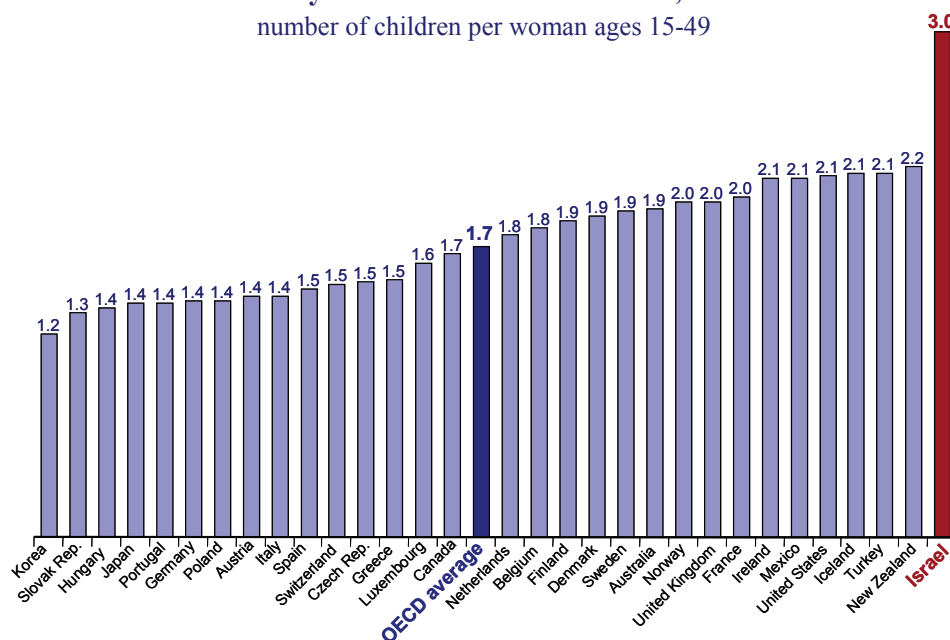
* Ratio of dependents (ages 0-14 and 65+) to working-age population (15-64).

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

Data: World Bank.

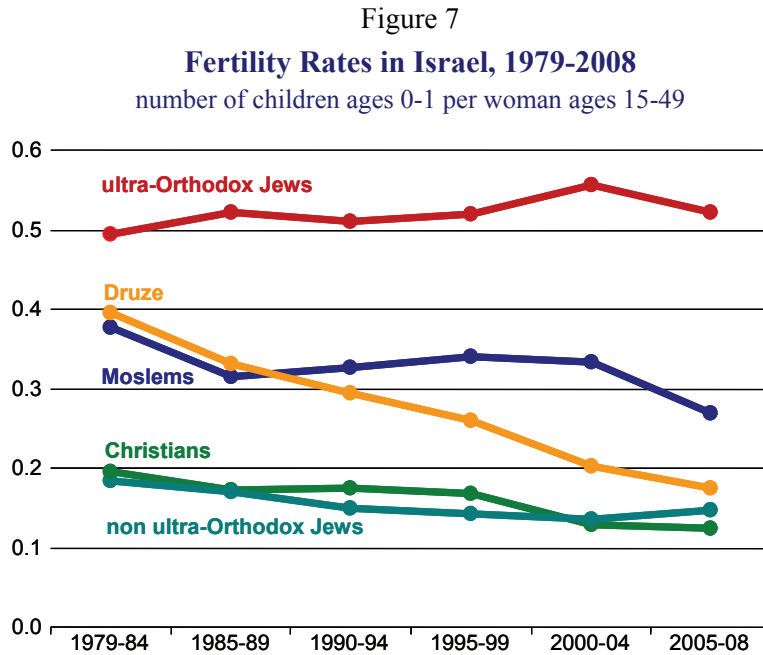
While dependency ratios fell across the West, the demographic process in OECD countries was different than Israel's. The population in most OECD countries has aged considerably and in some of these countries, there is a question regarding how future tax and social security systems will be able to meet the needs of the growing elderly population. Israel, as indicated in Figure 6, is a relatively young country and the number of children per woman is high. While the average number of children per woman in the OECD is 1.7, with relatively small differences between countries, the Israeli average is 3.0 – almost double the OECD average.

Figure 6
Fertility Rates in OECD and Israel, 2008
 number of children per woman ages 15-49



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: CBS, OECD.

Figure 7 highlights Israel's fertility picture since 1979 by population groups. The figure shows the average number of children aged 0-1 to mothers aged 15-49 in five-year increments. In the first five-year segment, 1979-1984, the five population groups can be divided into three main groupings. The first grouping includes non-ultra-Orthodox Jewish women and Christian-Arab women, with a very similar number of children per woman (0.18 and 0.19, respectively). The second grouping includes Druze and Muslim women, with twice the number of 0-1 year-old children (0.40 and 0.38, respectively) as non-ultra-Orthodox Jewish women and Christian-Arab women. Ultra-Orthodox women had the greatest number of 0-1 year-old children: 0.49.



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

In the first four groups, fertility rates decreased over the past three decades, although the decline was not uniform. The similarity between non-ultra-Orthodox Jewish and Christian Arab women was maintained throughout the past three decades, with the number of 0-1 year-old children dropping to 0.15 and 0.12 per woman, respectively, by 2005-2008. Though Druze and Muslim women initially experienced similar reductions in fertility, this similarity ended after a few years. Druze fertility rates continued to drop steadily over the years, reaching 0.17 children under the age of one by 2005-2006, and nearly completing a convergence process with non-ultra-Orthodox Jewish women.³ After their

³ Further analysis of Israel's demographic trends can be found in Rebhon and Malach (2008).

initial decline, the fertility rates of Muslim women stabilized over the next two decades (from 1985 to 2004), displaying even a slight increase during this period.⁴

After 20 years of nearly constant fertility rates among Muslim women, ranging from 0.32 to 0.34, this rate fell to 0.27 in 2005-2008. Studies by Cohen, Dehejia and Romanov (2007) and Toledano, Sussman, Frisch and Gottlieb (2009) indicate that cuts in child benefits during the past decade led to a decline in birth rates among Muslim Israelis – particularly, among the Bedouin – and among the ultra-Orthodox. Both studies found that child benefits had a similar effect on Muslim birth rates while Toledano, Sussman, Parrish and Gottlieb found a lower impact than Cohen, Dehejia and Romanov among the ultra-Orthodox. Figure 7 shows that the number of children aged 0-1 born to ultra-Orthodox women was relatively stable, with a slight rise between 1979 and 1999. When child benefits were increased, ultra-Orthodox fertility rose from 0.52 in 1995-1999 to 0.56 in 2000-2004. After child benefits were reduced, the number of children returned to its previous level, 0.52, in 2005-08.

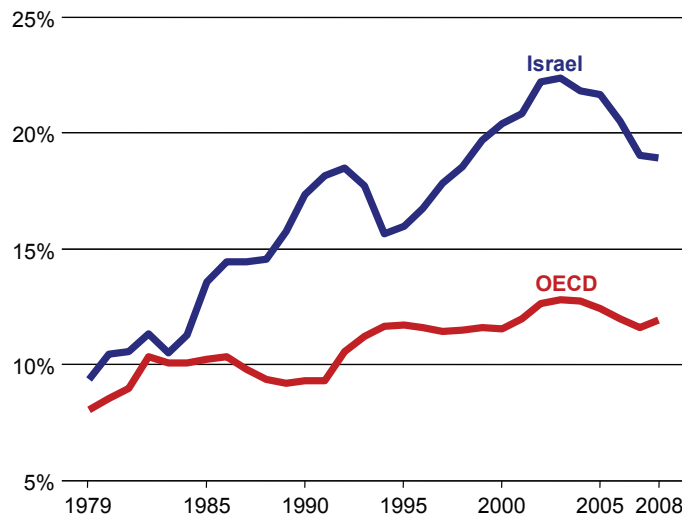
The ultra-Orthodox and Muslim Arab populations play a major role in Israel's high fertility rates relative to the OECD (Figure 6). If children born in these groups receive a good education in core subjects – which they are not receiving today – they will be better able to integrate in an open and competitive economy and will provide Israel with an advantage over many Western countries that face an increasing need to import labor from abroad (as immigrants or foreign workers). But if the ultra-Orthodox and Arab Israelis continue to receive a poor educational toolbox, they will find it increasingly difficult to become a part of a modern labor market, with a good chance of reliving their parents' high rates of non-employment – with all that this implies for the future of Israel's economy and society.

⁴ Within the group of Muslim Israeli women, the Bedouin women in the Negev desert have exceptionally high fertility rates.

4. Men in the Labor Market

The non-employment situation illustrated in Figures 2 and 3 has not always been typical of Israel. The country's labor market underwent some major changes in recent decades. Figure 8 show the long run non-employment trends among 35-54 year old men in Israel and in the OECD since 1979.

Figure 8
Male Non-Employment Rates, Israel and OECD, 1979-2008
 as percent of 35-54 year-old male population



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: CBS, OECD.

Three decades ago, rates of male non-employment in Israel and the OECD were similar, 9.4 and 8.1 percent respectively. Over the years, non-employment in the OECD increased by 48 percent (from 8.1 to

11.9).⁵ During this same period, Israel's rate of non-employment more than doubled. This happened despite two periods of correction that followed two difficult periods in Israel's economy.

The large immigration wave from the former Soviet Union in the early 1990s led to sharp increases in Israel's unemployment rates. The relatively rapid integration of the new immigrants was accompanied by a decline in unemployment rates together with a decrease in non-employment rates – almost back to the level that had prevailed prior to the immigration wave. At that point, non-employment rates resumed their earlier upward trend from the 1980s.

The severe recession and wave of terror in the early 2000s contributed to the rise in non-employment rates during those years. The end of the recession by mid-decade improved the employment picture and rates of non-employment declined. Even so, rates of non-employment among Israeli men are currently much higher than those in the OECD.

What caused the increasing gap between non-employment rates in the OECD and in Israel over the past three decades? The OECD average serves as a form of control group reflecting changes in Western countries during these years. The greater increases in Israel's non-employment rates could be due to a number of reasons, requiring a separate examination that is beyond the scope of this study. In general, economic growth is accompanied by a continuous process of structural changes. As a result, demand for skilled workers grows as demand for unskilled workers declines (in relative terms). If the share of educated workers in the Israeli economy does not increase along with the rising demand for such workers, it is possible that many workers lacking the necessary skills will find it increasingly difficult to find employment in the labor

⁵ A possible explanation for the rise in non-employment rates among men in the OECD could be related to the process of aging in countries belonging to the organization. For example, if over the decades the share of 50+ year-olds increases within the 35-54 age group in the OECD, and if non-employment rates of this age group are high relative to younger age groups, this may be a contributing factor for the increase in non-employment in the OECD observed in the figure.

market. Also, as Israel imports more unskilled foreign workers, it crowds out more and more unskilled Israelis from the labor market.

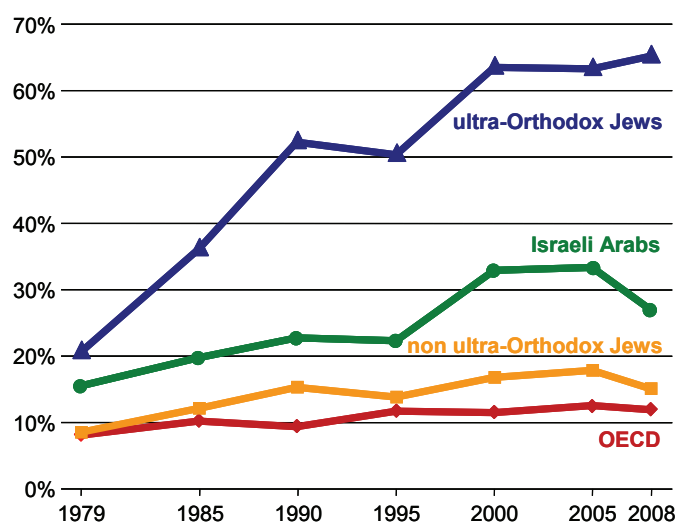
Another contributing factor is undoubtedly the poor state of Israel's education system (described in the chapter "Israel's Education System – An International Perspective") in the core subjects, which undermines the prospects of many children to acquire knowledge that might have helped them realize their potential.⁶ Furthermore, the less adequate Israel's physical infrastructure – especially its transportation infrastructure and the limited access to rapid and inexpensive means of transportation – the more Israelis find it difficult to find employment within a reasonable and inexpensive distance from their homes.

Figure 9 divides Israeli men aged 35-54 into three groups. In 1979, rates of non-employment among non-ultra-Orthodox Jewish men (8.5 percent) were almost identical to male non-employment rates in the OECD (8.1 percent). Since then, a gap developed in the rates of non-employment between the two groups – possibly due to some of the reasons outlined above.

Differences between rates of non-employment among Arab Israeli men (15.4 percent) and those of non-ultra-Orthodox Jewish men (8.5 percent) in 1979 increased only slightly by 1995, from a gap of 6.9 percentage points to one of 8.6 percentage points. In the second half of the 1990s, the gap almost doubled, reaching 16.1 percentage points by 2000. During these years there was a sharp hike in the number of unskilled non-Israeli workers employed in Israel. The primary reason for this rise in non-employment rates among Arab Israeli men may have been their replacement by foreign workers. Non-employment rates among Arab Israeli men remained high until 2005 and have since declined, as did those of non-ultra-Orthodox Jewish Israeli men. Most likely, these

⁶ This is not meant to imply that the share of adults with academic degrees is low in relation to the West, as will be shown. The problem is that many individuals with high potential are unable to reach higher education because of the inadequate primary and secondary education that they receive.

Figure 9
Male Non-Employment Rates, 1979-2008
 as percent of 35-54 year-old male population



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
 Data: CBS, OECD.

declines in non-employment were due to the rebounding of the Israeli economy from the deep depression earlier in the decade.

In 1979, rates of non-employment among ultra-Orthodox men aged 35-54 were fairly high (20.6 percent) compared to the OECD average and to non-ultra-Orthodox Jewish men. These rates tripled within just 21 years to 63.4 percent by 2000. In contrast to the other two Israeli groups of men, as the economic situation improved between 2005 and 2008 and non-employment among Arab Israeli and non-ultra-Orthodox Jewish men fell, non-employment among ultra-Orthodox men rose from 63.1 to 65.1 percent.

Berman (2000) provides a picture that supplements the one in Figure 9 with regard to ultra-Orthodox men. In 1980, 41 percent of ultra-Orthodox

men aged 25-54 were enrolled full-time in *yeshivas*. By 1996, this share had increased to 60 percent. The employment situation among ultra-Orthodox men is extraordinary in terms of its severity for two main reasons: it has worsened considerably over the past decades, and there is no relation between employment rates among the ultra-Orthodox and the state of the economy.

What occurred between 1979 and 2008 that enabled such a substantial increase in the share of non-employed prime working age ultra-Orthodox men? One oft-cited explanation by Israeli ultra-Orthodox in private conversations is culture – though employment patterns among ultra-Orthodox men in other Western countries are quite different from those in Israel.

The National Economic Council (2009) compares 2006 employment rates among ultra-Orthodox men aged 16-60/64 in England (67 percent) with employment rates among all English men (79 percent), finding a difference of 12 percentage points between the two groups. The rate of employment among ultra-Orthodox men in England was 29 percentage points higher than that of Israeli ultra-Orthodox men of the same age (38 percent), while the employment rate of ultra-Orthodox women in England (47 percent) was seven percentage points lower than that of same-age Israeli ultra-Orthodox women (54 percent). These differences in employment rates exist elsewhere as well. Employment rates among ultra-Orthodox Jews in New York are also higher than those of the ultra-Orthodox Jews in Israel (Gonen, 2000). Even if one were to argue that the large employment differences between ultra-Orthodox in Israel and abroad might be due to cultural differences between countries, this argument does not adequately explain how male ultra-Orthodox non-employment rates within Israel could have tripled within the span of just two decades.

Another common explanation given for the high rates of non-employment among the ultra-Orthodox is their desire to avoid mandatory conscription to the IDF. Israeli law exempts all men from obligatory service who are enrolled in a *yeshiva*. However, these conditions also

prevailed 30 years ago, when non-employment rates were less than one-third of what they are today.⁷ According to the Economic Planning Administration of the Ministry of Industry, Trade and Labor (2009), which bases its study on the Central Bureau of Statistic's Social Survey for 2005-2007, 45 percent of ultra-Orthodox men aged 30-64 previously served or are currently serving in the IDF. Among ultra-Orthodox men aged 20-29, only 11 percent previously served or are currently serving in the IDF – compared with 91 percent among non-ultra-Orthodox Jewish men of the same age.

Part of the explanation for the high rates of non-employment may be due to the way that ultra-Orthodox Jews are identified in the sample – on the basis of the “last place of study” variable in the CBS's Labor Force Survey. For example, if non-employment rates among the religious Jews who are not ultra-Orthodox are lower than those among the ultra-Orthodox, and if more of this religious population used to go to a *yeshiva* after secondary school in the 1970s and 1980s compared with those who attend a *yeshiva* today, then part of the explanation for the rise in non-employment in the figure may be due to the different mix of the population defined here as ultra-Orthodox.

The facts, however, suggest that the process is actually operating in the opposite direction. A considerable proportion of the population previously defined as “traditional” or “religious” has become more religious and even ultra-Orthodox. A good example of this is the group of people who vote for the *Shas* political party, whose numbers have increased considerably in recent decades. As this phenomenon becomes more widespread, it is possible that changes in the population defined by the “last place of studies was a *yeshiva*” variable have had the opposite effect on non-employment numbers than described above. This is a population group that did not necessarily graduate from a *yeshiva* but

⁷ The initial number of exemptions in 1948 for those studying in *yeshivas* was 400, but by as early as 1953, it had reached 1,240. The number of exemptions reached 4,700 in 1968 and 16,000 in 1985. Today, over 40,000 ultra-Orthodox men receive exemptions each year from the military draft.

from a State-Religious secondary school (and at the time was not considered ultra-Orthodox) but has adopted and currently follows an ultra-Orthodox lifestyle regarding employment, military service, children's schools, and so on.

Another possible explanation, as noted above, is that many ultra-Orthodox Jews may be working, but do not truthfully declare their employment situation. Even if this is a large-scale phenomenon, only a substantial change in the share of those who are untruthful with regard to their work status could explain the large changes that have taken place in the extent of non-employment among ultra-Orthodox men aged 34-54. There does not appear to be any particular reason to assume that the share of non-law-abiding ultra-Orthodox Jews has increased by such a magnitude as to explain the increase in the rate of non-employment. In any event, if the explanation for the high and rising non-employment among ultra-Orthodox Jews lies in a culture that endorses not truthfully declaring employment, widespread tax evasion and fraudulent receipt of welfare benefits, then a root source solution should focus on enforcing the country's laws on all parts of Israeli society.

Since no major changes took place in the requirements for compulsory military service,⁸ and since there have probably not been large changes in the culture of fraudulent tax reporting, then the real explanation for the large rise in ultra-Orthodox non-employment rates is probably due to some other factor – quite possibly, the various forms of benefits and subsidies that the government provides Israel's ultra-Orthodox population. If the total amount of benefits provided to the average ultra-Orthodox family increased by a large amount, then this could enable the families to adopt non-work as a way of life, albeit at relatively low

⁸ If the requirement to choose between compulsory military service or enrollment in a yeshiva has not changed in any major way since 1979, and yet rates of non-employment have tripled, then it is possible that the source of the problem is unrelated to one solution favored by some in Israel, that of granting the ultra-Orthodox a blanket exemption from military service so as to free them from the purported need to study in a yeshiva to avoid the draft.

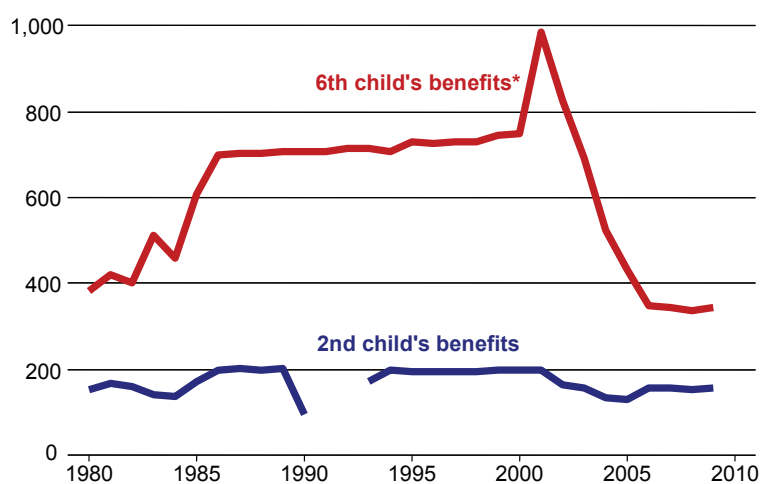
income levels. Child benefits have grabbed headlines in recent years, but it is possible that the research emphasis until now, which had been primarily on the effect of the benefits on ultra-Orthodox fertility, has been missing the main effect of this financial support – its impact on employment.

Figure 10 shows the size and changes in child benefits since 1980 for the second and sixth children in the family. Over the past three decades, there were no major changes in the second child's allowance (net of inflation). This was not the case regarding benefits from the sixth child and higher. As early as 1980, the allowance for the sixth or later child (NIS 384 per month, in 2008 prices) was at least double the second child allowance (NIS 153). From 1980 to 1985, it increased by 58 percent. By the end of the decade, in 1989, this benefit reached NIS 708 per month, 84 percent more than its level at the beginning of the decade. During the

Figure 10

Monthly Child Benefits by Child, 1980-2009

2008 prices



* For 6th or later child.

Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: National Insurance Institute.

1990s, the sixth-child allowance rose even further, reaching NIS 748 in 2000, spiking up in 2001 – with the Halpert Law – to NIS 987 (2.5 times its 1980 level, in real terms). Since then, child benefits declined markedly from the sixth child and on, to NIS 344 in 2008 prices, and today it is 10 percent below its 1980 level. While child benefits have apparently had little impact on ultra-Orthodox birth rates, their expansion over the years – keeping in mind that the sixth child allowance is multiplied by the number of children in the family – may have contributed to the increase in ultra-Orthodox non-employment rates.

But this is still not the full picture and there are other routes through which large budgets are being transferred to the ultra-Orthodox population. These other income sources facilitate: (a) the large growth in non-employment rates, described in Figure 9; and (b) high birth rates – despite lack of employment income – above and beyond other population groups in Israel and in the West (Figure 7).

Berman (2000) details the dependency that families headed by *yeshiva* students have on public assistance. In 1993-1996, only 18 percent of these families' income – compared with the national average of 81 percent – came from work (primarily the wife's). Assistance from institutions (aside from National Insurance benefits of various kinds) mostly in the form of scholarships for *yeshiva* students comprised 39 percent of their incomes. Child benefits contributed another 32 percent. In other words, at least 70 percent of the ultra-Orthodox family income – excluding pension payments, disability or other National Insurance programs – came from various forms of aid and benefits, mainly from the government. Berman finds that government assistance to ultra-Orthodox families more than doubled between 1979-1982 and 1993-1996.

The National Economic Council Report (2009) lists some possible funding sources for an ultra-Orthodox family with six children under the age of 18, including two under age 3. The family receives NIS 910 in child benefits. If the husband does not work, the family gets another NIS

700 as a *kollel*⁹ scholarship from the Ministry of Education, about NIS 1,000-2,000 (this is a minimum estimate) from additional *kollel* scholarships, and an additional NIS 500 in vouchers for the holidays (monthly average value) from charities. If the wife does not work, the family receives another NIS 940 in benefits from the Ministry of Religious Affairs. Together, this totals an assistance package of NIS 4,000-5,000 per month for a family in which neither parent is working. This does not include various subsidies in housing, child-care, transportation, municipal taxes, and so on, that ultra-Orthodox families often receive.

When the goal is a source treatment of non-employment among working age ultra-Orthodox men, then it is insufficient to focus just on the benefits and assistance that apparently enable such atypical rates of employment and fertility. The State of Israel needs to start focusing on the contents of the educational toolbox provided pupils in the ultra-Orthodox school system. Those who do not learn the subjects necessary for coping successfully in a modern labor market will find it hard to live above the poverty line as adults. In light of the fact that this population group – together with the Arab Israelis who also receive a poor education (albeit for other reasons) – will be the majority in Israel, time is rapidly running out for bringing a core curriculum to their schools that will provide the tools necessary to work in a global economy and to be contributing citizens in a modern democratic society.

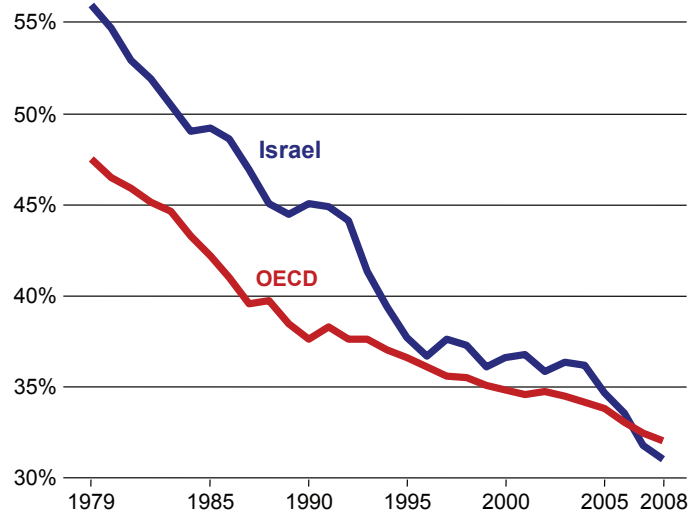
⁹ *Kollels* are another name for what are called in Hebrew “higher” *yeshivas*.

5. Women in the Labor Market

Employment patterns among women aged 35-54 are very different from those of men, both in Israel and in the OECD countries (Figure 11). While male non-employment rates increased, female non-employment rates dropped considerably. Women's non-employment rates in the OECD declined from 47.5 percent in 1979 to 32.0 percent in 2008, a decrease of 15.5 percentage points. The main explanation for the large decline in non-employment rates among women has to do with women's increased levels of education. Higher levels of education are associated with increased income, and as incomes rise, the price of choosing the non-employment alternative rises too, encouraging more women to join the labor market. Other factors that decrease female non-employment

Figure 11

Female Non-Employment Rates, Israel and OECD, 1979-2008 as percent of 35-54 year-old female population



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: CBS, OECD.

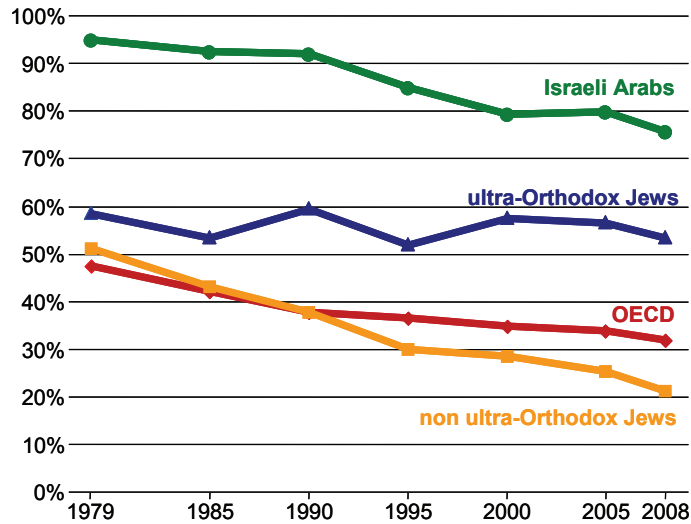
include opening public or subsidized day care centers and kindergartens, laws forbidding discrimination against women, fully or almost fully paid maternity leaves, and the expansion of the service sector in the economy.

Non-employment among Israeli women has declined even more precipitously than the OECD average. In 1979, the rate of non-employment among women was 56.0 percent, or 8.4 percent above the corresponding rate in the OECD. Within three decades, non-employment among Israeli women aged 35-54 fell to 31.0 percent, a decline of 25.0 percentage points, placing Israeli women in 2008 a full percentage point below the average for women in the OECD.

Two population groups contributed to the substantial decrease in Israeli non-employment among women: non-ultra-Orthodox Jewish women and Arab Israeli women. In 1979 the rate of non-employment among non-ultra-Orthodox Jewish women was 51.2 percent, or 3.7 percent above the corresponding rate in the OECD (Figure 12). By 2008, their rate of non-employment dropped by more than half, to 21.2 percent – a decline of 30.0 percentage points that caused the gap between OECD women and non-ultra-Orthodox Jewish women in Israel to reverse itself since 1979. Non-employment rates among non-ultra-Orthodox Jewish women in 2008 were 10.8 percentage points lower than those of OECD women.

Among Arab Israeli women, non-employment rates were very high in 2008 (75.7 percent). But 30 years ago, nearly all (95 percent) prime-working age Arab Israeli women were not employed. So high current rates notwithstanding, a substantial change in the employment rates of female Arab Israelis has taken place over the past three decades. In fact, between 1990 and 2008, the gap in non-employment rates between Arab Israeli women and non-ultra-Orthodox Jewish women – which was quite large – remained stable: a gap of 54.3 percentage points in 1990; 54.8 percentage points in 1995; 50.9 percentage points in 2000; 54.6 percentage points in 2005; and, 54.5 percentage points in 2008. That is, for the past two decades, the rate of decrease in non-employment among Arab Israeli women was similar to that of non-ultra-Orthodox Jewish

Figure 12
Female Non-Employment Rates, 1979-2008
 as percent of 35-54 year-old female population



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: CBS, OECD.

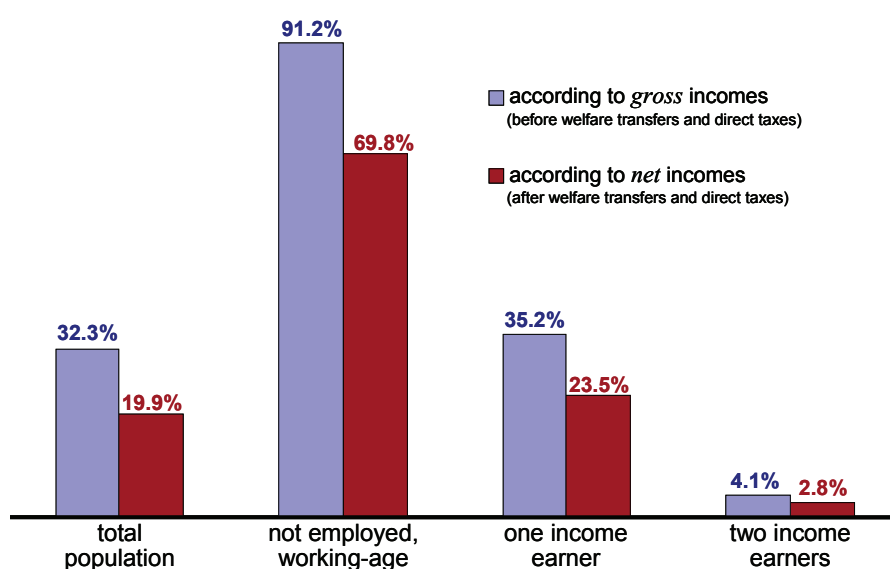
women – though rates of non-employment among Arab Israeli women still have a long way to go before they resemble those of non-ultra-Orthodox Jewish women.

The main characteristic of non-employment among ultra-Orthodox women is its relative stability over the last three decades. On the one hand, they did not display the rise in non-employment that typified ultra-Orthodox men. On the other hand, they also did not display the substantial decrease in non-employment rates among women that occurred in other countries and other sectors in Israel. In 1979, rates of non-employment among ultra-Orthodox women were 7.3 percentage points higher than those of non-ultra-Orthodox Jewish women, and in 2008 this gap increased considerably – reaching 32.2 percentage points.

6. Education and Employment

The issue of employment is strongly linked to the problem of poverty. Figure 13 shows 2007 data published by Israel's National Insurance Institute (Annual Survey, 2008).¹⁰ Among families whose working age head of household is not employed, 91.2 percent live below the poverty line in terms of gross income (i.e., before transfer payments and taxes). When one of the adults in the household earns an income, the incidence of poverty in terms of gross income drops to 35.2 percent, and with two

Figure 13
Percent of Families Under Poverty Line, 2007



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: National Insurance Institute.

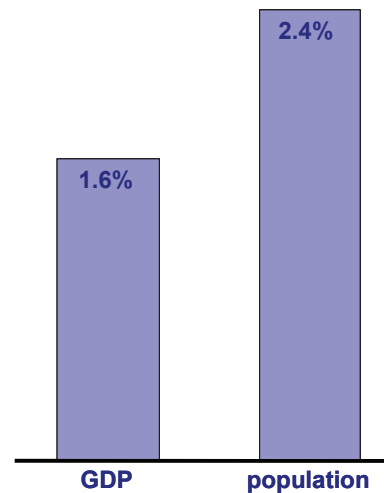
¹⁰ The National Insurance Institute is the Israeli version of the American Social Security Institute.

or more income earners, only 4.1 percent of all households live below the poverty line. Poverty in terms of net income (that is, after transfer payments and taxes) paints this picture in even greater relief. With two or more providers, only 2.8 percent of families live below the poverty line in terms of net income.

Nonetheless, according to the National Insurance Institute (*Poverty and Social Gaps Report, 2008*), working poor families constitute 46 percent of all poor families in Israel. The National Insurance Institute suggests two main reasons for this: a high percentage of people who are employed part-time and low salaries. One-third of the poor work full-time and earn less than minimum wage – indicating serious law enforcement problems.

Another important reason that there are so many working poor in Israel, perhaps even more important than the reasons specified by the National Insurance Institute, is the level of education in Israel that affects not only poverty but also the general standard of living in Israel. Figure 14 compares Israel and the United States with respect to both population and gross domestic product (GDP). While Israel's population equaled 2.4 percent of the American population in 2008, GDP in Israel that year was only 1.6 percent that of the United States'.

Figure 14
Comparison of Israel and U.S., 2008
ratio of Israel to U.S.



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: CBS, OECD.

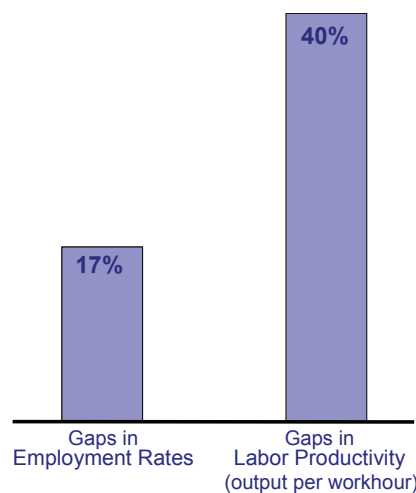
Two primary factors contributing to the large output gap between the two countries are employment and productivity. Figure 15 shows that the number of Americans employed as a percentage of the United States' working age population was 17 percent higher than the rate of employment in Israel.

The other key factor underlying the relative differences in production between the two countries is large gap in labor productivity. The fact that many Israelis do not work is not enough to cause output gaps of the magnitude observed between the United States and Israel. The average Israeli worker's output per hour worked is considerably

lower than the average American worker's. While there are areas where the productivity of Israeli workers does not differ by much from American productivity levels – and in some cases, even exceeds American productivity – the American lead over Israel at the national level is very large. After accounting for differences in purchasing power parity between the countries, GDP per hour worked in the U.S. is 40 percent higher than GDP per hour worked in Israel.

Economic growth in GDP per capita stems from the ability to increase productivity. This comes from upgrading the physical capital and infrastructures inherent in the manufacturing process, as well as from improving human capital – particularly through education. Human capital improvements, which increase productivity, make it possible for

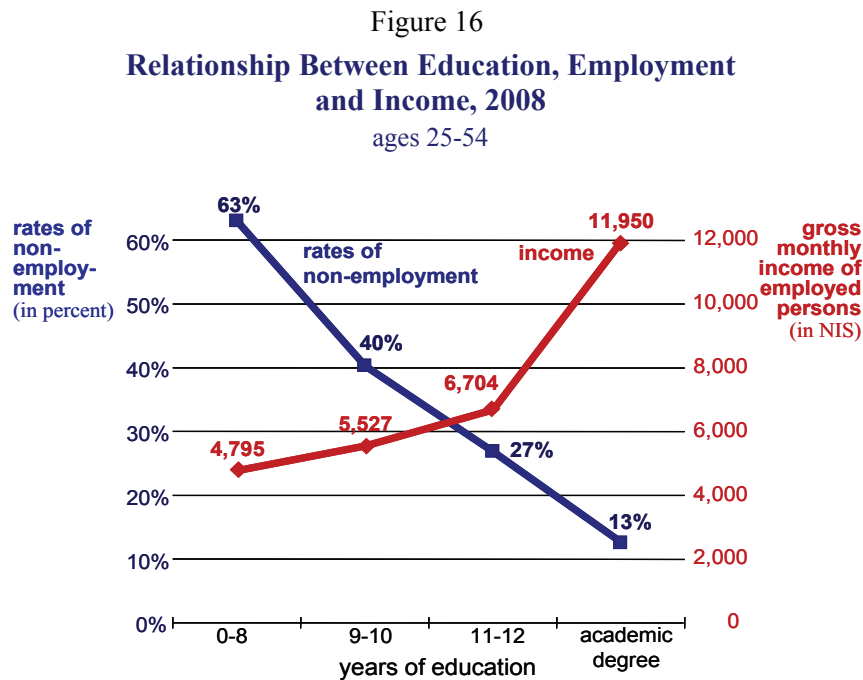
Figure 15
**Labor Force Comparison,
U.S. and Israel, 2008**
percent difference between U.S. and Israel



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: CBS, OECD.

employers to pay employees more, which would contribute to alleviating part of the poverty problem and the low wages currently paid to many Israeli workers. As an economy grows, it needs more and more educated and skilled individuals, thereby increase their chances to find work and be employed.

These relationships do not exist only in theoretical models. They happen to be stylized facts characterizing Western countries, Israel included. Figure 16 shows the relationship between education, employment and income in Israel in 2008. Among 25-54 year-olds with 0 to 8 years of schooling, 63 percent were not employed and those who were employed earned an average monthly income of NIS 4,795. When the number of years of schooling increases to 9-10, average monthly income rises to NIS 5,527 and non-employment rates drop to 40 percent. Employment prospects for individuals with 11-12 years of schooling are



Source: Dan Ben-David, *Economic Quarterly*, 2003 (updated).
Data: CBS, OECD.

higher than those of the two other groups, with a non-employment rate of 27 percent. The labor market for academics with higher education is the best of all groups. Only 13 percent of them were not employed while the income of those who were employed reached nearly NIS 12,000. In Israel circa 2008, 46 percent of the 25-54 year-olds had no education beyond 12 years of schooling, while 29 percent of them had academic degrees.¹¹

As a result of major differences between secondary school education systems throughout the Western world, it is difficult to compare adult graduation percentages across countries. While the OECD provides data on the share of secondary school graduates, the variety of definitions for the term “secondary school” renders such comparisons of graduates meaningless. An alternative approach is to compare the number of years of schooling among working age adults across countries. Such international comparisons are also not as accurate as one would hope for, since a year of schooling in one country is not necessarily equivalent to that in another country. Table 1 in the chapter “Israel’s Education System – An International Perspective” shows just how much variability there is among Western education systems.

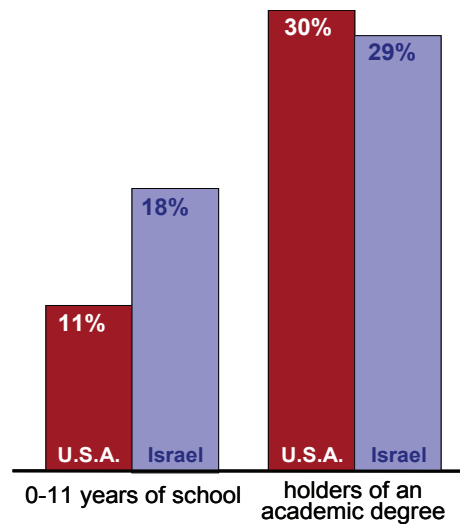
A comparison of the U.S. labor force with Israel’s in terms of education levels among adults can shed some light on the employment, productivity and output differences between the two countries, as depicted in Figures 14 and 15. Completion of 12 years of schooling is sufficient to be considered a “secondary school graduate” in the United States while in Israel, a secondary school graduate must be eligible for a Matriculation Certificate (*te’udat bagrut*), a concept with no equivalent in the United States, making comparisons of secondary school graduates much less meaningful.¹²

¹¹ Income inequality between education groups is not necessarily indicative of just productivity differences between groups. Such inequality can also result from, among other things, differences in employment rates across various occupations and the degree of organized labor in the different workplaces.

¹² In some American states there are secondary school exit exams.

On the other hand, if a person's level of education does not exceed 11 years of schooling, then it is unlikely that the person graduated from secondary school in either country. Figure 17 compares the 25-54 year-old populations of the two countries in terms of their education levels in 2008. While the share of prime working age adults with academic degrees is very similar in the two countries – though one could argue about the value of such a comparison in light of the variability of the concept within countries and across institutions of higher education – the share of adults with no more than 11 years of school is over 50 percent greater in Israel than in the United States. Figure 16 illustrated the link between higher non-employment rates, lower income levels and low level of education. Hence, the larger the share of relatively uneducated

Figure 17
Education Among Ages 25-54, 2008
 comparison between Israel and the United States

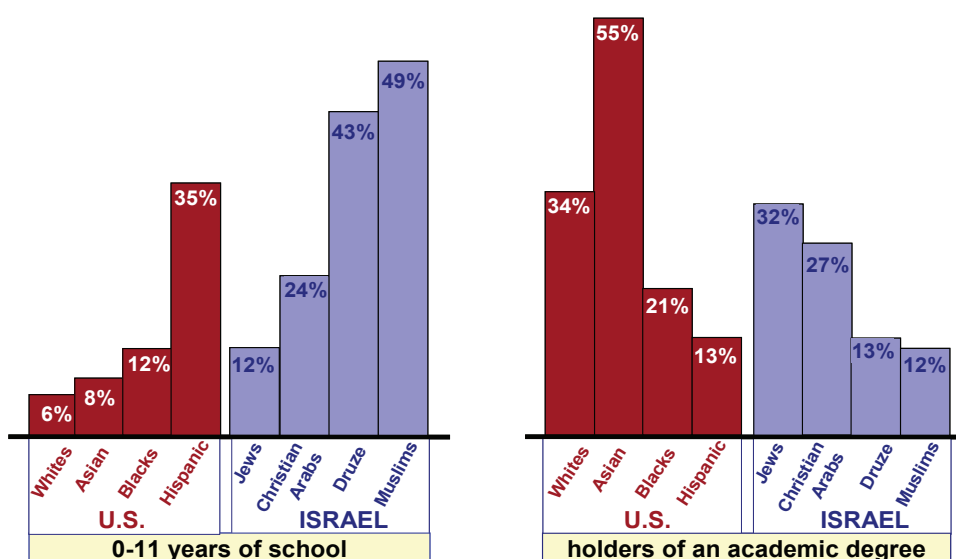


Source: Dan Ben-David, Taub Center and Tel-Aviv University.
 Data: CBS, U.S. Census Bureau.

individuals within the working-age group, the lower the expected rates of employment and productivity.¹³

Despite the very large differences in scale between them, one common characteristic shared by both the United States and Israel – but not by many other countries – is the degree to which both are countries of immigrants with very heterogeneous populations. Figure 18 compares the level of education between major population groups at ages 25 to 54 in

Figure 18
Education Among Ages 25-54, 2008
 comparison between Israel and the United States



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
 Data: CBS, U.S. Census Bureau.

¹³ The emphasis here is on the supply side in the labor market. Comparing levels of education among workers in Israel and the United States will yield similar employment rates between the countries the more the demand side for employees in both countries is similar.

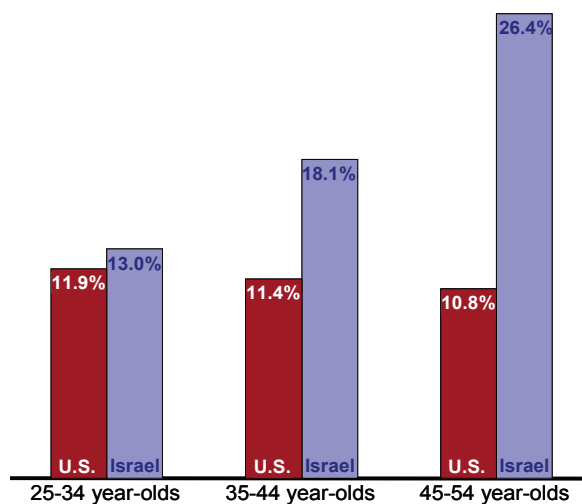
both countries. The population shares holding academic degrees among white Americans (34 percent) and Jews in Israel (32 percent) are very similar. The highest rate of college graduates at these prime working ages is among Asian Americans, with more than half holding an academic degree. The American group with the lowest shares of academics is that of the Hispanics, with 13 percent of graduates – an identical percentage to that of the Druze in Israel and one percentage point higher than Muslim Arab Israelis.

At the other end of the educational achievements spectrum are prime working age adults with no more than 11 years of schooling. The rate of such secondary-school dropouts among white Americans (6 percent) is half that of Israeli Jews (12 percent). In fact, the dropout rate among Israeli Jews is identical to that of African-Americans. The share of dropouts among Israeli Druze (43 percent) and Muslim Arabs (49 percent) is higher than that of any major ethnic group in the United States.

Despite the large disparity between the two countries in the share of prime working age high-school dropouts, this gap has been closing over time. Figure 19 shows very large differences between the countries for 45-54-year-olds, 10.8 percent of whom did not finish secondary school in the United States compared to 26.4 percent in Israel. The gap falls considerably among 35 to 44-year-olds, to 11.4 versus 18.1, and is almost eliminated among 25 to 34-year-olds, 11.9 percent versus 13 percent, respectively.

As shown in Appendix Figure 2, the narrowing gaps in dropout rates are reflected in all four main population groups in Israel. The share of dropouts among Muslim Arab Israelis aged 25-34 (36 percent) is similar to that of Hispanic Americans (33.1 percent) in the same age group, while among Israeli Druze the rate (27.6) is lower than both. The situation among Christian Arab Israelis (10.8 percent) is slightly better than that of African-Americans in the United States (11.2 percent), while the gap between Israeli Jews (7.5 percent) and whites in the United States (5.7 percent) of the same age groups is considerably lower.

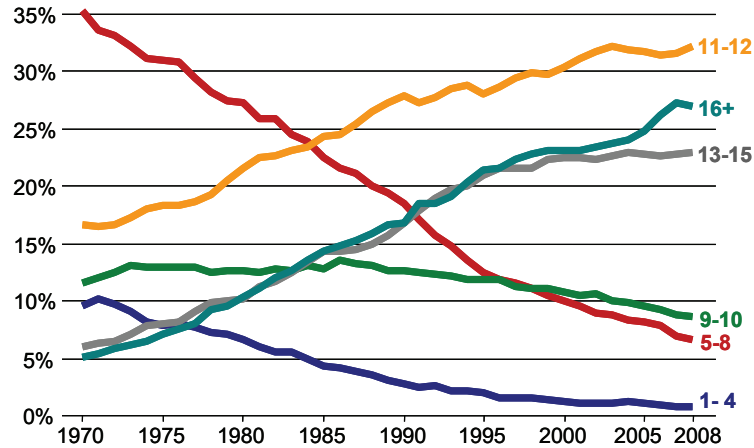
Figure 19
Share of Population with 0-11 Years of Education At Most



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: CBS, U.S. Census Bureau.

Figure 20 shows the large changes that have occurred over the past four decades in educational attainment among 35 to 54-year-olds in Israel. By 2008, the group with 1-4 years of schooling has all but disappeared. The largest group in 1970 was that of individuals with 5-8 years of schooling. Thirty-eight years later, the size of this group was reduced by half, while its share in the population fell from 35 percent to 7 percent. The largest group of 35 to 54-year-olds today is those with 11 to 12 years of schooling. This group grew five fold since 1970 and its share in the population almost doubled, from 17 to 32 percent. The second largest group in 2008 – comprising individuals with 16 or more years of

Figure 20
Population Aged 35-54, by Years of Education, 1970-2008
 each education group as share of total age group



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

schooling – grew faster than all other groups.¹⁴ More than one-quarter of those aged 35-54 had 16+ years of schooling in 2008, compared to just 5 percent in 1970.

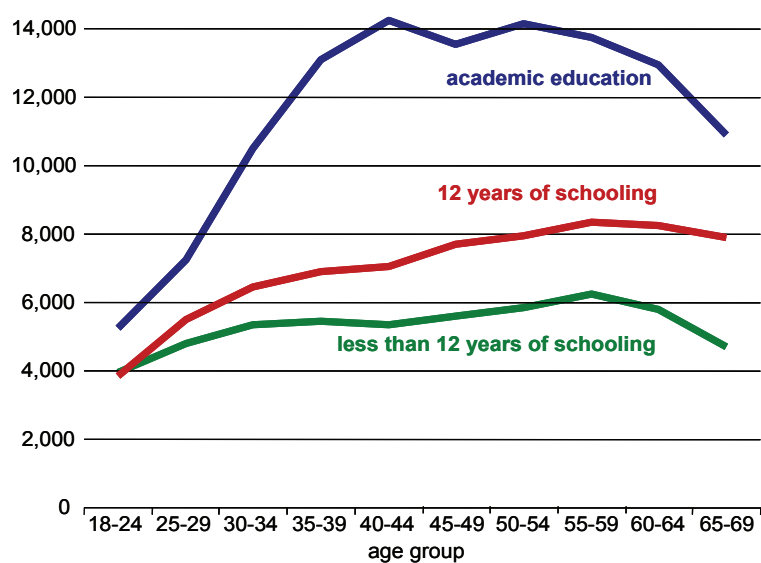
Figure 21 sharpens the picture of the relationship between education and income in Israel. Israel's population is divided into five-year age groups, with the exception of the bottom of the adult age scale. In this youngest group, aged 18-24, no income differences are observed between

¹⁴ Over the years, the Central Bureau of Statistics has changed some of the variables and definitions in its Labor Force Surveys. In contrast to current Surveys, those from many years ago do not include variables indicating whether individuals hold academic degrees. Hence, the second-best option available for gauging changes over the long run is to utilize a different variable – one that has existed over the entire time span – indicating 16+ years of schooling as an approximation for receipt of an academic degree.

those who completed 12 years of schooling and those who did not. As age – and, presumably, work experience – increase, the incomes of both groups rise as well, but with a steadily growing income advantage to those who completed 12 years of schooling. In the ages close to retirement, monthly income begins to decline in both groups.

The highest incomes in the figure are in the group with an academic education. While the gap between them and the other two groups is low at younger ages, by the 40 to 44-year-old age bracket, the average monthly income of those with an academic degree reaches NIS 14,235, compared to an average of NIS 7,036 for individuals with 12 years of schooling and NIS 5,339 on average for those who did not complete secondary school.

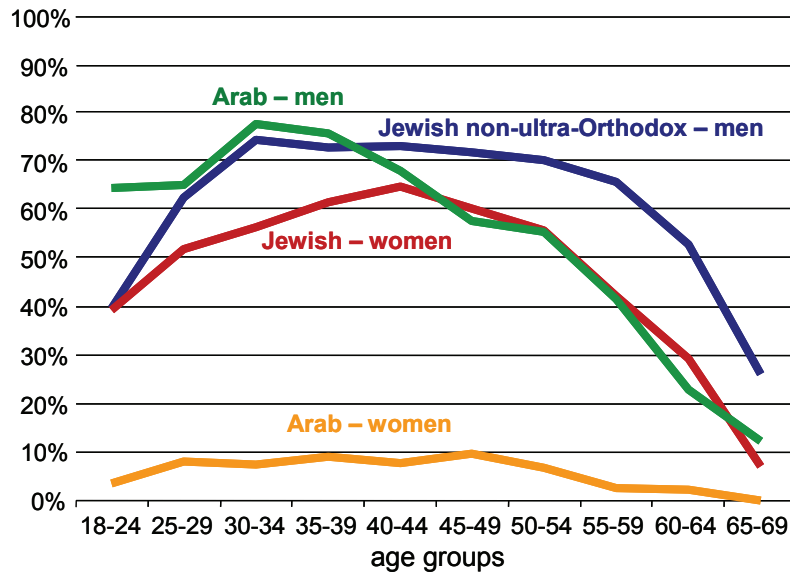
Figure 21
Incomes by Education and Age, 2008
 gross monthly income (NIS)



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

Figure 22 focuses on employment rates among groups of men and women who did not complete more than 11 years of schooling. Arab Israeli women in this group have the lowest employment rates, below 10 percent in all age groups. Among Jewish Israeli women, employment rates begin at 40 percent at the youngest ages, gradually rising to a peak of 65 percent in the 40 to 44-year-old age bracket, after which employment rates decline sharply until retirement age.

Figure 22
Employment Rates
 by groups with 0-11 years of schooling, 2008



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

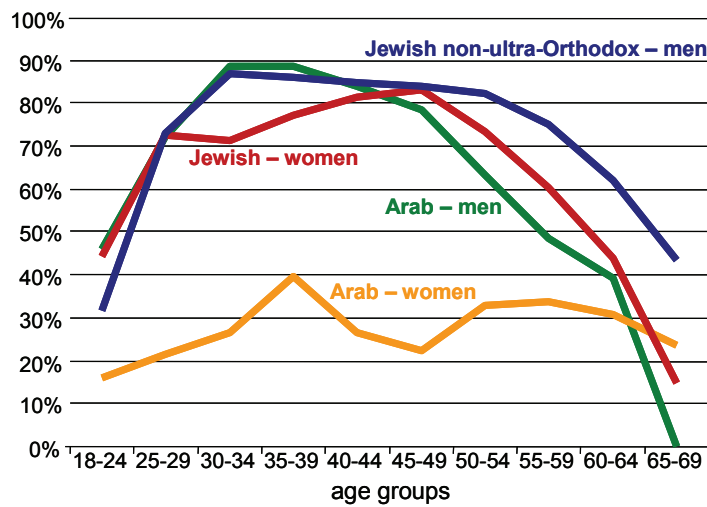
Employment rates of Arab Israeli men are almost identical to those of non-ultra-Orthodox Jewish men aged 25-39. They then begin a precipitous and continuous decline – unlike the relative stability of employment rates among non-ultra-Orthodox Jewish men until their 50s. The steep decline in Arab Israeli male employment is similar to that of Jewish women from the mid-forties age bracket. It may reflect a combination of (a) physically demanding employment, which reduces the ability to keep working after age 40, and (b) an increased difficulty for people above the age of 40 (men and women, Arabs and Jews) to change jobs.¹⁵

When the focus moves to those with a matriculation certificate, signifying completion of secondary school in Israel, the employment picture improves for all groups (Figure 23). Employment rates among Arab Israeli women rise to 30 percent in most age groups and are much higher than the secondary school dropout rates of employment. Among young people, aged 18-29, there is great similarity of employment rates among the other three groups: Arab Israeli men, non-ultra-Orthodox Jewish men and Jewish women. While the resemblance in employment rates between Arab Israeli and Jewish men continues until ages 40-44, female employment rates stabilize in their late 20s and do not keep rising like the men's. A major reason for this may be that these ages, which are usually of the ages for childbirth and child care, make it difficult for many women to remain in or to re-enter the labor market. Employment

¹⁵ Another explanation for the findings in the figure may relate to the nature of available labor force data in Israel: the existence of annual surveys providing cross-sectional data and the absence of longitudinal surveys following the employment of a person or group over time that would allow construction of time series. As a result of the *de facto* restriction to cross-sectional analysis, there may be cohort effects that reflect differences in behavior and work between age groups that are unrelated to education. Saadi and Lewin-Epstein (2001) examine the phenomenon presented in Figure 22 over time, controlling for cohort effects, and find a picture similar to that in the figure – i.e. a steep decline in the employment of Arab men as they get older, which is not the case among Jewish men. Saadi and Lewin-Epstein find an empirical corroboration to arguments (a) and (b) here.

rates of Jewish women and men once again become similar in their late 40s. From that point onward, employment rates of Jewish women decline more quickly than those of Jewish men, while Arab Israeli men’s employment rates decline even faster and are substantially lower among older people than among similarly aged men and women in the Jewish population.

Figure 23
Employment Rates
 by groups with a secondary school degree*, 2008



* Completion of matriculation (*Bagrut*) exams.

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

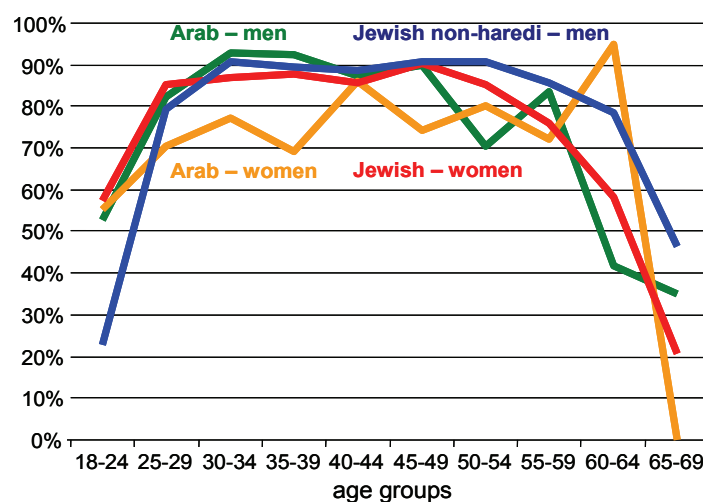
The great equalizer in terms of employment patterns is an academic degree (Figure 24). There is a considerable amount of similarity in rates of employment between men and women and between Jews and Arabs with academic degrees – though it is important to note that this is just an initial comparison that does not consider issues such as wages or full versus part-time employment. Because of the relative scarcity of Arab

Israeli women with academic degrees, the outcomes based on the Labor Force Survey exhibit a considerable degree of variability across age groups, but their employment rates tend to range between 70 and 80 percent. Employment rates among Arab Israeli men are highest between the ages of 30-39, with more than 90 percent of them employed. Close behind are non-ultra-Orthodox Jewish men with employment rates of around 90 percent from their mid-30s to their mid-50s. Israeli Jewish women's employment rates are almost identical, but a little lower in their mid-30s to late 40s.

Figure 24

Employment Rates

by groups with an academic degree, 2008

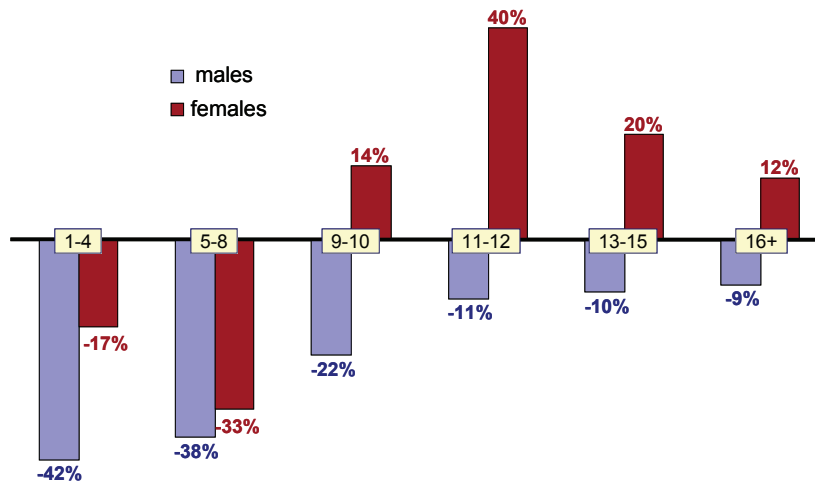


Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: CBS.

The relationship between education levels among 35-54 year-olds and changes in male and female employment since 1970 is portrayed in Figure 25 by means of cumulative percent changes. There was a decline in employment rates among all men in all education groups, with employment rates declining faster the lower the level of education. In other words, while employment rates of men with 16+ years of schooling fell by 9 percent from 1970 to 2008, the drop was 22% among those with 9-10 years of schooling, with a decline of 42 percent in the employment rates of men with less than five years of schooling.

Figure 25

Cumulative Changes Since 1970 in Employment Rates, 1970-2008
ages 35-54, by number of years of education



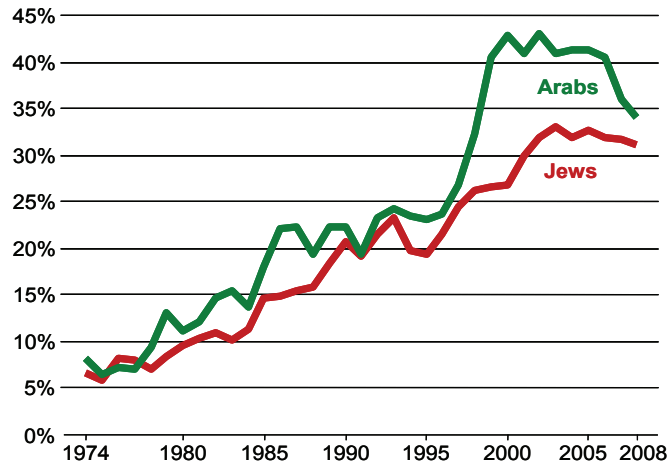
Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: CBS.

The picture is more complex when it comes to changes in the employment pattern of women aged 35-54 over the past four decades. On the one hand, employment rates of women with up to eight years of schooling declined while employment rates among women with nine or more years of schooling increased. On the other hand, there is none of the monotonicity in the rates of change characterizing employment patterns among men. The group with the largest increase in employment rates is that of women with 11-12 years of schooling – an increase of 40 percent. Employment rates of women with 16+ years of schooling increased by 12 percent during the same period.

While non-employment rates are affected by education levels, Figure 26 focuses on the similarities and differences since 1974 between Arab Israeli and Jewish men with no more than ten years of schooling. The structural changes inherent in the economic growth process led to a relative decline in the demand for workers with low education – and the effects of this are evident in Figure 26. There has been a steady rise in non-employment rates among prime working age male Jewish and Arab Israelis during the past three and a half decades. In some of the years between 1974 and 2008, non-employment rates of those aged 35-54 in both groups were very similar, and in other years those of the Arab Israelis were higher.

Differences in rates of non-employment between the two groups are especially noticeable in two periods: during the second half of the 1980s and since the latter half of the 1990s. One possible explanation for the relatively higher non-employment among Arab Israelis during the first period could be that this group may have been more affected by the Israeli government's Economic Stabilization Plan for reducing hyperinflation in 1985. The many cuts in government spending may have negatively impacted less-educated Arab Israelis more than less-educated Jewish men. Another possible reason for the non-employment gaps between the two groups during this period might be the first *intifada*, which may have negatively affected relationships between Jewish employers and Arab Israeli employees.

Figure 26
Non-Employment Rates, 1974-2008
 as share of 35-54 year-old male population with 1-10 years of education



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

The second period in which gaps in non-employment rates widened between Israeli Arabs and Jews began in the mid-1990s. During this period, there was a large increase in the number of unskilled non-Israeli workers, most of them employed as manual laborers. These foreign workers crowded out less-educated Israeli workers – primarily Arab Israelis (see a more direct comparison in the next section), though it is also possible to see an increase in non-employment among Jewish workers, albeit more moderate and delayed. The relative stability in high levels of non-employment among Arab Israeli men during the early 2000s, despite a reduction in the number of non-Israeli workers, may be due to the wave of terrorism emanating from the West Bank and Gaza and from rioting in some Arab Israeli towns and communities within the Green Line. The greater the effect that this may have had on Israeli Jews' willingness to buy from Arab Israelis or to employ them, the greater the impact on employment rates of less-educated Arab Israelis.

7. *Foreign Workers*

The primary key to raising living standards and reducing poverty is to increase employment and productivity. One of the main channels for doing so in Israel is to improve the country's human capital base. There are, however, additional policy instruments that affect employment.

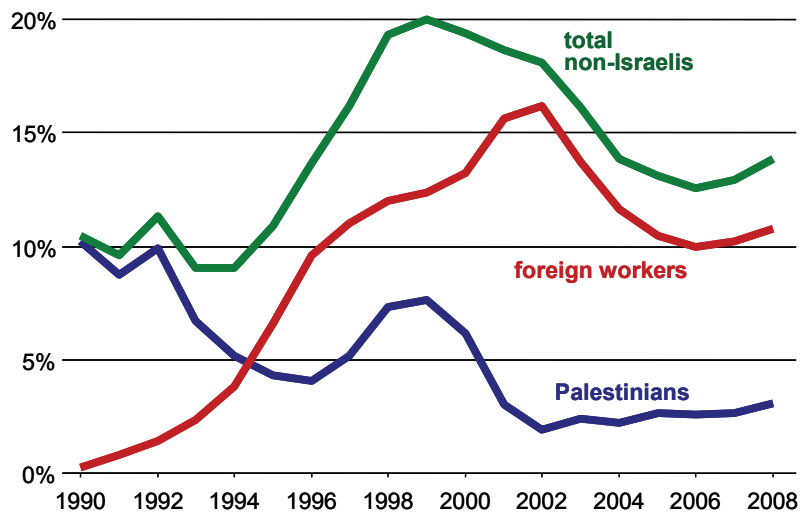
For several years, there has been a dichotomy between supply and demand in Israel's unskilled labor market. Government assistance, providing an important social safety net intended to minimize poverty problems, can sometimes be a disincentive to work. This can be a particularly strong work disincentive for those lacking the necessary skills for coping in a modern economy, whose potential earnings from work are not much greater than what they can receive from the government, whether through formal welfare budgets or through other budgets designated for specific population groups.

At the same time, Israel, which already has an abundance of unskilled citizens, has allowed the import of hundreds of thousands of additional unskilled workers from abroad. Figure 27 shows how this phenomenon developed over the past two decades. In the early 1990s, following the first *intifada*, restrictions were increased on the number of Palestinian workers from the occupied territories allowed into Israel. Data published by the Bank of Israel (2009) indicates that their numbers dropped by 44 percent, from 107,700 in 1990 to 60,087 in 1995.

In their stead, the government allowed employers to import foreign workers. In 1990 there were only 2,500 foreign workers in Israel. Within just five years, their number climbed to 92,525 (estimates on the number of foreign workers include both those who are legally allowed to work in Israel and those who are not). Until then, it could be argued that foreign workers merely replaced the Palestinians so that the share of non-Israelis during the first half of the 1990s did not change much (it ranged from 9 to 11 percent of workers in the business sector).

But in the second half of the 1990s, Palestinian workers began to return to work in Israel and, by 1999, their number (113,600) even exceeded that of 1990. Yet, the number of foreign workers in Israel never

Figure 27
Non-Israeli Workers, 1990-2008*
 as share of employed in business sector



* Includes legal and illegal workers.

Source: Dan Ben-David, *Economic Quarterly*, 2003 (updated).

Data: Bank of Israel.

fell back to its original 1990 level. In fact, quite the opposite occurred. While the number of Palestinian workers rebounded to earlier levels, the number of foreign workers continued to rise, doubling between 1995 and 1999, and reaching 184,600 by the end of the decade. The total number of non-Israeli workers reached nearly 300,000, or one out of every five workers in the Israel business sector, in 1999.

In 2000, with the beginning of a major terror wave, the number of Palestinians employed in Israel dropped again while that of foreign workers continued to grow. The foreign worker peak was reached in 2002 with 254,500 foreign workers in Israel (and 30,338 Palestinians). That year, the government decided to adopt and implement a policy to deport foreign workers residing illegally in Israel. This resulted in a decline in their numbers to 180,300 in 2006. Between 2006 and the end of 2008, the trend once again changed direction and an additional 31,000 foreign workers and 13,000 Palestinians were added, with the proportion of non-Israeli workers in the labor force returning to 13.9 percent, i.e., a ratio of one in seven workers in the business sector.

As noted, the economic growth process is one of structural changes in the economy. The productivity improvements underlying the growth process stem from – among other factors – an upgrading of skills in the labor force. In an economy where the demand for skilled workers is constantly growing, public policy should focus on reducing the supply of unskilled workers by converting as many as possible into skilled workers. Workers who upgrade their education and get vocational training fitting the needs of a modern economy will have an increased probability of finding jobs and earning higher incomes. The greater the share of workers who upgrade their education and skills, the greater the likelihood that those who do not undergo such an upgrade will also benefit (in terms of employment and incomes) because they will have to compete with fewer unskilled workers.

The policy of bringing unskilled foreign workers to Israel has precisely the opposite effect. It increases the supply of unskilled workers rather than facilitating its decline. The import of foreign workers adds

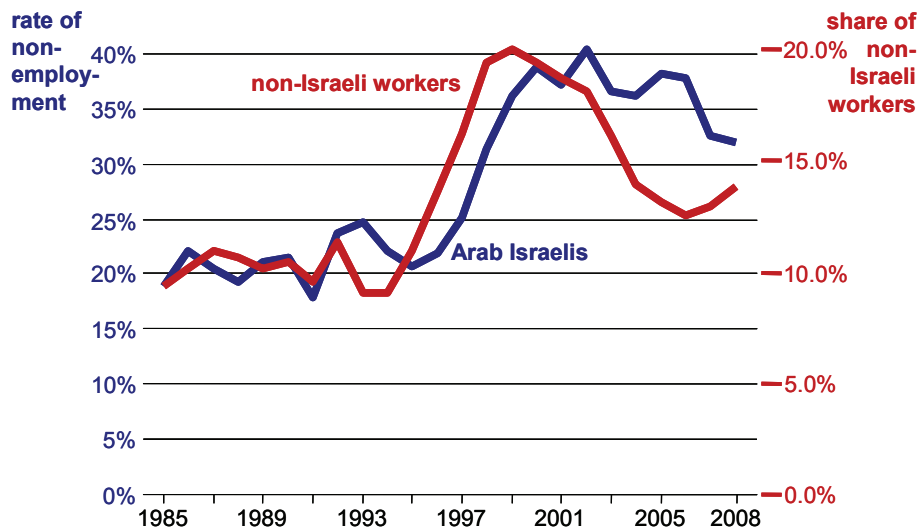
downward pressure on wages and crowds out unskilled Israeli workers from the labor market whose employment costs are higher.

Figure 28 shows a possible link between the share of non-Israeli workers in the business sector (shown in red along the right vertical axis) and the rate of non-employment among Arab Israeli men aged 35-54 (shown in blue along the left vertical axis). The share of non-Israelis in the business sector was relatively stable between the mid-1980s and the mid-1990s. The rate of non-employment among Arab Israeli men was also steady during those years. From 1995 to 1999, however, the share of

Figure 28

Non-Israeli Workers Versus Non-Employment in Israel, 1985-2008

rates of non-employment among Israelis aged 35-54 with 1-10 years of education versus the share of non-Israelis* in the business sector



* Includes legal and illegal workers.

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

Data: CBS, Bank of Israel.

non-Israelis increased by 83 percent while non-employment among Arab Israelis increased by 74 percent.

The changes in non-employment depicted in Figure 28 did not happen in immediate conjunction with the increase in non-Israeli workers, but occurred with a delay of about a year. If the rise in Arab Israeli non-employment was indeed caused by the increase in non-Israeli workers, then the delay in changes observed in non-employment rates could be due initially to transitions from full-time to part-time jobs, with a subsequent crowding out of part-time workers. It is also possible that the illegal foreign workers may have had an initial impact only on Israeli workers in the underground economy, with less of an impact on Israelis holding legal positions (i.e., jobs for which wages are paid by law and social benefits are provided by law). Only after some time, might this process of increasing numbers of foreign workers also have begun to crowd out Arab Israelis from the above-ground, legal, economy. Later, in the 2000s, the decline in the share of non-Israeli workers was steeper than the decline in non-employment among Arab Israeli men. As noted, the reason for the delayed fall in Arab Israeli non-employment might also be related to the terror wave.

The most effective way to reduce the number of foreign workers is not by the pursuit and deportation of the illegal workers but by the imposition of a sufficiently high tax that will make the cost of employing foreign workers considerably higher than that of hiring Israelis. The imposition of such high taxes must be accompanied by serious law enforcement efforts targeted at the Israeli employers. As the profitability of employing foreign workers declines, so will demand for them, and most of these workers will leave the country of their own volition if they fail to find employment.

8. Earned Income Tax Credit

In the 1990s the U.S. extensively instituted the Earned Income Tax Credit, also known as the negative income tax. The program was successful as a means of encouraging employment. The main criticism of this policy was that most new jobs were added at very low wages. Therefore, as stated in the recommendations at the end of the chapter “A Macro Perspective of Israel’s Society and Economy,” it is essential that such a program, designed as a core component of the effort to substitute disincentives to work and with work incentives, be linked to a parallel program of upgrading adult education and providing professional training (further details in Ben-David, Ahituv, Lewin-Epstein and Stier, 2004).

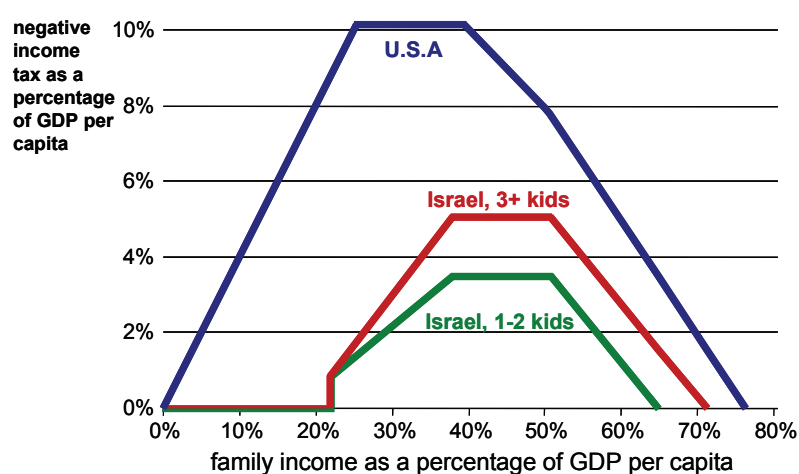
Negative income tax was introduced in Israel in a limited way – only in certain geographic areas – with the goal of being expanded to additional areas and, eventually, throughout the whole country. While the Israeli program has similarities to the American one, the differences are sufficiently large to reduce its effectiveness in achieving its goal of encouraging employment – while at the same time leading to large expenditures from the government budget.

The primary difference between the programs is in the degree of the incentives provided by each. In the United States, a family of two parents and two children is entitled to a negative tax of 40 percent of annual income from \$1 to \$12,500. In other words, a family with an income of \$5,000 receives a check in the amount of \$2,000 from the United States government, while a family with an income of \$12,500 receives \$4,824 from the government so that its total income reaches \$17,324. One of the main advantages of this method is that the financial incentive to work grows with income. When the income yielding the maximum negative tax payments is reached, this amount does not begin to decline immediately as the family income continues to grow, but only when family income

passes the threshold of \$18,750. The benefit is completely eliminated when the family income reaches \$36,355.¹⁶

Comparison of the negative tax programs in the United States and in Israel must take into account differences in living standards. To do so, the size of the payment in each country is depicted in Figure 29 relative to the country's GDP per capita. Similarly, family income is also divided by GDP per capita along the horizontal axis of the figure.

Figure 29
Negative Income Tax, U.S. and Israel, 2008*



* In U.S.: families with 2 parents and 2 children, net negative income tax.

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

Data: Internal Revenue Service, BEA, U.S. Census, Israel's Finance Ministry, CBS.

¹⁶ The numbers provided here reflect the existence of both the EITC and the federal income tax, i.e. these are the net amounts received after both the negative and positive income taxes are accounted for.

As shown in the figure, incomes below 22 percent of GDP per capita in Israel do not qualify for the negative income tax, whereas the same income in the United States entitles its recipients to negative income tax at a rate of 9 percent of GDP per capita. Unlike the American system, Israel distinguishes between families with one or two children and families with three children or more.

The United States government gives the maximum negative tax – 10 percent of GDP per capita – when the family's income reaches 25 percent of GDP per capita. At a similar relative income level, the negative tax in Israel reaches only 1.8 percent of GDP per capita for families with three children or more, and even less (1.4 percent) for families with one to two children. In Israel the maximum amount is paid only when income reaches 40 percent of GDP per capita. Not only does the negative income tax begin much later in Israel, but also the maximum negative tax in Israel is considerably lower – 5.1 percent (half the maximum negative tax in the United States) for families with 3+ children and only 3.5 percent of GDP per capita for families with fewer children.

The differences in approach between the two countries are substantial. The American model gives more at the beginning of the process to encourage entry into the labor market and it reaches the maximum payment much more quickly. In Israel it is possible to reach the maximum negative tax level only at much higher income levels. Even when the maximum negative income tax is reached in both countries, the Israeli model's incentive to work is very small relative to the American incentive.

The absence of a serious negative income tax program in Israel may be more severe than simply money wasted on an effort yielding minimal outcomes. Failure could lead to a decision to cancel the program altogether rather than implementing it properly and yielding the desired results – with all that this entails regarding the loss of an important policy tool for encouraging employment.

9. Summary and Conclusions

The employment rate for working age Israelis (ages 15+) in 2008 was 53.1 percent. This contrasts with an average employment rate of 56.9 percent in OECD countries that year. By how much would Israel's gross domestic product have grown had Israel's employment rate risen to the OECD average? Following Helpman (1999) and assuming that the elasticity of output with regard to labor is 0.68, and making the further – conservative – assumption that the average newly employed person can produce only 75 percent of what the average employed person produced in 2008, then Israel's GDP would have increased by NIS 27 billion.

This increment to GDP is almost equal to Israel's entire education budget, and it would have been attained had the country reached only average OECD employment levels. If Israel's employment rate were to rise to the American rate (62.2 percent), then its GDP would have grown by NIS 64 billion. Israel would have been a different country in many ways, with a higher average standard of living, with an increased capacity to help its needy, and with a different allocation of the budget financing burden. All this would be added to Israel's gross domestic product just from higher rates of employment, even before considering the impact of raising productivity to average G7 levels.

In light of the rapid demographic changes that Israeli society is undergoing, the currently high rates of non-employment already characterizing large parts of the population will be impossible to maintain in the future, when these groups become the majority. If the trends of past decades continue unabated, the State of Israel will find itself in an unsustainable situation.

The key to dealing with these issues is a core treatment of the underlying reasons for the low employment and productivity. The main points of a comprehensive strategy for such core treatment are presented at the end of the chapter "A Macro Perspective of Israel's Society and Economy." One of the primary components of such a strategy is education reform. (General guidelines for a systemic education reform

are outlined at the end of the chapter, “Israel’s Education System – An International Perspective.”) The current level of education in the basic areas of study is insufficient and limits the ability of today’s children to become tomorrow’s well-equipped adults in the global market place. This situation is even more severe with regard to the ultra-Orthodox Jews and Arab Israelis.

Ultra-Orthodox Jewish leaders do not accept the State’s sovereignty with regard to the provision of an education that could provide their children with greater freedom of choice regarding their future lifestyles. Conversely, Arab Israelis are ready to accept a high quality core curriculum, but the government does not provide either the direction or the resources to make it happen. While ultra-Orthodox and Arab Israelis differ in the reasons that their children do not receive a uniform high quality core curriculum as part of their study programs, a country with any long term survival aspirations has very little choice in this regard.

Children who do not receive the necessary educational toolbox today will not have the capabilities for sustaining a modern economy when their population groups collectively become the majority in Israel tomorrow. Furthermore, the country’s future minority – today’s majority – will not have the ability to finance the future majority’s non-work lifestyles, though it will not be possible to abruptly turn off the financing spigot. At that point, substantial parts of those population groups, whose education is inadequate, will have serious problems subsisting.

The current socioeconomic trajectory is rapidly leading to an economic dead-end that will be extremely difficult to extricate the country from, if the necessary policies are not implemented in the very near future. In addition to educational reform, there is a need for major reform in the labor market along the lines of the comprehensive strategy outlined at the end of the macro perspective chapter that opens this book.

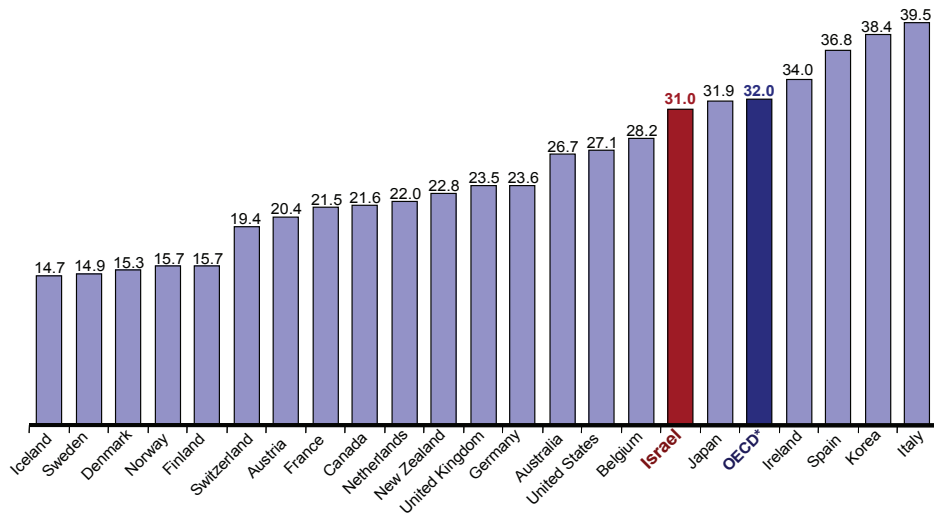
But these are not enough. The issue of law enforcement must be given a much higher place of prominence in Israel’s national priorities. For example, situations such as that described by Eliav, Endewald, Gottlieb and Kachanovski (2009), in which the share of workers whose employees

failed to pay them the required minimum wage reached 14 percent in 2007 – i.e. one out of every seven Israeli workers – are problematic. This is a higher rate than that which prevailed in 1997 (10 percent). The exploitation of uneducated workers is particularly severe: 20 percent of those with 9-12 years of schooling were not paid the minimum wage required by law. That share rises to 29 percent among those with just 0-8 years of schooling. The 2007 Report on Poverty and Social Disparities (National Insurance Institute, 2008) indicates that about 40 percent of all full-time employees living in poor families, and 13 percent of full-time employees in the entire economy, earn less than the minimum wage.

Furthermore, an apparently large amount of economic activity in Israel takes place “under the radar” of the tax authorities. When many people work and get paid, but do not pay taxes as required by law, the result is a problematic discrimination in the shouldering of the tax burden. At the same time, the government fails to receive all of the tax revenues due. For reasons of social fairness and equality before the law and for the objective of increased ability to raise tax revenues without raising tax rates (and possibly even reducing them), it would appear that allocation of resources for a substantial improvement in Israeli law enforcement could be a good investment from an economic perspective and beneficial from a social welfare standpoint.

All of the issues discussed in this chapter are still solvable. But they require implementation of a systemic policy – while still possible – that will enable the State of Israel to change direction in the area of employment.

Appendix Figure 1
Share of Female Non-Employment, 2008
 out of female population ages 35-54

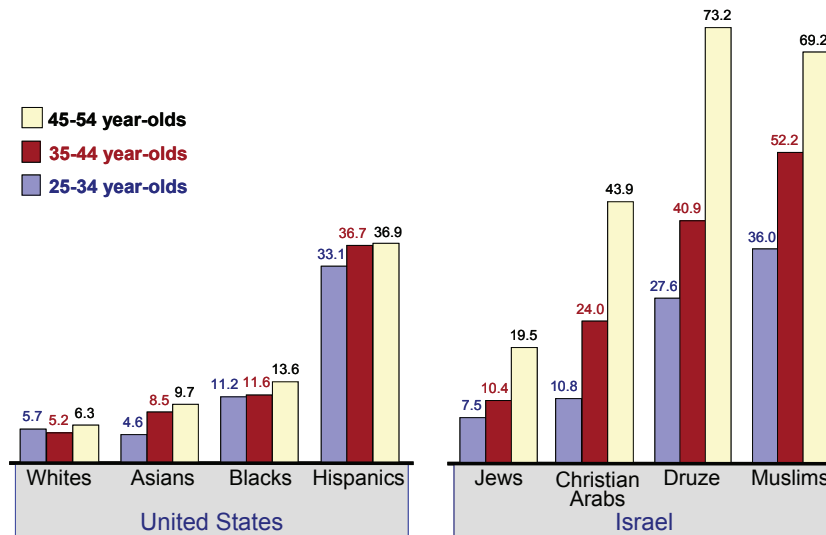


* The OECD average includes countries that do not appear in this figure.

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

Data: CBS, OECD.

Appendix Figure 2
Share of Population with 0-11 Years of Education
 in percent



Source: Dan Ben-David, Taub Center and Tel-Aviv University.
Data: US Census, CBS.

Sources

Hebrew

- Bank of Israel. *Annual Report*, various years.
- Ben-David, D., Ahituv, A., Lewin-Epstein, N., Stier, H. (2006). A Blueprint for Improving the Employment Outlook in Israel. In Reichman, U. and Nachmias D. (eds.) *Reinventing Government in Israel*, 235-276.
- Central Bureau of Statistics (CBS). *Statistical Abstract of Israel*, various years.
- Statistical Appendixes, various years.
- *Labor Force Survey*, various years.
- *Income Survey*, various years.
- Eliav, T., Endewald, M., Gottlieb, D., Kachanovski, I. (2009). *Trends in Minimum Wage Law Compliance: The Case of Israel*. The National Insurance Institute, Research Papers.
- Gonen, A. (2000). *From Yeshiva to Work: The American Experience and Lessons for Israel*. Jerusalem: The Floersheimer Institute for Policy Studies.
- Helpman, E. (1999). Growth in Israel: An International Comparison. *The Economic Quarterly*, 46. 7-17.
- Levin, H. (ed.) (2000). *The Haredi Sector – Strength through Employment*. National Economic Council. Prime Minister's Office.
- The National Insurance Institute, Research and Planning Administration. *Annual Survey*, various years.
- *Poverty and Social Gaps Report*, various years.
- Rebhun, U., Malach, G. (2008). *Demographic Trends in Israel*. Ruth Gavison (ed.). The Metzilah Center for Zionist, Jewish, Liberal and Humanist Thought. Jerusalem.
- Toledano, E., Frish, R., Zussman, N. (2009). *The Effect of Child Allowances on Fertility*. Discussion Paper Series 13 2009, Bank of Israel, Research Department.

English

- Berman, E. (2000). Sect, Subsidy, and Sacrifice: An Economist's View of Ultra Orthodox Jews. *The Quarterly Journal of Economics*, August.
- Cohen, A., Dehejia, R., and Romanov, D. (2007). *Do Financial Intensives Affect Fertility?* NBER Working Paper Series, National Bureau of Economic Research, Cambridge.
- OECD Stat Extracts. <http://stats.oecd.org/index.aspx?r=172013>
- Sa'di, A. H., and Lewin-Epstein, N. (2001). Minority Labor Force Participation in the Post-Fordist Era: The Case of the Arabs in Israeli. *Work Employment and Society*. 2001.15.781.
- U.S. Census Bureau. Statistical Abstract 2009.
- U.S. Bureau of Economic Analysis. *Surveys of Current Business* (different years).
- U.S. Internal Revenue Service, 2009.
- World Bank, World Development Indicators (2008).