SHORESH
Institution for Socioeconomic Research

Changing the paradigms

Policy Brief

March 2016

On the Gender Gap in Israel's Labor Market

Sagit Azary-Viesel and Dan Ben-David[1]

Gender gaps in Israel are large, not only from a domestic perspective comparing women in the labor market to men, but often from an international perspective as well. The size of the gaps notwithstanding, these have been falling in most instances. Israel's education system plays a major role in determining the magnitude of the gender gaps, both from the direct impact of schooling as well as an indirect impact via child care during work hours.

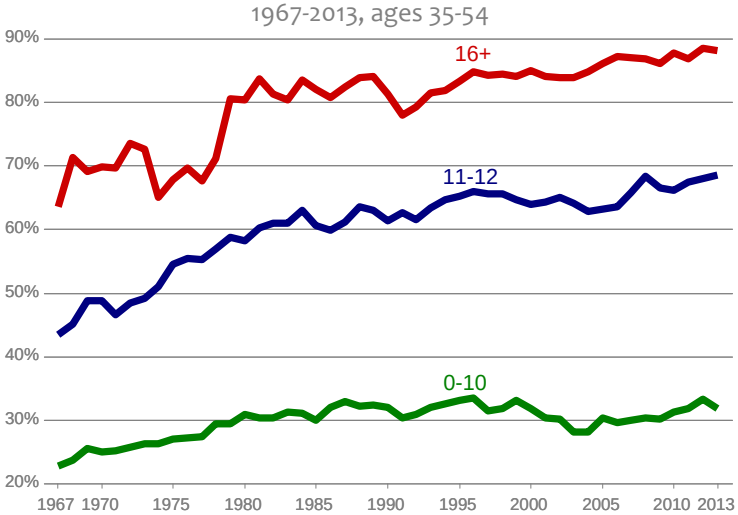
A steady five decade-long increase in female employment

The continuous improvement in female education has been reflected in their increasing entry into the labor force. The link between the extent of schooling and employment rates among prime working age women (35-54) has been readily apparent since the 1960s (Figure 1). Roughly two thirds of the women with 16 or more years of schooling (a number that usually reflects an academic education) were employed in 1967. This contrasts with less than one half of the woman with 11-12 years of schooling who were employed, and only one quarter of the woman with no more than 10 years of schooling who were employed.

Figure 1

Female employment rates by years of schooling

1967-2013, ages 35-54



Source: Sagit Azary-Viesel, Dan Ben-David and Oren Tirosh, Shoresh Institution
Data: Central Bureau of Statistics

[1] Sagit Azary-Viesel, researcher at the Shoresh Institution for Socioeconomic Research and a PhD student in the Department of Public Policy at Tel-Aviv University. Prof. Dan Ben-David, President, Shoresh Institution for Socioeconomic Research; Department of Public Policy, Tel Aviv University; Research Fellow, CEPR, London. We thank Moty Citrin, Dr. Noam Gruber and Prof. Ayal Kimhi for their helpful comments and to Sarit Menahem Carmi, Oren Tirosh and Noam Zontag for their assistance.

Among women with the lowest levels of education, employment rates rose during the 1970s and stabilized at around 30%. In the other two education categories, employment rates grew much more, approaching 70% among women with 11-12 years of schooling and nearly 90% among those with 16+ years of schooling.

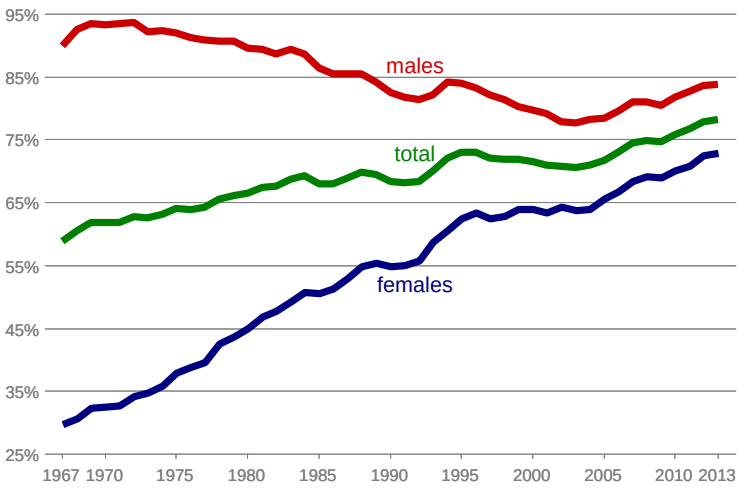
In addition to the increasing employment within each of the education categories, there has been a major improvement in female education in general, with more and more women attaining matriculation (*bagrut*) certificates signifying high school graduation in Israel and also completing academic studies. These changes have had a substantial impact on the country's employment rates since the 1960s.

While employment rates among 35-54 year old males have fallen significantly between the 1960s and the middle of this past decade – a drop of more than ten percentage points – female employment rates have steadily increased, more than doubling, from 30% in 1967 to almost 65% in 2005 (Figure 2). The rise in female employment has more than offset the fall in male employment and has led to an overall increase in national employment rates among prime working age adults during these decades.

Figure 2

Employment rates, 1967-2013

ages 35-54



Source: Sagit Azary-Viesel, Dan Ben-David and Oren Tirosh, Shoresh Institution
Data: Central Bureau of Statistics

Over the past decade, there has been an increase in both female and male employment. The two key reasons for this are the emergence of Israel's economy from the severe recession related to the second Intifada – the worst Israeli recession in decades – and reductions in welfare benefits that induced more people to enter the labor market.

Gender wage gaps in Israel are among the developed world's highest

The median wage gap between prime working age men and women employed in full-time positions rose during the 1990s with male wages exceeding females by about 3,000 shekels (Figure 3). After the second Intifada erupted and the serious recession set in, wages stabilized, rising slig htly for women and falling slightly for men, until the increases in recent years for both groups. The picture is not particularly different for the general working age labor force (15+), though female and male median incomes are a bit lower for this broader population group.

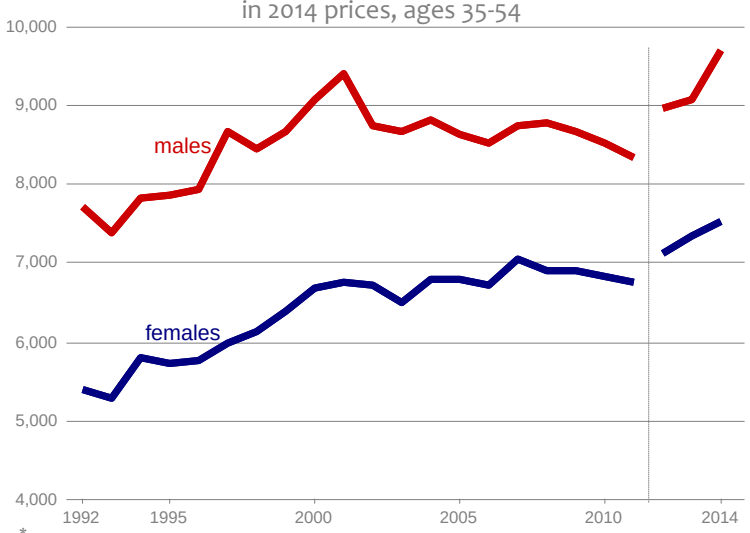
When the focus turns to gender gaps, it appears that the reality in Israel is relatively exceptional when compared to most of the developed countries (Figure 4). Wage gaps between men and women in Israel are among the highest in the developed world. In 2011 (the last year for which there are comparable international findings), the wages of males employed in full-time positions was 22% higher than the wages of females. Israeli gender wage gaps are approximately one third greater than the average gap in the OECD, exceeding the gaps in 30 of the OECD's 34 member countries.

That said, gender wage gaps in most of the OECD countries have been falling over the past decade, and this has also been the case in Israel. There has been a drop of 6.3 percentage points in Israeli wage gaps since 2001, a reduction of over one fifth in the gender wage gap. This fall places Israel in the middle of the OECD in terms of the average annual wage gap reductions during this period.

Figure 3

Median monthly wages of full time employees*

in 2014 prices, ages 35-54



* Until 2011 data from the income survey. Since 2012, data from expenditure survey.

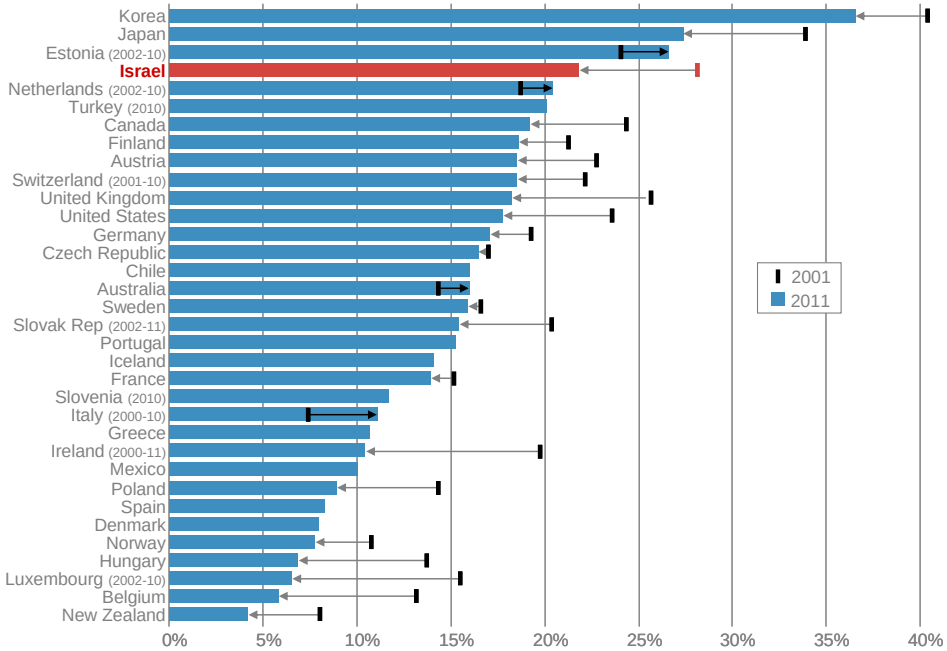
Source: Sagit Azary-Viesel and Dan Ben-David, Shoresh Institution and Tel Aviv University

Data: Central Bureau of Statistics

Figure 4

Gender wage gap

between male and female full-time employees* in 2001 and 2011**



* median gross monthly earnings of males minus median gross monthly earnings of females as percent of male's median gross monthly earnings

** unless specified otherwise.

Source: Sagit Azary-Viesel and Dan Ben-David, Shoresh Institution and Tel Aviv University

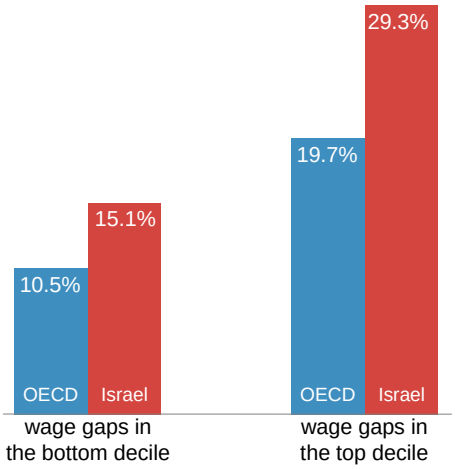
Data: OECD

Wage gaps between men and women in Israel are high even when moving away from the middle of the wage distribution. The gaps in Israel exceed the OECD average at both high and low wage levels (Figure 5). While OECD wage gaps are about 10% in the bottom decile and 20% in the top decile, Israeli wage gaps are roughly one half times greater in both deciles, reaching 15% in the bottom decile and 29% in the top decile.

Figure 5

Gender wage gaps in the bottom and top income deciles

among full-time employees*, 2012



* percentage point differences.

Source: Sagit Azary-Viesel, Shoresh Institution and Tel Aviv University

Data: OECD

Increasing gender equality alongside declining levels in areas of education that are key for advancement in the labor market

As in the area of employment, the primary determinant of wages is education. This is due to the underlying economic growth process and its accompanying structural changes. These structural changes – from agriculture and textiles to services and hi tech – are reflected in a steady increase in demand for educated workers and a steady decline (in relative terms) in the demand for poorly educated and unskilled workers. The result is both higher wages and higher employment rates among the more educated (Kimhi and Shraberman, 2014; Stier and Herzberg, 2013; Kimhi, 2014; Ben-David, 2015).

When the spotlight turns to education, the emphasis needs to be on quality rather than quantity. When education levels are low, additional school years can provide an alternative indicator to quality, but when a large share of the population reaches higher education – as is the case in Israel – there is a growing need to emphasize quality instead of quantity.

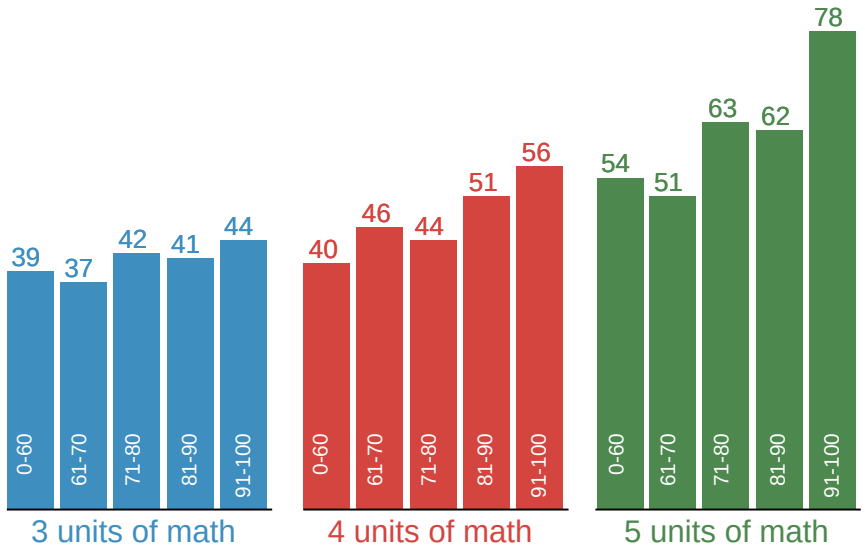
Within the context of education and the labor market, the bottom line is that education needs to improve the level of knowledge and improve professional skill levels. The number of school years or the acquisition of academic degrees in and of themselves should not be the only objective. In terms of labor market skills obtained by graduates, not every academic degree is equivalent to every other academic degree. The gaps in education levels between institutions and between disciplines are enormous. The jump board into academia and into the labor market afterwards is the school system.

A specific example of this appears in Kimhi and Horovitz (2015) who found a strong relationship between the level of mathematics studies in high school and wages after more than a decade following the completion of high school. They found that the level of mathematics studies has both a direct effect and an indirect effect. The higher the number of math units (5 units of math represent the highest level of high school mathematics in Israel), the greater the likelihood that pupils will get accepted to better academic institutions and to disciplines leading to higher wage occupations. The differences in impact between different education levels is so strong that pupils receiving low grades at 5 units of math tended to receive similar wages to those pupils who excelled at 4 units (Figure 6), and similarly with regard to the weakest pupils at 4 units versus the top students at 3 units.

Figure 6

Hourly wages*

by math levels and grades



* among salaried employees born in 1979 who were 29 years old in 2008.

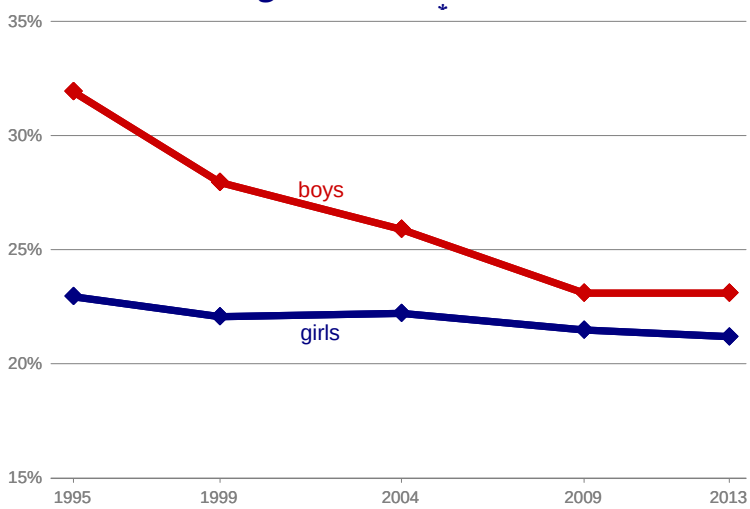
Source: Ayal Kimhi and Arik Horovitz, Shoresh Institution
(based on findings from Kimhi and Horovitz, 2015)
Data: Central Bureau of Statistics

When the scope is widened to include all math and science fields, it turns out that over the past decades there has been a substantial reduction in the gap between boys and girls studying in at least two math and science fields at levels 4 and 5 (Figure 7). The gender gap fell from nine percentage points in 1995 to two percentage points in recent years. It is conceivable to assume that the greater the gender gap's decline in fields that are key for the labor market, the greater the future decline in wage gaps between men and women.

The problem is that this decline in the education gender gap at the highest levels of math and science did not result from an increase in the share of girls studying these courses at the higher levels. In fact, there was a two percentage point decline among girls studying in these fields. The fall in the gender gap was a result of an even sharper decline, of nine percentage points, among the boys. So while a reduction in education gaps in fields that are central for the labor market can lead to a reduction in wage gaps between women and men, the underlying cause of this reduction – a fall in the number of children studying math and science at

Figure 7

Share of 12th graders taking at least two high level math and science*



* share of matriculation (bagrut) examinees taking at least two subjects in the math and sciences fields at the level of at least 4 units.

Source: Dan Ben-David, Shoresh Institution and Tel Aviv University
Data: Central Bureau of Statistics

high levels – yields negative implications for Israel's future in areas of employment, incomes, poverty, productivity, and economic growth at the national level.

Large, but decreasing, gender gaps in the share of part time positions

Another factor influencing wage gaps between women and men is the share of persons working part time. This has both a direct effect on incomes and also an indirect effect on future promotions to higher wage levels. To facilitate international comparisons of the share of persons working part and full time, the OECD has adopted what it refers to as a "common definition" of a 30 hour work week for a full time position (in Israel, a work week is defined as 35 hours or more for a full time position). Figure 8 shows the share of women and men aged 25-54 employed in part time positions. Very few men in Israel and in the OECD are employed in part time positions. In recent years, there has been a slight increase in the share of male Israelis working part time to about 7%, about a third more than the OECD average.

The picture among women is considerably different. The share of women working part-time is much higher than the share of men working part time, both in Israel and in the OECD. While the OECD average has increased slightly from 19% in 1995 to 21% in 2014, the share of women working part time in Israel fell from 24% to 19%.

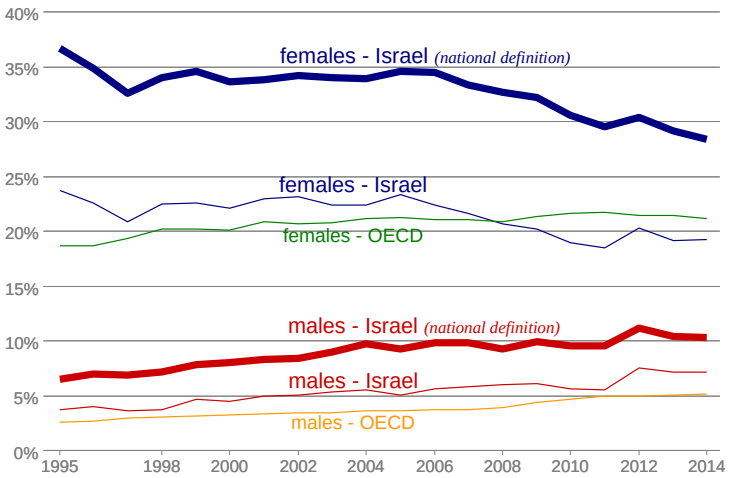
There is a problem with the OECD's common definition when it comes to Israel. In addition to the substantial difference in the length of a full-time work week, Israeli employment definitions do not enable all of the country's workers to fit into the OECD classification. As a result, 14% of Israeli employed persons are not included in the OECD's definition of full and part time employed persons. This is in stark contrast to nearly all of the other nations with only a marginal difference (if at all) between the sum of the part and full time employed persons and the total number of employed persons. For this reason, Figure 8 also displays the share of part time employed persons in Israel according to the country's national definition.

On the one hand, very large gaps between the shares of women and men working part time – 20 percentage points according to the common definition (30 percentage points according to Israel's national definition) versus 16 percentage points in the OECD in 1995 – can contribute quite a bit to high gender wage gaps in Israel. On the other hand, there is a sharper decline in the share of part time Israeli women and a steeper increase in the share of part time Israeli men.

Figure 8

Incidence of part-time employment*

1995-2014, ages 25-54



* Part-time employment as a share of the total according to the OECD's common definition (30 hour full-time work week, as opposed to a 35 hour full-time work week in Israel), except when specified otherwise. Usage of the OECD's common definition leads to an omission of 14% of Israel's employed persons. Hence, Israel's national definition is also included here and it encompasses all of Israel's employed persons.

Source: Dan Ben-David, Shoresh Institution and Tel Aviv University
Data: OECD

As a result, the gap between Israeli women and men in part time positions fell by 40% (in terms of both the OECD's common definition and Israel's national definition) while the OECD gap fell by just 1%. The faster decline in Israel's gender part time position gap than in the OECD can contribute to a faster decline in the country's gender wage gap.

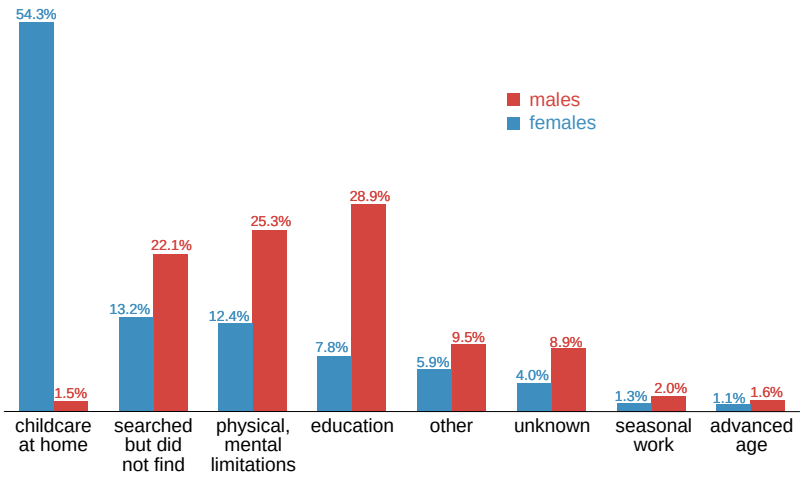
Despite the steady increase in female employment rates in recent decades (Figure 2) and the improvement in their education, there still exists a gender gap in rates of employment and a greater share of women than men are not employed. Also, more Israeli women than men work in part time positions. Child care represents a substantial barrier to entry into the labor market for many women whether in part time positions or in any form of employment. As Figure 9 indicates, 54% of women who are not employed in Israel state that the reason for their employment situation is the need to care for children and the home.

On the face of it, there do not appear to be fewer child care arrangements for the very young in Israel than in other countries. Data collected by the OECD shows that 31% of Israeli children ages 0-2 are registered in early child care facilities, which places Israel above two thirds of the OECD countries. In the case of 3-4 year olds, Israel is at the pinnacle of the OECD in terms of the number of children in child care frameworks.

Figure 9

Reasons for non-employment, by gender

as percent of non-employed, 2013



Source: Sagit Azary-Viesel and Oren Tirosh, Shoresh Institution

Data: Central Bureau of Statistics

It appears that costs to parents provide an important explanation in the issue of child care for the very young. International cost comparisons are not simple, due to the need to weigh the cost of various forms of child care with tax breaks and benefits that vary from country to country. The OECD conducted comparisons that provide only a partial explanation in the case of Israel and need to be taken with a degree of caution in this regard. Nonetheless, the comparisons do provide an idea about the costs within defined and limited conditions.

The OECD calculated the net cost (that is, after taking into account child care costs, tax deductions, child benefits and other benefits) of early childhood care in 31 of the member countries. The comparisons were carried out for single parent families in which the parent is employed in a full-time position (defined by the OECD as 30 hours per week) and for two parent families in which both parents are employed full time. A number of comparisons were conducted for single and two parent families with the comparisons distinguished from one another by the ratio of the family's income to the average wage in the economy. Figure 10 depicts the comparisons closest to the median family in Israel (for both types of families).

In the case of single parent families in which the parent is working full time, the cost of child care in Israel is 22.4% of the family's disposable income, which is much higher than the 13.5% share in the OECD – making it considerably more difficult for the Israeli single parent

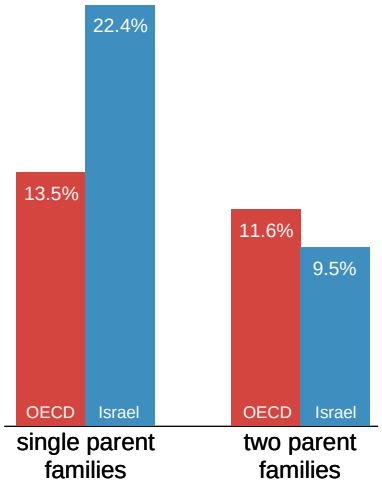
to leave home to work. In the case of families with two parents working full time, the share of the child care cost out of income is slightly lower than the comparable share in the OECD.

It is important to point out a number of drawbacks to these comparisons. First, the number of children in Israeli families is greater than the number in most OECD countries, especially among relatively low income families. Therefore, while the OECD comparisons are made for a fixed number of children per household, the higher fertility rates in Israel increase the total cost of childcare per family. In addition, the share of Israeli parents in full time employment is lower than in the OECD, creating a sort of chicken and egg issue. Comparisons of parents working full time are less relevant for a larger share of the parents in Israel who are working part time. It is possible that many Israeli parents work in part time positions because their levels of education/skills do not enable them to work in a full time position that could cover the costs of child care.

Figure 10

Net preschool childcare costs*

as percent of family net income



* * Costs of preschool childcare minus tax reductions and childcare benefits. The comparisons are only for households with small children in which all parents work full-time. In the case of single parent families, the cost comparison is for families with an income that is 67% of the average wage while in the two-parent case, the comparison is for families with an income that is twice the average wage. These are the comparisons most applicable for the median incomes of such families in Israel.

Source: Sagit Azary-Viesel and Dan Ben-David, Shoresh Institution and Tel Aviv University

Data: OECD

Recommendations for root solutions to reduce gender gaps

There are numerous cosmetic solutions in the realms of taxation and subsidies that can have an effect on gender gaps. But a root solution with long run implications that will both reduce gaps and contribute to an increase in living standards goes through education. The Finance Ministry (2015) found that 60% of the monthly gender wage gap in 2014 was due to the share of part-time employment and 30% to the occupation field (the remainder was due to other sources). Education plays a key role in determining both of these factors.

In general, as the number of years of schooling among women increases, their rates of employment rise, as do their wages. But the relationship between education and wages is also dependent on the quality of education. The higher the level of studies in schools, the more possibilities open up for higher education – and afterwards, for higher paying occupations.

Not everyone is able to study at the highest levels in high school. But there is little doubt that, to the extent that it is possible to enhance the level of education at the earlier ages, a greater number of children with the natural abilities will subsequently be able to get into better educational frameworks. While such a policy will improve conditions for those who will then be able to study at higher levels, it will also benefit those unable to do so because the supply of less-educated and poorly-skilled workers will fall – and this will lead to higher wages and employment rates for those who unable/uninterested in upgrading their education.

This is the primary route not just toward reducing gender gaps, but also toward reducing inequality within all parts of the population.

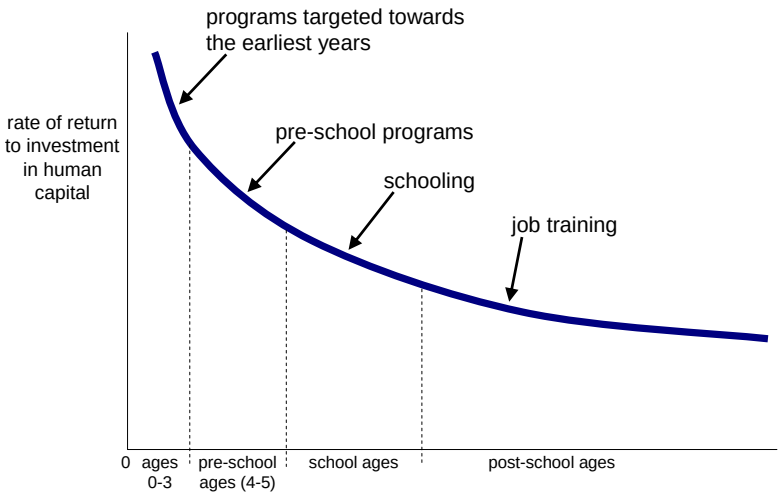
The greater the number of children studying at higher levels, the greater the increase in their productivity. From the individual perspectives, this is a necessary condition – albeit, an insufficient one – for wages to rise. From the national perspective, this will lead to an improvement in Israel's collective ability to assimilate, utilize and develop new technologies, which in turn increases the country's rate of economic growth and raises its general standard of living.

The above only serves to further underline the importance and urgency of implementing a comprehensive reform of Israel's education system that will upgrade the level of core studies, making them uniform and compulsory in all of the country's schools. This is the key to a root treatment of gaps between and within population groups in Israel. The systemic reform also needs to substantially improve the way that teaching candidates are chosen, taught and compensated. The third leg of the comprehensive education reform requires a major reduction in the education ministry's numerous and encumbering bureaucratic barriers so that a greater share of the resources can be directed towards actual educational improvement.

Findings from Italy (Brilli, Del Bocca and Prozato, 2016) indicate a positive and significant impact of child care frameworks on the employment prospects of the mothers. In general, child care at the youngest ages needs to take into account not only the release of parents into the labor force but also – and probably even more so – the immense importance of education at these young ages on subsequent development over the lifecycle. Nobel Laureate, James Heckman, perhaps the leading researcher today in the field, shows (Figure 11) the link between returns to investment and children's ages. Heckman (2012) writes: "The highest rate of return in early childhood development comes from investing as early as possible, from birth through age five, in disadvantaged families. Starting at age three or four is too little too late, as it fails to recognize that skills beget skills in a complimentary and dynamic way. Efforts should focus on the first years for the greatest efficiency and effectiveness. The best investment is in quality early childhood development from birth to five for disadvantaged children and their families."

Figure 11

Returns to a unit dollar invested*



* Returns to a unit dollar invested at different ages from the perspective of the beginning of life, assuming one dollar initially invested at each age.

Source: James J. Heckman (2008), "Schools, Skills and Synapses," *Economic Inquiry*, 46(3): 289-324.

Just as Israel's primary and secondary education is provided to all of the country's children for free (though, the issue of widespread parental payments to schools opens the back door to tuition under different names), it is vital that a quality educational framework be provided for

free from early childhood through the end of high school. Reducing the school week from six to five days will enable longer school days throughout the education system, which will in turn make it possible for more parents to join the labor force. Since the primary providers of childcare in Is rael are mothers, this would be a step in the direction of reducing gender gaps in the labor market. From the children's perspective, those additional hours each day could be devoted to sport, cultural, religious and/or any other activities that fit the lifestyles in the various neighborhoods and towns.

References

English

Ben-David, Dan (2015), *The Shoresh Handbook on Israel's Society and Economy,* Shoresh Institution for Socioeconomic Research.

Brilli, Ylenia, Daniela Del Bocca and Chiara D. Prozato (2016), "Does child care availability play a role in maternal employment and children's development? Evidence from Italy," *Review of Economics of the Household*, 14: 27-51.

Heckman, James J. (2008), "Schools, Skills and Synapses," *Economic Inquiry*, 46(3): 289-324.

Heckman, James J. (2012), *Invest in early childhood development: Reduce deficits, strengthen the economy*, http://heckmanequation.org/

Kimhi, Ayal (2012), "Labor Market Trends: Employment Rate and Wage Disparities," in Dan Ben-David (ed.), *State of the Nation: Society, Economy and Policy 2011-2012*, Taub Center for Social Policy Studies in Israel, pp. 123-160.

Kimhi, Ayal and Arik Horovitz (2015), "Impact of the Level of High School Math on Israeli Pupils' Academic and Career outcomes," Taub Center Policy Paper No. 2015.01.

Kimhi, Ayal and Kyrill Shraberman (2014), "Labor Income Inequality Trends in Israel," in Dan Ben-David (ed.), *State of the Nation: Society, Economy and Policy 2014*, Taub Center for Social Policy Studies in Israel, pp. 225-262.

Stier, Haya and Efrat Herzberg (2013), "Women in the Labor Force: The Impact of Education on Employment Patterns and Wages," in Dan Ben-David (ed.), *State of the Nation: Society, Economy and Policy 2013*, Taub Center for Social Policy Studies in Israel, pp. 201-232.

Hebrew

Ministry of Finance (2015), *Weekly Economic Survey*, http://mof.gov.il/chiefecon/economyandresearch/doclib/skiracalcalit_151115.pdf