TAUB CENTER
FOR SOCIAL POLICY STUDIES IN ISRAEL

Today's Workers, Tomorrow's Retirees
Understanding the Pension Gender Gap in Israel

Liora Bowers and Hadas Fuchs

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Introduction

Women's retirement age is one of the most contentious topics on Israel's socioeconomic agenda in recent years. While the retirement age was gradually raised from 60 to 62 for women and from 65 to 67 for men beginning in 2003, attempts to continue to increase the retirement age for women have thus far been unsuccessful. The fiscal implications for the state and the old pension funds of raising the retirement age from 62 for women is clear; an increase of a single year in women's retirement age would save an estimated NIS 550 million per year for the National Insurance Institute (NII) (Committee to Raise Retirement Age 2016). In March 2018, the old pension funds suggested they would need to reduce benefits by up to 1.5 percent unless the government provided additional funds to cover its failure to raise the retirement age to 64 for women (Stein 2018). Those arguing to maintain

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the current retirement age at 62 are concerned that more women would experience financial hardship if the retirement age was raised, as they may be unable to continue physically demanding work in fields such as nursing or teaching and that they face reduced labor demand for and employment options at an older age. They argue that those women who can keep working past 62 generally already do so, and it is weaker populations who rely on NII at those ages.

The issue of retirement age is part of a larger question about the level of pension income available to women upon retirement, both in absolute terms and relative to that of men. As pension savings are closely tied to lifetime earnings, the private pension system inherently reflects labor market differences. Monthly pension incomes for women are lower, because, on average, women earn less, take longer periods of leave for childcare, retire earlier, and live longer.

At first glance, it seems that a lower pension mostly has implications for unmarried women, given that the overall financial position of the household matters more than the source of the income. Furthermore, if a spouse passes away, the remaining spouse receives survivor's insurance from NII and private pensions generally continue making some payments to the surviving spouse.[1, 2] In addition, divorce law in Israel requires the splitting of pension assets acquired during the years of partnership between the couple. Nonetheless, there are several reasons why gender gaps in pension income are of significance even for married individuals.

First and foremost, many individuals are not aware of how the career and family decisions they make not only affect their current wages, but will manifest themselves in their retirement years. Increased awareness can lead men and women to advocate for themselves with regard to labor market opportunities and financial savings, and families to make decisions that promote greater independence and financial well-being for each member. Along these lines, intra-household bargaining theory describes individual income as resources that individuals are entitled to in their own name.

1 Survivor's pension recipients who reach old-age allowance age or an old-age allowance recipient who is widowed is entitled to a full old-age allowance and half of a survivor's pension if they have fulfilled the required qualification period for an old-age allowance.

2 In 2018, eligible elderly who have been widowed are entitled to a monthly survivor's pension of NIS 1,535. An elderly man with an income higher than NIS 5,646 per month, however, receives a survivor's pension equivalent to 36 months of the payment.

Individual entitlement allows women to have stronger control over that income, helps determine their negotiating position, and can empower them in family decision making (Institute for Social and Economic Research 2011).[3]

The issue of poverty should also be noted. In most OECD countries, elderly women are more likely to live in poverty than are elderly men. This is true in Israel: in 2013, the poverty rate among men over age 75 was 19 percent, while the rate among women was 26 percent. This gap between the genders is higher than the overall poverty gap between men and women across all age groups in Israel — which stood at 2 percent (Giorno and Adda 2016) — and is one of the higher such gaps among the OECD countries (OECD 2017).

In this study, while we discuss the current gender pension gaps among retirees, we are, for the most part, interested in looking to the future. As such, the study focuses on those in their early and prime working ages in the labor market today (ages 25-45). This group will be most affected by current labor market trends and pension system policies.

1. The pension system in Israel — background[4]

OECD countries are seen as having three pillars to their pension systems: the first pillar is generally provided by some branch of government and is redistributive; it is meant to reduce poverty among the elderly. The second pillar can be provided by government or by private pension companies with the goal of income replacement or to distribute income more equally (income smoothing) over the course of an individual's lifetime. The third tier comes from personal savings and is voluntary; it serves the function of enhancing resources during retirement. This pillar includes various forms of retirement savings such as interest income, rental income, and other investments.

The first pillar: National Insurance Institute allowances

In Israel, the first pillar — which aims to provide every elderly citizen with a uniform and basic income as well as to reduce elderly poverty — is provided through old-age allowances and income support from the National Insurance Institute (NII). Upon reaching the qualifying retirement age, every Israeli

3 The European Institute for Gender Study also noted several years ago that a pension gender gap may make women more likely to stay with abusive partners (*The Economist* 2017).

4 This section surveys the pension system in general. For a more detailed description and more precise amounts and types of allowances, as well as exceptions, see the website Kol Zchut (All Your Rights).

resident who is insured (i.e., the individual has made the required payments to NII over the course of a lifetime) is eligible for a universal, resident-based, fixed, public old-age allowance. Contributions are deducted monthly via payroll or paid for directly in the case of unemployment, self-employment, or non labor market participation. The conditional retirement age — 62 for women and 67 for men — refers to the age at which an individual may first begin receiving old-age benefits from NII, assuming that income from other sources is below a mandated ceiling. At age 70 (the absolute retirement age) all qualified individuals receive an old-age allowance from NII, regardless of additional income.

The basic allowance in 2018 is NIS 1,535 per month for an individual with a 2 percent increase for every additional year insured beyond ten years, up to a maximum 50 percent total increase for those who have paid into the NII for 35 years or more. In addition, those who do not receive an allowance from retirement age until age 70 due to income from work or other sources receive an increase of 5 percent for every deferred year.

About one in five elderly qualify for additional income support from NII, which is provided to lower-income households who also meet asset test requirements based on vehicle ownership, land ownership, and savings.[5] With receipt of income support, elderly households are raised to near the poverty line.

The second pillar: Occupational pensions

The second pillar is intended to allow an individual to maintain a standard of living that is similar to what he had before retirement (income replacement); in Israel, this is provided through private occupational pensions. The roots of occupational pensions go back to the Histadrut labor federation in the 1940s. This system suffered from large actuarial deficits during the 1980s and 1990s, and in the mid-1990s, Israel began a major reform in order to stabilize its pension system. In 1995, the "old" pension funds were closed to new participants. The old pension funds are generally defined benefit funds, that is, upon retirement the individual receives a guaranteed monthly pension equal to a predetermined percentage of their salary (OECD 2011).

5 According to Claude Giorno, senior economist on the OECD Israel Desk, the only other countries that have an asset/wealth test for pension benefits are Australia, Denmark, Ireland, the Netherlands, and the United States. These requirements seem to be a barrier for some of the population to access this assistance. While the asset test considers land and vehicle ownership (more common in Arab Israeli villages and in the periphery), it does not take into consideration the value of one's primary residence.

These old funds contrast starkly with the main post-1995 retirement savings vehicles: "new" pension funds,[6] manager's insurance, and provident funds. All of these are defined contribution funds, in which, upon retirement, the individual's benefit is determined by the amount of money accumulated in their fund.

In 2008, Israel implemented mandatory pension coverage, requiring all employers to make pension contributions on behalf of their employees, as well as to deduct employee contributions. Since then, pension contribution rates have increased, and now stand at a total of 18.5 percent of salary, including at least 6 percent for severance pay. Although coverage must only be provided up to the average market wage, in practice, it is common for employers to cover the full salary.[7] In addition to the mandatory contribution requirements, Israeli tax policy also incentivizes private pension savings through generous tax credits.

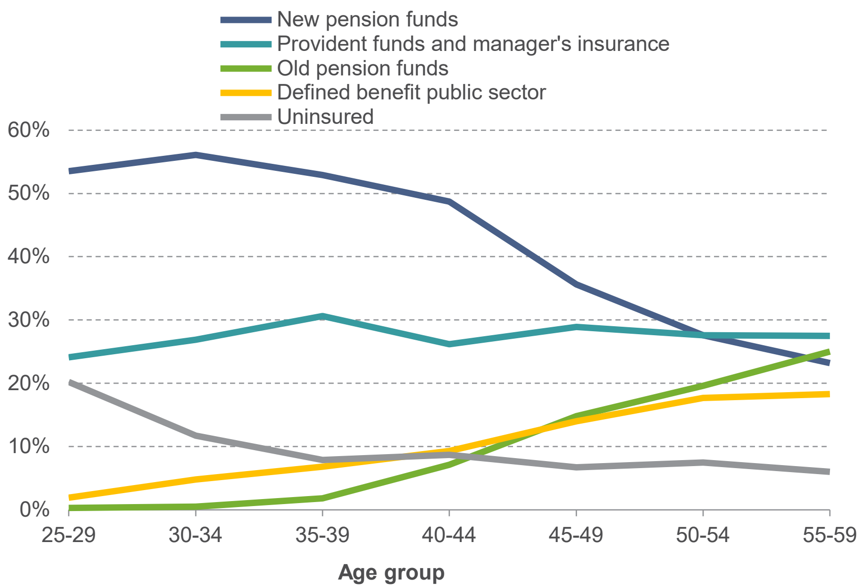
Upon reaching retirement age, the retiree must draw the pension as monthly income up to a minimum amount (NIS 4,418 in 2018); anything above this amount can be taken out in a lump sum. Private pensions in Israel offer a type of insurance on life expectancy as monthly payments continue until death. Those who live longer than expected receive more than they contributed, the opposite is true for those who pass away early.

As shown in Figure 1, 54 percent of employees under the age of 40 contribute to new pension funds and another 24 percent to provident funds or manager's insurance. Overall, almost 80 percent of those under age 40 contribute to one of these three defined contribution plans, a figure that has been increasing rapidly with time in the younger age groups. Less than 10 percent of this age group is in the old pension plans or defined benefit public sector plans (Giorno and Adda 2016).

6 In 2016, there were 2.1 million active new pension funds — i.e., funds into which monthly contributions are made — and an additional 2.2 million inactive funds (Capital Markets, Insurance and Savings Authority, 2016). The maximum insured salary in a new pension fund is double the average market wage (about NIS 19K); contributions on salary above this amount are placed in a different retirement savings plan.

7 A recent examination of the issue suggests that only about 60 percent of employee salaries are covered on average, as certain components such as overtime pay or bonuses are not included by some employers for purposes of pension contributions (Menahem Carmi and Spivak 2018).

Figure 1. Pension arrangements of employees, 2012



Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: Giorno and Adda 2016

Overall, the OECD's assessment of Israel's current pension system generally provides good marks in terms of financial sustainability and fiscal responsibility. Due to the increasing coverage and contribution rates to private defined contribution plans, the system does not face the extent of actuarial challenges or unfunded liabilities that many other OECD countries face. Such a defined contribution system also does not face the problem of large cross-subsidies across generations.[8] On the other hand, it provides less room for redistribution within the pension system and leaves individuals more exposed to greater inequality and market fluctuations. This same mandatory defined contribution structure is thought to reduce overall lifetime income for lower income individuals (due to the high private pension

8 The old pension funds and the defined public sector pension for government employees require additional funding from the state. Since almost all of these arrangements have been closed to new participants, it is not anticipated that this problem will continue.

contribution rates) and contribute to inequality in pension income.[9] As this current system gains more traction, it seems that the need for government to provide income support for retirees will diminish, shifting the burden of financing retirement from NII to low-income workers themselves. Given the lower average earnings of women and their greater reliance on NII allowances, the growing importance of the second pillar over time relative to the first pillar may cause pension gender gaps in Israel to widen.

2. The pension gender gap in occupational pensions

Limitations in data availability make it more difficult to measure the pension gender gap among today's retirees in Israel.[10] Rough estimates are available from the 2015 Survey of Health, Aging and Retirement in Europe (SHARE).[11] We received data on 640,000 individuals in Israel who had a new pension fund with Menorah Mivtachim in 2017 (the largest new pension fund in Israel, with a 36 percent market share in 2016), allowing us to get a

9 For more on the impact of the 2008 pension reform on lower income earners, see Brender 2009.

10 Pension data published in the annual Household Expenditure Survey by the Center Bureau of Statistics is provided at the household, rather than the individual, level, and so do not allow distinction by gender for married individuals.

11 About 4,000 Israelis were surveyed, but only a small percentage of responses included information on the level of occupational pension income. A gap of 43 percent in average monthly pension income (NIS 13,412) versus (NIS 7,630) was found between men and women who responded. For comparison, a similar gap of 38 percent was found when responses were limited to those aged 70-80. The low response rate to the question suggest that the sample is not representative. We can, however, look to Europe with its better data collection on the subject, to understand the extent of the pension gender gap in other countries. The gap in retirement balances between men and women over age 65 in Europe (population weighted) has stood at about 37 — 39 percent over the last few years, with Germany, Luxembourg, the UK, and the Netherlands having the highest gaps — above 40 percent (European Institute for Gender Equality 2015). Central European countries, such as Estonia and Slovakia, along with Denmark have the lowest gaps — under 10 percent. These lower gaps exist even in cases where the gender pay gap is large, generally due to pension systems that historically have had a substantial flat-rate component relative to the earnings-related component (EU PAR 2018; Finnish Center for Pensions 2018).

better understanding of the pension savings of both employed and retired individuals across age and gender groups (Ministry of Finance 2016).[12, 13]

Figure 2 presents a cross-sectional view of average pension balances by gender and age.[14] Due to the substantial changes in pension policies — including the move from defined benefit to defined contribution plans and the 2008 mandatory pension contribution requirement legislation — pension balances should not be compared across different age groups and generations. For example, it is anticipated that those in the 45-49 age group today will continue growing their defined contribution pension funds over time, so that when they reach ages 55-59 in ten years their balances will be notably higher.

The figure also shows the pension gender gap for each age group, which is smaller for younger age groups, and peaks at 28 percent for the 45-54 age group.[15] Similar gaps were found by Menahem Carmi and Spivak (2018).

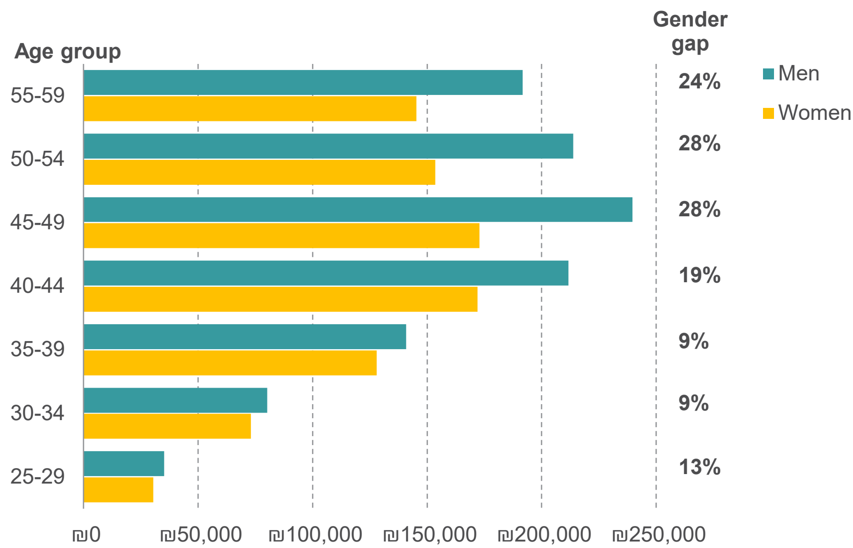
12 All active accounts (those with current monthly contributions made) along with inactive accounts with balances over NIS 50K are included in the data. Where an individual has more than one account with Mivtachim, the balance across all accounts is used.

13 While it is possible for individuals to hold pension savings in several funds (i.e., holding both active and inactive accounts), it is estimated that about 80 percent of pension savings of those in the labor market are in active accounts. We thank Prof. Avia Spivak for supplying us with this information.

14 Approximately 55 percent of the individuals in this dataset are women. This female-majority in new pension funds, as well as the general level of pension savings by age and gender, is consistent with similar findings that included data from all pension funds in Israel (Menahem Carmi and Spivak 2018). One possible explanation for the female majority is that more men are self-employed, and thus may have lower pension savings (up until 2017 there was no pension savings requirement for the self-employed). Another possible explanation is that men may be more likely to opt for defined contribution programs known as manager's insurance rather than new pension funds and so would not be included in the new pension funds data; there are little data available about the balances in manager's insurance funds Finally, it is possible that men with lower incomes are more likely to work in the informal sector (the shadow economy) where pension contributions would not be made.

15 The labor market and pension system factors explained in Section 3 imply a larger gap. Part of the reason for this lower figure could be that men are seemingly more likely to withdraw a portion of their severance funds (saved alongside their pension) upon leaving a job than are women (source: Mivtachim).

Figure 2. Average pension savings by gender (in NIS) and gender gap (in percent), 2017



Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: Menorah Mivtachim, New Pension Funds

Given the differences in employment rates and salaries among the various population groups in Israel, we examined the Mivtachim pension gender gap separately for three population groups: Arab Israelis, Haredim (ultra-Orthodox Jews), and all others. Since the dataset does not include information on the population group of its insured individuals, residential locality was used as a proxy for group affiliation.[16] As seen in Figure 3, the average pension gender gaps for those under 44 are similar for Arab Israelis and "all others" (around 15 percent or less). In the older age groups, however, there is a notably larger gender pension gap among Arab Israelis. This likely reflects a major generational shift; whereas Arab Israeli women in older generations had little formal labor market participation, that is

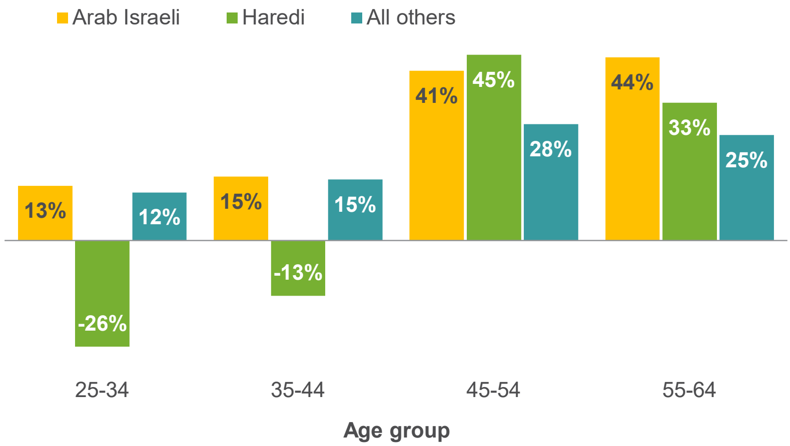
16 Arab Israelis refers to data on individuals living in all villages categorized as Arab by the Central Bureau of Statistics. Haredim include all individuals living in one of the four primary Haredi localities (Bnai Brak, Modi'in Ilit, Beitar Ilit, and Immanuel). Residents of all other municipalities (including Arab Israelis and Haredim who live in mixed cities such as Jerusalem) are included in "all others."

no longer the case. Employment among Arab Israeli women has increased substantially alongside higher education rates, and today the gender wage gap is even smaller in this group than among Jews (Adva 2017). As a result, the gap in the pension savings is smaller.

Unsurprisingly, Haredi women under age 45 on average have higher pension balances than do Haredi men, with the gap particularly substantial among those ages 25-34 — 26 percent in favor of women . This finding reflects higher employment among Haredi women than Haredi men. The data align with a generational shift in the working patterns of Haredim. Back in the late 1970s, Haredi men were employed at similar rates to non-Haredi Jewish men, and at double the rates of Haredi women (Regev 2017). This likely explains why the gaps are similar to those for the rest of the Jewish population for the older Haredi population.

Figure 3. The gender pension gap, 2017

Population group is based on residential municipality



Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: Menorah Mivtachim

3. Factors influencing the future gender pension gap

A 2017 study published by the European Parliament examines anticipated future pension gender gaps in European countries. The study employs an index comprised of two overarching domains: employment related policies and pension system policies, with greater weight (65 percent) placed on the former, as these are thought to contribute more substantially to pension gender gaps. Each domain has several sub-indicators, as described in Table 1, and explained in detail below. The indicators were chosen by the study's authors to allow for comparability, ease of measurement, and continued tracking over time.

Table 1. Indicators of projected gender pension gaps in European countries, 2017

Domain	Indicator	Calculation	Indicator weight (within domain)
Employment gaps (domain weight within overall index — 65%)	Female employment rates	Female employment rate ages 15-64, multiplied by 50 and divided by 40	50%
	Hourly wage gap	1 minus hourly gender wage gap	25%
	Female part-time work	1 minus share of working women employed part-time	25%
Pension system structure (domain weight within overall index — 35%)	Career break impact	NRR (Net Replacement Rate) for average wage earner with childcare career break divided by NRR for base case*	25%
	Pension redistribution	NRR for low wage earner (66%) with no career breaks divided by NRR for base case*	25%
	Indexation rules	NRR after 10 years of indexation divided by NRR for base case*	25%
	Retirement age pension difference	NRR for average wage earner at female retirement age versus NRR for average wage earner retiring at male retirement age	25%

* Base case refers to average wage earner with continuous 40-year career from age 25-64.

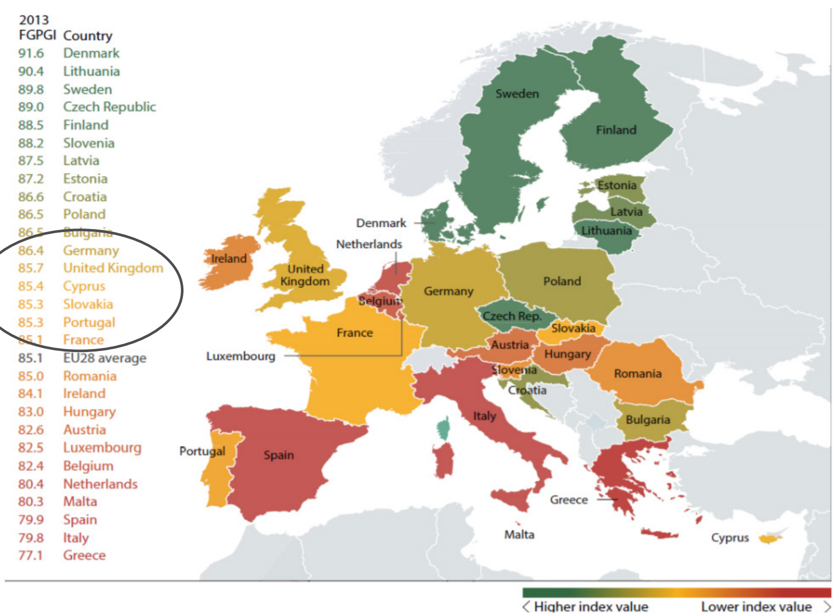
Source: European Parliament, Policy Department

The results of the original study, which did not include Israel, are presented in Figure 4. We then approximate this index for Israel in order to allow comparison to the 28 European countries included in the study (for full methodological detail, see the Appendix). It must be noted that the index numbers shown here are an approximation, with Israel's figure less directly comparable to that of the other countries shown.[17]

Countries shown in green, such as the Scandinavian and several Central European countries, have the lowest future gender gaps. Some of the Bismarkian countries in Western Europe — Austria, Belgium and the Netherlands — along with the Mediterranean countries have the largest anticipated future gaps. We estimate that Israel falls somewhere in the middle among European countries, indicated by the blue circle in the figure.

Figure 4. Future Gender Pension Gap Index

Israel's estimated place is marked with a circle



Source: European Parliament, Policy Department 2017

17 The precise figures calculated for any one country is less relevant than the country's general placement. This is because the figures are very dependent on the specific assumptions used for each indicator (e.g., does one use part-time work or hours worked as an indicator of intensity); in the case of Israel, the figures do not always come from the same data source (e.g., hourly wage gap) or year as the European figures.

The following section contains a comparison between Israel and other OECD countries for each of the indicators that make up this index as outlined in Table 1.

Employment related policies

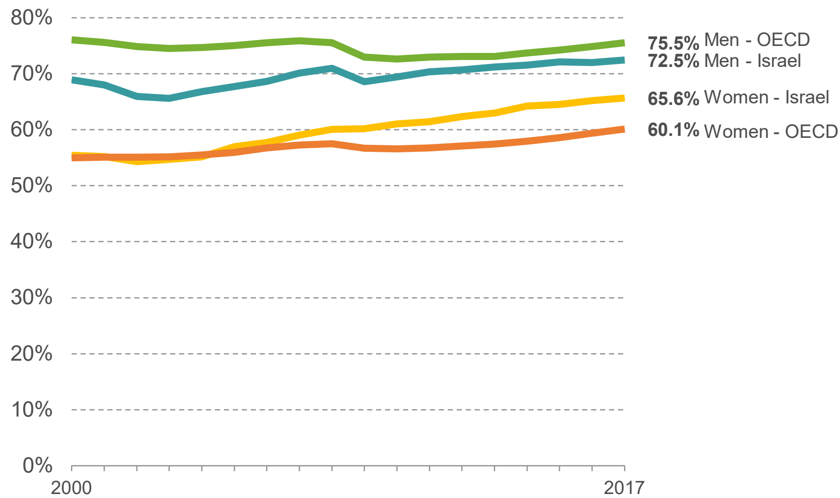
Female employment rates

Israel fares well with regards to policies encouraging women to work. The individual income tax system — which grants a larger tax credit for women than for men — provides higher take-home income for a two-wage earner household than for a one-wage earner household in which the total gross income is equivalent. The fact that an addition of 50 percent of the old-age allowance benefit is granted for 35 years of insured work, as well as the additional annual deferment benefit for late retirement, encourages women to be part of the labor force.

On the other hand, there is a homemaker old-age allowance benefit — which provides that a non-working married woman is exempt from making NII contributions while still qualifying for a basic old-age allowance — can be seen as a disincentive for women to enter the work force and as maintaining traditional gender roles.

Employment rates of women have risen substantially over the last decades, propelled by an increase in working mothers and women ages 55-64, whose employment increased substantially following the rise in retirement age in 2003 (Bank of Israel *Annual Reports* 2010; 2014). As shown in Figure 5, employment rates among the working age population stand at 65.6 percent for Israeli women, a gap of 6.9 percentage points from the 72.5 percent figure for men. This gap is substantially smaller than the employment gender gap in OECD countries on average, which stands at 15.4 percentage points. Israel is in the top third (ranked 11) of OECD countries in terms of having a small employment gap between men and women. Such high employment rates among women are particularly remarkable given Israel's extremely high fertility rate relative to other countries (3.1 children per woman compared to an OECD average of 1.7; see Bowers and Fuchs 2016).

Figure 5. Employment rates in Israel and the OECD



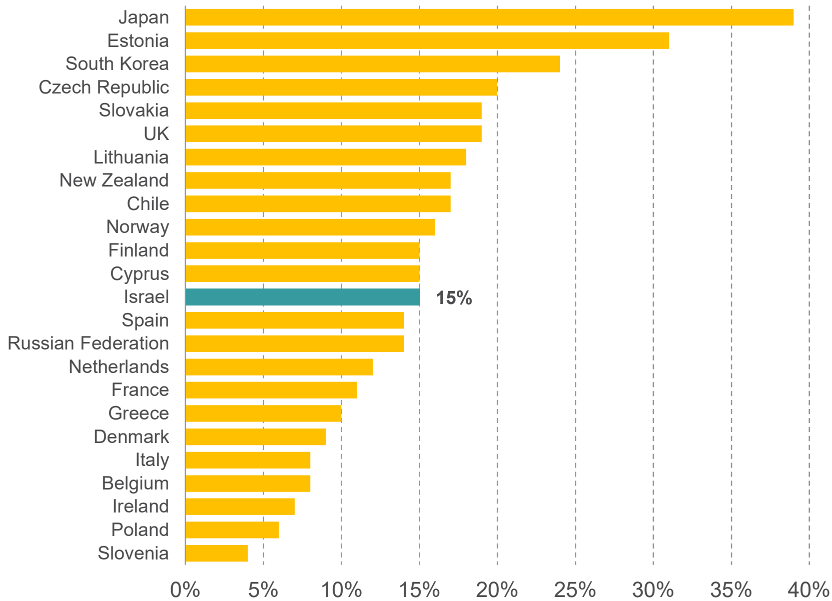
Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: OECD.Stat

Hourly wage gap

In Israel, there is a substantial gender wage gap. This gap stems from both the hourly wage gap and the fact that women work fewer weekly hours on average. In 2014-2015, the gross earnings gap stood at 36 percent, with Israel ranked as having the fifth highest gap from the 21 OECD countries with available data. After adjusting for the difference in hours worked, the hourly wage gap stood at 15 percent in 2014-2015, in the middle of the ranking (Figure 6). In 2016, however, the hourly wage gap rose to 19 percent. It is not currently clear whether this specific increase is an outlier or if it is truly indicative of a growing gap.

Much, but not all, of the hourly gap is explained by difference in the occupational choice of men and women. Occupational differences begin to emerge at an early age, as already in high school girls represent a relatively small share of those studying computer science and engineering (Fuchs 2016).

Figure 6. Hourly wage gap between women and men, 2014-2015
Ages 25-64



Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: PIACC

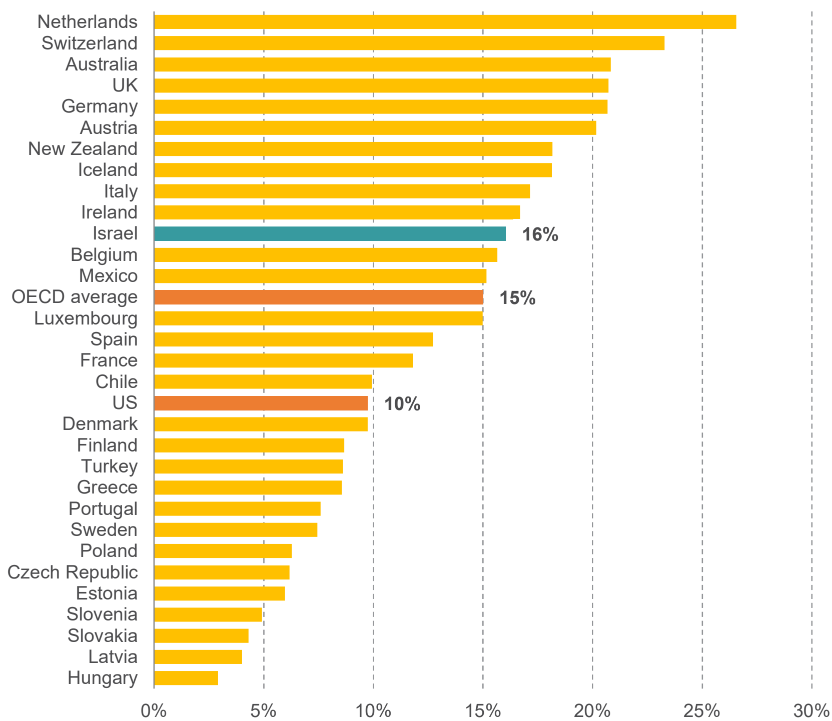
Women in part-time employment

In 2017, based on national definitions, 31.8 percent of working women in Israel worked part-time, compared to 12.9 percent of men (OECD).[18] The percentages vary widely among the OECD countries, where at one end 74 percent of working women work part-time in the Netherlands, while at the other extreme, only 7 percent work part-time in Hungary. The incidence of part-time work is the indicator used in the European future pension gender gap study. However, it is the difference in weekly work hours that is of greater importance to gross wage gaps. As Figure 7 shows, Israel has the 11th largest gap out of the 32 OECD countries. In 2017, women worked on average

18 Israel defines part-time work as less than 35 weekly work hours.

16 percent fewer weekly hours than did men in Israel (37.0 and 44.1 weekly hours, respectively).

Figure 7. The gender gap in weekly work hours on the main job, 2017



Source: Liora Bowrs and Hadas Fuchs, Taub Center | Data: OECD.Stat

Another factor that affects the income an individual brings home over the long term is the continuity of labor market involvement — that is, do individuals stay employed continuously, or are they periodically unemployed or underemployed? National Insurance Institute data, which counts those who worked at least one month in 2015, show that women, on average, worked 10.51 months and men 10.75 months. The number of months worked on average is just slightly higher for men than for women in every income decile.[19]

Factors related to the pension system

The second set of factors in Table 1, used to understand the pension gender gap, include various policies related to the pension system, which we will now explore.[20]

Career break compensation

One way in which countries' pension policies affect women and men differently is how pension entitlements accrue during periods of maternity leave and childcare. Governments have several conflicting policy objectives to weigh, including encouraging parents to spend time with their young children while at the same time ensuring that individuals do not leave the labor market for prolonged periods of time, the result of which can be a depreciation in their skills and marketability. Similar challenges arise when developing policy around the overall length of parental leave periods and salary replacement provided during that time. Attaining the right balance between these two objectives, while not codifying gender-stereotypical roles, is an important objective of policy makers.

In Israel, the paid portion of maternity leave and parental leave (generally 15 weeks) is counted as an insured period for the purposes of NII's allowance calculations. However, if a woman takes the full 26 weeks considered birth and parenthood leave or up to the longer one year of unpaid leave for childcare, the unpaid portions would not be considered insured periods.[21, 22] Nonetheless, since only 35 years of insurance are required to be considered full tenure for purposes of old-age benefits, there are some years built into

19 There are substantial differences between the deciles, however, wherein men and women in the lowest decile worked on average less than 5.5 months a year.

20 Various policies can affect the gaps in pension income. For example, a simulation of the hypothetical pension gender gap by Norway Statistics' Research Department showed that the gap would narrow from 43 percent, if it was based solely on earnings and actuarially fair principles to 7 percent if based on various regulations. The regulations used included gender-neutral life tables, capping social security income, using child care credits, use of pension inheritance policies, guaranteed pension policies, higher pensions for singles, and taxation on pension income (Halvorson and Pederson 2017).

21 During the portion of unpaid leave, a woman is also not required to pay NII contributions.

22 Harris-Olshak (2014) showed that 41 percent of Israeli women took leave time after birth beyond the paid portion, and that the average length of leave taken was 20 weeks.

the system that allow a woman to be out of the labor market and still qualify for the maximum allowance (assuming that she began making NII payments at the age of 18). Similarly, the law requires employer and employee contributions to private pensions during the period of paid parental leave — that is up to the 15 weeks. However, if a woman also takes advantage of additional unpaid leave offered by law, she would not be entitled to pension contributions during that period.[23] A woman can choose to make contributions on her own during this unpaid leave to ensure continuity of savings, and in certain cases spouses can also make contributions on behalf of their wives and enjoy the aforementioned tax benefits. In practice, very few households seem to take advantage of this option.

Compared to other OECD countries, Israel's pension protection during periods of childcare is quite low in the second pillar. Due to the direct link between defined contributions and pension income, and the lack of pension contributions beyond the paid portion of leave, a substantial contribution gap develops in the case of longer leaves (or reduced position scope) to care for children. Many OECD countries have specific policies that reduce the impact of such a gap, namely by providing pension credits/entitlements for parents during periods of childcare. Nearly all countries with public pension schemes grant credits or other means to reduce the impact of childcare on pension income.[24]

However, even among countries with a more substantial private pension system, there are countries in which childcare is compensated for in retirement income. For example, in Denmark, occupational pension contributions (two-thirds funded by the state and one-third by the beneficiary) are made for a period of about 8 months following the end of parental leave. Similarly, other countries contribute to private occupational plans on behalf of the parent for the period of time shown in parentheses: Sweden (480 days including maternity leave), Estonia (3 years including maternity leave), Chile (6 months including maternity leave), Slovakia (6 years).[25] In Switzerland, Iceland, Australia, and the Netherlands, on the other

23 This is particularly significant in light of the fact that higher-earning women on average tend to take longer maternity leaves. Some 70 percent of women in Israel earning less than NIS 4,000 per month returned to work immediately following the end of paid leave, compared to 53 percent of those earning above NIS 10,000 per month (Harris-Olshak 2014). On the other hand, the lowest-earning women (those earning less than NIS 5,000 per month) were three times more likely (12 percent versus 4 percent) not to return to work at all within 12 months (Wasserstein and Toledano 2014).

24 In public-scheme countries where childcare credits are not granted, such as the US in which full Social Security benefits are received based on the 35 highest earning years, a break of five years from a potential 45-year career does not affect income from the first or second tier pension system. In Canada, up to 7 years of childcare can be excluded from salary periods used to calculate benefits.

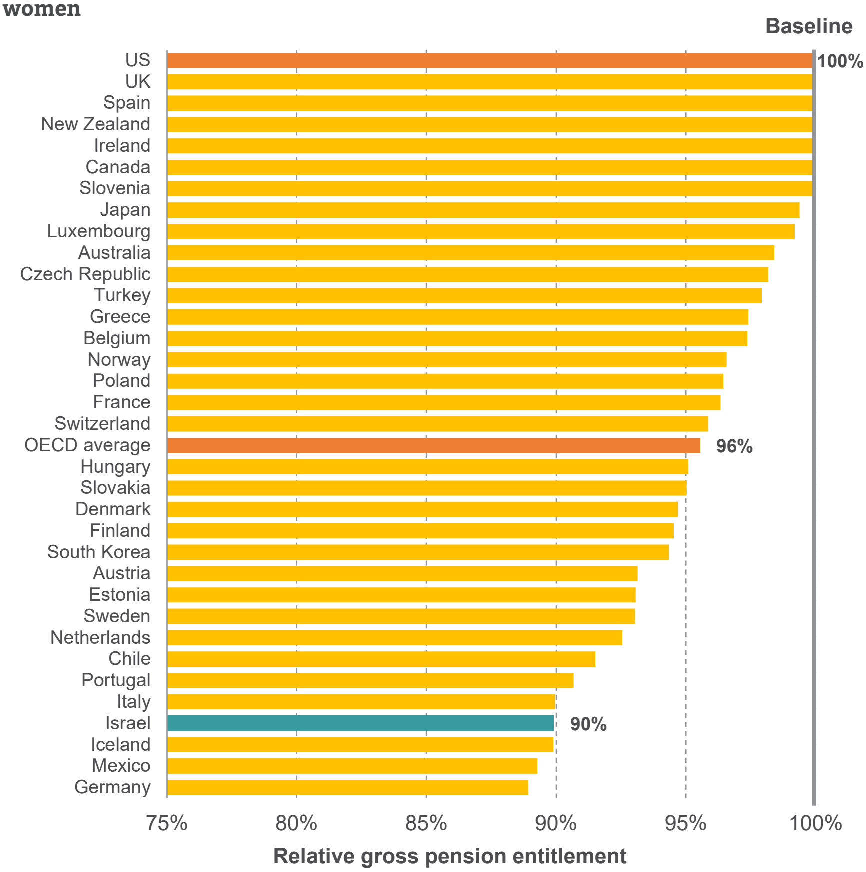
25 Different countries use different bases to calculate pension contributions; in some cases, it is the actual salary earned prior to the break, in other cases it is related to the average or minimum wage.

hand, such contributions into private pension plans for childcare periods are not made (OECD 2015).

A 2015 OECD simulation showed that an Israeli woman earning the average wage and taking a five-year career break at age 30 to care for two children is estimated to receive 90 percent of the pension income of a woman who does not take that break ("baseline") on the assumption that these are her only career breaks. Figure 8 shows that this is the fourth-lowest rate compared to the 34 OECD countries where a similar simulation was conducted (OECD 2015).

Figure 8. The influence of career breaks on pension entitlements, 2014

The gross pension entitlements of a mother earning the average wage who takes a five-year career break for childcare versus that of a continuous-career women



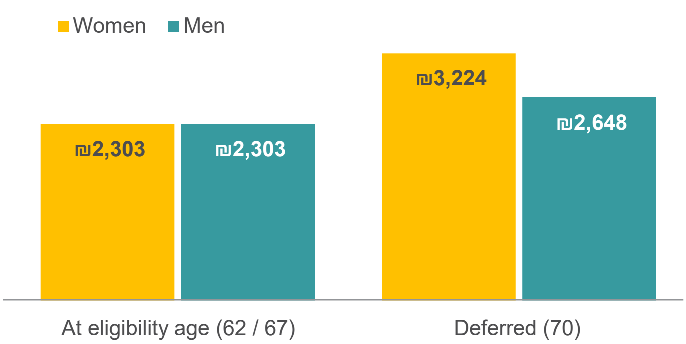
Note: OECD model based on a woman having a full career (age 20 to retirement age) earning the average wage who takes a 5-year career break starting at age 30, when she has two children, ages 2 and 4). The indicator compares the ratio of the pension entitlement of this woman and that of a woman with similar characteristics who does not take this career break. Based on pension rules in place in 2014.

Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: OECD, *Pensions at a Glance 2015*

Pension redistribution

Given that, on average, women earn less than men over the course of their lifetime, another key policy consideration that affects the gender pension gap is the extent of redistribution that exists within the pension system. Here, there is a stark difference, by design, between NII (the first pillar) and private pensions in Israel (the second pillar). The National Insurance Institute is extremely redistributive — it does not matter if someone earned NIS 1,000 per month, or NIS 100,000 per month. If a man and a women are insured for at least 35 years and retire at the official retirement ages they would receive the exact same monthly allowance from NII throughout the remainder of their lives. In addition, the retirement age differential of 5 years and the 5 percent annual retirement deferral increase gives women a redistribution advantage. Thus, if a man and woman were both insured for 35 years, and chose to defer their allowance and retire at the age of 70 in 2018, the woman would receive an allowance that is 18 percent greater than the man would receive — NIS 3,224 per month versus NIS 2,648 per month – through the age of 80 (Figure 9).

Figure 9. NII old-age allowances, 2018



Note: Assumes retirement in the same year and 35 years of pension contributions

Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: NII

While NII old-age allowances are very redistributive (progressive), private pensions could actually be viewed as being regressive in terms of their distributional impact. This occurs because of the substantial tax breaks on pension contributions.[26] These tax breaks serve as a subsidy provided to those who pay income tax; with greater subsidies the higher one's marginal income tax rate. As more than 80 percent of direct taxes are paid by the top two deciles, these benefits accrue substantially more to the higher income groups (Ministry of Finance 2017).[27]

Pension indexation

Pension indexation refers to how the level of pension income changes annually to adjust for changes in the economy. Since a woman retiring at 62 with an average life expectancy will spend 20+ years in retirement, it is important to consider how the pension she receives on the day of retirement may change over those years. Before 2003, NII old-age allowances were adjusted annually by the average wage growth. Since then, they are adjusted by the Consumer Price Index; that is, their value stays constant relative to prices (Menahem Carmi and Kimhi 2018). The standard of living increases in the long-term, because wages in general increase faster than prices.[28] The impact of indexing old-age allowances to CPI thus means that, in real terms, the monthly allowances decrease relative to the average income in the economy. Due to these indexation rules, ten years after retirement in Israel the estimated net replacement rate as a share of average wage is 8 percentage points lower than the rate received at retirement for the portion provided by NII (measured as a percent of the average wage in the market,OECD pension simulator).[29] It appears that private pension income, however, has maintained its value relative to overall earnings in the economy based on market returns in the last years.[30]

26 Employer contributions up to 2.5 times the average wage are tax free, there is a tax credit on employee contributions, and severance pay contributions up to a salary of almost NIS 33,000 are untaxed. Earnings in both pension and severance accumulate tax free, and NIS 4,106 (in 2018) of pension annuity income is exempt from tax.

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28 CPI in Israel is targeted to increase at about 2 percent per year in the long-term. Real wage growth (that is, above inflation) over the last 20 years has averaged 1.0 percent annually.

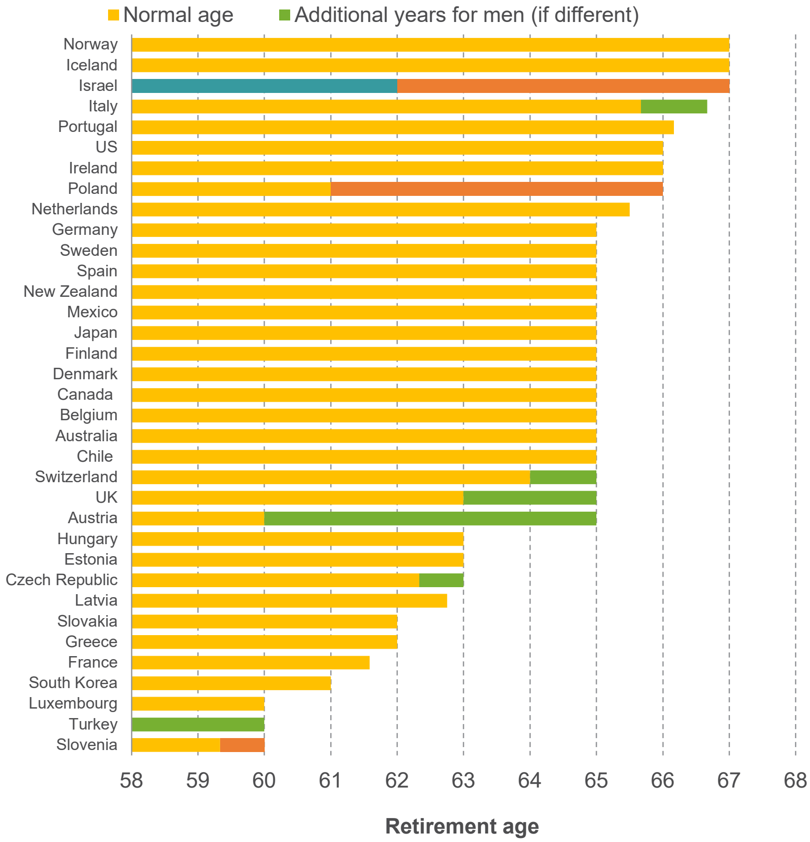
29 Net replacement rate is the ratio between the monthly pension that the worker receives upon retirement and the final wage earned from employment.

30 Monthly income is calculated upon retirement by the new pension funds under the assumption that annual returns in the fund will be 3.36 percent above the CPI. If such returns are met, then the monthly pension income grows by the CPI; if they are higher or lower than this, then the monthly return will be adjusted upwards or downwards accordingly.

Retirement age

Retirement age gaps between men and women existed in only 9 out of 35 OECD countries in 2016 (Figure 10), and Israel is one of only 3 OECD countries that plans to maintain such a gap (Poland and Switzerland are the other two countries, shown in orange in the figure (OECD 2017). It should be noted that Israel's retirement age for men, at 67, is tied with Iceland and Norway as the highest in the OECD.

Figure 10. The gender gap in retirement age, 2016

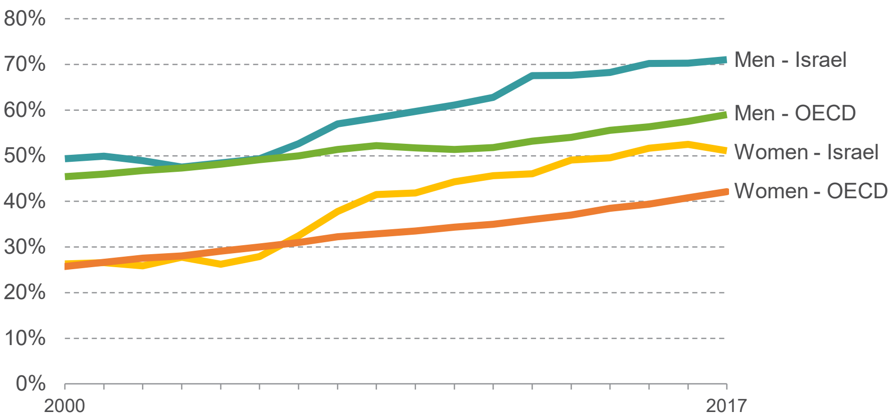


Note: Countries shown in orange anticipated maintaining a retirement gender age gap through 2060.

Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: OECD, *Pensions at a Glance 2017*

While the official retirement age is 62 for women, many continue working beyond that age, and over time there has been a notable increase in the percent of older men and women employed in Israel (Kimhi and Shraberman 2013).[31] A substantial jump can be seen starting around 2004, the last time that retirement ages were raised in Israel. In 2016, 53 percent of Israeli women and 70 percent of Israeli men aged 60-64 were employed, over 10 percentage points more than in the OECD for each gender (Figure 11). In the older age cohort (65-69), the figures drop to about 51 percent of men and 29 percent of women (OECD.Stat).

Figure 11. Employment rate among those ages 60-64



Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: OECD.Stat

Pension payment coefficients

One factor not considered in the future pension gender gap in Europe study is the issue of gender-specific life tables, because in Europe only

31 Some 22 percent of women aged 62-63 worked in 2014 and instead chose to defer their old-age allowance. An additional 23 percent of women in this age group worked but had income that fell under the maximum level allowed in order to receive an old-age allowance. About 41 percent of women in this age group had no income from work and received an old-age allowance. Finally, the remaining likely fall under the label of "homemaker" and are not eligible for their own old-age allowance until age 70 (Committee on Raising Women's Retirement Age 2016).

gender-neutral life tables are used.[32] Pension companies in Israel, upon an individual's retirement, calculate a coefficient by which the total amount saved in the defined contribution fund is divided. This coefficient is used to determine the monthly pension income an individual is to receive; dividing the total savings balance by a higher coefficient results in a lower monthly income. The factors (aside from retirement age) considered in determining the coefficient in any given year are gender and factors that influence the calculation of survivor's allowance — marital status, the age difference between the couple, the percent of survivor's allowance and the number of insured months selected. Marital status affects the potential payout needed in the case of an individual's death and continued survivor's pension benefits. Thus, the coefficient for a married individual with a survivor's pension[33] is higher (and the pension lower) than for a similar single person without a survivor's pension since some pension benefits will be transferred to their spouse in case of death. It is important to note that due to the fact that a woman is more likely in practice to benefit from a survivor's pension than is her husband, the coefficients used for married men and women are fairly similar.

The other factor determining the coefficient is gender. Life expectancy is longer for women than for men; at age 65 the average life expectancy in Israel for a woman is 21.5 and for a man it is 18.9 years (OECD). Pension companies, by law, use this difference to calculate a higher coefficient for a single woman (a lower pension) than for a single man retiring at the same age.[34] Today in the OECD it appears that only four countries — Israel,

32 In 2012, the European Court of Justice ruled that use of gender in determining insurance calculations of any kind is considered a form of discrimination, and all pension funds in Europe had to begin calculating benefits similarly for men and women. This ruling was made across the board for insurance policies, including health, life and car insurance; depending on the insurance type, the change benefited men in some cases and women in others. The US Supreme Court also ruled in 1983 that pension benefits could not be determined with consideration of gender. This issue has been brought up legislatively in Israel several times, most recently in June 2018, with a proposed law that would prohibit the use of gender as a factor in pension income calculation.

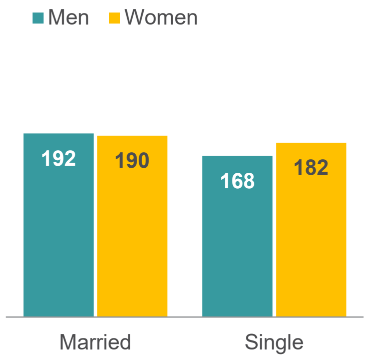
33 In the new pension funds, there must be some level of survivor's pension selected by a married individual, with their spouse as a beneficiary. In manager's insurance plans, there is an insurance period that is paid out on a monthly basis to beneficiaries as named by the retiree.

34 Having a higher coefficient for women is actuarially reflective of the life expectancy differences between genders, and from an economic perspective there is justification for actuarially fair principles. It does, however, lead to questions about why gender is the only relevant factor in this calculation. For instance, while Arab Israeli men on average live four years less than Jewish men (see Chernichovksy, Bisharat, Bowers, Brill, and Sharony 2017), neither sector nor other facts correlated with life expectancy, such as socioeconomic status, are utilized in the coefficient calculation.

Australia, Chile, and Mexico — use gender-specific life tables rather than unisex lifetables for calculating annuities (OECD, 2017; Andrew Reilly, OECD).

Figure 12 presents the coefficients used by the Menorah Mivtachim pension funds as of June 2018. While married men and women have similar coefficients (with a 1.2 percent higher coefficient for men), the coefficient for single men is 7.5 percent lower than for a single woman at the same retirement age of 67. It is important to note, however, that the impact on pensions is actually less than implied by the 7.5 percent lower coefficient because among women a larger portion of their contributions are directed towards pension savings. The reason is that a portion of one's pension contributions during working years are directed towards life and disability insurance coverage. Due to their lower risk profile, the insurance fees charged for women are about 3 percentage points lower than for men. On average, in the larger pension funds in 2016, 8.4 percent of pension contributions for men and 5.6 percent for women went towards life and disability insurance coverage (Menahem Carmi and Spivak 2018).

Figure 12. Coefficients for single and married men and women retiring at age 67



Note: Assumes 60% survivor pension in the case of married partners

Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: Menorah Mivtachim

We assessed the difference in the coefficient and the insurance fee differential on pension savings for women and men using the Menorah Mivtachim's pension simulator. The calculation was made for a man and a woman earning the same salary (NIS 7,500 per month) at age 30, with the same wage growth (1.5 percent annually) and retiring at age 67. Due to the lower insurance fees charged to a woman over the course of this period, upon retirement her pension savings balance is 1.8 percent higher than her male counterpart. Once the 7.5 percent coefficient difference in favor of the single male is factored in, however, the single woman's pension income is 6 percent less than the male's.

4. The future pension gender gap

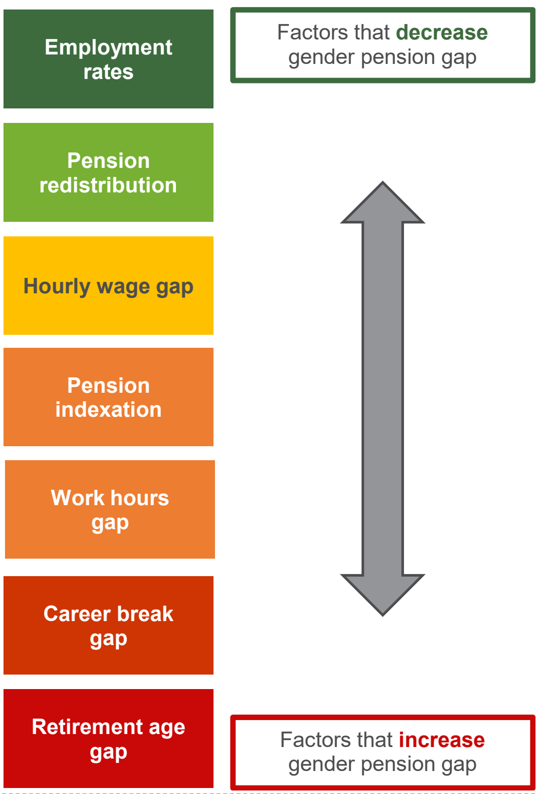
After examining each of the components that comprise the future gender pension gap index separately — not including use of gender-specific lifetables as that is not relevant in Europe — we can return to the overall perspective.

The gap between Israel and the OECD

Given the large weight placed on the employment domain relative to the pension systems domain (see Table 1) — and Israel's strong performance in this domain, particularly in terms of female employment rates — the country places somewhere in the middle of the OECD countries in terms of future gender pension gaps (see Figure 5 previously).

Figure 13 shows how Israel rates in different indicators. Israel's efforts to encourage women's labor market participation have a clear positive impact on the pension gender gap, as does the redistributive role played by NII's universal pension. In contrast, the retirement age differences and career breaks for childcare work to women's disadvantage and increase the gaps. From Figure 13 and from the analysis to this point, it seems that if decision makers are interested in lowering the gender pension gap in Israel, they have a few avenues available. First and foremost, a strong emphasis could be placed on raising women's retirement age (perhaps even equating it with that

Figure 13. Israel's ranking on factors influencing gender gaps



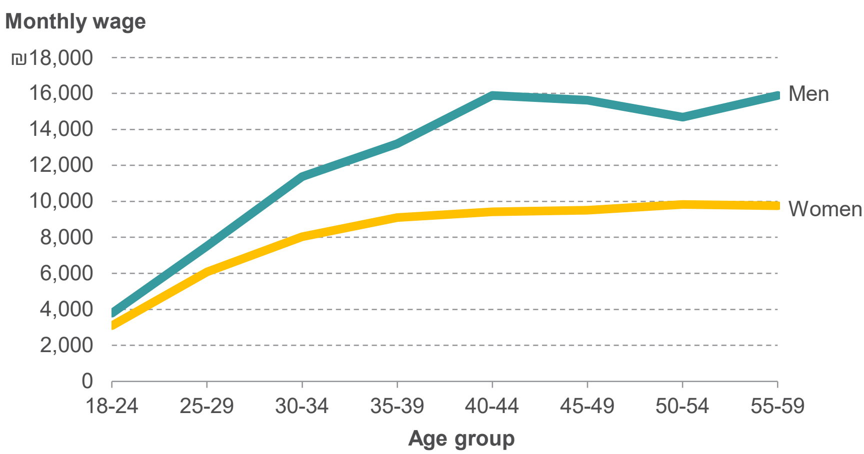
Source: Liora Bowers and Hadas Fuchs, Taub Center of men). Second, pension continuity during maternity leave and career break periods for childcare could be strengthened. In addition, switching old-age allowance indexation rules so that they are linked to wages would lower the gap since linking to prices lowers the value of the accumulated pension over time, and women have a longer life-expectancy (of course, actuarial implications of this change must be considered). Finally, factors that lead to wage gaps between men and women, such as the number of hours worked and occupational choice, play a role, and steps to shrink the differences will lower the gap.

Estimating pension income and the pension gender gap

The above discussion helps us understand how Israel compares to other countries on factors that affect the future pension gender gap. What, however, is the estimated level of this future gap?

In order to estimate this figure, we assessed income trajectories of men and women in Israel based on the Central Bureau of Statistics *Household Expenditure Survey*. Figure 14 shows the monthly salary of men and women in 2016 by age group. It is important to stress that these figures are simple averages, and do not take into consideration any differences between men and women in employment characteristics, such as different work hours and occupational choice. While salaries start out relatively similar in the 25-29 age group, the salary growth of men is substantially higher and the wage gaps peak around age 45, before stabilizing.

Figure 14. Simple wage differences between women and men, 2016



Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: CBS, *Household Expenditure Survey*

The basic data — an 18 percent gross gender wage gap at age 30 and differences in wage growth — were run in the Menorah Mivtachim simulator, including the anticipated pension income for single and married men (age 67 retirement) and women at three retirement ages (ages 62, 64, and 67).[35] The estimates on private pension income can be seen in Figures 16 and 17 below. In addition, we have added estimated NII old-age allowances in 2018 to allow for a more inclusive evaluation of retirement income.

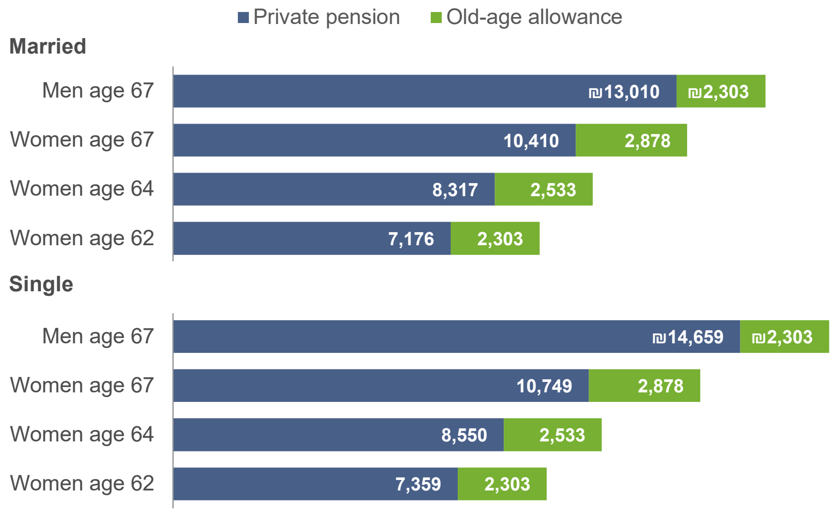
It is important to note that the assumptions used were quite basic — for example, linear wage growth, the same earnings profile for married and single individuals of the same gender, continuous employment, etc. As such the income numbers should be taken as a rough simulation that gives an overall big picture rather than precise estimates of retirement income. In light of the gender differences in employment that have been identified throughout this paper, namely lengthy maternity leaves and faster wage growth at the younger ages allowing men to accrue larger market returns starting earlier than women, it is anticipated that the actual gap would be higher than that shown.

Consider first the case in which both a married man and woman retire at age 67. In this case the woman's anticipated private pension income would be NIS 10,410 per month and her old-age allowance would be NIS 2,878. The average man's private pension income would be NIS 13,010, and his old-age allowance would be NIS 2,303. In total, the man's monthly income would be NIS 2,024 more than the woman's income.

Examining the retirement income of a woman who retires at age 62 instead of 67 demonstrates the large difference that those five years make on her financial position. With retirement at 62, her private pension income is estimated at NIS 7,176 per month, or NIS 3,234 less (31 percent less) than if she retired at age 67. In addition, she would receive a lower old-age allowance because she would not be receiving the 5 percent per-annum bonus for late retirement.

35 Based on 2013 data from the Central Bureau of Statistics Household Expenditure Survey, the average gross wage for a 30-year-old man and woman was NIS 9,200 and NIS 7,500 per month, respectively. The average wage growth through age 60 was 2 percent for men and 1.5 percent for women after controlling for education, resulting in a 32 percent gross wage gap at age 67. The average pension balance at age 30 was assumed to be NIS 53K for women and NIS 57K for men, based on actual data from Menorah Mivtachim. Pension management fees were modeled at 1.75 percent of contributions and 0.2 percent of the total balance.

Figure 15. Monthly pension income for married men and women at various retirement ages



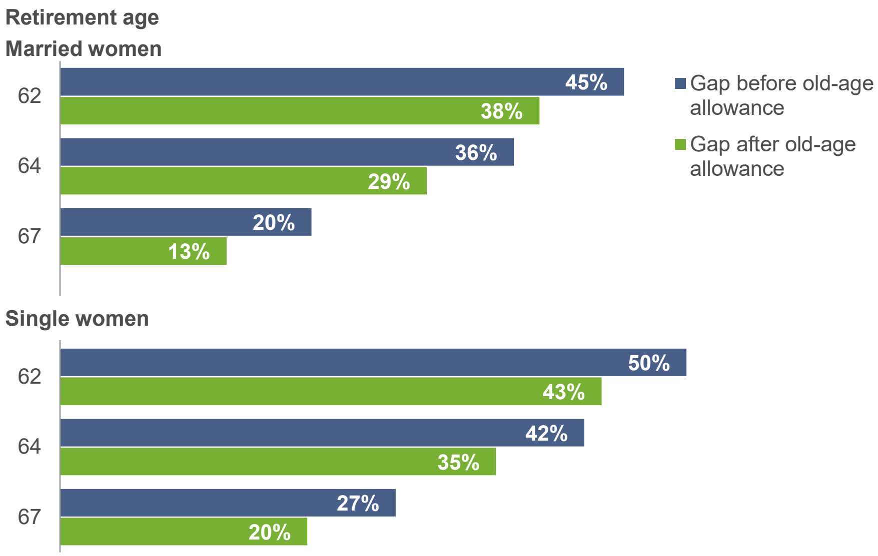
Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: Menorah Mivtachim

Similar results — but with a larger gender pension gap for the reason described above regarding the coefficient – can be seen among single men and women with average salaries and wage growth rates according to gender. In the case of the average single female who retires at age 67, her private pension monthly income would be NIS 10,749 per month, with an additional NIS 2,878 old-age allowance. This compares to a private pension of NIS 14,659 and an old-age allowance of NIS 2,303 for the single male who retires at 67. The National Insurance Institute again plays a redistributive role in this case, with the woman's old-age allowance greater due to a larger retirement deferral benefit. Due to the different coefficients, there is an even larger gap for women who retire early, with the private pension income at NIS 7,359 per month for a 62-year-old retiree — 36 percent less than for a woman retiring at age 67.

The gender pension gaps are shown in percentages (Figure 16). In addition, the impact of NII allowances can be seen by examining pension gender gaps before and after old-age allowance for the average retiree based on the above earnings scenarios. The private pension gender gap for the average married woman ranges from 45 percent for a woman retiring at 62 to 20 percent for a woman retiring at 67, relative to the average married man retiring at 67. After accounting for old-age allowances, the gap falls to 38 percent and 13 percent respectively. For single women, the gaps are higher. The average single woman retiring at age 62 would have a private pension that is just about half that of a single man retiring at age 67, and that gap falls to 27 percent with retirement at age 67. NII's old age allowances again work to reduce those gaps, to 43 percent and 20 percent, respectively.

Figure 16. Pension gender gap

Before and after the impact of an old-age allowance, for women at various retirement ages as compared to men retiring at age 67



Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: Menorah Mivtachim, simulation

Conclusion

Gender pension gaps are a growing issue of discussion among policy makers globally but have not been explored in depth in Israel. This issue is important for a number of reasons, including the need to increase awareness in financial decision making among women and families, ensure an independent source of income for women, and reduce the 7 percentage point poverty gender gap among Israel's elderly.

Substantial differences in pension income between men and women exist worldwide. The second pillar of pensions — intended to ensure income replacement — is aimed at ensuring a smooth financial transition between working and retired life. Thus one's pension income is supposed to be tied to the individual's labor market performance — the more contributions for pensions they put in during the working life, the more they receive. On average, men work more years with higher hourly wages and greater weekly working hours, and so their average income is higher than that of women's. In light of this, a key question for policy makers remains: if and how much cross-subsidization of pension income between groups is optimal to incentivize more labor market participation and higher salaries, while simultaneously reducing inequality and poverty in old age? Other issues arise from the data as to what policies could reduce pension gaps by improving women's labor market outcomes.

For historical reasons, Israel's pension system revolves around private occupational pensions, which are mandatory for employees since 2008; and, since the mid-1990s, the system is designed around the defined contribution model. This system promotes fiscal responsibility and sustainability, but can heighten inequality and magnify lifetime differences in salaries and employment. While gender gaps among current retirees in Israel are hard to assess due to poor data availability on pension incomes by gender, this study aimed to assess how current labor market and pension policies will affect the gender pension gap in the future. Through separate simulations for single and married men and women at various retirement ages. It was found that the average pension income for the average married woman retiring at the official age of 62 is expected to be about 38 percent less than the average for a man retiring at age 67. If a woman retires at 67, that income level increases to NIS 13,288 per month and the gender pension gap falls to 13 percent.

Among single individuals, pension income gaps are even greater due to the absence of a survivor's pension and women's longer life expectancy. The simulation shows that a single man retiring at 67 will benefit from an income that is 43 percent higher than a single woman retiring at age 62 from old-age allowance and private pension. Among this population as well, the impact of delayed retirement for single women is substantial, reducing the gender gap to 20 percent.

Analysis of Menorah Mivtachim's new pension funds highlights the labor market differences across population groups over time. Haredi women under age 44 have a notable pension savings gender gap in their favor — reflecting the higher employment rates of these women. While very large gender pension savings gaps exist among older Arab Israeli women, the differences between men and young Arab Israeli women – with their growing education and employment rates — resemble those of the "all others" group.

All in all, the differences between men and women in the labor market play a key role in setting the pension income differences after retirement. It is important to remember the substantial role of the National Insurance Institute in the gender redistribution through old-age allowances — which narrow gender pension gaps substantially. Based on its labor market and pension system, Israel falls somewhere in the middle of European countries in terms of future gender pension gaps. Pension gender gaps are lowered by the strong employment rates of women as compared to other OECD countries. In contrast, there are large gaps in the weekly working hours between men and women, likely heightened by Israel's high fertility rates and greater burden of housework/childcare on Israeli women. Most of the other OECD countries have found ways to ensure pension continuity during career breaks for childcare, whether with public or private-based pension systems, while in Israel, such career breaks have a substantial detrimental impact on private pension income.

Israel's 5-year retirement age difference between the genders makes it an outlier among OECD countries, and the simulation shows that if the retirement ages were the same, pension gaps would narrow significantly. In addition, Israel's use of gender-specific life tables — rare among OECD countries — puts single women at a notable disadvantage to single men in terms of monthly pension income. This coefficient disadvantage prevails even though overall pension savings on the same lifetime earnings would be slightly higher for women due to their lower life and disability insurance fees.

In general, it seems like gender plays a more prominent role in retirement policies in Israel than in other OECD countries. From the existence of a homemaker status for married women, a 5-year retirement age gap, use of gender specific lifetables (which result in a higher coefficient when calculating monthly pension allowances for women); and even differential survivor's pensions for widowed men and women, gender shapes retirement policies in a uniquely profound way in Israel that has a large effect on pension gaps between men and women.

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Appendix

Appendix Table 1. Forward-looking Gender Pension Gap Index

Organized by low to high in each domain, highlight represents Israel's positioning

	Highest score (1)	Lowest score (29)	Average score	Israel's score	Israel's ranking
Measures related to the labor market					
Women's employment rate	90.6	49.9	73.2	83.1	7
Hourly wage gap	95.1	70.2	85.1	85.0	15
Part-time employment among women	97.0	22.9	76.0	68.2	21
Measures related to pension policies					
Effect of career breaks	115.8	87.8	100.2	93.6	27
Pension redistribution	130.0	97.6	109.5	113.2	10
CPI linking	108.3	79.4	91.8	88.3	20
Pension retirement age difference	100.0	89.8	99.6	89.8	29
Labor market factors-total	83.7	66.3	76.9	79.9	9
Pension system factors-total	111.6	93.9	100.3	96.2	24

Source: Liora Bowers and Hadas Fuchs, Taub Center | Data: European Parliament, Policy Department 2017

Assumptions for the appendix table

- Latest available data for Israel, except for hourly wage gap wherein 2015 data appears to be more reflective of recent years than the 2016 figure and is used in the analysis
- Part-time employment based on national definitions
- OECD pension simulation data provided by Andrew Reilly, OECD

- Replacement rate calculations are made using gender-neutral life tables for women in Israel in all cases except for the fourth indicator, retirement age. In this case, the gender-neutral life table for a man retiring at age 67 is used for comparison purposes.

- Replacement rates from 80 percent OECD average wage earnings are used, which is equivalent to about 100 percent of the Israel average wage. We chose to use this wage level as the OECD model assumes private pension contributions only up to the average wage in Israel. Similarly, a low wage worker (66 percent of average Israeli wage) translates to a replacement rate based on 52 percent of the average OECD wage. Sensitivity testing shows that using 80 percent earnings does not affect the overall placement of Israel in the index.

- OECD Pensions simulator cannot provide a replacement rate from NII in a scenario of retirement at 62 (because the simulator is designed around a retirement age of 64 for women in Israel), so the Net Replacement Rate in this scenario is made using an estimated marginal increase of 1.8 percentage points in NRR for each additional year of work between age 62 and 67.