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 Internet edition

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Alex Weinreb and Nachum Blass*

Abstract

The public's preoccupation with the size of the religious population in Israel (and particularly, the size of the Haredi community) reflects, to a large extent, concerns for the country's economic future, its ideology, and security. This work takes an in-depth look at data that touches on the religiosity trends of the Jewish population in Israel. The principal finding is that if trends in changes in the level of religiosity, and in particular, changes in the Haredi population are considered, then projections regarding the size of the religious population are substantially lower than those based on fertility rates alone. This conclusion is based on two complementary analyses. The first looks at actual enrollment rates for 1st graders in schools under the various supervisory authorities relative to the expected number based on natural growth rates. The second examines the number of students who remained in schools under the same supervisory authority from 1st to 8th grade. In both analyses, we see unexpected gains in enrollment in secular schools, and net losses in State-religious and Haredi schools. We combine these estimates with Central Bureau of Statistics long-term population projections, demonstrating how profoundly religious change can affect our estimates of future population composition.

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*“It ain’t what you know that gets you into trouble.
It’s what you know for sure that just ain’t so.”*
— (Mark Twain)

Introduction

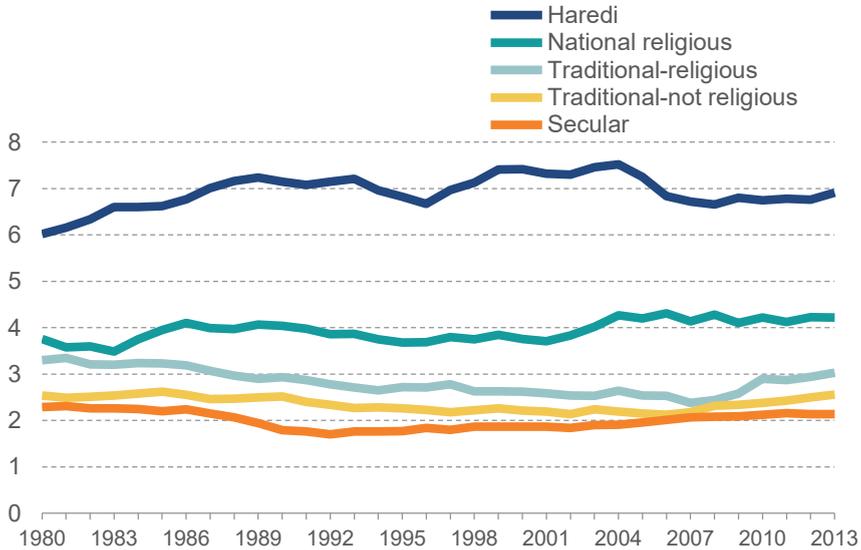
Israeli society is becoming progressively more religious, and in the Jewish sector, more Haredi (ultra-Orthodox). This, at least, is a frequent assertion, in both secular and Haredi circles, and among journalists, politicians and academic researchers.¹

In most accounts, the main factor driving this increasing religiosity in Israel is the strong relationship between religiosity and fertility (e.g., Bystrov and Soffer 2010). As seen in Figure 1,² even though there have been mild fluctuations in fertility from 1980 to 2013 within each of the five levels of religiosity used by Israel’s Central Bureau of Statistics (CBS) — Haredi, religious, traditional-religious, traditional-not religious, and secular/other³ — the overall differences between the five groups are quite stable. Over the last 30 years at least, the fertility rates of Haredi women in Israel have been about three times as high as those of (Jewish) secular women, with traditional and religious falling between these. Projecting these relative differences in fertility into the future, it is easy to assume that Israeli society will become more religious and, in particular, that it will undergo a process of “Haredization.”

1 Outside Haredi circles, these assertions are typically accompanied by considerable anxiety, rooted in one of three factors: the perception of Haredi ambivalence about democratic politics and related issues (Stadler, Lomsky-Feder and Ben-Ari 2008); fears of religious oppression as religion is infused into everyday life (Kremnitzer 2017 refers to Haredim as a “hegemonic minority”; Melamed 2018 asserts that secular Israelis are “in danger of extinction”); or economic reasons, that is, that higher rates of poverty among Haredim and their lower levels of general education will act as a brake on Israel’s economic development. Statements by Ben-David are representative: “If trends of the last 10 years continue, 78 percent of the primary school students will be Haredim or Arab by 2040, and only 14 percent will be in the state’s secular sector.” (Ben-David 2009) “In light of the fact that about half of today’s children are either Arab or Haredi, and given achievement levels that are at best Third World and below, the current demographic changes reflect a socioeconomic evolution that will be unsustainable when these children grow up.” (Ben-David 2012). Equivalent statements have been made by Soffer, the long-term director of the Heinkin Center for Geostrategy at the University of Haifa (e.g., Bystrov and Soffer 2010).

2 The data used to produce Figure 1 are from Hleihel (2017). These are the standard estimates, combining data on actual births from Israel’s Population Register with self-reported data on religiosity from the CBS Social Survey. Data-quality issues are reviewed below.

3 This is the standard division used by Israel’s Central Bureau of Statistics.

Figure 1. Total fertility rate, 1980-2013**By religiosity**

Source: Hleihel, 2017

The second factor said to be driving increasing religiosity at the societal level is shifts at the individual level, that is, people becoming more religious across their life course. As we document below, the data supporting this assertion are much thinner and more problematic than observers' impressions. Nonetheless, those impressions shape popular perception. There appear to be a growing number of public figures — politicians, musicians, TV personalities — who are religious or who have become more religious over the last few decades. Likewise, in the eyes of many, Haredi and religious political parties are increasingly powerful, assertive, and ready to challenge the longstanding religious status quo.

As prevalent as these views have become, there is some evidence that, at the very least, they exaggerate the phenomenon of increasing religiosity. This is the central assertion in Avishai Ben Chaim's 2016 series of reports

on *Haredim: Dissolution* (Ben Chaim 2016).⁴ It is consistent with an analysis of primary school enrollment data by Taub Center researchers: Blass and Bleikh (2016) show that Haredi enrollment patterns drop below the anticipated growth from about 2012, even though Haredi fertility rates 6 to 7 years beforehand remained stable (Hleihel 2017). It is also consistent with other ongoing changes in the Haredi community, all of which point to deepening cracks in the edifice of Haredi institutions. Among these indicators are: Rapidly rising divorce rates, driven in part by changing religiosity of one of the partners (Rabinowitz 2017a); a sharp increase in age-at-marriage (Rabinowitz 2017b), which in turn raises the number of “dangerous years” when the young are at greater risk of leaving the community (Ben Chaim 2016, part 3, 10:55); a sharp increase in labor-force participation (Regev 2017) and internet penetration (through both computers and cellphones, ISOC 2017), which augments interpersonal contact and the flow of new ideas; and more generally, a growing Haredi middle-class with consumption behavior and desires that mirror those of their less religious counterparts (Weiss 2017).

Each of these changes is what Davidman (2015:31), writing about ex-Haredim in the United States, calls “a metaphorical tear in the sacred canopy that shelters community members from all possible threats to their way of life.” Taken together, they point to the increasing permeability of the borders that divide the Haredi and non-Haredi world, and that could once be relied upon to protect the former from the latter.

Tracking electoral support for Haredi parties, especially United Torah Judaism (UTJ), a Haredi party that, unlike Shas, does not try to appeal to non-Haredi voters, is another way to see how quickly Haredi political power is growing. In the 1999 elections, UTJ won 125,000 votes. In the 2015 elections, it won 210,000 votes. This translates into an annualized 3.2 percent increase in the number of votes. This is a significant increase, but it is much less than implied by the prior fertility rates in the Haredi sector. By this we mean: if the youngest voters in 1999 were born in 1981, and the youngest voters in 2015 were born in 1997, taking average fertility levels between those years should tell us how fast the rate of increase of Haredi voters should have been.

4 Matching the hyperbole of Melamed’s claim that secular Israelis are “in danger of extinction” (footnote 1), one of Ben Chaim’s informants, Shrulik (Yisrael) Frosh, the highly regarded Mayor of the Haredi city El’ad, asserted that “there is no house where there isn’t someone dead [i.e., no longer Haredi]” (אין בית אשר אין בו מת), and another informant (Moshe Shenfeld, an ex-Haredi associated with the organization Yotzim le’shinui), asserted that within a few years “Haredi mothers will give birth to more secular children than do secular mothers” (Episode 1).

Using Hleihel's estimates, average Haredi TFR from 1981 to 1997 translates into an intrinsic annualized growth rate of 4.26 percent — using a standard demographic method detailed below (Preston, Heuveline, and Guillot 2004: 150-155). If support for UTJ would have followed this trajectory, UTJ would have received 247,000 votes in 2015, that is, 37,000 more than they actually received.

This slower-than-expected growth is consistent with recent accounts of “mainstream” political parties establishing offices in Haredi communities (Weiss 2018), and pulling away some Haredi voters from the sector's traditional parties. This points to the same weakening of centralized authority structures implicated in rising age-at-marriage, divorce, and employment, documented above. It is also possible, however — and this is not completely independent of the first explanation — that the slower-than-expected growth reflects net patterns of religious mobility, that is, more people moving away from Haredi streams across the life course, or away from religious streams in general, than moving towards them.

Taking all these factors together, it seems clear that in spite of the frequent assertions that Israeli society is rapidly becoming more religious and, in particular, more Haredi, different indicators point in somewhat different directions. On the one hand, fertility is strongly and positively correlated with religiosity, and it is particularly high in Haredi families. On the other hand, voting patterns, school enrollment data, patterns of family formation and disruption, and an array of behavioral changes related to education, employment and consumption, suggest that a child born into a Haredi family (and even more so to a religious family) will not necessarily enroll in a Haredi or religious school 6 years later, vote for associated political parties 18 years later, or remain in the respective religious fold after that.

Taken together, these trends suggest that a robust accounting of the speed of religious change in Israel's Jewish population needs to estimate the **net effects of all these factors** across different levels of religiosity. In particular, it needs to take into account differences in demographic growth but also religious mobility across the life-course.⁵

5 Beyond these net effects, understanding the magnitude of religious mobility in any given direction is also important, if we are to forecast accurately future economic effects. This is not the focus of our work here, but for illustrative purposes, take the following two scenarios, each giving rise to a net movement of 10 percent out of the Haredi community. In the first scenario, there is a 20 percent movement out of the Haredi community but a 10 percent gain. In the second scenario, there is a 12 percent loss and 2 percent gain. The economic implications of these two scenarios are different, because (a) a different percentage of ex-Haredim in the general population will need some level of remedial education or training, and (b) a different percentage of the Haredi community will have a general education acquired outside that community, which in turn influences likelihood and type of employment, as well as cultural attitudes in general (hence the ambivalence about the value of *hozrei bitshuva* in some sectors of the Haredi world).

Contemporary estimates of the magnitude of religious change are typically based on Israel *Social Survey* (ISS) data (e.g., Gershoni 2016; Sarel 2017), though equivalent estimates can also be found in the 2015 Pew Israel Survey. These are the only large surveys fielded in Israel that include questions on both past and present level of religiosity. A number of researchers have used these data to make two arguments. First, there is considerable net movement from the religious sector to the traditional and secular sectors. Second, there is only moderate loss of to the Haredi sector because only slightly more people leave it than join it.

The accompanying Appendix 2 documents how a combination of sampling and non-sampling error makes the ISS and Pew data unreliable sources of data on the question of religious mobility to-and-from Haredi communities.

Our analysis therefore takes a different tack. Extending earlier work by Blass and Bleikh (2016), we use data on school enrollment of every child in Israel:

1. Comparing the number of students in 1st grade in every educational sector to the expected number, given growth rates in the core population associated that educational sector
2. Tracking children's educational pathway from 1st grade to 8th grade, through Israel's State (secular), State-religious, and Haredi educational sectors.

Our approach not only allows us to avoid the sampling and non-sampling problems associated with the ISS and described in Appendix 2. It also focuses our attention on religious change prior to the dangerous years of young adulthood, when rates of religious mobility tend to be higher (Davidman 2015). That focus on religious change over the first 14 years of a person's life fills an important part of the empirical picture. In particular, it taps into the religious movement of young families, a category that is generally less religiously mobile than unmarried and childless.

Our estimates cover the last 15 to 20 years. They confirm that high levels of natural growth in Israel's Haredi and religious populations are making Israel more religious. However, we also demonstrate that the pace of this change is moderated by substantial net movement of individuals toward a less religious identity. In other words, even as differential fertility is making Israel's Jewish population more religious at the aggregate level, there is more movement away from religion at the individual level. This in itself suggests that, in the short-term at least, these movements are giving rise to an

increasingly bimodal distribution in terms of religiosity, with progressively higher concentrations at the religious and secular end of Israeli society.⁶

The paper's argument is advanced over two major sections. The first contains all empirical estimates. The second synthesizes those estimates, then adds them to the CBS's own long-term projections.

1. Transitions between educational sectors

Background

The transition of students between different educational streams has been described in a number of Taub publications (Blass 2004; Blass 2012; Blass and Bleikh 2016; Blass and Douchan 2006). The reason for continued engagement with this topic is, as mentioned above, the desire to identify the sources of the Haredi educational sector's rapid growth. The possible reasons are: (a) extra high fertility levels; and (b) the movement of children from secular or national-religious schools to Haredi schools, in the wake of parents' increasing religiosity, or as a result of other appealing characteristic that is unrelated to religiosity.⁷

Data on movement from one educational sector to another — as well as between different subtypes within these sectors — were first presented by Blass (2004), and were largely focused on primary schooling from 1996 to 2005. Students were categorized by legal status and type of supervisory structure, and a movement was identified where a student transitioned from one type of school to another.

Blass and Bleikh (2016) differ significantly from past work in two key ways. It looked at a longer period: 2000 to 2015; and it focused on a wider age-range, beginning in kindergarten. This second point was particularly important since critics of earlier papers asserted that ignoring kindergarten ignores the ways in which non-Haredi families are co-opted into sending their children to sections of the Haredi school system, drawn by the longer school days, transport to-and-from kindergarten, and food. This in itself was thought to strengthen levels of religiosity within the family, since the children remained in the Haredi sector, pulling in their parents, and younger siblings.

6 In turn, this suggests that the ongoing challenges to the status quo may equally reflect the legislative efforts of an increasingly assertive (and defensive) secular sector, not only the efforts of a growing religious one.

7 This is primarily relevant at early ages, and among the socioeconomically weaker sectors, since early childhood education in the Haredi sector is often longer and provides partial meals. In the popular press, this is known as the "Chocolate milk and roll" phenomenon, a way of tempting poorer families to join the Haredi educational sector.

Analyses in Blass and Bleikh (2016), in particular, refuted these assertions. They pointed to a number of notable phenomena:

1. The overall magnitude of movement between different types of educational sectors and subsectors is small. More than 95 percent of students spend their whole educational career in the same school system. “Chocolate milk and a roll” therefore seems like a peripheral consideration in parental choice of school.
2. Despite the overall level of stability, different types of schools differ in their appeal. In particular, in the past 15 years, there has always been greater movement from more religious educational sectors to their less religious counterparts, in both relative and absolute terms.
3. The pace of growth in Haredi and state-religious educational sectors has also slowed in the last 10 years, even though, as seen in Figure 1, underlying fertility levels have remained relatively stable among the Haredim, and risen among the religious.
4. There has been continued growth in the state-secular school system despite the relatively low levels of fertility.

These are important findings but can still be strengthened. Past work, in particular, does not adequately take into other factors that can influence school enrollment, including migration and different educational trajectories across different types of schools. We describe these factors’ contribution to the trends in enrollment below.

The gap between the expected number of students in 1st grade and the actual number

Our first set of analyses identifies religious mobility between birth and age 6 (or 7). Our indicator of religious mobility is the difference between actual enrollment of Israel-born children in 1st grade and the projected enrollment based on fertility rates 6 years earlier (as observed in Figure 1). The data on actual enrollment are from a Ministry of Education database that lists all students in Israel from 2001 to 2015. Here we limit ourselves to those registered in 1st grade.⁸

⁸ We also estimate the difference between actual enrollment in 2nd grade and projected enrollment based on fertility levels 7 years earlier. This is based on the fact that a non-trivial percentage of children appear to skip 1st grade, especially in the Haredi sector (Weinreb and Blass 2017). We expand on this below.

The logic underlying this analysis is simple. Assuming zero mobility between religious sectors, the number of children entering 1st grade in a particular religious sector should reflect the number born into that sector 6 years earlier, with some modification for differences in child mortality, net migration, and timing of entrance into 1st grade. Appendix 4 outlines the method used to calculate this expected number.

Figure 2 shows that these expectations are only partly realized. In each of the three panels, the dashed orange line charts the total number of students enrolled in 1st grade by year, the dotted orange line charts the number of Israel-born students, the solid orange line the number of the Israel born while correcting for different patterns of grade repetition across school sectors, and the solid grey line is the expected number of Israel-born students after taking into account differences between educational sectors in the percentage of students who repeat a grade.⁹

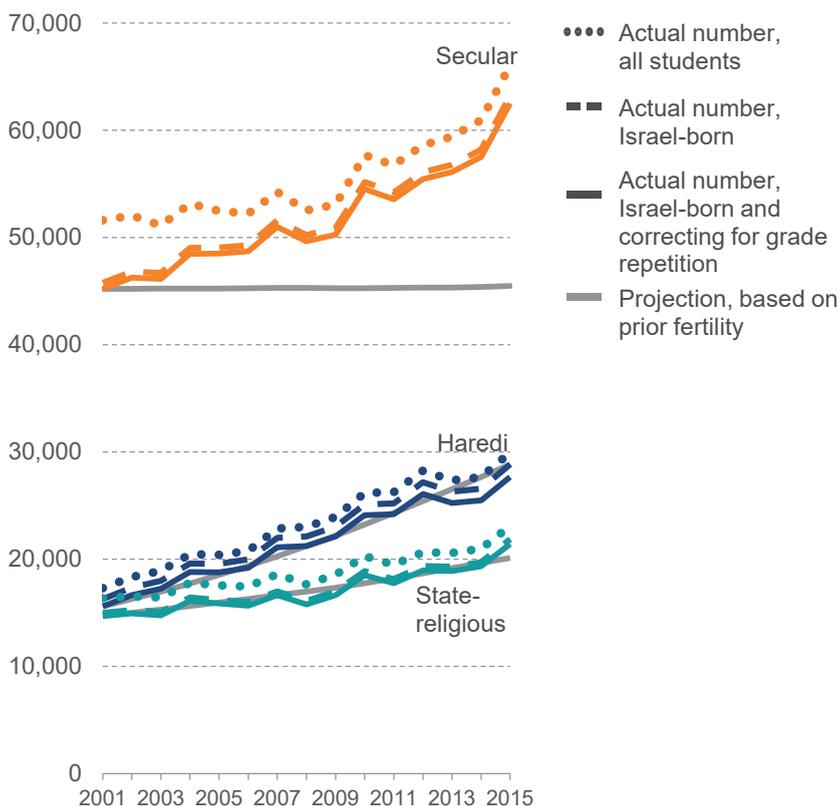
As expected, we see the sharpest increase in the number of Israel-born students enrolled in Haredi schools. The number jumps from 16,659 in 2001 to 27,668 in 2015, implying a population doubling time of approximately 17 years.¹⁰ In religious schools, we also see an increase, though it is more moderate, going from 14,941 in 2001 to 21,419 in 2015 (doubling time of approximately 26 years). Finally, there is also an increase in enrollment in secular schools, from 45,218 to 62,473 in the same 14-year period (doubling time of approximately 30 years).

9 In prior research (Weinreb and Blass 2017), we have shown that there is considerable variability in the likelihood of grade repetition and skipping across educational sectors. As a result, it takes more student-years to reach the end of primary school in the Haredi sector than in the religious or secular sector (raw enrollment figures reflect both the number of births 6 years earlier, plus the number of students repeating a grade). The solid orange line presents the estimated number of students in the sector net of these differences in educational trajectory.

10 Doubling time assumes stability of annualized growth rate. It is calculated as: $0.693 / ((\ln(N_{2015} / N_{2001}) / 14)$.

Figure 2. Projected versus actual 1st grade enrollment in the non-Arab educational sector

By school type



Source: Alex Weinreb and Nachum Blass, Taub Center
Data: Hleihel, 2017; Ministry of Education, Student database

This final increase — in the number of Israel-born students entering 1st grade in secular schools — is the biggest surprise. We highlight it further by comparing actual enrollment to a projected growth rate implied by the differential fertility levels 6 years earlier. Since we do not know exactly how many women of reproductive age are Haredi, religious, or traditional and secular (the term W in (1) in Appendix 4), we employ a simple demographic technique that converts the Period Total Fertility Rates calculated by

Hleihe (2017) into annual growth rates for each sector. Specifically, Hleihe linked the women sampled in the *Israel Social Survey* to their birth histories, as recorded in Israel's Population Register. This means that the level of religiosity is self-reported, but the birth data are observed (and therefore more accurate). We use standard methods to convert these pTFRs to annual growth rates (Preston, Heuveline, and Guillot 2004: 150-155). Specifically, we convert the pTFR into a Net Reproduction Rate (NRR) in two stages. First, we apply a factor of 0.475 to exclude boy births. Second, we assume that the length of generation (g) is 27.5 years and calculate a probability of survival from 0 to 27.5 ($p_{27.5}$) using a 2012 Israeli model life table: $p_{27.5} = .5(l_{25} + l_{30})/l_0$. The annual growth rate, r , is then calculated as $\ln(\text{NRR})/g$.¹¹

Assuming a 6-year gap between birth and 1st grade, and using observed enrollment of Israel-born students in 1st grade in 2001 as the projection's starting point, we then apply this series of growth rates to each subsequent year in order to estimate the projected number of Israel-born 1st graders in 2002 (birth year 1996), 2003 (birth year 1997), etc., up to 2015 (birth year 2009) relative to those in the sector in 2001.¹² Projected enrollment is indexed by the solid grey line in the figures.

Two main findings leap out at us here. First, in both Haredi and religious schools, the projections (the solid grey line) fit actual 1st grade enrollment of Israel-born students (solid orange line) quite well, even though they should exceed it. In religious schools, the fit extends across the whole 2001- to 2015 period. In Haredi schools, it lasts until 2012. Then a systematic difference emerges, with the number of enrolled students lagging the projected number by 1,200-2,200 per year between 2013 and 2015. That is, 3.7 - 7.1 percent fewer students than projected per year in this most recent period. Nor is it a single year fluctuation. Rather, it is a numerically significant drop that has lasted for at least 3 years. Similar effects can be seen in both sectors in 2nd grade.

11 Whereas the projected number of students in Haredi and religious sectors are based on growth rates in those sectors only, the secular projection is a weighted average of growth rates from the secular (40 percent), traditional-not religious (40 percent), and traditional-religious (20 percent). This is a conservative estimate of the composition of the State (secular) system. An estimate that allocates higher weight to secular and traditional-non religious will lower the expected number of students in the secular sector.

12 This projection takes into account mortality at younger ages — very low in Israel in general. It eliminates in-migration (by limiting the projection's baseline number to Israel-born children) but cannot take into account out-migration.

A second finding related to the projected number of students is the clear mismatch between the flat projection and the ongoing increase in enrollment in secular schools (bottom panel of Figure 3). Unlike in the Haredi and religious schools, actual and projected enrollment in secular schools are on completely different trajectories. Across the 14 years, actual 1st grade enrollment of Israel-born students in the secular sector increased at an annualized growth rate of 2.3 percent per year. Although this is a slower rate of growth than that in the two other sectors, it is much higher than the growth rates implied by fertility levels of populations most likely to send their children to secular school, i.e., the secular, traditional/not religious, and traditional/religious. Note, too, that enrollment of Israel-born students (solid orange line) is increasing at a faster rate than enrollment of all students (the upper dashed line). This is because the proportion of 1st-graders in Israeli secular schools who are foreign-born falls between 2001 and 2007.¹³ In fact, this rate of growth is so high (for native-born Israeli children) that it implies a doubling time of 30 years, which is a much faster growth rate than can be found in any OECD country.

The specific number of excess or missing students in each sector can be approximated by estimating the regression coefficient that links actual enrollment in 2001 with actual enrollment of native-born non-repeating students in 2015, then estimating the difference between these two points. This coefficient — the change in the number of Israel-born students with every additional year — is presented in Table 1. It confirms that removing foreign-born students and sector-specific patterns of grade repetition, an average of 84 fewer students per year entered 1st grade in Haredi sector between 2001 and 2015 than was expected, compared to an excess of 92 students in the religious sector. This looks like almost a perfect fit — though as noted above, the projection should fall short of the actual enrollment. In contrast, the secular sector grew by 1,232 students more per year than expected.¹⁴

13 In general, a disproportionate share of immigrant children enroll in first grade in religious schools due to prior political agreements channeling immigrant children from Ethiopia to religious schools on the one hand and reluctance on the part of Haredi schools to accept them on the other hand. Specifically, of the 84,219 foreign-born students registered in first grade in Israel between 2001 and 2015, 58.1 percent were in a secular school, 24.7 percent in a religious school, and 17.2 percent in a Haredi school. Likewise, of the 92,538 foreign-born students registered in 2nd grade in Israel between 2001 and 2015, 58.2 percent were in a secular school, 25.2 percent in a religious school, and 16.6 percent in a Haredi school. In the early part of this period, as implied in the bottom panel of Figure 3, this concentration in religious schools was less pronounced.

14 The reason that the sum these three numbers does not come closer to zero is that although this is a projection based on fertility rates, we know nothing about the number of women of reproductive age in each sector to whom we can apply those rates (the “W” term in equation (1) in Appendix 4). We argue later that this deviation from zero could reflect the net movement of women from Haredi/religious sectors into the secular.

Table 1. Difference between actual and projected change in the number of Israel-born pupils enrolled in 1st grade between 2001 and 2015,

By educational sector

	Observed annual increase in enrollment	Projected annual increase in enrollment	Difference between actual and projected	Mean enrollment 2001-2015	Difference as percentage of mean enrollment
Haredi	861.8	945.8	-84.1	21,564	-0.39
Religious	480.5	388.5	92.0	17,062	0.54
Secular	1232.5	17.8	1214.7	51,587	2.35

Source: Alex Weinreb and Nachum Blass, Taub Center | Data: Ministry of Education

Relative to the mean annual 1st grade enrollment in this period of 21,564 in Haredi schools, 17,062 in religious schools, and 51,587 in secular schools, these seem like very small differences: the missing students account for less than 1 percent of the actual number of students in both Haredi and religious sectors; and the excess adds 2.3 percent per year to the mean enrollment in secular schools.

They are actually very significant, however. Two things are important to note here.

First, as mentioned earlier, an unknown portion of students in the Haredi and religious sectors are not from Haredi or religious families, but are placed in those schools because some parents send their children to more religious schools. Without that imported element, enrollment in Haredi and religious schools would be lower than the projected number based on fertility alone.

Second, the excess enrollment in secular schools also needs to be explained. Three factors are responsible for this excess. The first is Arab enrollment in Jewish schools. Across the 2001 to 2015 period, and correcting for the small number of Jewish 1st graders enrolled in the Arab and Druze educational systems, Arab and Druze children added an average of 339 (about 0.6 percent) children to 1st grade enrollment (increasing slightly with time, from an average of 280 children from 2001 to 2003 to 349 children from 2013 to 2015).

The second factor is in-migration of women of reproductive age from the former Soviet Union in the years after 1994.¹⁵ Throughout the 1990s, more than 80 percent of migrants to Israel were from the former Soviet Union, and 53 percent of these were women (CBS 2016). This increased the

15 A similar effect to the one described in this paragraph, but related to Ethiopian migration, may explain the moderate excess enrollment in the religious sector.

number of women of reproductive age — term W in equation (1) — whose children went to secular schools, in particular. We estimated the number and age-profile (5-year age groups) of these in-migrants from 1994 to 2001.¹⁶ We assigned these women the age-specific fertility rates of Israeli secular women (5-year age groups, as per Hleihel 2017) and assumed that between 80-90 percent of those births remained in Israel, survived to age 6, and were sent to secular schools. This yields estimates of 583-656 additional children per year enrolling in 1st grade over and above what was expected based on intrinsic growth alone.¹⁷ If we extend the exercise and add other migrants to the pool of women who would likely have sent their children to the schools, the increase in W would have added no more than 700 children per year to 1st grade enrollment.

All the remaining difference — 200-250 children, depending on the assumptions — can be ascribed to the third factor, people moving toward less religious sectors. We estimate the number of movers by assigning the mothers of these children the age-specific fertility profile of religious women. An average excess enrollment of 200-250 children per year implies an annual movement of 1,847-2,300 women from a more religious population into the population that sends their children to secular schools. The estimate becomes lower if we assume that the mothers of these children, on average, have the age-specific fertility profile of Haredi women; and it becomes higher if we assign them the age-specific fertility profile of traditional-religious women. To get a more comprehensive assessment of religious mobility among adults, we can also add men, though that requires additional assumptions about the relationship between religious change and marital breakdown.¹⁸

16 These are generous assumptions since this same period was also characterized by relatively high levels of out-migration of Israelis who would likely send their children to secular schools: much higher among those with advanced degrees (to North America) and return migrants to Soviet Union (Cohen-Kastro 2014). Likewise, throughout the 1990s, the TFR of Russian *olim* (immigrants to Israel) — already included in Hleihel's estimates — was lower than that of secular Israelis (CBS 2016).

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18 As implied in an analysis of CBS data on Haredi divorce by the Israel Democracy Institute (Rabinowitz 2017a), they might be single-parent families, where a change in religiosity was a primary cause of the divorce. Or they may be two-parent families, where the whole family unit is making a change. The data do not allow us to link children's movements to family characteristics.

In general, therefore, the estimates thus far suggest that what appears to be minimal net movement of children towards secular schools between birth and 1st grade, from either Haredi or religious communities, points to the significant religious mobility of adults. More evidence for this can be found in the transition patterns of individual students between 1st and 8th grade, to which we now turn our attention.

Religious transitions from 1st to 8th grade

Our second set of analyses identifies religious mobility between grades 1 and 8. Here we take advantage of individual-level data on children available in the Ministry of Education data, allowing us to track each student's movement between secular, national religious, and Haredi schools from 2001 to 2015.

We limit the sample to children born in between 1992 and 2003 in order to maximize the number of students observed across all eight grades.¹⁹ Assuming that the youngest children in our sample followed a standard trajectory across primary school — moving up one grade each year — all but the last birth cohort should have reached 8th grade by 2015, the last year for which we have data. This yields a sample of 562,734 girls and 592,057 boys (though, as explained above, grade repetition means that some of these students are double-counted).²⁰

Table 2 presents tabulations of the initial school's religious affiliation and the final destination given the net transitions. The top panel presents the percentages of girls who remain in their original stream or who move. The bottom panel presents equivalent statistics for boys.

19 This approach minimizes both left- and right-censoring.

20 To check the sensitivity of our estimates to this choice of subsample, we selected other ranges of years where cohorts have completed primary school. Results are substantively very similar.

Table 2. Pupil transfers between educational sectors, 1st grade to 8th grade

		Last school		
		Secular	Religious	Haredi
Girls (N = 562,734) First school	Secular	97.8%	1.8%	0.4%
	Religious	15.6%	80.8%	3.5%
	Haredi	3.8%	6.5%	89.8%
Boys (N = 592,057) First school	Secular	97.9%	1.7%	0.4%
	Religious	21.0%	75.0%	4.1%
	Haredi	4.4%	8.4%	87.3%

Source: Alex Weinreb and Nachum Blass, Taub Center | Data: Ministry of Education

Table 2 shows that of all girl students who first appeared in a secular school, 97.8 percent remained in the secular stream, with 1.8 percent moving to the religious stream, and a mere 0.4 percent moving to a Haredi stream. For boys, the results are almost identical.

Among students who are first seen in a religious school, the levels of retention and mobility are very different. Among girls, 80.8 percent of girls remain in the same stream; and 75.0 percent of boys remain in the same stream. Of those who leave, the vast majority — 81.7 percent of girls and 83.7 percent of boys — move to the secular school, not to a Haredi school. In fact, about 21 percent of all boys first observed in a religious school are in a secular school by 8th grade.

Overall, among students who are first observed in a Haredi school, there is somewhat higher retention than in religious schools, though these rates vary substantially across the four Haredi subsectors.²¹ Overall, 89.8 percent

21 The most successful at retaining students are the Independent and Exempt schools. Among the 74 percent of Haredi girls who began schooling in these networks—most in Independent schools — only about 7 percent move to either religious or secular schools by 8th grade. Among those who began school in Recognized and Ma'ayan ha'torani schools, 12.5 percent and 19.6 percent, respectively, move to either a religious or secular school by 8th grade.

A somewhat different pattern can be seen among boys. Only Exempt schools are very successful at retaining boys in the Haredi system — 96.8 percent who began their schooling in an Exempt school are still in a Haredi school in 8th grade. Educational mobility among boys who begin in other networks is much higher: 26.9 percent of boys in the Independent network (equally divided between religious and secular); 18.7 percent of boys in the Ma'ayan ha'torani network (of whom 68 percent to religious; 32 percent to secular); and 17.9 percent of boys in the Recognized network (of whom 84 percent go to religious, and 16 percent to secular).

of girls and 87.3 percent of boys remain in a Haredi school by 8th grade. Among both boys and girls who leave the Haredi sector, about two-thirds go to religious schools, and the remainder to secular schools.

The numeric net effects of these movements are shown in Figure 3. Among students born between 1992 and 2003, between from grades 1 to 8, there was a net movement of 13,119 girls from religious to secular schools, 3,529 girls from Haredi to secular schools, and 7,398 girls from Haredi to religious schools. Among boys, the movement was even greater: the net flows were 18,028 from religious to secular schools, 4,835 from Haredi to secular schools, and 7,398 from Haredi to religious schools.

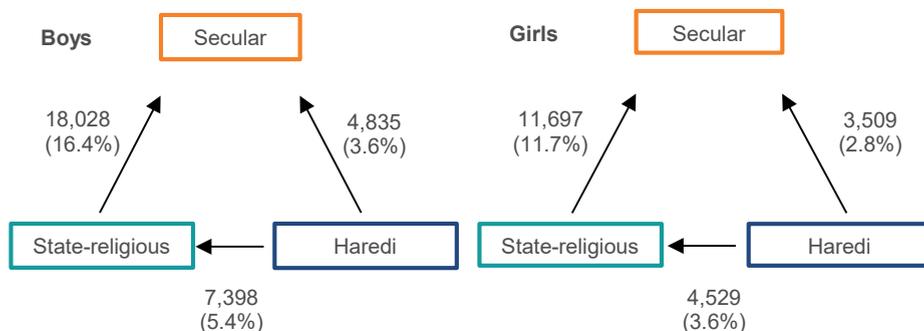
Overall, therefore, there was much more movement away from Haredi schools than towards them, as well as more movement away from religious schools. Specifically, the net loss to the Haredi educational system was 20,271 students (12,233 boys and 8,038 girls). The net loss to the religious system was 29,725 students (18,028 boys and 11,697 girls), even as it gained 11,927 students from the Haredi system. And on the flipside, the secular system enjoyed a net gain of 38,069 students (22,863 boys and 15,206 girls).

Relative to the total enrollment in this period²² of 263,193 in Haredi schools and 218,905 in religious schools, these are more significant differences than those between birth and 1st grade. There is net flow of 9.0 percent of boys and 6.4 percent of girls from Haredi to one of the less religious sectors by 8th grade (about 60 percent to religious schools, the rest to secular schools). Likewise, there is a net flow of 16.4 percent of boys and 11.7 percent of girls away from religious schools toward the secular sector. Given the larger size of the secular educational sector, students from Haredi and religious schools add 1.3 percent and 4.6 percent respectively to the population in secular schools.

22 We estimate the total number of individual students by eliminating excess years due to grade repetition. Specifically, we apply factors estimated in Table 2 of Weinreb and Blass (2017).

Figure 3. Net movements of students between educational sectors from 1st to 8th grade, 2001-2015

By gender



Note: Restricted to students born between 1992 and 2003 who spent at least 2 years in the Israeli education system.

Source: Alex Weinreb and Nachum Blass, Taub Center

Data: Ministry of Education, Student database

Total movement from birth to 8th grade

To get a sense of total religious mobility across the early part of the life course, we combine the two periods of movement documented here: between birth and 1st grade; and between 1st grade and 8th grade. We also add estimates of religious mobility based on this work to the CBS long-term population projections to show how significantly they will affect the future composition of Israel's Jewish population. First, however, since the credibility of these estimates rises and falls with the reliability and validity of the data, we describe the anticipated weaknesses of each of the two types of data used here.

Data quality issues

Table 3 describes the types of data and their likely biases in the two periods covered here.

Table 3. Types of data used for population projections and their effect on the estimates

Period	Type of data	Anticipated effect on estimate
Birth to 1 st grade	a) Number of births: indirect estimate	Likely error in indirect estimate of fertility
	b) Enrollment: administrative data	a) Childless adults are not represented. Estimates therefore <i>underestimate</i> total (adult) movements towards secular
1 st to 8 th grade	Enrollment: administrative data	b) Enrollment in 1 st grade is affected by parents' aspirational religiosity. Estimates therefore <i>overestimate</i> attrition from religious and Haredi sectors

Source: Alex Weinreb and Nachum Blass, Taub Center

Ministry of Education enrollment data are used to define the number of students registered in 1st grade. This is the target for the fertility-based projections presented in Figure 3. The same Ministry of Education data — now focused on enrollment in grades 1 to 8 — are used in the second set of estimates, with results presented in Table 2 and Figure 3.

These data have two key strengths. They include all children in the Israeli education system, and they allow analysts to track individual children across multiple years. This means that estimates based on these data are not affected by sampling error. Nor are they biased by measurement error associated with the quality of self-reported religious identify (this is likely a major issue in the ISS data, as described in Appendix 2).

Alongside these strengths are two possible weaknesses, however. The first is the magnitude of parents sending their children to schools whose orientation is more religious than they are themselves. We have mentioned that there are no robust ways to estimate the percentage of children in each of the educational frameworks that fit this criteria. In informal discussions held with researchers at the Institute for Haredi Research, the latter asserted that a large proportion of the students who left the Haredi system during primary school belong to this group. The implication is that these students are not truly Haredi.

To the extent that this is true, this inflation of Haredi enrollment by non-Haredi students strengthens our central point. It should lead to the following. First, enrollment in Haredi schools in the early grades should be higher-than-expected based on fertility levels alone. Second, there should be some measure of attrition from these schools as these children age, whether because parents always intended to move them to a less religious sector after a number of years of exposure to religious education, or because of emerging conflicts between parental aspirations and other family preferences.

As worrying as this sounds for the validity of our estimates, it is precisely because we estimate religious mobility from birth all the way to 8th grade that it is not a problem for our general argument. Figure 3 shows that even with some parents sending their children to more religious schools, the number of students in 1st and 2nd grade in both religious and Haredi schools is less than the fertility-based projection (once corrections are made for foreign-born and grade repetition). By extension, the number of students in each sector should reflect parents' religiosity by 8th grade. Put somewhat differently, the tendency of parents to send children to more religious schools would be an issue if we were only looking at religious mobility between grades 1 and 8. Since we are looking at mobility from birth to 8th grade, it leaves us with a question about the shape of the curve linking those two points, but not the accuracy of the overall trajectory.

The second weakness with the Ministry of Education data is less about children's parents' religious mobility than inferring from those parents to the religious mobility of childless adults. Childlessness in Israel appears to be highly correlated (negatively) with religiosity. Engelberg (2011), for example, shows that the percentage of respondents ages 30 to 39 who had never married was 24 percent among the secular, 15.8 percent among the religious, and 5.3 percent in the Haredi community — though the rapid rise in Haredi age at marriage documented by Rabinowitz (2017b) suggests that this will increase.²³ Combining these levels with the low rates of non-marital fertility in Israel — the fourth lowest in the OECD (own calculations from OECD data) — strongly suggests that the enrollment data underestimate total net movement towards greater secularity. This is because there will be a higher number of ex-religious or ex-Haredi

23 Notwithstanding the strong pro-natalist ethos and universal access to advanced reproductive technologies (Ivry 2009), 10.8 percent of Israeli women aged 40-44 are childless, just below the OECD median of 11.3 percent (OECD data).

among the 24 percent of currently secular who are childless, than ex-secular or ex-religious among the 5.3 percent who are currently Haredi.²⁴

Total estimates of mobility

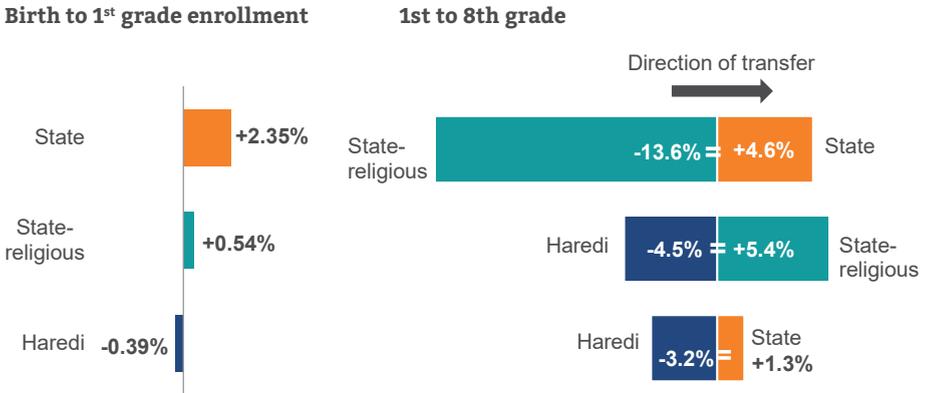
To get a sense of total religious mobility across the two periods, Figure 4 presents an initial summary of these net movements, using two figures: one representing movement from birth to enrollment in 1st grade; the second showing movement from 1st to 8th grade.

Where we can follow individuals — only from 1st to 8th grade — these bars are joined and reflect the relative magnitude of net movement from one status to another. This magnitude depends on the population in each sector. In each case, the number to the left—its origin — refers to the percentage of the original group that is leaving, and the percentage on the right refers to how much of a boost these new arrivals give to the destination group. We see in Figure 4 that between 1st and 8th grade, the net 13.6 percent loss of students from religious schools adds 4.6 percent to enrollment in secular schools — the student population in the latter is larger. Likewise, the net 4.5 percent loss from Haredi schools adds 5.4 percent to religious schools' enrollment, and the net 3.2 percent loss to Haredi schools adds 1.3 percent to secular schools' enrollment.

Moving back to the earliest age-group — birth to 1st grade — we see a largely parallel phenomenon. Although the birth to 1st grade estimates are not based on individual flows (so do not balance to zero, which is why arrows are not used), they also imply a marginal 0.39 percent loss to Haredi schools, equally marginal gain of 0.54 percent loss to religious schools, and more significant gain of 2.3 percent to secular schools.

24 In theory, these adult non-parents should be picked up in the ISS sample. The problem is that the ISS data, as discussed in Appendix 2, are too weak a link to rely on here, at least insofar as our interest is in the magnitude of religious change in the current or ex-Haredi subsample.

Figure 4. Net flows of individuals from one religious category to another in the 14 years following birth

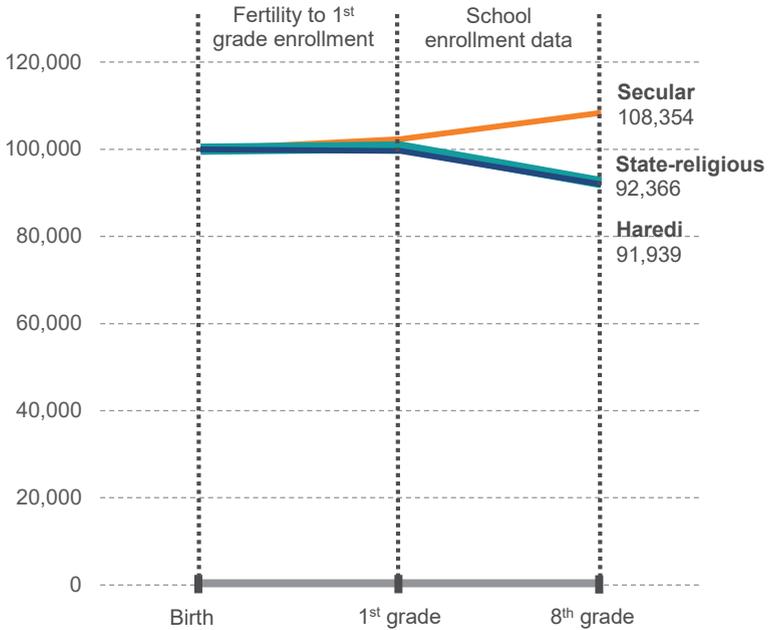


Source: Alex Weinreb and Nachum Blass, Taub Center | Data: Ministry of Education

The cumulative effect of these three periods of movements is represented in a more intuitive way in Figure 5. Employing a widely-used conceptual tool in demography, we assign each religious sector a radix of 100,000 births — a type of hypothetical cohort — and then apply the two age-specific gains and losses observed in Figure 4 to that radix. The question Figure 5 answers is: how many people would there be in each of the three religious groups if this hypothetical cohort experienced the rates of religious movement in the two periods observed here?

Figure 5 shows that across this early part of the life-course, there is considerably more movement away from religion than toward it. As noted above, this movement is solely a function of parents' decisions in early childhood, and primarily a function of parents' decision until their mid-teens. Until this stage, there is approximately an 8 percent drop-off in religiosity for both Haredi and religious, and a concomitant 8 percent gain to the secular. This translates into a net shift of at least a few thousand parents toward more secular religious status each year, in addition to the shift among non-parents, who are much less likely to be religious.

Figure 5. Net effect of current rates of religious mobility on a hypothetical cohort of 100,000 born into each religious category, from birth to 8th grade



Source: Alex Weinreb and Nachum Blass, Taub Center

2. The impact of mobility between streams on long-term population projections

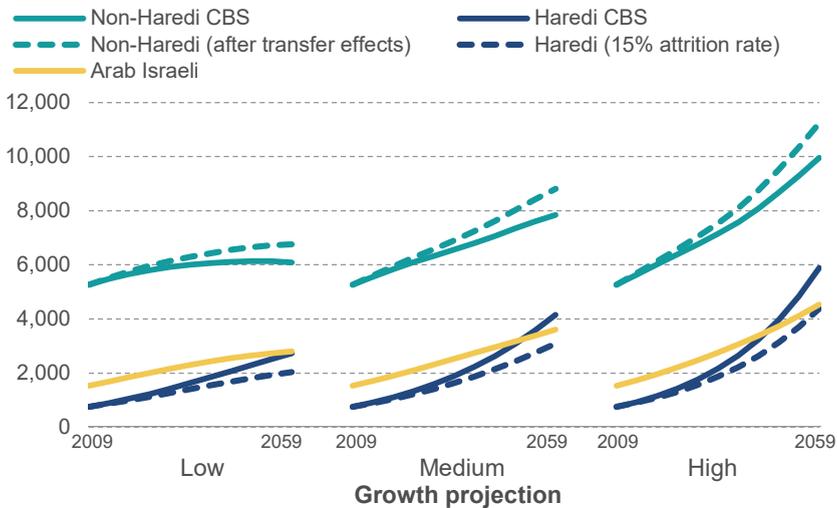
As a final stage in this analysis, we added estimates of religious mobility based on this work to the CBS long-term population projections, going from 2009 to 2059 (for a full description, see Appendix 5). These projections are the sum of three series of projections, one for Israel's Arab population, one for Haredim, and one for everyone else (i.e., the secular, traditional and religious populations). All three projections assume zero net migration, and that there is no movement *between* these three groups. In other words, population growth for each of these groups is almost solely driven by fertility.

We plugged our estimates of religious mobility into the CBS's low, medium, and high growth scenarios. We then projected this population for five years, re-estimated the net movement of people from Haredi to non-Haredi populations, etc., and repeated these steps for each 5-year period until 2059.

Our results, alongside those of the original CBS projections, are shown in Figure 6. They clearly demonstrate that to the extent that the observed levels of religious mobility continue, they will have very significant effects on the future composition of the Israeli population. In the original CBS estimates, presented as solid lines, the Haredi population is around 3, 4 and 6 million individuals by 2059, in the low, medium, and high growth scenarios, which amounts to 45-59 percent as large as the non-Haredi (non-Arab) population. Incorporating religious mobility into these estimates, presented as dashed lines, reduces the Haredi population to 2-4.1 million individuals, about 30-39 percent of the size of the non-Haredi population. In other words, for every 100 non-Haredi (non-Arab) individuals in the population, there will be about 30-39 Haredim.

Figure 6. Population projections according to CBS and Taub Center projections

Number of individuals in each religious stream, in thousands



Source: Alex Weinreb and Nachum Blass, Taub Center

Data: Paltiel, Ari, Michel Sepulchre, Irene Kornilenko, and Martin Maldonado. 2012. *Long-range Population Projections for Israel: 2009-2059*. Demography and Census Department, CBS

Summary and Conclusions

Israel's Jewish population is becoming progressively more religious and Haredi, and this change is being driven by higher fertility in the religious and Haredi communities. In the Haredi population, in particular, fertility in the rates between 1995 and 2005 implied a doubling time of around 17 years, much faster than natural growth in other Jewish populations in Israel.

We have shown here, however, that fertility-driven change is only part of the story of religious change in Israel. An important moderating effect can be seen when we track a series of birth cohorts into 1st grade, then follow the individuals that make up those cohorts until 8th grade. Cumulatively, these data suggest that by approximately age 14, relative to the number born 14 years earlier, there appears to be about an 8 percent net loss of those born into the Haredi world towards the religious and secular populations and an 8 percent loss of religious to the secular population. This does more than simply reducing the growth rate of the Haredi and religious population. It augments growth in the non-Haredi sectors, especially the non-religious population, by about 8 percent, effectively pushing the non-religious growth rate far above its relatively low intrinsic (fertility-driven) level. This is in addition to any net effect of religious mobility that occurs from individuals' late teens to their 30s, the age on which most public discussion in Israel has focused, and when rates of mobility are typically higher. If we take the estimates of parental religious mobility inferred from the excess number of children in secular schools at the end of section 1, then it seems like there are at least 2,000 women — and presumably a similar number of men — who are moving from the religious and Haredi sectors toward the more secular end of Israeli society each year. Moreover, this does not include people who move after their youngest child has begun 1st grade.

These are significant levels of religious mobility. They may not have reached the point where, as Shenfeld argues (see footnote 4), “Haredi mothers will give birth to more secular children than do secular mothers.” But they are still quite large.²⁵

25 Net patterns of religious movement within Israeli society have not yet reached these levels, but only because somewhat less than half of all Jewish women of reproductive age are either Haredi or religious families. In terms of the magnitude of movement, however, Israel is already approximating those levels.

This, we argue, may be one of the reasons that, as noted in the introduction, the rate of increase in the number of voters for the most Haredi political party, the UTJ, has lagged behind their TFR. More dramatically, we think it is the main reason that enrollment in Israel's secular schools has increased much more than would be expected based on fertility alone. The rate of growth between 2001 and 2015 for native-born Israeli children implies a doubling time of 30 years. This is at least partly driven by a steady inflow of ex-Haredi and ex-religious women into the non-Haredi and non-religious sectors — i.e., the term W in equation (1). The magnitude of this movement belies the types of simplistic, hyperbolic and inflammatory assertions that secular Israelis are “in danger of extinction” (Melamed 2018).

To extrapolate from these different rates of growth over the last 15 years into the future, assumptions need to be made about future levels of fertility and religious change. We are wary of doing this — for as long as demographers, including our colleagues at the Central Bureau of Statistics, have been forecasting reductions in fertility among Haredim, they have been wrong.²⁶ That said, we do not think that the magnitude or pace of religious change that we have documented here is specific to this era. If anything, as mentioned previously, the pace of change in Haredi society has increased over the last few years: signs include increasing age-at-marriage, rising rates of divorce, rapidly increasing educational attainment and employment, and heightened consumer desires. Thus far, some of these changes have been more concentrated among Haredim in mixed cities (Regev 2017), but the structural factors that are driving them will likely affect Haredim in more segregated areas, too. Moreover, each will independently reduce fertility and the pace of growth.²⁷ And each will also open up the possibility of religious mobility, which includes both movement from “full-Haredi” to “Haredi-light” or “religious Zionist” or even non-religious, “datla'sh” (i.e., ex-religious) status. If anything, then, we expect that the pace at which Israeli society is going to become increasingly Haredi or religious — at least in ways that affect socioeconomic development, our primary concern here — is going to slow even more than it already has.

26 Our CBS colleagues are as skilled as their counterparts in other census bureaus. The problem is that Israeli fertility patterns are a complete outlier among developed countries, breaking many established norms in demography. A forthcoming Taub Center publication details these patterns (Wilson and Weinreb forthcoming).

27 Note that increasing the age at marriage in the Haredi community will push up the mean age at childbearing, and therefore the mean length of generation. This will reduce the annual growth rate even where the total fertility rate remains the same.

There are also hints of a second important finding in our analysis. High Haredi fertility combined with movement toward more secular streams at the individual level is giving rise to an increasingly bimodal distribution in terms of religiosity, with progressively larger concentrations at the Haredi and secular ends of Israeli society. In the short-term, we suspect that this is an underlying cause of some of the increasing tensions over the reach of religion in Israel: two growing groups, each increasingly assertive and each feeling threatened by the other. In the longer-term, however, we think that this thinning middle layer will fill, as older barriers breakdown under the weight of ongoing changes within both Haredi and secular society: some movement out of the Haredi world, some movement into it. Each of these will allow for a more heterogeneous religious middle that also includes a more educated, employed Haredi population with more mainstream middle-class characteristics.

All in all, therefore, our conclusions are much less pessimistic and “doomsday-ish” than many others’. Israel has become more religious compositionally over the last few decades, and it will become more so in the foreseeable future, though at a slower pace than most observers imagine. This in itself shows that serious and measured attempts to chart Israel’s future composition need to incorporate processes like movement between levels of religiosity. Ignoring religious change, in particular, overlooks the ongoing process of secularization at the individual level. In so doing, it exposes us to the risk that Twain warned against: “It ain’t what you know that gets you into trouble. It’s what you know for sure that just ain’t so.”

Appendix

1. Election data

One of the methods employed by the Israeli Central Bureau of Statistics to estimate the size and geographic distribution of the Haredi population is based on voting patterns for Haredi political parties, in particular United Torah Judaism (UTJ). As noted by Gurovich and Cohen-Kastro (2004:19): “An important characteristic of Ashkenazi Haredi society is its relatively stable voting patterns, a product of the community’s social, community, and religious structure. The central political party that has represented the Haredi population since the founding of the State of Israel is Agudat Yisrael, known today as UTJ (Agudat Yisrael and Degel Ha’Torah).”

Of course, voters in Parliamentary elections often engage with a number of important issues, and they may choose to vote for a party that does not match their religious outlook. Using voting patterns to identify religiosity is, therefore, an indirect measure. In the Israeli context, however, it is a valid measure, especially when looking at trends in voting across a number of election cycles. This is a similar argument to the one that we make about a person’s tendency to send his/her children to a religious school. That tendency rises alongside the strength of religious sentiment, in much the same way as the tendency to vote for a party that reflects his/her personal religious sentiment. Given this, we should expect the number of voters for UTJ to have grown in line with their rate of natural growth, as determined by fertility 18-21 years beforehand (the age range of new voters).¹

Here, we evaluate this expectation empirically. The central question is: what is the relationship between the number of UTJ voters in any given election, and the expected number of voters given the underlying natural growth rate? The absence of data on Haredi fertility rates prior to the late 1970s, in addition to the significant changes in the structure of Israel’s Jewish (i.e., non-Arab) population that followed the large *aliya* from the former Soviet Union countries, mean that we focus on trends beginning with elections to the 13th Knesset in 1992, and ending with elections to the 20th Knesset in 2015.

1 Here we restrict ourselves to support for UTJ, the party list that represents the Ashkenazi sector of Haredi society. The reason for this restriction is that Haredim who identify with this list are considered more obedient to their leaders’ instructions than supporters of the other major Haredi party (i.e., Shas), which should translate into a closer relationship between rates of natural growth and voting patterns.

In addition to the effect of natural growth on a party's core constituency, four other factors affect the number of votes a party receives across a number of election cycles.

- A. Standard fluctuations.** Notwithstanding “relatively stable voting patterns,” there are shifts in the percentage of eligible voters who actually vote. These shifts are influenced by a number of factors, and raise or lower the number of voters for any given party accordingly. We take two steps to address this factor here:
- a. Describing overall trends across the complete 1992 to 2015 period;
 - b. Identifying the trends in voting from a number of different starting points: 1992, 1996, 1999, 2003.
- B. Net migration.** Between 1995 and 2015, 700,000 people moved to Israel, the majority of them receiving a right to vote on arrival. By identifying the number of foreign-born students registered in first-grade in Haredi schools, we estimate the number of likely UTJ voters among these new immigrants, and also the range of years in which they arrived.² That said, we know of no data that allow us to estimate the number of older immigrants that voted for UTJ. Our estimates may therefore marginally bias the number of UTJ voters downward (though the young age structure of the Haredi population makes these older voters a very insignificant portion of the total UTJ vote).
- C. Differential mortality.** Haredi mortality rates are higher than rates in the wealthiest Israeli communities, but lower than those in non-Haredi communities with equivalent levels of poverty (Chernichovsky and Sharony 2015). Our estimates assume that this balances out: i.e., that the number of Haredi voters among adults is reduced by mortality at about the same rate as that of non-Haredi voters.
- D. Religious mobility.** Processes of increasing or decreasing religiosity. In light of these first three factors, wherever the number of UTJ voters falls below the rate of growth, as implied by fertility 20 years beforehand, we can assume there is a reduction in religiosity within from Haredi community. And where the number of voters rises above the rate of growth, it implies more of an increase in religiosity.

² We assume that these parents have an average of 1.5 children (age 1st grade or less), and that 66% of them voted for UTJ. Modifying these assumptions does not significantly change our estimates.

Appendix Table 1 presents data on the expected and actual number of voters for UTJ in all election cycles between 1996 and 2015.

Two major facts can be seen in these estimates:

1. With the exception of 1996, the actual number of UTJ voters has fallen short of the expected number in every election cycle.
2. Across the whole period, the gap between the expected and actual number fluctuates between 1 and 28 percent. However, the gap grows across time, implying a 10-28 percent shortfall in UTJ voters in the 2009, 2013, and 2015 elections.

Overall, this strengthens the argument for a net movement away from Haredi-level religiosity. That is, however many people moved towards Haredi levels of religiosity that they would vote for UTJ, even more appear to have moved away.

Appendix Table 1. Ratio of actual to expected voters for United Torah Judaism, 1996-2015, by election cycle

Election year	1992	1996	1999	2003	2006	2009	2013	2015
Birth years of voters	1975-1978	1979-1981	1982-1985	1986-1988	1989-1991	1992-1995	1996-1997	
Intrinsic annual growth rate in Haredi sector (birth years) ¹		(3.73%) ²	3.73%	4.13%	4.24%	4.50%	4.40%	4.34%
Assumed number of UTJ voters immigrated since prior election ³		n/a	2,550	,3,411	2,310	2,244	3,510	1,830
Number of UTJ voters, less new immigrants ⁴	86,167	98,657	123,191	129,126	138,820	137,438	181,866	195,970
Expected UTJ voters, with starting year for trend set to:								
-1992		100,038	111,888	131,972	149,877	171,516	204,539	223,093
-1996			110,343	130,150	147,808	169,149	201,716	220,014
-1999				145,305	165,018	188,844	225,203	245,631
-2003					146,645	167,818	200,129	218,282
Ratio of actual to expected number of voters, with starting year for trend set to:								
-1992		0.986	1.101	0.978	0.926	0.801	0.889	0.878
-1996			1.116	0.992	0.939	0.813	0.902	0.891
-1999				0.889	0.841	0.728	0.808	0.789
-2003					0.947	0.819	0.909	0.898

Note: ¹ Estimated as $r = \ln(NRR)/g$, where r indexes a growth rate, NRR is the net reproduction rate, and g is the length of generation (17.5). ² Assumes the same growth rate as the 1979-1981 period. ³ Assumes 66 percent of new immigrant parents with children in Haredi 1st grade will vote for UTJ, and that they have 1.5 children at the time of aliyah (1.5 of their foreign-born children will be counted per family.) ⁴ The number of UTJ voters is reduced by the sum of all new immigrant voters from 1999.

Source: Alex Weinreb and Nachum Blass, Taub Center

2. Reasons for Low Confidence in Israel Social Survey Estimates of Religious Mobility from the Haredi Sector

Attempts to quantify the magnitude of religious change in Israel, whether by researchers or journalists, are typically based on data from the 2007-2012 waves of the Israel Social Survey (ISS) (e.g., Gershoni 2016, Ben Chaim 2016, Sarel 2017). Equivalent estimates have also been made using the 2015 Pew Israel Survey (Pew 2016: 69-71). In this appendix we outline three major types of problems that undermine our confidence in these data on the specific question of **religious mobility to-and-from Haredi communities**.

Our first is a classic “construct validity” issue. Both the ISS and Pew survey use a self-reported measure in which respondents are asked to define themselves religiously at the time of the survey. In the ISS, respondents use one of the five standard CBS religiosity categories: (i) Haredi; (ii) religious; (iii) traditional/religious; (iv) traditional/less-religious; or (v) secular. In the Pew survey, the two traditional categories are combined.

To generate a measure of religious change, both surveys then include a retrospective question on the religiosity of the household at age 15 (ISS in the 2007 to 2012 waves) or when they were a child (Pew). In either case, the ISS and Pew estimates of religious mobility are based on a simple comparison of responses to these two questions, one current, the other retrospective. Researchers tabulate the percentage of people who claimed to have been Haredi at age 15 but are now religious or secular, the percentage of people who claimed to have been secular or religious at age 15 but are now Haredi, and so on, across all five response categories (ISS), or four response categories (Pew).

The main problem with this approach is that questions on self-reported religiosity are known to be highly susceptible to **social desirability bias**, that is, to the tendency of respondents to provide an answer that matches normative, socially valued responses (Leah and Fish 1989; Presser and Stinson 1998). This is a problem because the direction of social desirability bias on religious questions is sensitive to the value of religion in that particular setting. Sedikides and Gebauer (2010), in particular, demonstrate that in more religious cultural contexts respondents are more likely to exaggerate their religiosity; and in less religious contexts they are more likely to under-report religiosity. Applying this to the Israeli context we would therefore expect self-reported religiosity to be pulled toward the extremes, especially

given the high levels of residential segregation for secular and Haredim, as respondents use their religious autobiography as a method of “self-enhancement,” exaggerating the movements they have made into their current status.

A second category of problems affects **sample selection**. Although both the ISS and Pew sample frames — based on the continuously updated population register — are formally representative of the Israeli population (CBS 2012: 50), the same cannot be said for the actual data. There are two specific issues here.

The first is related to actual **sample design**. Across the 2007 to 2012 waves of the ISS, between 82-84 percent of the sample was generated in a single stage probability sample targeting areas with at least 7,100 individuals above age 20 (the number rose gradually across the years). The remainder of the sample was generated in a two-stage process, where the chance of selection in the first stage is proportionate to population size. This is a fairly standard approach, designed to optimize the balance between representativeness and survey cost (simple random samples are too costly to field on that national level).

The problem here is that Haredim are more likely to live in urban areas, and least likely to live in the smallest yishuvim, which are in turn the least likely areas to be sampled in the ISS. This has implications for estimating the magnitude of religious mobility since it suggests that we are more likely to find people in the ISS data who have become Haredi (and remained in, or moved to, larger cities) than people who left the Haredi world (and moved to smaller settlements). Note that this issue is not fixed by the census bureau’s re-weighting of the ISS sample: this is a compositional difference between settlements.

The Pew data are affected by a similar problem. Of the 707 Haredim in the Pew sample, only 332 (47 percent) were sampled in the general “Jewish base sample.” The remaining 53 percent are from the “Haredi oversample,” which was generated by targeting areas with known high rates of Haredi homogeneity (see Pew 2016:231). In other words, there is an embedded bias against Haredim who live in more heterogeneous residential areas, which likely includes a disproportionate number of “Haredi-light” individuals, or new Haredim.

A second sample selection issue — likely more important — is related to **non-response rates**. Like other sample surveys, especially in developed countries, the ISS does not successfully interview everyone it samples. In 2009, the overall response rate was 79.9 percent; in 2010 it was 78.9 percent.¹ In the Pew survey, the overall response rate was 57 percent.

1 By international standards for developed countries, these are relatively high response rates. They are, for example, 10-30 percent higher than response rates in the US or Canadian General Social Survey, or British Social Attitudes Survey (see Stecklov, Weinreb, and Carletto 2017:4).

More important than these absolute percentages of missing respondents is the fact that the decision to not participate is highly correlated with religiosity, at least in the ISS (there are no comparable statistics in Pew methodological appendices). For example, although the CBS does not publish the levels of non-response in ISS fieldwork conducted in Haredi residential areas in its summary volumes (e.g., CBS 2012), Gubman and Romanov (2009: 11), statisticians at the CBS, report that Haredim represented “about 50 percent of all interview non-respondents” in the 2006 ISS data. This is a much higher proportion than the number of Haredim in the sample. Less than 6 percent of ISS respondents in 2006 self-identified as Haredi, and no more than 7.5 percent in any wave between 2007 and 2012.

These high non-response rates in Haredi communities reported by Gubman and Romanov are consistent with reports by other researchers, whether in small ad hoc surveys (Remennick and Hetsroni 2001) or larger nationally representative ones (Schechtman, Yitzhaki, and Artsev 2008).² This is a problem for estimating religious mobility because a priori we expect more willingness to respond to a survey among people who have recently become Haredi. Not only are they more used to dealing with outsider interviewers than their counterparts who grew up within the Haredi world (Weinreb, Sana, and Stecklov 2018). We expect them to be more eager to display their ideological transformation. The result is that the ISS likely exaggerate the number of newcomers into the Haredi world.

The third and final category of problems is **sample size**. In the 2007 to 2012 waves of the ISS, self-identified Haredim comprised 6.2-7.4 percent of the ISS samples. Even if none of the other issues detailed above existed – namely, there was no bias in self-reported religiosity, the sample design perfectly reflected the religious distribution of the population, and non-response patterns were not related to religiosity – this would give too wide a margin of error for interpreting change in any single year.

We highlight this problem in Appendix Table 1. As noted in the paper to which this document is appended, the speed of religious change among young adults is a matter of public interest in Israel. If we wanted to generate an answer to this question using ISS data, we would likely restrict ourselves to an analysis of respondents aged 20-29 in the most recent ISS data that includes both the current and retrospective religiosity questions. That is the approach taken in

2. One CBS study focused on measurement of Haredim shows that 9.5 percent of individuals who were not interviewed between 2007 and 2009 of the ISS were identified as Haredim using other methods (Schifris et al. 2011:42). This is much higher than the 6.9 percent of the actual ISS sample that self-reported as Haredi. But even this estimate is hampered by the fact that 784 non-respondents could not be classified religiously, which is triple the number of non-respondents identified as Haredi.

Appendix Table 1. Restricting ourselves to the 2012 ISS data, we generate 95 percent confidence intervals around the unadjusted probability that individuals aged 20-29 who claim that they were Haredi or Secular at age 15 now claim the same or some other religious identity.³ By 95 percent confidence interval we refer to the range of values within which we can be 95 percent confident that the true value in the population falls.

As the top panel of Appendix Table 1 shows, the unadjusted probability that one of the 178 individuals who was Haredi at age 15 remained Haredi is 91.0 percent. However, the 95 percent confidence interval extends from 82.6-99.4%. Likewise, the table shows that the probability that one of these Haredi 15-year-olds would become religious was 3.9 percent, or become either traditional or secular was 5.1 percent, where each of these estimates is surrounded by a large range, respectively 0.0-9.6 percent and 0.0-11.5 percent.

The bottom panel of Appendix Table 1 repeats this exercise for the 495 individuals who claim to have been secular at age 15. Some 87.9 percent (82.1-92.6 percent range) remain secular, with 98.6 percent (96.5-100 percent range) remaining either secular or traditional, and only 0.8 percent (0-2.4 percent range) become Haredi.

How close to either the unadjusted probability or the extremes of the range is the true value? It is not possible to know from these data, but for so meaningful a social phenomenon, these ranges are clearly too large to inspire confidence. The same can be said about the Pew data. Pew reports a margin of error of +/-6.9 percent for their Haredi subsample (Pew 2016: 233).

Some might say that Appendix Table 1 is a strawman. It is possible to solve the small sample size issue by pooling data from all ISS waves that contain the relevant religiosity variables. This will increase the size of the denominator in the ME equation (footnote 3), and therefore reduce the margin of error.

3 We use the standard formula, margin of error (ME) = $z \cdot \sqrt{(p(1-p)/n)}$, where $z=1.96$, and p and n are given in the data.

Appendix Table 2. 20-29-year-olds' self-categorization as Haredi or secular at age 15, according to 2012 survey

	Z	P	n	ME	Minimum	Maximum
A. Was Haredi at age 15 (n=178)						
Haredi	1.96	91.01	178	4.20	82.61	99.41
Religious	1.96	3.93	178	2.85	0.00	9.64
Traditional-Religious	1.96	2.81	178	2.43	0.00	7.67
Traditional-Not religious	1.96	1.12	178	1.55	0.00	4.21
Secular	1.96	1.12	178	1.55	0.00	4.21
Secular or Traditional	1.96	5.05	178	3.22	0.00	11.48
B. Was secular at age 15 (n=495)						
Haredi	1.96	0.81	495	0.79	0.00	2.39
Religious	1.96	0.61	495	0.69	0.00	1.98
Traditional-Religious	1.96	3.23	495	1.56	0.12	6.34
Traditional-Not religious	1.96	7.47	495	2.32	2.84	12.10
Secular	1.96	87.88	495	2.88	82.13	93.63
Secular or Traditional	1.96	98.58	495	1.04	96.50	100.07

Source: Alex Weinreb and Nachum Blass, Taub Center | Data: CBS, 2012

Appendix Table 2 provides a response to that assertion. After pooling the 2007 to 2012 waves, the probability of a young Haredi having remained Haredi still falls in the relatively large 87.8-94.9 percent range. And the probability that s/he will have become either secular or traditional falls in the 2.1-7.4 percent range. This is certainly an improvement. But it does not approach the much smaller range of values associated with the ex-secular subsample. This can be seen in the bottom panel of Appendix Table 2: the probability that a secular 15-year-old will have remained either secular or traditional falls in the 96.6-98.8 percent range, and that s/he will have become Haredi falls in the 0.5-2.0 percent range.

More important, as much as pooling data from all ISS waves reduces the 95 percent confidence interval, it compounds the other three type of bias that we outlined above: the likely bias in self-reported religiosity; the fact that non-response patterns are positively related to religiosity; and the fact that the sample design slightly discriminates against people who live in smaller communities, where these are the least likely to be Haredi, but they may very well include ex-Haredi.

Appendix Table 3. 20-29-year-olds' self-categorization as Haredi or secular at age 15, according to 2007-2012 survey

	Z	P	N	ME	Minimum	Maximum
A. Was Haredi at age 15 (n=968)						
Haredi	1.96	91.30	968	1.78	87.75	94.85
Religious	1.96	3.93	968	1.22	1.48	6.38
Traditional-Religious	1.96	1.96	968	0.87	0.21	3.71
Traditional-Not religious	1.96	1.76	968	0.83	0.10	3.42
Secular	1.96	1.03	968	0.64	0.00	2.30
Secular or Traditional	1.96	4.75	968	1.34	2.07	7.43
B. Was secular at age 15 (n=2,987)						
Haredi	1.96	1.24	2,987	0.40	0.45	2.03
Religious	1.96	1.07	2,987	0.37	0.33	1.81
Traditional-Religious	1.96	2.71	2,987	0.58	1.55	3.87
Traditional-Not religious	1.96	8.34	2,987	0.99	6.36	10.32
Secular	1.96	86.64	2,987	1.22	84.20	89.08
Secular or Traditional	1.96	97.69	2,987	0.54	96.61	98.77

Source: Alex Weinreb and Nachum Blass, Taub Center | Data: CBS, 2007-2012

In conclusion, the combination of these three major sets of concerns underlies our profound reservations about using data from the ISS (or Pew) to look at religious mobility from the Haredi sector. We think these data are more robust when it comes to non-Haredi sectors, including the religious sector, because concerns about sample design and high levels of Haredi non-response are less salient. So they can be used more readily to look at religious mobility between the non-Haredi sectors. Even here, however, care must be taken. Self-reported religiosity, especially retrospective reports of religiosity, remains a problematic measure.

These reservations are the starting premise for the present study, to which this document is appended. Until more internally and externally valid survey data on religious mobility can be collected, estimates of religious mobility in Israel need to draw on a wider array of data.

3. Religious Mobility Between Secular, Traditional, and Religious Among Young Israelis in the CBS Social Survey Data

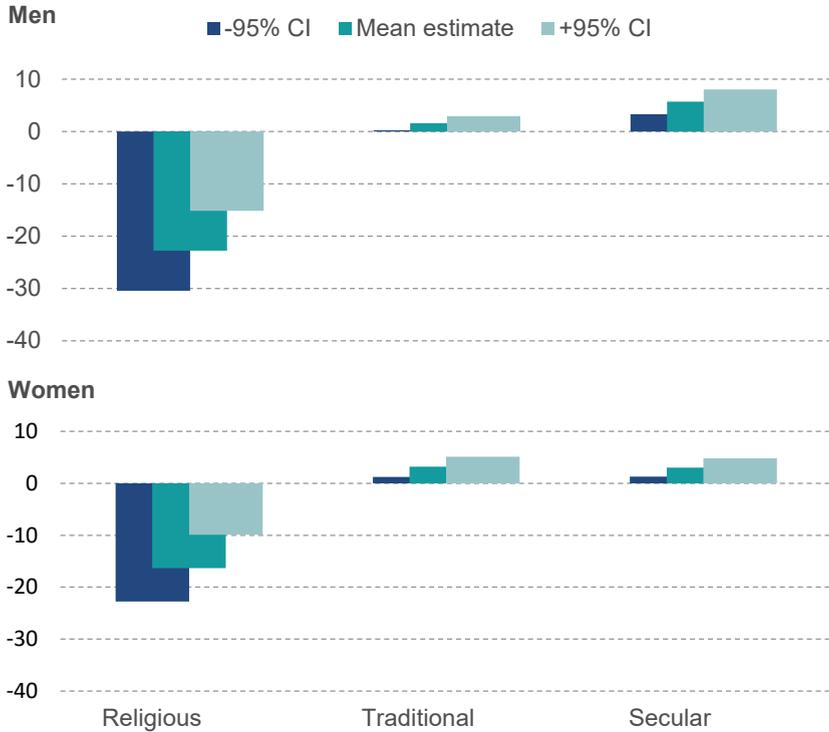
The previous appendix describes our reservations about the reliability and validity of the Israel Social Survey (ISS) data as a source of estimations of religious mobility between the Haredi and non-Haredi world, even when pooling the 2007 to 2012 waves into a single data-file. It also argues that even though one of our concerns — related to the likely bias in self-reported religiosity — affects other sectors, the ISS data as a whole “are more robust when it comes to non-Haredi sectors, including the religious sector.”

Balancing these assertions with our general preference for looking at the pace of religious change in Israel using as many valid and reliable sources of data as possible, this appendix presents analyses of religious mobility in the ISS between the secular, traditional and religious sectors. In other words, we do not include any respondents who self-identified as Haredi at the time of interview, or reported themselves as having been Haredi at age 15.

To maximize sample size (and reduce the margins of error described in Appendix B), we pool the 2007 to 2012 waves of the ISS. These are the only waves of the ISS that include a question about both current and past religiosity. To get a better sense of recent religious change — which is at the core of current debates — analysis is also restricted to respondents aged 20-29. Together, these two steps yields a total sample of 6,561 individuals who were age 15 — the reference period — between 1993 and 2007. Since the median age of this subsample is 24, we refer to the estimates of religious mobility as stretching to age 24. Finally, to reduce margin of error, the two Masorti categories are combined.

Appendix Figure 1 presents the net effects of mobility in and out of three levels of religiosity among this pooled ISS sample of 20-29-year-olds. The top panel presents estimates for men, and the bottom panel estimates for women. Since these estimates are based on a survey, we include 95 percent confidence intervals (though as noted in Appendix 2, these intervals do not include the effect of non-sampling error).

Appendix Figure 1. Religious mobility among ISS non-Haredi respondents aged 20-29 at time of survey (2007-2012)



Source: Alex Weinreb and Nachum Blass, Taub Center | Data: CBS, *Social Survey*

The overall patterns look similar for men and women. Among both, there is a net movement away from the religious sector, and consequent net growth in the secular and traditional sectors. Alongside this, however, there are hints of gender differences: the reductions among religious men are greater than among women (15-30 percent versus 10-23 percent, respectively). There are also signs of much greater movement toward the “secular” category among men, whereas for women, there is roughly equivalent growth in both the traditional and secular categories.

To generate a more comprehensive picture of changes in religiosity, we combined the data in Appendix Figure 1 with those in Figure 6 in the main text: the latter describes changes in religiosity from birth to 8th grade in a hypothetical birth cohort of 100,000.¹ This addresses the question: of every 100,000 births into religious and secular families, how many would there be in each of these two sectors if they experienced the rates of religious movement in each of the three periods observed here?

The total cumulative effects are presented in Appendix Figure 2. Trends identified between birth and 8th grade continue between ages 15 and 24. Specifically, the net movement between these three groups in the ISS data suggest that the secular-traditional population will grow from 108,000 in the beginning of 8th grade to between 111,000-114,000 at age 24, whereas the religious population will shrink further, from about 92,000 in 8th grade to 70,000-79,000 at age 24.

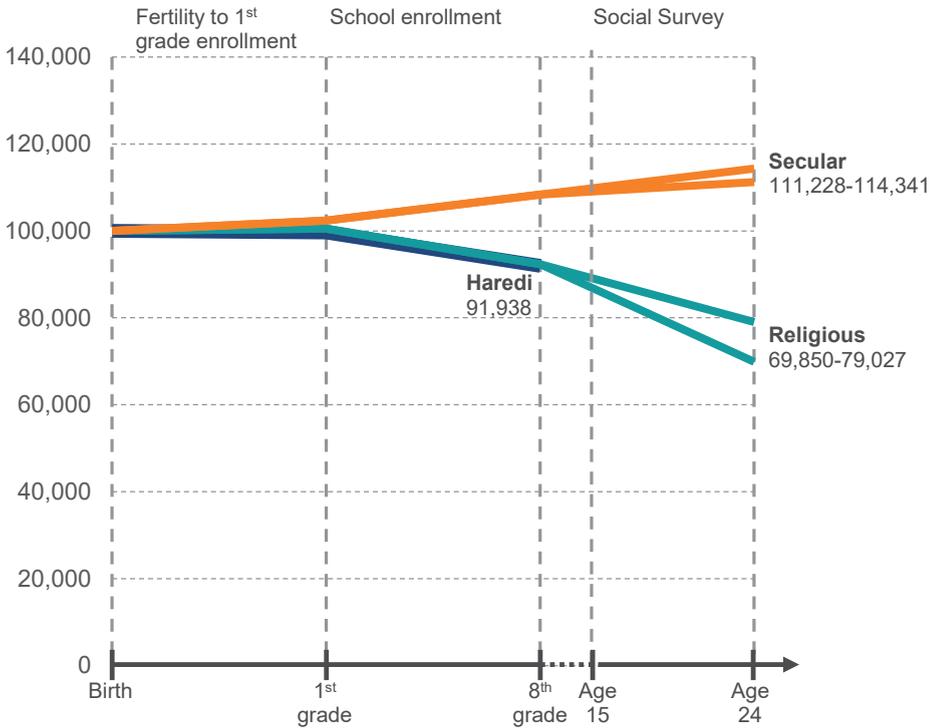
These estimates support and strengthen the central assertion of this paper. Changes in the religious structure of Israel's Jewish sector are not only a product of differential fertility across levels of religiosity. They are also a product of other processes and transitions — social, religious, ideological — that affect people's decision to remain in a particular group, or to leave it.

Here we see clear effects of changes in population structure that have nothing to do with fertility. These data show that when we follow a single birth cohort from birth to 8th grade, 8 percent of those born into either a Haredi or religious family end up being are being educated in a less religious school. This is after taking into account movement in the opposite direction. Moreover, among those who are remain in a religious school in 8th grade, another 12 to 22 percent will not self-identify as “religious” by age 24. The vast majority of these will move towards a less religious sector, not toward the Haredi sector.

This has significant implications for overall population change in Israel since these movements not only point to a reduction in the growth rate of the Haredi and religious sectors. They point to augmented growth rates in the non-religious population, effectively pushing the secular growth rate above its relatively low intrinsic (fertility-driven) level. We address this directly in the final analytic section of the paper, and in Appendix 5.

1 The magnitude of religious change in the secular category here is assumed to be a 2:1 ratio of secular:traditional ISS rates.

Appendix Figure 2. The cumulative effect of religious mobility, from birth to age 24, on a hypothetical birth cohort of 100,000
By religiosity



Source: Alex Weinreb and Nachum Blass, Taub Center | Data: Ministry of Education; CBS, Social Survey

4. Projection methods for the number of 1st graders, by educational stream

We assume that the number of children, C , belonging to a particular religious sector s , that we expect to find in first grade in a given year t , should approximate:

$$C_{s,t} = W_{s,t-6} * pTFR_{s,t-6} * ({}_6q_0(t-6,t)) * (1 + ({}_6IM_{0,s(t-6,t)} - {}_6OM_{0,s(t-6,t)})) \quad (1)$$

where W indexes the number of women of reproductive age in a given religious sector, $pTFR$ is the Period Total Fertility Rate associated with those women, ${}_6q_0$ is children's probability of death between birth and age 6, ${}_6IM_0$ the rate of in-migration and ${}_6OM_0$ the rate of out-migration for children aged 0 to 6.

Two other factors are missing from (1). The first is the tendency of some parents to send children to schools that are more religious than their own family's level of religiosity. As discussed in the main text, this is a known phenomenon — though of unknown magnitude — especially in Primary School (though among Haredi schools, it is limited to those streams that permit children from non-Haredi families, whether to boost enrollment or bring non-Haredi families closer to a religious lifestyle). It implies that actual enrollment in more religious schools, and in Haredi schools in general, is boosted by students from less religious families.¹

The second factor missing from (1) is based on prior research that shows there is considerably more (net) grade repetition in the Haredi sector — that is, number of students repeating a grade minus the number skipping a grade — than in the religious or secular sector (Weinreb and Blass 2017). This means that a higher percentage of first and second grade students in Haredi schools are repeating the grade, which again will inflate the raw enrollment figures above the number expected given births 6 or 7 years earlier.

To account for these additional factors, our projected total number of students expected, TC , is:

$$TC_{s,t} = C_{s,t} + A(C_{s,t}) + ((1/B_{s,t}) * C_{s,t}) \quad (2)$$

where C is the initial estimate in (1), A is the net proportion of students

1 There may be some presence of Haredi children in non-Haredi settings, and religious children in non-religious schools — this is an argument made by Ben-David (2017), that we address below — but our focus here is on net effects. Those point clearly to a greater number of children being placed in schools that are more religious than their home environment, at least in early grades.

born into a different religious sector (subscript $\sim s$) that are educated in a more religious sector (assuming that $A > 0$ in both religious ($s=2$) and Haredi ($s=3$) sectors), and B is the sector-specific number of student-years it takes for a given pupil to make their way through a year of school after accounting for different rates of grade repetition (taken from Table 2 in Weinreb and Blass 2017).

Of all these terms, W , A and OM are unobserved. However, we have good estimates of changes in W based on prior fertility (20 years beforehand) and recent IM of adult women. We know the direction of bias in A so can establish conservative bounds around estimates. Finally, although there are no available data on rates of out-migration by religiosity (term OM in (1)), qualitative data suggest that it is higher among the less religious. Either way, our estimates are limited to Israeli-born students.

5. Integrating Religious Movement into Long-Term Population Projections

The Central Bureau of Statistic's (CBS) long-term projections, 2009-2059, are basically the sum of three series of projections, each focused on a discrete population:

1. Arabs
2. Haredim
3. Everyone else (i.e., non-Haredi and non-Arab population)

All three series treat these three core populations as “closed.” They do this by making two assumptions. The first is that there is zero net migration. This is certainly problematic for the magnitude of Jewish vs. Arab differences, and potentially also problematic for Haredi vs. non-Haredi differences (historically, Haredim have not immigrated to Israel in the same level as non-Haredim). But these are relatively small-scale problems.

The second assumption, much more relevant to this paper, is that there is no movement between these three groups. This is a common practice when projecting growth of subpopulations where there is very little movement of individuals between these two groups (e.g., Jewish vs. Arab). But in light of the religious mobility documented in this paper, it is a very unrealistic assumption for the relative trends of Haredim vs. Everyone else.

Together, these two assumptions mean that the projections for each of these groups can only be driven by mortality and fertility. More specifically, since mortality differences across these three populations are minimal, differential population growth over time is almost wholly a function of fertility, which since the 1980s has driven most powerfully by religiosity (Friedlander and Feldmann 1993).

Within these constraints, the overall projection methods are quite standard. There is a careful delineation of Haredim vs. others (building on a lot of prior work at the CBS), use of improved Lee-Carter methods to project mortality, expert opinion regarding the range of future fertility rates. Also standard is the definition of low, middle and upper ranges of values for their projections. Overall, then, the methodological approach is solid.

To explore the effect of religious mobility on these projections, we selected the three “simple” long-term scenarios that the CBS defined: the low, medium, and high growth scenarios (we ignored their more “complex” scenarios that combine high projections for one population with low for another). Our goal was to change nothing in the CBS’s model, other than allow for mobility between Haredim and Everyone else.

We did this by using the relationship between the intrinsic growth rate, net reproduction rate (NRR), and total fertility rate (TFR) that we had employed in the first analysis (projections from birth to first grade in Figure 3). Specifically, we reduced the TFR implied by the Haredi growth rates in the CBS’s projections by 10, 15, and 20 percent. Those children were added to the non-Haredi sector in the low, medium and high scenarios.¹ This population was then projected five years forward, and the net movement of people from Haredi to non-Haredi populations was re-estimated, with these steps repeating themselves for each 5-year period until the projections reached the CBS endpoint of 2059.

Results, alongside those of the original CBS projections, are shown in Figure 7 in the main paper. Here we present them in terms of the projected number of Haredim per 100 non-Haredi (among non-Arab population), by CBS low, medium or high growth scenario.

In each case, the steeper blue line is the CBS’s own projection of this ratio. It shows rapid and massive growth of the Haredi population relative to the non-Haredi population, ranging from 46-59 Haredim per 100 non-Haredim in the low to high growth scenarios, respectively.

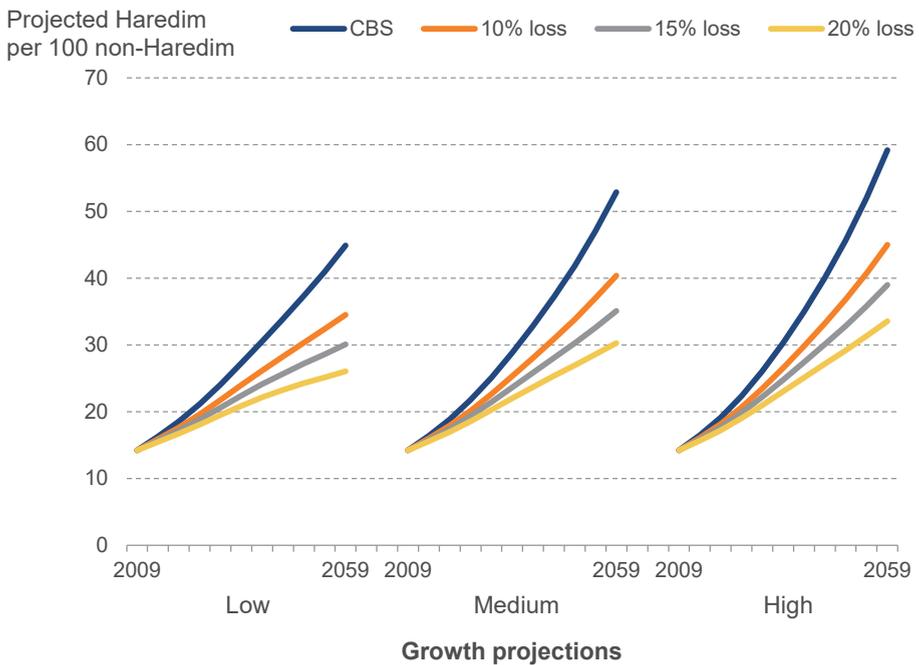
The orange line assumes a 10 percent net flow of Haredim to non-Haredi population. And the grey and yellow line assume a 15 and 20 percent net flow, respectively. Not surprisingly, the higher the net flow away from the Haredi population, the slower the growth. Even with a net 15 percent loss, which we think is on the low side of realistic, the relative numbers of Haredim to non-

1 As in the paper, we took into account different denominators in these two sectors. That is, given the relative sizes of the Haredi and non-Haredi Jewish population, a reduction of one child in the Haredi TFR, and the movement of that child to the non-Haredi population, will add less than one child to the TFR of the non-Haredi population.

Haredim drops precipitously, to 30-39 Haredim per 100 non-Haredim. And this is without taking into account any other changes: no differences in net migration (much higher for non-Haredi populations); the ongoing changes within the Haredi world.

Appendix Figure 3. Projected number of Haredim relative to non-Haredi Jews, 2009-2059

By CBS growth assumption, and level of religious mobility away from the Haredi community



Source: Alex Weinreb and Nachum Blass, Taub Center

Data: Paltiel, Ari, Michel Sepulchre, Irene Kornilenko, and Martin Maldonado. 2012. *Long-range Population Projections for Israel: 2009-2059*. Demography and Census Department, CBS

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