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Policy Brief

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Overpopulation and demography in Israel

Directions, perceptions, illusions and solutions

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Abstract

Israel combines one of the smallest surface areas with the highest fertility rates in the OECD. With such rapid population growth, there is a tendency to misdiagnose the underlying reason for many of Israel's overcrowded institutions and infrastructures – while concomitantly undervaluing the impact of the population's internal distribution on the country's future ability to sustain itself economically and to stem the burgeoning flow of educated emigrants from the country. Israel's current policies are intended to stimulate greater fertility. Though relatively ineffective, their continuation and the message that they convey is an issue that Israel needs to revisit. That said, the primary road to a turnaround in national fertility lies elsewhere – in a resource that Israel has refined to the highest levels known to man, but has made scarcely available to large swathes of the country's population: education. Recalibrating the national emphasis from education quantity (e.g. years of education, academic degrees) to education quality will not only lead to a turnaround from the currently low levels of productivity and high levels of poverty and income inequality, it will also foster a large and growing middle class with different attitudes toward fertility than those prevailing today.

Background

Israel is a study in irony. It has one of the world's most educated populations – in terms of average years of schooling per capita, or population share holding an academic degree – yet, its labor productivity is below that of most developed countries (Ben-David, 2017). Israel has universities that are among the world's best, and a school system that yields

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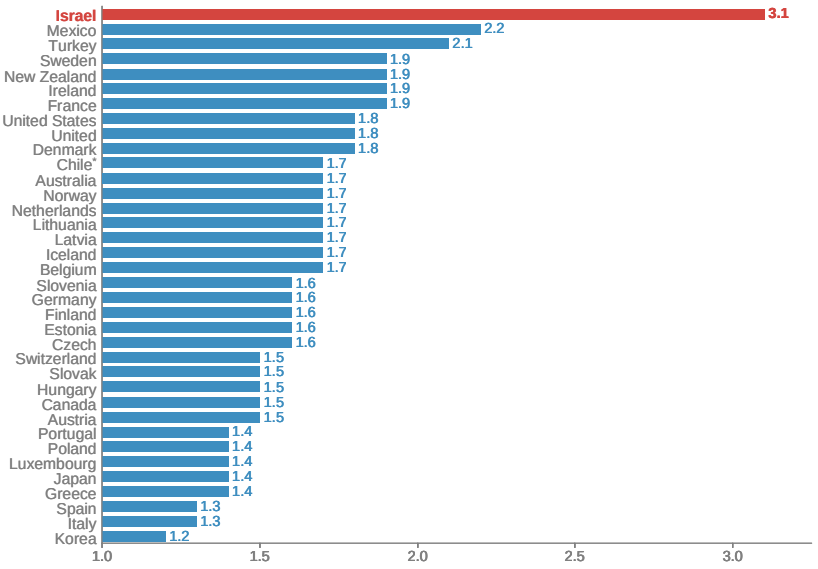
national scores in math, science and reading that are below those of nearly every other industrialized country.

Such archetypal domestic contrasts are also perplexing when the focus shifts to the issue of Israel's population growth. While nearly all OECD countries (33 of the 36 countries) have entered a period in which their fertility rates are below the 2.1 needed for maintaining a constant population over time, Israel's fertility rate stands out in a league of its own (Figure 1). At 3.1, it is almost a full child per family more than the number two country, Mexico.

Figure 1

Fertility rates, 2016



* 2015

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

Low birth rates in the developed world pose some serious challenges of their own, particularly with regard to the work force's ability to sustain living standards in such realms as health care and social security. This growing concern has often led to the import of foreign workers, many of them poorly educated and relatively unskilled – with all of the attendant issues that accompany such policies. The recent flow of refugees into Europe has only served to amplify this issue, in some cases with political ramifications that impact election outcomes and referendums.

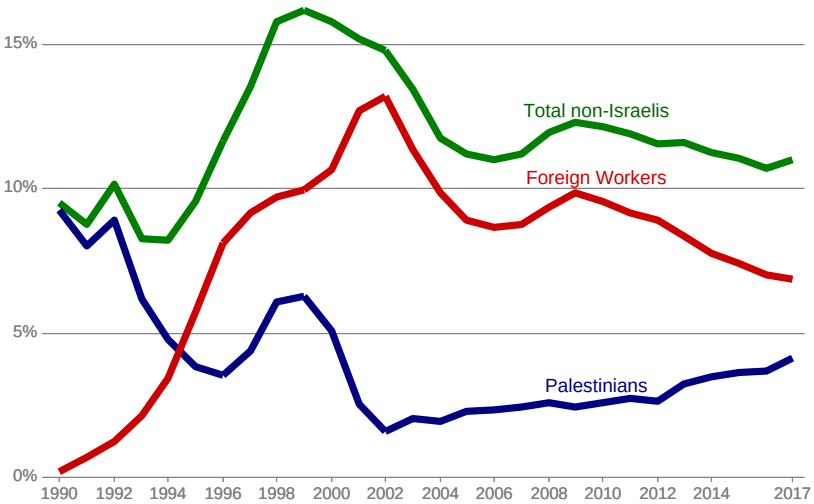
Israel, which has no such fertility problems, has nonetheless opted to follow the European example of importing a considerable number of unskilled and uneducated workers from developing countries (Figure 2). The irony of such policies is confounded by the fact that Israel is already inundated with adults who received a developing world education as children, and who have since grown to become poorly skilled adults (more on this below). Over 300,000 non-Israelis are currently employed in Israel – comprising almost one of every nine persons employed in the country's business sector.

With so much cheap labor already available domestically, the result of bringing in such large additional numbers of similar workers from abroad only serves to drag Israel's productivity downward even

Figure 2

Non-Israeli Workers

as share of business sector workforce, 1990-2017*



* Includes legal and illegal workers

Source: Ben-David (2003) *Economic Quarterly* (updated)
Data: Bank of Israel

further. Firms have little incentive to invest in technologies that could raise the amount produced by each worker, which would then yield higher wages and incomes in a country with the highest poverty rates in the OECD.

Perceptions and illusions

Israel's high fertility rates often lead to misleading conclusions about the primary determinants of some of Israel's main socioeconomic problems. Are the country's roads becoming increasingly congested because of rapid population growth? Is overpopulation the reason for high occupancy rates in hospitals? Why are Israel's classrooms so crowded?

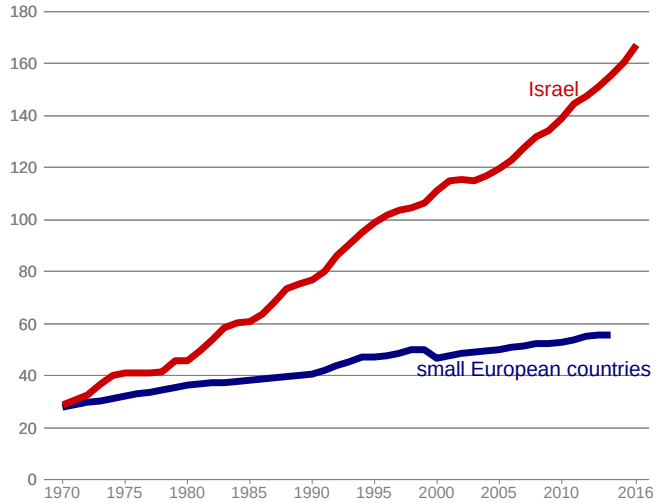
The extremely congested state of Israel's roads constitutes a major drag on the country's productivity (in addition to the state of the education system, stifling bureaucracy and more). By creating geographic "peripheries" in areas that are otherwise very close to the larger cities, the congested roads are a key factor in Israel's high rates of income inequality and poverty. The comparison with some of Europe's smaller nations is a stark one. In 1970, the number of vehicles per kilometer road in Israel was identical to the average in the European countries (Figure 3). By 2016, the congestion on Israeli roads was nearly three times the European average.

Healthcare in Israel also suffers from overcrowded conditions, with higher hospital occupancy rates than in all OECD countries (Figure 4). It's a problem that is compounded by a very low number of nurses per capita – roughly half the OECD average – that is falling over time, with the share of nursing school graduates in the population below the share of graduates in nearly all of the OECD countries. In light of these, and a plethora of additional problematic healthcare system attributes, it should probably not come as a surprise that mortality rates from infectious and parasitic diseases per capita in Israel have nearly doubled over the past two decades and that the country is now firmly ensconced at the top of the OECD (Ben-David, 2017). In

Figure 3

Congestion on roads

number of vehicles per kilometer of road in Israel and small European countries*, 1970-2016



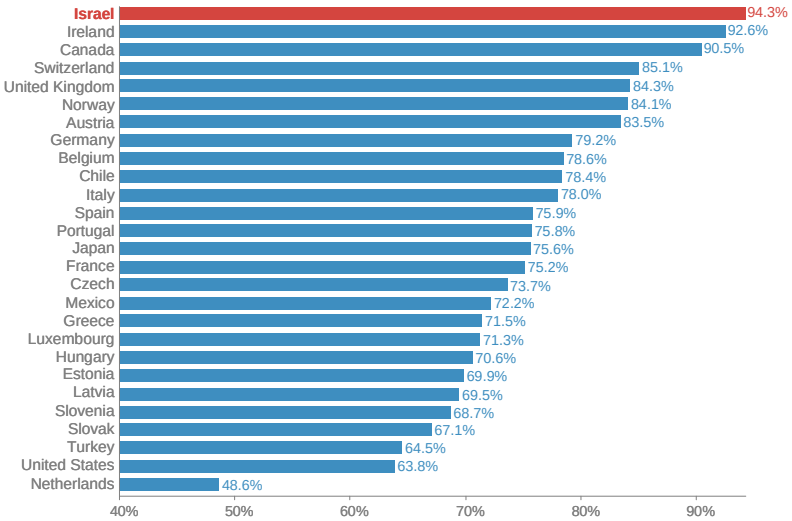
* Belgium, Denmark, Netherlands and Switzerland

Source: Dan Ben-David, Shoresh Institution and Tel Aviv University
Data: Central Bureau of Statistics, OECD, World Bank and Ingram and Liu (1999)

Figure 4

Hospital occupancy rates

as percent of available beds, average for 2010-2014

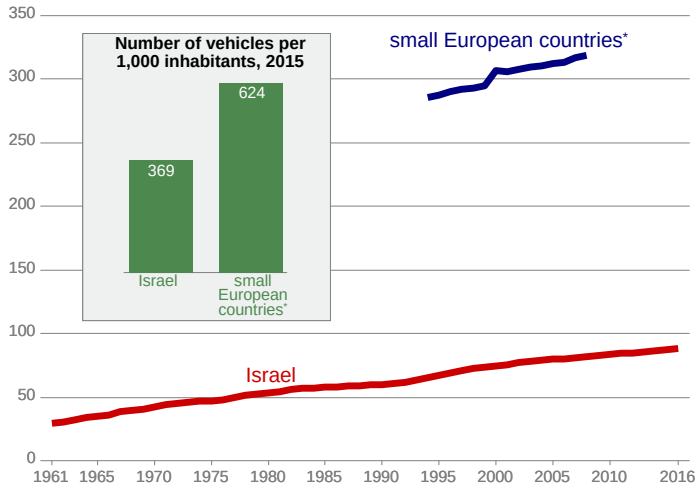


Source: Dan Ben-David, Shoresh Institution and Tel Aviv University
Data: OECD

Figure 5

Density of roads relative to country size

km road per one hundred sq km surface area, 1961-2016

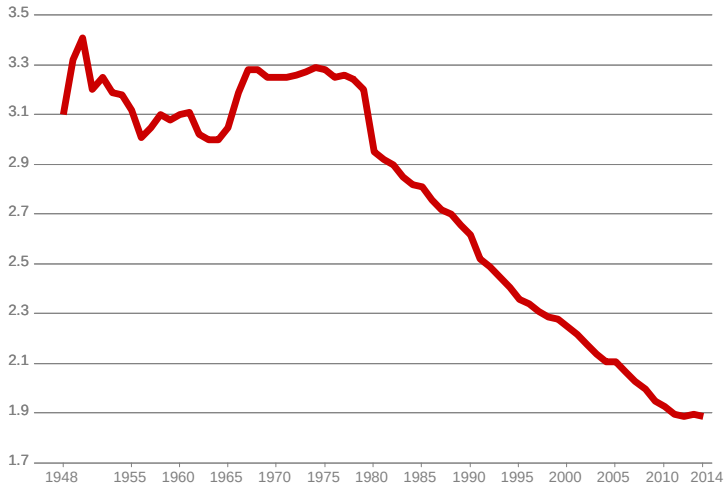


* Belgium, Denmark, Netherlands and Switzerland.

Figure 6

Hospital beds*

per 1,000 population, 1948-2014



* Curative (acute) care hospital beds.

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

fact, Israel's mortality rate from infectious and parasitic diseases per capita is roughly 50% greater than in the number two country in the OECD, Mexico.

While it may appear that rapid population growth swamping these systems, the primary problem is much simpler – insufficient investment. The number of kilometers of road per hundred square kilometers of surface area in Israel has risen considerably over the years (Figure 5). But the gap between the small European countries and Israel is still several orders of magnitude beyond what Israel has built. As a result, while Israel has 40% less vehicles per capita (Figure 5 insert), the number of vehicles per kilometer road is 180% more than the average in the small European countries. In addition, passenger and freight transport by rail in Israel is just half that of the small European countries.

Underinvestment is also the primary reason for the congestion in Israel's hospitals. While Israeli fertility rates are high today in comparison with other OECD countries, they are almost one-quarter less than the 4.0 that characterized the country in 1960. The same is true with regard to comparisons of immigration in recent times to that in the country's early years. While Israel experienced extensive immigration – primarily from the former Soviet Union and Ethiopia, with some influx from France and other countries – in recent decades, these rates are considerably smaller relative to the total population when compared to the extent of immigration to Israel in its first decades. In its first years of existence, Israel was inundated by refugees from the Holocaust and from Arab countries. Its economic situation was so grave in the 1950s that it had to ration food.

And yet, the much poorer Israel of those years managed to build hospitals and increase the number of hospital beds at the rate of its exponentially increasing population (Figure 6). Those national priorities pivoted at the end of the 1970s, with the number of hospital beds per capita in a free fall ever since. This trend exists despite the fact that today's Israel is considerably wealthier than the Israel of the early years, and is much more capable of caring for its needs.

At first brush, one could easily associate Israel's high fertility rates with its very congested classrooms. In a country with one of the developed world's worst education systems, the high number of students per class is often cited as a fundamental underlying

cause for the system's failures. While studies on the impact of class size on education quality have not been conclusive, the pertinent question regarding Israel is not whether large classes are detrimental to learning but rather, why are Israel's classes so large in the first place?

The number of pupils per class in Israel is indeed much higher than the OECD average (Figure 7). But at the same time, the number of pupils per full-time equivalent teacher in Israel is nearly identical to the OECD average – and even lower in the secondary schools (Figure 8). In other words, Israel is funding a sufficient number of teachers that could enable the country to reduce its class sizes to the OECD average. The fact that this is not the case has less to do with fertility than with an education system that is very inefficient in its utilization of existing resources.

Figure 7

Average class size, 2014

(number of pupils per class)

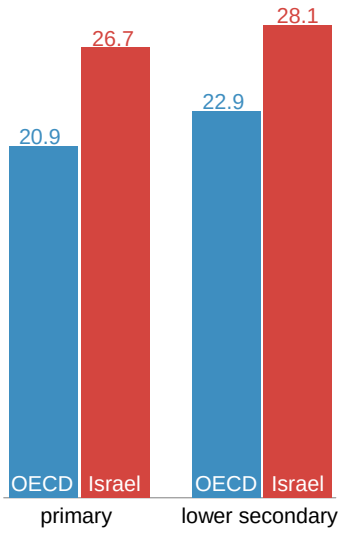
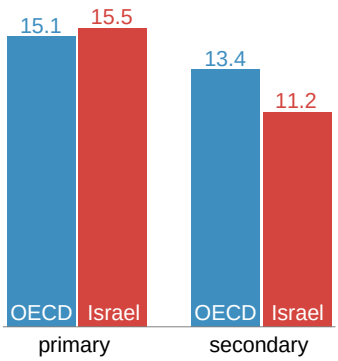


Figure 8

Number of pupils per teacher*, 2014



* according to full-time equivalents

Source: source: Dan Ben-David, *State of the Nation Report 2011-2012*, (updated)
Data: OECD

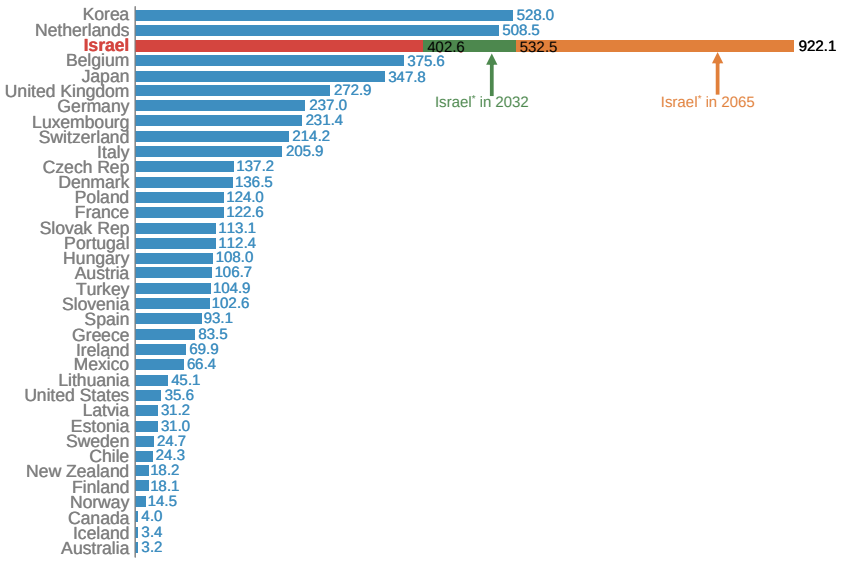
The direction: overpopulation

In light of the above, is over-population a problem that Israel needs to be seriously concerned with? Figure 9 sheds some further light on this issue. With 8.8 million people at the end of 2017, Israel is already the third most crowded country in the OECD. Midpoint population forecasts by the Central Bureau of Statistics (2017) point to rapidly increasing population density in the coming years. By 2032, just over a decade from today, Israel's population is expected to reach 11.5 million people, with a density roughly equal to that of Korea – the most densely populated OECD country – today. By 2065, the forecast is for 20 million Israelis, or 922 per square kilometer – two and a half times Israel's current population density. To give a sense of Israel's impending congestion, this would make the future Israel more crowded than the current population density in all 180 countries with at least 1500 square kilometers, except Bangladesh. Since

Figure 9

Population density

persons per square kilometer, 2017



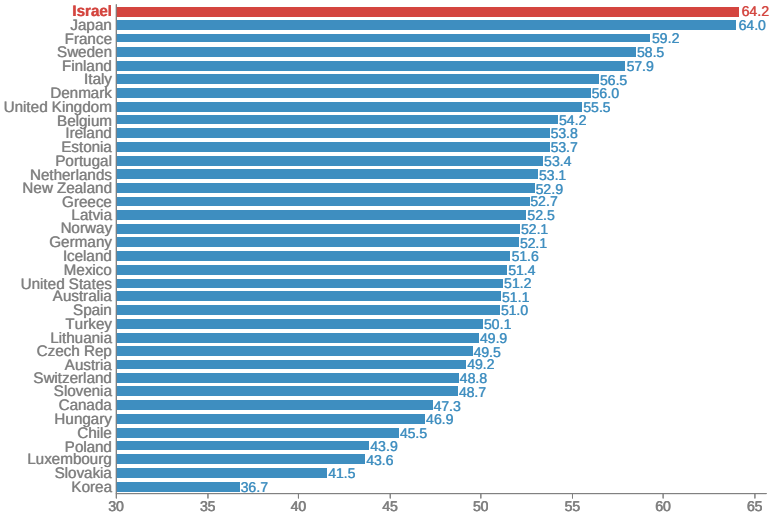
* midpoint projection

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

Figure 10

Total dependency ratio, 2015

Ratio of population aged 0-14 and 65+ per 100 population aged 15-64

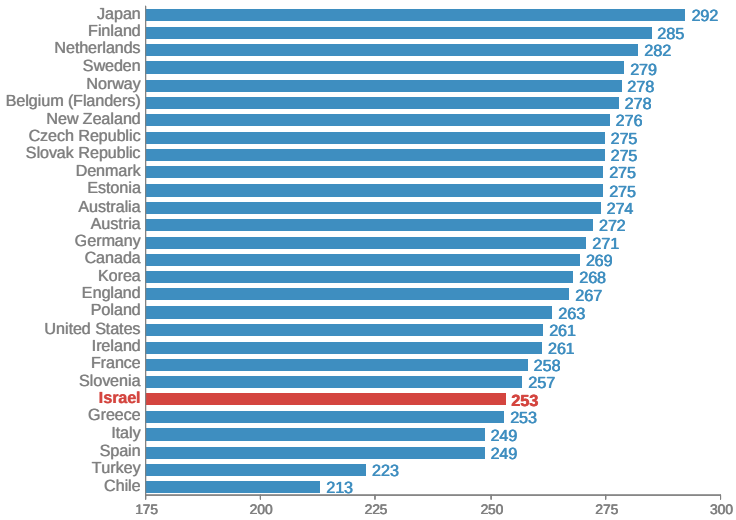


Source: Dan Ben-David, Shoresh Institution and Tel Aviv University
Data: UN

Figure 11

Average score in literacy and numeracy proficiency

PIAAC exam, 16-64 yr olds, 2011-2014



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

Israel's infrastructure investments have not kept up with its current population growth because of national priorities that have tended toward narrow sectoral, business and personal interests instead of national concerns as in the past, there is a serious question regarding the country's future capacity to adapt to the population inundation ahead.

Already today, Israel's dependency ratio (the share of non-working age population to working-age population) is the highest in the OECD (Figure 10). This problem is compounded by a couple of major factors in the Israeli case. First, the share of the country's working-age population that is not participating in the labor force is greater than in most OECD countries. Hence, the burden on the remaining shoulders who do work is high, and can be expected to rise substantially in the future.

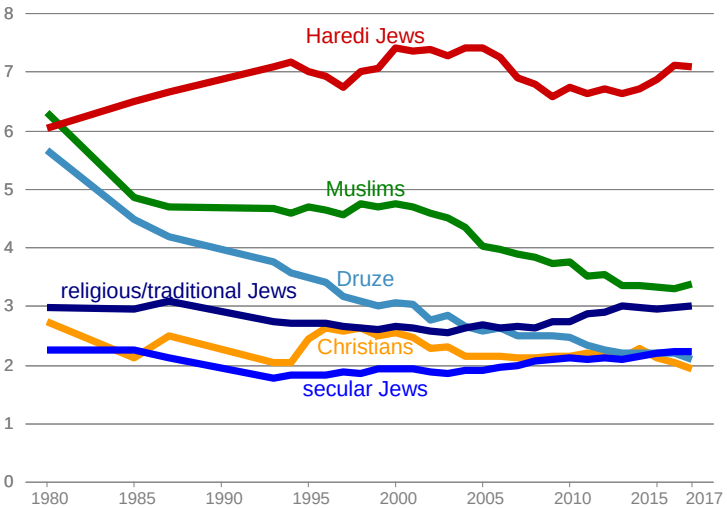
Second, as a result of an education system that has been producing appreciably sub-par outcomes in international exams for years, Israel's adult population is characterized by literacy and numeracy proficiency scores that are below the vast majority of OECD countries (Figure 11). Thus, it should not come as a surprise that Israel's labor productivity is low – and falling further and further behind the developed world leaders for the past four decades.

The future economic burden will be exacerbated by the internal composition of Israel's fertility rates (Figure 12). The Haredim (ultra-Orthodox Jews) had an average of 6 children per family in 1980. Their fertility rates peaked at roughly 7.5 at the

Figure 12

Fertility rates in Israel

Number of children per woman of child-bearing age, 1980-2017



Source: Dan Ben-David, Shoresh Institution and Tel Aviv University
Data: Central Bureau of Statistics and Hleihel (2017).

height of the welfare benefits in the early 2000s. After falling a bit in the aftermath of massive cuts in the benefits, Haredi fertility rates have been rising again over the past decade, to over 7 children on average per woman of child-bearing age. Muslim and Druze fertility rates fell sharply in the first half of the 1980s, with Druze rates continuing to decline over the subsequent years, eventually reaching the current fertility rates of secular Jews. While Druze rates fell, Muslim fertility rates stabilized in the mid-1980s and remained steady at just under 5 children per family for over a decade and a half. The combination of welfare benefits cuts and a growing Muslim middle class were accompanied by a decline in Muslim fertility rates that continues to this day. Fertility rates among the remaining population sub-groups are below those of the Haredim and Muslims, albeit with a slight rise in the fertility rates of the secular and religious Jews in recent years.

Israel's Arabic-speaking children account for a quarter of its first graders. Their average scores in math, science and reading in international exams are below those of many Third World countries. In fact, their scores are below those of most predominantly Muslim countries (Ben-David, 2017).

The majority of Haredi children – who account for almost one-fifth of Israel's first graders – do not even participate in the international exams (and thus, do not lower even further the already low national average to a level that would more accurately reflect the true state of education in Israel). Nearly all of the boys do not study any core curriculum subjects beyond eighth grade, and even what they do study until that juncture is quite partial (no English, no science and only rudimentary math).

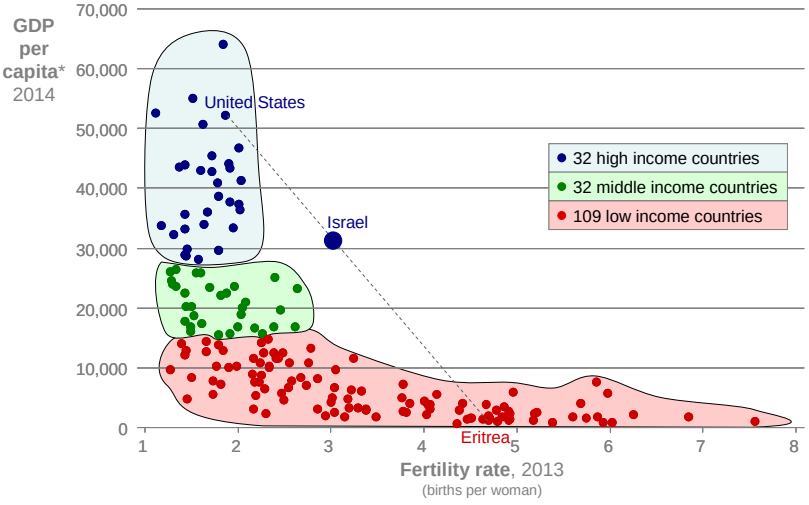
In addition to the Arabic-speakers and Haredim, who alone account for nearly half of Israel's first graders, there is an extensive social and geographic periphery in Israel – much of which also receives a Third World education. In other words, the population groups with the highest fertility rates in Israel are receiving an education that will not enable them to support a developed economy in the future – with all of the national security implications that this will have on Israel's future ability to exist in the most violent region on the planet.

Israel's unique merging of population groups with such disparate education levels is highlighted in Figure 13. The figure displays observations for 173 countries with data on living standards (as expressed by GDP per capita) and fertility. While there are substantial income differences between the 32 high income countries, they are invariably characterized by relatively low fertility rates. The 32 middle income countries include a number of nations with fertility rates greater than the 2.1 needed for maintaining the same population size. The largest group of countries, by far, encompasses the low income nations. Incomes in many of these are extremely low while fertility rates are exceptionally high.

Figure 13

National living standards and family size

173 countries



* excluding countries that are primarily oil-exporters and city-states.
** in 2011 PPP dollars.

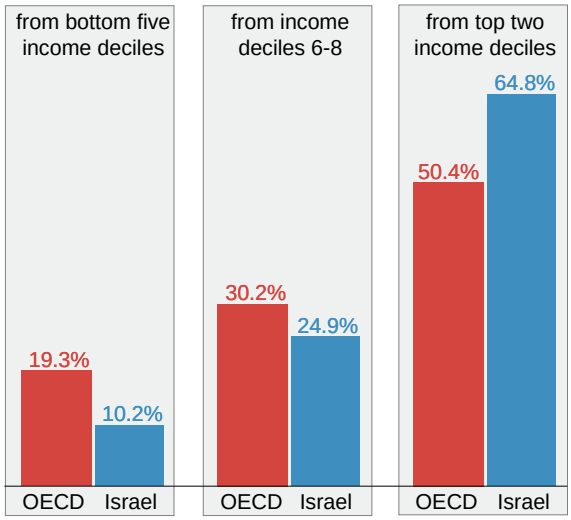
Source: Dan Ben-David and Sagit Azary-Viesel, *Shoresh Handbook* (2015)
Data: World Bank

Of all 173 countries, Israel is alone in its placement outside all three groups. Its distinctive combination of population subgroups at the cutting edge of human knowledge alongside population subgroups receiving Third World educations makes it unique among nations. A line drawn from the United States through Israel reaches Eritrea at the other end, symbolizing a sort of weighted average of the two that is Israel.

The huge gaps between Israel's various population subgroups are also reflected in the particularly skewed distribution of its tax base – which also provides a glimpse of the direction that the country is headed. In the case of Israel, half of the population is so poor that the total amount of income tax and social security tax that they paid in 2011 only accounted for 10% of the total collected (Figure 14). The average for the bottom five deciles in the OECD was 19%, nearly twice the Israeli share. At the other end of the spectrum, the top two income deciles accounted for one-half of the total income tax and social security revenues in the OECD while the amount borne by the top 20% of the population in Israel accounted for nearly two-thirds of the total amount collected.

Figure 14

Share of direct taxes and social security contributions paid by income deciles, 2011



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

Narrowing this down further – to just income tax – yields even greater disparity in the burden. In 2000, the bottom half of Israel's taxpayers accounted for only 1% of the country's total income tax revenue while the top two deciles accounted for 83% of the total. By 2017, revenue collected from the bottom half of the working population fell to 0%. In the top two deciles, it rose to 92%. For comparison purposes, the share of total U.S. income tax revenue coming from the top two American income deciles in 2015 (83%) is where Israel was a decade and a half earlier. Since then, Israel has surpassed the U.S. by a considerable amount.

The problem is that while it is possible to continuously increase the tax burden on the few who shoulder it, it is not possible to force these individuals to remain in Israel and to continue bearing the rising burden. The "brain drain" has always been an issue that Israel has had to contend with. In recent years, that problem has intensified.

Policy suggestions

The issue of population growth is an extremely touchy one in Israel. Within a single decade of the 20th century, a third of the Jewish People were murdered in the Holocaust and the State of Israel was born. In 1948, with populations in the surrounding countries numbering in the millions, the Arab countries attacked Israel's 672,000 Jews, killing roughly one percent of its population in their attempt at destroying the nascent country. In light of these dual national traumas, followed by a foreboding future lined with existential threats and all-out wars, it's not difficult to understand why the country's founders adopted the "be fruitful and multiply" passage from the Bible, spurring Israel's population to grow as rapidly and as abundantly as possible. Government policies encouraging high fertility rates have been in place since Israel's birth.

While threats from all directions continue to be made, and though Israel's children still must put their lives on the line to defend the country, the situation has nonetheless changed considerably since the early decades. Israel now has peace agreements with two of its neighbors while the danger of being overrun by its still abundant enemies has been replaced by the threat of missiles.

Today, Israel's population is larger than the populations in a third of the OECD countries and it is greater than the number of inhabitants in over half of the world's nations. Yet Israel is the third smallest OECD country in size – and therein lays its present-day challenge, for Israel is now headed toward much more than severe overcrowding and overuse of the small country's very limited resources. The composition of the fast growing population is currently leading to an eventual outcome that will extend beyond the inhospitable to the unsustainable in terms of Israel's ability to fund its needs and protect its people.

While successive Israeli governments have encouraged high fertility rates, the overall impact of such policies on fertility has been marginal at best. The primary reason for Israel's uniquely high (for a developed country) birth rates lies elsewhere, as does the key route to their reduction. And yet, a government wishing to curb Israel's rapid population expansion must nonetheless signal a change in its priorities. The time has come to discontinue the provision of benefits intended to encourage the creation of large families – from the elimination of child benefits through removal of housing benefits to the discontinuing of subsidized fertility treatments for families with many children.

A major step in this direction was taken in the early 2000s, albeit not as part of a policy intended to reduce fertility but as a concerted effort to stop Israel's economic freefall during the intifada-related recession. The primary effect that the significant slashing of benefits appeared to have had was on the less educated and poorly skilled segments of society. The cuts were followed by substantial employment increases in these groups, which in turn were accompanied by varying reductions in their fertility rates (with slight increases in fertility among non-Haredi Jews).

The route to a significant change in national fertility rates lies elsewhere. The emphasis of governmental policies should not be on trying to affect fertility rates directly. Instead, it should emanate from the perspective of ensuring Israel's very survival in the future. The country needs to open the education floodgates and let the knowledge already existing in its best higher education institutions flow to every school in Israel – with particular emphasis on the areas currently receiving a Third World education. This requires a major overhaul of the country's education system, with systemic changes: (1) in the core curriculum (in terms of its level and uniformity of coverage across all schools); (2) in the way that teachers are chosen, trained and compensated, and; (3) in the way that Israel's largest budget item is managed and spent.

The case of the Haredim deserves particular attention in this context, as it makes Israel a unique outlier in the developed world. On the one hand, the country has adopted developed country norms stipulating that a child's basic right to an education requires mandatory school attendance. On the other hand, Israel is the only developed country that allows parents to systematically deprive their children of a core curriculum that will provide them with tools and employment options in the future. As if this were not enough, Israel also provides varying degrees of funding for schools that do not teach a core curriculum. At the very least, all public funding for schools depriving their pupils of a complete core curriculum needs to be discontinued immediately. Haredi children must be given the same basic right as all other Israeli children to an education that will give them options when they reach

adulthood. From Maimonides, the Rambam physician, to the Lubavitcher Rebbe Schneerson, an electrical engineer who studied mathematics at both the University of Berlin and the Sorbonne, the time has come to reemphasize that there is no contradiction between education and religious observance.

Returning to the general issue of fertility, the provision of a cutting-edge education to all of Israel's children is not only possible in a country with some of the world's best universities, it is the key. Education is not only a major factor in determining personal economic well-being. As has been the case across the developed world, and in Israel, birthrates are not immune to the profound impact that education has on living standards.

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