Executive summary of

The Shoresh Handbook

on Israel's society and economy 2015

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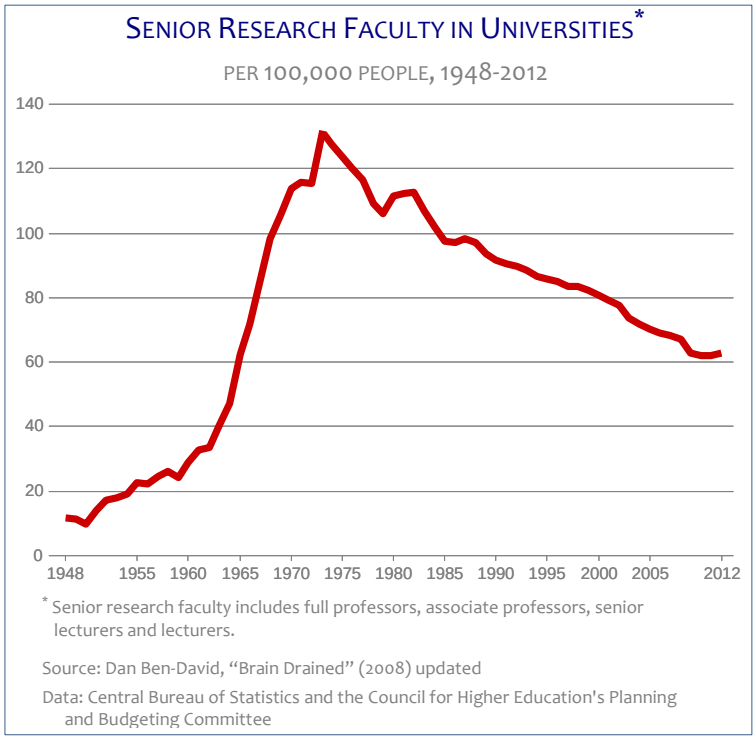
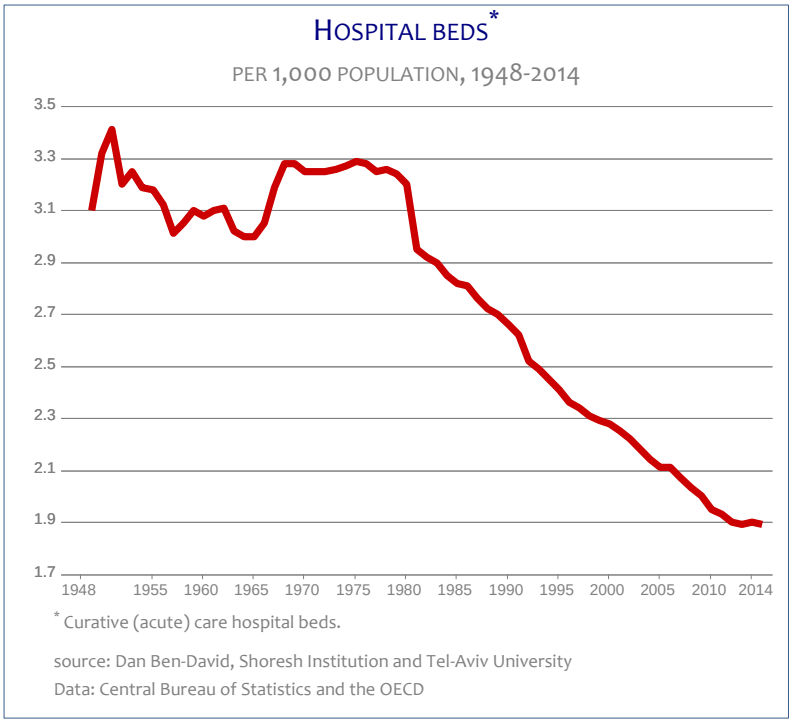
1. Israel's long-run socioeconomic trajectories

In the 1970s and early 1980s, Israel underwent a significant change in national priorities. The result was a shift to new socioeconomic trajectories that have since been very steady – multi-decade trajectories that are simply unsustainable in the long-run. The *Shoresh Handbook on Israel's society and economy* provides a seminal big-picture perspective of contemporary Israel: where we were, where we are, where we are headed (and how fast), what that means, and what can be done about it. Much of the prevailing wisdom regarding Israel is simply wrong, while some of the key paradigms need to be redefined.

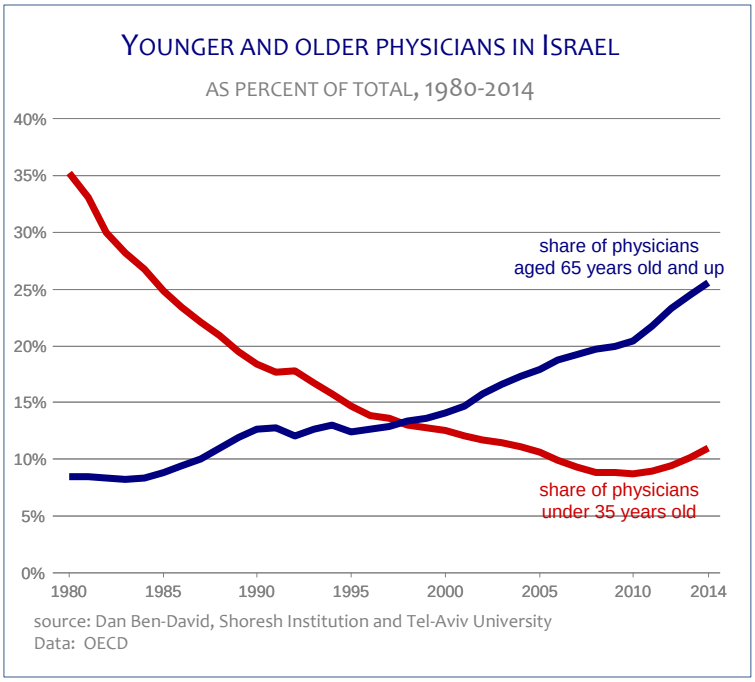
Israel's turnaround in national priorities is vividly apparent in a number of vital socioeconomic realms ranging from education and health to infrastructure and growth. Two graphs for which data exists since the founding of Israel in 1948 could not be more explicit in this regard.





When Israel was primarily a poor country with agricultural produce comprising half of its exports, it built research universities for its future. During its first decades of existence, Israel increased the number of university researchers at an exponential rate. The national priorities of the time yielded seven research universities by the mid-1970s, with the number of research faculty per capita nearing American levels.

Then Israel's priorities changed. Though Israel became wealthier and the external threats diminished, not a single research university was established over the past four decades (the case of Ariel is primarily political and not a part of any strategic higher-education plan). Although the population more than doubled and the number of students in the universities grew to almost 3 and half



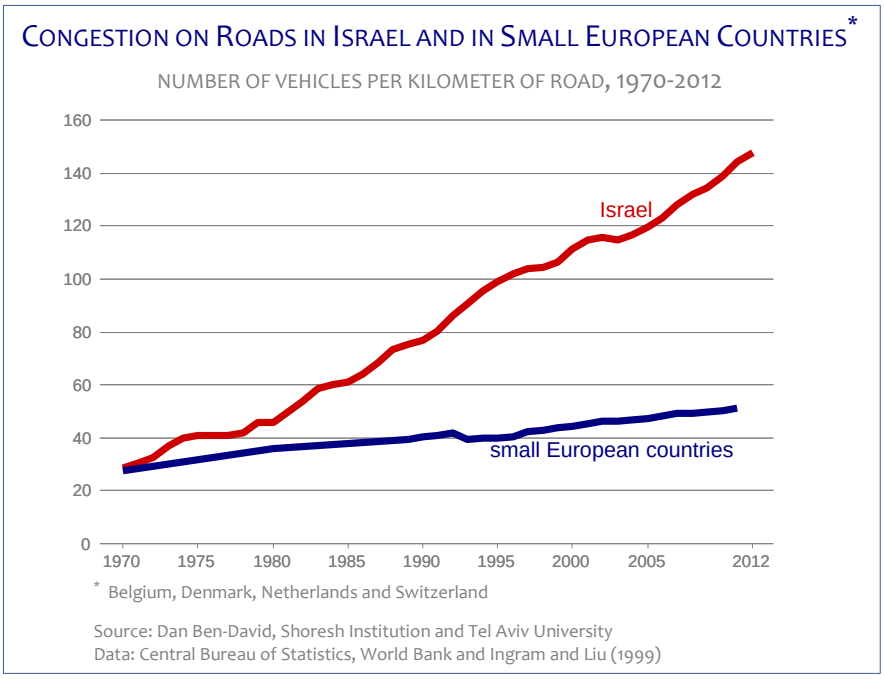
times what it was in the 1970s, the total number of research faculty in all of the universities grew by only 14%. Even if one adds the non-research colleges, the number of students in higher education grew by 5 and a quarter fold while the total number of senior faculty – research or otherwise – in higher education grew by 40%.

Another area in which the change in Israel's national priorities has been quite palpable is in its health policies. During Israel's first three decades, the new country managed to increase the number of hospital beds at roughly the same pace as its very rapidly growing population. Then came the national change in budgetary priorities and the country shifted its resources further and further away, steadily reducing the number of hospital beds per capita for three and a half decades.

The diversion of funds and the resultant multi-decade drop in hospital beds has brought Israel to the bottom rungs of the OECD ladder. 31 of the remaining 33 OECD countries have more hospital beds per capita than Israel. Thus, while Israel has some of the best physicians in the developed world, its population is hospitalized in conditions that are in some cases found in the Third World with patients in corridors and dining areas – with a heightened likelihood of secondary infections and disease.

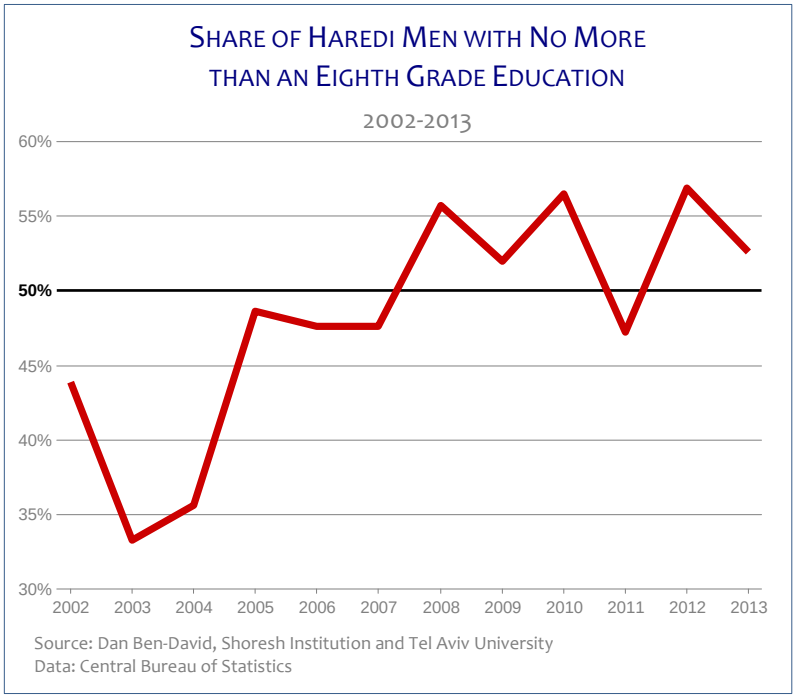
Though Israel is currently situated at around the middle of the OECD in terms of professionally active physicians per capita, it did not invest sufficiently in the training of physicians. As a result, Israel has an increasingly elderly stock of physicians. Three and a half decades ago, only 8.5% of Israel's physicians were at the age of 65 and up. Today, their share of the total exceeds 25 percent, the highest share – by far – in the OECD. The country's young physicians accounted for over a third of the total in 1980. Today, only one in ten is under the age of 35. Twenty-five of the twenty-nine remaining OECD countries with data on physician ages have a higher share of young physicians. The situation among nurses is worse.

One key factor directly affecting both productivity and inequality is the transportation infrastructure. Congestion on Israel's roads – as measured by the number of vehicles per kilometer of road – was nearly identical to the average congestion in small European countries (Belgium, Denmark, Netherlands and Switzerland) in 1970. Over the next four decades, road congestion in Israel climbed to almost three times the average of these other small countries. In 2011, congestion on Israeli roads was over three times the overall OECD average – though the number of vehicles per capita in Israel was 38% less than the OECD average. In fact, the cost of cars and their usage is so prohibitive in Israel (especially relative to the lower Israeli incomes) that the number of vehicles per capita is lower than in 30 of the other 33 OECD countries, and yet the congestion on Israel's roads



exceeds that in 30 of the 33 remaining OECD countries.

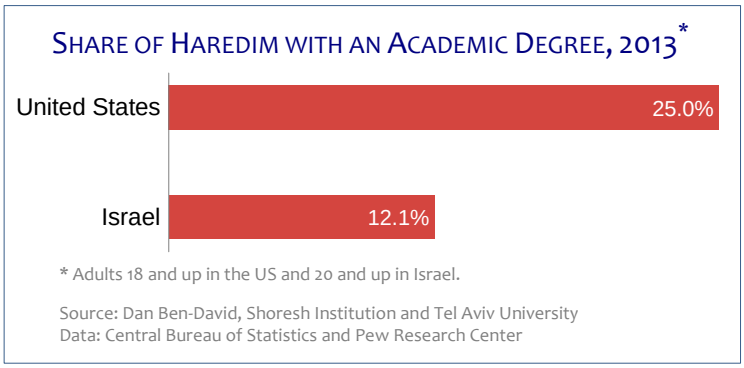
Over the past four decades, roads were not built where most of the population lives. There has been a recent upswing in building new roads and in widening existing ones – and yet, the number of vehicles per surface area of road increased by 16% between 2005 and 2013. Part of the reason for this is a lack of significant transportation alternatives to cars. In fact, the number of train passenger-kilometers travelled relative to population size in Israel is but a small fraction of the level in Europe.



Demographic changes within Israel today will play a major role in defining the future economic viability of the country. The fastest growing population group within Israel are the Haredim (ultra-Orthodox Jews). Contrary to beliefs that continue to prevail within Israel, the share of Haredi men with no more than an eighth-grade education (and even this "core education" that they receive tends to be very partial, with no study of science or English and very low levels of math) has actually increased – both in absolute terms and also as a share of all Haredi men – over the past decade. Today, more than half of the large and rapidly growing Haredi male population has no formal education beyond eighth grade.

The primary reason that Haredi Jews in Israel are so poorly educated has less to do with religion than with their political power. A unique feature of Israel's education system is that it allows Haredim to use religion as a means to prevent their children from receiving an education that will provide them with alternatives when they become adults. Consequently, it is very difficult for such individuals to eventually reach higher education, even if they may one day become interested in doing so.

A comparison of educational attainment at the academic level – between Haredim in Israel and Haredim in the United States – is useful in illustrating the line between religion and politics. Though their adherence to the Jewish religion is ostensibly similar, the share of Haredi Jews in the States with academic degrees is twice that of Haredi Jews in Israel.



The average achievement level in math, science and reading knowledge attained by the non-Haredi Israeli children (since the vast majority of Haredi children do not study the material, they do not participate in the international exams in any meaningful way) is near the bottom of the OECD. Arab-Israeli children receive an education that places their attainment levels at Third- World levels. Disparity in educational achievements among non-Haredi Israeli children is by far the highest in the OECD (and it would be even higher had the Haredi children taken the exam), so it should not be a surprise when such inequality in education is later translated into the largest income gaps in the developed world.

The failure of Israel's education system extends far beyond the low level of math, science and reading knowledge possessed by its children. The OECD administers an additional exam focusing on simple problem-solving abilities. It defines six levels of problem-solving abilities, from the highest Level 6

to the lowest Level 1. As specified by the OECD, "Level 1 students tend not to be able to plan ahead or set sub-goals."

22% of Israeli pupils were unable to even reach the OECD's minimum Level 1 of problem-solving. No other OECD country approaches this rate of inability – which does not even include Israel's Haredi children. When such a large share of children receive developing world levels of education and primary skills, it should be clear what kind of a future awaits – unless the knowledge from Israel's state-of-the-art universities reaches them before they grow up.

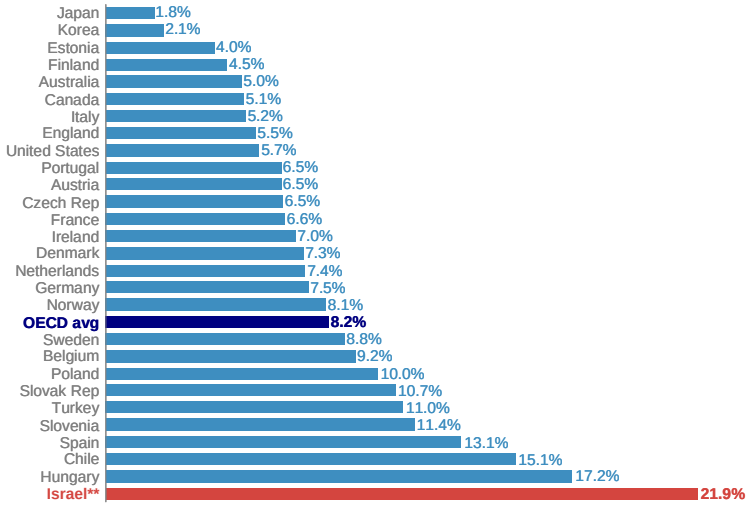
Poor physical and human capital infrastructures play a major role in determining the productivity so vital for economic growth. While much of Israel's fast total factor productivity growth in the period preceding the 1973 Yom Kippur War could be ascribed to a catching-up phase with the rest of the developed world, the decades since then have been characterized by particularly low rates of productivity growth.

The result, when translated into GDP per hour worked, is that Israel has one of the lowest rates of labor productivity in the developed world. In fact, Israel's labor productivity is not only low, it has been falling further and further behind the G7 countries who have been leading the developed world since the mid-1970s. A part of Israel is cutting edge – the universities, hi-tech, medicine, and so on – but a large, and growing, share of the population is not receiving either the tools or conditions to work in a modern, competitive global economy. This part of Israel is like a huge weight on the shoulders of the rest, a weight that is becoming increasingly heavier over time.

The greater the gap between what skilled and educated Israelis can receive abroad and what they receive at home, the more personal thresholds will be crossed. It will become increasingly easier – particularly for the young – to decide between leaving, or remaining and earning below potential while continuing to shoulder a heavier and heavier burden.

Since the mid-1970s, the labor productivity gap between the leading developed countries and Israel has increased by almost five-fold. This

Percent of Pupils Below the OECD's Minimum Problem Solving Level*, 2012



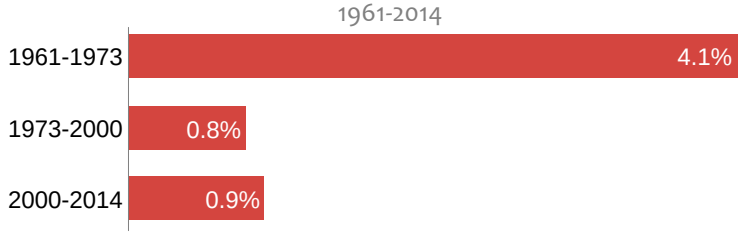
* The share of pupils below Level 1

** Israel not including Haredi Jews

Source: Dan Ben-David, Shoresh Institution and Tel Aviv University
Data: PISA and Israel's National Authority for Educational Measurement and Evaluation

Annual Changes in Business Sector Total Factor Productivity

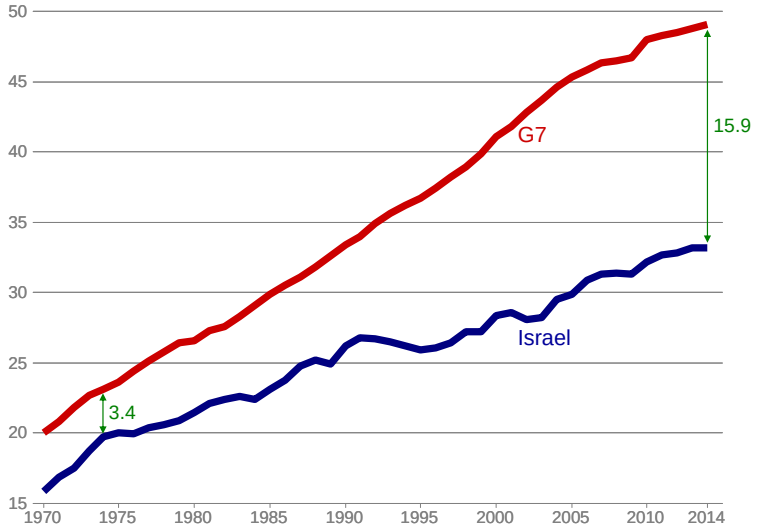
1961-2014



Source: Dan Ben-David, Shoresh Institution and Tel Aviv University
Data: Bank of Israel

Labor Productivity

GDP per work-hour*, 1970-2014



* In 2005 PPP-adjusted dollars.

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

trajectory of the past four decades will not be sustainable for another four decades – with all that this implies for the future of Israel.

2. The future – if no change in the present

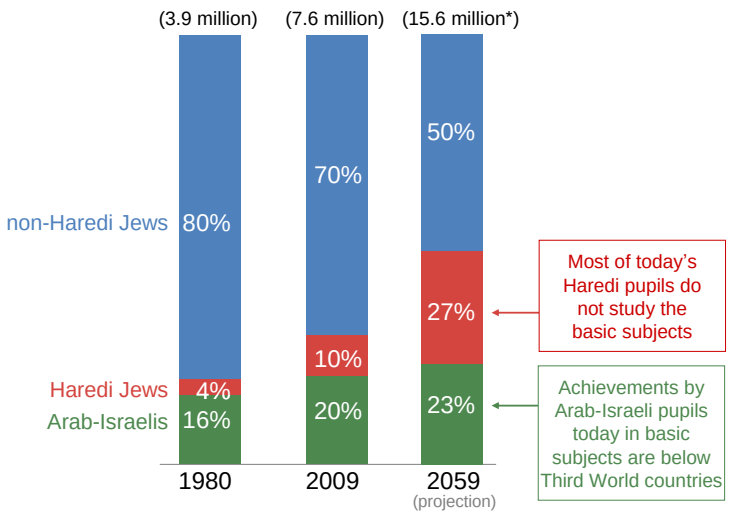
What lies in store for Israel in the future? Today's children are tomorrow's adults and the fastest growing segments of Israel's population tend to be those who are also receiving the worst core education. This will have tremendous implications on Israel's future unless the country's physical and human capital infrastructures begin receiving immediate attention in the national priorities.

What has played out in Israel over the past four decades has essentially redefined the national security paradigm which plays so influential a role in Israeli elections. Planes, tanks and battalions are only a part of what Israel needs to defend itself. Children receiving a Third World education will only be able to maintain a Third World economy, which cannot support the First World defense that Israel requires to physically remain alive in the extremely violent neighborhood that it lives in.

When a large share of future adults will not be able to maintain a first world economy, then who will fund the needs of such a society? Already today, nearly 50% of the Israeli population pay no income tax at all. 20% of the population account for 89% of the entire income tax revenue – up from 83% in 1999. In light of the rapidly changing demographics in Israel, on whom could future income taxes be levied – those whose incomes are so low that they do not even reach the bottom rung of the income tax ladder, or those already shouldering 89% of the income tax burden whose share in the population will become considerably smaller than their current 20%?

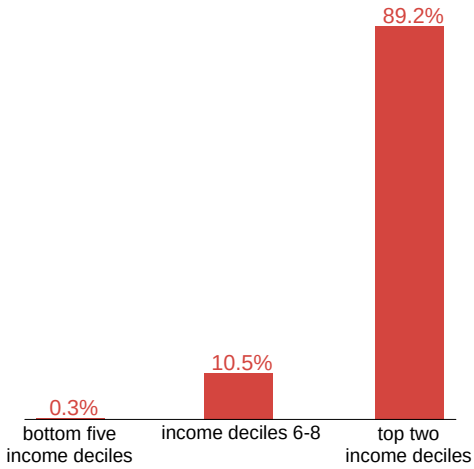
If Haredim and Arab-Israelis do not receive the tools and conditions to work in a modern economy, then there is little reason to expect their employment and productivity to converge with those of the rest of society. Under such a scenario, the Finance Ministry forecasts that the ratio of government tax revenues to GDP will fall sharply in the future (despite the expected increase in tax revenues from Israel's newly-found gas fields) while the ratio of government expenditures to GDP will increase precipitously as a result of rising welfare needs. Consequently, the government deficit, as a share of GDP, will increase more than four-fold while Israel's debt to GDP ratio will take off.

Future Population of Israel



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

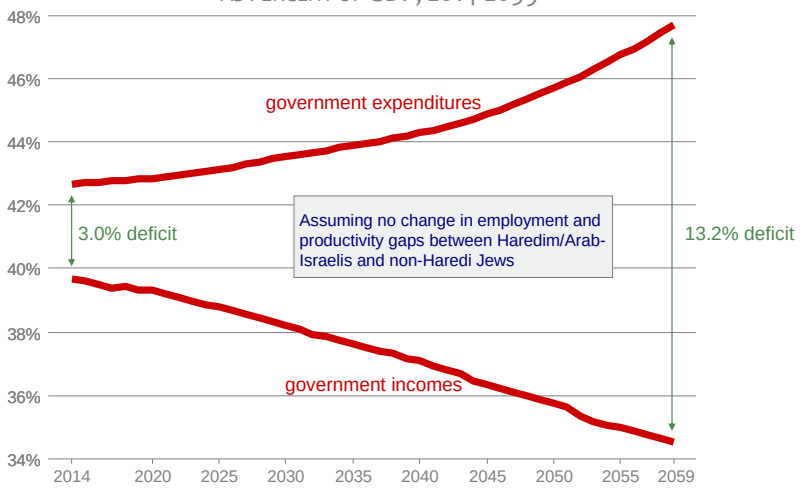
Share of Total Income Tax Revenue Paid by Income Deciles, 2011



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

Projected Future Government Incomes and Expenditures*

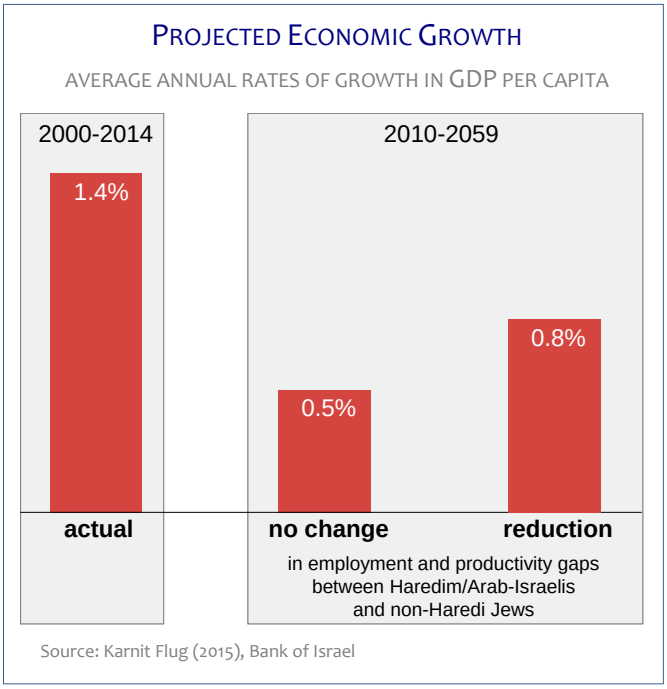
AS PERCENT OF GDP, 2014-2059



* based on Central Bureau of Statistics' middle projection.

Source: National Economic Council, Prime Minister's Office
Data: Assaf Geva (2015), Finance Ministry

Israel's future growth picture under each of the Bank of Israel's existing scenarios is not a good one. The rate of growth in Israel's standard of living – as measured by GDP per capita – is expected to drop from the current 1.4% over the past decade and a half to 0.5% or 0.8% a year depending on whether or not there is convergence of employment and productivity rates among Haredim and Arab-Israeli with the rest of society. Hence, the challenges that Israel faces extend far beyond simply bringing the Haredim and Arab-Israelis up to the average non-Haredi Jewish levels of productivity and employment. There is a need to take the entire country up to a higher level. This is possible – still – but the window of opportunity for a major turnaround in Israel's current long-run trajectories will not remain open indefinitely.

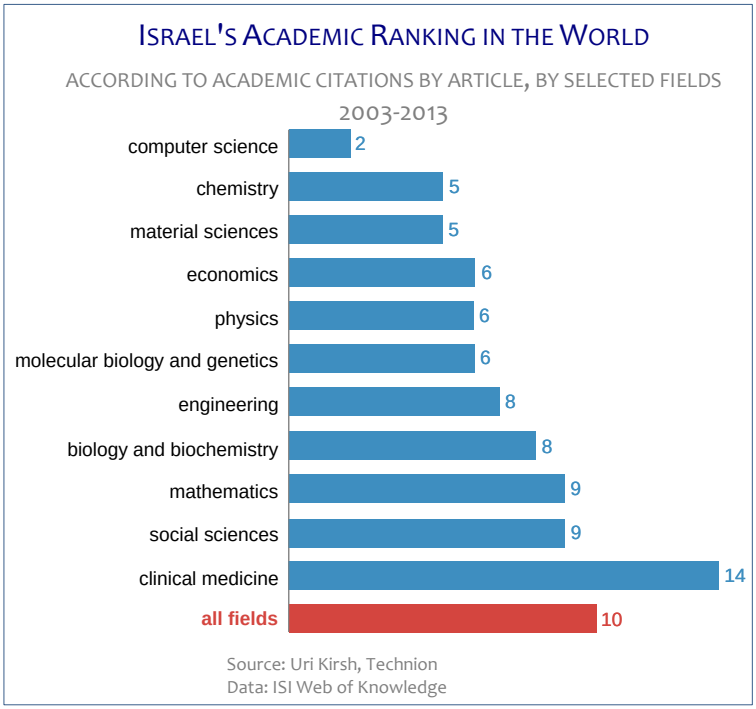


Such a change in emphasis needs to focus on three policy spheres. The first policy sphere, focusing on the individual and firm levels, has to create incentives to work and hire while providing the necessary tools. The second policy sphere concentrates on the next level up – creation of surrounding conditions that will increase employment and productivity while reducing poverty and inequality. The third policy sphere addresses the overall strategic issues that will not only improve the situation in the present, but also ensure sustainable socioeconomic trajectories in the future. The handbook provides an outline of some of the core areas that these various policy spheres need to focus on.

3. The opportunity

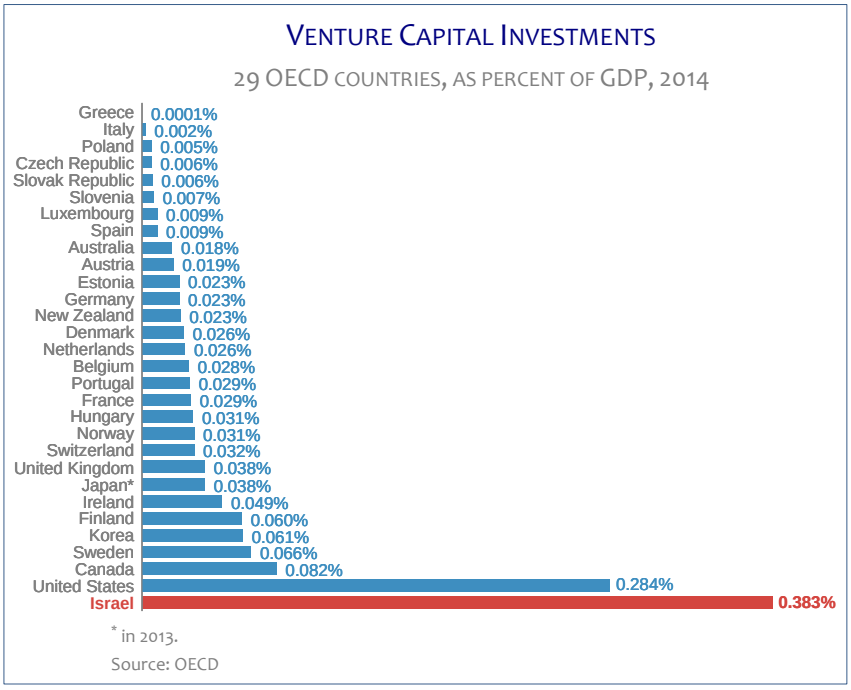
In some respects, the situation in Israel is analogous to the passengers and crew of the Titanic who are focusing only on the rearrangement of deck chairs instead of on that huge iceberg ahead and the need to chart a new course. Israel is not a developing country by any stretch of the imagination. All the knowledge that Israel needs for implementing a turnaround is already within its borders and does not have to be learned or imported from abroad.

Despite its long-run socioeconomic trajectories, Israel is still home to some of the world's leading research centers. Its universities were ranked second in the world (on the basis of the academically accepted measure of citations per article) in the area of computer science, sixth in physics and tenth overall. Academic excellence is a fundamental cornerstone for technological advances – and Israel still has it.



The country invests in R&D at higher rates than any other country and the result has been a closing of the gap in patents per capita between Israel and the world's leading economies. The subsequent confidence in the ability of Israelis to think outside the box and find solutions to myriad issues has led to more money flowing into Israel than flowing out – with a very strong and stable currency just one indication of this confidence. Net

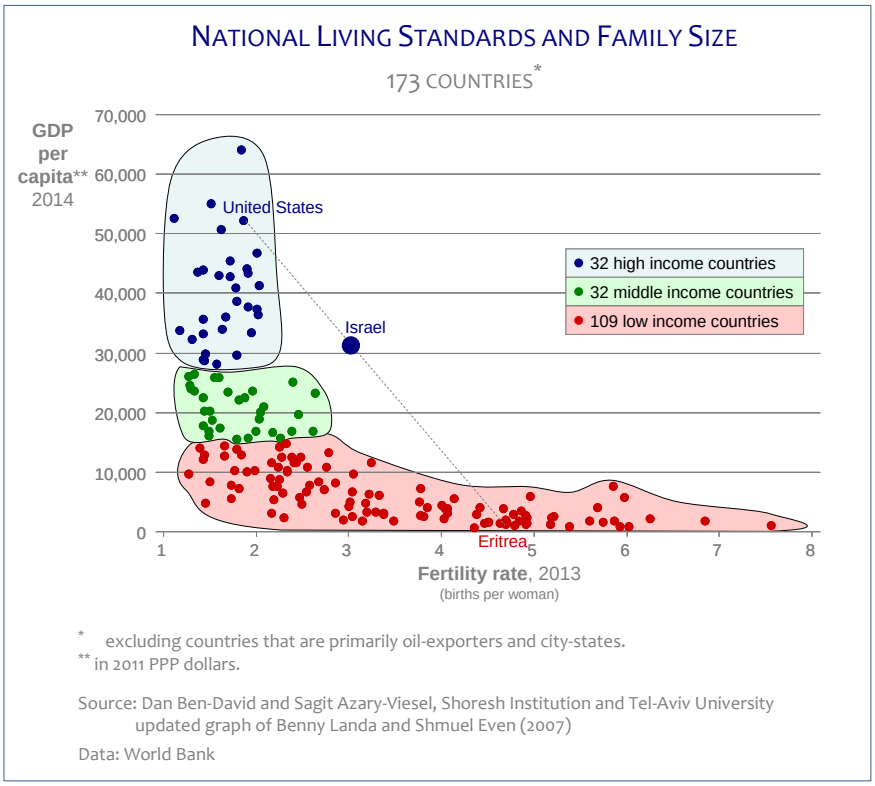
foreign direct investment flowing into Israel now exceeds the OECD average, as a share of GDP.



Israel's combination of research universities, R&D and its innovative capacity have led to technological capabilities that have been consistently attracting venture capital investments at rates unseen elsewhere in the developed world. For Israel, this is where much of its future can be – if it will enact policies enabling a greater share of its society better integration into the labor market and allowing the country's economic engine to utilize more of its existing cylinders.

The primary thread tying together the stark contrasts emanating from the *Shoresh Handbook's* big-picture perspective is that there are two Israel's in one. One part of the population is literally cutting-edge while there is another part of the population that is not receiving either the tools or conditions to work in a modern, global, competitive economy.

Consequently, in a world divided into 3 groups on the basis of income and family size, Israel is the outlier – a weighted average of the United States and Eritrea. Among developed nations that are growing old, Israel has a very young population, relatively large families – even among its more educated – and fewer single-parent families. If it can muster the political wherewithal to enable the knowledge already in its universities to reach all of its children, it will be able to catch the wave that will take Israel all the way to the top. But if the country does not utilize its existing window of opportunity, the current default is an unsustainable long-run socioeconomic trajectory – with all of the existential implications that this has in one of the least hospitable neighborhoods on the planet.



A final point that can provide a glimpse of Israel's opportunity is its very unique and engaged population. 400,000 Israelis (5% of the entire population) went out into the streets on one Saturday evening in the summer of 2011 to protest high prices that are just the tip of the iceberg. One can only imagine what kind of a reaction there would be if the majority of Israelis were aware of the magnitude of the entire iceberg, a good portion of which is laid out in the *Shoresh Handbook*.

There is still a window of opportunity to implement a turnaround in national priorities. The primary question is whether such a turnaround will occur before this window closes.