

# Shoresh Research Paper

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## Leaving the Promised Land A look at Israel's emigration challenge

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### Abstract

The issue of emigration from Israel touches one of the country's most sensitive nerves. Even the Hebrew terms used for immigration (*aliya* – rising up) and emigration (*yerida* – descending) depict how the issue is viewed by much of the population. But attitudes are changing and, as Israel becomes more integrated into the developed world, a rising share of its college graduates have been leaving – primarily those who studied in Israel's leading institutions and in some fields most important for ensuring the country's continued and future economic growth. This study explores the emigration's underlying determinants as well as its magnitude and trends.

### Perspective

The changes that Israel has undergone in the seven decades since its birth are no less than dramatic. In 1949, a year after Israel's independence, nearly two-thirds (64%) of its exports were agricultural while just 18% were manufacturing exports (excluding diamonds). By 2015,

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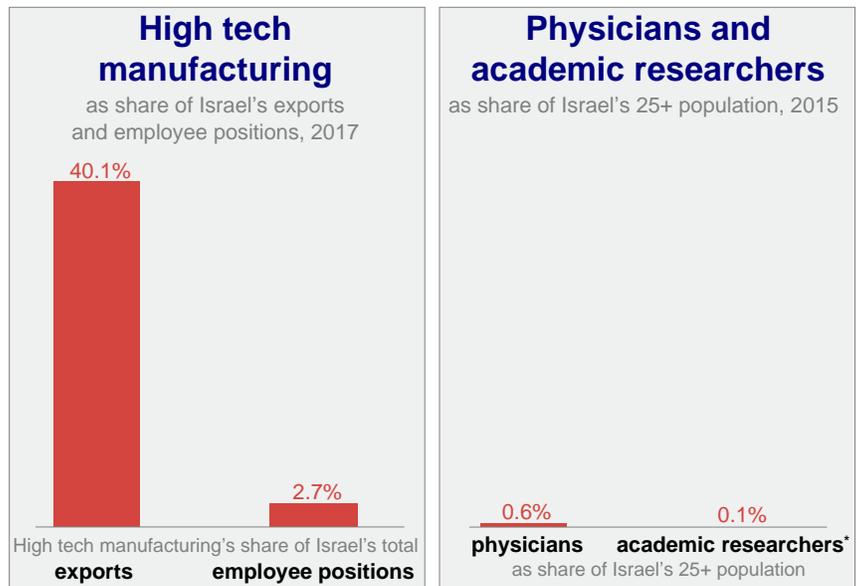
agricultural exports fell to just 2% of the total while non-diamond manufacturing exports rose to 85% of Israel’s total exports. Much of this extraordinary change has been spearheaded by a very small portion of Israeli society.

The country’s export leader – which has also been Israel’s primary economic locomotive in recent years – is its high tech sector. Though only 2.7% of all employee positions in Israel are in high tech manufacturing fields, these nonetheless accounted for 40.1% of Israel’s entire exports in 2015 (Figure 1).

The high tech sector was able to attain – and retain – Israel’s “start-up” nation status because of the bedrock foundations provided by Israel’s universities, among the world’s best. The total number of research faculty in the eight universities (regardless of research fields) is just 0.1% of Israel’s population 25 years old and up. The physicians entrusted for ensuring the health of the country’s entire population account for just 0.6% of all persons ages 25 and up – with the majority of these physicians graduating from Israel’s universities.

Thus, while 9 million people live in Israel, it is an exceptionally small number of Israelis – less than 130,000 persons – that is keeping the economy, the healthcare system and their underlying university bedrock near the pinnacle of the developed world. Not inconsequentially, these are also at the base of the qualitative edge that enables Israel to physically defend itself. The fragile size of this group means that emigration by a critical mass out of the total – even if

Figure 1



\* Senior faculty in Israel's research universities

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

Data: Israel's Central Bureau of Statistics

only numbering several tens of thousands – could generate catastrophic consequences for the entire country.

That is still not the case. But the extent of emigration, the direction of the trend, and the direction that all of Israel – a country that needs to remain sufficiently attractive to those who are very sought after by other countries – is headed should ring alarm bells in all of the corridors that determine Israel's national priorities.

## **Behind the emigration**

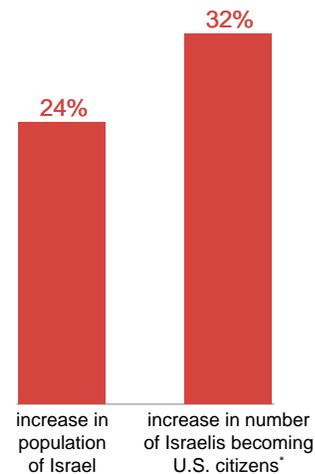
On the face of it, emigration should be much less of an issue today than in the past. Some of the key reasons for emigrating from Israel have abated substantially over the decades. While Israel was in a literal fight for its life during the country's first two and a half decades, the extent of its external threats has subsided significantly since the 1970s, after the 1973 Yom Kippur War and the subsequent signing of the 1979 peace agreement with Egypt (followed by the 1994 peace agreement with Jordan). The leap in Israeli incomes since the country's birth substantially raised living standards, eventually bringing the country into the family of developed nations.

With very little data existing on the extent of emigration from Israel in the past, it's not possible to gauge how significant current rates are from an historical perspective. What is possible, however, is to gain some insight with regard to certain aspects of Israeli emigration in recent years and on the direction of current trends.

According to the U.S. Department of Homeland Security, 66,000 Israelis received American citizenship or legalized permanent residency (Green Cards) between 1995 and 2005 (Newsweek, 2018). This rose to more than 87,000 in the years 2006-2016. On the face of it, the latter number may appear to be insignificant, as it comprised just 1.1% of Israel's population during this period.

What may be more important than the magnitude of the emigration is the direction that these numbers exemplify. While Israel's population increased by 24% between the decades 1995-2005 and 2006-2016, the number of Israelis receiving American citizenship or Green Cards increased by 32% (Figure 2). Interestingly, Israel was beset by the major Intifada-related recession during the latter half of 1995-2005 while the subsequent decade was one of relative prosperity in the country. On the other hand, the initial decade in the U.S. was a relatively good one from an economic perspective while the succeeding decade included America's worst recession since the Great Depression. And yet, the growth in the number of Israelis emigrating to the United States from the first decade to the second exceeded Israel's population growth by a third.

Figure 2  
Changes in population and emigration to U.S.  
increases from 1995-2005 to 2006-2016



\* U.S. citizens or legalized permanent residents

Source: Dan Ben-David, Shoresh Institution and Tel Aviv University  
Data: Israel's Central Bureau of Statistics and the U.S. Department of Homeland Security (Newsweek, 2018)

As noted, the emigration numbers are still relatively small when compared to Israel's overall population. But the picture tends to change quite a bit when the focus sharpens to the most educated portions of society, those keeping Israel a part of the developed world. More on this below.

Just as the overall emigration rate does not reflect some of the key underlying challenges that emigration poses for Israel, a look at Israel's overall tax burden (as measured by total taxes paid relative to GDP) provides a similarly partial, and possibly misleading, picture. In 1995, the Israeli tax burden equaled 35.4% of GDP, compared to an average of 33.1% in the OECD countries. By 2017, the picture flipped, with Israel's tax burden falling to 32.7% and the

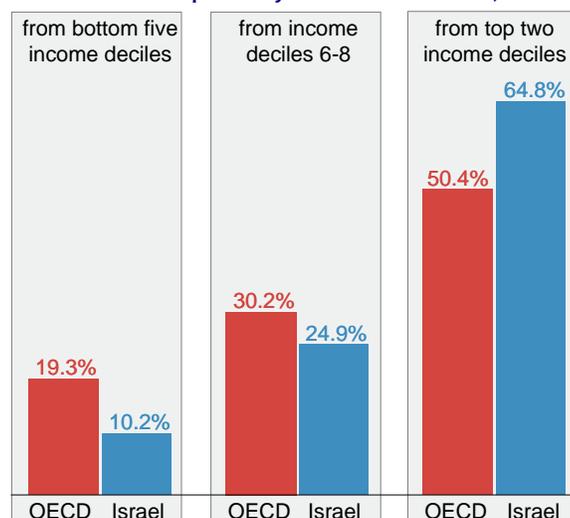
OECD's rising to 34.2% of GDP (the U.S. tax burden, always relatively low, rose slightly from 26.5% in 1995 to 27.1% of GDP in 2017). With regard to tax revenue sources, income and social security taxes accounted for 55.4% of total revenues in Israel, compared to 61.4% in the U.S. and 68.8% on average in the OECD.

The comparative picture changes with regard to the more educated segments of the population – those who a modern economy needs the most, and those who tend to have higher incomes. While the share of income and social security taxes paid by the

top two income deciles in the OECD accounts for half of the total collected (Figure 3), the share contributed the top two deciles in Israel was nearly two-thirds of the country's total in 2011 (the most recent data available).

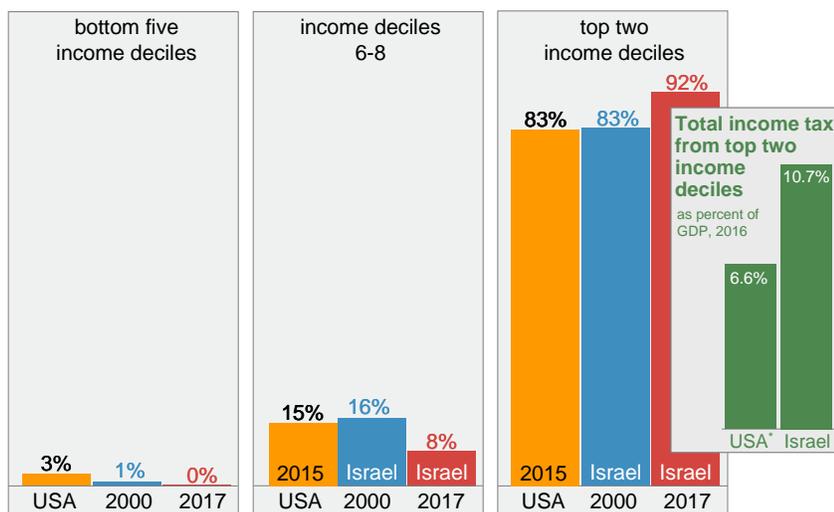
Narrowing the focus to income taxes alone brings the picture of the direct burden into even sharper relief. With income inequality in Israel one of the highest in the developed world, half of the country's population is so poor that it did not even make it to the bottom rung of the income tax ladder and paid no income tax at all in 2017 (Figure 4). At the other end of the income spectrum, the top two income deciles accounted for 92% of

Figure 3  
Share of total income and social security tax revenue paid by income deciles, 2011



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

Figure 4  
Share of total income tax revenue paid by income deciles



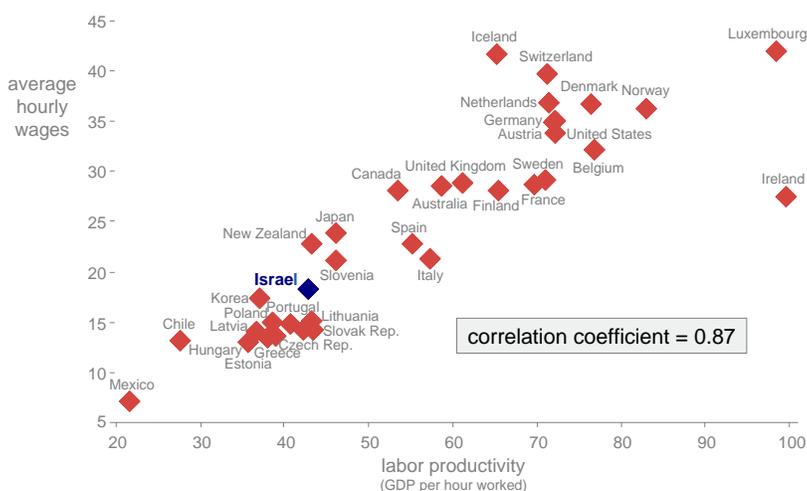
Source: Dan Ben-David, Shoresh Institution and Tel Aviv University  
Data: Finance Ministry and the Center for Federal Tax Policy

Israel's entire revenue from income taxes. While the share of total income tax revenues paid by the top two income deciles is relatively high in both Israel and the U.S., compared to the OECD, the 92% share of total income tax paid by the top 20% of the Israeli population is nonetheless considerably higher than the 83% share borne by the top two income deciles in the United States in 2015 – a share that Israel had already equaled in 2000, and has since surpassed in its steady upward climb.

In a sense, the difference between the income tax burden on the top two deciles in Israel and the U.S. is starker still. While the amount of income taxes paid by the top 20% accounted for 6.6% of American GDP, the amount paid by the top two income deciles in Israel reached 10.7% of the country's GDP. For perspective, the annual income of an average earner in the ninth decile in Israel was \$62,500 in 2017, an income that would have moved such a person down by two deciles – to the seventh income decile – had they earned this amount in the U.S. in 2015.

The primary determinant of wages is labor productivity, measured as GDP per hour worked. The link between wages and labor productivity across the OECD is shown in Figure 5. Having the highest labor productivity does not necessarily ensure having the highest wages, as is evident in the case of Ireland. But a country that is generally unable to produce much in an hour cannot pay, on average, high wages. Overall, the lower a country's labor productivity, the lower its

Figure 5  
Relationship between labor productivity and wages  
in ppp-adjusted US dollars, 2017



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

average wages – with a correlation coefficient of 0.87 across the OECD countries. Israel's labor productivity is below that of most OECD countries. Consequently, so is its average wage.

While Israel has one of the leading high tech sectors in the developed world, it is inundated with very poorly educated and relatively unskilled individuals alongside major infrastructure deficiencies. The average literacy and numeracy proficiency of Israelis between the ages of 16 and 64 is among the lowest in the developed world (OECD, 2016). In the case of Israel's transportation infrastructure, the number of vehicles per kilometer road in the country is nearly three times the average congestion in small European countries (Denmark, Belgium, Netherlands and Switzerland), though the number of vehicles per person in Israel is 40% lower than the average in those countries (Ben-David, 2019a). Israel's bureaucracy is one of the most cumbersome among developed countries (World Bank, 2019) and a major inhibitor in doing business.

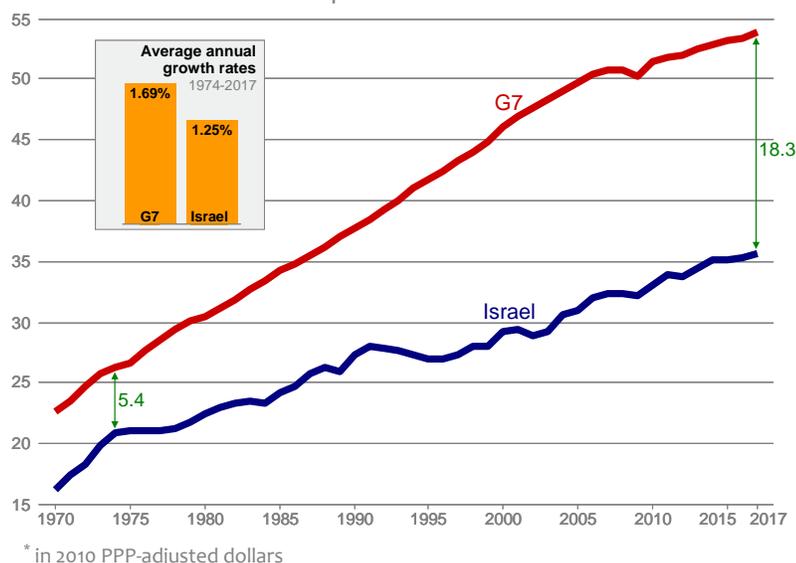
More problematical is the direction that Israel is headed. The congestion on its roads, which had been equal to the average of the small European countries in 1970, has increased over five-fold since then. Nearly one-fifth of Israel's children study in ultra-Orthodox (Haredi) schools, with nearly all of the boys being deprived of a core curriculum beyond eighth grade. Another quarter of Israel's children are Arabic speakers whose average achievements in math, science and reading are below those in many Third World countries – and even below the majority of predominantly Muslim countries (Ben-David, 2019a). In addition to the Haredi and Arab children is an extensive periphery – geographic and social – in which a great number of Jewish non-Haredim live and receive an inferior education. Put differently, roughly half of Israel's children, belonging primarily to the fastest growing parts of the country's population, are receiving an education far below developed world standards.

Thus, not only is Israel's labor productivity low, the average annual labor productivity growth rate since 1974 has been nearly one-half of a percentage point below the average annual growth rates of the leading developed world countries, the G7 (insert in Figure 6). The cumulative effect of this disparity in growth rates has been a productivity gap that has grown more than three-fold since 1974 (Figure 6). The greater the gap between what Israel's most educated and most-highly trained individuals can be compensated abroad and what they receive in Israel, the greater the spur to emigrate.

The emigration incentives resulting from Israel's labor productivity – and its accompanying effect on wages – falling further and further behind the leading developed world countries are compounded by the country's relatively high consumer prices. Household final consumption prices in Israel are 28% higher than in the U.S. and 66% greater than the OECD average.

In this context, one of the greatest concerns that young Israeli families have is the cost of housing. The number of years that an Israeli needs to work to purchase a home is extraordinarily high in comparison with other developed countries (Figure 7). Dividing the median cost of an apartment by the median family's annual disposable income provides an indication of just how high a burden the acquisition of homes is in Israel. Two Israeli cities, Tel-Aviv and Jerusalem, are among the five most expensive cities in the developed world.

Figure 6  
Labor Productivity, 1970-2017  
GDP per hour worked\*



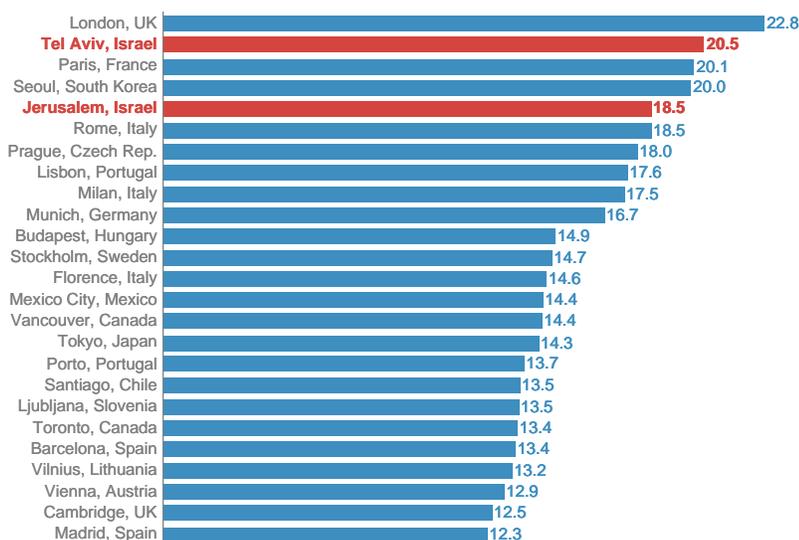
\* in 2010 PPP-adjusted dollars  
Source: Dan Ben-David, Shoresh Institution and Tel Aviv University  
Data: OECD, Central Bureau of Statistics, Bank of Israel

Since wages are significantly affected by education, cross-country wage gaps are subsequently affected by differences in education levels within countries. For example, the higher the level of education, the greater the wage gaps between the United States and Israel (Figure 8). While the wage gap between American and Israeli high school graduates is 22% greater than the gap between those who did not complete high school in the two countries, the wage gap between individuals with undergraduate degrees is 95% higher – and the wage gap between persons with advanced degrees is 150% higher. In other words, gaps between the United States and Israel in a person’s ability to consume and save rise with education – with all of the incumbent effects that this has on spurring emigration among the most highly educated.

Figure 7

### Twenty-five most expensive cities in the OECD

Number of years of work needed to buy a home\*, 2019



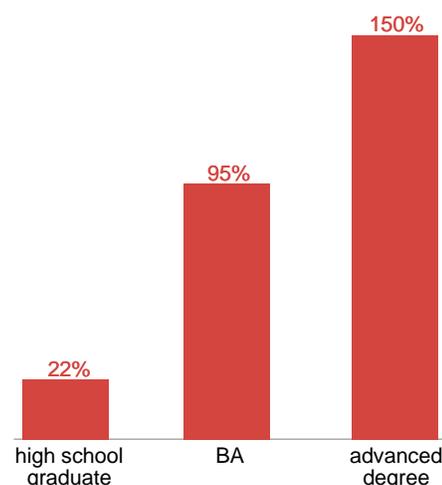
\* ratio of median apartment prices to median familial disposable income, expressed as years of income.

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

Data: Numbeo

Figure 8

### Differences in US-Israel wage gaps\* relative to US-Israel wage gap among those who did not finish high school, 2014



\* Based on median weekly earnings of full-time wage and salary workers age 25 and older by educational attainment.

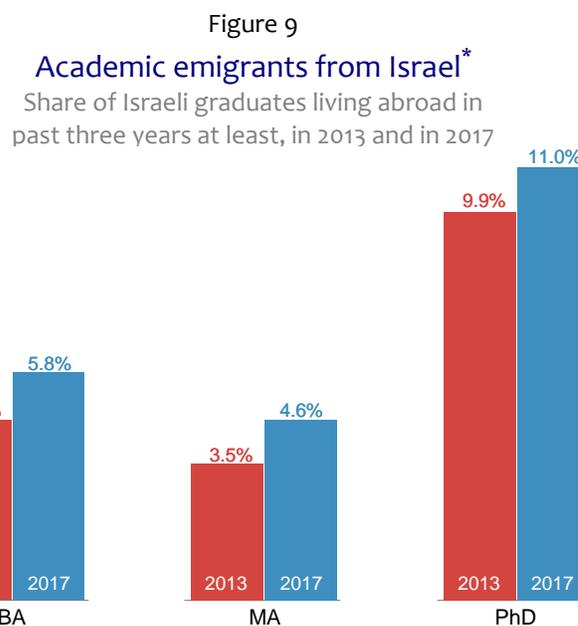
Source: Dan Ben-David, Ayal Kimhi and Michael Crystal, Shoresh Institution  
Data: Israel’s Central Bureau of Statistics. US Bureau of Labor Statistics

## Emigration among college graduates – the general picture

573,275 persons received an academic degree in Israel between 1980 and 2010 (Central Bureau of Statistics, 2018). Of those receiving an undergraduate degree (at most), 5.8% had been living abroad for at least three consecutive years in 2017 (Figure 9). This is up from 4.6% in 2013. For Israelis with MA's, the increase in emigration was from 3.5% to 4.6% while the situation among Israelis with PhDs is the most severe, rising from 9.9% in 2013 to 11% (i.e. one out of every nine persons). Recent Israeli government programs investing hundreds of millions of dollars to bring back the most educated emigrants have been closed because of their ineffectiveness.<sup>1</sup>

Of course, while some leave, others return (the Central Bureau of Statistics defines such persons as those living in Israel for at least two years since returning from abroad). However, the ratio of academic emigrants to academic returnees has been rising in recent years. In 2014, 2.6 persons with an academic degree left Israel for each one who returned (Figure 10). By 2017, this ratio had risen to 4.5 emigrants per returnee.

Not only are the net flows increasingly outward, a closer examination of the highest academic emigration rates suggests an even more serious predicament. The better the institution of higher learning, the greater the emigration rate of its graduates. At the bottom of the academic



\* Persons graduating between 1980 and 2010 and living abroad in 2017 for the past three or more years.

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

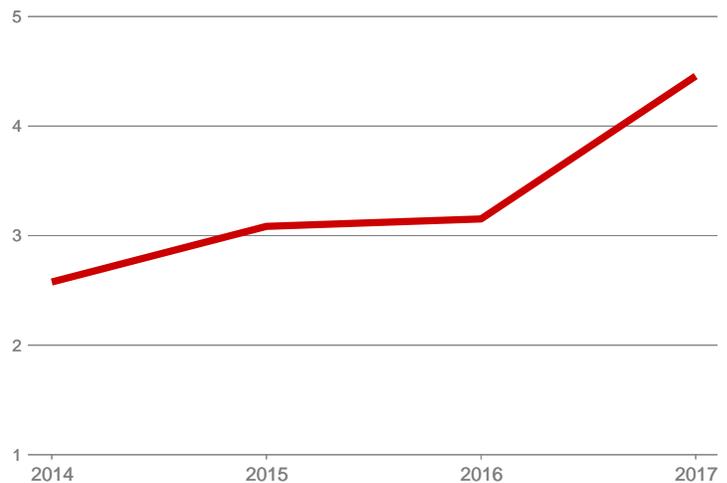
<sup>1</sup> I-CORE, launched in 2011, and “The Israel Brain Gain Program” launched in 2013 have since been closed (Newsweek, 2018).

totem pole in Israel are its teaching colleges. To give a sense of the disparity in quality, the average psychometric score (serving a similar screening purpose as the American SAT for applicants to higher education institutions) in the teaching colleges in 2015 was 487 – below over 60% of those who took the exam. The average psychometric scores of students in the non-research colleges were 523 in 2015, or 7% higher than those of the teaching college students. The highest psychometric scores were among students in the research universities, averaging 623, or 19% greater than the average score of the non-research college students.

Among the academic graduates in the social sciences and humanities fields, 1.8% of teaching college graduates have emigrated from Israel (Figure 11). The emigration rate rises to 4.1% among graduates of non-research colleges, and to 6.7% of all university graduates in social sciences and humanities.

Israel’s economic engine is fueled by the technical fields, which highlights the challenge created by emigration rates among graduates in the exact sciences and engineering. A greater share of graduates with degrees in sciences and

Figure 10  
Ratio of academic emigrants to returnees\*  
2014-2017

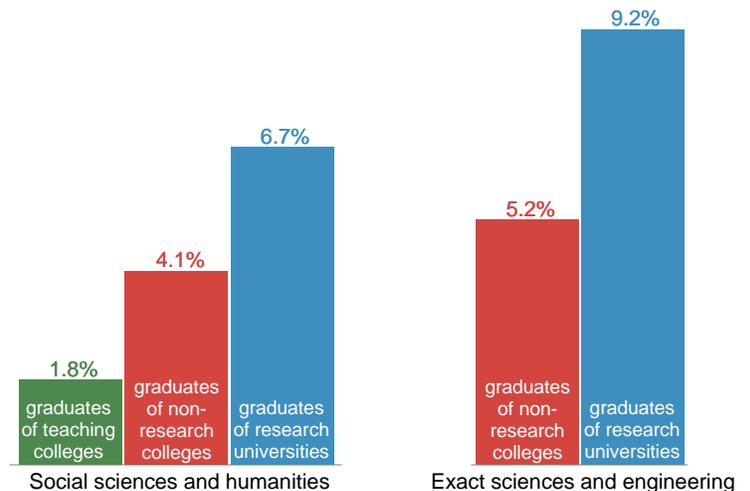


\* Ratio of persons graduating between 1980 and 2010 and living abroad at least three most recent years to past graduates returning to Israel and living in the country at least two most recent years.

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

Figure 11  
Academic emigrants from Israel\*

Share of Israeli graduates living abroad in three most recent years at least, by type of degree-granting institution, 2017



\* Persons graduating between 1980 and 2010 and living abroad in 2017 for the past three or more years.

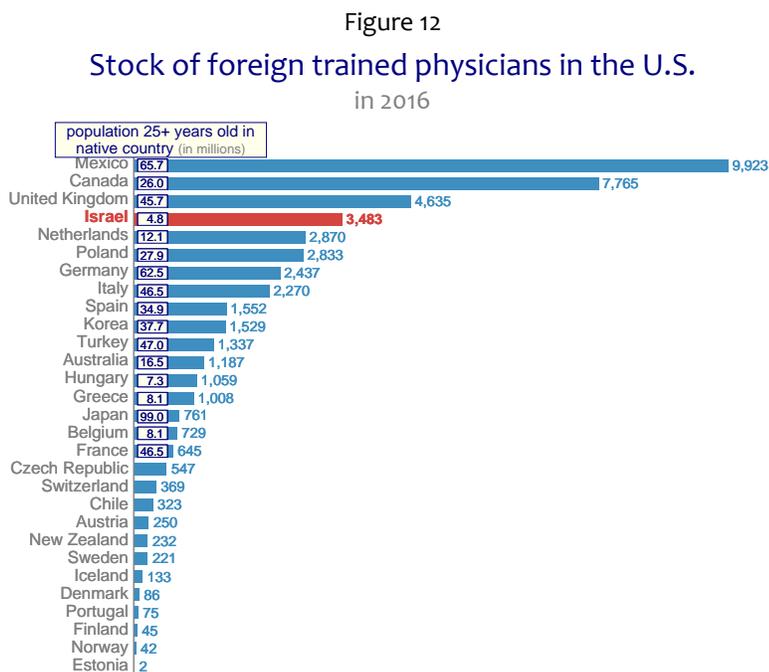
Source: Dan Ben-David, Shoresh Institution and Tel-Aviv University  
Data: Israel’s Central Bureau of Statistics

engineering from the non-research colleges (these disciplines are not taught in the teaching colleges) have emigrated from Israel (5.2%) than among graduates in social sciences and humanities fields (4.1%). The highest rate of emigration (9.2%) is by graduates from Israel's top institutions of higher learning, in the technical fields most vital for the country's economy.

## Emigration among physicians

The number of medical school graduates per capita in Israel was the lowest among all OECD countries in 2016. The severe dearth of national resources directed towards educating physicians in Israel<sup>2</sup> led to a jump in the share of Israelis earning their medical degrees abroad. A decade ago, in 2008, Israelis receiving their medical degrees abroad were 37% of the total number of Israelis receiving their medical degrees in Israel. By 2017, this share had risen to 52%.

When so many Israelis study medicine abroad, it should not come as a surprise that many also choose to live and practice abroad afterwards. The number of Israeli physicians in the United States, for example, is the fourth highest among all source countries (Figure 12). But while the populations of persons 25 and up – from whom the physician population is drawn – equal 45.7 million in the U.K., 26.0 million in Canada, and 65.7 million in Mexico, (the



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

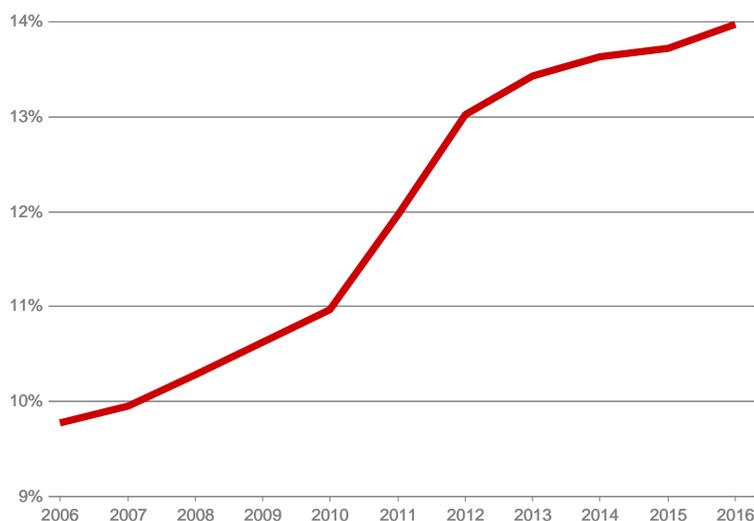
<sup>2</sup> In recent years, a new medical school has been opened in Safed while it is now possible to study pre-med in Israel and then continue studying medicine. It remains to be seen how such measure will affect the supply of physicians in Israel.

only three countries with more physicians in the U.S. than Israel), the similarly aged population in Israel is just 4.8 million, several orders of magnitude lower.

In fact, the total number of Israeli physicians practicing in OECD countries (other than Israel) was 9.8% of all physicians in Israel in 2006 (Figure 13). This share rose to 14% by 2016. One of the outcomes of the low numbers of medical school graduates and rising shares of Israeli physicians abroad has been a major aging of Israel's physicians (Ben-David 2019b). In the years 2014-2017, the share of physicians in OECD countries under the age of 35 (16%) was a third more than in Israel (12%). At the other end of the age spectrum, just 7% of the OECD physicians are in the 65-74 year-old range compared to 16% of the Israeli physicians. While there are almost no physicians 75 years and up practicing in the OECD (just 1%), a full 10% of the total number of Israeli physicians is at least 75 years old.

Figure 14 depicts the net migration flows of physicians to and from Israel. The annual net changes to the stock of Israeli

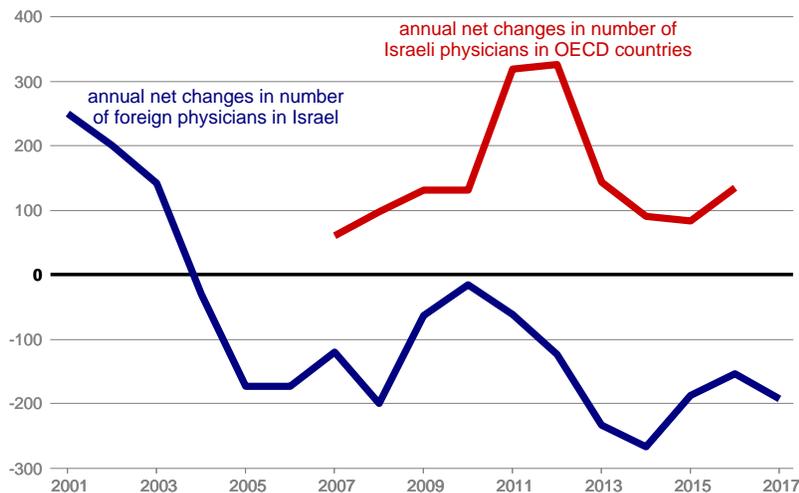
Figure 13  
**Israeli physicians abroad\***  
as share of total physicians in Israel, 2006-2016



\* Israeli physicians in OECD countries.

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

Figure 14  
**Migration of physicians to and from Israel**  
annual net changes in stocks of Israeli physicians abroad and foreign physicians in Israel, 2006-2017



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

physicians in OECD countries (other than Israel) has been positive – that is, the total number of Israeli physicians abroad has been increasing – in each of the years over the past decade. As Israel has been a country of immigrants over the decades, some may take comfort in the fact that among the new immigrants to Israel, there are also physicians. The stock of foreign-trained non-Israeli doctors living in Israel had in fact been increasing until 2003 (Figure 14).<sup>3</sup> But since then, the outflow of such physicians has been greater than the inflow – averaging a decline of 151 physicians each year in the stock of foreign physicians in Israel.

## Emigration from Israel’s universities

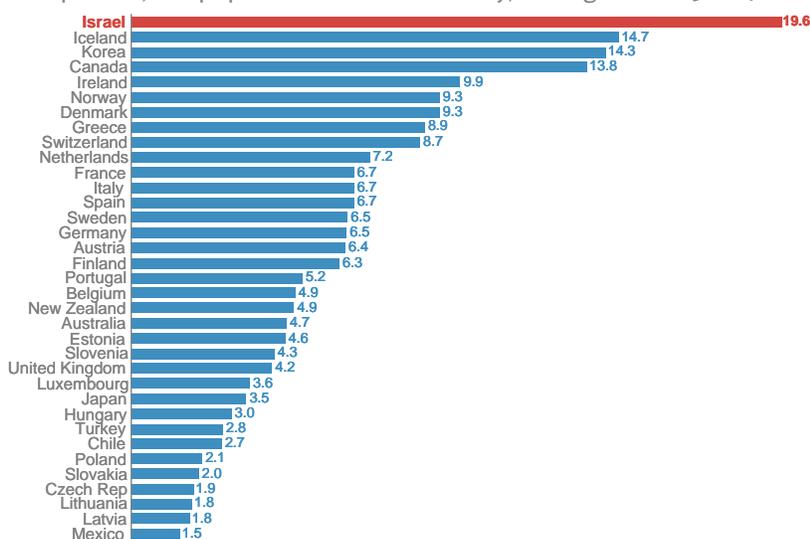
While Israel’s research universities are among the world’s leaders in many fields, the top of the top are almost invariably American universities. Thus, Israeli universities encourage their best students, those who hope to enter Israeli academia as future researchers, to either do their PhDs or their post-docs in leading American universities. To remain at the cutting edge, Israeli professors often visit top US universities on sabbaticals, leaves-of-absence, or other arrangements in the States that enable them to maintain close contact with their American colleagues on an on-going basis. No other country even approaches Israel in terms of the share of its population who are temporary scholars in the U.S. (Figure 15).

<sup>3</sup> Changes in the stocks of physicians are not entirely due to migration. These stocks are also affected by unknown mortality rates which are presumably quite small in relation to the migration flows.

Figure 15

### Temporary Foreign Scholars in U.S. Universities\*

per 100,000 population in home country, average for 2015-2017



\* Scholars on non-immigrant visas engaged in temporary academic activities and not enrolled as a student at a U.S. college or university. International scholars engaged in academic activities includes, but is not limited to, post-doctoral scholars, visiting lecturers/professors/faculty, visiting researchers, short-term scholars and visiting specialists.

Source: Dan Ben-David, Shoresh Institution and Tel-Aviv University  
Data: Institute of International Education.

This ability to maintain such a close relationship between top universities in the two countries serves as a major source of cross-pollination, with Israeli faculty members and students benefitting greatly from the knowledge spillovers. To give a sense of the magnitude involved, the number of temporary Israeli scholars in U.S. universities was nearly 1,700 in recent years whereas the total number of senior faculty in Israel's eight public universities equals about 4,900.

While the development of such relationships with leading American universities is important for fostering state-of-the-art research in Israel, these relationships can also become one-sided – with many Israelis deciding to remain in the States, taking up permanent positions there. Sharpening the focus to just the leading researchers, this study concentrates on the number of Israelis in tenured or tenure-track positions in top 40 American academic departments across a number of different fields (this is a followup to an earlier study by Ben-David, 2008). To retain a conservative estimate of this number, not only were adjunct, clinical and other semi-permanent positions not included, Israeli visitors to the American universities were also excluded, as were tenured faculty who also hold positions in Israel, and emeritus faculty members. In addition, persons who may hold Israeli citizenship – who may even have been born in Israel – but grew up abroad and did not study or teach in an Israeli university, were also left out of the sample. Finally, research faculty in one of the six fields who happen to belong to academic departments other than the department in the specific discipline of focus (e.g. physicists in Astronomy departments, philosophers in Religious Studies or Law departments) were not included in the study either.

Rankings of the top forty departments in six fields – chemistry, physics, philosophy, computer science, economics and business (the latter, a field that was not included in Ben-David, 2008) – were determined on the basis of average citations per published faculty member.<sup>4</sup>

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<sup>4</sup> Based on rankings from Elsevier's Scopus database. In the case of the business schools, information from rankings produced by the University of Texas at Dallas and the US News and World Report were also taken into consideration.

Faculty members in each of these departments were cross-checked to eliminate double-counting across universities and departments, and were also compared to the list of the faculty members in the Israeli universities to avoid incorporation of researchers with positions in Israel.

The study was completed in January 2019. Comparisons over time should be treated with caution since this is not an exhaustive examination of all Israeli researchers in all American universities. The rankings of top American departments change at the margins, so the departments examined here are not necessarily identical to the departments examined in Ben-David (2008) for the academic year beginning in 2007. Furthermore, Israeli academia has also broadened since the earlier study to include two additional academic research institutions. With the addition of Ariel University, there are now 8 official public research universities in Israel, while the faculty at the private Herzliya Interdisciplinary Center (IDC) includes persons doing research at the highest Israeli levels.<sup>5</sup>

Since the very limited number of available research positions in Israel's research universities was found (in Ben-David, 2008) to be a major factor leading to emigration of research faculty in some of the disciplines, it is important to note that in the twelve years that have elapsed between the two studies, additional slots have opened up in some of the fields examined (Figure 16). These are due to additional positions in three of the five disciplines within the seven original universities: five more researchers in physics, 39 more in chemistry, and 82 more in computer science. During this period, the number of slots fell by five in economics and by eight in philosophy. When the two new universities are taken into account, the total number of faculty positions in Israel in four of the fields grew – with philosophy being

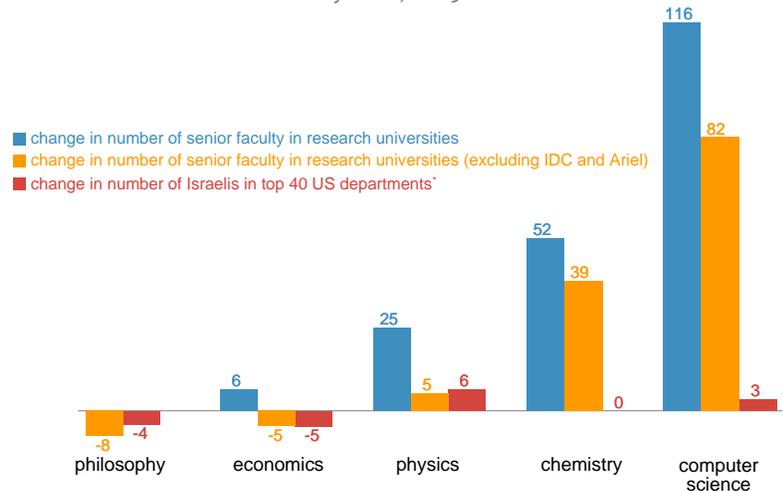
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<sup>5</sup> The fact that there are nine research universities in Israel does not mean that there are nine departments in each of the disciplines. Some of the country's universities are either small or with a particular research emphasis. For example, there are philosophy departments in only five of the institutions while the IDC does not have physics or chemistry departments. Ariel does not have a separate economics department but has instead made the field an indistinguishable part of the university's business school. On the other hand, two economics departments were included here for the Hebrew University, the one in Jerusalem and the one in the university's Faculty of Agriculture located in Rehovot.

the exception (neither one of the two new universities has a philosophy department). Alongside these changes in the number of positions within Israel – and possibly, as a result of some of these changes – the number of Israeli researchers in top American universities in 2019 remained fairly similar to the number in 2007, rising slightly in physics and computer science and falling slightly in economics and philosophy, with no change in chemistry.

Overall, the number of tenured or tenure-track Israelis in the top forty chemistry departments in the United States is equal to 10% of all chemistry faculty in Israel’s research universities (Figure 17). In physics, this share rises to 11% and in philosophy, to 13%. There is a considerable jump in the next two fields, computer science and economics, with the number of Israelis in just the top forty American departments equaling just over a fifth of the total computer science faculty in Israeli universities and nearly a quarter of the economics faculty in Israeli universities. In some of the leading American departments, there are multiple Israeli

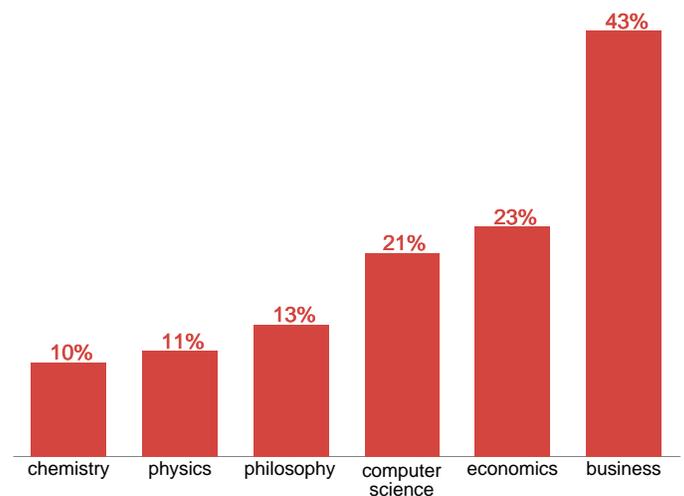
Figure 16  
Change in size of senior faculty in Israel and in number of Israelis in top American universities by field, 2019



\* Only tenured or tenure-track Israelis. Not including emeritus professors, those who have an additional position in an Israeli university or those born in Israel who grew up abroad.

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

Figure 17  
Israelis\* in top 40 American departments as percent of total senior faculty in Israeli universities, 2019



\* Only tenured or tenure-track Israelis. Not including emeritus professors, those who have an additional position in an Israeli university or those born in Israel who grew up abroad.

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

researchers. The situation in the business schools – not analyzed in the 2008 study – is at a different level entirely, with the number of Israelis in the top forty American business schools equaling 43% of the entire business school faculties in Israel’s universities. Some of the top U.S. business schools have a double digit number of Israeli faculty members.

In the case of the latter three fields, computer science, economics and business, salaries in the private sector in the States tend to be relatively high. Thus, American universities wishing to remain at the top of their fields need to offer competitive salaries, creating large wage gaps across the academic disciplines in the U.S. (Ben-David, 2008). Since Israel’s public universities pay the same salaries regardless of the discipline, the large gaps that result between the two countries within each of these disciplines most likely play an important role in elevating the emigration rates in these fields above those in the other three.<sup>6</sup>

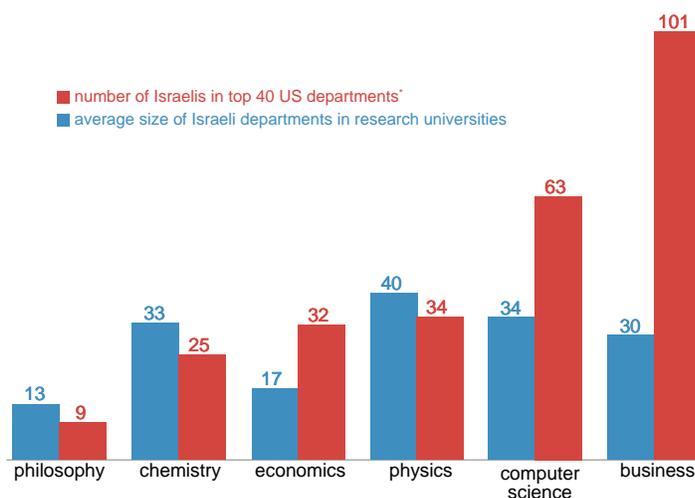
It should be noted that in all six of the fields analyzed here, average Israeli departments are smaller – in some cases, considerably so – than the average top forty departments in the United States. Philosophy departments in Israel average 13 members, compared to an average size of 22 in the top 40 departments in the States. In chemistry and physics, the average Israeli departments include 33 and 40 researchers, respectively, compared to 40 and 50 (respectively) in the U.S. The average economics department in Israel numbers just 17 economists while the American average is 41, enabling coverage of a much greater number of fields of study in the States. Despite their considerable increase in size over the past dozen years, the average size of a computer science department in Israel (34 faculty members) is still far below the U.S. average (59). Top American business schools have 104 professors on average – not including the many semi-permanent clinical and adjunct professors that they employ. This compares to relatively decimated Israeli business schools averaging just 30 faculty members.

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<sup>6</sup> Since the IDC is a private institution and not bound by the public universities’ comprehensive wage bargaining agreements, its inclusion in the analysis potentially dampens what might otherwise have been even higher emigration rates – both in terms of the wages that the IDC can pay and in terms of the additional academic slots in Israel that the IDC has created.

To get an idea of the scale of the Israeli emigration in these fields, Figure 18 compares the total number of Israelis in the leading American universities to the average size of the Israeli departments in each field. In the case of philosophy, chemistry and physics, the number of Israelis in the top forty American departments equals 67%, 77% and 86% (respectively) of an average department size in Israel. In economics and computer science, the number of Israelis in the top U.S. departments could fill nearly two additional Israeli departments. The number of Israelis in the top American business schools equals nearly three and a half Israeli business schools.

Figure 18  
Size of academic departments in Israel and number of Israelis in top American universities by field, 2019



\* Only tenured or tenure-track Israelis. Not including emeritus professors, those who have an additional position in an Israeli university or those born in Israel who grew up abroad.

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

The above analysis provides a glimpse of how the number of departments in each field would grow if the Israelis in the top U.S. departments were to return home. It's also possible to examine the impact of such potential returnees on existing department sizes. In each of the cases, the Israeli departments would still be considerably smaller than the average American departments, but this could be a major step in adding to the intra-disciplinary diversity that each of Israel's top universities needs.

## Conclusion

As Israel's labor productivity falls further and further behind the leading developed countries, as the income tax burden is increasingly being placed on the most educated parts of the population, and as living costs rise far above those in other developed countries, Israel's

ability to retain its most skilled citizens is declining. While the overall emigration numbers are still relatively small when compared to Israel's total population, the bite that they take out of the most educated segments of society – those that keep Israel a part of the developed world – is not inconsequential.

Furthermore, the outward flow of college-educated Israelis has been rising in recent years. It is particularly high among those whom Israel needs the most, from its best-trained engineers through its physicians to the academic researchers who keep the country – and its generations of future students – at the technological frontier. The emigration rates of the most highly educated, relative to those remaining in Israel, have already entered into double digits.

In light of the breadth, depth and the direction of the emigration from Israel, a serious solution to the problem requires much more than the ineffectual symptomatic assistance at individual levels that has been implemented until now. A sharp pivot in national budgetary priorities is needed. Provision of the necessary tools (e.g. education) and conditions (e.g. infrastructures) to much wider swathes of the population will not only bring down one of the highest poverty rates in the developed world, it will also raise the country's economic growth rate. Including a much larger share of Israel's best and brightest – from all of its various population sub-groups – in the economy at levels of productivity that they are capable of is akin to having the national economic engine running on more of its cylinders, raising the entire economy to a whole new level and to a much steeper growth path. That will not only help keep Israelis at home, it may also begin attracting some of those who have left.

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