

# A Picture of the Nation

Israel's Society and Economy in Figures

Avi Weiss



2022

- Macro-Economic Trends
- Labor Markets
- Spotlight: Top Decile Wage Earners in Israel
- Health
- Demography
- Spotlight: Violence and the Israeli Arab Marriage Market
- Spotlight: Israel's Southern District
- Welfare
- Education
- Spotlight: Educational Frameworks for Young Children in Arab Society in Israel
- Spotlight: Special Education Budgeting in Israel



# A PICTURE OF THE NATION

## Israel's Society and Economy in Figures

### 2022

**Avi Weiss**



Taub Center for Social Policy Studies in Israel  
Jerusalem, June 2022

The research upon which most of the figures and analyses in this booklet are based can be found in the *State of the Nation Report 2021* and other Taub Center publications

## Taub Center for Social Policy Studies in Israel

The Taub Center was established in 1982 under the leadership and vision of Herbert M. Singer, Henry Taub, and the American Jewish Joint Distribution Committee (JDC). The Center is funded by a permanent endowment created by the Henry and Marilyn Taub Foundation, the Herbert M. and Nell Singer Foundation, Jane and John Colman, the Kolker-Saxon-Hallock Family Foundation, the Milton A. and Roslyn Z. Wolf Family Foundation, and the JDC.

The Taub Center is an independent, nonpartisan, socioeconomic research institute based in Jerusalem. The Center conducts quality, impartial research on socioeconomic conditions in Israel, and develops innovative, equitable and practical options for macro public policies that advance the well-being of Israelis. The Center strives to influence public policy through direct communications with policy makers and by enriching the public debate that accompanies the decision making process.

The Taub Center publications represent the views of their authors only, and they alone are responsible for the contents. Nothing stated in them creates an obligation on the part of the Center, its Board of Directors, its employees, other affiliated persons, or those who support its activities.

Center address:

15 Ha'ari Street, Jerusalem, Israel

Tel: 972 2 567 1818

Fax: 972 2 567 1919

Email: [info@taubcenter.org.il](mailto:info@taubcenter.org.il)

Website: [www.taubcenter.org.il](http://www.taubcenter.org.il)

English lay-out: Laura Schreiber

# Table of Contents

## Foreword

### Macro-Economic Trends

An unusual decline in private consumption and imports in 2020 / 10

The extreme reduction in consumption in 2020 resulted from the lockdowns / 11

The Israeli economy has recovered unexpectedly quickly, but there is further to go / 12

The deficit in 2021 fell more than anticipated / 13

The deficit and the deficit target / 14

Relief expenditures geared at addressing COVID-19 were the greatest in the country's history / 15

The burning question: What is the right way to deal with the increasing debt arising from relief expenditure during the pandemic? / 16

The ratio of public capital to GDP is especially low in Israel / 18

The interest rate that Israel pays on its debt is particularly low / 19

### Labor Markets

About 70,000 people remain without work due to COVID-19 / 22

The sharp drop in employment among Arab men began before COVID-19 / 24

Workers in the Northern District, followed by Jerusalem and the Southern District, were the most adversely affected by COVID-19 / 25

Sectors were harmed differentially / 26

In some industries, work from home may be here to stay / 28

Employment monotonically increases with education level / 30

Mizrahi Jews are expected to earn more and non-Jews less at most education levels / 31

## Spotlight: Top Decile Wage Earners in Israel

- Only a quarter of the top decile income earners are women / 34
- Academic achievements play a major role in reaching the top salary decile / 35
- For non-Jews, self-employment is the path to the highest income decile / 36
- Education and experience are needed to reach the upper echelons / 37

## Health

- A recent increase in the number of physicians per capita in Israel / 40
- Number of physicians per capita is near, but below, the OECD average / 41
- Half of the physicians in Israel are 55 or older / 42
- The number of registered nurses per capita has been growing steadily, while the number of licensed practical nurses has been falling / 43
- The share of active nurses in Israel is among the lowest in the OECD / 44
- Relative dearth of physicians in the periphery / 45
- Individuals in higher socioeconomic groups are more likely to choose to get vaccinated against COVID-19 / 46
- Many lives could, potentially, be saved by adopting successful medical practices from other countries / 48

## Demography

- High mortality rates during COVID-19 waves / 52
- Mortality as a share of confirmed COVID-19 cases was particularly low in Israel / 53
- Relatively high mortality among older populations in 2020, and among younger ones in 2021 / 54
- Increased migration since 2014, largely from Ukraine and France / 55
- Fertility in Israel has fallen, but is still far higher than in any other OECD country / 56
- Early indicators point to an increase in Jewish/other fertility due to COVID-19 and a cessation of the decrease among Arabs / 58

### Spotlight: Violence and the Israeli Arab Marriage Market

Increase in the number of murders in the Arab sector, decrease in the Jewish sector / 60

Large youth bulge in the Arab population — part of the explanation for the increased violence / 61

The Arab marriage market in Israel will be imbalanced for a decade and a half / 62

Large gender imbalance in Arab higher education / 63

Rapid increase in divorce rates in Israel's Arab society / 64

### Spotlight: Israel's Southern District

The population in the south of Israel is growing more quickly than in the rest of the country / 66

The Southern District is no longer experiencing negative net migration / 67

An increasing percentage of migrants to the South are from the former Soviet Union / 68

Migrants to the South are more likely to be first-generation college graduates than migrants to other areas in Israel / 69

Residents in the periphery tend to be more satisfied with their lives than those in heavily populated areas / 70

Education levels are rising in the South as in other areas in Israel, but still lag behind other districts / 71

A larger percentage of high-paying jobs in the manufacturing sector in the South than elsewhere in Israel / 72

### Welfare

The majority of the increase in social expenditure during the COVID-19 crisis went toward welfare / 74

A substantial rise in income for seniors living in poverty / 75

The number of those receiving unemployment benefits is lower than it was prior to the pandemic / 76

Sizable changes in the number of participants in vocational training during the crisis / 77

Young children spent time in front of screens during the first lockdown, contrary to professional advice / 78

Wider screen usage on average among children with parents reporting higher levels of stress / 79

Expenditure on social services as a percent of GDP is low relative to other welfare states / 80

Low take-up of the non-universal social benefits / 81

## Education

Stability in the distribution of students over the four education systems / 84

The share of Jewish students who were not born in Israel is declining / 85

Narrowing of the gap between the Arab and Jewish sectors in the resources allocated to education / 86

The share of young teachers in the Arab population has fallen substantially / 88

A large increase in the education level of teachers in Israel / 89

Decreasing class size without increasing the education budget is feasible / 90

Advanced science and technology track students whose parents have an academic education are most likely to attain an academic degree / 92

Advanced science and technology track graduates have the highest incomes at age 33 / 93

High school study major has a substantial impact on wages beyond its influence on the likelihood of academic studies / 94

Large increase in 2020 in enrollment in academia / 95

The portion of the Arab population receiving a higher education has been rising steadily / 96

## Spotlight: Educational Frameworks for Young Children in Arab Society in Israel

A relatively low percentage of Arab children from birth to age 3 attend early childhood education and care frameworks / 98

The implementation rate out of the allocation for construction of ECEC daycare settings is especially low in the Arab localities / 99

The share of children from birth to age 3 in supervised ECEC frameworks is especially low in the Arab population / 100

## Spotlight: Special Education Budgeting in Israel

Despite recommendations, the share of special education students integrated into regular classes has not been rising / 104

The share of the education budget allocated to special education is growing faster than the share of special education students / 106

A large increase in the types of disabilities that require particularly large budget outlays / 107

Many students who are currently attending special education schools can be mainstreamed / 108



---



## FOREWORD



It is my honor and pleasure to present the 2022 version of *A Picture of the Nation*. While the 2020 and 2021 editions naturally focused mainly on the effects of COVID-19, this year's booklet is much more of a mixed bag — the macro-economic trends and labor sections are very pandemic heavy, describing what has transpired since March 2020, but the rest of the sections concentrate largely on more general issues.

As usual, we present the situation and trends in each of the main areas researched by the Center — macroeconomic policy, labor markets, health, demography, welfare, and education. In addition, we present five Spotlights with some of the most interesting and important findings from new studies we published during the last year. The first analyzes the top decile of wage earners in Israel and uncovers what is required to reach this upper echelon. The second looks at the increasing violence in Arab society, tries to uncover its source, and, in so doing, demonstrates reasons for increasing concern over the next couple of decades. The third Spotlight takes a deep dive into the south of the country, showing how indicators have changed over time. The fourth is concerned with the attendance in supervised early childhood education and care frameworks

---

---



## FOREWORD

in the Arab society, and helps uncover the reasons it is so low, and the final spotlight Spotlight looks at special education in Israel, and shows that, to a large extent, the education system is not successfully traversing the special education waters, and demonstrates what is required to put the system on track.

I trust that the findings presented in this book will help inform decision makers and the general public, and continue to serve as an asset.

**Prof. Avi Weiss**

President, Taub Center for Social Policy Studies in Israel

Professor of Economics, Bar-Ilan University

---

---

# MACRO- ECONOMIC TRENDS

The hit Israel's economy took in 2020 as a result of the pandemic was not surprising, but the speed with which the economy bounced back in 2021 was quite unexpected. With this, balance has not yet been restored in the different parts of the economy, with private consumption lagging far behind what it was expected to be if not for COVID-19. In this section, we take a bird's eye view of the economy.

One of the issues that arose as a result of the pandemic concerns the debt-to-GDP ratio. After years of struggling to bring this ratio to its desired level, the need to assist adversely affected populations and businesses saw it increase from 60% to 72% in 2020. In 2021 it again changed direction, with the ratio falling to 69%. The question of how to proceed optimally is a matter of contention. Some insights into this issue are presented on pages 16–19, and are based on a joint Taub Center-Aaron Institute paper by Prof. Benjamin Bental, Prof. Zvi Eckstein, and Dr. Sergei Sumkin.

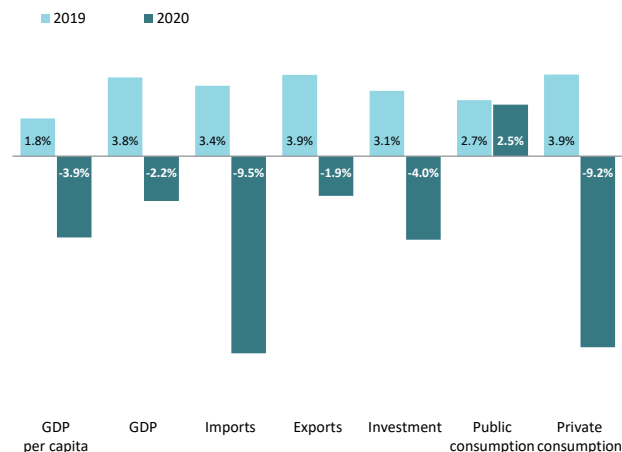


## An unusual decline in private consumption and imports in 2020

**In the figure:** The year 2019 was a fairly typical one for the Israeli economy in the second decade of the 21<sup>st</sup> century; in contrast, 2020 was an outlier. Instead of about 4% growth, GDP declined by more than 2%. Thus, instead of a typical increase of close to 2% in GDP per capita, there was a substantial decline of about 4%. The components of GDP that experienced the largest decline, unlike in the rest of the world, were private consumption and imports. Investment also fell, but the small decline in exports is noteworthy. It is also worth noting that public consumption grew close to its “normal” level, an outcome that reflects the fact that far fewer public sector workers were sent on unpaid leave than their counterparts in the business sector.

**Beyond the figure:** The relatively small decline in exports is due to the ability of the high tech sector to largely bypass lockdown restrictions and transportation difficulties resulting from the pandemic in Israel. In particular, the option of working from home and the high tech sector’s ability to deliver its output digitally make it more resilient to crises and emergencies.

GDP growth and its components



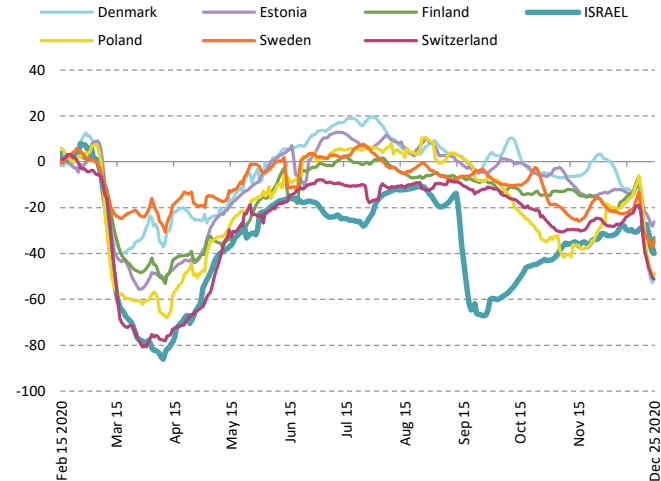
Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

## The extreme reduction in consumption in 2020 resulted from the lockdowns

**In and beyond the figure:** The impact of the crisis and the lockdowns in Israel was more serious than in other countries. In Israel, presence at retail and recreation sites fell by an average of 34% over 2020, while for the other countries with similar GDP loss to Israel's — Denmark, Estonia, Finland, Poland, Sweden, and Switzerland — the average presence at retail and recreation sites fell by 5%, 10%, 16%, 18%, 10%, and 26%, respectively. This goes hand-in-hand with the stringency level in Israel during this period, which was much higher than in these other countries. Thus, it is not surprising that consumption went down far more in Israel.

**Implications:** The extreme closures placed a heavy toll on the Israeli economy, something to take into consideration if similar situations arise in the future.

Google Mobility Index, retail, commerce, and recreation



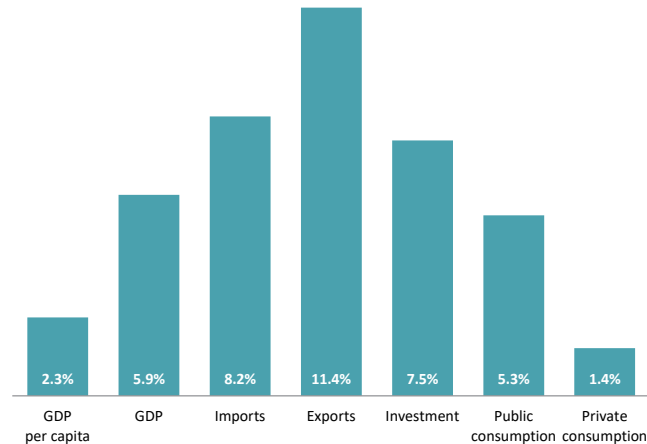
Source: Benjamin Bental and Labib Shami, Taub Center | Data: Our World in Data

## The Israeli economy has recovered unexpectedly quickly, but there is further to go

**In the figure:** The economy recovered quickly in 2021 with a growth rate of 8.2% relative to 2020. However, since 2020 was a crisis year, the figure here compares 2021 to 2019.

**Beyond the figure:** As shown, while GDP was higher by almost 6% than in 2019, if the COVID-19 crisis had not occurred, then GDP in 2021 would have been higher than in 2019 by about 8%. GDP per capita grew at a high rate in 2021 relative to 2019 but was somewhat below the average biannual rate for the previous decade. In contrast, exports grew by an exceptionally high rate, while imports, investment, and public consumption more or less returned to the levels they would have been at were it not for COVID-19. From the perspective of the national accounts, the exceptional rate of growth in exports was made possible by the low growth in private consumption, which is still far from its “normal” level.

**Rate of change in GDP and GDP components in the first three quarters of 2021 relative to the same period in 2019**



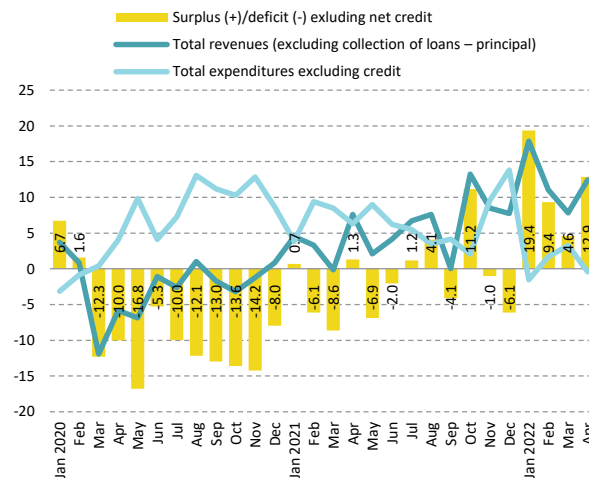
## The deficit in 2021 fell more than anticipated

**In the figure:** The figure shows the gap between government expenditure and government revenue and the resulting deficit for the years 2020 and 2021 relative to 2019. Government revenue plummeted with the onset of the COVID-19 pandemic due to the sharp drop in economic activity during the first lockdown. Despite the crisis, government revenue recovered quickly, and already in the second half of 2020 it came close to its 2019 level. However, expenditure continued to rise, reaching a peak in late 2020 and significantly increasing the deficit. Until the approval of the budget in November 2021, the gap between government expenditure in 2021 and in 2019 narrowed substantially. Revenues showed an overall upward trend due to the economy's recovery and rapid growth. In 2022, the deficit changed to a surplus.

**Beyond the figure:** For 2020 as a whole, the deficit stood at 11.4% of GDP as compared to 3.7% in 2019. The deficit in 2021 reached 4.4% of GDP which is significantly lower than the forecasts by the Bank of Israel and the Ministry of Finance (5.3% and 6.8%, respectively).

### Government expenditure, revenue, and budget surplus relative to 2019

NIS billion



Source: Benjamin Bental and Labib Shami, Taub Center | Data: Ministry of Finance, Accountant General Department

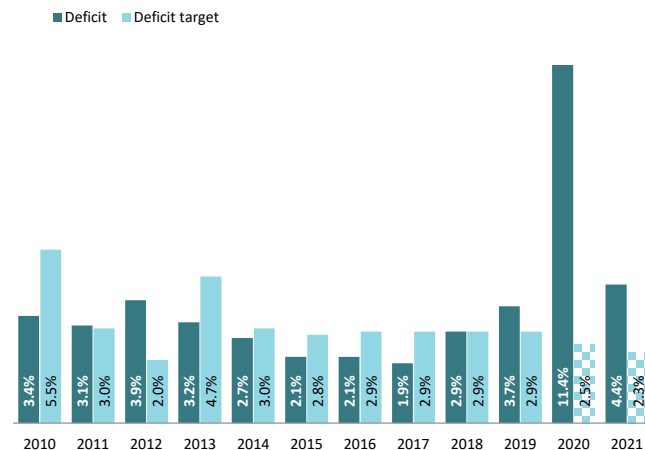
## The deficit and the deficit target

**Background:** As part of the budget planning process, the state sets a deficit target as a percent of GDP.

**In the figure:** In the middle of the decade preceding the COVID-19 pandemic, the actual deficit was substantially lower than the target set. Nevertheless, towards the end of the decade, the deficit grew beyond the target, primarily due to generous wage agreements in the public sector. In the 2019 budget proposal, the government set new decreasing deficit targets with the intention of reaching a rate of 1.5% by 2024. At the onset of the COVID-19 pandemic in Israel, the government did not have an approved budget, so new deficit targets were not set. However, crisis related expenditures grew and tax revenues declined, causing the deficit to reach heights not seen since 1996. The rapid recovery of the market led to a quick reduction in the deficit rate.

**Beyond the figure:** In the 2021/2022 budget approved in early November 2021, the updated deficit target was 6.8% for 2021 and 3.9% for 2022. The target of 1.5% was pushed back by two years due to the continuing coronavirus crisis.

The deficit and the deficit target as a percent of GDP



Note: Deficit targets for 2020 and 2021 were set before the outbreak of the COVID-19 epidemic.

Source: Benjamin Bental, Taub Center | Data: Ministry of Finance, Accountant General Department

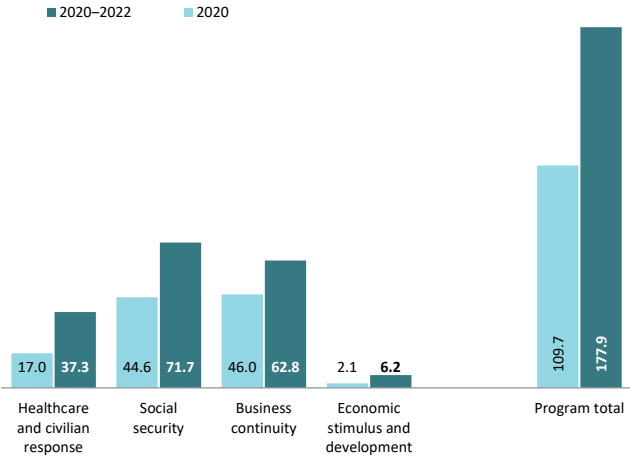


# Relief expenditures geared at addressing COVID-19 were the greatest in the country’s history

**In the figure:** As a result of the economic effects of the COVID-19 pandemic and in order to deal with the challenges facing the healthcare system, the government adopted the largest multi-year assistance plan since the establishment of the State. The plan was divided into four categories: a healthcare and civilian response; a social security net; business continuity; and economic stimulus and development.

**Beyond the figure:** The assistance provided up until April 2022 totaled about 5.3% of cumulative GDP for 2020, 2021, and the first quarter of 2022. During this period, the Ministry of Finance showed flexibility in transferring budgets from one line item to another as needed. In total, by the end of 2020, 80% of the budget designated for that year (NIS 137 billion) was utilized, and the amount utilized by the end of April 2022 was about 93% of the total budget of NIS 191.6 billion.

**Total implementation by program assistance category**  
NIS billion



Source: Benjamin Bental and Labib Shami, Taub Center | Data: Ministry of Finance, Accountant General Department, Economic Program Implementation Data

## The burning question: What is the right way to deal with the increasing debt arising from relief expenditure during the pandemic?

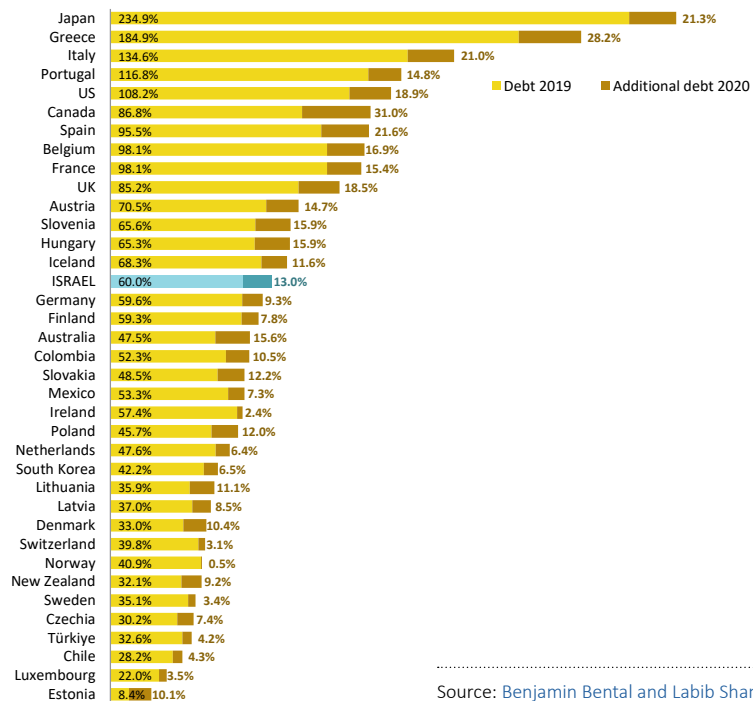
**Background:** For many years, one of the main objectives of Israel's macroeconomic policy was to lower the debt-to-GDP ratio to a level of 60%, a target specified for the EMU (European Economic and Monetary Union) in the Maastricht Treaty. The goal was to improve Israel's credit rating in international markets, which would lower the interest rate Israel needs to pay to service its debt.

**In the figure:** The target was achieved in 2019, prior to the onset of the COVID-19 pandemic. As shown in the figure, many countries, and first and foremost Japan, are far from this target and Israel's success is impressive. The heavy expenditure during the pandemic (see the previous page) and the sharp drop in GDP in 2020 raised the debt-to-GDP ratio significantly.

**Implications:** Policy makers have proposed several ways to restore the ratio to the target reached in 2019. The Ministry of

Finance advocates a rapid reduction of the deficit, specifically by expanding the tax base and reducing expenditures. The path recommended by the Bank of Israel calls for a more moderate pace of reduction in the deficit and an increase in public capital investment (see the next page). According to this plan, the deficit will be reduced, but returning to a debt-to-GDP ratio of 60% will take longer. Another possible trajectory involves massive investment in infrastructure that will be financed by increasing the deficit in the short run by 2 percentage points, which, in turn, will raise the debt-to-GDP ratio in the short run. The acceleration of growth that is expected to follow the increase in public capital will quickly change the trend. According to this approach, the debt-to-GDP ratio is expected to be about 65% by the end of the current decade, despite the increase in the deficit, thus reaching the rate forecasted by the Bank of Israel at that point. The next few pages explain the rationale for this expansionary approach.

## Debt-to-GDP ratio in 2019 and 2020 in the OECD countries



Source: Benjamin Bental and Labib Shami, Taub Center | Data: IMF

## The ratio of public capital to GDP is especially low in Israel

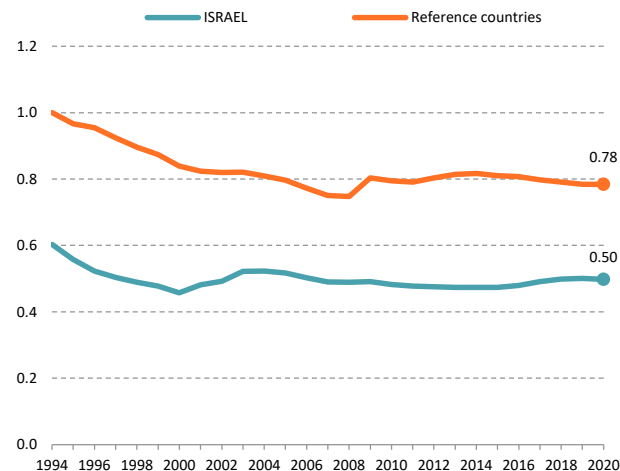
**Background:** Public capital consists primarily of public infrastructure, such as roads, seaports, and airports, as well as all components of public transportation. The stock of public capital is estimated according to the cumulative investment in infrastructure assets over time.

**In the figure:** The stock of public capital out of GDP in Israel is about 30 percentage points lower relative to European countries of similar size but with higher GDP per capita (the “reference countries”).

**Beyond the figure:** This is due to the fact that while the investment rate in public capital in Israel tends to be similar to that in the reference countries (about 4%), the rate of growth in GDP is higher in Israel, primarily as a result of the far more rapid population growth than in the reference countries.

**Implications:** The shortfall in public capital, in particular in transportation and digital infrastructure, has a decisive effect on public welfare, the level of labor productivity, and economic growth rate. Increasing its level is essential to maintaining the growth of the economy and to raising the standard of living.

The ratio of public capital to GDP



Note: Reference countries: Austria, Denmark, Finland, Netherlands, and Sweden.  
Source: Benjamin Bental, Zvi Eckstein, and Sergei Sumkin, Taub Center and Aaron Institute for Economic Policy | Data: IMF

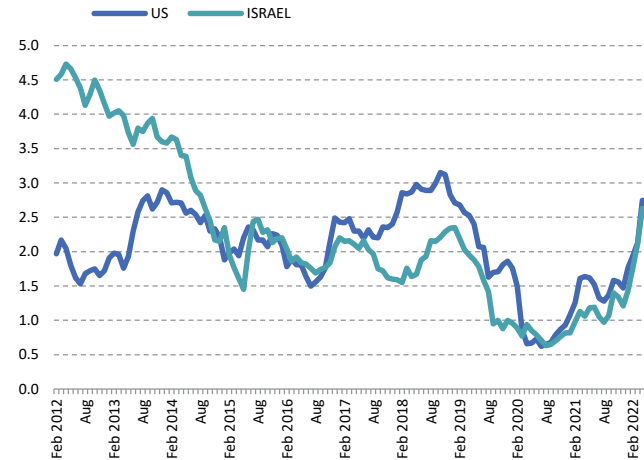
## The interest rate that Israel pays on its debt is particularly low

**Background:** The economic literature shows that neither the debt-to-GDP ratio nor the debt burden will grow if the interest rate is lower than the rate of growth in GDP and the budget deficit is under control.

**In the figure:** The nominal ten-year yield on Israel's debt has declined substantially during the past decade, and in 2020–2021 was about 1%. The gap between the yield on Israeli and US debt is evidence of the low risk associated with Israeli debt by the international markets. Given the inflationary environment in Israel, the real interest rate on the debt is negligible or even negative and is expected to remain so in coming years even with the apparent rise in nominal interest rates around the world.

**Implications:** Israeli GDP growth rate is about 4% on average, much higher than the real interest rate. Thus, it is possible to finance increased investment in public capital by temporarily increasing the deficit, without endangering Israel's standing in international capital markets. The additional growth resulting from such an investment would further strengthen Israel's international standing.

**Nominal return on 10-year bonds**



Source: Benjamin Bental, Taub Center | Data: FRED, Federal Reserve Bank of St. Louis



---

# LABOR MARKETS

The COVID-19 pandemic had a large but relatively short-lived effect on employment on a national level, but that effect was not evenly distributed. Men were affected more than women, workers in some industries have still not recovered while others experienced no downturn, and the effect was different in different regions of the country. In the following pages, we take a look at the effects on the labor market, including the increased propensity to work from home, a change likely to persist in some industries and occupations.

In addition, we demonstrate the importance of a higher education, with respect to both employment and wages.



## About 70,000 people remain without work due to COVID-19

**Background:** The developments in GDP in 2020 and 2021 are, of course, also seen in the labor market. While in normal times an unemployed individual is defined as a jobseeker who is not currently working, the definition was expanded as a result of the unpaid leave and lockdown policies to include workers who had been absent from their place of work for at least a week due to “circumstances related to COVID-19.” Another group that came under the definition of “unemployed” included workers who had given up on their job search and had left the labor force.

**In the figure:** The figure on the next page shows that the lockdowns primarily affected the share of workers temporarily absent from work. This group stands out as having shrunk in size during the second half of 2021, following the termination

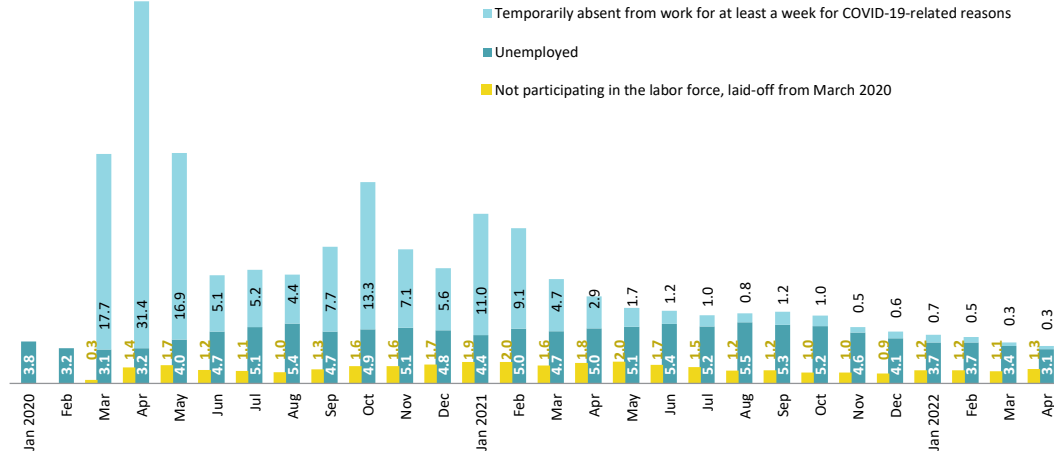
of the unpaid leave program. Nonetheless, the “classic” rate of unemployment gradually rose to a peak of 5.5% during the summer of 2021, with a particularly large decline during the final quarter of the year when the economy grew at an annual rate of 16.6%. By the start of 2022, classic unemployment returned to its pre-COVID-19 rate, and it has continued to fall since.

**Beyond the figure:** The share of workers who have given up their job search, which reached 2% of the population aged 15 and over in May 2021, has hovered consistently around 1.1%–1.2% since then. That is, more than 70,000 workers who were in the labor force prior to the coronavirus crisis have yet to return to the labor force.



## Unemployment, absence, and non-participation in the labor force

Percent



Source: Benjamin Bental and Labib Shami, Taub Center | Data: CBS

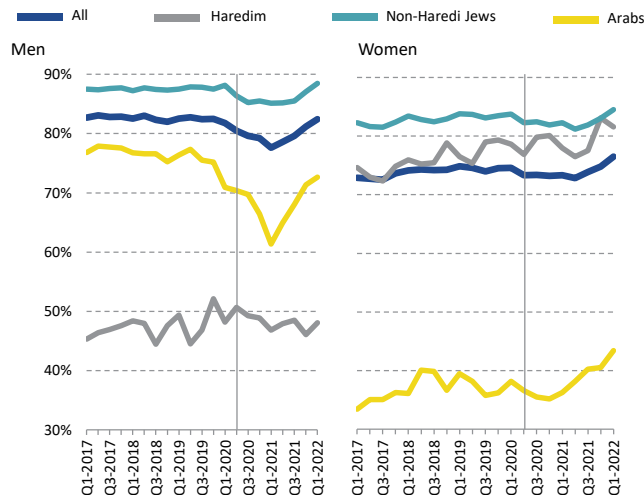
## The sharp drop in employment among Arab men began before COVID-19

**In the figure:** During the COVID-19 pandemic, government support was relatively generous (see page 15). Since the outbreak, employment rates (including those on furlough) fell for almost all population groups. For women, this fall has been mostly recovered, although employment rates for non-Haredi women have remained lower than before the pandemic. For men, however, employment has remained lower. The greatest fall was among Arab Israeli men, but this fall began well before the coronavirus pandemic began in Israel.

**Beyond the figure:** The decline among Arab men has been largely among the younger working-age population. This lack of employment is the result of several factors, including the relative dearth of higher education among this population as well as the import of foreign, low-skilled labor in the construction industry.

**Implications:** Finding solutions for this problem is not only critical in order to attain continued growth in the Israeli economy, but also to allow for increased upward mobility and decreased violent crime (see pages 59–64).

Employment rates for ages 25–64



Note: Including workers on furlough. The vertical line marks the beginning of the COVID-19 epidemic.

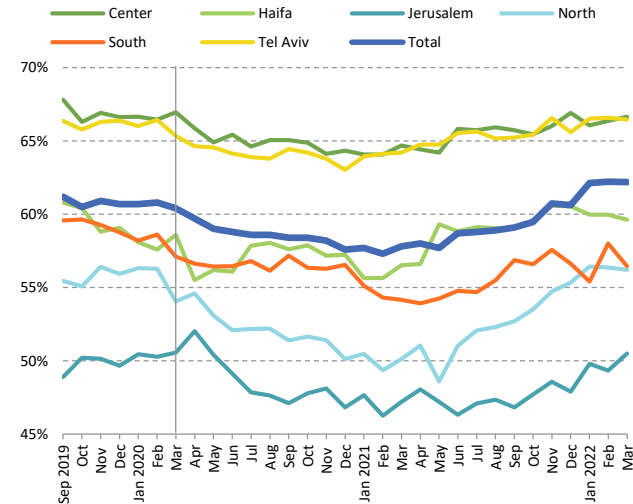
Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS

## Workers in the Northern District, followed by Jerusalem and the Southern District, were the most adversely affected by COVID-19

**In the figure:** While employment fell throughout the country during the pandemic, the Central Districts were the least affected and also recovered the quickest and most completely. The greatest damage was for workers in the North, with a 13% drop in employment, although by October 2021 this had moderated to 4%. The declines were smaller in Jerusalem (7%) and the South (9%), while in the Center, Tel Aviv, and Haifa the decline was in the 4%–5% range. These findings correspond with the decrease in employment among Arab men shown in the previous figure.

**Implications:** Unsurprisingly, the weakest districts were once again where employment was most greatly affected. In the case of future lockdowns, these are the areas in which relief efforts will be most needed.

Employment rates for ages 15 and over



Note: Including workers on furlough. The vertical line marks the beginning of the COVID-19 epidemic.

Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS

## Sectors were harmed differentially

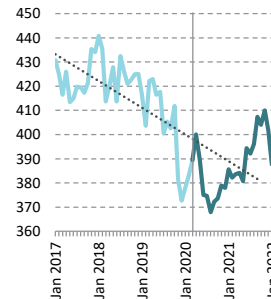
**In the figure:** Comparing trends before the onset of the pandemic to those that followed, it is clear that while some sectors were seriously harmed, others were barely affected, if at all. It is fairly obvious that, as a result of the lockdowns, the accommodation (tourism) and food services (restaurants) sector was badly harmed, with only partial recovery since. Less obvious was the damage to employment in the construction and agriculture sectors. In other sectors, significant losses were either not felt or have since been recovered.

**Implications:** Quickly recognizing which sectors are most likely to be affected during emergency periods can help focus relief efforts, including targeting workers for training efforts.

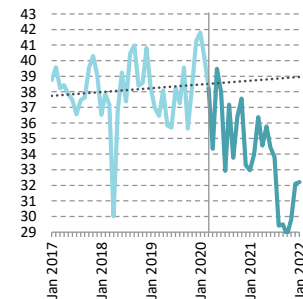
### Actual employment versus the pre-crisis trend, by economic sector

Thousands

Manufacturing, mining, quarrying



Agriculture, forestry, fishing



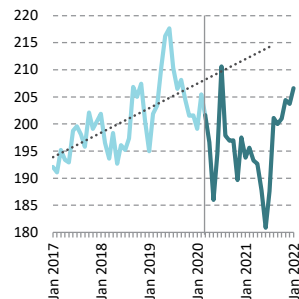
Note: Including workers on furlough. The vertical line marks the beginning of the COVID-19 epidemic.

Source: [Michael Debowy](#), [Gil Epstein](#), and [Avi Weiss](#), Taub Center | Data: CBS

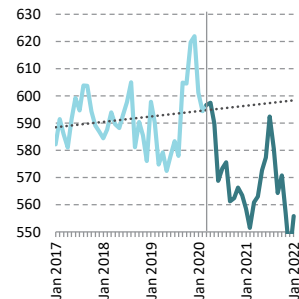
## Actual employment versus the pre-crisis trend, by economic sector

Thousands

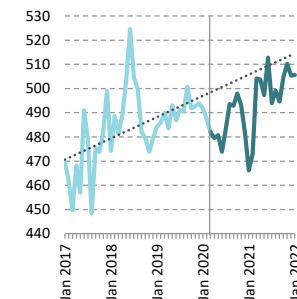
Construction



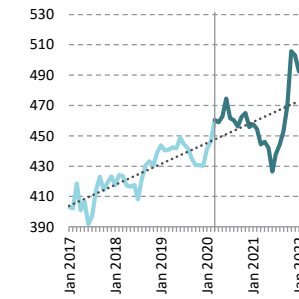
Wholesale/retail trade, motor vehicle repairs; transport, storage, postal, courier activities



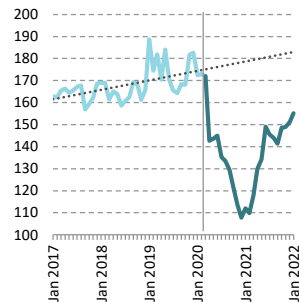
Education



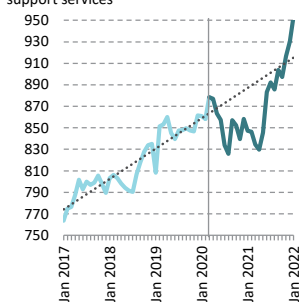
Human health, social work activities



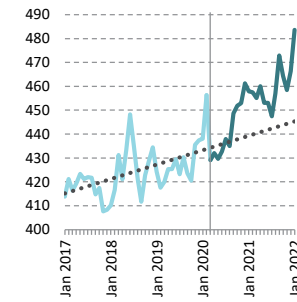
Accommodation, food services



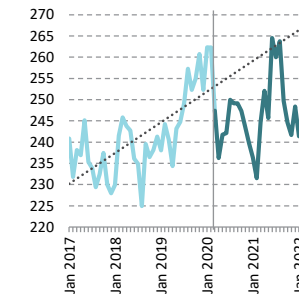
Information, communication; financial, insurance activities; real estate; professional, scientific, technical activities; administrative support services



Local, public, defense administration; infrastructure, waste management



Other economic sectors



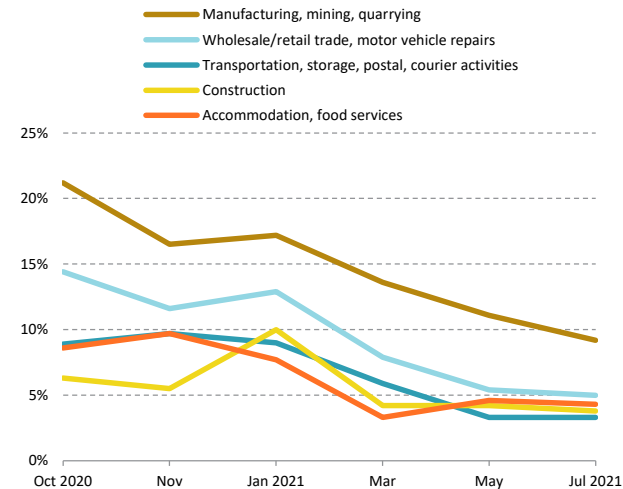
## In some industries, work from home may be here to stay

**In the figure:** The crisis led to a dramatic rise in the amount of work conducted from home throughout the economy, especially at times of peak morbidity and during the ensuing lockdowns. In all of the “tangible” manufacturing and service sectors, the share of those working from home was much lower than in the “intangible” production and service sectors. In fact, over half of those in the information and communication sector worked from home until the summer of 2021. There was tremendous and quite noticeable volatility in work-from-home volumes in the education sector, and, more surprisingly, volatility in the energy supply and air conditioning sector.

**Beyond the figure:** We seem to have entered a new reality in which working from home has become a central feature of employment regardless of the pandemic. If this indeed becomes part of the new paradigm, the implications for issues such as housing prices, office rental costs, congestion, and pollution could be considerable.

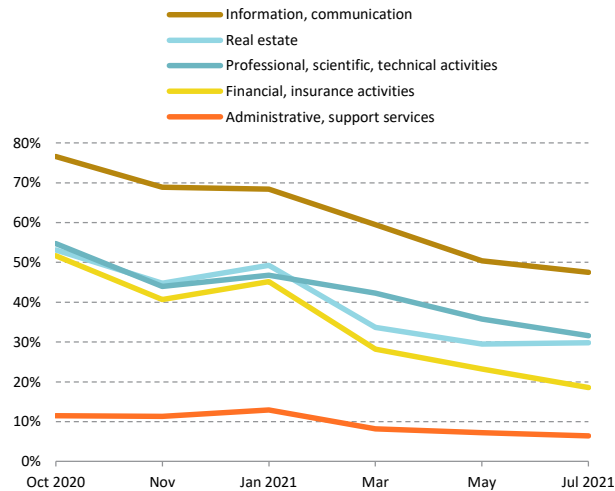
Share of those working from home by economic sector

### “Tangible” employment sector

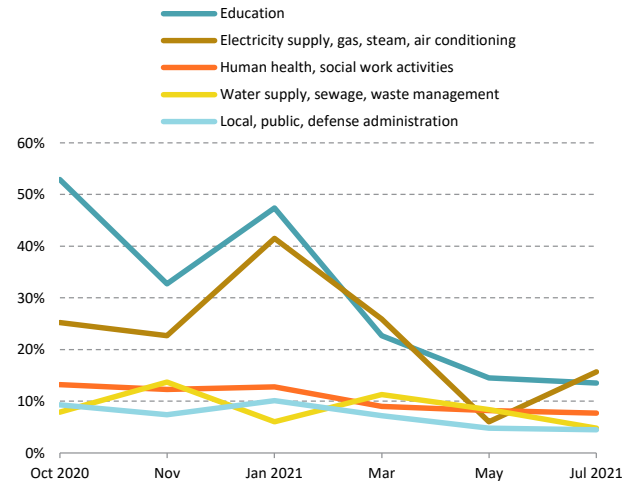


## Share of those working from home by economic sector

### “Intangible” employment sector



### “Distinctly public” employment sector



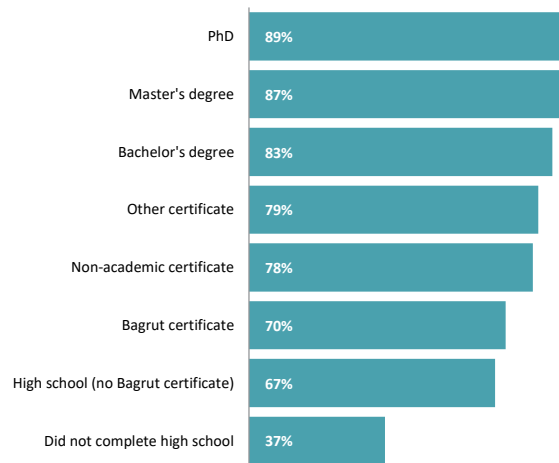
Source: [Michael Debowy](#), [Gil Epstein](#), and [Avi Weiss](#), Taub Center | Data: CBS

## Employment monotonically increases with education level

**In the figure:** Employment rates rise consistently with education levels, but level off, of course, as full employment is approached. For those who did not complete high school, the labor market participation rate is less than 40%; the rate climbs to 70% for high school graduates, and to over 80% for those with academic degrees. The highest employment rate is for those with a PhD, nearly 90% of whom are employed.

**Beyond the figure:** While it is generally recognized that higher levels of education lead to higher wages (see the next page), this figure demonstrates the additional importance of education. Higher levels of education make it more likely to achieve and retain gainful employment, which benefits the entire country in numerous ways.

**Employment rates for ages 17–62, by educational attainment, 2017–2018**



Source: [Michael Debowy](#), [Gil Epstein](#), and [Avi Weiss](#), Taub Center | Data: CBS

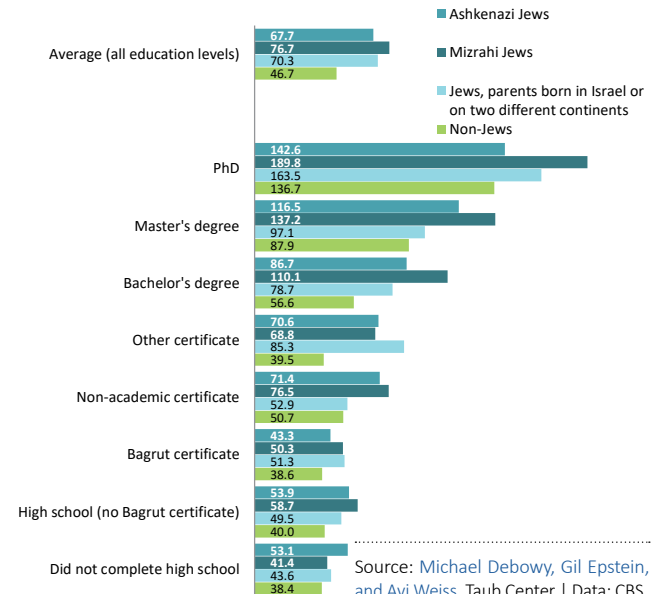


## Mizrahi Jews are expected to earn more and non-Jews less at most education levels

**In the figure:** The figure shows the predicted income for an otherwise average individual (controlling for worker characteristics, including variables such as occupation, industry, and parents' education) by ethnicity, sector, and level of education. Unsurprisingly, expected income rises with one's education level. Surprisingly, it rises at an increasing rate even through the highest degree, a finding not found in earlier studies.

**Beyond the figure:** Interestingly, Mizrahi Jews earn more at almost every education level than do Ashkenazi Jews or those whose parents were born in Israel or were not both born of the same ethnicity. With this, Ashkenazi Jews are more educated on average, and so the mean difference throughout the working population is attenuated. Another interesting finding is that a Bagrut (matriculation certificate) no longer yields a wage premium. It seems that today, the value of a Bagrut certificate is that it allows access to higher education, which yields higher salaries.

**Predicted gross average hourly wage of workers, 2017–2018**  
NIS



Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS



---

# SPOTLIGHT

## Top Decile Wage Earners in Israel

In this Spotlight, we look at the top decile wage earners in Israel. The study answers two questions: what characteristics affect the likelihood of reaching this upper income echelon, and what affects one's ranking within this decile? Two important traits that we consider are education and experience. The conclusion reached is that while these variables have a critical effect on the likelihood of reaching the top echelon, their affect on location within the top decile is minor. Therefore, in the following pages, we focus on the first question alone — what can propel a worker into that top decile.

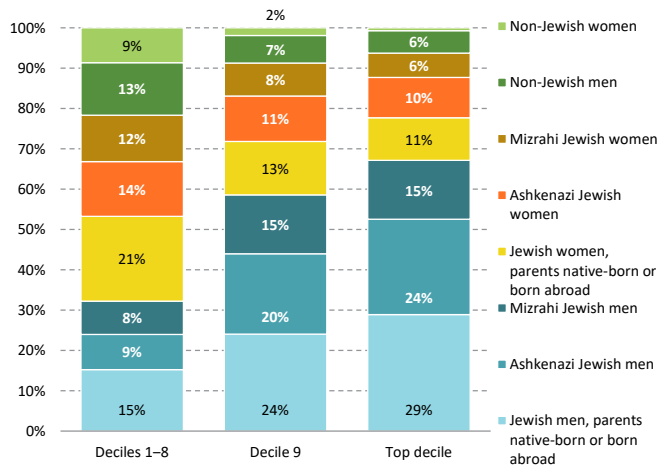


## Only a quarter of the top decile income earners are women

**In the figure:** The ethnicity and gender distribution in the top decile is starkly different from that in the rest of the labor force. While women make up more than half of the workers in deciles 1–8, they are only a third in the ninth decile and a quarter in the top decile. Moving from the lower deciles to the top decile, the percentage of Ashkenazi men nearly triples while those of other Jewish men almost doubles, with the biggest losers being non-Jewish women.

**Beyond the figure:** Much of the gaps between the genders and between sectors may be temporal — they could stem from historical employment patterns and choices since high salaries are generally achieved after many years of employment. Some may stem from occupational choices. However, the portions that result from discrimination or “glass ceilings” are those that need to be addressed by policy makers.

Composition of income decile, 2017–2018

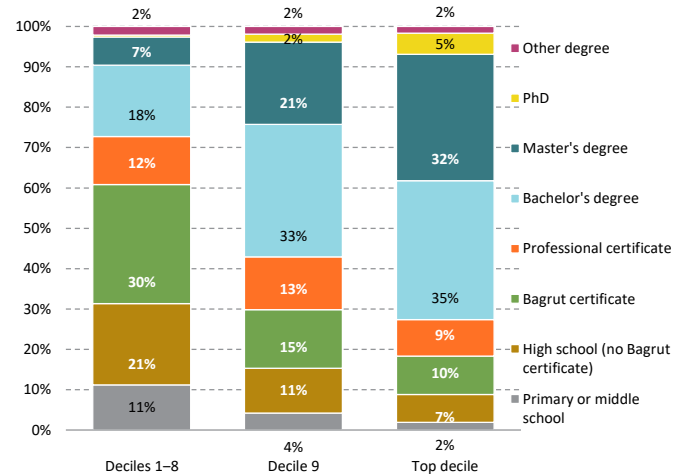


## Academic achievements play a major role in reaching the top salary decile

**In the figure:** While only about a quarter of the employees have an academic degree in deciles 1–8, over half of those in the ninth decile and almost three quarters of those in the tenth decile have a bachelor's degree or higher. In fact, about two-thirds of those with a PhD earn enough to place them in the top decile, along with over half of those with an MA.

**Beyond the figure:** The importance of a higher education has always been recognized, but it has clearly become more so as the economy has evolved. Making higher education attainable to those who want it is critical for improving welfare and increasing the possibility of intergenerational mobility.

Distribution of education, 2017–2018



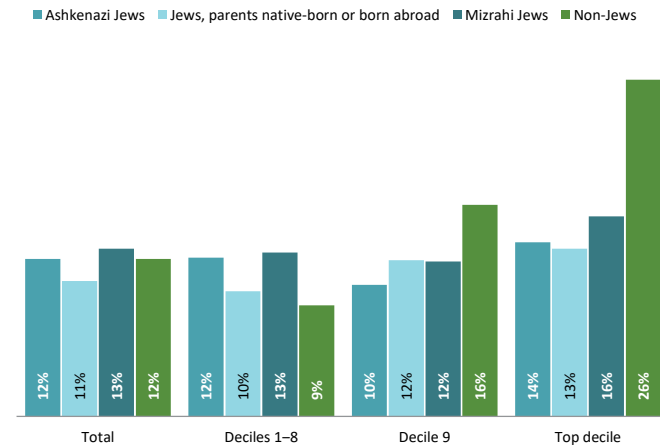
Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS

## For non-Jews, self-employment is the path to the highest income decile

**In the figure:** The percentage of self-employed is fairly similar for all population groups, averaging about 12%. This does not change greatly as one moves into the higher income deciles, except among non-Jews, among whom the percent of self-employed triples between deciles 1–8 and the top decile.

**Beyond the figure:** The lesson from this finding is that non-Jews face great difficulty in reaching the top decile in the “normal” way it is done in the rest of the population — through being an employee. This is another indication of the “glass ceiling” discussed on page 34.

Share of self-employed, 2017–2018

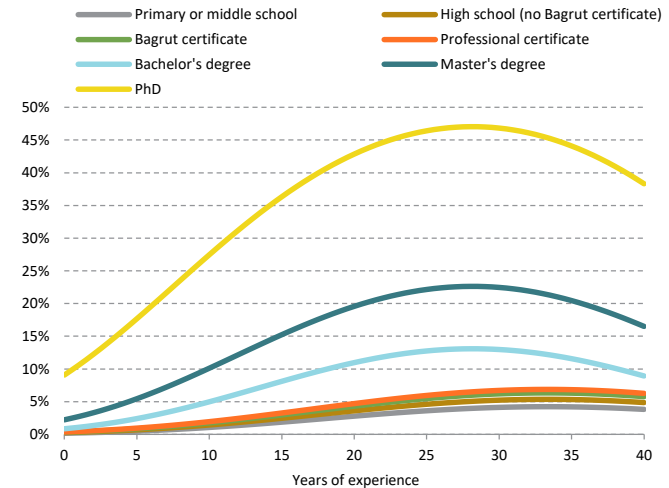


## Education and experience are needed to reach the upper echelons

**In the figure:** This figure demonstrates regression results controlling for a variety of individual characteristics in explaining a worker's success in reaching the upper income decile. As seen, the raw effect shown on page 35 does not diminish as a result, and, in fact, the increasing effect of higher degrees is even more obvious. In addition, experience matters — it is difficult to reach such heights early on in one's career, but with the right training, it is attainable with greater experience.

**Beyond the figure:** As previously shown, education is of the utmost importance, and here we see that education and experience strongly complement each other.

### Impact of years of experience on the probability of selecting into the top income decile, 2017–2018



Note: The probabilities are calculated by calibrating all of the background variables (apart from education and experience) to the average value for each education group.

Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS





---

# HEALTH

The continual increase in Israel's population makes it challenging for the number of healthcare providers to keep pace. After the large influx of physicians during the mass immigration from the former Soviet Union, the number of doctors per capita started declining in the last decade and a half, and only recently has started climbing as a result of new medical schools being opened and more Israeli medical students studying abroad. The number of nurses has also started increasing, but their numbers remain woefully low. In this section, we look at the number of medical staff, over time and in comparison with other countries.

In addition, we ask the question: How many lives could be saved annually were Israel to improve its track record with respect to the treatment of certain ailments? This is accomplished by doing a "what if" analysis, comparing mortality from these illnesses in Israel to those in other countries.

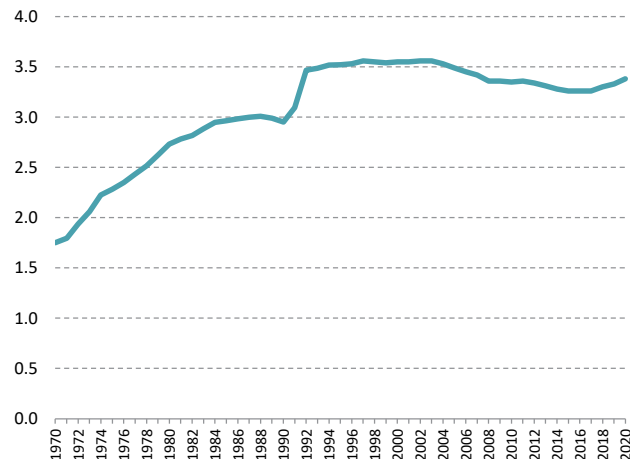


## A recent increase in the number of physicians per capita in Israel

**In the figure:** At the end of 2020, there were about 31,800 physicians with a medical license under the age of 67 in Israel. Of those, more than 8,300 were medical residents. The number of physicians per capita has gradually risen since 2017 following a long downward trend that began in the early 2000s.

**Beyond the figure:** The Israeli healthcare system is still benefiting from the massive influx of immigration from the former Soviet Union during the 1990s. However, it appears that this effect is tapering off due to the increasing rate of retirement as this population of physicians ages, and there is a shortage in certain medical professions, including internal medicine, emergency medicine, intensive care, and infectious diseases. A high percentage of physicians report being overburdened, which is manifested in long work hours, excessive caseloads, and difficulty in allocating sufficient time to each patient.

Physicians under the age of 67 per 1,000 population



Source: Nadav Davidovitch, Baruch Levi, and Rachel Arazi, Taub Center |  
Data: Ministry of Health, 2021

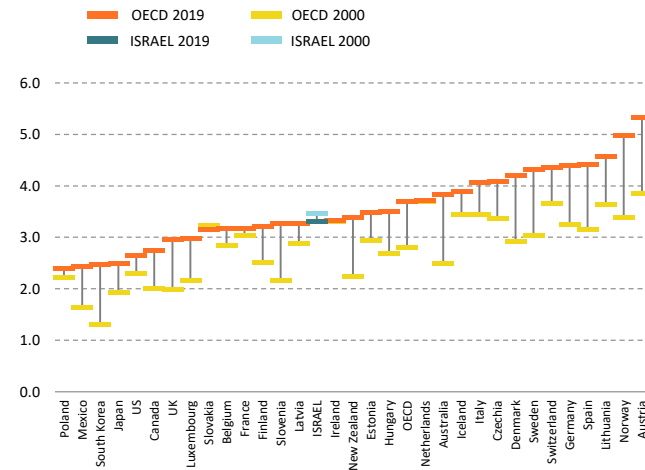
## Number of physicians per capita is near, but below, the OECD average

**In the figure:** The number of physicians per capita in Israel is below the OECD average, and it is one of only two countries in which this number fell between 2000 and 2019.

**Beyond the figure:** This drop occurred despite an increase of 26% in the number of physicians, and reflects the rapid growth in Israel's population. During the past decade, there has been a sharp increase in the number of new physicians each year. The number of new medical students doubled over the past decade as a result of the opening of new medical schools in Safed and Ariel, and the transformation of hospital departments into teaching departments. Many Israelis study abroad; Israel has the most foreign-trained medical graduates in the OECD, with the number of immigrant physicians trending upward in recent years.

The Yatziv Reform (2019), which regulates the accreditation of foreign medical studies, led to a substantial reduction in opportunities to study abroad, especially in Eastern Europe, which will have a significant impact, particularly in the periphery where graduates from those institutions tend to work.

**Number of active physicians per 1,000 population in the OECD, 2000 and 2019 (or the closest year)**



Source: [Nadav Davidovitch](#), [Baruch Levi](#), and [Rachel Arazi](#), Taub Center |  
Data: OECD, 2021

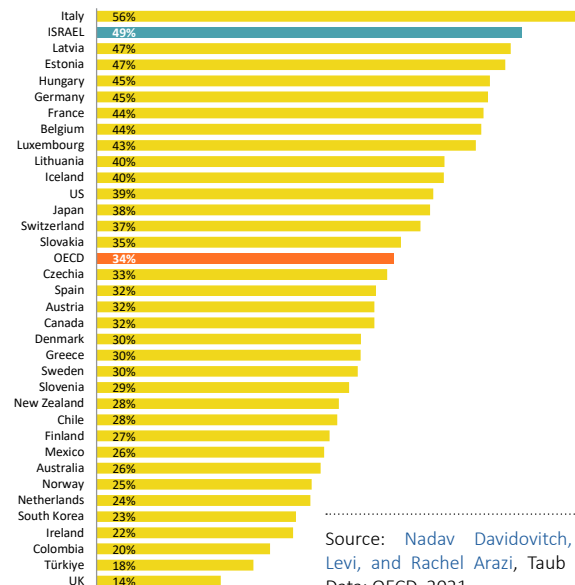
## Half of the physicians in Israel are 55 or older

**In the figure:** The average age of physicians in Israel is among the highest in the developed countries — second only to Italy. Many physicians in Israel are close to retirement age and are expected to leave the labor force in the coming years.

**Beyond the figure:** Israel's ratio of physicians to the population as of today is already lower than the OECD average (3.3 vs. 3.5 per 1,000 population). The shortfall in manpower is particularly evident in the geographic periphery and in specific medical fields, such as anesthesiology, internal medicine, and pathology.

**Implications:** Filling the gap created by the retirement of older physicians requires increasing the inflow into the profession, for instance, by enlarging medical training programs and adding clinical fields in hospital wards in Israel. It is also important to increase the number of positions for residents and specialists in the public healthcare system, in the hospitals, and in the community, particularly in geographic areas and medical fields characterized by a severe shortage in manpower.

**Share of physicians age 55+ in the OECD countries, 2019 (or the closest year)**



Source: [Nadav Davidovitch](#), [Baruch Levi](#), and [Rachel Arazi](#), Taub Center |  
Data: OECD, 2021

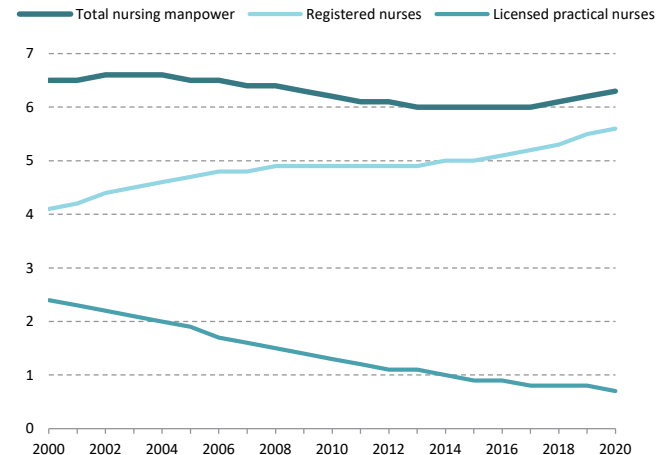
## The number of registered nurses per capita has been growing steadily, while the number of licensed practical nurses has been falling

**In the figure:** The share of nurses under the age of 67 with a nursing license — not all of whom practice — stood at 6.3 per 1,000 population in 2020. There are two conflicting trends: the absolute number of registered nurses (RNs) and their ratio to the population is on an upward trend, while for licensed practical nurses (LPNs) the opposite is the case.

**Beyond the figure:** The nursing profession has undergone academization in recent decades. This process has led to an almost complete disappearance of LPNs. With this, it has had a positive effect on the image and duties of nurses, and has led to empowerment of the nursing profession and to the creation of positions such as nurse case managers and nurse practitioners, alongside an increased desire to attain additional training.

**Implications:** It is important to examine how these changes will affect the healthcare system with respect to the boundary between the various professions both in the hospitals and in the community, the continuum of care, and the frameworks of employment.

Number of nurses up to the age of 67 per 1,000 population



Source: Baruch Levi, Rami Adut, and Nadav Davidovitch, Taub Center |  
Data: Ministry of Health, 2021

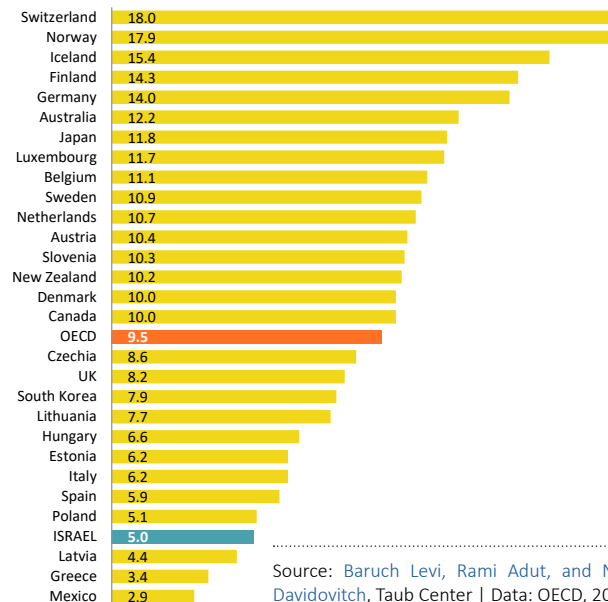
## The share of active nurses in Israel is among the lowest in the OECD

**In the figure:** There are 5 active nurses per 1,000 population in Israel, slightly more than half the average rate in the OECD countries. This low rate is evidence of a shortage of nursing manpower.

**Beyond the figure:** The shortage has a negative effect on the healthcare system as a whole, although it is not uniformly felt. The shortage is particularly severe in the periphery and in unattractive placements that in any case have difficulty recruiting nursing staff, such as public health nurses and, in particular, school nurses.

**Implications:** It is important to gradually increase the number of nurses in Israel by expanding the training programs. In addition, an effort should be made to attract nursing manpower to the geographic areas and placements where the shortage is particularly acute, such as in public health services. This can be done by, for example, expanding the roles of the nursing profession, creating advancement paths, and providing financial incentives.

**Number of active nurses per 1,000 population in OECD countries, 2019 (or the closest year)**



Source: Baruch Levi, Rami Adut, and Nadav Davidovitch, Taub Center | Data: OECD, 2021

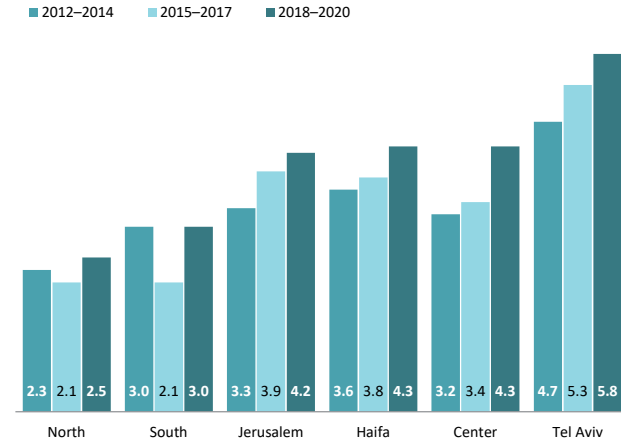
## Relative dearth of physicians in the periphery

**In the figure:** The number of physicians per capita in the South and the North are significantly lower than in the rest of the districts.

**Beyond the figure:** Between 2015 and 2017, there was a decline in the number of physicians per capita in the South and the North, which served to widen existing gaps. This may be due to the gradual phasing out of periphery grants for physicians that were meant to attract healthcare labor force to these areas. After 2017, the number of physicians per capita rose in both areas.

**Implications:** Certain medical specialties are not always accessible to patients in the periphery. In fact, from a national perspective, broad dispersal of specialized medical services may not be desirable or attainable. In contrast, the allocation of primary and in some cases secondary medical services in the community to remote areas is likely to provide large benefits for public health, primarily by promoting preventive care and advancing healthy living. Advancing the implementation of e-health should also be strengthened in the future.

**The distribution of physicians per 1,000 population by district of employment, three-year average**



Note: The figure is based on the CBS Labor Force Survey rather than administrative data of the Ministry of Health and therefore the data should be treated with caution.

Source: Nadav Davidovitch, Baruch Levi, and Rachel Arazi, Taub Center |

Data: Ministry of Health, Manpower in the Healthcare Professions (various years)

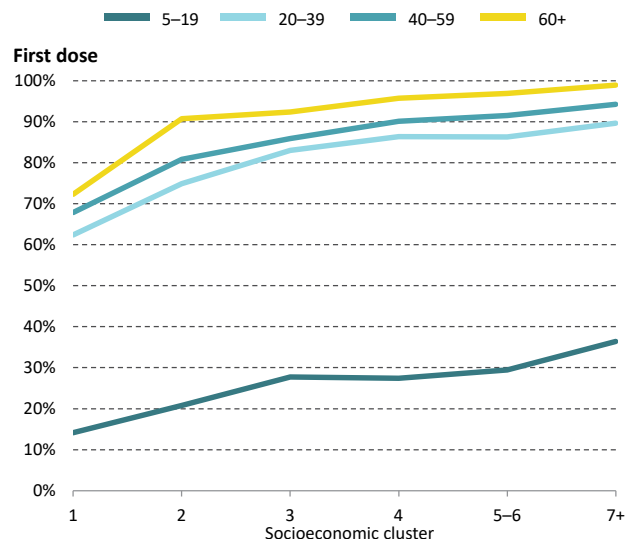
## Individuals in higher socioeconomic groups are more likely to choose to get vaccinated against COVID-19

**Background:** The start of the vaccination campaign constituted a dramatic turning point in Israel's response to the COVID-19 pandemic. Despite the clear advantages of the vaccines, there have been many challenges, including an unexpected challenge of disparities in vaccination rates across socioeconomic levels. In the case of routine vaccinations, rates are in general higher among poorer populations. In the case of COVID-19, though, the situation is different.

**In the figure:** Vaccination rates for COVID-19 are positively correlated with socioeconomic status, with the differences concentrated primarily in the lower socioeconomic clusters.

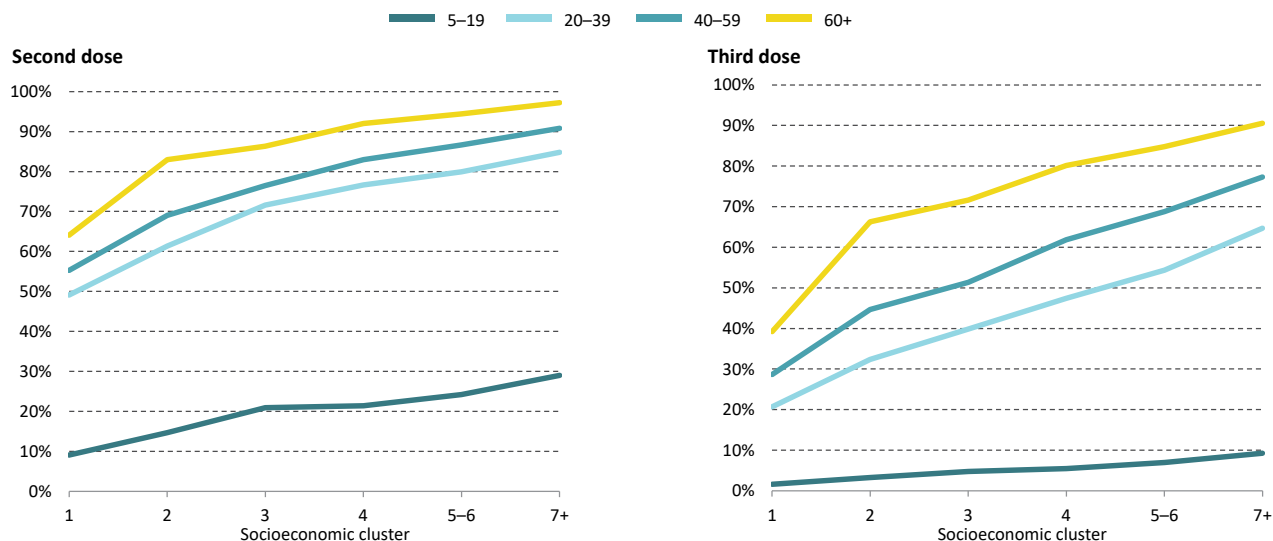
**Beyond the figure:** These data raise concern that this is not simply a matter of the poorer populations choosing to defer receipt of the third dose, but, rather, it is a decision to avoid it altogether. In view of the long-run physiological, mental, and socioeconomic effects of the disease, this disparity in vaccination rates will be reflected in other ways in the future.

COVID-19 vaccination rates





## COVID-19 vaccination rates



Note: The data are updated to December 6, 2021. The authors wish to thank Oren Miron for his part in the research.

Source: [Nadav Davidovitch](#), [Baruch Levi](#), and [Rachel Arazi](#), Taub Center | Data: Ministry of Health; CBS

## Many lives could, potentially, be saved by adopting successful medical practices from other countries

**In the table:** Relative to 36 other developed countries, Israel has one of the lowest (age-standardized) mortality rates from heart disease, especially among men. Both men and women also have low relative levels of mortality from neurological disorders, the 4<sup>th</sup> leading cause of death.

Israeli men also enjoy low mortality relative to other countries on a number of other leading causes of death. They have the 5<sup>th</sup> lowest mortality from cancers in general and 7<sup>th</sup> lowest mortality from chronic lung disorders. On these two measures, Israeli women fare much worse, ranking 19<sup>th</sup> — largely because of high mortality from breast cancer (32<sup>nd</sup>) — and 16<sup>th</sup>, respectively.

However, the leading cause of death on which Israel is a poor performer is diabetes. Israel is in the bottom three developed countries among both men and women.

**In the figure:** Reducing diabetes mortality to the median level across the 36 other countries in our sample would save almost 3,400 deaths per year in Israel. That is more than the number of coronavirus deaths in 2020. Achieving the median OECD mortality in all other causes of mortality where Israel ranks below the median would save an additional 3,000 deaths per year. Reaching 4<sup>th</sup> place would save 4,400 deaths from diabetes and 11,700 deaths from all other causes.

**Implications:** Ranking Israel on specific causes of death relative to other wealthy countries is the most effective way to identify health conditions for which Israel could reap significant gains by changing clinical practices using existing medical technologies.

### Age-standardized death rate per 100,000 people per year and Israel's ranking across 37 developed countries, by cause of death and gender

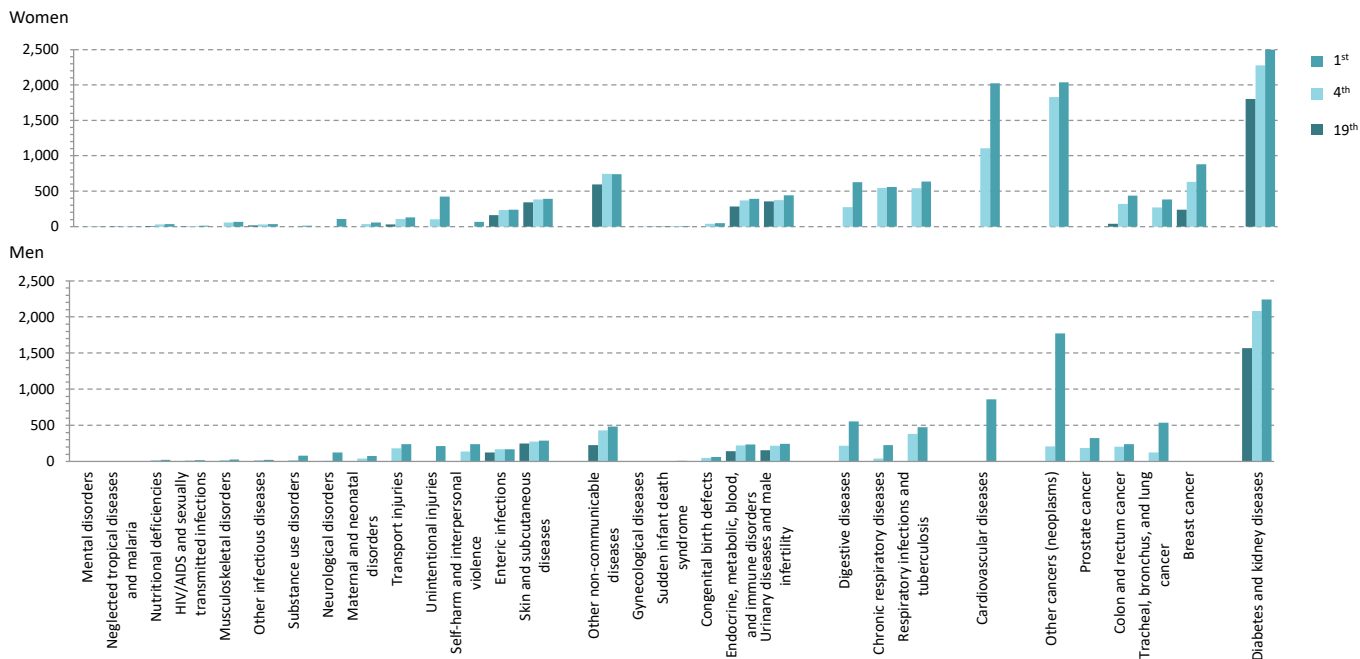
Cause of death	Men		Women	
	Israel death rate	Israel rank	Israel death rate	Israel rank
Neoplasms	145.09	5	107.52	19
Tracheal, bronchus, and lung cancer	31.35	10	13.41	13
Colon and rectum cancer	19.27	14	14.34	23
Breast cancer			21.47	32
Prostate cancer	14.20	5		
Cardiovascular diseases	112.70	3	82.36	6
Diabetes and kidney diseases	50.09	36	36.48	35
Neurological disorders	28.72	5	27.45	4
Chronic respiratory diseases	19.85	7	13.19	16
Digestive diseases	18.92	11	14.60	15
Respiratory infections and tuberculosis	15.88	13	11.74	18
Other non-communicable diseases	14.04	34	14.34	34
Urinary diseases and male infertility	5.55	31	5.83	34
Endocrine, metabolic, blood, and immune disorders	5.08	34	5.42	36
Congenital birth defects	2.79	15	2.48	13
Sudden infant death syndrome	0.23	13	0.21	21
Gynecological diseases			0.04	18

Cause of death	Men		Women	
	Israel death rate	Israel rank	Israel death rate	Israel rank
Self-harm and interpersonal violence	12.62	7	2.96	4
Unintentional injuries	10.30	2	7.30	10
Transport injuries	9.26	17	3.27	22
Skin and subcutaneous diseases	5.20	37	4.68	37
Enteric infections	3.08	37	2.83	34
Maternal and neonatal disorders	2.66	11	2.35	14
Substance use disorders	2.27	5	0.32	3
Other infectious diseases	1.22	25	0.96	25
Musculoskeletal disorders	0.76	15	1.47	17
HIV/AIDS and sexually transmitted infections	0.55	23	0.25	21
Nutritional deficiencies	0.40	19	0.39	23
Neglected tropical diseases and malaria	0.05	26	0.02	23
Mental disorders	0.00	7	0.00	8

Note: A lower rank denotes a lower mortality rate.

Source for table and figure on the next page: [Alex Weinreb and Elon Seela](#), Taub Center | Data for table and figure: GBD project, Institute for Health Metrics and Evaluation (IHME), University of Washington

**Number of lives that would be saved if age-cause-specific mortality rates in Israel were the same as those in countries ranked 1<sup>st</sup>, 4<sup>th</sup>, or 19<sup>th</sup> place across 37 developed countries, by cause of death and gender**



---

# DEMOGRAPHY

In the following pages, we look at some of the demographic changes stemming from the COVID-19 pandemic. We naturally start with mortality, demonstrating how Israel fared in handling the pandemic, and also how it affected different age cohorts. We then take a look at changes in births during the pandemic and in migration to Israel, including since the start of the pandemic.



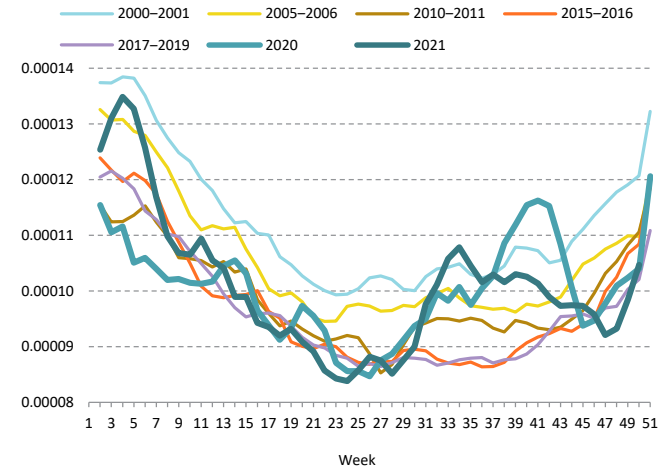
## High mortality rates during COVID-19 waves

**In the figure:** Over the last 20 years, mortality rates in Israel have been falling. This trend continued in the first two and a half months of 2020. After that, we see the impact of the COVID-19 pandemic.

Relative to its seasonal average, mortality in 2020, including coronavirus-related mortality, peaked in October, reaching levels not seen since the 1990s. During 2021, there were three distinct peaks, each pushing mortality to levels reached in the late 1990s or early 2000s: in late January, mid-August, and November (the Delta variant). The result was that there were 73% more deaths in 2021 than in 2020, despite Israel's rapid vaccination campaign.

**Beyond the figure:** Mortality rose again in early 2022, this time driven by the Omicron variant. There were around 1,930 deaths in the first two months of the year. That is less than during the same period in 2021 (2,424 deaths), but it is still a substantial increase over the pre-COVID-19 seasonal average.

Weekly mortality rates, three-week average



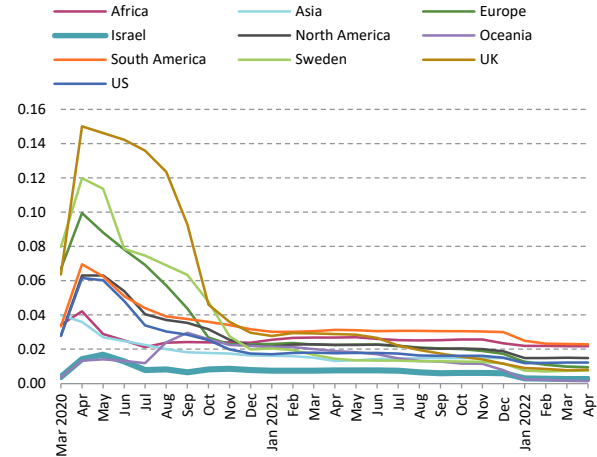
Source: [Alex Weinreb](#), Taub Center | Data: CBS

## Mortality as a share of confirmed COVID-19 cases was particularly low in Israel

**In the figure:** As seen in the previous figure, there was significant excess mortality as a result of the pandemic, however, the mortality rate out of total confirmed cases paints a different (and complementary) picture. Since the beginning of the pandemic, the rate of mortality out of confirmed cases in Israel was among the lowest in the world and it remained so throughout the pandemic. Even variants such as Delta (spring-autumn 2021) and Omicron (winter-spring 2022) did not manage to worsen the performance of the Israeli healthcare system.

**Beyond the figure:** The mortality rate out of total confirmed cases provides a reliable estimate of the healthcare system's ability to deal with the pandemic's challenges, and primarily the burden on hospitals and treatment of patients with chronic morbidities (pre-existing conditions), that constitute the main risk of death resulting from infection. Israel's young age profile, of course, has a positive effect here, although even after correcting for the age distribution, Israel's situation was excellent.

**Mortality rate out of all confirmed COVID-19 cases**



Note: Data are correct to the end of each month.

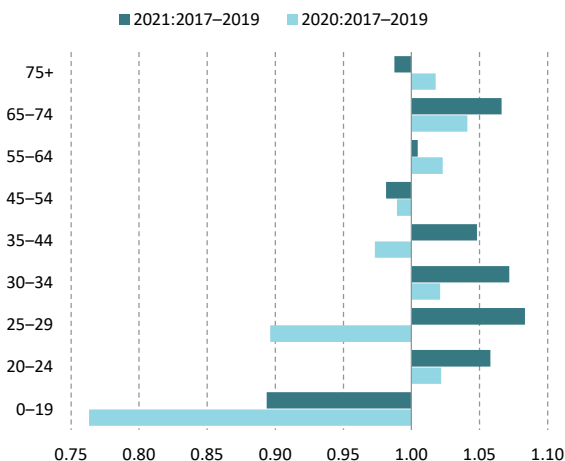
Source: Alex Weinreb and Kyrill Shraberman, Taub Center | Data: Our World in Data

## Relatively high mortality among older populations in 2020, and among younger ones in 2021

**In the figure:** Relative to 2017–2019, mortality increases in Israel in 2020 were largely concentrated at ages 55 and above. In 2021, substantial increases in mortality also occurred in the 25–44 age group, with mortality at ages 75 and above falling to around its pre-COVID-19 levels.

**Beyond the figure:** This increase in mortality at younger ages will have a larger negative effect on estimated life expectancy in 2021 than we observed in 2020. It will also delay any return to the pre-COVID-19 mortality trajectory where we were accustomed to seeing overall mortality rates fall year after year. Most likely, given the high mortality of early 2022, that return will not occur before 2023, assuming that no new aggressive COVID-19 variants develop, and that we can achieve and maintain some measure of herd immunity, with or without continued vaccinations.

**Ratio of age-specific mortality rates in 2020 and 2021 to mortality rates in 2017–2019**





## Increased migration since 2014, largely from Ukraine and France

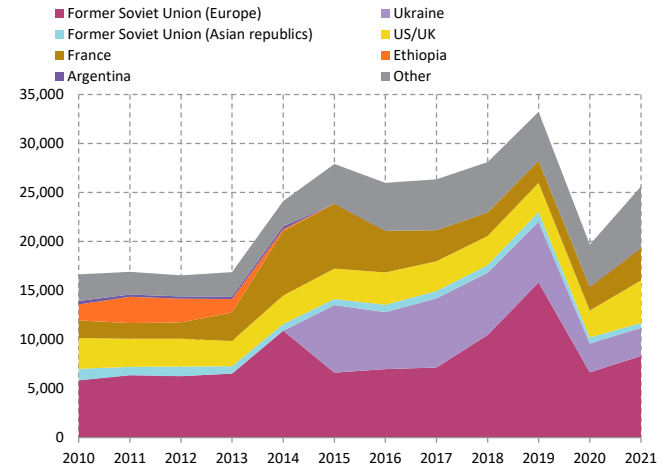
**In the figure:** The number of immigrants to Israel was stable between 2010 and 2013 and began to rise sharply in 2014, driven primarily by an increasing number of immigrants from Ukraine and France. These more than compensated for the reduction in migration from Ethiopia. By 2018, the number of French immigrants returned to its pre-2014 levels, and, between 2017 and 2019, the number arriving from Russia more than doubled, reaching 15,800 in 2019.

Not surprisingly, the COVID-19 pandemic led to a sharp reduction in the number of immigrants in 2020, which fell from 26,000–33,000 per year between 2015 and 2019 to 19,700. The reduction was almost wholly driven by a fall in immigration from Russia and Ukraine.

During 2021, immigration largely recovered. By December of 2021, almost 26,000 immigrants had moved to Israel, including the largest number of Americans since 1973.

**Beyond the figure:** The current war between Russia and Ukraine will increase immigration from both countries, and perhaps from others in Eastern Europe.

**Total immigrants, by country of origin**



Source: [Alex Weinreb](#), Taub Center | Data: CBS

## Fertility in Israel has fallen, but is still far higher than in any other OECD country

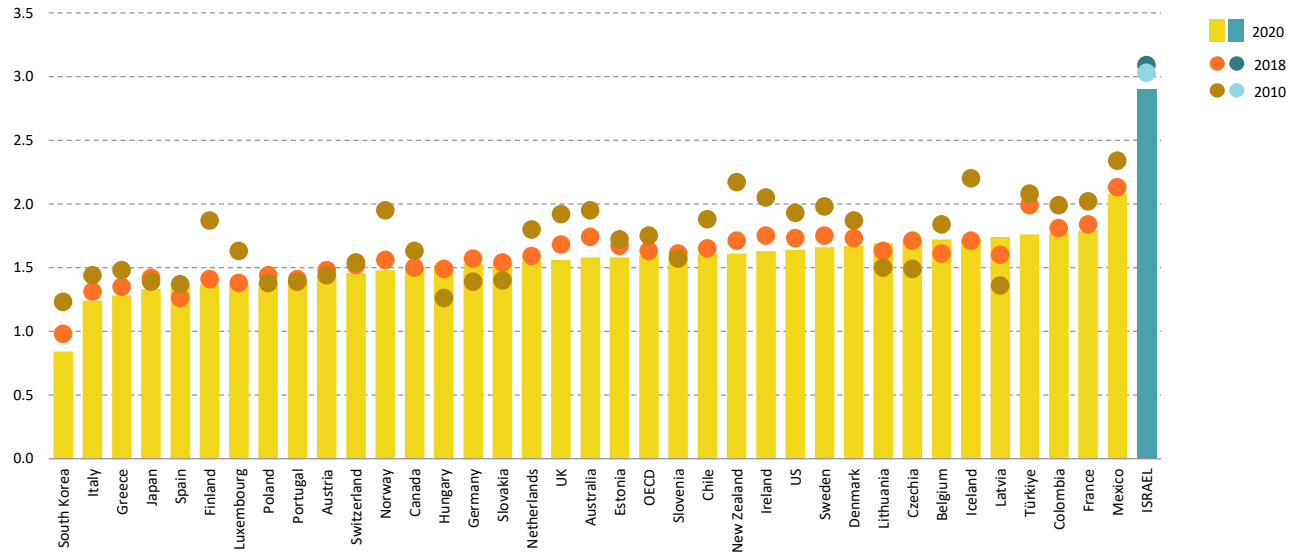
**In the figure:** Between 2010 and 2018, the Total Fertility Rate (TFR), the most widely used measure of the average number of children per woman, fell in almost every OECD country. In some — Finland, Norway, Sweden, Iceland, and New Zealand — the TFR fell by more than 0.4 children.

TFR did not fall in Israel in this initial period. However, it did fall by 0.2 children between 2018 and 2020. This was the first sustained reduction in fertility in Israel since the 1990s. Even with this reduction, Israel's TFR in 2020 remained almost

double that of the OECD average, which from 2010–2020 fell from 1.71 to 1.55. Israel's TFR in 2020 was also 1.1 children higher than Europe's highest fertility country (France), and 1.3 children higher than in the US.

**Beyond the figure:** In terms of conceptions, 2020 was the last pre-COVID-19 year. We await data that will tell us whether the COVID-19 pandemic magnified or reversed these long-term fertility trends.

### Total Fertility Rates (TFR) in OECD countries, 2010, 2018, and 2020



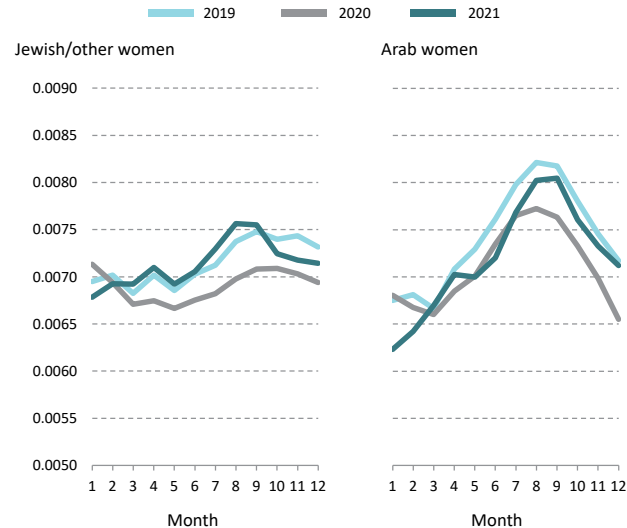
Source: Alex Weinreb, Taub Center | Data: OECD

## Early indicators point to an increase in Jewish/other fertility due to COVID-19 and a cessation of the decrease among Arabs

**In the figure:** Thus far, COVID-19 appears to have stopped any continued reduction in fertility rates in Israel. The General Fertility Rate (GFR) of Jewish/other women rose moderately in March 2021 — reflecting births conceived around June 2020 — climbing above 2019 levels in the peak fertility summer months. By October 2021, Jewish/other women's fertility fell below its 2019 level — these conceptions occurred during the high mortality months of the preceding January and February. The GFRs of Arab women in 2021 largely tracked those of 2020 for the first half of the year, then rose toward 2019 levels in the second half. This hints at a change in timing of fertility, as people delayed pregnancy during the pandemic's early days.

**Beyond the figure:** In raising the fertility rates of Jewish/other women, and preventing further reductions in Arab women's fertility rates, COVID-19 appears to have had a different effect on fertility in Israel than in most developed countries.

**General Fertility Rates (GFR) for women ages 15–49**



Source: [Alex Weinreb](#), Taub Center | Data: CBS

---

# SPOTLIGHT

## Violence and the Israeli Arab Marriage Market

There has been a concerning trend of increased violence, including murders, and a decline in the sense of security in Arab society. In this Spotlight, we show some reasons for this change, and investigate how this can be expected to develop. We show that due to demographic and economic factors, there is real reason for concern.

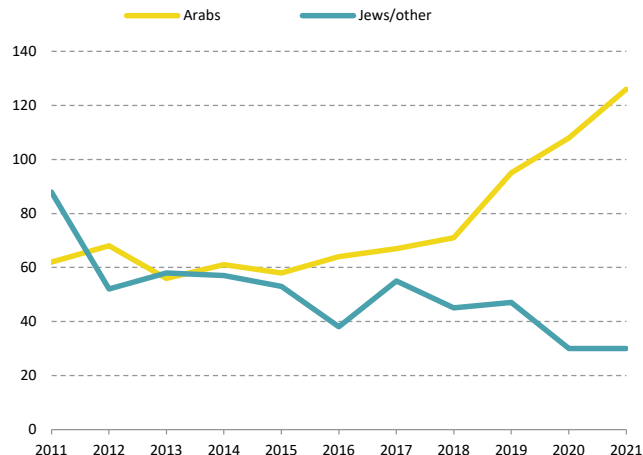


## Increase in the number of murders in the Arab sector, decrease in the Jewish sector

**In the figure:** Between 2011 and 2021, there was a gradual decline in the number of murders in Israel's Jewish population, even though the population grew by around 20%. In contrast, from 2016 to 2021, the number of murders in the Arab population doubled.

**Beyond the figure:** Although Arabs constitute roughly 21% of the population, around 80% of all murders in Israel in 2020 and 2021 occurred in the Arab population.

Number of murders, by sector



Note: 2021 figures for the Arab sector are until December 1, 2021 and for the Jewish/other sector are until October 1, 2021.

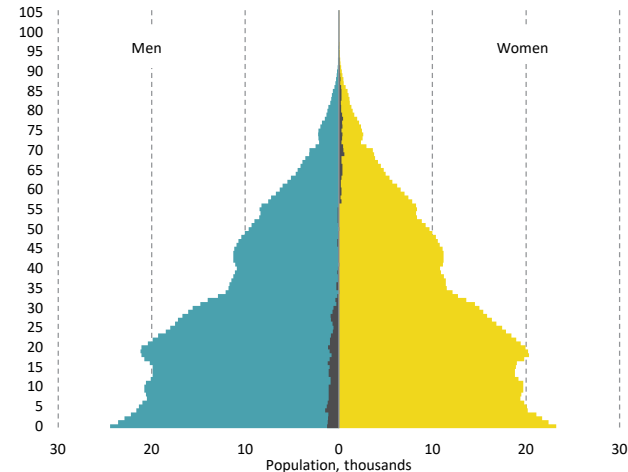
Source: [Alex Weinreb](#), Taub Center | Data: El-Hai and Shaalan, 2021

## Large youth bulge in the Arab population — part of the explanation for the increased violence

**In the figure:** The age structure of Israel's Arab population is young, meaning that younger cohorts tend to be larger than older cohorts. There are some deviations from this pattern, however. Most notably, there is a substantial “youth bulge,” meaning there are more people in their late teens and early twenties than in their early or mid-teens.

**Beyond the figure:** When a significant share of a youth bulge is socially disengaged — that is, un- or underemployed and not in higher education — societies tend to experience higher crime rates and more social instability in general. One of the underlying reasons for the rapid growth in crime and murder rates in the Arab population is this demographic structure.

Israeli Arab population by sex and single years of age, 2021



Note: Projections are based on CBS, 2019; Weinreb, 2020.

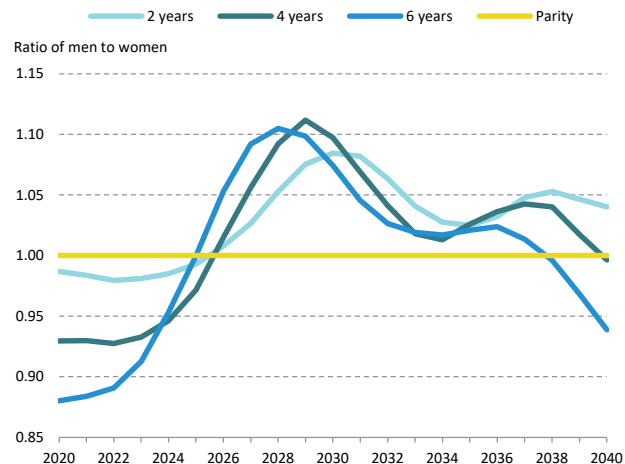
Source: [Alex Weinreb](#), Taub Center

## The Arab marriage market in Israel will be imbalanced for a decade and a half

**In the figure:** Using population projections up to 2040, we look at the ratio of Arab men at their current median age at first marriage (25–28) to women 6 years younger than them (the current spousal age difference in the Arab sector) as well as 4 years younger and 2 years younger. Irrespective of the spousal age difference, the ratio will climb over the next few years. By 2026, it will exceed 1.0. By 2028, it will exceed 1.05, and stay there under all spousal age difference scenarios until the early 2030s. The ratio will not fall below parity again until 2040.

**Beyond the figure:** The combination of a young age structure and younger brides has long meant that there are more Arab women than men on the marriage market. Beginning around 2026, this ratio will reverse, making it increasingly difficult for Arab men in Israel to find a wife within the Israeli Arab population. This may be an added source of sociopolitical instability.

**Ratio of Arab men at median marriage age (25–28) to Arab women who are 2, 4, or 6 years younger than them**



Source: [Alex Weinreb](#), Taub Center | Data: Weinreb, 2020

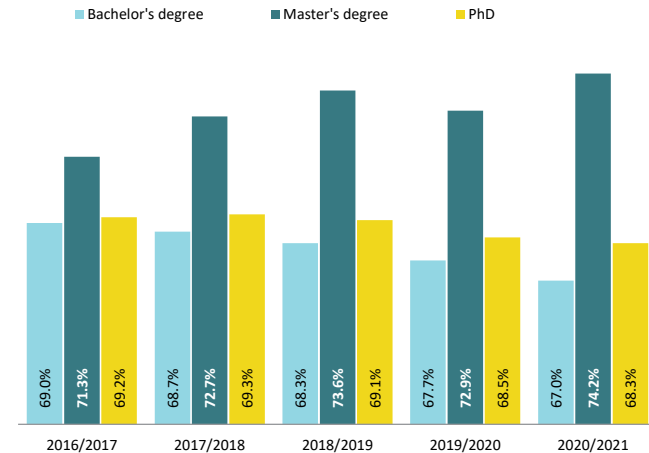


## Large gender imbalance in Arab higher education

**In the figure:** Higher education in Israel's Arab population is increasingly feminized. In the 2020/2021 school year, almost three-quarters of Arab students enrolled in master's-level programs — the fastest growing level of higher education for Israeli Arabs, as seen on page 96 — were women. These percentages had been slowly rising over the prior 5 years. Also, more than two-thirds of Arab students enrolled in undergraduate or PhD level programs in Israel were women, just several percentage points lower than the level 5 years earlier.

**Beyond the figure:** Rising levels of higher education among women will increase their participation in the labor market. It will likely also lead to other desirable societal outcomes such as improved child and adult health and lower rates of poverty. On the other hand, the increasing feminization of higher education may make it more difficult for women and men to find appealing marital partners within the Arab population; and where marriage does occur, educational mismatch may become a source of conflict within marriage.

**The share of Arab women out of all Arab students studying for an academic degree**



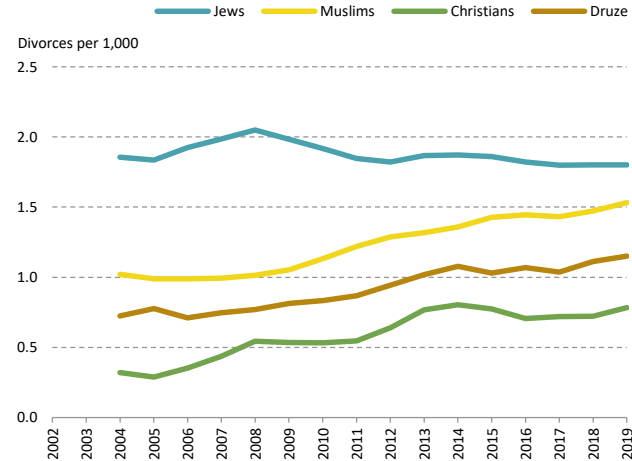
Source: Alex Weinreb and Avi Weiss, Taub Center | Data: Council for Higher Education, 2016–2020

## Rapid increase in divorce rates in Israel's Arab society

**In the figure:** Between 2004 and 2019, crude divorce rates increased by more than 50% among Muslims and Druze, and more than doubled among Christians (Arabs and non-Arabs). Among Jews, in contrast, the rate fell slightly. In fact, at observed rates of change in the 2009–2019 period, the crude divorce rate will be higher among Israeli Muslims than Jews by 2023.

**Beyond the figure:** Marriage in Israeli Arab society has become increasingly unstable. This appears, in part, to be driven by rapidly increasing educational differences between young men and women, with the latter pulling ahead by a substantial margin, as shown in the previous figure.

Trends in the crude divorce rate



Note: Cumulative three-year average.

Source: [Alex Weinreb](#), Taub Center | Data: CBS, 2021

---

# SPOTLIGHT

## Israel's Southern District

The Southern District of Israel has many unique demographic features that distinguish it from other districts, including the large Bedouin community and the large number of residents from the former Soviet Union. The South has been changing, and, in this Spotlight, we highlight some of the more significant changes.

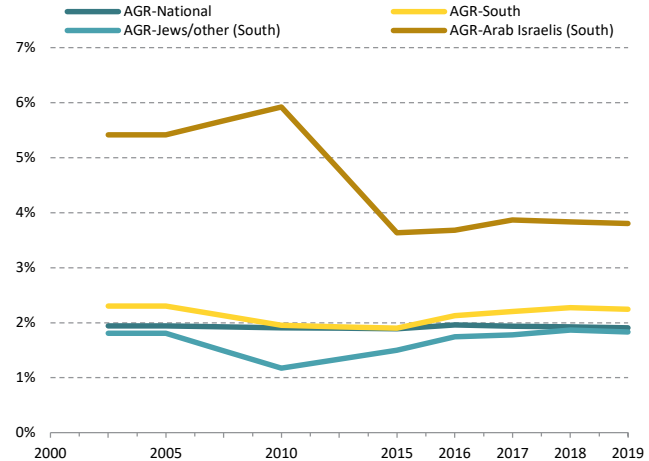


## The population in the south of Israel is growing more quickly than in the rest of the country

**In the figure:** Since 2015, the Southern District's population has grown by between 25,000 and 29,000 per year, reflecting a 2.2–2.3% rate of growth per year. That is higher than the national average. It implies a population doubling-time of around 31 years. Within the South, the growth rate is much higher in the Arab population — around 3.8% per year between 2015 and 2019 — than in the Jewish/other population — around 1.8% per year.

**Beyond the figure:** The increasing demographic weight of the Bedouin populations in the South mean that average regional characteristics related to education, employment, health, and so on, are increasingly influenced by this growing minority.

**Annualized population growth rates (AGR) in the Southern District**



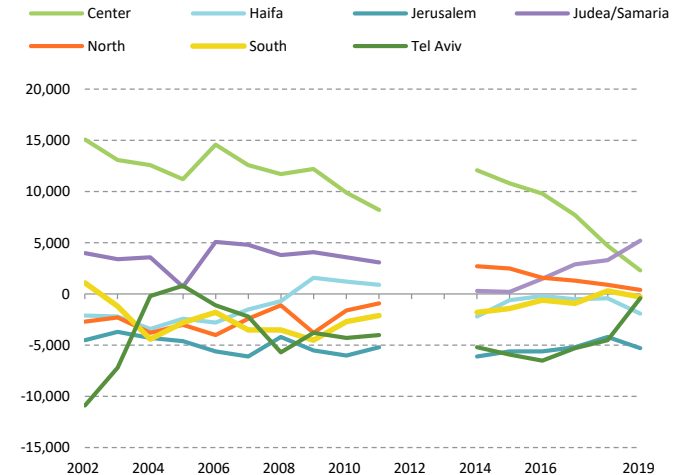
Source: [Alex Weinreb](#), Taub Center | Data: CBS

## The Southern District is no longer experiencing negative net migration

**In the figure:** Between 2002 and 2017, net migration to the South (not including immigrants arriving from outside of Israel) was negative. In other words, more people left the South than moved to the South from elsewhere in Israel. In 2018 and 2019, net migration hovered around zero. Similar trends can be seen in the Northern District, and even stronger positive trends in the Haifa District.

**Beyond the figure:** Israel's two main peripheral regions, the South and the North, are no longer losing population to the Central region as they did for most of the first two decades of this century.

Net migration by district



Note: Migration data for 2012 and 2013 were not published, hence a break in the data.

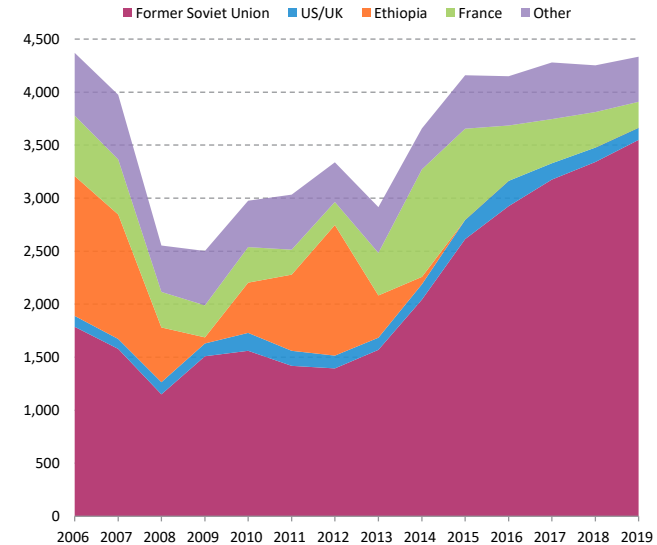
Source: [Alex Weinreb](#), Taub Center | Data: CBS

## An increasing percentage of migrants to the South are from the former Soviet Union

**In the figure:** Since 2013, the immigrant population in the South has been increasingly drawn from the former Soviet Union; they accounted for 82% of the 4,335 new immigrants who settled in the South in 2019, augmenting the 25,300 immigrants who had come since 2006. In contrast, the South attracts very few immigrants from Anglophone countries, and immigration from Ethiopia, substantial up until around 2014, dropped to zero after that.

**Beyond the figure:** The South has significant national, linguistic, and religious diversity. About 10% of adults ages 45–54 are categorized as neither Jewish, Muslim, nor Christian; this is a higher percentage than in any other region in the country.

The number and origin of migrants to the South



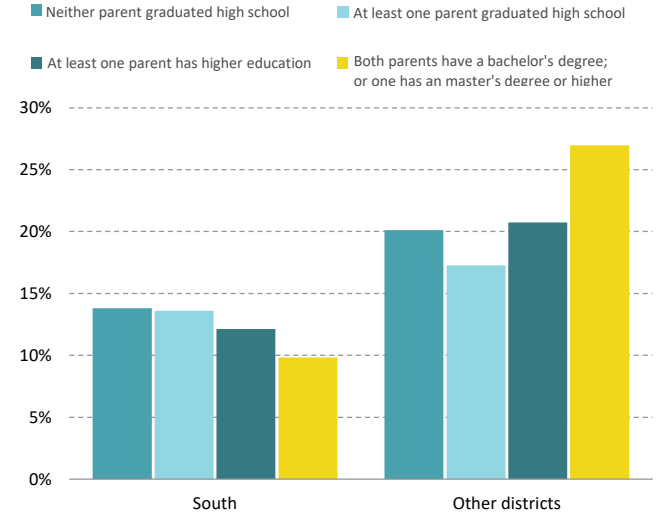
Source: [Alex Weinreb](#), Taub Center | Data: CBS

## Migrants to the South are more likely to be first-generation college graduates than migrants to other areas in Israel

**In the figure:** Young people who choose to move to the South are less likely to have highly educated parents than those who migrate to other regions. This is a distinctive pattern.

**Beyond the figure:** In general, the probability of migration is higher for people with more education — that is a standard finding across the world. Here, however, since we are adjusting for migrants' own education in these estimates, the negative effect of parents' education implies that migrants to the South are more likely to be *first-generation* university educated than their counterparts who migrate to other regions. That means they are, on average, less wealthy. It may also mean that they are more motivated or have more grit.

### Five-year probability of a 20–39-year-old migrating into the Southern District, or other districts in Israel, by parent's education



Note: Adjusted for age, ethnicity, and own education.

Source: [Alex Weinreb](#), Taub Center | Data: CBS, Social Survey

## Residents in the periphery tend to be more satisfied with their lives than those in heavily populated areas

**In the figure:** Residents of all “periphery” districts score higher on almost all measures of satisfaction than their counterparts in the Central, Jerusalem, and Tel Aviv Districts. This is particularly clear in terms of satisfaction with life in general (including the strength of family ties and feelings about neighbors), and economic satisfaction (economic situation in general, income, and work).

**Beyond the figure:** After being shown this figure, many local leaders in the South claimed it was related to the greater affordability of homes outside the central areas of Israel. Affordability, they asserted, also allows for more time to engage in other activities that enhance satisfaction.

**Proportional difference between district level probability of responding “very satisfied” and national average, adjusted for age, education, and ethnicity**



Note: Districts are sorted by “Economic” satisfaction.

Source: [Alex Weinreb](#), Taub Center | Data: CBS, Social Survey

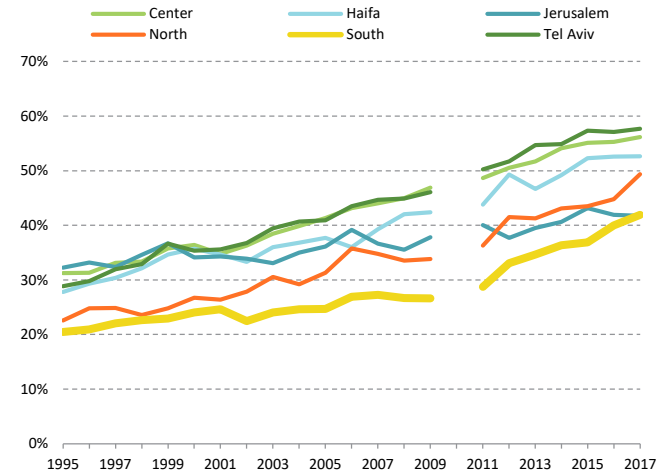


## Education levels are rising in the South as in other areas in Israel, but still lag behind other districts

**In the figure:** Regardless of substantial increases in the percentage of Jewish residents with a bachelor's degree over the last 20 years, the South's Jewish population remained the least educated in Israel up to 2017. Among 30–44-year-old Jewish residents of the Central and Tel Aviv districts, around 57% have a bachelor's degree. Among those in the North, about half have a bachelor's degree. The South, with around 40% having a bachelor's degree, lagged behind. And even though this places it on par with the Jerusalem District, secular education levels in the latter are pulled down by a much larger Haredi population, which suggests that Jerusalem's non-Haredi Jewish population is considerably more educated than its Southern District counterpart.

**Beyond the figure:** These relatively low levels of education remain one of the South's biggest disadvantages when it comes to attracting investment. It has the least educated labor force of any district in Israel. This is the South's "low-skill trap."

Share of Jews ages 30–44 with a bachelor's degree



Note: In 2010 there were broad changes in the survey methodology. Data have been concatenated to their level after the break in the data.

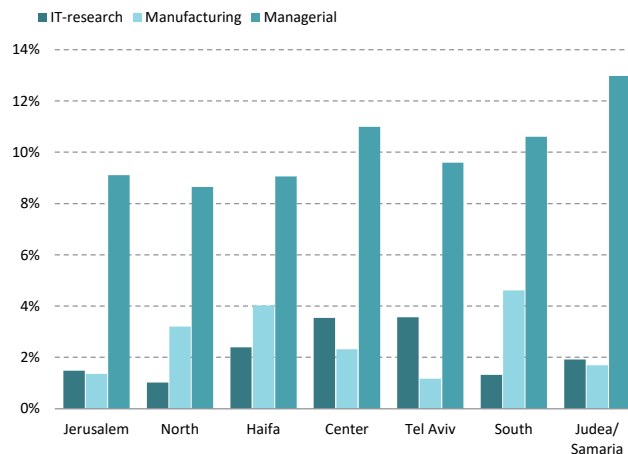
Source: [Alex Weinreb](#), Taub Center | Data: CBS, Labor Force Survey

## A larger percentage of high-paying jobs in the manufacturing sector in the South than elsewhere in Israel

**In the figure:** As of 2016–2017, employees in the Southern District had a considerably lower probability — 60% of the national average — of being in a position categorized as scientific R&D or computer programming. On the flipside, an employee in the South was 76% more likely to be employed in a high-end manufacturing position than the national average. On this measure, the Southern District scored highest in the country.

**Beyond the figure:** There appears to be a regional concentration of skills and infrastructure associated with these high-end manufacturing positions. That provides a comparative advantage for certain types of investment in the south of Israel.

**Probability of someone currently employed being in one of the three categories of relatively high-paying occupations, by district, adjusted for age and education**



Source: [Alex Weinreb](#), Taub Center | Data: CBS, Labor Force Survey

---

# WELFARE

For obvious reasons, government expenditures on welfare, and, in particular, on unemployment payments, skyrocketed from the onset of the pandemic through the middle of 2021. In this section, we take a look at various aspects of the treatment of the COVID-19 pandemic, including cash benefits and social services, with an interesting glimpse into households and the use of screens to occupy children during the lockdowns. We also consider the level of expenditures on welfare in general, and at the dismal situation with respect to the take-up of selective programs.

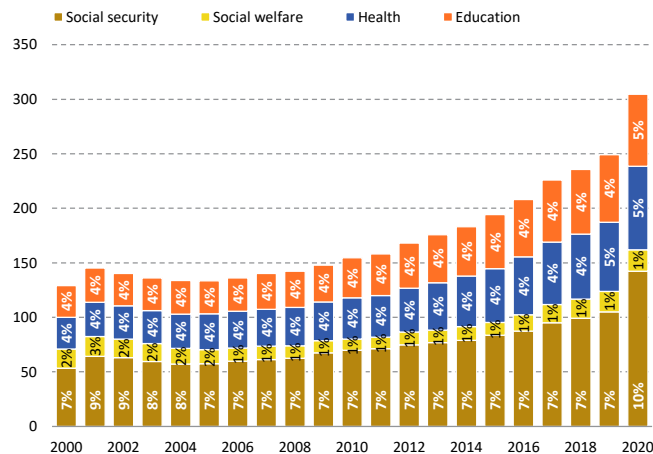


## The majority of the increase in social expenditure during the COVID-19 crisis went toward welfare

**In the figure:** In 2020, social expenditure in Israel stood at about NIS 304 billion, an increase of about NIS 55 billion relative to the previous year. Social expenditure as a share of GDP crossed the 20% mark in 2020 for the first time in two decades, reaching a level of 22%. Most of the increase in social expenditure (about 70%) was concentrated in social welfare, and about one-quarter was a result of increased expenditure on healthcare.

**Beyond the figure:** The increase in expenditure on social welfare was for the most part the result of an increase in two main components of social security expenditure: the increase in unemployment benefits and the introduction of a quasi-universal grant provided by the National Insurance Institute. Following the large increase in social expenditure in 2020, it is likely that social expenditure in Israel will shrink in coming years. Such a development is expected to return Israel to the lowest ranks among welfare states.

**Social expenditure by category and as a percent of GDP**  
NIS billion, 2020 prices



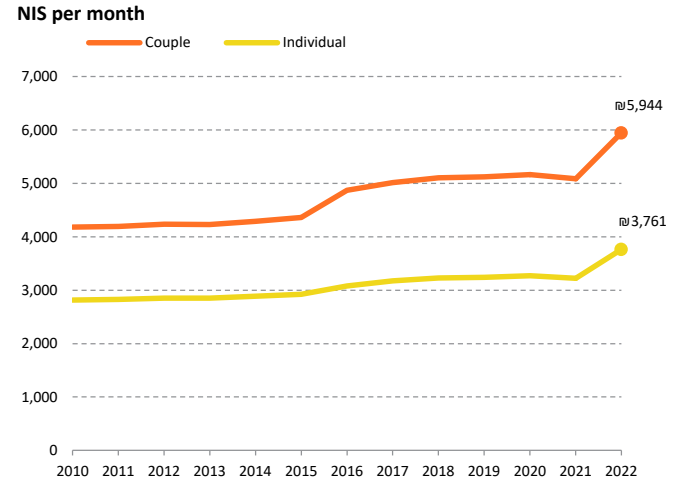
Source: John Gal and Shavit Madhala, Taub Center | Data: Ministry of Finance, State Budget files; NII

## A substantial rise in income for seniors living in poverty

**In the figure:** This year (2022), Israel adopted one of the main recommendations made by the Elalouf Committee for the War Against Poverty in 2015, namely to increase the income of seniors living in poverty by increasing the income support supplement paid to those eligible for an old-age benefit where it is their only or main source of income. Since 2016, when the gradual implementation of the Committee's recommendations began, there has been an increase in the benefit paid to low-income senior citizens; however, the current move increases the benefit significantly, both for a couple and for a single individual.

**Implications:** The aforementioned implementation is meant to lift many seniors out of poverty, even if the improvement in their economic welfare is not very large. As shown, the monthly addition is NIS 972 for a couple and NIS 615 for a single individual relative to 2020.

**The basic old-age benefit supplemented by income support for ages 70–80**



Note: The data for 2022 are based on the total average benefit for the months January–March 2022.

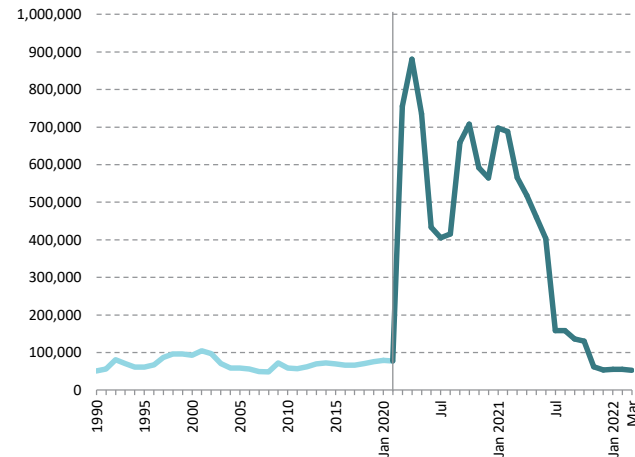
Source: John Gal and Shavit Madhala, Taub Center | Data: NIL

## The number of those receiving unemployment benefits is lower than it was prior to the pandemic

**In the figure:** The unemployment insurance program was the main tool used during the COVID-19 pandemic. Changes made in the structure of the program expanded eligibility, and within a short period of time the number of recipients shot up from a monthly average of about 75,000 to a peak of 880,000 in April 2020, the majority of whom were sent on unpaid leave. Beginning in April 2021, the number of recipients declined continuously and significantly to about 53,000 by the end of 2021, following the tightening of the program's conditions in parallel with the recovery in the labor market.

**Beyond the figure:** The adjustments made in the unemployment benefits program helped many workers keep their jobs through the crisis. The labor market recovery during the second half of 2021 justified a modification of the unemployment insurance program to fit the new reality. These changes are likely to again make unemployment insurance a tool with a limited ability to deal with unemployment and provide protection to the jobless. It is likely that we will see an increase in the number of those receiving income support.

**Number of unemployment insurance recipients, monthly average**



Note: The vertical line marks the beginning of the COVID-19 epidemic.

Source: [John Gal and Shavit Madhala](#), Taub Center | Data: NII

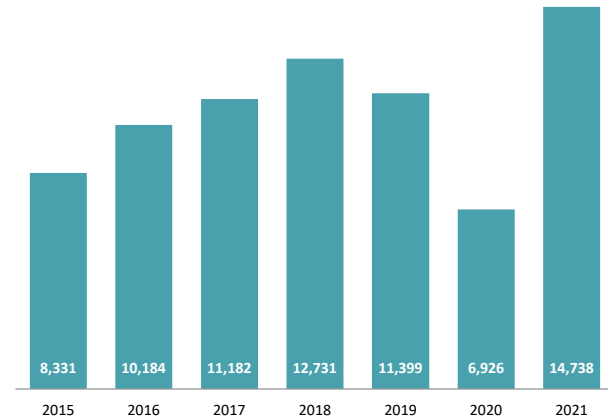
## Sizable changes in the number of participants in vocational training during the crisis

**Background:** Despite the importance attributed to vocational training, particularly when many of the unemployed do not have a higher education, there was great difficulty utilizing training allocations in the first year of the crisis.

**In the figure:** In 2020, there was a substantial decline in the number of participants in training programs. In 2021, there was a substantial rise in the number of participants, in particular among those in on-the-job training (OJT) programs.

**Implications:** Vocational training can serve as an important tool to improve the skills of the working-age population, improve labor productivity, and reduce social inequality. This is particularly true given the return to full employment, noting that it was primarily low-skilled and low-paid workers who were affected by the pandemic. Efficient and broad use of this tool will require a larger allocation of resources, constant revision of the programs to meet the labor market's changing needs, monitoring of the effectiveness of State-financed programs, and the implementation of lessons learned in future programs.

**Participants in adult vocational training funded by the division for professional training**



Source: John Gal and Shavit Madhala, Taub Center | Data: Ministry of Welfare and Social Affairs

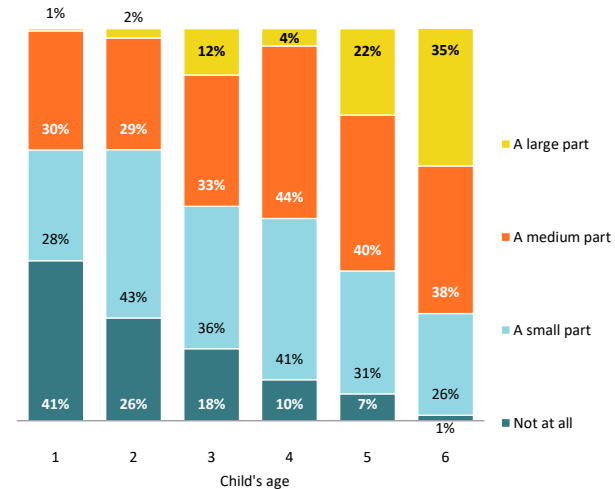
## Young children spent time in front of screens during the first lockdown, contrary to professional advice

**Background:** There is wide-spread agreement in the research and policy literature that screen use can hinder optimal child development, particularly among very young children. It has negative effects related to weight gain, sleep disorders, and behavioral and emotional problems, and may also harm the cognitive development of young children. Among preschool-age children, watching screens can harm language and literacy development. In the spring of 2020, the Taub Center conducted a survey of the use of screens during the first lockdown.

**In the figure:** There is clear evidence that the amount of time spent watching television increased with age for children ages of 1–6. It is also clear that a great number of children under 2 were exposed to screen time, against the advice of professionals who advise no screen time at this age.

**Beyond the figure:** Looking at “play time” on other screens (smartphones and tablets), the trend is similar; more than 40% of parents of 1-year-olds reported that it was a part of their children’s daily activities.

**Daily television watching among young children during the COVID-19 lockdown, by child’s age**



Source: Navon, Bowers, Blank, Vaknin, and Shavit, Taub Center | Data: Parent’s Survey During the First COVID-19 Lockdown, Taub Center



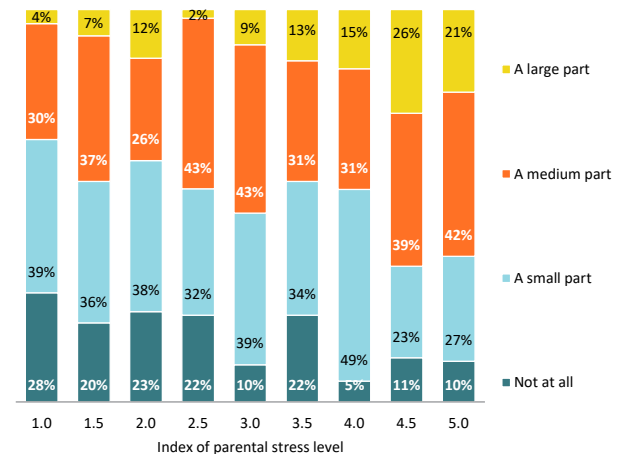
## Wider screen usage on average among children with parents reporting higher levels of stress

**In the figure:** In the study discussed on the previous page, we found that screen time among young children increases with their parents' psychological stress level. This figure shows the average screen time use among children ages 1–6 according to the index of parent's psychological stress.

**Beyond the figure:** The findings also showed that children's screen time was higher among children whose parents did not have a higher education and that parental stress levels during the lockdown were higher among Arabs and low-income families.

**Implications:** Based on an examination of the findings in view of theoretical models in the literature on parenting, it can be assumed that they reflect a decline in the psychological welfare of the parents, which in turn affects their availability and their emotional ability to set boundaries for their children. These results point to the importance of aiding parents of young children in dealing with stress and providing them with guidance on limiting screen time, perhaps through the Tipat Halav clinics (Mother and Child clinics) or pediatricians.

**Daily television watching among young children during the COVID-19 lockdown, by parental stress level**



Source: Navon, Bowers, Blank, Vaknin, and Shavit, Taub Center | Data: Parent's Survey During the First COVID-19 Lockdown, Taub Center

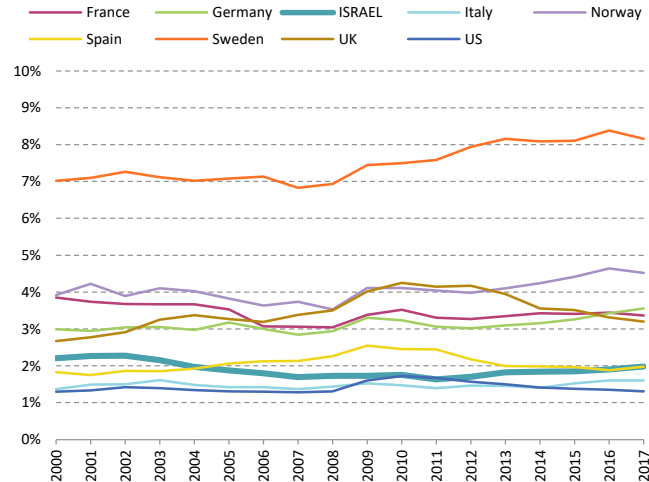
## Expenditure on social services as a percent of GDP is low relative to other welfare states

**In the figure:** A comparison of Israel with selected welfare states shows that the welfare system's level of expenditure on social welfare services is relatively low. In 2017, the average expenditure on social welfare services in these countries was 3% of GDP, while in Israel it was 2% — similar to the expenditure in Spain and somewhat higher than that in Italy and the US.

**Beyond the figure:** There is a low level of expenditure on services in-kind in Israel, including services to senior citizens (not including expenditure on long-term care), to individuals with disabilities and to families with children, on housing and employment services, and on other assistance outside these categories that is provided as a welfare service. This has implications for the scope of solutions provided to deal with social problems and on the quality and accessibility of existing services, particularly in the periphery.

**Implications:** A significant increase in welfare expenditure to the level common among other welfare states will provide the target population with a higher quality of life.

Expenditure on social welfare services, as a percentage of GDP



Note: Expenditure on in-kind benefits in welfare fields.

Source: John Gal and Shavit Madhala, Taub Center | Data: OECD

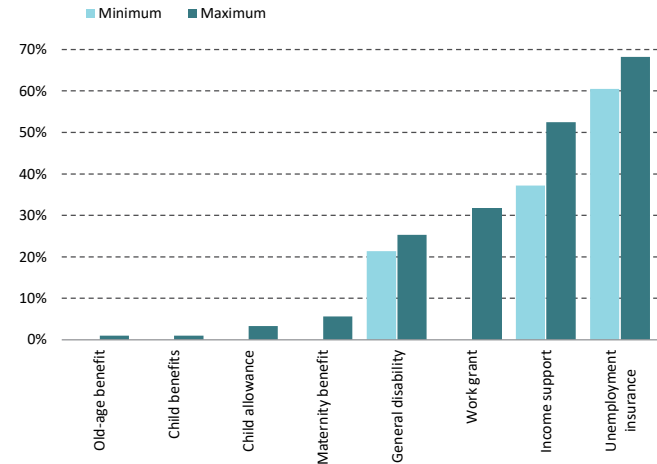
## Low take-up of the non-universal social benefits

**In the figure:** In many instances, the target population of social programs do not claim their rights. This is not true for universal programs, which do not condition eligibility on income and for which eligibility is straightforward. When eligibility is conditioned on a complex bureaucratic process and is intended only for those who can prove particularly low income, the take-up rate among eligible individuals is low.

**Beyond the figure:** Individuals who do not claim their social security benefits (and to a lesser extent those who are eligible for unemployment benefits) are usually members of the weakest and most marginalized groups in Israeli society, and they do not receive the entitled assistance that could help alleviate their distress.

**Implications:** Increasing the rates of take-up of social programs requires: greater accessibility to information about the programs; removal of bureaucratic barriers; use of digital platforms; automation; outreach to eligible individuals; and more. For example, providing the work grant automatically to those eligible would certainly increase the take-up rate.

Rate of non-take-up of social rights, selected years



Note: Due to the complexity in measuring non-take-up, in some cases it is presented as a range, with the maximum and minimum levels based on various basic assumptions. For further details, see Gottlieb, 2021.

Source: [John Gal and Shavit Madhala](#), Taub Center | Data: Gottlieb, 2021; State Comptroller, 2021



---

# EDUCATION

Some substantial changes have occurred in the education system over the past twenty years — decreases in class size, increases in the number of hours per student, higher education levels for teachers, and more. In this section, we present some of these changes.

One set of changes that occurred over a fairly extended period in the last century concerns tracking in high schools. In the following pages, we show how this played out in terms of the probability of attaining academic degrees and the salary earned in the labor market.

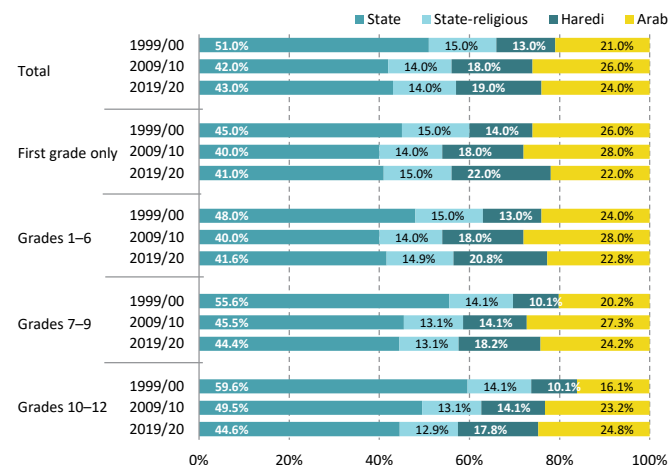


## Stability in the distribution of students over the four education systems

**In the figure:** The demographic composition of the education system in Israel has changed substantially in the last twenty years. The main change occurred between 1999 and 2009, while there was relative stability from 2009 to 2020. However, looking at Grade 1 students — the age group that is the best indicator of future trends — shows that the State education system is maintaining its share of students, with a slight upward trend, due to both an increase in fertility and the inflows from the State-religious and Haredi (ultra-Orthodox Jewish) systems. The State-religious system is maintaining its size despite an increase in fertility, the Haredi system continues to grow rapidly, and the Arab system is contracting.

**Beyond the figure:** These changes cast doubt on the forecast that in the coming years the Arab and Haredi student populations will grow beyond 50% of the total student population, but it confirms the difficulty in finding a common denominator that will unite the education system since such a large part of it belongs to the two weakest members of the “four tribes.”

The distribution of students in Israel



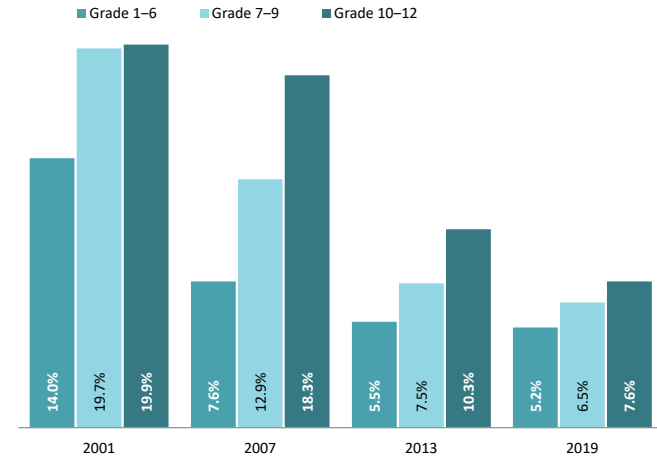
Source: Nachum Blass, Taub Center | Data: Ministry of Education, Mabat Rahav website

## The share of Jewish students who were not born in Israel is declining

**In the figure:** For many years, the problems of the education system in Israel were attributed to the fact that a large share of the students were immigrants or the children of immigrants — many of whom came from the former Soviet Union in the 1990s. However, during the last 20 years, the situation has changed dramatically and currently only 5.2% of students in Grades 1–6 (and even fewer in Grade 1 only) were not born in Israel, as opposed to 14% in 2001.

**Beyond the figure:** The implication of this statistic is that the vast majority of students arrive in Grade 1 after at least two to three years in a Hebrew-speaking preschool. Moreover, for 69% of students in Grades 1–6, both parents were born in Israel. These figures show that managing immigrant children is not as central in Israel's educational system as it once was.

Share of Jewish students not born in Israel



## Narrowing of the gap between the Arab and Jewish sectors in the resources allocated to education

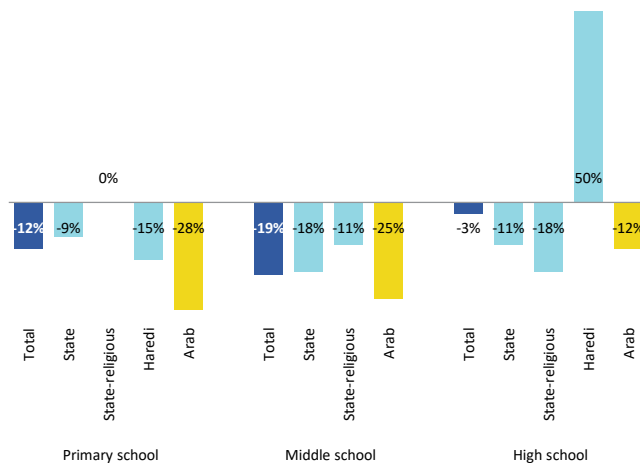
**In the figure:** The gap in resource allocation between the Arab and Jewish sectors continues to narrow. Between 2000 and 2020, class size in the Arab sector declined at a faster rate than in the Jewish sector, and the average number of students per full-time teacher in primary and middle schools also declined faster in the Arab sector than in the Jewish sector.

**Beyond the figure:** Although the data relate to all students, and do not take the weaker socioeconomic backgrounds of students in the Arab sector into account, this is still a substantial change. These outcomes are the result of several parallel processes: the reduced birthrate in the Arab sector, an increase in the share of the middle class in the Arab sector, a larger allocation of budget resources to the Arab education system, and greater attention and obligation by the Ministry of Education to reduce the gaps between the sectors.

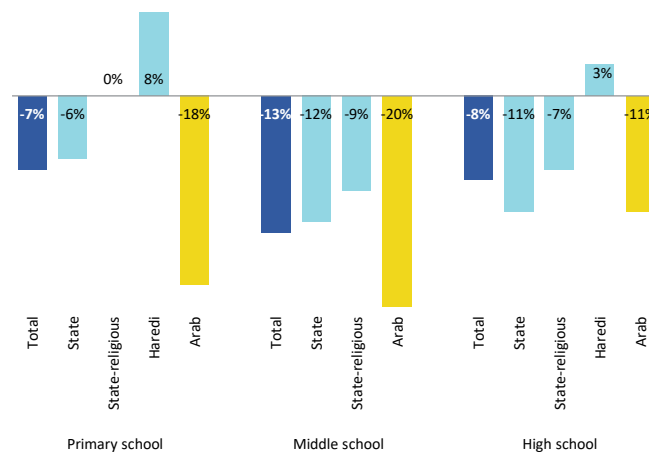


## Rate of change between the 1999/2000 school year and the 2019/2020 school year

Average number of students per full-time teacher position



Average number of students per class



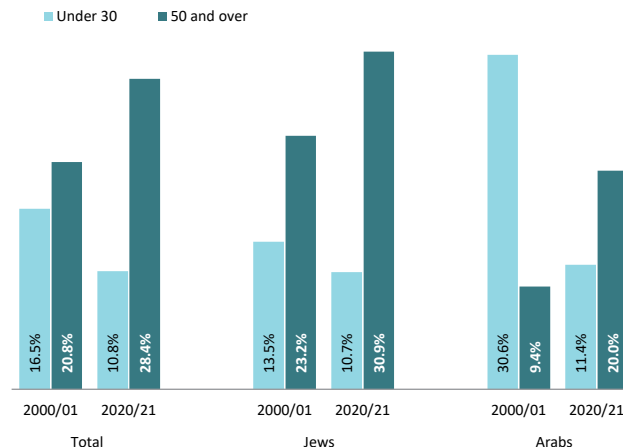
## The share of young teachers in the Arab population has fallen substantially

**In the figure:** During the past twenty years, the average age of teachers has increased. The share of older teachers has risen and the share of younger teachers has declined. This is especially pronounced in the Arab education sector.

**Beyond the figure:** The finding reflects demographic changes in the population of students studying education. In earlier periods, the Arab education system grew at a much faster rate than the Jewish education system, and the share of young teachers at the turn of the century was large.

Teachers in Israel are relatively young. In primary education, the share of teachers under 30 in the 2017/2018 school year was 13% as compared to 11% in the OECD, and the share over 50 was 21% in Israel as compared to 35% in the OECD. There are currently 11 countries in the OECD in which 40% of teachers are over the age of 50. Some of these countries could face a serious manpower crisis in their education systems in the future, although in some places the effect is offset by shrinking numbers of students due to very low fertility.

Teaching manpower by age and sector



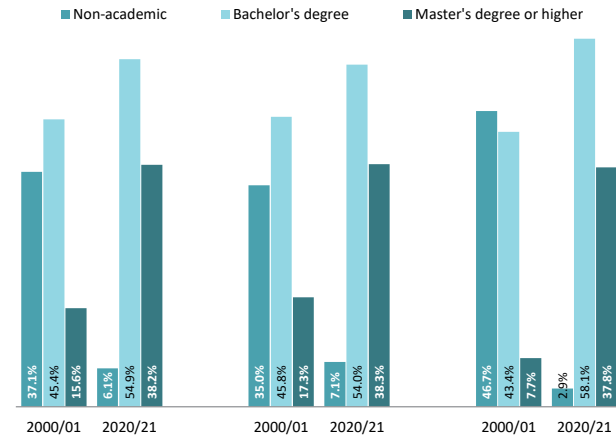
Source: Nachum Blass, Taub Center | Data: CBS, 2021

## A large increase in the education level of teachers in Israel

**In the figure:** One of the most noteworthy changes in teacher characteristics over the past twenty years is the meteoric rise in teachers' level of education, and, it is to be hoped, as a result, in their teaching skills. The increase was more pronounced in the Arab sector than in the Jewish sector, with the portion with a bachelor's degree in 2019/2020 higher in the Arab sector, and the portion with a master's degree similar between the two sectors.

**Beyond the figure:** The increasing level of education and seniority among teachers also has major budgetary implications, since it involves wage increases above and beyond the growth in the number of teachers and/or changes in labor agreements. In the discussions leading up to new labor agreements, attention should be paid to questions such as whether there should be a change in the relative importance placed on teacher education and seniority versus the quality of instruction and working conditions (e.g., schools serving disadvantaged populations and/or located in the geographic periphery).

Teaching manpower by education level and sector



Source: Nachum Blass, Taub Center | Data: CBS, 2021

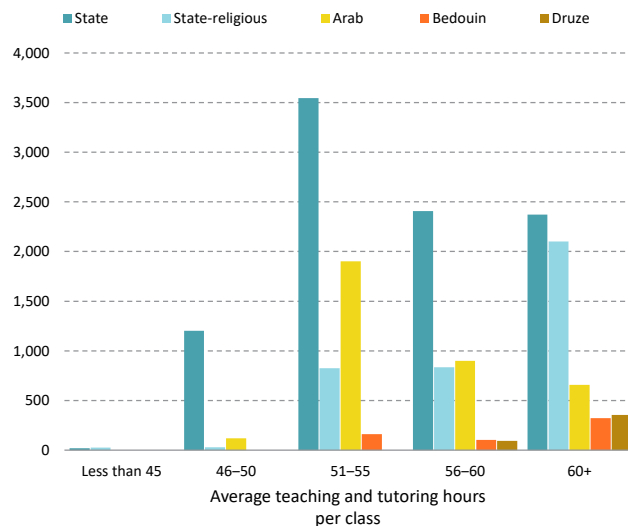
## Decreasing class size without increasing the education budget is feasible

**In the figure:** The education system currently allocates about 60 weekly teaching hours to primary school classes in official education (for a full-time teacher position including frontal teaching hours, tutoring hours, and preparation time). As a result of the affirmative action policy, the number of work hours allocated to schools that serve students with a low socioeconomic status is much higher than to schools with students with a high socioeconomic status (right figure). Furthermore, the share of high-budget classes is larger in the State-religious system and in the Arab system than in the State system (left figure).

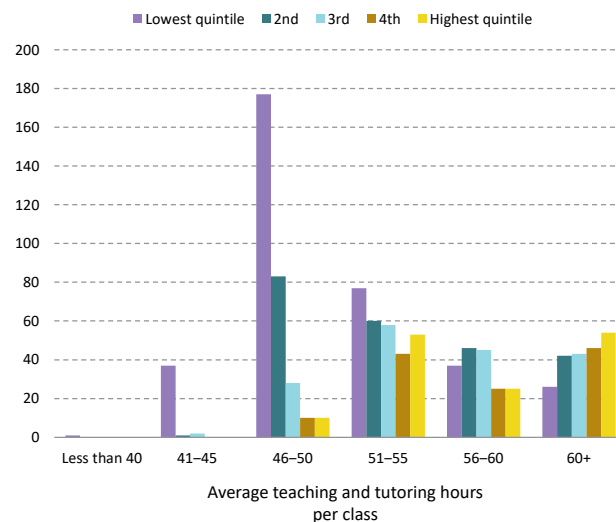
**Implications:** A different division of teaching hours, that is, fewer hours per class (say 45 instead of 60) would allow a reduction in class size without an increase, or perhaps even a decrease, in the cost of salaries (depending on the number of hours that are involved). This is easier to do in schools that serve students with weak socioeconomic status — primarily in the Jewish State-religious and Arab systems — because they have more teaching hours per class. This is a feasible policy since, according to the situation today, a share of the hours is not used for teaching the class as a unit.

If the desire is to optimally utilize the large number of hours allocated to the official primary education system while maintaining the budgeting system in its current format, principals should be given greater flexibility and room to maneuver in utilizing teaching hours.

**Distribution of classes by teaching and tutoring hours by school sector and supervision type, primary school only**  
Without long school days or classes with fewer than 20 students



**Distribution of schools by teaching and tutoring hours by socioeconomic quintile, primary school only**  
Without long school days or classes with fewer than 20 students



Source: Nachum Blass and Michael Debowy, Taub Center | Data: Ministry of Education

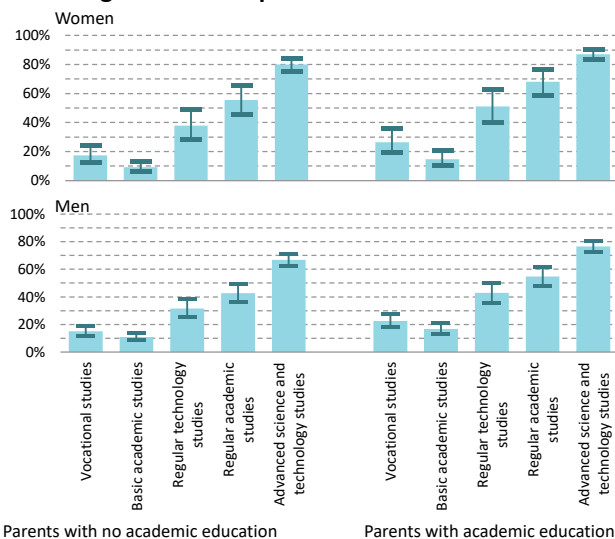
## Advanced science and technology track students whose parents have an academic education are most likely to attain an academic degree

**Background:** The secondary school system in Israel was transformed from one that separated basic academic and vocational studies to one that diversifies the various study tracks and emphasizes personal choice. During the 1980s and 1990s, there was a gradual process of academization of the vocational study tracks, and it became possible to obtain a Bagrut certificate in all of the subjects.

**In the figure:** The figure differentiates between five main study tracks in Israel's high schools. In all of the tracks, the likelihood of obtaining an academic degree is higher for those whose parents have an academic degree. In addition, graduates of the advanced science and technology track are more likely to attain at least a bachelor's degree.

**Beyond the figure:** The findings are particularly important for the basic academic track, which aims to expand the number of those eligible for a Bagrut certificate, the key to entering higher education. As seen, however, the chance of those who studied in this track to acquire an academic education is particularly low.

**The likelihood of acquiring an academic degree, by study track in high school and parent's education**



Note: Predictions are for Jewish students with average academic ability from a Mizrahi-Ashkenazi background. The t-bars represent 95% confidence intervals.

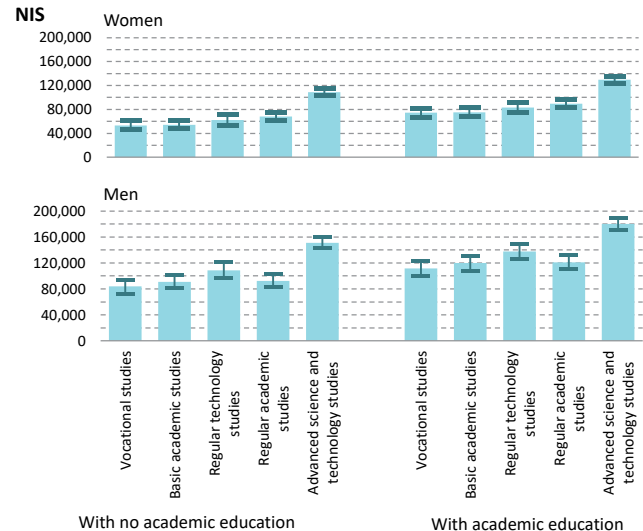
Source: Eyal Bar-Haim and Yariv Feniger, Taub Center | Data: CBS

## Advanced science and technology track graduates have the highest incomes at age 33

**In the figure:** In all tracks, there is a significant advantage in favor of those who attained an academic degree. Graduates of the advanced science and technology track have a major advantage in terms of income relative to graduates of the other tracks. Income disparities between graduates of other tracks are relatively small (when controlling for parents' academic education, Jewish ethnicity, and own academic achievement). Among men, there is somewhat of an advantage for graduates of the regular technology track over other tracks. Nonetheless, it is important to note that income was measured at a relatively young age and it may be that this advantage is related to an earlier entry into the labor market.

**Beyond the figure:** Studies in Israel and other countries show that, later in life, academic studies are usually linked to higher wages in the labor market relative to a technological-vocational education.

**Predicted annual earnings at age 33, by study track in high school and education**



Note: Predictions are for Jewish students with average academic achievement, from a Mizrahi-Ashkenazi background, and whose parents have no academic education. The 1-bars represent 95% confidence intervals.

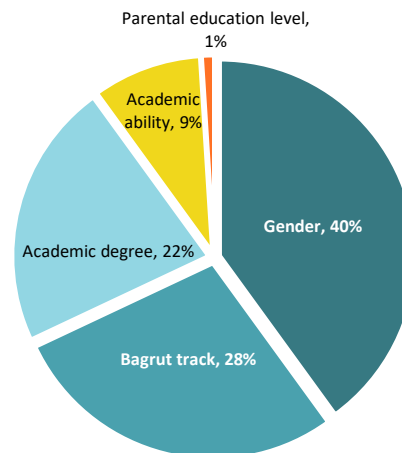
Source: [Eyal Bar-Haim and Yariv Feniger](#), Taub Center | Data: CBS

## High school study major has a substantial impact on wages beyond its influence on the likelihood of academic studies

**In the figure:** Looking at the factors that are likely to influence wage differences, gender is unsurprisingly the most important component, accounting for about 40% of the variance. Previous studies have shown that the lion's share of the gender wage gap is explained by factors such as work hours, employment sector, and occupation. High school study track accounts for almost 30% of the explained variance in wages.

**Beyond the figure:** The small contribution of parents' education level in predicting income can be explained by the fact that its effect is captured by other variables — the choice of study tracks and whether to attain a higher education. Interestingly, the share of the variance of wages explained by the study track remains highly significant even though the model also includes the component of an academic education. In other words, beyond the effect on the likelihood of continuing on to higher education, placement in study tracks is linked to the acquisition of skills relevant to the labor market and the development of employment aspirations.

**Components of the variance in explained wages at age 33**



Note: The explained variance is 11.04%. The model included parents' education, gender, Bagrut score, Bagrut major, and academic degree. Jewish students only.

Source: Eyal Bar-Haim and Yariv Feniger, Taub Center | Data: CBS

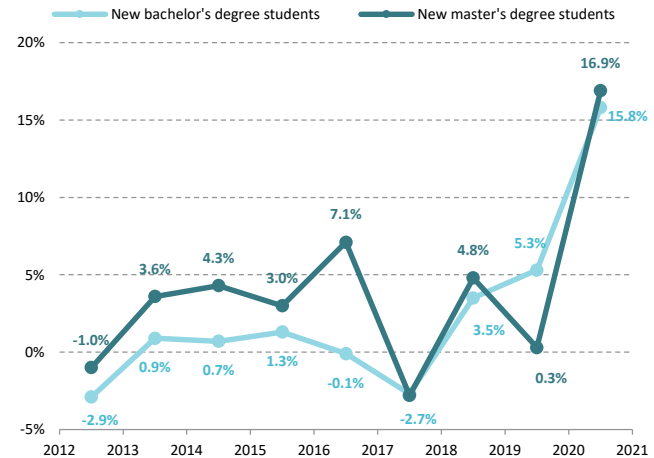


## Large increase in 2020 in enrollment in academia

**In the figure:** There was a surge in the share of new students during the 2020/2021 academic year, with the growth in the number of new bachelor's and master's degree students much higher than the average growth in the previous eight years.

**Beyond the figure:** Although some of the increase may possibly be attributed to deep-seated processes such as improved access to higher education and the growing importance of it in today's knowledge-based economy, the sharp rise in the annual growth rate likely stems largely from the conditions created by the coronavirus crisis. For instance, young men and women who might have traveled after their army service could not do so. Similarly, those who would have worked could not find employment. In addition, remote learning may have made academia more accessible for many. We will have to wait for data for a few years to understand to what extent this increase was a change in the timing of enrollment and to what extent it was an actual increase in enrollment.

**Percent change in the number of new bachelor's and master's degree students**



Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS

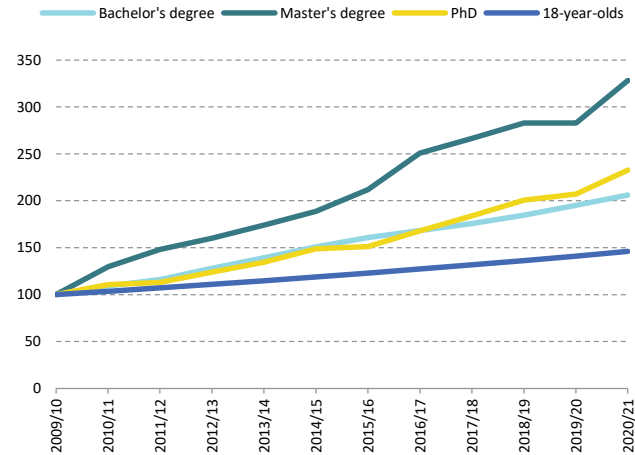
## The portion of the Arab population receiving a higher education has been rising steadily

**In the figure:** Between the 2009/2010 and 2020/2021 academic years, the number of Arab students enrolled in higher education in Israel increased 122%: from 25,951 to 57,552 students. The increase was especially sharp at the master's degree level, where the number of Arab students increased 228%, from 3,270 to 10,735. At both the bachelor's and master's degree levels, the percentage increases were much higher in academic colleges than in universities or teaching colleges. Over the same period, the size of Israel's university-aged Arab population increased by around 46%. So more than 60% of the total increase in enrollment is driven by rising rates of higher education (rather than population growth).

**Beyond the figure:** These rising levels of enrollment actually underestimate the total change in higher education among Arab students since an increasing number are enrolled in institutions outside Israel. Notably, more than half of the roughly 10,000 students at the Arab-American University in Jenin are reported to be Israeli Arabs.

### The number of Arab students in institutions of higher education in Israel

2009/2010 = 100



Source: Alex Weinreb and Avi Weiss, Taub Center | Data: Council for Higher Education, 2009–2020

---

# SPOTLIGHT

## Educational Frameworks for Young Children in Arab Society in Israel

In accordance with the Trajtenberg Committee decisions, freely available supervised early childhood education and care (ECEC) was extended in 2015 to include children aged 3–4. This, however, is not the case for children under 3. In this Spotlight, we look at the Arab population in which participation in such frameworks is particularly low, and we try to ascertain some of the reasons for this.

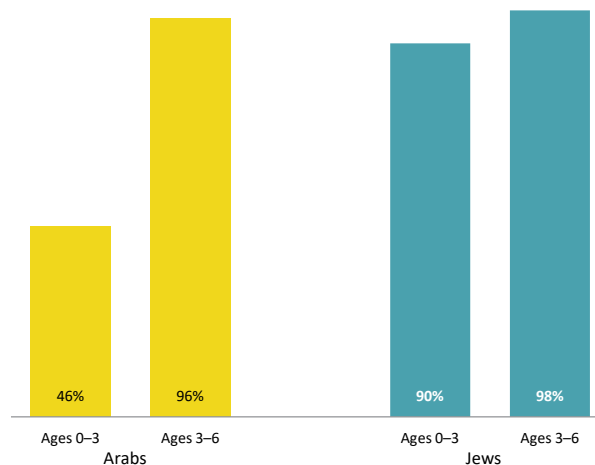


## A relatively low percentage of Arab children from birth to age 3 attend early childhood education and care frameworks

**In the figure:** Unsurprisingly, participation in preschool frameworks for children ages 3–6 is almost universal in Israel since it became fully subsidized following the decisions of the Trajtenberg Committee. In contrast, the rates of attendance at an ECEC framework for children ages birth to 3 differ significantly between Arabs and Jews: 9 out of every 10 Jewish children in the sample attended such a framework while less than half of the Arab children in the sample attended.

**Beyond the figure:** The modal number of years for a Jewish child in an early childhood education framework is 4, while for an Arab child it is 3. It is well recognized that attending an early childhood education and care framework is particularly important for lower socioeconomic populations. In fact, in households with parents who are college graduates, children may be better off staying at home for the first years of their life. Given the socioeconomic differences between Jewish and Arab families in Israel, existing attendance rates seem less than optimal.

**Rates of attendance at an ECEC framework, children ages birth to age 3 and ages 3–6**



Source: [Hai Vaknin and Yossi Shavit](#), Taub Center | Data: PIRLS 2016

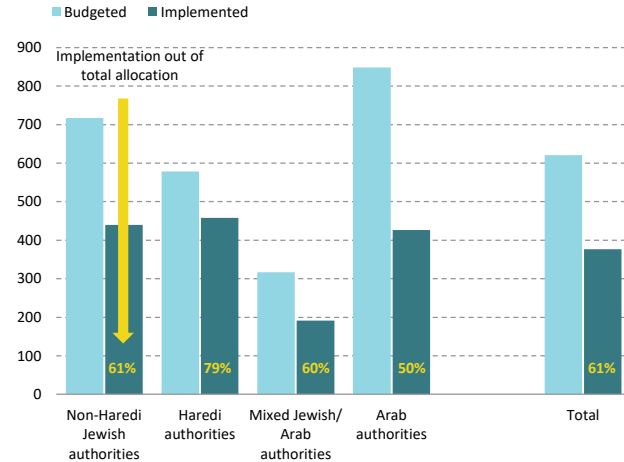
## The implementation rate out of the allocation for construction of ECEC daycare settings is especially low in the Arab localities

**Background:** The shortage of early childhood education and care frameworks in Arab society led to a decision in 2015 to earmark 25% of the designated budget for construction of early childhood daycare centers to the Arab sector.

**In the figure:** The highest average allocation per child for building early childhood daycare centers is indeed to the Arab localities, however, these have the lowest utilization rate (about one-half).

**Beyond the figure:** Numerous obstacles face an Arab locality wishing to build a daycare center, including difficulties in issuing building permits due to the lack of zoning plans and a shortage of appropriate land reserves; furnishing costs, which are not included in the construction budget and which many Arab localities do not have the means to finance; difficulty in dealing with the complex bureaucracy in order to obtain government support; and a shortage of professional early childhood education manpower who can initiate and support the process. These help explain the low utilization rates of the daycare center construction budget in the Arab localities.

**Average annual expenditure per child for the building of ECEC daycare settings, allocation and implementation, 2014–2020**  
NIS



Source: [Madhala, Shami, Gal, and Seela](#), Taub Center | Data: Ministry of Welfare and Social Affairs, files for allocation and implementation of building of daycare centers by local authority; CBS, files of local authorities in Israel

## The share of children from birth to age 3 in supervised ECEC frameworks is especially low in the Arab population

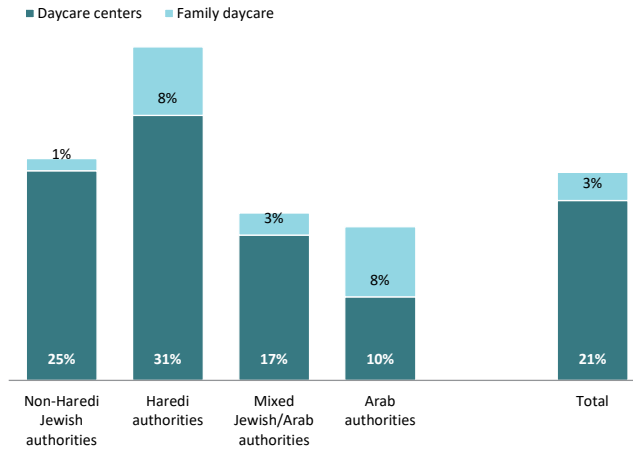
**In the figure:** On the previous page, we related to attendance at ECEC frameworks of any kind. Here, we will relate specifically to government supervised ECEC frameworks. These frameworks offer subsidized tuition for families based primarily on the family's income per capita. The subsidy, as well as preference in acceptance, is provided to children with two working or studying parents — apart from children who are eligible for a subsidy and attend such frameworks under the Law for Young Children At-Risk, following a referral from the social services departments. Although the Arab population is one of the most marginalized in Israel and over half of the children live in poor families, the rates of participation in supervised and subsidized educational frameworks for ages birth to 3 are particularly low. In addition, an abnormally large share of the children who attend these frameworks do so based on the Law for Young Children At-Risk.

**Beyond the figure:** These gaps, which according to the data also existed a decade ago, are explained by a number of factors. First, the low rate of employment among Arab women

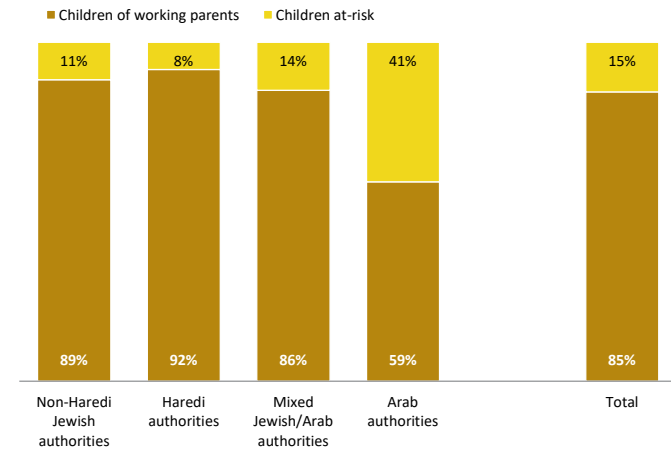
creates a barrier to access and, from the outset, limits the possibility of attending supervised ECEC frameworks. To this are added barriers such as a lack of mobility, bureaucratic hurdles related to registration, economic barriers due to the cost of the framework, and a preference for private frameworks that are cheaper and more flexible.

**Implications:** Supervised daycare centers can provide a high-quality educational setting that facilitates the development of a young child's abilities and improves human capital, enabling optimal integration into the education system and increasing social mobility later in life. Therefore, it is important to ensure that very young children in disadvantaged population groups have access to high-quality supervised educational frameworks. In the context of early childhood policy, this is manifested in a shift from focusing on the integration of women in the labor market (which is the basis of the current tuition subsidy program and policies) to focusing on the development of young children's abilities.

### Share of children from birth to age 3 in supervised frameworks, 2018/2019



### Breakdown of eligibility category of children from birth to age 3 in supervised frameworks, 2018/2019



Source: [Madhala, Shami, Gal, and Seela](#), Taub Center | Data: Ministry of Welfare and Social Affairs, files for mapping young children in supervised frameworks; CBS, local authority files





---

# SPOTLIGHT

## Special Education Budgeting in Israel

The percentage of students with special needs has been increasing steadily over the years. Such students are divided into three groups: those registered in regular classes, those in regular schools in separate classes, and those in special schools. In this Spotlight, we delve into this population and analyze what needs to be done to overcome some of the shortcomings of the existing system.



## Despite recommendations, the share of special education students integrated into regular classes has not been rising

**Background:** Special education students can be divided into three groups: those who learn in integrated frameworks (mainstreamed) with other students; those in separate special education classes in regular schools; and those in separate frameworks within special education schools.

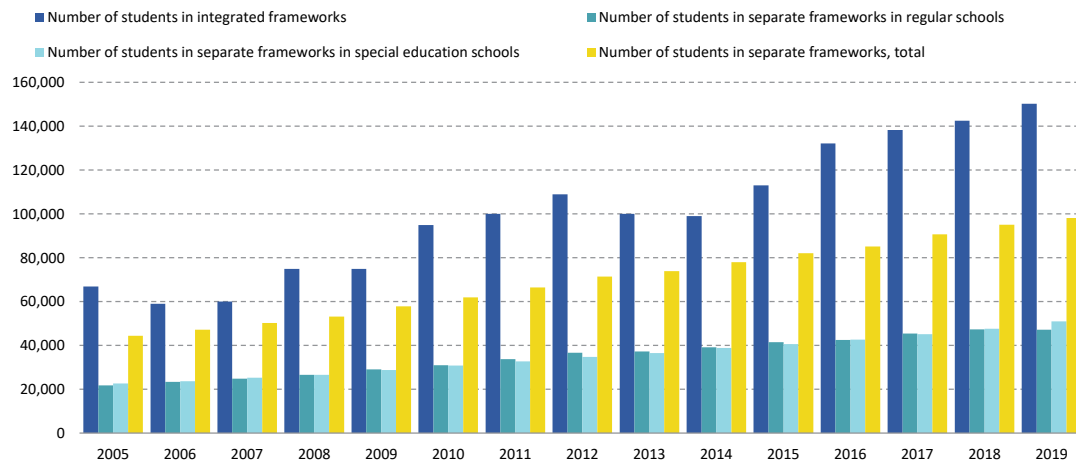
**In the figure:** The two groups that learn in separate frameworks are similar in size, and their share of all special education students has remained almost unchanged over the years at about 40%.

**Beyond the figure:** The implication is that despite the intentions and declarations of the Ministry of Education to increase the share of mainstreamed students, the situation is static. It may be that, in practice, the current division reflects

the genuine needs of the students, although it may also be that the intentions of the Ministry of Education meet opposition from various stakeholders, which hinders implementation.

**Implications:** If the Ministry of Education feels that the current situation adequately meets the needs of special needs students then it should leave the situation as is. If, on the other hand, it feels that the number of mainstreamed special needs students should be increased, then it must be more persistent in implementation of the integration policy by improving diagnostic tools, adopting new budget rules, and tightening control over the referral of students with special needs to frameworks that are appropriate for them while giving preference to integrated frameworks.

## Distribution of special education students among educational institutional settings



Source: Nachum Blass, Taub Center | Data: Ministry of Education, Director General's presentation; Mabat Rahav website

## The share of the education budget allocated to special education is growing faster than the share of special education students

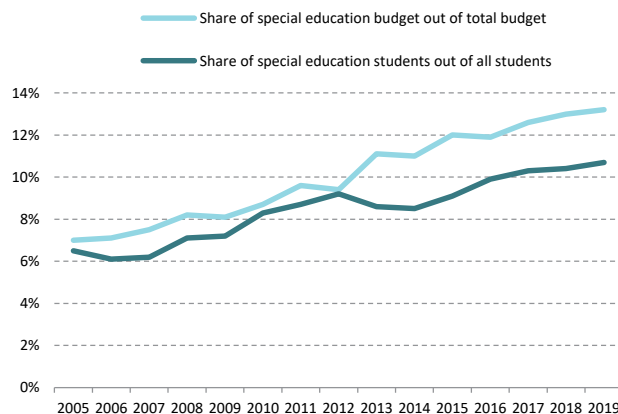
**Background:** Between 2005 and 2019, the Ministry of Education budget grew from NIS 24.5 billion to NIS 47.6 billion (in 2005 prices).

**In the figure:** During that period, the share of students with special needs rose from 6.5% to 10.7% while the share of the education budget devoted to special needs rose from 7% to 13.2%.

**Beyond the figure:** The large increase in the share of the special education budget is primarily explained by the more rapid growth in the portion of special education students and by the especially rapid growth in the portion of those with disabilities that require a particularly high budget allocation. The result is an unexpected and uncontrolled growth in the share of the special education budget.

**Implications:** There is a need to strengthen the Ministry's mechanisms for controlling the definitions of disabilities and handicaps that require an increased budget allocation while encouraging the transfer of students with special needs to integrated frameworks.

Special education students and Ministry of Education budgets



Source: Nachum Blass, Taub Center | Data: Ministry of Education Budget; Accountant General reports; Mabat Rahav website

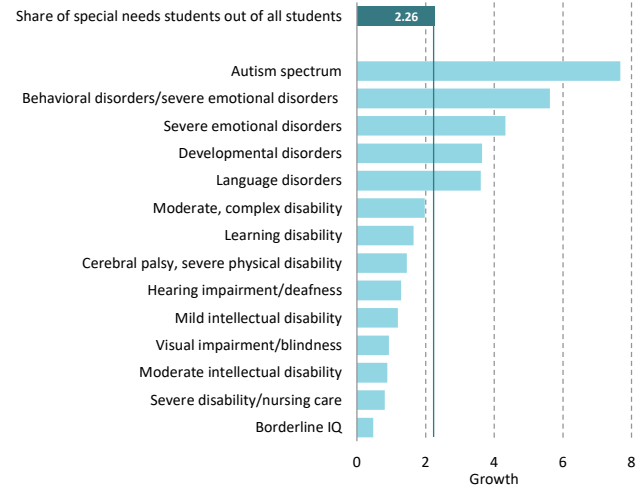
## A large increase in the types of disabilities that require particularly large budget outlays

**Background:** The number of students with special needs grew from 111,515 in 2005 to 248,488 in 2019. The student population's composition, in terms of types of disability, also changed significantly.

**In the figure:** Between 2005 and 2020, the special education population grew by a factor of 2.26. The number of students on the autism spectrum and with severe behavioral or emotional disorders, disabilities for which particularly large budgets are allocated, climbed by factors of 7.63 and 5.62, respectively. By contrast, the number of students suffering from multi-problem learning disabilities, the cost of whose treatment is much lower, climbed more slowly than the overall rate, and even declined in recent years.

**Beyond the figure:** Since each disability is budgeted differently, every change in the weight of the disabilities has great budgetary significance. The changes that occurred in practice required an increase in the special education budget beyond the overall increase.

**The ratio between the number of special needs students in 2020 and the number of such students in 2005, by type of disability**



Note: Does not include disability categories with fewer than 46 students in 2018.

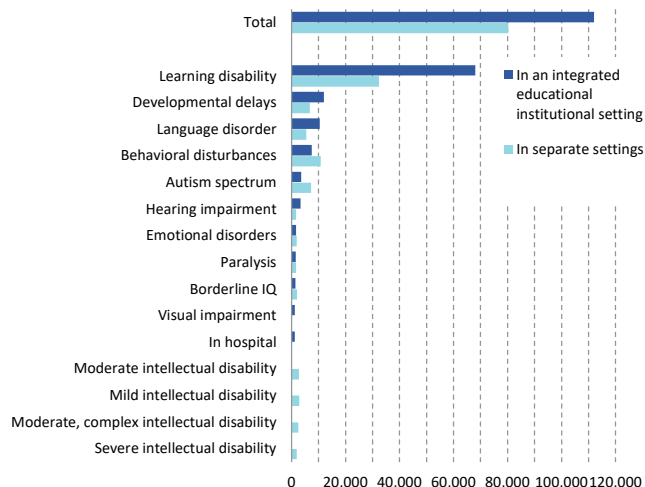
Source: Nachum Blass, Taub Center | Data: Mabat Rahav website

## Many students who are currently attending special education schools can be mainstreamed

**In the figure:** A decisive majority (61%) of integrated students have learning disabilities and most of them (68%) are mainstreamed. Students with other types of disabilities can be divided into two main groups: disabilities in which a large share of the students are integrated, and disabilities where a decisive majority attend separate frameworks.

**Implications:** The data suggest that there are many students who are currently in separate frameworks whose parents can be convinced to move them to integrated settings given policies that encourage and support such a move. This is especially so in the case of students with learning disabilities, a large share of whom are already in integrated settings.

**Number of special education students in integrated and separate educational institutional settings, by type of disability, 2015**



---

## **Board of Directors**

### **Chair: Jim Angell**

Dennis W. Carlton (Vice Chair, Planning and Resource Development), John Davison (Vice Chair, Budget and Finance), Miri Eisen (Vice Chair, Governance and Administration), Helen Abeles, Penny Blumenstein, John Dunn, Martha Freedman, Anat Gafni, Alan H. Gill, Ellen M. Heller, Steve Lieberman, Michael P. Lustig, Michael S. Saxon, Mark Sisisky, Caryn Wolf Wechsler, Ariel Zwang

## **General Assembly**

### **Chair: Helen Abeles**

Jim Angell, Penny Blumenstein, Zvi Feine, Amir Halevy, Ellen M. Heller, Steve Lieberman, Stanley Rabin, Michael S. Saxon, Mark Sisisky, Steven Taub, Caryn Wolf Wechsler, Ariel Zwang

## **International Advisory Council**

Henry Aaron (Brookings Institution), David Autor (MIT), Mario Blejer (Banco Hipotecario), Aaron Ciechanover (Technion), Stuart Eizenstat (Covington), Han Entzinger (Erasmus University), Adam Gamoran (William T. Grant Foundation), Edward Glaeser (Harvard University), Eric Hanushek (Stanford University), James J. Heckman (University of Chicago), Peter S. Heller (Johns Hopkins University), Daniel Kahneman (Princeton University), Robert E. Litan (Korein Tillery), Burton A. Weisbrod (Northwestern University)

## **Center Staff**

**President: Avi Weiss | Director General: Suzanne Patt Benvenisti | Senior Director of Strategic Partnerships: Michal Pozmanter | Research Director: Alex Weinreb | Chief Financial & Operating Officer: Liora Bowers**

Rachel Arazi (Guest Researcher), Arielle Avraham (Grants and Donor Relations Coordinator), Dudu Barazani (Maintenance), Benjamin Bental (Principal Researcher, Economics Policy Program Chair), Carmel Blank (Senior Researcher), Nachum Blass (Principal Researcher, Education Policy Program Chair), Haim Bleikh (Researcher), Nadav Davidovitch (Principal Researcher, Health Policy Program Chair), Michael Debowy (Research Assistant), Hedva Elmackias (Office Manager), Gil Epstein (Research Advisor), John Gal (Principal Researcher, Welfare Policy Program Chair), Casey Girard (Deputy Director, Strategic Partnerships), Racheli Gresser (Marketing and Government Relations Coordinator), Ayelet Kamay (Publications Director), Baruch Levi (Guest Researcher), Yuval Levy (Research Assistant), Shavit Madhala (Researcher), Lior Morag (Digital Media Associate), Yael Navon (Senior Researcher), Ori Oberman (Research Assistant), Talia Peckerman (Governance and Operations Manager), Laura Schreiber (Senior Publications Manager), Anat Sella-Koren (Director, Marketing, Communications and Government Relations), Labib Shami (Senior Researcher), Yossi Shavit (Principal Researcher and Chair, Taub Center Initiative on Early Childhood Development and Inequality), Dana Shay (Researcher), Kyrill Shraberman (Researcher), Sarit Silverman (Senior Researcher), Hai Vaknin (Research Assistant), Dana Yovel (Interim Director of Marketing, Communications and Government Relations)

**Past Directors: Israel Katz (z"l), Yaakov Kop (z"l), Dan Ben-David**

---

---

## **Policy Program Fellows**

### **Economics Policy Program**

Benjamin Bental (Chair), Yarom Ariav, Gilad Brand, Adi Brender, David Brodet, Doron Cohen, Naomi Feldman, Reuben Gronau, Jack Habib, Moshe Mandelbaum, Dan Peled, Assaf Sarid, Haim Shani, Eytan Sheshinski, Shmuel Slavin, Avia Spivak, Michel Strawczynski, Shlomo Yitzhaki, Ben-Zion Zilberfarb

### **Education Policy Program**

Nachum Blass (Chair), Fadia Nasser-Abu Alhija, Shlomit Amichai, Shlomo Beck, Rami Benbenishty, Carmel Blank, Yigal Douchan, Eli Eisenberg, Yariv Feniger, Isaac Friedman, Meir Kraus, Orit Levin, Ariel Levy, David Maagan, Zemira Mevarech, Yael Navon, Joel Rapp, Rita Sever, Yossi Shavit, Edna Shimoni, Rami Sulimani, Eran Tamir, Yuli Tamir, Yuval Vurgan, Zvi Yanai, Noam Zussman

### **Health Policy Program**

Nadav Davidovitch (Chair), Dorit Adler, Anat Arbel-Shamir, Alexander Aviram, Uri Aviram, Ran Balicer, Shlomo Barnoon, Gabi Ben Nun, Yitzhak Berlowitz, Nakhle Bishara, Bishara Bisharat, Orna Blondheim, Adi Brender, Shay Brill, David Chinitz, Keren Dopelt, Tal Dovev, Asher Elhayany, Miri Endblad, Leon Epstein, Ronni Gamzu, Yigal Ginat, Dan Greenberg, Itamar Grotto, Eitan Hai-Am, Jonathan Halevy, Eran Halperin, Michael Hartal, Avi Israeli, Orit Jacobson, Avigdor Kaplan, Galit Kaufman, Rachel Kaye, Muhammad Khatib, Shira Kislev, Maya Leventer-Roberts, Baruch Levi, Jacob Menczel, Shlomo Mor-Yosef, Roei Ben Moshe, Adi Niv-Yagoda, Meir Oren, Baruch Ovadia, Shani Paltuch-Shimon, Eran Politzer, Sigal Regev-Rosenberg, Bruce Rosen, Judith Shamian, Amir Shmueli, Haim Silber, Varda Soskolne, Jochanan Stessman, Aviad Tur-Sinai, Leah Wapner, Salman Zarka, Dan Zeltzer

### **Labor Policy Program**

Einav Aharoni-Yonas, Rani Dudai, Gil Epstein, Haggay Etkes, Mark Feldman, Daniel Gottlieb, Nitsa (Kaliner) Kasir, Yaakov Loupo, Miki Malul, Guy Mundlak, Dalia Narkiss, Tali Regev, Dmitri Romanov, Moshe Semyonov, Ofer Setty, Sigal Shelach, Arie Syvan, Yossi Tamir, Aviad Tur-Sinai

### **Welfare Policy Program**

John Gal (Chair), Michal Almog-Bar, Ofer Arian, Uri Aviram, Avishai Benish, Orly Benjamin, Nissim Cohen, Israel Doron, Zvi Feine, Daniel Gottlieb, Anat Herbst-Debby, Roni Holler, Nitsa (Kaliner) Kasir, Chana Katz, Michal Koreh, Michal Krumer-Nevo, Lihi Lahat, David Levi-Faur, Ibrahim Mahajne, Miki Malul, Ronen Mandelkern, Menachem Monnickendam, Baruch Ovadia, Nadav Perez-Vaisvidovsky, Yekutiel Saba, Talia Meital Schwartz-Tayri, Shmulik Sheintuch, Sigal Shelach, Roni Strier, Yossi Tamir, Aviad Tur-Sinai, Idit Weiss-Gal, Uri Yanay, Amos Zehavi

---





The Taub Center was established in 1982 under the leadership and vision of Herbert M. Singer, Henry Taub, and the American Jewish Joint Distribution Committee. The Center is funded by a permanent endowment created by the Henry and Marilyn Taub Foundation, the Herbert M. and Nell Singer Foundation, Jane and John Colman, the Kolker-Saxon-Hallock Family Foundation, the Milton A. and Roslyn Z. Wolf Family Foundation, and the American Jewish Joint Distribution Committee.