

Israel's Tight Labor Market: January to September 2023

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Michael Debowy, Gil Epstein, and Avi Weiss

Introduction

At the time of writing, Israel is in a war forced upon it by Hamas. The war has had an immediate effect on the labor market, with one-quarter of a million workers called up by the army and a similar number evacuated from their homes and absent from work, with possible longer-term consequences. At this stage, the extent of the effects is unknown and is dependent on, among other things, the course of the war. In the chapter devoted to the war in this book, we present our assessment of the war's effect on the labor market under various scenarios. In this chapter, we discuss the situation prior to the war, since we do not yet have sufficient data on this on-going period of war.

In the four years that passed since the outbreak of the COVID-19 pandemic and up to the outbreak of the war, the Israeli economy and the labor market flourished, with full employment and consistent growth in per capita GDP and the real wage. However, even before the war, and as the effect of the pandemic tapered off, a number of shocks — some of them external, such as problems in the global supply chain and the Russia-Ukraine war, and others internal, such as the dispute over the judicial reform — threatened to disrupt the Israeli economy and to reverse some of the accomplishments in employment of the past two years. Nonetheless, it appears that, up until the outbreak of the war, the Israeli labor market was able to withstand the pressures and continued to present favorable employment opportunities to Israelis. The rate of unemployment fell from 3.8% in 2019 to 3.5% during the first three quarters of 2023 while the average real wage rose by almost 9%.

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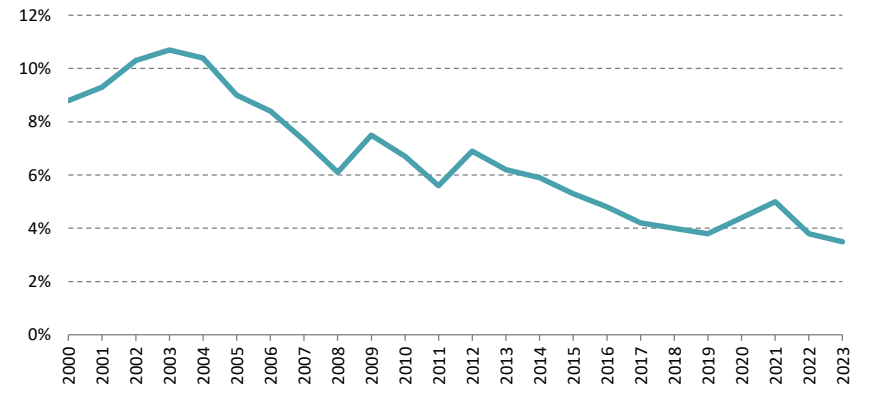
It is still too early to say whether the labor market has completely absorbed the economic, geopolitical, and social upheavals that occurred prior to the war or whether they will continue to affect it even after the war's conclusion. One way or another, policy makers should invest even more effort to maintain and strengthen the existing trends and attract additional workers into the labor market.

In this chapter, we review the developments in the labor market up to October 2023 and discuss them with respect to the economic and political situation in Israel and worldwide. We examine the level of employment and work hours across industries, as well as wages and wage increases, and we present the variation in employment by gender, population group, age, and district. We characterize the labor market in Israel by geographic regions and survey the changes that have occurred in recent years in higher education and vocational training. The data for the period following October 7th that appear in some of the graphs in this chapter are discussed in the chapter on the effects of the war that appears at the start of the book.

Unemployment, employment, and wages

Figure 1 presents the rate of unemployment since 2000 according to its standard definition, namely the percentage of unemployed (jobseekers who are not employed) out of the sum of employed and unemployed individuals. As can be seen, at the beginning of the 2000s, and especially during the period of the Second Intifada, the rate of unemployment was relatively high (about 10%), but subsequently declined, reaching its current level of about 3.5%. This is close to the natural unemployment rate, i.e., the lowest achievable unemployment rate in a modern economy, stemming from normal frictions in the labor market that result in workers leaving their place of work, frictions that include the closure of their work place, layoffs, workers (or employers) moving to a new location, and dissatisfaction on the part of the worker or the employer.

Figure 1. Unemployment rate



Note: The graph presents the unemployment rate according to its standard definition. The data for 2023 are for the first three quarters.

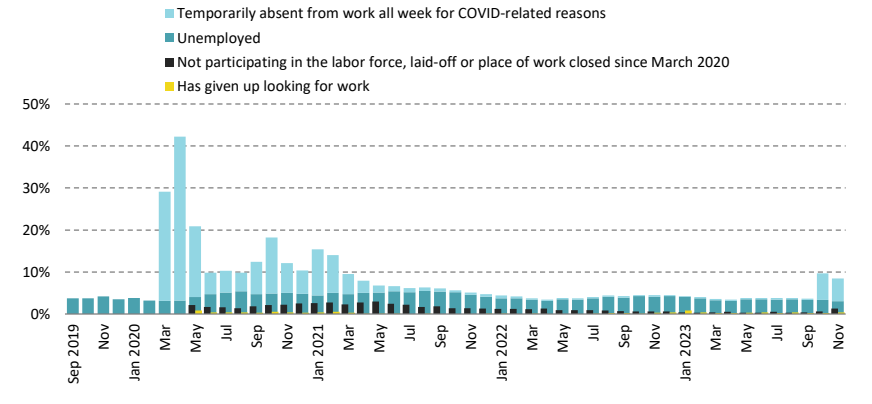
Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS

Figure 2 presents broad unemployment and its components over the past three years. During the COVID-19 pandemic, the definition of unemployment was broadened to include workers on furlough (or absent from work for a different pandemic-related reason), and individuals who had left the workforce due to COVID-19. These categories were broadened at the end of the pandemic to include workers who were absent from work for economic reasons or left the workforce because they were laid off or their place of work was closed during the previous two years. These two groups led to a large increase in the official unemployment rate during the pandemic; however, during the past two years their share of the unemployed has diminished significantly, such that the unemployment rate remains similar whether or not they are counted.

Between January and September 2023, the broad rate of unemployment stood at 4% on average, which is lower than the average rate during the same period in 2022 (5.1%) and significantly lower than the average rate in 2021 (11.3%). The first half of the year was characterized by a tight labor market, as in the previous year, and risk factors, such as the increase in global prices, the hike in the Bank of Israel interest rate, and political shocks caused by the plans to reform the judicial system, were not reflected in the unemployment rate. However, it should be noted that macroeconomic risk factors tend to filter

down to the labor market with a lag, such that the effect of these factors may only be felt in the future.

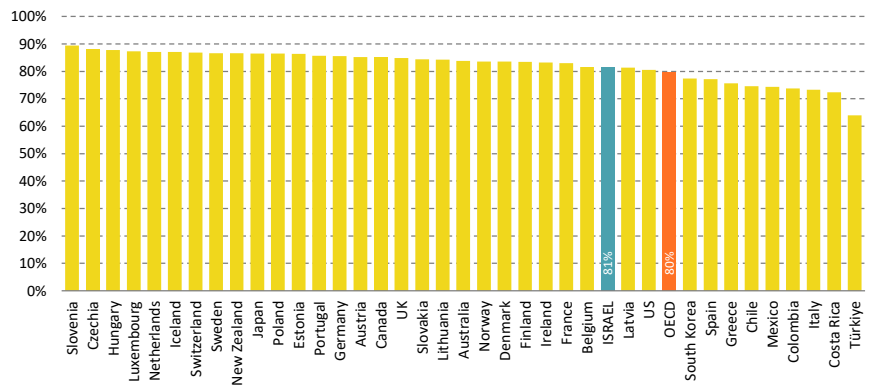
Figure 2. Unemployment, including the widening of the category during the COVID pandemic



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

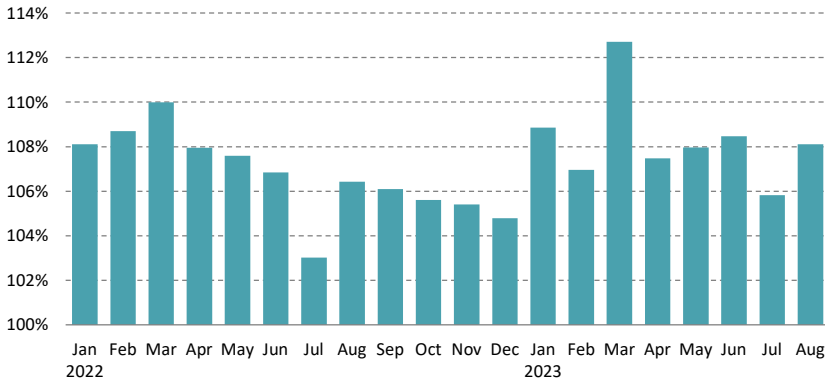
The low unemployment rate in Israel, both historically and internationally, is encouraging in terms of optimal use of the workforce, but it does not mean that the economy is approaching its full employment potential. The percentage of the population participating in the labor force can be increased, and with it the employment rate. Thus, while at the beginning of 2023 the employment rate among the 25–54 age group was similar to that in the OECD (Figure 3), it was 6–8 percentage points lower than in countries such as Slovenia, Czechia, Hungary, the Netherlands, Iceland, and Switzerland. The reason that the employment rate numbers are less impressive than the unemployment rate numbers is because of the relatively low labor force participation rate (81.2% as compared to 81.9% in the OECD among the 25–64 age group in 2022), with the labor force participation rates being very different across population groups in Israel (see the discussion below on employment by gender and population group). It is hoped that the government's efforts to raise labor force participation rates will bear fruit, and that the shocks and economic uncertainty of the current situation will not have an adverse effect on the various populations groups.

Figure 3. Employment rate among ages 25–54, Israel and the OECD, first quarter of 2023



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

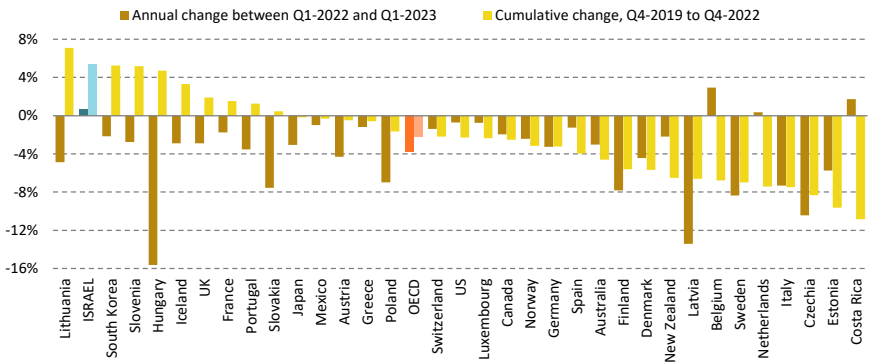
A basis for cautious optimism can be found in wages, which have returned to their upward trend with the moderation in inflation. Figure 4 presents the average monthly wage of employees (in constant prices) from the beginning of 2022 relative to its level in 2019. In 2022, the wage increases achieved during the COVID-19 pandemic and the exit from it were eroded, partly due to the sharp rise in prices following the pandemic and the outbreak of the Russia-Ukraine war. In the first half of 2023, this trend reversed and wages again rose. Overall, the average monthly wage was about 1% higher on average than during the same period in the previous year and about 9% higher than during the same period in 2019.

Figure 4. Average wage for an employee relative to the same month in 2019**Fixed priced**

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

It is worth emphasizing that while global inflation is moderating, wage increases in Israel following the pandemic, and, in particular, over the past year are noteworthy relative to wages in other high-income countries. Figure 5 presents the change in the real hourly wage in the OECD in recent years. For each country, one column presents the aggregate change between the final quarter of 2019 and the same quarter in 2022 while the other represents the annual change between the first quarter of 2002 and the same quarter in 2023. As noted, the real wage in Israel has risen both from 2019 until 2022 and during the past year. In contrast, the graph shows that wages were eroded in most high-income countries during the pandemic and following it, and in particular over the past year. Thus, the average wage in the OECD countries fell by 2% between 2019 and 2022 and by 4% between 2022 and 2023. In contrast, the raw data show that Israel is the only country in the OECD in which the average wage rose during both periods, although the sources of data for the various countries make it difficult to carry out a precise comparison, so this result should be treated with some caution.

Figure 5. Rate of change in real hourly wage in the OECD countries, 2019/2022 and 2022/2023



Note: In all of the countries except Israel, South Korea, and the UK, the sectoral breakdown of the labor force was held constant at the level of the base year in the calculation of the changes. The rates of change presented for the US, Australia, Canada, New Zealand, and Switzerland were calculated after controlling for background variables. Salary data for the US, Australia, Canada, New Zealand, South Korea, Japan, Mexico, and the UK do not include workers in the public sector. The wage data for Israel relate to the wages of employees only.

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

Employment and wages by industry

During the pandemic and the exit from it, the short-term trends differed significantly across industries (Debowy et al., 2021; 2022). Over the past year, there has been somewhat of a convergence in economic activity, and employment trends across industries are similar to those of the economy as a whole or to the long-term trends in each industry.

Table 1 presents the change in the number of employees by industry during each of the first three quarters of 2023 relative to the same quarter in 2022. The share (in percent) of the industry out of total employment in the economy in those quarters appears at the end of each row. As expected in a tight labor market with an increase in population, the number of employees in most industries grew during the sample period. Of the approximately 153,000

jobs added during this period,¹ about 20,000 were in wholesale and retail commerce and vehicle repair; about 27,5000 in education; about 20,000 in transportation, warehousing, postal, and courier services; about 18,000 in information and communication (which to a large extent overlaps high tech services); and about 13,000 in food and accommodation.

In a small number of industries, the number of workers declined during this period: during the first half of the year, the number of workers in public administration and manufacturing declined by about 9,600 and 6,400, respectively; however, during the summer months that trend reversed, such that, on average, they employed 800 and 1,100 more workers, respectively than in the previous year. In electricity, gas, steam and air conditioning, there was a decline of about 1,900 workers during the year while in art, entertainment and leisure and real estate (which are relatively small industries with respect to employment) the number of workers declined by more than 100 in each.

Table 1. Rate of annual change in the employment number relative to the same period in the previous year, by industry branch

	Q1 2023	Q2 2023	Q3 2023	Industry share Jan–Sep 2023
All industry sectors	4%	4%	3%	100%
Education	6%	4%	7%	15%
Health, social work, long-term care activities	-1%	4%	7%	14%
Wholesale/retail trade (excl. diamonds), motor vehicle repairs	7%	11%	-3%	13%
Manufacturing, mining, quarrying	-1%	-3%	4%	9%
Professional, scientific, technical activities	1%	3%	2%	7%
Administrative, support services	4%	3%	4%	7%
Information, communication	8%	8%	4%	6%
Accommodation, food services	20%	8%	-2%	6%
Construction	5%	7%	2%	5%
Local, public, defense administration, NII	-5%	0%	5%	4%
Transportation, storage, postal, courier activities	18%	10%	8%	4%
Financial, insurance activities	1%	10%	-6%	3%

- 1 According to the data of the Central Bureau of Statistics Labor Force Survey, the average monthly number of employees grew by about 153,000 between January–September 2022 and January–September 2023. According to the National Insurance Institute data, the average number of Israeli employees grew by about 95,000 between January–May 2022 and January–May 2023. The difference between these figures is due to the growth in the number of foreign workers and self-employed.

Table 1 (continued). Rate of annual change in the employment number relative to the same period in the previous year, by industry branch

	Q1 2023	Q2 2023	Q3 2023	Industry share Jan–Sep 2023
Other services	21%	15%	-3%	3%
Art, entertainment, recreation	7%	-5%	-7%	2%
Household as employer	-7%	-9%	6%	2%
Agriculture, forestry, fishery workers	-2%	3%	7%	1%
Real estate activities	23%	-6%	-21%	1%
Water supply, sewage, waste management	4%	-4%	3%	<1%
Electricity, gas, steam, air conditioning	-17%	-10%	-4%	<1%
Extra-territorial organizations	65%	8%	52%	<1%
High tech services	5%	2%	0%	7%
High tech manufacturing	4%	3%	2%	3%

Note: In the high tech industries, there are several sub-industries that belong to different industry groupings — manufacturing; information and communication; and professional, scientific, and technical services — and, therefore, there is some overlap. The employment data in the high tech industries relate only to the number of employees and do not include self-employed. The values in the left column represent the percentage of employees in the industry out of total employees in the economy in the first nine months of 2023.
Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS

During the first half of 2023, there was an increase of about 3,200 jobs in the high tech industries relative to the previous year (the lion’s share of which were in manufacturing of computers and electronic and optical equipment) and about 9,700 in high tech services (most of which were in the sub-industry of computer software and consulting). The bulk of the growth in the number of high tech jobs occurred in the first quarter of the year while during the second quarter growth slowed in both high tech services and high tech manufacturing. In contrast, there was a drop in the number of jobs in communication services and pharmaceutical production during the first two quarters of the year.

The decline in the growth rate in recent quarters is evidence that, while the warnings of a serious crisis in the high tech industry may be premature, they are not baseless. There have been dips in this industry globally, but the slowdown in hiring in Israel has been particularly severe (Dor, 2023), although the largest and well-established companies in Israel are continuing to expand (Rosental, 2023). The drop in the number of workers in some parts of Israeli high tech — even though it will result in greater efficiency — is not expected to benefit Israeli workers, and it can be assumed that the first victims will be

workers with a relatively weak background such as those with a lower-quality formal education, graduates of the colleges (Rudi, 2023), and Arab workers (Walzer, 2023).

More tangible evidence of the effect of the high tech slowdown on the labor market can be found in the data on jobseekers. According to a report by the Israeli Employment Service, there was a sharp rise in the number of jobseekers in the information industries (technological occupations) between April 2022 and February 2023.² The cumulative increase in the number of jobseekers in those professions was 71.4% during those ten months, as compared to only 10% among other jobseekers (Zohar, 2023). The report states that during these months, the number of workers who had been laid-off among jobseekers in technological occupations almost doubled (from 3,635 in April 2022 to 6,865 in February 2023), while the number of other jobseekers who had been laid-off grew by only 15%. These data are certainly consistent with an accelerated decline in the number of workers in the high tech industries, although there may be other factors involved, such as slower growth in the supply of high tech jobs than in demand or growth in the number of students studying toward high tech degrees.

There are several possible reasons for the slowdown in the high tech industry, including risk factors that are endemic to the Israeli high tech industry, such as the long-term downward trend in the number of start-ups and increasing concentration in the industry, the focus on a small number of areas, and insufficient preparation for technological innovation, such as Generative AI (Innovation Authority, 2023a). Another possible factor is the planned judicial reform and the controversy surrounding it, which have been identified as factors explaining the weak capital market in Israel and the decline in the inflow of foreign capital. In March, officials in the Innovation Authority and the Chief Economist Division of the Ministry of Finance predicted that the increase in Israel's risk premium that would result from the full implementation of the proposed judicial reform would lead to a decline of between 8% and 25% in the high tech employment rate (Ministry of Finance 2023a; Innovation Authority,

2 Workers in occupations in information-intensive industries and workers in the high tech industries do not necessarily overlap: many technological workers are employed in other industries (such as traditional manufacturing, finance, and professional, scientific and technical services) while high tech workers are not necessarily employed in technical occupations (managers, business development professionals, production workers, etc.)

2023b). This gloomy forecast — which is not without basis according to the existing data — implies that even if the labor market in Israel is healthy, policy makers should act carefully and wisely to preserve it.

Over the past year, and in particular during the second quarter of 2023, there was a small but notable decline in average work hours per worker, with a simultaneous rise in the number of employees. This has to some extent offset the achievements in employment presented in Table 1, since employees in the economy are working fewer hours on average relative to the previous year. Table 2 presents the change in the number of weekly work hours per employee in the various industries of the economy between 2021 and 2022 and in each of the first three quarters of 2023 relative to the same quarters in 2022.

The number of average work hours remained almost unchanged between 2021 and 2022, apart from the industries most affected by the pandemic, namely food and accommodation services, art, entertainment, and leisure and other services. In those industries, the number of workers rose significantly in 2022, as well as in the first quarter of 2023. However, in the second quarter of 2023 the number of weekly work hours per employee declined in most of the economy's industries relative to the previous year, and the sharpest drop occurred in management and support services and in art, entertainment, and leisure.

Table 2. Rate of annual change in the average number of weekly work hours per employee relative to the same period in the previous year, by industry branch

	2022 vs 2021	Q2 2023	Q2 2023	Q3 2023	Industry share Jan–Sep 2023
All industry sectors	1%	0%	-3%	-1%	100%
Education	0%	0%	0%	-4%	15%
Health, social work, long-term care activities	-1%	4%	-3%	0%	14%
Wholesale/retail trade (excl. diamonds), motor vehicle repairs	1%	0%	-3%	1%	13%
Manufacturing, mining, quarrying	0%	-1%	-4%	2%	9%
Professional, scientific, technical activities	0%	0%	-3%	-1%	7%
Administrative, support services	4%	4%	-4%	-7%	7%
Information, communication	-1%	1%	-2%	0%	6%
Accommodation, food services	12%	5%	-1%	-1%	6%
Construction	1%	-1%	-5%	-1%	5%
Local, public, defense administration, NII	0%	0%	-1%	0%	4%
Transportation, storage, postal, courier activities	3%	1%	-4%	-2%	4%
Financial, insurance activities	-1%	-1%	-2%	1%	3%
Other services	7%	1%	-4%	2%	3%
Art, entertainment, recreation	9%	3%	-4%	-6%	2%
Household as employer	-3%	-1%	-2%	-2%	2%
Agriculture, forestry, fishery workers	-1%	0%	3%	1%	1%
Real estate activities	1%	4%	8%	-1%	1%
Water supply, sewage, waste management	2%	-1%	-7%	4%	<1%
Electricity, gas, steam, air conditioning	-3%	1%	2%	-4%	<1%
Extra-territorial organizations	-4%	-6%	0%	1%	<1%

Note: The values in the left column represent the percentage of employees in the industry out of total employees in the economy in the first nine months of 2023.

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

The decline in number of work hours during the first two quarters of 2023 passed over some of the industries, including agriculture, forestry, and fishing. The only industry that stands out with respect to the increase in average work hours in the second quarter is real estate, in which more than two hours were added to the average work week between the first half of 2022 and the first half of 2023. However, this gap has closed and by the third quarter of 2022 the number of work hours per worker rose to its 2023 level. It can be assumed that

the increase in the interest rate and more moderate demand led to increased pressure in the industry, which was reflected in, among other things, a greater number of work hours (alongside a cutback in the number of workers, as seen in Table 1).

There is a high degree of variation in wages across industries. Table 3 presents the change in the average monthly wage between the first three quarters in 2022 and the same quarters in 2023 by industry. At the end of each row is the share (in percent) of the industry out of total employees between January and September 2023. During the first three quarters of 2023, the average wage of employees was about 1% higher than its level in the same period in the previous year and the real wage in most of the industries remained similar to its level in the previous year within a range of 1%–2%. Exceptions include mining and quarrying, with a large increase during the first half of the year relative to the same quarters in the previous year; management and support services, and transportation, warehousing, postal, and courier services, where wages were much higher than in the previous year in all of the quarters; and education, where the wage rose at the beginning of the year following the wage agreement signed with the Teachers Union in the fall of 2022. On the other hand, the average wage in finance during the first half of the year was much lower than in 2022 and in the third quarter it was much higher than in the previous year.

Table 3. Rate of annual change in average monthly wage of employees relative to the same period in the previous year, by industry branch

	Q1 2023	Q2 2023	Q3 2023	Industry share Jan–Jul 2023
All industry sectors	1%	0%	2%	100%
Education	6%	2%	5%	15%
Health, social work, long-term care activities	0%	-1%	0%	14%
Wholesale/retail trade (excl. diamonds), motor vehicle repairs	-1%	-1%	0%	13%
Manufacturing, production	-1%	3%	3%	9%
Professional, scientific, technical activities	-2%	1%	2%	7%
Administrative, support services	3%	4%	5%	7%
Information, communication	1%	0%	2%	6%
Accommodation, food services	1%	0%	0%	6%
Construction	0%	1%	2%	5%
Local, public, defense administration, NII	5%	1%	2%	4%
Transportation, storage, postal, courier activities	7%	3%	1%	4%
Other services	0%	0%	0%	3%
Financial, insurance activities	-5%	-4%	8%	3%
Art, entertainment, recreation	2%	1%	3%	2%
Agriculture, forestry, fishery workers	0%	0%	2%	1%
Real estate activities	-2%	-2%	0%	1%
Electricity supply, water, sewage, waste management	3%	0%	3%	1%
Mining, quarrying	7%	9%	-4%	<1%
High tech services	-1%	1%	2%	7%
High tech manufacturing	-2%	6%	4%	3%

Note: The values in the left column represent the percentage of employees in the industry out of total employees in the economy in the first nine months of 2023.

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

It is of interest that following years of continuous wage increases, the wages in both high tech services and high tech manufacturing dropped somewhat in the first quarter of 2023. However, the picture changed in the second and third quarters. During this period, the average wage of employees in high tech services (which account for three-quarters of high tech workers) was similar to its level in the previous year. This stagnation was a result of the offsetting trends in the various sub-industries: an increase of 6% in information services and in software and computer consulting; and a decline of 1% and 3% in communication services and research and development, respectively. On the other hand, high tech manufacturing saw a sharp increase in wages, primarily due to the increase in pharmaceutical production (in which the average wage rose by 4% alongside a drop of 2% in total employees) and computer and electronic and optical instruments manufacturing (in which the average wage rose by 2% alongside an increase of 4% in number of employees).

Employment by age, sector, and gender

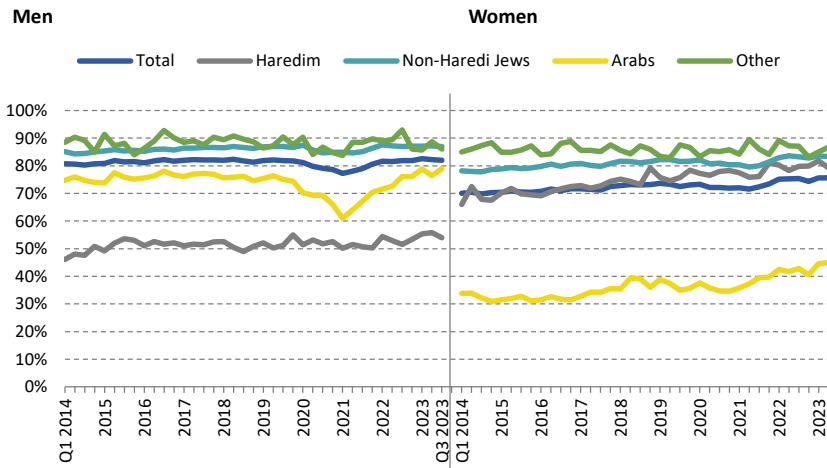
Figure 6 presents the employment rates among men and women aged 25–64 in the various population groups in recent years. While a high employment rate was more or less maintained among non-Haredi (non-ultra-Orthodox) Jewish men, there has been a fairly consistent increase in employment among Arab and Haredi men during the past two years. There were impressive achievements in these two population groups, and during the second quarter of 2023 their employment rates were 76% and 56%, respectively, following a low point of 61% and 50%, respectively, at the beginning of 2021.

However, the data for Haredi men should be treated with caution. Employment among men defined as Haredi according to the National Economic Council (i.e., studying in a yeshiva and living in a Haredi community) was much lower than the figure just presented; during the first half of the year it was 52.9%, which is about 7 percentage points above its 2019 level. The majority of the current increase originated among men who self-identify as Haredi but do not meet the definition of the National Economic Council and with this group's rapid expansion during the last two years (due to self-identification or for convenience of identification when being surveyed), which explains about 44% of the increase in the employment rate among Haredi men between the first half of 2019 and the same period in 2023. The rest of the increase is primarily

concentrated in the 55–64 age group, a population that is not expected to remain in the labor market in the long term (Ministry of Finance, 2023b). Therefore, it can be assumed that among large swathes of the Haredi sector, the employment of men was no higher than at the end of the previous decade.

Among women, the data are less ambiguous. Their rates of employment in 2023 reached their highest levels ever for the second year in a row. During the first half of 2023, non-Haredi Jewish women maintained a high rate of employment (about 83%); among Haredi women it was 79%–82% and among Arab women it reached a historic peak of 45%. Overall, while the rate of employment among men in the summer of 2022 was identical to that in the summer of 2019 (82%), among women there was an increase of about 2 percentage points (77% vs 75%).

Figure 6. Employment rate among ages 25-64, by sector and gender

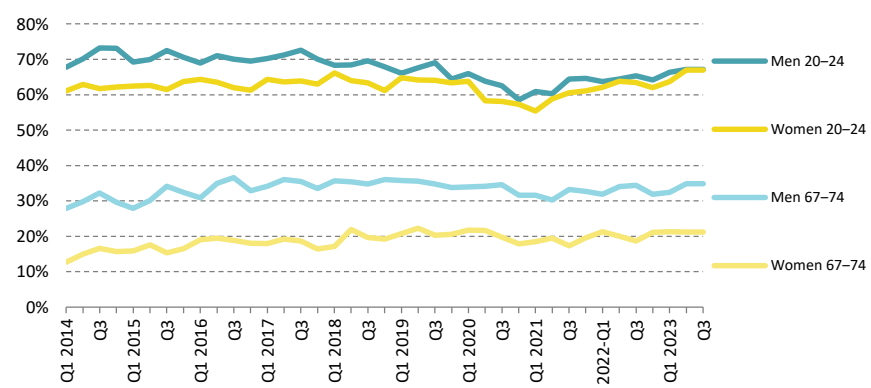


Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS

The trend that saw the rates of employment among men return to their pre-pandemic levels while those among women rose to new heights could also be seen among the young. Figure 7 presents the rates of employment among men and women aged 20–24 and 67–74. By the end of 2021, the employment rates among the young — which historically tended to be lower by several

percentage points than those of older age groups and which were particularly affected by the pandemic — returned to their 2019 rates and since then have remained relatively stable. The employment of young men remained several percentage points lower than during most of the previous decade: 67% on average during 2023 as compared to 70% on average between 2014 and 2019. Meanwhile, the employment of young women rose in 2023 above level between 2014 and 2019: 66% vs 63%. These data also provide evidence that the gender gap in the employment of the young during the past decade (which was 10% between 2014 and 2019) has essentially disappeared over the past year.

Figure 7. Employment rates among ages 20-24 and 67-74



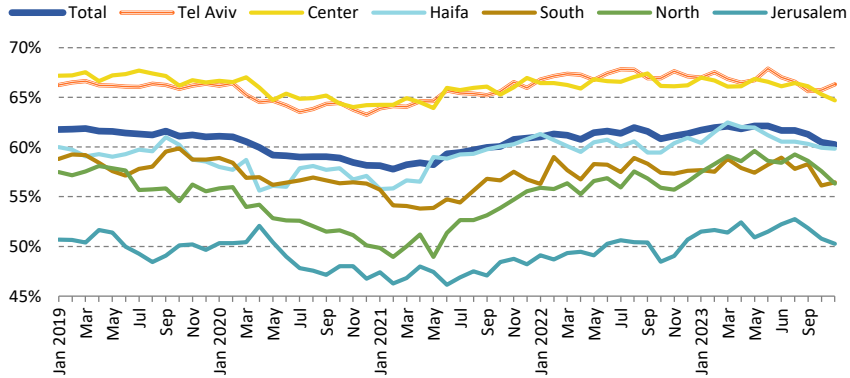
Note: Individuals serving in the army (in compulsory service or in the professional army) are defined as employed. Workers who are temporarily absent from their place of work or on unpaid leave are also defined as employed.

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

In contrast to the young population, workers in the 67–74 age group suffered less from the pandemic while the recovery was more gradual for them. Thus, during the first half of 2023, the employment rate among this population had not yet returned to its 2019 level (although the gap that remained was only 1 percentage point among both men and women). Part of the reason lies in the ages within this group — since labor force participation declines with age, an increase in the average age within the group will lead to a reduction in participation even if the employment rate at each age remains unchanged.

The lag in the recovery of employment among older adults is not surprising and is consistent with the patterns observed among various age groups during and immediately following a crisis (Rahamim & Zohar, 2021). Overall, this is one of the only groups that has not fully recovered with respect to employment at least to pre-pandemic levels; however, the difference is within the range of statistical error. Thus, for example, we will show below that there has been an increase in employment in every geographic region, as will be shown below.

From a geographic perspective, during the first half of 2023, and for the first time since the onset of the pandemic, the level of employment in the periphery exceeded its 2019 level (Figure 8). Thus, for example, between January and May 2023, the employment rate in the Jerusalem district was 1 percentage point higher than that observed during the same period in 2019. It is worth noting that between January and May 2022, it was 2 percentage points lower than the same period in 2019. The same pattern can be seen in the North, while in the South the rate of employment is similar to its 2022 level and somewhat lower than its 2019 level. Accordingly, the employment gap between Jerusalem and the North on the one hand and the Center and Tel Aviv on the other has returned to its pre-pandemic level while that between the South on the one hand and the Center and Tel Aviv on the other remained similar to that observed in 2022 (although the widening of the gap between the South and the Center during the pandemic was more moderate than that between Jerusalem or the North and the Center).

Figure 8. Employment rate among ages 15 and older, by district

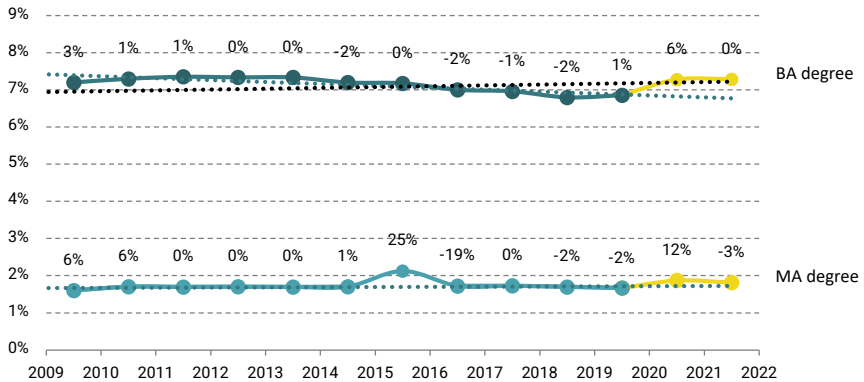
Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: CBS

Higher education

During the pandemic, the number of students in higher education rose sharply, which can be attributed to, among other things, the lockdowns and the reduced possibilities for employment and leisure for the young. As the pandemic tapered off, the following question remained: How many of the new students would have started a degree at some stage even without the pandemic and how many of them would never have started a degree if the pandemic had not occurred? This is a difficult question to answer with certainty so soon after the pandemic (given the length of academic studies). Nonetheless, the evidence that has accumulated indicates that many of the students belong to the latter group who decided to start a degree as a result of the shock of the pandemic (and lack of other options). Figure 9 presents the number of students studying toward a bachelor's degree and a master's degree in Israel as a percentage of the 18–35-year-old group from the 2009/2010 academic year until the 2021/2022 academic year, alongside the annual change in this number, and the trend during the decade prior to the pandemic. In the 2021/2022 academic year, the share of students studying toward a bachelor's degree remained higher than its forecasted value on the downward-sloping trend line of the previous decade (reaching its highest level since 2014), and the rate of annual increase in the proportion of students in

that year remained positive (in contrast to the annual average negative growth of the previous decade).

Figure 9. Students in higher education as a percent of those ages 18–35 and the rate of annual change, by degree level



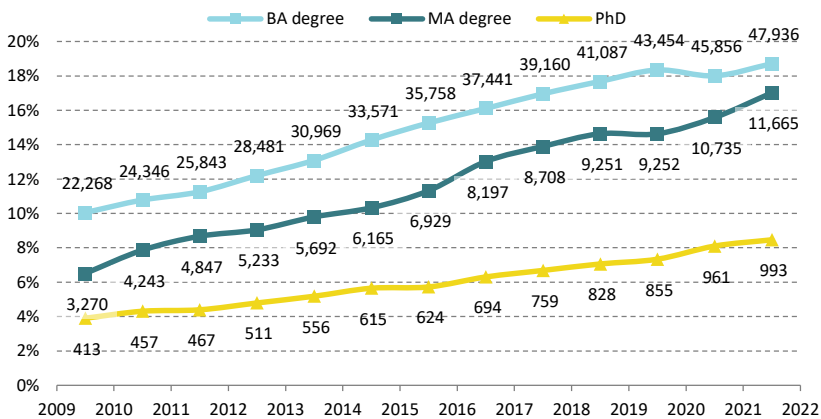
Note: The height of the line represents the number of students as a percentage of the 18–35 age group and the number above it represents the rate of growth in this number (in percent) relative to the previous academic year. The dotted lines represent the long-term trends during the pre-pandemic period and are based on the period between the academic years 2009/2010 and 2019/2020. The trend line for master's degree students omits the 2015/2016 academic year, which is an outlier.

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

In the 2021/2022 academic year, the patterns in the growth rate in the number of students varied across population groups. Thus, for example, the number of Arab students studying toward a bachelor's degree, a master's degree, and a Ph.D. grew by 5%, 9%, and 3%, respectively, relative to the previous academic year, while the number of Jewish and other students studying toward all types of degree did not grow significantly (or even declined). The size of the relevant age groups grew by about 2% during this period. This change is consistent with the long-term trend during the past decade (Figure 10), during which the Arab population in the relevant age group grew significantly and at the same time the proportion of Arab students rose steeply. In the decade between the 2011/2012 academic year and the 2021/2022 academic year, the number of Arab students studying toward a bachelor's degree grew by 85%; the number studying toward a master's degree grew by 141%; and the number studying

toward a PhD grew by 113%, while the Arab population in the relevant age group grew by only 32%.³ During this decade, the proportion of Arab students grew for all of the degree types: from 11% to 19% for a bachelor's degree (which is only a few percentage points less than their proportion in the population); from 9% to 16% for a master's degree; and from 4% to 8% for a PhD. Their proportion of the relevant age groups grew from 23% to 28%.

Figure 10. Share of Arab students in higher education, by degree level



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

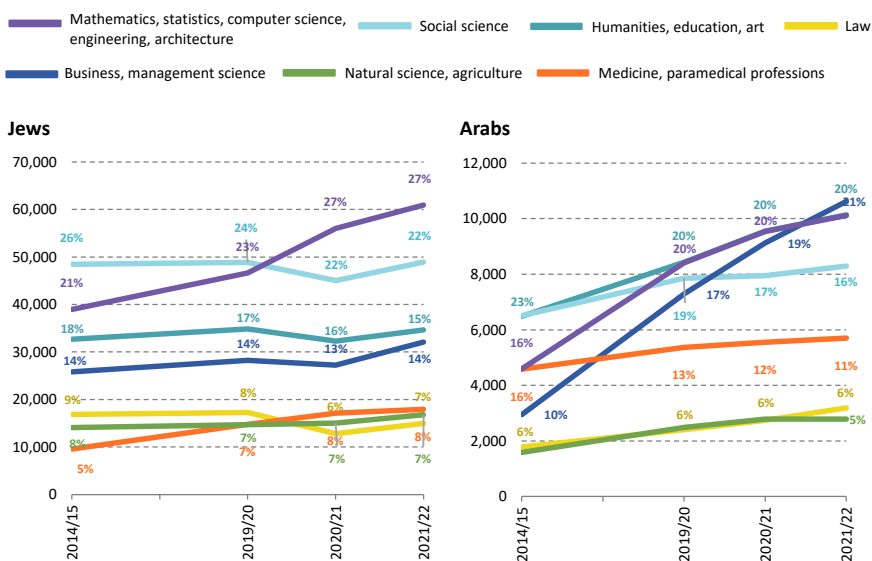
Major changes were also observed in study majors, among both Arabs and Jews. Figure 11 presents the number of students by field of study and their proportion within the total number of students belonging to that population group for each year. A number of trends that are common to the two groups can be seen: the share of students in mathematics, statistics, computer science, engineering, and architecture grew significantly between 2014/2015 and 2021/2022, at a rate of 29% among Jews and others and 23% among

³ The *relevant ages* were calculated on the basis of the age profile of students in the universities in the 2021/2022 academic year for each type of degree separately. This profile was used to derive the weights that were attached to the growth in the population (by age group) between 2010 and 2020. This calculation showed that the Arab population in the relevant age groups grew by about 32% for all degrees, while the Jewish population in the relevant age group grew by about 10%–12% (by type of degree).

Arabs. In contrast, the share of students in the social sciences, the humanities, education, and art dropped significantly, by a rate of 15% among Jews and others and by a rate of 21% among Arabs.

There were sector-related trends in several study majors. For example, the proportion of medical and paramedical students within total Arab students dropped by 30% during this period while the proportion within the total Jewish and other students grew by 54%. It is worth noting that, among the Arab population, the decrease in most of the healthcare professions (including medicine) is observed across the board and may be a result of the increase in the proportion of students studying abroad. The weight of students in business and managerial science within the total number of Arab students has doubled during the period, while the weight of students in these professions within the total Jewish and other student population has remained unchanged.

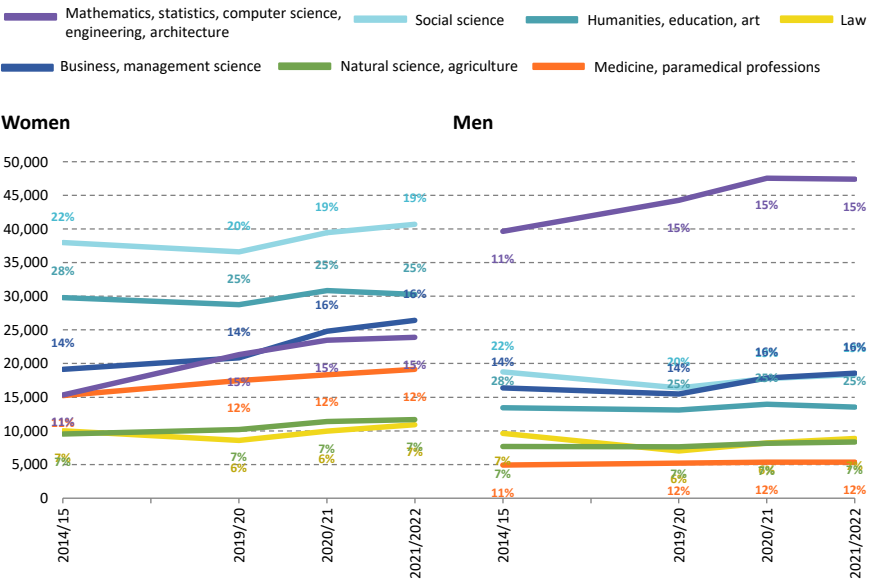
Figure 11. Number of students in higher education, by study major and sector



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

The distribution of study majors is also strongly influenced by gender. Figure 12 presents the number of students by study major and gender between the 2014/2015 and 2021/2022 academic years. Among male students, there is a tendency to study mathematics, statistics, computer science, engineering, and architecture and 78% of the increase in the number of male students during this period occurred in these fields. In 2021/2022, about 40% of male students and 15% of female students were studying in these fields. Another 30% of the male students were studying the social sciences or business administration (40% of female students); 4% were studying medicine and the paramedical professions (12% of female students); and 11% were studying the humanities, education, or art (19% of female students). In law, the proportions of male and female students are similar.

Figure 12. Number of students in higher education, by study major and gender



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

The number of graduating students continued to grow between the 2021/2022 academic year and the 2021/2022 academic year (Table 4). The number of graduating students with a bachelor's degree or a master's degree grew by 4% and the number graduating with a PhD grew by about 5.5%, which represents a change in trend following the decline recorded between 2019/2020 and 2020/2021. This is still about 4% lower than the peak in 2019/2020. From a broader perspective, from the 2009/2010 academic year until the 2021/2022 academic year, the number of students graduating with a bachelor's degree grew by about 27%; the number graduating with a master's degree grew by about 5%; and, the number graduating with a PhD grew by 13%. Obviously, the size of these age groups also grew, but the growth in the population was less than the increase in the number of graduates. Thus, for example, the proportion of graduating students within the 20–32 age group was 1.3% in 1990, 2.3% in 2000, 2.9% in 2010 and 3.2% in 2022.

Table 4. Number receiving academic degrees in Israel, by degree level

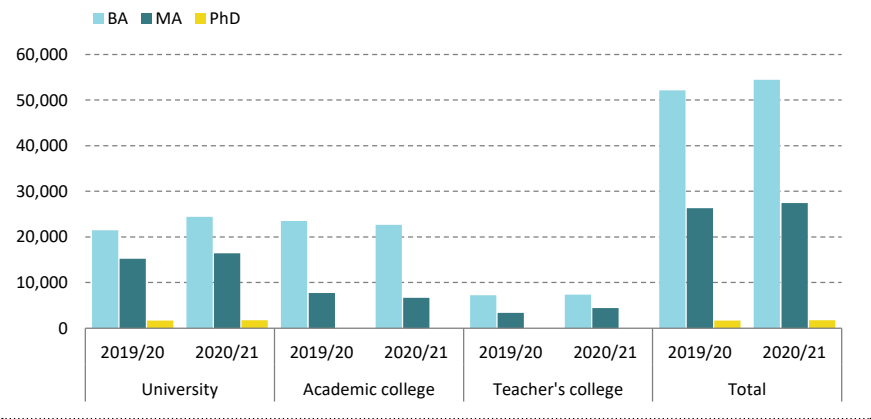
Academic year	First degree	Second degree	Third degree
1989/1990	11,528	2,790	450
1999/2000	29,322	7,528	800
2009/2010	42,934	15,649	1,534
2019/2020	50,395	24,022	1,811
2020/2021	52,157	26,289	1,640
2021/2022	54,434	27,389	1,731

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

It also worth examining the breakdown of institutions of higher education that grant the degrees, particularly in view of the increase in the number of degrees awarded by the colleges in the 2020/2021 academic year (Debowy et al., 2022). Figure 13 presents the number of degrees awarded in the 2020/2021 and 2021/2022 academic years by institution type. It is worth noting the problem in comparing data between these years since in 2021 the Interdisciplinary Center in Herzliya (IDC) was recognized as a university and formally changed its name to Reichman University. In any case, it appears that the universities and the teacher colleges awarded more degrees in 2021/2022 than in 2020/2021. The universities led in the rate of growth in number of bachelor's degrees awarded with an increase of about 12% (3,000 degrees), including the change in the

status of Reichman University,⁴ while the teacher colleges led in the growth in number of master's degrees awarded with an increase of about 24% (1,000 degrees). Overall, the colleges in fact granted fewer degrees (4% or 875 fewer bachelor's degrees and 17% or 1,120 fewer master's degrees), where some or all of the decline was due to the reclassification of Reichman University.

Figure 13. Number of those receiving an academic degree in Israel in the 2020/2021 and 2021/2022 academic years, by degree level and institution type



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

Figure 14 presents the distribution of bachelor's degree students in the 2021/2022 academic year by socioeconomic ranking and type of institution. The colleges had the largest proportion of students from lower socioeconomic backgrounds. The proportion of students from areas with socioeconomic rankings 1–4 in the government subsidized colleges stood at 38% (a slight increase from the previous year), which resembles the proportion of the population living in localities with those rankings. On the other hand, the share of students from areas with a ranking of 1–4 in the universities was 25%, while the share of students in universities from strong socioeconomic background areas (ranking of 9–10) was twice that in the colleges (30% vs 15%).

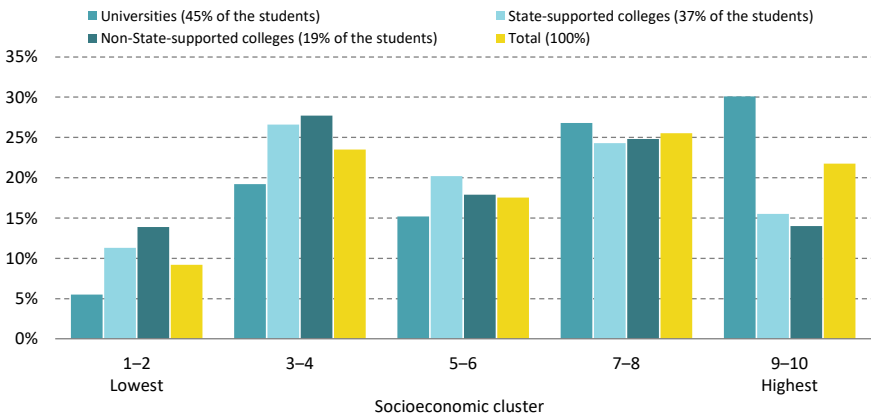
4 At this stage, we do not have data on the number of degrees awarded by Reichman University, although it accounts for about 7.7% of the total number of students studying toward a bachelor's degree in the universities (data of the Council for Higher Education, Table 8).

The socioeconomic gap between the institution types widened over the past year. For example, between the 2020/2021 and 2021/2022 academic years, there was a significant increase in the share of students from areas with socioeconomic rankings 9–10 in the universities, alongside a slight increase in the share of students with rankings of 6–8, while the share of students from lower socioeconomic backgrounds (ranking of 1–5) declined. On the other hand, the proportion of students from areas with a ranking of 9–10 fell both in the government supported and completely private colleges. While in the case of the non-budgeted colleges it can be assumed that the change was in part, and possibly in large part, due to the reclassification of Reichman University,⁵ the picture is clearer in the case of the budgeted colleges. In these institutions, the share of students with from areas with ranking 7–10 fell by 20% while that of students from areas with rankings 1–4 grew by 40% in those same years. The widening of the gap is concerning, but it should be remembered that this is a comparison of only two successive years and does not represent a trend. The larger picture is in fact encouraging: during the past five years the number of bachelor's degree students from localities with a low socioeconomic status (ranking of 1–4) grew by about 18,000, which constitutes a large majority of the increase in the number of bachelor's degree students (of about 21,000).⁶

5 The extent to which the decrease in the share of students with ranking of 9–10 among the unbudgeted colleges is the result of the reclassification of Reichman University does not really reflect a change in trend but only reinforces a trend that already existed in previous years. Quantitatively, it is sufficient if 15% of the students at Reichman belong to areas ranked 9–10 in order for the reclassification to explain all of the decrease in the share of these rankings among the unbudgeted colleges.

6 See the Council for Higher Education site, [The Opening of the 2022/2023 Academic Year](#).

Figure 14. Distribution of BA students in higher education, by socioeconomic ranking, 2021/2022 academic year



Note: The data do not include the Open University and the teacher colleges, which do not receive government support from the Planning and Budgeting Committee. The percentage of students in each of the institution types (appearing on the X axis) includes students whose socioeconomic ranking is unknown. The data appearing in the columns relate to total students with a socioeconomic ranking, which accounts for about 97% of students in all the types of institutions.

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

Overall, the general situation of higher education in Israel remains healthy and the number of students as a percentage of the younger population remains significantly higher than what was expected prior to the pandemic. It is also continuing to grow from year to year and includes an increasing number of students from weaker socioeconomic backgrounds. Nonetheless, there is evidence that the socioeconomic gap between the institutions grew last year (or alternatively was larger than it appeared to be in previous years), which is likely to have an impact on equal opportunity in the labor market for individuals from all socioeconomic backgrounds. At the same time, the increase in the proportion of students in technological fields of study, particularly women and Arabs, is continuing, although those fields of study are still considered to be relatively masculine and Jewish. The choice of these study majors may serve these students well if the high tech industry in Israel returns to its previous growth trend; however, if the crisis in high tech continues for a long time or intensifies it may not put them at an advantage.

Vocational training

During the past decade, there was a consistent increase in the number of students in vocational training courses for adults under the supervision of the Ministry of Labor (the responsibility for which was transferred to the Ministry of the Economy and Industry starting from the 2020/2021 academic year). Their number grew by 31% in 2019 (about 13,000 students) relative to 2011. During that period, the working age population (20–64) grew by 12.4% and the gender breakdown remained balanced. Not all of the students in vocational training complete their studies successfully and are awarded a certificate; the proportion who did obtain a certificate rose somewhat from 57% in 2011 to 62% in 2019. The pandemic, of course, had an impact here as well, and, in 2020, the number of students dropped by 32% (almost 18,000 students) relative to 2019.

A particularly relevant population for vocational training is those jobseekers who are eligible to participate in training programs sponsored by the Israeli Employment Service (alongside placement programs and programs for reintegration in employment). While in 2021 the number of participants in these programs rose sharply (relative to both the pandemic period in 2020 and relative to 2019), to the point that it was referred to as a paradigm change (Israeli Employment Service, 2022), in 2022 the number of participants declined significantly (see Table 5). There are three main reasons for this: a smaller number of jobseekers due to the recovery in the labor market; the large increase in vocational training in 2021 following the drop in 2020 and the return to more reasonable numbers (although the numbers in 2022 were lower than in 2019); and budget constraints that reduced the scope of the programs (Israeli Employment Service, 2023).

Table 5 presents the number of participants in the vocational training courses of the Employment Service in 2021/2022 and its rate of change. It can be seen that while the number of participants in workshops and users of placement tools (and in particular employer tools, regional activity, partnerships, and other placement support services) has grown,⁷ the number of participants

7 The 39,000 participants in these programs in 2022 include 3,200 jobseekers who began employment and training as part of the employer voucher program and 10,000 jobseekers who participated in employment fairs throughout the country. This is in addition to participants in local initiatives and partnerships, the WORKIT project to encourage high-quality employment in the periphery, recruiting services for strategic employers, and support for laid-off workers.

in all vocational training programs has declined. The largest decline occurred in the occupational Hebrew and English programs and the courses run by the Department for Manpower Training and Development. In total, about 8,600 fewer jobseekers participated in programs for vocational training and improving human capital sponsored by the Employment Service in 2022 relative to the previous year.

Table 5. Rate of change in the number of participants in vocational training program of the Israeli Employment Service, 2021 and 2022

Program/year	2021	2022	Change
Employment Circles	27,427	24,397	-11%
Employment consultation	50,453	55,343	10%
IAM - Diagnostic Tool	19,368	20,071	4%
Total: workshops, programs	97,248	99,811	3%
Courses in professional training division	4,443	1,337	-70%
Professional training vouchers	3,055	3,032	-1%
Completing education, academic retraining	270	249	-8%
High tech vocational training by the Israel Innovation Authority	1,718	1,438	-16%
Hebrew for on-the-job	1,600	133	-92%
English for on-the-job	2,397	248	-90%
Digital literacy	2,561	1,014	-60%
Total: vocational training, tools to upgrade human capital, skills, and expertise	16,044	7,451	-54%
Tools for employers, district activities, join ventures, support skills, etc.	8,860	39,202	342%
Overall total	122,152	146,464	20%

Source: Michael Debowy, Gil Epstein, and Avi Weiss, Taub Center | Data: Israeli Employment Service

The gap in trends of participation between vocational training and other programs provided by the Employment Service indicates that the drop in vocational training is due to factors other than the change in the number of jobseekers and is more likely due to budget shortages (as reported in the Employment Service Report for 2022). This is consistent with the limited scale of vocational training programs in Israel, their fragmented administration, and the lack of fit between the types of vocational training and the populations that need them the most. These factors reduce the potential for vocational

training to improve human capital in the labor market and they have previously been identified as weak spots in a survey by the OECD of vocational training in 2018 (Kuczera et al., 2018). It can be assumed that the adoption and implementation of its recommendations in full would facilitate the expansion and improvement of vocational training and contribute to employment and wages in the economy.

Conclusion

Until the outbreak of the war, Israel had a tight labor market, with a low rate of jobseekers and real wages that were rising at a rate that stood out among high-income countries. During the first three quarters of the year, a consistent increase was recorded in the number of employees in most industries, although in the second quarter there was somewhat of a decline in average work hours in most industries. The rates of employment among Haredi and Arab men continued to rise, reaching 56% and 76% respectively in the second quarter of the year. At the same time, women in all population groups continued to surpass historic records with respect to rates of employment, which stood at more than 80% among Jewish women and more than 45% among Arab women. The employment of young women (aged 20–24) also reached a new high and caught up to the rate of employment among men in the same age group.

Another encouraging development was observed in employment in the periphery. In Jerusalem and the North — which returned to their 2019 level of employment later than the Tel Aviv and Center districts did so — the level of employment rose to above its 2019 level. However, the disparity in employment between regions merely returned to its level in 2019 and did not decline any further than that. Less encouraging is the disparity in employment between the South and the Center, which remained slightly larger than in 2019.

The number of students and graduating students from institutions of higher education also remains high, which indicates that the jump in registration for academic studies during the pandemic was not in fact driven by future students who decided to begin their studies earlier than planned, but rather by Israelis who would not otherwise have sought an academic education. Similarly, Arab students continued to integrate into higher education and there was an increase in the number of male Arab students and female students (from all

the population groups) choosing technological fields of study. The number of students pursuing higher education from weaker socioeconomic backgrounds also grew. However, the socioeconomic disparity seen in their institutions of choice continued, with a larger proportion of students from weaker socioeconomic backgrounds studying in private and semi-private colleges and a larger proportion of students from stronger socioeconomic backgrounds accepted to the universities, influenced in part to the reclassification of the Interdisciplinary College (IDC) in Herzliya as Reichman University. In the area of vocational training sponsored by the Israeli Employment Service, there was a drop in the number of jobseekers participating in programs, due to, among other things, budget constraints.

As a result of the developments seen in this chapter, the Israeli labor market was in a relatively healthy state when the war that was forced on Israel began on October 7th. The war will likely have a major impact on the labor market, though the exact scope of that effect is still unclear. We can hope that the resilience of the Israeli labor market will enable it to quickly and completely recover from the current crisis.

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