# The Eli Hurvitz Conference on Economy and Society 2021

**June 29-30**

THE ISRAEL DEMOCRACY INSTITUTE

DALIA AND ELI HURVITZ FOUNDATION LTD

## Background Materials

Chairs: **Prof. Eugene Kandel** | **Prof. Karnit Flug**

Conference Director: **Daphna Aviram-Nitzan**

THE ISRAEL DEMOCRACY

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# The Health System's Preparedness for Times of Emergency and Crisis

Moshe Bar Siman Tov[1] and Iris Ginsburg[2]

Ahead of the 2020 Eli Hurvitz Conference on Economy and Society, the Israel Democracy Institute convened a group of experts and senior officials from the Israeli health system and other agencies to examine the preparedness of the health system for major crises and future emergency scenarios, among other things-- in light of the lessons learned so far from the COVID-19 crisis. In a series of meetings held during October and November, the group analyzed the strengths and weaknesses of the Israeli health system and of its main components, and assessed their implications for different extreme emergency scenarios.

• Biological events, such as a pandemic: Events generating a new form of morbidity that affects individuals; rapidly spreads between countries, lasts for months or years, at varying levels of intensity; and challenges the system's intake and treatment capacities, which are primarily tailored to respond to the demands of routine times

• **Physical events, such as earthquake or war:** Events that inflict immediate and extremely powerful—but sometimes, predictable-- damage to infrastructures across a wide area— but within which there may be considerable differences in f the extent of damage. The harm

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2 An expert in health policy and economics. Has held a number of economic management positions in the Israeli health system and for a decade served as a member of the Drug Basket Committee.

inflicted on individuals is limited, and tends to take the form of trauma injuries. These events require mobility of resources and individuals, an extended recovery period (of at least a year), and may do direct damage to hospitalization infrastructure.

• **Technological events, such as a major cyber-attack:** Events that inflict multi-dimensional damage, including severe damage to infrastructures and to individuals—damage that is geographically widespread and continues to spread, difficulties in mobilizing resources and personnel, significant interference with the activities of medical and emergency teams, and a long recovery period.

The group formulated a series of recommendations on preparedness for each of these scenarios, and split into three working groups to examine the core areas of the health system: hospitalization, health services in the community; and designing policy and interfaces. Each group used a SWOT model to analyze the health care system's current situation in these areas, incorporating the lessons learned from the attempts to cope with COVID-19, and drawing up its recommendations accordingly.

## Main. Recommendations of the Work Teams

### Control and Oversight

a. Set up a national health security administration
b. Appoint health security officers in local authorities
c. Implement a “emergency event management team” protocol in local authorities.
d. **Medical personnel:**

• Conduct periodic assessments of lack of medical personnel and hospital beds, and update the allocated f doctors and nurses in hospitals.
• Establish personnel “war room” at the Ministry of Health.
• Define a basic unit for personnel (emergency team) to allow flexibility in usage and mobility of medical staff during emergency events
• Mobilize personnel from external sources to the hospitalization system.
• Mobilize personnel from the hospitalization system to the home hospitalization system.

• Pair up units within the health system with units outside of it as “sister” units, to facilitate mobility and regulation of personnel between them.

• Invest in training of personnel and maintain readiness for emergencies.

• Maximize use of existing personnel: Expanding their authority in times of emergency; Provide responses to staff burnout, support for workers’ families, and psychological support for workers

• Increase the number of medical staffs: Make permanent the temporary personnel positions created during the pandemic, and create an additional 700 "slots" for nurses’ training in academic institutions

## Hospital infrastructure

a. Increase the number of general hospitalization beds to at least 17,000 over the next 25 years—adding around 680 beds a year

b. Ensure uniform high standards in the reinforcement of buildings against rocket/missile attacks and against earthquakes

c. Ensure flexible planning and construction of new health infrastructures and buildings

d. Ensure an emphasis in construction plans on infrastructures for intensive care units and air isolation units

e. Conduct advance planning of infrastructure reserves for the hospitalization system throughout the country, such as emergency use of geriatric hospitals, psychiatric hospitals, hotels, incarceration facilities, yeshivot, and field hospitals

## Information systems

a. Establish a team to define the types of information that need to be collected and reported during emergencies

b. Create systems for mapping available health resources, overloads in health institutions, and areas of high infection/resistance to infection

c. Shift health organizations to FHIR infrastructure (Fast Healthcare Interoperability Resources)

d. Develop work processes for sharing inter-organizational information during routine times, and upgrade the ease-of-use of the EITAN information-sharing system

e. Develop tools and skilled personnel designated for working with Big Data

f. Implement innovative technologies for distance medicine and systems management

g. Update information security and cyber-defense protocols

## Maintaining the provision of elective medical procedures in hospitals during emergencies

a. Formulate a uniform Ministry of Health policy for the continuation of elective procedures in hospitals during emergencies, which will apply to all hospitals

b. Maintain elective procedures, as much as possible, elective procedures in all areas of hospital services

c. Establish centralized controls for distributing the load of elective procedures among different hospitals

d. Give hospital directors the freedom to expand elective procedures in accordance with the patient loads on their hospitals

e. Prepare diverse solutions for maintaining the provision of elective procedures, such as online day clinics; reassigning procedures to private hospitals; home hospitalizations; and reassigning hospital clinic activities to community clinics

f. Ensure continued synchronization between hospitals and community services in routine times, and especially during emergencies, to facilitate mutual assistance

g. Include private hospitals in the roadmap for maintaining elective procedures, so that these can provide backup for the public health system

h. Distribute the burden carried by medical teams as much as possible, to prevent a situation in which some of them collapse under the strain, while others are barely working

## Home hospitalization and distance treatment

a. Strengthen the distance treatment system provided by health funds in various areas of medicine, to include the provision of clinical services during routine times, which may then be supplemented during emergencies

b. Strengthen the health funds' home hospitalization system, during both routine times and in emergencies, and set a standard for hospitalization beds in the community to reach around 15% of all planned hospitalization beds for internal and geriatric medicine

c. Appoint a taskforce for planning, incentivization, and acceleration of activities regarding home hospitalization

d. Develop models for mobilizing hospital doctors and nurses to reinforce health funds' home hospitalization teams

e. Provide social support for at-risk populations by using accessible communications technologies

## Legislation

a. Establish an inter-ministerial team to formulate overall legislation for health emergencies.

b. Meet the following criteria in such legislation: Legislation clearly defines the circumstances in which it will apply; allows minimal interference in professional decision-making; requires a rapid decision-making mechanism; offers sufficient flexibility for taking action; keeps infringement of human rights to a minimum; includes effective oversight mechanisms; facilitates transparency of information; and offers clear guidelines

## Media and public information

a. Include media management as a major element in decision-making in the health system

b. Establish a national public information system for public health

c. Establish an infrastructure for internet activities and in-house production capabilities at the Ministry of Health

d. Establish a system for monitoring the effectiveness of media and public information activities

**The estimated cost of implementing these recommendations is NIS 14 billion in one-time expenses, and approximately NIS 6 billion in annual expenses.**

# Employment in Israel During the COVID-19 Pandemic

Gabriel Gordon
The Israel Democracy Institute

Immediately prior to the COVID-19 pandemic, Israel's economy was in relatively good shape. In 2019, the Gross Domestic Product grew at a substantial rate in 2019 and per-capita GDP was also up, as reflected in a rise in the standard of living. The ratio of public debt to GDP was low relative to international comparisons, and the environment was one of almost full employment, with the unemployment rate at its lowest level for decades.

With the outbreak of the pandemic in March 2020, the combination of rising infection rates, the resultant drop in consumption of services, the restrictions on various activities, and the sharp decline in domestic and international demand led, in a matter of weeks, to an unprecedented fall in the activity of a large swathe of industries and to a sharp rise in unemployment. During this period, hundreds of thousands of workers were furloughed, many were laid off, and large numbers of self-employed workers were left without income.

The significant (and inherent) correlation between, on the one hand, the levels of activity in the economy as a whole and in specific industries (which were directly linked to infection rates and to the severity of the restrictions imposed), and on the other, the employment situation, posed a significant challenge to the formation of a balanced public policy, with this correlation characterizing economic activity in Israel throughout the crisis. Rises in infection rates led to the imposition of restrictions, with three lockdowns being enforced since the beginning of the pandemic. These restrictions succeeded in bringing down infections, but they also led to a dramatic rise in the number of unemployed. The severe economic damage that resulted, created

pressure on decision-makers to lift the restrictions, and when they did so, infection rates rose once again.

Increases in unemployment were not uniform, and the impact of the crisis was felt to a different extent among different population groups. These differences were a result of the varying levels of damage caused to different economic branches, and were also a function of the demographic and socioeconomic characteristics of employees prior to the pandemic, such as age, education, area of residence, gender, and status at work.

In our review, we show that the negative impact of the pandemic on employment, especially during periods of lockdown, was more significant among vulnerable populations. The hardest-hit populations included young adults, Arabs, ultra-Orthodox Jews, low-income workers, workers with only basic levels of education, residents of East Jerusalem, and workers in the food, hospitality, and entertainment industries. The findings also show that between 40% and 45% of the unemployed among most of the vulnerable groups managed to return to work in the periods after lockdown, compared with around 50% of more resilient groups.

Thus, it can be concluded that in times of crisis, the workers who are dealt the most severe blow are those with the lowest levels of education, working in low-level jobs that do not require special training, in the lowest income brackets, along with younger workers However, it should be noted that in the specific case of the COVID-19 pandemic, among all these factors, it is the specific character of those industries which were forced into a total lockdown, which had the greatest impact.

# Back to Work: Who's back in, and who's still out among Israel's COVID unemployed?

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The Israel Democracy Institute

This preliminary paper draft examines the trends in exit from and return to employment throughout the COVID-19 crisis of 2020/21. The analysis is based on administrative data of the Israeli Employment Services, and is supplemented by Labor Force Survey data of the Central Bureau of Statistics.

We find that exit rates were higher among women, young workers, and individuals with less than an academic education. Arabs' exit rates were not significantly different from those of Jews. However, women and workers with academic degrees who were employed prior to the pandemic, have higher chances of going back to work. Among Arabs – especially men – rates of return to employment are lower than those of Jews. Overall, these results are consistent across economic branches.

We also find that the duration of unemployment was longer among Arabs than among Jews, and among women, it was rather similar to that of men. In both cases, the duration of unemployment increases with age.

Finally, the duration of unemployment seems to have a negative effect on the chances of going back to work, even when the conditions in the labor market improve.

The results suggest that as it emerges from the crisis, the Israeli labor market faces several significant challenges, most prominent among them the need to restore employment to pre-COVID levels among the young and among minority groups, namely Arabs.

# Living Stipends in Vocational Training Programs

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This study examines the link between providing stipends to participants in vocational training programs, and various characteristics—including the completion of training;, degree of success in the program, and the rate of integration into the workforce—using descriptive statistics and probability regression. In the absence of available data on recipients of living stipends from the Ministry of Labor and their background characteristics at the time the study was conducted, it is based on surveys conducted among two groups: graduates of vocational training programs, and program dropouts.

The first recommendation, stemming from the need to analyze and upgrade vocational training programs, is to create a system to support research. This would comprise a database including information not only about program participants and stipend recipients, but also about individuals referred to training programs or inquiring about them, even if they do not go on to participate in a program. It is important that this information include personal details such as on the subjects' background, and information about their education, work, and income, both before and during the program. The system should also make it possible to track and examine participants' integration into the workforce after training. Such a database would support better and more reliable assessment of the impact of living stipends on individuals' desire and

motivation to register for and participate in training programs, and on their success in those programs and in the workforce.

The responses to our survey indicate that living stipends have a significant impact on the willingness to sign up for training. Only 18% of respondents who received a living stipend reported that it had no effect on their desire to register for the course, while all the others reported that it did affect their decision to register. Indeed, 30% indicated that they would not have done so were it not for the stipend.

The study shows that the main reason for training program dropout is linked to participants' ability to continue earning a living during the program.. Those graduating from the program can be characterized as older, better educated, and more well-off, which would seem to enable them to cope better with the challenges of participating in training.

These findings are consistent with those of previous studies from around the world, which found a clear positive impact of living stipends on both registration (Braunstein, 1999; Cohodes & Goodman, 2014; Kim, 2012; Mundel, 2008) and on completion of training (Allon, 2011; Barrow et al., 2014; Castleman & Long, 2013; Chen & Des Jardins, 2010; Chen & St. John, 2011; Dynarsky, 2003), particularly among those with low incomes.

Participants in vocational training programs with no sources of income at the time of their participation, were asked about the effect which the current living stipend (1500 NIS a month) would have had, and then—as to the effect of a higher stipend (2500NIS monthly or at the same level as unemployment benefits). Only 66% indicated that a stipend of 1500 NIS would have been very helpful, as compared with 80% with regard to a living stipend of 2500 NIS.

In response to an open question about the appropriate stipend level, the respondents' average response was a sum of NIS 4,000 per month. This position is not surprising, when comparing the level of stipends provided in Israel versus in other developed countries such as Germany, France, the United States, and others. It is interesting to note that a large proportion of respondents (84%) were completely unaware of the possibility of receiving a living stipend, and that Ministry of Labor data indicate that just 1% of participants in subsidized training programs receive living stipends. Thus, the eligibility criteria for living stipends, the size of the stipend, and the way in which this information is made accessible, should all be reconsidered.

A comparison of stipend recipients with participants who were potentially eligible, but did not receive living stipends reveals that the former have better chances of increasing their wages following training, and better chances of working in the field in which they were trained.

The COVID-19 pandemic has opened up a window of opportunity both to respond to the greater need for training and living stipends, and a greater possibility for implementing a new and improved model, which will help those who lost their jobs during the pandemic to participate in high-quality technological and vocational training and find their place in the workforce.

# A Just Transition to a Low-Carbon Economy

Prof. Nathan Sussman, Daphna Aviram-Nitzan, and Hila Shoef-Kollwitz
The Israel Democracy Institute

There is overwhelming consensus among leading international institutions, including the United Nations, the OECD, the European Union, the World Bank, and the International Monetary Fund, that most of the steps being taken and those planned as part of the transition to a low-carbon economy, also promote inclusive economic growth in the medium and long term.

Alongside the recognition of the economic logic behind policies to reduce emissions and the potential for medium and long-term growth they offer the economy, international institutions have also begun issuing warnings about the growing dangers in the short term for employment prospects in specific sectors and for regions that are dependent on these sectors for their residents' income; about assessments indicating that the transition to a low-carbon economy will lead to a rise in energy prices in the short term, which will have a greater impact on vulnerable populations; and about fears that both the immediate and more long-term benefits of this transition will be shared in an unequal and regressive manner.

Thus, it is widely accepted today that in the transition to a low-carbon economy provisions must be made for vulnerable populations, so that "no-one is left behind."

In the first section of this document, we identify various policies currently implemented around the world, or that are detailed in the literature, which aim to reduce the negative impact of the transition to a low-carbon economy on vulnerable populations, and ensure that these populations reap the many benefits this transition can provide.

In the second section, we present an analysis of the impact of various components of this planned shift, on households and on the general Israeli public, based on a study conducted by the Israel Public Policy Institute (IPPI) and on three public opinion surveys carried out by the Israel Democracy Institute. We also present a summary of the main insights gained from a consultation process with civil society organizations and the general public via an online platform on which the public could respond to open-ended questions.

Below are our policy recommendations based on experience accrued around the world and on the findings of our surveys and public consultations, which if adopted, will help ensure a "just transition" of Israeli society to a low-carbon economy.

## Recommendations for Action

1. Identify and map vulnerable populations:

a. Upgrade the identification of populations in Israel suffering from energy poverty, by defining a basic basket of energy consumption adapted to the Israeli context.

b. Map the potential negative impact on employment prior to launching planned regulatory changes.

c. Reducing the burden of the transition to a low carbon economy among populations defined as vulnerable

2. In line with the findings of our public opinion surveys and consultation processes with civil society organizations and the general public, we recommend reducing the burden that comes with the transition to a low-carbon economy on populations identified as vulnerable, and ensuring that they benefit from the advantages it offers, by helping them shift to greener personal energy consumption, government investment in supportive infrastructure, and encouraging private-sector investment in service of these goals. This can be achieved via the following policy steps:

a. Improve the efficiency of household energy consumption:

i. Provide subsidies or combined public-private funding for home insulation for selected populations, including insulation of walls, windows, and roofs (as in Britain), as well as logistical help for carrying out upgrades.

ii. Reduce taxes and levies on air conditioners and heating appliances with a high energy efficiency rating.

iii. Incentivize urban renewal projects to upgrade old buildings to meet green standards (similar to the TAMA 38 arrangement for reinforcing aging buildings). We found broad public support for this in our surveys as a motivating factor to upgrade old buildings. The focus should be on buildings located in population centers with a low socioeconomic ranking, and especially those centers in geographical regions with a particularly hot or cold climate, such as those in the north and the south of the country.

b. Improving the efficiency of energy consumption for transportation

i. Increase government funding for public transportation in rural areas. According to the findings of the IPPI study and our public opinion surveys, focus should be placed on Arab villages and towns, whose populations were identified as being particularly vulnerable to increases in fuel prices. It was also found that improving the frequency and accessibility of public transport would lead a large share of the public to cut back its use of private vehicles.

ii. Improve communications infrastructures, including connecting rural areas to the fiber optic cable network for high-speed internet. This can help increase the number of those working from home, even if only for part of the week.

iii. Provide subsidies to citizens to upgrade old, high-emissions vehicles with newer (second hand) vehicles that are more fuel efficient and less polluting, by providing differential grants. Eligibility for these grants, and the amounts provided, should be decided according to household income and distance from the workplace (as in France). This will benefit residents of the rural periphery who need financial assistance.

iv. Provide discounts on annual vehicle tax and purchasing taxes for vehicles with low emissions and low fuel consumption, using a differential scale such that the discounts are reduced as the cost of the vehicle increases.

c. Decentralize electricity production to households and to small and medium-sized producers:

i. Upgrade and expand the electricity conduction network to distant locations in the periphery, to facilitate production for distribution purposes by households and small solar energy producers and open up new income sources for these residents.

ii. Provide funding assistance for the installation of solar panels on roofs of homes of vulnerable populations This will enable them to produce electricity for their own use and significantly reduce their energy expenditure.

d. Expand incentives for private investment in green sectors and in vulnerable areas:

i. Increase grants for green research and development, as an opportunity for leveraging growth.

ii. Provide grants or tax rebates to industrial plants for improving energy efficiency, in order to ease the transition to a low-carbon economy and protect employment.

iii. Provide incentives for investment in vulnerable regions, as identified in the course of mapping of vulnerable populations.

e. Provide funding assistance and incentives for professional training and retraining programs for workers in vulnerable industries and regions, who are at risk of losing their jobs. In addition, encourage and incentivize training for vocations relating to renewable energy, recycling, and the circular economy, and provide training in new, greener production methods as well as in basic technological skills so that more people can work and provide services remotely.

f. Recycle incomes from carbon tax to help balance the tax burden. In the short term, we recommend using carbon tax incomes to provide financial incentives for using green services and products. In the medium and long term, when tax rates rise, we recommend recycling carbon tax incomes to reduce other taxes, with the highest priority being cuts to regressive taxes such as VAT. The advantage of using tax incomes to reduce VAT is that the choice of populations who will benefit will not be influenced by political interests or pressure groups, and thus this step is less likely to encounter political and other barriers to implementation. In addition, reducing VAT will not only benefit households, but will also benefit producers and businesses that were hit by the carbon tax, without canceling this incentive to reduce consumption of polluting energy.

3. Education, awareness, and public participation:

a. Awareness. Our surveys show that most of the public is concerned about the climate crisis and believes that Israel's government should take steps to mitigate it and prepare for it. At the same time, more needs to be done to raise awareness about the environmental and social impact of

failing to act and about how these outcomes can be avoided, particularly among population groups with the lowest levels of awareness (ultra-Orthodox Jews, young people, low-income groups, and those with lower levels of education). The survey findings also indicate that greater awareness is **needed about the personal benefits of shifting to green energy consumption, such as the benefits to be derived from installing solar** panels, upgrading homes to meet green standards, or changing to an environmentally friendly vehicle. These steps have been taken by only a small fraction of the public. Finally, we identified a need for public information campaigns regarding the logistical steps required to improve household energy efficiency. Campaigns of this kind were ranked by the public as an effective means of incentivizing households to take these actions.

b. Public participation and engagement. During the current period of instability and high tensions in public and political discourse in Israel, it is important to develop platforms for public participation throughout this process. Involving the public in an effective manner can help disseminate information and increase transparency, while also ensuring that decision-makers are made aware at the policy-design stage of the views and needs of the population groups affected by the planned changes.

c. Behavioral economics. We recommend exploring the use of behavioral economics tools to encourage the public to act. To this end, we recommend first identifying the contexts in which there are large gaps between the current and desired realities with regard to the transition to a low-carbon economy due to behavioral barriers; identifying which behavioral barriers are responsible for these gaps; and examining which behavioral tools might be suitable for addressing these barriers. Empirical assessments of the effectiveness of relevant behavioral tools can be conducted using surveys, laboratory experiments, and field experiments in conjunction with (for example) local authorities.

d. Educating the younger generation. The information we gleaned from the public revealed that not enough is being done to educate young people about the dangers of the climate crisis and how it can be prevented. The responses from the public and from civil society organizations highlighted this lacuna. Thus, relevant content should be integrated into the education system curriculum so that the younger generation can be properly informed and prepared. However, this policy step will only affect the next generation, and therefore does not address the immediate

need for public cooperation. For this reason, it is less urgent than broad public information campaigns targeting all ages.

This paper is one of a series of studies published by the Israel Democracy Institute in conjunction with the Ministry of Environmental Protection, as part of the program on "Israel 2050: A Thriving Economy in a Sustainable Environment" program.

# How Willing are Israelis to Reduce Carbon Emissions?

Daphna Aviram-Nitzan, and Hila Shoef-Kollwitz
The Israel Democracy Institute

A survey conducted in December 2020 by the Israel Democracy Institute (IDI) examined Israeli's attitudes toward climate change and the possible steps to stem the tide.

The survey was conducted as part of Israel 2050: A Flourishing Economy in a Sustainable Environment, a project spearheaded by the IDI in collaboration with the Ministry of the Environment as well as the Ministries of Economy, Energy, and Transport and the Israel Planning Administration. The project deals with preparations by the Israeli economy to reduce carbon emissions and to design strategic plan and policy objectives for 2050, a plan which Israel must to submit to the UN by the end of 2020. The findings of this survey were presented at IDI's Eli Hurvitz Conference on Economy and Society. Link to the full survey.

**Pollution, Climate Change, and Government** – 75% of Israelis agree that there is a link between air pollutant emissions and climate change and that the Israeli government should take steps to deal with global warming.

**Humanity at Risk** – 72% of Israelis believe that humanity is at risk due to climate change and global warming, and 54% believe that the climate crisis is the next crisis we will have to deal with.

**General Climate Fears** – 70% of Israelis are concerned about the increase in disease and epidemics against the backdrop of the climate crisis; 63% are concerned about the increase in

air pollution; 60-61% are concerned about the economic blow to the weaker populations around the world as a result of the climate crisis, or concerned about the destruction of the earth as a habitable environment; and 56% are concerned about the shortage of natural resources and raw materials. Among Arab Israelis, the number concerned about the rise in air pollution is particularly high: 72% as compared with 64% among secular and orthodox Jews and only 38% among ultra-orthodox Jews.

**Recycling** – 77% of Israelis expressed strong willingness to separate trash for recycling on a regular basis provided the recycling bins are near their homes. This willingness declines significantly to 53% if the bins are some distance away.

**Public vs. Private Transportation** – 45% of Israelis are willing to cut back on travel in private vehicles in order to reduce air pollution, even if this makes the trip longer and less convenient.

**Environment and Elections** – Despite the findings of the survey, climate change and environmental quality are not a major consideration for voters in either Knesset or local elections: only 30% and 33%, respectively.

The Climate Change Crisis survey was conducted by IDI's Social Eye team for inclusion in a more extensive report being written by an IDI research team called "A Fair Transition to a Low-Carbon Economy in Israel." This report was published in December 2020 and presented in part at the Eli Hurvitz Conference on Economy and Society (December 14–16, 2020).

The survey is based on a representative sample of the Israeli population and included 1009 respondents. It was conducted online, November 8–14, 2020. A total of 842 men and women were interviewed in Hebrew and 167 in Arabic, constituting a representative sample of the entire adult population in Israel (aged 18 and up). The maximum sampling error for the survey population as a whole is plus ±3.15%, with level of 95% (Jews ±3.4%, Arabs ±7.7). The fieldwork was conducted by the Smith Institute, directed by Rafi Smith. The data file is available at Data Israel.

# Dualization and Classes in the Israeli Labor Market

Prof. Yotam Margalit
The Israel Democracy Institute

The public discourse on socioeconomic gaps in Israel usually focuses on the rise in income inequality over recent decades. Yet beyond this trend, another important development in the Israeli economy has been the gradual segmentation of the labor market into a number of "classes," distinguished not only by income, but also by their members' employment prospects, accompanying social benefits, and pension security. This development is related to a process of dualization, in which a major divide is created between labor market insiders—workers who enjoy relative protection through traditional employment arrangements—and outsiders--workers who are exposed to market fluctuations and have only limited employment protections. Dualization has become a central feature of labor markets in many advanced economies; but as this study shows, the characteristics and implications of the phenomenon in Israel are particularly challenging.

This study examines dualization in Israel, with a focus on two factors that are central to understanding it in the local context. The first is the degree of representation the worker enjoys, and the second is the worker's level of education. The study shows that much can be learned about the emergence of distinct classes in the Israeli labor market over recent decades, by examining workers according to these two dimensions: first, differentiating between the insiders (union members or workers covered by a collective agreement) and the outsiders (all other workers in the labor market); and second, within each of these two groups, differentiating between workers with an academic degree and those without. This results in the creation of four groups of workers.

The study analyzes the process of dualization in the Israeli labor market by means of a novel panel dataset we created using administrative data that tracks the employment and income characteristics of workers in each of these four groups. Our sample consists of more than 580,000 individuals tracked annually over the period 2001–2014. In addition to administrative data, we also analyze information from the Israel Tax Authority on workers' incomes and pension contributions, as well as data from the Ministry of Education on the educational attainment of each individual. Finally, we merged the individual-level information with data from the Social Survey produced by the Central Bureau of Statistics.

Our analysis indicates that the widest gap between insiders and outsiders is seen among workers with no college degree, in terms of their job prospects, employment conditions, income, and pension security. Similarly, examination of survey data indicates that the two groups also differ sharply in the way they view their respective situations in the labor market and their economic futures. Compared with outsiders who have no academic degree—the largest group, accounting for almost half of all salaried workers—insiders without an academic degree remain in jobs for longer periods (on average, 2.1 times longer), earn more (on average, around 37% more), and receive better pensions and benefits. By contrast, the differences between insiders and outsiders with a college or university degree are much smaller.

The gaps between insiders and outsiders grow as the former accrue more years on the job and benefit from greater employment experience. In 2001, the income of a representative insider (on average, a Jewish male around 40 years old) with no academic degree was almost identical to that of an outsider with similar characteristics, while around a decade and a half later the gap between them had grown to around 13% in favor of the insider. The gap between outsiders without a degree and insiders with a degree grew from 11% at the beginning of the period to around 49% at its end.

In addition to these gaps, the study also indicates that there is little mobility between the two groups. This is particularly notable among outsiders with no academic degree: around 91% of workers who were in this category at the beginning of the period surveyed, remained outsiders ten years later.

In the study, I discuss the factors behind these trends. Some of these are connected to economic and technological changes that are characteristic of all industrial economies, while others are

unique to the Israeli labor market. The unique factors include structural changes, such as the dramatic decline of organized labor, as well as welfare and labor law.

Following an analysis of these factors, I discuss a number of steps that could help mitigate the negative consequences of dualization in Israel's labor market. Among other things, these include expanding the public investment in active labor market policies (such as government-funded retraining programs), which would improve the employability of unskilled workers; legislative changes that would improve the mobility of workers by reducing the linkage between social benefit entitlements and the length of time worked for a specific employer; bolstering the enforcement of labor regulations; and amending the legislation regarding unionization so as to make sector-level collective agreements more feasible. Adopting these proposals will bolster the economic security of workers and help establish work regulations that are better suited to the new and evolving labor market.

# Vocational Training in Israel: Barriers, Shortcomings, and Challenges in an International Perspective

Dr. Eitan Regev, Yarden Kedar and Naor Porat
The Israel Democracy Institute

Vocational training is intended to enable people from all strata of the population to learn a trade and develop skills needed in the job market. It is of great importance for developing human capital, meeting the needs of employers, and increasing productivity—all of which are essential for raising the standard of living and sustaining economic growth. Nevertheless, there has been a substantial decline in recent decades in the status, scope, and budgets of the vocational training system in Israel. The scope of publicly budgeted vocational training programs has been cut sharply, as have the budgets allocated for them, and they have gradually been transformed into a vehicle for improving the well-being of underprivileged population groups rather than a means of developing the human capital of the entire population. This trend has led to a shortage of skilled personnel in some fields, especially manufacturing industries and high tech. The shortage stems from mutually reinforcing factors—training failures, insufficient budgets, and structural barriers in those industries—that cause personnel deficiencies (both quantitative and qualitative). These, in turn, reduce investment in productive capital. Moreover, according to estimates by the Ministry of the Economy, tens of thousands of industrial workers are expected to retire by 2021. This makes the need to substantially expand vocational training and improve its quality even more evident.

In light of this, the main objectives of the study are to describe the Israeli vocational training system—in terms of organization, planning, budgets, and execution—and to compare it to

training systems in other developed countries; to identify the main barriers and shortcomings in each of these aspects; and to draw up specific, practical recommendations to help policymakers improve the quantity and quality of skilled personnel, especially in manufacturing.

Our analysis indicates that the Israeli vocational training system suffers from structural, planning, bureaucratic, and budgetary flaws, which detract from its ability to train a sufficient number of skilled workers in the fields needed. The system is convoluted and spread out over many agencies and organizations (the Vocational Training Branch in the Ministry of Labor, the Technological Training Institute, the Education Ministry, the Defense Ministry, etc.), with no clear division of authority and responsibilities among them. It seems to have been patched together over the years, instead of being the product of orderly thinking regarding the ideal combination and structure for achieving the government's objectives. The division of authority includes unnecessary duplications, and the structure of the system creates a distortion in the incentive mechanism that leads to improper assignment of students to the various institutions and to a waste of public funds. It is not clear who is directly responsible for the outcomes of vocational and technological training programs, or for assessing (quantitatively and qualitatively) achievement of the goal for which they were intended. Essentially, there is no one agency accountable for the situation.

Our analysis of the system indicates that the current separation between the agencies and organizations that manage the training programs and those that carry them out, and between the public sector and the business sector, makes policymaking and long-range planning difficult. Until recently, the system lacked a research body in charge of gathering data, analyzing it frequently and on a long-term basis, and making it available so as to improve training programs and adapt them to the needs of employers and of the changing labor market. This makes it very difficult to measure the success of the training programs, so there is no way to incentivize organizations based on their performance. Furthermore, private institutions, which profit from training as many students as possible, decide on course content and study tracks according to demand from students rather than market needs, and they have no obligation or incentive to help with job placement after training.

Our international comparison found many differences between the training systems in Israel and other developed countries. The comparison focused on European countries with high per-capita

income and well-developed, state-managed training and internship systems. The main areas in which the Israeli system falls short (comparatively speaking) include excessive complexity and low budgets. In addition, the absence of accreditation options has led to a lack of opportunities to transfer between vocational and academic fields of study. The most significant shortcoming, however, is the lack of involvement by employers and other social partners in the training process (although there seems to have been a positive trend in this regard since 2015). Thus, whereas in Israel only 0.5% of students have apprenticeships with an employer during training, in the comparison countries the rate is at least 50%, and in some cases even 80%. Moreover, unlike in Israel, vocational training programs in the comparison countries have a positive image—by virtue of certain factors that are lacking in the Israeli system: a high rate of employment in the field studied, high salaries, stipends for trainees, encouragement of academic recognition of non-academic training, and lifelong learning.

The study also examined the link between vocational training programs and labor productivity. Labor productivity in Israel, which is substantially lower than the OECD average, is an important indicator of the ability of the country's economy to grow and improve residents' standard of living. The disparity between labor productivity in Israel and average labor productivity in industrialized countries has not shrunk in many years. The low labor productivity in Israeli manufacturing industries raises questions about the effectiveness of the current Israeli training system. The quantitative analysis in this document, which compares OECD countries with one another, indicates that public investment in vocational training increases labor productivity in manufacturing, and especially in traditional industries—a result that accentuates the need to upgrade and improve the Israeli training system.

## We therefore recommend:

(**1**) Reforming the organizational structure of the vocational training system so as to eliminate duplications of responsibility among the different entities and concentrate management, supervisory, and implementation powers in one governmental body

(**2**) Substantially increasing public budgets for training programs, while also shortening the training programs, making their content more relevant, and creating modularity

(**3**) Expanding and facilitating options for accreditation, for transferring between different vocational tracks, and for linking vocational programs with academic programs

(**4**) Offering stipends on a large scale to participants in the training courses

(**5**) Offering government incentives to increase the business sector's involvement in and funding of the training process—by means of support for physical infrastructure and apprenticeships and by means of involvement in curriculum design and revision

(**6**) Including on-the-job training (OJT) in the curriculum throughout the vocational training period

(**7**) Conducting ongoing monitoring and assessment of graduates' performance in the job market, as well as the compatibility (or incompatibility) between study programs and subsequent employment, and making the data available to the public

# Is the Higher Education System Ready to Integrate the Growing Number of High School Graduates with Matriculation in Five-Unit Mathematics?

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## Background

In 2013, the "5 × 2" initiative was launched in the wake of a substantial decline in the number of new high school graduates who had taken the five-unit exams in math, physics, chemistry, and technological subjects, as well as a growing shortage in teachers of these subjects. This and other initiatives, such as Giving Five and the Scientific Technological Cadets, have borne fruit: Between the 2011/12 and 2018/2019 school years, the number of students passing the five-unit matriculation exam in mathematics (many of whom go on to enroll in STEM programs in universities) rose by 10,200. In view of this upswing, some questions arise regarding the expected increase in demand for university STEM programs in the next five academic years (2021/2–2025/6), during which the graduates are expected to enroll: To what extent will the number of applicants to science and engineering programs increase in the next five years? And will the resources currently available to the academic Institutions be sufficient for coping with this increase?

## Main Findings

An analysis of the patterns of university enrollment among people who passed the five-unit matriculation exam in mathematics—particularly enrollment in science and engineering programs—shows that most of them indeed study these subjects and are overrepresented in them. These patterns are expected to have a major impact on demand for science and engineering programs in the next five years, and this demand is very likely to increase substantially. Most of the increase in the number of students passing the five-unit math exam can be attributed to the stronger segments of society, who reside mainly in socioeconomically well-off localities. This fact reinforces the assumption that most of the recent graduates who passed the five-unit math exam are capable of earning a degree in sciences or engineering. Assuming that these patterns continue among the new graduates as well, we predict that in the next five years demand for science and engineering programs will exceed the current capacity of academic institutions by about 45%—a figure that is close to the target set by the Council for Higher Education (40%). However, there is some variation among the different STEM fields. In the biological sciences, demand in the next five years is expected to exceed current capacity by 44.3%; in engineering and architecture, by 38.6%, in math, statistics, and computer science, by 41.4%, and in the physical sciences, by 83.4%.

To sum up the findings, in some high-tech fields in higher education (e.g., computer science and the physical sciences), there is a large surplus of qualified candidates, whereas in other STEM fields the situation is better. In those fields that are more in demand—those characterized by high salaries—the universities are having difficulty meeting the excess demand and have been forced to raise their admission criteria. The main obstacles to increasing capacity in these programs are insufficient senior faculty, teaching assistants, and physical infrastructure. Recruiting new faculty members is the biggest problem. Even though the universities are given a free hand to recruit personnel, they are struggling due to the cannibalization effect in the high-tech industry (private companies "snatching up" the most talented potential faculty members). The findings of this study show that this problem is likely to get worse in the next five years due to the surge in the number of students passing the five-unit math matriculation exam and their subsequent enrollment in academia.

# Recommendations

The market failure in university high-tech programs will not be resolved by the private sector. Only government intervention and adequate budgeting can solve the problem of incentives (or more accurately, the lack thereof) that is detracting from the budgeted institutions' ability to recruit faculty in STEM fields. A substantial increase in government budgets is therefore essential for increasing enrollment in college and university STEM programs. We recommend that the Ministry of Finance, the Council for Higher Education, and academic institutions consider implementing the following measures:

## Ministry of Finance

(**1**) Offer generous scholarships and grants to students in high-tech fields who commit to continuing for advanced degrees and then joining the teaching faculty.[3]

(**2**) Reexamine the salary policy in universities and public colleges so as to take into account differences between supply and demand in the various fields in academia and the labor market.

(**3**) Encourage investments and offer governmental and philanthropic incentives to upgrade the physical infrastructure for science and engineering programs in non-budgeted colleges as well.

## Council for Higher Education and Academic Institutions

(**1**) Establish combined undergraduate/Ph.D. programs and employ outstanding students in these programs as teaching assistants before they complete their studies.

(**2**) Consider increasing the use of technology in university programs so as to reduce the need for personnel and make faculty members more accessible.

(**3**) Consider expanding the faculty by hiring experts from the private sector to teach in universities in addition to working in industry.

3 There are precedents for this in the health system (e.g., in-demand residencies, doctors in the periphery).

(**4**) In the short term (i.e., during a limited transition period), in order to cope with the immediate shortfalls, consider hiring faculty members from abroad.

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