

**Under Embargo – until Wednesday, June 16**

## **2021 Israel Innovation Authority - Innovation Report**

**The Israeli High-Tech Sector Is Maturing – Changing the Character of Israel's Entire Economy. If the Government does not Reassess its Policies toward the Sector, High-Tech Growth will Benefit the High-Tech Sector Alone.**

**About 10% of Israeli Employees Work in the High-Tech Sector, and they are Responsible for:**

**15% of Israel's Gross Domestic Product (GDP), 25% of the Total Income Tax Paid In Israel, 43% of Exports, and 40% of the Value of Companies Listed on the Tel Aviv 35 Index**

**Although a record number of Israeli startups are floating on the stock market, there has been a sharp decline in the number of new startups established annually (from 1404 in 2014 to approximately 520 in 2020), and a sharp decline in the establishment of multinational development centers in Israel (from 46 in 2016 to 4 in 2020).**

**Dr. Ami Applebaum, Chairman of the Israel Innovation Authority:** "The influence of high-tech on the resilience of the Israeli economy requires the country to ensure the continued prosperity of the high-tech sector. At present, the number of new start-ups founded each year is sharply declining, the number of seed-level investment rounds is diminishing, and governmental research and development budgets are being cut on an

annual basis – dramatically, relative to other countries. The State of Israel must continue to develop a robust response to the significant challenges facing the Israeli high-tech sector. These challenges are detailed at length in the *2021 Israel Innovation Authority Innovation Report*. The recent global economic and health crises highlighted, above all, the challenges the high-tech sector is facing, as well as the unparalleled and unprecedented importance of the sector's contribution to Israel's economy. Most of all, we have further realized the need to maintain the global level of success of Israeli high-tech in order to guarantee the country's overall economic growth. Shocks in the Israeli high-tech ecosystem could critically affect employment, tax revenue, and the stability of the Israeli economy as a whole."

2020 was a year of epidemics and crises, which were accompanied by extraordinary and unprecedented economic and health challenges. Israeli high-tech entered the crisis phase in a strong and stable position. It withstood the shockwaves of the crisis - and in many ways, flourished more than ever. **The 2021 Israel Innovation Authority Innovation Report** published today (16 June) outlines, among other findings, the contribution that the high-tech sector can make towards the recovery of the Israeli economy through accelerated digital transformation, the sector's diverse range of assets, and the main challenges the country is facing in the fields of finance and human capital.

## The 2021 Israel Innovation Authority Innovation Report Highlights Several Worrying Trends:

- Over the past five years, the number of new start-ups established annually in Israel fell from 1,400 in 2014 to 850 in 2019, and it is estimated that just 520 new start-ups were established in 2020.
- Israel's internationally competitive position as the "Start-Up Nation" is eroding, and in recent years Israel has been on a declining trend, relative to other countries, according to global innovation indices.
- **Where will tens of thousands of graduates holding high-tech professional degrees work?** One in every four students in Israel is studying for a bachelor's degree in technological fields, including engineering or computer science. An influx of new graduates could exacerbate the existing "entry-level" problem. By 2030, more than 20-25 thousand employees with limited or no experience are expected to join the high-tech sector each year, but according to the Israel Innovation Authority and Start-Up Nation Central's Human Capital Report, only 45% of companies recruit "junior employees."
- The share of the state budget invested in the Israel Innovation Authority (i.e. the State of Israel's investment in supporting civilian research and development) has fallen sharply, from 1% in the early 2000s to less than 0.5% today – a significantly lower proportion than in world-leading countries in the field.

### Additional Key Points from the Report:

- The total amount of capital raised by Israeli start-ups quadrupled within a decade and totaled \$11.5 billion in 2020 - 20% more than the total amount of capital raised in 2019.
- The number of investments exceeding \$100 million has increased almost sevenfold in the last five years – from three investments in 2015 to 20 investments in 2020. In the first quarter of 2021 alone, there were 20 investments of over \$100 million.
- The value of high-tech exports is growing steadily, reaching almost \$50 billion in 2020 – more than 40% of total exports.
- High-tech employees, who make up 10% of all employees in the economy, are responsible for a quarter of the income tax paid by employees in Israel.

Employees of multinational companies' R&D centers pay six times more income tax relative to their share of the workforce.

- Compared to 2019, 2020 saw a 50% increase in the number of Israeli technology companies floated on the stock markets. The number of listings of Israeli start-ups seeking to maintain their independence peaked in 2020, with Israeli companies achieving a record 31 initial public offerings (IPOs), primarily on the Tel Aviv and US stock exchanges.
- Are multinational companies no longer interested in coming to Israel? In an interesting change of trend, in 2020, multinational companies only opened four new research and development centers in Israel; they are, for the most part, usually established as part of mergers and acquisitions. This trend demonstrates the sector's maturity, with an increasing number of start-ups seeking to maintain their independence. Nonetheless, the workforce at these companies has expanded at the same high rate as the rest of this sector, and its share among the total high-tech sector has been maintained.
- Contrary to the image of high-tech as a young sector, there has been an increase in the average age of employees in the high-tech industry – **which is now higher than the average age of employees in the rest of the economy**. The average age of high-tech employees in 2019 was 40.1, compared with the average working age in the rest of the economy which stood at 39.6.

### Details of the Report's Main Points:

#### Human Capital: The Shortage of Experienced Employees is Constant, While the Number of "Juniors" is Growing

Competition for human capital in the high-tech sector continued during the coronavirus pandemic. The shortage of experienced employees that high-tech companies are interested in recruiting still exists, and totals 13,000 job vacancies in the sector (compared with some 19,000 in 2019), according to the recent *Human Capital Report* published by the Israel Innovation Authority and Start-Up Nation Central. High-tech employees have made a significant contribution to rehabilitating an economy recovering from the economic, social, and health crises, while also generating new sources of income in order to reduce the budget deficit.

At the same time, the rate of university graduates entering the sector – which should help address the shortage of employees – is rising: one in four students in Israel is

studying for a bachelor's degree in a technological field. While this is, on the one hand, good news for a sector with an chronic human capital shortage, the influx of new graduates may exacerbate the inability of inexperienced entry-level candidates to find a job in the high-tech sector.

In the coming years, tens of thousands of new employees who have acquired technological/academic training, but have limited or no professional experience, will join the high-tech workforce. However, today, employers in the high-tech sector are interested in experienced employees, and a large proportion of employers lack the capability to train young employees without prior professional experience. To mitigate this problem and prevent unemployment among new graduates, high-tech employers, including mature Israeli start-ups, will be required to facilitate more widespread hiring and training of inexperienced employees.

**Dr. Ami Applebaum, Chairman of the Israel Innovation Authority:** "The *2021 Israel Innovation Authority Innovation Report* finds that a third of students are studying a scientific profession, with the potential to participate in the high-tech sector. However, if employers in the sector do not make the necessary adaptations in order to recruit entry-level employees, tens of thousands of skilled and educated graduates will not enter the market due to a systemic perceptual bias. The sector must work alongside us to encourage vocational training, and in particular employers must agree to hire inexperienced employees and expand the sectors employed in high-tech to prevent any aggravation of the "entry-level" problem."

### **The high-tech sector demonstrated high levels of resilience during the coronavirus pandemic but was not immune to its effects.**

Israeli high-tech has demonstrated a high level of resilience in responding to the economic impact of the coronavirus crisis thanks to the sector's ability to respond quickly to the new working environment and uncertain conditions. In 2020 and 2021, the sector demonstrated growth according to various economic indices.

The capital raised by Israeli start-ups has more than quadrupled over the past decade, and in 2020 totaled \$11.5 billion - 20% more than the amount of capital raised in 2019. The average size of an investment round increased by 10% compared to 2019, with the

bulk of this growth in funds raised by later-stage start-ups, some of which raised unprecedentedly large rounds totaling hundreds of millions of dollars.

Within five years, the Israeli high-tech sector increased by sevenfold the number of investments in excess of \$100 million – from 3 such investments in 2015 to 20 investments of more than \$100 million during 2020. Moreover, in the first quarter of 2021 alone, some 20 investment rounds of more than \$100 million were closed (according to IVC Data - The Israeli Tech Review, Q1 2021).

At the same time, at the height of the coronavirus crisis, the level of unemployment benefit recipients in the high-tech sector reached a peak of 14% (Appendix "A"), a level seven times greater than recipients of unemployment benefits in the sector before the coronavirus pandemic began (2%, as of January 2020). However, in the other sectors of the economy, the level of unemployment recipients during the first lockdown period was twice as high. As of April 2021, the unemployment rate in the high-tech sector was 8.2%. A reported shortage of 13,000 employees, as opposed to thousands of high-tech layoffs, indicates that employers in the sector are sticking to their approach of recruiting only experienced employees and are not willing to expand the workforce to a variety of other populations, especially inexperienced entry-level graduates – "junior candidates."

During the coronavirus crisis, most of the unemployed high-tech staff were employees with relatively low salaries for the high-tech sector, earning a monthly salary of less than NIS 15,000. Based on this information, it can be concluded that most of the loss in employment in the high-tech sector was amongst young employees ("juniors") and employees in supporting fields who earn, in general, salaries that are lower than the sector's average, which was NIS 25,300 as of 2020.

### **What Happened to Entrepreneurial "Drive" in Israel?**

Along with the clear strengths of Israeli high-tech, there are a number of worrying indicators whose long-term impact must be monitored so that relevant stakeholders can work toward their reduction. For example, after a boom in entrepreneurial activity around a decade ago, there has been a significant decrease in recent years in the number of new start-ups established each year.

This decrease raises a critical question - is the era of the "Start-up Nation" in Israel over? In just five years, the number of new start-ups established on an annual basis in Israel has plummeted, from 1,400 start-ups established in 2014, to 850 new start-ups in 2019

and an estimated 520 new start-ups in 2020. This figure represents a sharp drop of almost 70% in the number of new start-ups established each year compared to 2014.

The number of new start-ups that are currently being established has a direct impact on the future of Israeli high-tech, and the question is being raised as to how far this reduction can continue without posing a danger to the future of Israel as a “Start-up Nation.” The report also found that the number of investors participating in seed investments - aimed at fledgling start-ups in their initial stages - has also declined in the last two years.

The financial needs of start-ups and their ability to raise capital changed immediately with the outbreak of the coronavirus crisis. Therefore, the Israel Innovation Authority was called upon to manage this rapid change and immediately offer new solutions to respond to this situation. One notable example of a government solution developed in response to the coronavirus crisis is the Fast Track program created by the Israel Innovation Authority and the Ministry of Finance. This program aimed to help start-ups get through the initial period of the crisis, which was characterized by a decrease in the flow of money from the private market to innovative technology companies, which involves a great deal of risk. During the seven months that the program operated, NIS 650 million was provided to 283 approved applications (out of 578 applications submitted).

Approval of the applications was conditioned on obtaining supplementary financing, which contributed to the rapid return of early-stage investors to the market. This solution clearly demonstrates how rapid government intervention can generate growth, in this example through investment even in times of crisis, and offers insight into how government-based solutions can be adopted on a regular basis.

### **The Industry is Maturing: The Entire Economy Will Reap the High-Tech Fruits**

The 2021 *Israel Innovation Authority Innovation Report* presents the latest picture of Israeli high-tech and reflects what appears to be the maturing of the Israeli high-tech sector.

An increasing number of Israeli start-ups are choosing to maintain their independence and to grow organically, employing a large number of employees and conducting significant business activities around the world. The capital raised by Israeli start-ups in their mature stages is, as noted, increasing sharply, with more than 20 investments of over \$100 million in the first quarter of 2021 alone.

Likewise, high-tech exports are steadily growing, and in 2020 they totaled almost \$50 billion - over 40% of the total value of Israeli exports. The number of Israeli start-ups going public reached an all-time high in 2020 - 20 IPOs of Israeli companies, mainly on the Tel Aviv and US stock exchanges. This figure is double the number in 2019.

**Israel Innovation Authority Chairman, Dr. Ami Applebaum:** “The IPO trend is expected to continue, with more Israeli companies in the pipeline preparing to list and raise capital on stock exchanges. This trend is an indicator of the level of maturity achieved by the high-tech sector. An increasing number of start-ups are opting to grow into large companies, in contrast to the quick "exit" dream we have witnessed in the past.”

The maturing of the Israeli high-tech sector, as reflected, among other things, by the wave of listings by Israeli growth companies, is a positive sign for the economy. At the same time, it also raises a series of questions that the government will have to deal with - mature companies starting to publicly trade will have new needs that did not previously exist, or only existed on a limited basis, and some may require regulatory adjustments. For example, as this trend continues and more Israeli companies become large multinational companies that require transparency for their investors and are required to ensure business continuity while keeping their center of operations or management in Israel, questions may also be raised regarding labor and tax laws in Israel and their applicability and suitability to the management of global public companies.

In addition, the change in the character of Israeli companies, and the establishment of mature Israeli technology companies, will require the Israel Innovation Authority and the government to examine the range of tools being deployed to support and encourage research and development. Ultimately, Israeli regulators and legislators will be required to consider the implications of the situation in the high-tech sector as it relates to their respective fields of operation. The more the government works hand in hand with the sector and is attentive to its regulatory needs, the more the sector can continue to grow and prosper - and contribute to the growth of the economy as a whole.

The growth of large high-tech companies within Israel will enable the entire economy to reap the fruits of the high-tech sector. Adapting the business environment in Israel will allow the economy to enjoy the maximum economic value that these companies create for the citizens of Israel. Large companies, which employ more than just developers and engineers - but also designers, marketing and sales managers, operations or support



personnel, and other auxiliary employees whose roles are characterized by high productivity - are the future of Israeli industry. The role of the government lies in creating the most suitable environment to oversee the continued growth of the sector – in other words, stimulating the growth of the entire Israeli economy.

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