

## LEVERS FOR DEVELOPMENT OF THE CONTEMPORARY ECONOMY AND SOCIETY IN THE WORLD & ISRAEL

### POVERI PENTRU DEZVOLTAREA ECONOMIEI ȘI SOCIETĂȚII CONTEMPORANE ÎN LUME ȘI ISRAEL

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**Abstract:** The global community deals with a higher and higher number of challenges from the traditional competitors and from the emerging economies. The common planning stimulates the efforts in the research field and can lead to obtaining results which would not be possible if each country acted individually. Research and development (R&D) contribute to economic growth, contributes to the approach of a social challenge as poverty, precarious health and environmental degradation. From the author analysis, it results that the European economic environment must eliminate the gap separating it from the Japanese and the American industry to remain in the first line of technology and innovation. Currently (before the Covid 19), the EU notices the objective to invest 3% of the GDP in research-development. It is necessary for the EU, including Israel, to improve the investment conditions of the private sector in the of R&D field. A common approach of R&D and of the innovation would widen the expense range in relation to the transformation of the scientific knowledge in patented processes and products. The European Institute for Innovation and Technology can support this process, promoting the partnerships which create a bridge between education, innovation, research Efforts are made to create on European Research Area, to encourage the transfer of knowledge through the worldwide European researchers' networks. The cooperation between European countries is encouraged by creating effective infrastructures and through a common decision-making process in terms of research. The author of the article will examine the information, trends, demand of the R&D field in some of the EU countries, US, and compare it to the political situation in Israel.

**Key Words:** Research & Development (R&D), Economy, Innovation, Patents and Technological Developments, Career Development (CD).

**JEL CLASSIFICATION:** A13, G3, J2.

#### 1. Introduction

The global economic community deals with a higher and higher number of economic - social, and health (covid-19) challenges from the traditional competitors and from the emerging economies. The common planning stimulates the efforts in the research field and can lead to obtaining results which would not be possible if each country acted individually [2, 134 p.]. Research and development (R&D) contribute to economic growth, contributes to the approach of a social challenge as poverty, precarious health and environmental degradation. **The global world today is in an unfamiliar and unbalanced economic environment.** The only hegemonic power in the world - the United States, and more recently China, countries dependent on foreign capital, while future powers such as China and oil exporters (some of the Arab countries) maintain surpluses on a growing scale [14, 629 p.]. Some worry that the world is at the starting point, that only a dramatic change in economic policy (similar to the impact of the corona virus) can change the course of the walk. Others see basic structural factors that perpetuate a gross imbalance for an extended period of time. Currently (2020 - 2025) the EU notices the objective to invest 3% of the GDP in research-development. It is necessary for the EU, including Israel, to improve the investment conditions of the private sector in the field. A common approach of R&D a strategic, and of the innovation would widen the expense range in relation to the transformation of the scientific knowledge in patented processes and products. The

European Institute for Innovation and Technology [6] can support this process, promoting the partnerships which create a bridge between education, innovation and research. Countries are making efforts to create on **European Research Area**, to encourage the transfer of knowledge through the worldwide European researchers' networks. The cooperation between European countries is encouraged by creating effective infrastructures and through a common decision-making process in terms of research and the state of Israel.

## **2. Materials**

**The R&D economic environment in Europe.** of the most concrete manifestation of the European economy in relation to research and innovation is the 7th framework program (7th Framework Program or FP7) for the period 2013 - 2023 which benefited from a 50.5-billion-euro budget [7]. According to Linhares et al [12, 1522 p.], this is the sequel of the FP6 program, designed based on the performance of the previous programs, in order to perform a European Research Area, and lead to a European society and economy based on knowledge and development. The highlights of this innovation idea are based on some social - economic paradigms. The first one is that social capital was examined in multinational public-funded R&D projects. The second is that social capital will increase the odds of resource sharing among R&D partners (based on prior ties and shared vision contributed positively towards resource sharing between countries). The third was that commitment was the strongest predictor of resource sharing among R&D partners, and the last one is trust rarely contributed to partners' resource sharing choices.

The FP7 program has appeared in an assessment moment when it was noticed that the results are not the ones expected and that the reform package, characterized by 28 main objectives, 120 sub objectives and 117 indicators did not accompany the desired commitment of the EU member states [5]. Consequently, the updated Lisbon strategy emphasizes the economic growth and the use of the human resources. James et al [10, 449 p.] claims that the European Committee aimed the doubling of the budget, tracking the improvement of various indicators **such as** :

- 1) number of new financed researcher jobs ;
- 2) number of financed agreements ;
- 3) number of participants to the financed research projects ;
- 4) additional annual financing of small and medium enterprises.

The R&D program - FP7 provides 4 specific programs:

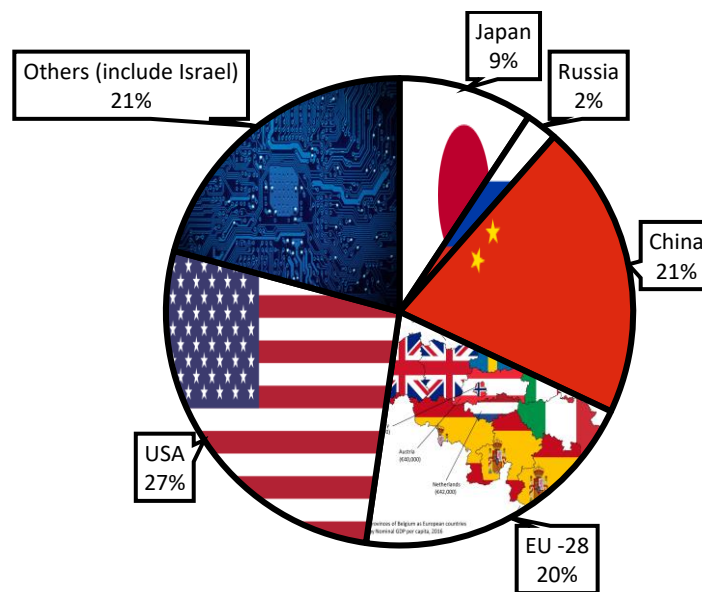
A. Cooperation - Refers to the common research in the field of health, food, agriculture, fishing, biotechnology, information and communication technology, energy, environment including climate changes, transport, including aeronautics), socio-economic and human sciences, space and security. Also, it targets nanoscience's, nanotechnologies, new production materials and technologies ;

B. Ideas - The key element is given by the incorporation of the European Research Council, which finances the border science ;

C. human capital - Is addressed to human resources and includes scholarships for young researches, education during life and career development, establishing partnerships between the research sector and the academic environment, giving excellency prizes etc. ;

D. Financial capacities - The financing contributes to the modernization of the infrastructure, supports research and development at low enterprise level, develops the knowledge and scientific groups and promotes scientific knowledge, in general.

for understanding of unbalance of the economic - innovation situation in the world, the author of the article will present by a "Cake figure" (figure 1.1) the central R&D in the world centers of scientific and technical progress, which share in world R&D expenditures.



**Figure 1.1 The world centres of scientific and technical progress  
(share in world R&D expenditures)**

Source: Made by the researcher from [13]

**Innovation environment in the global world- cooperation of EU - US - Eastern countries of Asia, and Israel.** The EU development organization manages the Galileo Project for the development of the next generation of satellite Global positioning systems (GPS). The systems of the future shall have a wider range of applications than the usual GPS systems used to guide car drivers, respectively a more efficient management of the traffic and of the research and rescue operations. The ITER reactor in construction in "Carache", France is considered an important step for the construction of prototype reactors for electric plants based on nuclear fusion - a type of nuclear energy considered safe, durable and ecologic [14, 630 p.]. The EU, Canada, China, India, Japan, South Korea, USA and Russia cooperate to the ITER project. The area is the field which first benefited from a research budget within PC7, which certifies the EU intention to have an independent role in the field. The Project Global Monitoring for Environment and Security facilitates access to the information collected from space, which allows the proper anticipation or approach of the ecologic or security crises.

The essential role of scientific research and technological development for increasing economic competitiveness was recognized also in the European Committee's Release; "*More Research and Innovation - Investing for Growth and Employment*" [7] For Israel, and for other countries, the need to boost the increase of the economic competitiveness, especially between 2018-2020, represents the first stage of the integration process, imposes the essential requirement to reduce and exceed the technological gaps which separate them from the other EU member states, USA and OCDE. This fact imposes as major objective for Israel the performance of a dynamic and competitive economic environment, able to assimilate and develop high technology fields and answer to the long-term

strategic development requirements, in the context of the global evolution of the economy based on knowledge [11, 423 p.]. The success of the integration is not related only to learning the interoperability reflexes with the European institutions. More than ever, the challenge of increasing the competitiveness of each separate individual and company in European conditions with high standards of productivity, efficiency and standard of living is considered. Education, research, development and innovation are defining elements of this process.

**Recommends and implementation in Israel.** The Framework Program for Technological Research and Development for the period 2015-2030 of the OECD, EU countries represents one of the alternative sources of financing of the Israeli companies. All EU member states draft research programs to get out from the economic and financial crisis, especially now in the covid-19 crisis. Considering the career development domain as a priority to exit the crisis, the decrease of the financing in this area is avoided. The "**European Innovation Scoreboard**" [EIS] report for 2019 [6] indicates progresses of the various EU countries in relation to the deficiency in the research-innovation field .

And still, the state of Israel is on its list, not managing to attract important amounts through its programs [12, 1522 p.]. The situation of the relevant indicators for the capacity and impact of the R&D technologic system is the following (year 2018-2019) ;

- The percent number of the researchers from the total population (2018) 4.6 ‰ for Israel, and 9.1 ‰ in the EU [5;3].
- The percent number of the employees with High Tech activities, in the total population is 12.1% in Israel, 4.8 % for Romania, and 15.8 % for the EU [5;3].
- The "weight" of the IT export in exports: 21.6 % for Israel, 3,79% for Romania; 15,90% EU [3;5] .
- The percent number of the employees in knowledge services from the total population: 21% in Israel, 14.5 % in Romania, and 33% EU [5,3].

**In Israel**, to support the above statements, it is established that the National R&D Plan is structured in five programs forming it[9]:

- 1) **human resources** - with the objective to increase the number of researchers and their professional performances.
- 2) **Capacities** - to develop the research infrastructure.
- 3) **Ideas** - to put in practice peak scientific and technological results, comparable with those at European level, reflected by increasing visibility and international recognition of the Israeli research.
- 4) **Partnerships in priority domains** - with objectives of focusing the resources and creating the relationships dedicated to solving complex problems and increasing the R&D competitiveness through technological transfer.
- 5) **Innovation** - to support the pre-competitive and competitive research, led by companies, provided the state aid rules are complied with.

According to the author of the article, the priority fields established in the **career development national plan** should be the following :

- Information and Communication Technology ;
- Energy ;
- Environment ;
- Health ;
- Agriculture - food safety and security ;

- Biotechnologies, biology and genetics ;
- Innovative materials, processes and products ;
- Space and security ;
- Socio-economic and humanist research ;
- Basic sciences .

As an example, in 2019, 836 projects were completed in the Human Resources Program, 20 in Capacities, 46 in Ideas and 3 in Innovation. The most important result categories, which contribute to the aggregation of the assessment indicators of the national CD (Career development) system are significant for the materialization of the advance process towards the knowledge-based society.

### **3. Conclusions**

The future of the world of employment, and with it the world of innovation, is an issue that has preoccupied humanity at least since the first industrial revolution. Concerns about deleting entire industries and professions, lack of employment and business interest, due to various changes and what technology will do to our workplaces have been here for many hundreds of years. In some cases, they were deceived, but in many cases, it turned out in retrospect that these fears were justified.

The employment market, industry, career development, and dynamic global innovation mean changing needs. A reality of research and development from which new jobs increase, with change being the "name of the game" and the conditions are of uncertainty. There is no way to know exactly what jobs or professional will be required in the future, but we certainly the governments have a way to plan the future of the company and study the needs of the future. From looking at the global market, the advantage of the countries discussed at the beginning of the article, USA, China, Japan and some European countries, it is clear that the change processes are reflected not only in market needs but also in employment perception and work model updated in recent years. A significant development in the job requirements can also be identified: professional knowledge is no longer a main basic condition but part of a set of requirements, which includes many soft skills such as teamwork, communication skills, creativity and expressiveness.

While the author of the article cannot predict these economic fluctuations - global will affect the labor market, but we can prepare. Ignoring some of the global economies from the need to invest in research and development of patents, decentralizing economic powers to other countries, supporting the training of existing workers will not create a better economic world.

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