

The Impact of Globalization on the Development of Israel Advanced Changes

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Abstract—The study examines the socioeconomic impact of development of an advanced industry in Israel. The research method is based on data collected from the Israel Central Bureau of Statistics and from the National Insurance Institute (NII) databases, which provided information that allows to examine the Economic and Social Changes during the 1990s. The study examined the socioeconomic effects of the development of advanced industry in Israel. The research findings indicate that as a result of globalization processes, the weight of traditional industry began to diminish as a result of factory closures and the laying off of workers. These circumstances led to growing unemployment among the weaker groups in Israeli society, detracting from their income and thus increasing inequality among different socioeconomic groups in Israel and enhancement of social disparities.

Keywords—Globalization, Israeli advanced industry, public policy, socio-economic indicators.

I. INTRODUCTION

WORLDWIDE globalization processes encouraging the expansion of political, cultural, and economic ties between countries, companies, and individuals, increased in the 1980s and 1990s, to a large degree as a result of the development of the information and media industry. Much research and literature has focused on the major and diverse impact of globalization on the economy [7], culture [18], [21], education and higher education [9], politics [5], [17] and characteristics of democratic regimes [14] around the world.

The causes of globalization are many and varied and are related to various economic and political developments, such as the dissolution of the Soviet Union (The process of the Soviet Union's dissolution occurred in the 1980s to early 1990s. The Communist Bloc fell apart and as a result, the relations between the United States and the Soviet Union thawed and suitable conditions for cooperation were formed, which enhanced globalization) [12], [16], the strengthening of the liberal economic approach supporting a "free market" policy and the reduction or removal of trade barriers and regulation processes blocking foreign investments and the flow of capital, merchandise, and services between countries [19], [25], [27], the rise of privatization processes in different countries [6], [20], and more.

At the same time, the main factor that encouraged and stimulated globalization processes around the world was undoubtedly the development of information and communication technology (ICT) industries, which expanded the scope of trade between the various countries in general and

accelerated the rate of interaction between human inhabitants of the earth in particular [4], [24].

The purpose of the current study is to examine the association between the development of advanced technologies (ICT) and that of globalization processes and to emphasize the effect of globalization on the ICT industry, with a focus on the Israeli advanced industries. Such a focus will enable examination and analysis of the economic and social changes that occurred in Israel in the 1990s, as associated with the development of advanced industry branches in this country during this period.

Globalization processes were evident in Israel as they were elsewhere, and beginning from the 1980s and to a greater degree from the 1990s, the country began to experience conspicuous changes in the structure of its local industry and economy, concurrent with the cultural, social, and political changes resulting from accelerated globalization. The choice of Israel as a gauge of the impact of globalization on advanced industry is due to the fact that this country is considered a global hi-tech power, mainly as a result of the personnel employed in the local advanced industry. This labor force is characterized by innovation capabilities, business acumen, and a great deal of creativity, qualities that have promoted many technological innovations and earned Israel's advanced industry recognition as the country's relative advantage versus other world economies. On one hand, many international companies that identified the relative advantage of the Israeli hi-tech industry decided to establish their research and development departments in the country and thus contributed to development of the local economy. On the other, the personnel employed in Israel's advanced industry are considered relatively high-cost with particularly high salaries, reducing the incentive of international companies to move their production lines to Israel, in favor of situating them in other countries with lower labor costs.

II. EMERGENCE OF GLOBALIZATION IN ISRAEL

The first buds of globalization were indeed evident within Israeli society as early as the beginning of the 1970s, upon signing the Free Trade Agreement with the countries of the European Union in 1975, and 10 years later (in 1985) when a similar agreement was reached with the United States. However only towards the end of that century and at the beginning of the 21st was an essential change evident in Israel's economic, social, and political structure.

The 1990s were a period of flourishing for the Israeli hi-tech industry, which formed the core of Israel's post-industrial information revolution. This transformation constituted a

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foundation of the globalization processes in Israeli society in subsequent years [2], [3], [22].

One component of the post-industrial revolution is the change in the structure of occupations and skills within the economy. From the 1970s to the 1990s a rise in the rate of scientific-academic and liberal professionals (technicians, managers, etc.) was evident. This was accompanied by a concurrent decrease in the more traditional professions, such as agriculture, traditional industry, and construction. These circumstances indeed led to accelerated development of the Israeli economy, however at the same time, they also enhanced polarization between the wealthy and educated and those who lacked these attributes and thus contributed to increasing inequality within the Israeli economy [1].

A. The Effect of Globalization Processes on Industry and Society in Israel

Examination of the effect of globalization on the economy and society in Israel points to three effects: first - the effect on the local industry in its entirety, second – the effect on advanced industry in particular, and third – the effect on socioeconomic processes within society.

B. The Effect of Globalization on Israel's Economy and Society

The effect of globalization on the Israeli economy is associated with the types of processes that occur within it. On one hand, globalization encourages the arrival of large international companies in the local economy, which has the effect of developing the domestic labor market and contributing to the country's tax revenues. On the other, globalization might encourage local companies to move their operations elsewhere and thus have a detrimental effect on the domestic labor market and on the country's tax revenues in the long term.

In a small economy like Israel, the first type of globalization processes are not sufficiently attractive, and all the more so when the cost of employing workers is higher than in competing countries. Israel's relative advantage, as embodied by its creative and innovative personnel, is not large enough to compensate for the disadvantage of its size [26]. This appears to be the main reason that globalization processes have not encouraged the establishment of international companies within the Israeli economy, rather only the purchase of local companies by them and moving production lines from Israel to cheaper countries. For example, the Israeli start-up Mirabilis (ICQ) was purchased in 1998 by the American AOL. Iscar (owned by the Wertheimer family) was purchased in 2006 by Warren Buffett, the navigation company Waze was purchased by Google in 2013. Mobileye was purchased by Intel in 2017, and more. Another process supported by globalization is the integration of international companies in the small Israeli economy in order to establish research and development as well as innovation centers (For example: Motorola, IBM, Intel, Cisco, Microsoft, SAP, and more).

The globalization processes that occurred in the Israeli

economy in general and in the advanced industry branch in particular contributed significantly to the development of this branch and thus to the development of the entire Israeli economy. The Israeli industry, based to begin with on the agricultural and textile branches, experienced a radical change in the 1960s and 1970s, when from a primitive industry with poor means that produced mainly food and textile products, was transformed into an advanced industry (to a great degree thanks to the defense industries established at this time, which promoted many technological developments that overflowed into the civilian industry and developed it). However, the most significant development of Israel's advanced industry was evident in the 1990s, mainly in the areas of media and computerization. In these years, the output of these hi-tech branches grew and their exports expanded considerably [11], [23].

In the 1990s, many local clusters of advanced industry dealing in research and development were established and contributed to the development of Israel's advanced industry. This development is strongly related to three global processes: One is the technological information revolution, and first and foremost the development of the internet. The second is the economic information revolution, and the third is the emergence of the global economy [15].

Foreign and international research and development centers opened in Israel and resulted in a decisive contribution to the domestic economy as they helped form new businesses, open new jobs, and raise the GDP. Moreover, Israeli scientists employed in these companies acquired a great deal of experience and considerable professional knowledge, which they utilized in the new start-up companies they subsequently established [8], [23]. At the same time, it is notable that the advanced Israeli industry has failed to date to establish large or medium-sized hi-tech companies, due to the fact that any promising start-up was offered early on for sale to a large international company that usually acted to move it to another country [23].

One way or another, there is no dispute as to the decisive contribution of advanced industry to the overall productivity of the Israeli economy. This contribution derives from the fact that the globalization and privatization processes that intensified, as stated, in the 1990s and at the beginning of the 21st century helped the Israeli advanced industry attract domestic and foreign investments. These investments contributed considerably to increasing the capital ($\Delta K/K$) on one hand and to raising the number of those employed ($\Delta L/L$) in advanced industry in the entire Israeli economy, on the other. At the same time, the advanced industry focused on creating new knowledge and technological improvements. These improvements had a positive effect on the utilization of manufacturing elements within the economy (capital and labor) and on the improvement of product quality, and hence contributed directly to the rise in general productivity ($\Delta A/A$) within the economy and thus to a rise in the GDP ($\Delta y/y$), according to the growth formula: $\Delta y/y = \alpha * \Delta L/L + \beta * \Delta K/K + \Delta A/A$ [10].

C. Effects of the Globalization Process on Israeli Industry

The globalization processes that contributed, as stated, to increasing the capital and the number of those employed in the Israeli economy as well as to development of advanced industry and its contribution to improvement of productivity in the Israeli industry, affected the structure of Israeli industry in the 1990s.

Changes in Advanced Industry Indices in the 1990s

The 1990s were, as stated, a period of flourishing for the Israeli advanced industry. Indices of this industry indicate a conspicuous rise in the number of those employed in the branch and its product during this decade and particularly in its second half. As portrayed in Figs. 1 and 2.

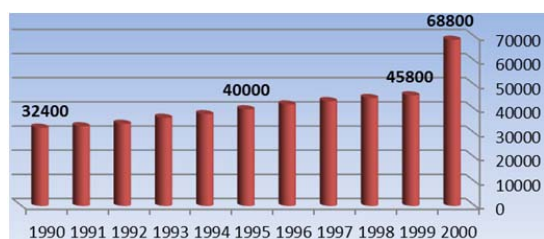


Fig. 1 The employment structure in Israel's advanced industry in the 1990s (Scientists, technicians, and software experts) [13]

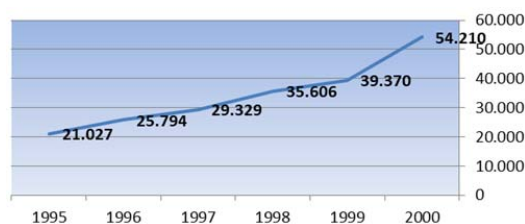


Fig. 2 Israel's advanced industrial product in the second half of the 1990s (In NIS million, in 2005 prices) [13]

Changes in the Structure of Israel's Industry in the 1990s

The rise in the number of those employed in Israel's advanced industry, and accordingly – the rise in the branch's product in the 1990s, had an effect on the structure of the entire Israeli industry. The globalization processes that enhanced the development of advanced industry thanks to its relative advantage had an opposite effect on Israel's traditional industry, which was at a disadvantage as a result of the high cost of products and labor in Israel [23].

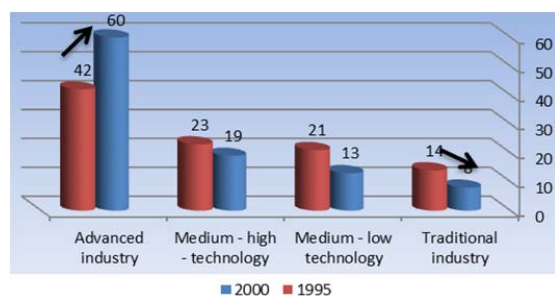


Fig. 3 The Industrial Structure in Israel 2000 vs. 1995 [13]

While advanced industry is relatively hi-tech, highly productive, and intended mainly for export, traditional industry is considered labor intensive, with relatively low productivity, and intended mainly for the domestic market. Hence, in the 1990s a change was evident in the structure of Israeli industry, with the weight of advanced industry beginning to rise and a corresponding drop in the weight of the traditional industry (Fig. 3).

Changes in the Extent of Israeli Exports and Their Features in the 1990s

The growth of advanced industry in the 1990s also had an effect on the extent of Israeli exports and particularly the export of hi-tech products and services. While the increase in exports by traditional and mixed branches gradually lessened, the export of technology branches began to rise consistently until reaching over \$11 billion in 2000 (about 60% of all exports by the entire Israeli economy), as portrayed in Fig. 4.

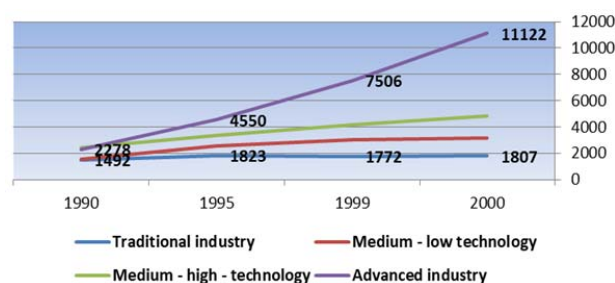


Fig. 4 Israeli Manufacturing Exports by Technological Intensity in the 1990s (Million \$) [13]

Effects of the Globalization Processes on Socioeconomic Processes within Israeli Society

The globalization processes that encourage international trade, as stated, by removing export taxes and barriers, urged Israel to employ a policy of "exposure", i.e., reducing export taxes on many commodities manufactured by traditional industry branches. At the same time, in these years free trade agreements were signed with countries offering cheap labor (such as Mexico, Poland, Hungary, and Turkey). As a result, the Israeli market was flooded with imported commodities at cheap prices, which led as stated to the rapid diminishment of Israel's traditional industry. As this industry constituted the employment and subsistence foundation of the Israeli working class (particularly in peripheral areas of the country), the developments had the effect of increasing unemployment among the weaker populations of Israeli society, with a negative impact on their income, and thus enhancing inequality between Israel's various socioeconomic levels and widening the social gaps.

One of the components of the post-industrial revolution is the change in the structure of occupations and skills in the economy. Since the 1990s, a rise was evident in the rate of scientific-academic and liberal professions in Israel. In contrast, a drop was evident in professional jobs in agriculture, traditional industry, and various non-expert jobs. The change in the structure of occupations in the economy is probably

related to the rise in the level of education among part of the workforce, contributing to the polarization between those with educational capital and those who lack this capital [26]. Accordingly, Israeli labor market indices from the mid-1990s indicate a conspicuous rise in the number of unemployed among the poorly educated (mainly those with 9 to 12 years of schooling), as portrayed in Fig. 5.

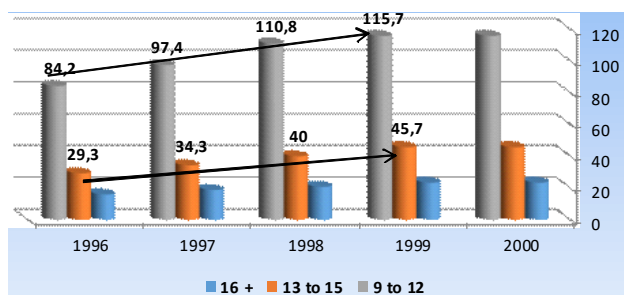


Fig. 5 Unemployment by Years of Schooling in Israel, 1996-2000 (in thousands) [13]

The increase in unemployment among the poorly educated, and accordingly among traditional professions, is evident in reports by the NII, which indicate a conspicuous rise in the number of claims for unemployment benefits (both first claims and continuing claims) towards the late 1980s and early 1990s, as portrayed in Fig. 6. This trend is compatible with the changes that occurred in the structure of Israeli industry at the time, which led as stated to a drop in activities of traditional industry in response to globalization processes that were gradually gaining ground in Israel.

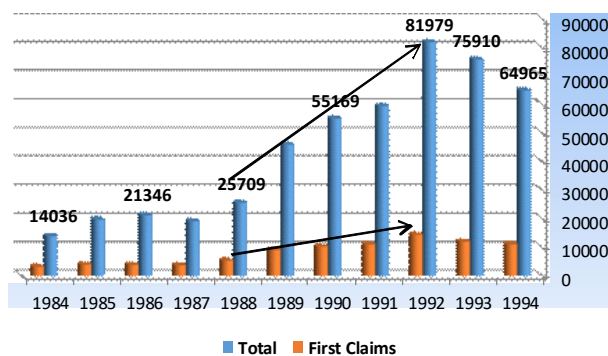


Fig. 6 Claims for Unemployment Benefit [13]

Data on the number of unemployed and of unemployment claimants in Israel in the 1990s, portrayed in Figs. 5 and 6, show an increasing trend of income disparities between the various levels of education within Israeli society. Until in 2000, the disparity between those with an academic education (16 or more years of schooling) and those with a secondary education (11-12 years of schooling) was more than double, as evident from Table I.

The income disparity between the different population groups in Israel was manifested in a conspicuous rise in the inequality in disposable income index (GINI Index) for the Israeli economy. The data for this index, portrayed below (Fig.

7), describe a consistent and stable increase (of about 23%) in socioeconomic disparities within Israeli society from the early 1980s to the mid-2000s, affected by many of the globalization processes on the rise at that time.

TABLE I
 GROSS MONEY INCOME FROM WAGES AND SALARY IN ISRAEL, 2000 (BY YEARS OF SCHOOLING) [13]

Years of Schooling	0-4	5-8	9-10	11-12	15-13	16+
Monthly income	3,403	3,942	4,421	5,435	6,609	10,014

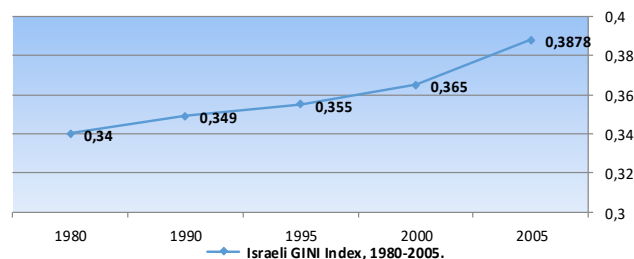


Fig. 7 Israeli GINI Index (Inequality in Disposable Income), 1980 – 2005 (after taxes and transfer payments) [13]

III. CONCLUSIONS

The accelerated processes of globalization in the Israeli economy in the early 1990s, are at the root of this study. Israel, which has a concentration of creative and innovative human capital constituting its relative advantage versus other countries, the effect of globalization was felt when international companies chose it for their research and development departments as well as for purchasing local start-up companies.

This study attempts, as stated, to examine the socioeconomic effects of the development of advanced industry in Israel. With the purpose of learning about these effects, data were presented on poverty, unemployment, and income disparity (the GINI Index) in the 1990s. The data presented about a rising unemployment trend is evident in the early 1990s among the less educated workers, as judged by claims submitted to the NII for unemployment benefits and by the income disparity. These trends are explained by the recognition that the globalization processes urged Israel to reduce customs on many commodities produced in traditional industry branches, and to sign free trade agreements with countries that offered cheap labor. Due to these steps, the weight of the traditional industry began to diminish as a result of factory closures and the laying off of workers.

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