# Direct U.S. Investment in Israeli Manufacturing: The Sectoral and Spatial Components

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*Direct U.S. investment in Israel stands out as an anomaly in the Middle East as it consists mainly of investments in manufacturing. Such investments are attributed to the locational and infrastructural advantages of Israel, as well as the Israeli government's having created a legal and financial environment conducive to foreign investment. Specific industries to attract investment include electrical and electronics, chemicals, pharmaceuticals, precision instruments, and metals. The choices in part reflect the availability of native Israeli research and development capacity. The spatial distribution of the investments is concentrated in Tel Aviv and Haifa, although some spread to other areas is seen, albeit not at the rate of native investments. Such investments have contributed to higher employment and exports; data are not available to measure whether or not other theoretical advantages have been realized.*

Direct U.S. investment in the Middle East has typically consisted of a series of various combinations of petroleum exploration and production, general sales, and services. One major exception is found in Israel, where direct U.S. investment has favored manufacturing. In this report the sectoral and spatial components of this investment will be analyzed. Although other investment possibilities, such as limited partnerships and tax-shelter investments, are possible in Israel, only direct investment is considered. By definition then, only U.S. manufacturers which have invested in plants will be considered. Data are taken from the *Directory of American Firms Operating in Foreign Countries*, various editions. In general this source provides the name, address and product or service provided by U.S. firms overseas. The data were cross-checked with listings in the following sources to verify

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that investments and operations were actually in the manufacturing sector: *The Etrogi Directory of Israel*, and *The Israel Directory, The Register of Commerce and Industry In Israel.* Data on general aspects of manufacturing in Israel were taken from the *Statistical Abstract of Israel*, various years. Financial and employment data on direct U.S. investment in the Middle East were taken from *Survey of Current Business*, various issues. Unless otherwise stated, all calculations are by the author.

## U.S. Direct Investment in the Middle East: An Overview

Since the 1950s direct U.S. investment in the Middle East has averaged some U.S. $1.6 billion per year. During the mid-to-late 1970s the pattern of investment showed some negative investment as a result of the Iranian Revolution, expropriations, and the completion of local takeovers of U.S. petroleum interests. During the period 1950 to 1983 petroleum was the most favored investment: petroleum exploration, production, and marketing, and related services constituted 82.6 percent of all U.S. investments. There have been changes in this pattern over time. During the 1950s, 97 percent of all U.S. investment was in petroleum; by the 1980s it had declined to 68 percent. In contrast, investment in manufacturing has averaged but 4.5 percent. The trends over time have been the reverse of those for petroleum, with an increase from 1.9 percent in the 1950s to 10 percent during the period 1980-1983. The remaining investments have been stable in the areas of general trade, finance, and general (business) services.

More specific, country by country data are hard to present. Since direct U.S. investment in the Middle East represents, on the average, 2.6 percent of all U.S. direct foreign investment, for many years the region was summarily lumped into the "Other" category of U.S. foreign investment. During the 1970s a separate Middle East category emerged, but only Iran and OPEC are listed as separate entities. By 1976 Iran was dropped from this list and replaced by Israel, even though the dollar value of the Israeli investments are miniscule compared with the former Iranian investments. What is significant, is that 45 percent of direct U.S. investments in Israel are in the manufacturing sector. Trade and services account for another 15 percent each, with "Other" and petroleum accounting for the remainder. In terms of total U.S. investment in Middle Eastern manufacturing, Israel received on the average some 65 percent. During the 1980s this figure increased to some 91 percent.

## Sectoral Analysis

As seen in Table 1, U.S. investment in manufacturing in the Middle East has favored food, especially beverages, pharmaceuticals, and tobacco. In

## Table 1.
## U.S. Investments in the Middle East

| | Total | Manufacturing | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total | Food | Tobacco | Chemicals | Metals | Machinery | Electrical | Transportation |
| 1980 Investment Position (millions of dollars) | 2,281 | 237 | 21 | | 39 | 10 | 21 | 80 | 15 |
| 1977 Employment | 138,317 | 31,102 | 1677 | | 5110 | 5516 | 2367 | 9010 | 3030 |
| 1979 Number of Factories or Investments | | | | | | | | | |
| Bahrain | 20 | 0 | | | | | | | |
| Egypt | 85 | 16 | 2 | | 14 | | | | |
| Emirates | 50 | 0 | | | | | | | |
| Iran | 192 | 23 | 7 | | 14 | | | | |
| Iraq | 24 | 1 | 1 | | | | | | |
| Jordan | 21 | 2 | 1 | | | | | | |
| Kuwait | 49 | 1 | | | 1 | | | | |
| Lebonan | 262 | 43 | 15 | 1 | 16 | | | | |
| Oman | 19 | 1 | 1 | | | | | | |
| Saudi Arabia | 152 | 5 | 1 | | 3 | | | | |
| Turkey | 102 | 31 | 5 | 5 | 6 | | | | |
| Qatar | 13 | 0 | | | | | | | |

Sources: 1980: Survey of Current Business (August, 1981), 32.
1977: Survey of Current Business (February, 1982), 41.
1979: Angel (1979).

Table 2.
Number of U.S. Investments in Israel by Year

(Number of manufacturing units)

| | 1966 | 1969 | 1975 | 1979 |
|---|---|---|---|---|
| Food | 0 | 1 | 2 | 2 |
| Textiles | 4 | 4 | 3 | 4 |
| Paper | 3 | 2 | 5 | 5 |
| Leather | 0 | 1 | 1 | 0 |
| Chemicals | 3 | 11 | 14 | 12 |
| Rubber | 1 | 1 | 4 | 2 |
| Plastics | 1 | 0 | 0 | 0 |
| Petroleum | 1 | 0 | 1 | 1 |
| Non-metallic Minerals | 0 | 1 | 1 | 1 |
| Basic Metals | 0 | 7 | 10 | 7 |
| Metal Fabricated Machinery | 1 | 2 | 2 | 5 |
| Electric/Electronics | 1 | 3 | 8 | 15 |
| Transportation | 0 | 0 | 1 | 0 |
| Precision Instruments | 0 | 0 | 0 | 4 |
| Pharmaceuticals | 0 | 1 | 4 | 4 |
| Miscellaneous | 0 | 5 | 5 | 8 |
| Total | 15 | 39 | 61 | 70 |

Source: Compiled from Angel (various years).

contrast, investment in Israel has been more varied. As can be seen in Table 2, food has played a very minor role in U.S. investments. Despite a meager resource base, investors have been attracted to textiles, paper, chemicals, metal and metal fabrication, and rubber. The miscellaneous category is taken over almost entirely by cosmetics. Starting in the 1970s investment has centered on the electrical and electronic industries. In short, U.S. investors in Israel have entered the heavy and high technology areas, and have tended to avoid basics such as food.

This pattern of investment is not accidental or fortuitous. The government of Israel, like governments in many developing countries, but in

contrast to many Middle Eastern countries, has actively sought out direct foreign investment. Beginning in 1950, legislation to encourage capital investment has been implemented. In common with other programs to attract direct foreign investment, tax incentives are offered to would-be investors, as are loans, waivers of import duties, and help in acquisition of land and buildings. Repatriation of foreign currency and profits are permitted. Offices to promote investment have been opened in the United States (in New York City, Chicago, Los Angeles, and Atlanta), in Europe, and Latin America (The Development of Manufacturing Industry in Egypt, Israel and Turkey, 1958; Edwards, 1971; The Encouragement of Capital Investment Laws, 1976; Halevi and Klinov-Malul, 1968; Israel Investor's Manual, 1968). Periodic conferences are held to encourage investment and to discover the persistent problems of investors that need government attention (Ficker, 1973). Treaties with the United States were negotiated whereby U.S. investors were granted protection and security against expropriation. Additional agreements with the United States have eliminated double taxation for individuals and corporations (Edwards, 1971). Finally, the government periodically specifies which kinds of industry have priority in the investment approval process (Lippe, 1956; Carmi, 1968).

In seeking foreign investments, Israel had major disadvantages to overcome. She has a small local market, and this frequently discourages foreign investors in general (Farmer, 1972). Some foreign markets were closed or restricted due to the Arab boycott. Israel lacks any semblance of a resource base. Labor lacks a tradition of productivity and discipline. In addition, the costs of manufacturing tend to be high since the level of wages is high, and output commonly substandard (Edwards, 1971; Gradus and Krakover, 1976; Halevi and Klinov-Malul, 1968; The Development of Manufacturing Industry in Egypt, Israel and Turkey, 1958).

Nevertheless, Israel does have some advantages for potential investors. She does have a somewhat unique position and access to world markets, especially those in Europe, Africa, and the Far East. The Arab boycott has been ignored or violated when Israeli goods are deemed necessary or essential to some Arab governments (IL&B, 1983). Israeli businesses have adopted advanced business and management practices. The country is politically stable. The government has continuously sought to maintain and expand the country's infrastructure. A potential of scientific and technological innovation exists (Israel Investors' Manual, 1968).

Among economists there has been some discussion whether or not any investments in Israel, and U.S. investments in particular, are rational or in the best interests of the U.S., regardless of the advantages or disadvantages for Israel as a host country. Michaely (1975) has argued that the greater part

of capital inflow to Israel has been derived from sources that depend very little on normal profit motives. Halevi and Klinov-Malul (1968) have argued that U.S. and other foreign investments in Israel derive basically from Zionistic feelings. Rabbo (1980) feels that the underlying reasons behind U.S. investments in Israel are political and not economic in origin. As such, he feels that the norm of foreign investment, seeking to maximize the rate of return or profit, has been sacrificed to the U.S. government's desire to promote the political and economic stability of Israel.

The data do not necessarily support these contentions. The average rate of return on U.S. investment in Israeli manufacturing has been estimated to be 15 percent (IL&B, 1983). This compares favorably with an overall average rate of return of 15.7 percent for all U.S. overseas investments during the 1970s and 1980s. It compares very favorably with an average rate of return of 11.3 percent for all U.S. direct investment in manufacturing in the same period. It does not of course compare favorably with the average 22.7 percent return on worldwide U.S. investment in petroleum or the 81.4 percent average rate of return on U.S. investment in petroleum in developing countries. But those latter negative comparisons do not mean that industrial investment in Israel is irrational or political. The companies which invested in Israel were clearly manufacturers, whereas investors in the other Middle Eastern countries were not: the investment strategies of different types of business presumably are different. The relative lack of infrastructure, the lack of skilled personnel, political instability (Farmer, 1972), and the preference for Arab investment (IL&B, 1983) in the other countries of the Middle East will not attract manufacturers, whereas the opposite characteristics found in Israel make Israel the preferred Middle Eastern location for investment in manufacturing.

In addition, it has been argued that the return on investment cannot be merely evaluated on a percentage basis, but must also include foreign exchange rates. A strong dollar in particular encourages overseas investment (Michaely, 1975). Another problem in evaluating rates of return in manufacturing is a lag during the construction and start-up phases; such time lags, if they exist for investment in trade and services, will be much shorter and investments will thus show a higher initial rate of return (Perkins, 1970). Finally, the preponderance of Jewish investment in Israel had started to decline by the 1950s (The Development of Manufacturing Industry in Egypt, Israel and Turkey, 1958), and the investment conferences sponsored by the Israel government investment authority commonly attract more non-Jewish investors than Jewish investors (Vicker, 1973). Even if a large proportion of Israel's new investments had been made by U.S. Jews, it is not clear, in the absence of interview data, why this would indicate any more irrational or political behavior than, say, the high rate of

investment in Taiwan and the People's Republic of China by overseas Chinese. Although survey data are lacking, U.S. direct investors in Israel would no doubt cite the obvious advantages Israel has for foreign investors, e.g. a trained work force, technological infrastructure, and proximity to markets.

## Spatial Orientation

Figures 1-4 show the location of the manufacturing facilities put up by U.S. investors. A clear pattern of preference for Tel Aviv and Haifa appears for all years under consideration. In this regard U.S. investors in Israel have followed a pattern typical of all U.S. investments in the Middle East, namely to gravitate towards the political, economic, and educational centers of the host countries. For example, during the 1960s and 1970s virtually 100 percent of all investments in Aden, Bahrain, United Arab Emirates, Iran, Iraq, Jordan, Kuwait, and Syria were in the capital city of the host country. In Egypt 84 percent was in Cairo, and the remaining 16 percent in Alexandria; in Turkey 40 percent was in Ankara, 44 percent in Istambul and 13 percent in Izmir; in Saudi Arabia 90 percent was found in the capitals of Jiddah and Riyadh and the remainder in oil producing areas. As can be seen in Tables 4-7, the degree of concentration is not as marked in Israel, and does decline over time. But the marked preference is nevertheless present. It is important to note that in choosing Tel Aviv and Haifa as sites for investments investors have forfeited substantial loans and grants. Such loans and grants were available only in priority areas [Figure 4] (Edwards, 1971).

The avoidance of development or priority areas is easily understood, even by Israeli investment authorities. These areas are usually deficient in some or all basic services such as electricity, sewerage, water, or roads. Transportation of raw materials then is often difficult, and the export of finished goods made more expensive. The areas commonly lack a full range of skilled workers; labor turnover tends to be high. The areas commonly lack buildings or centers for artisans and services that could supply the factories with parts and services. Maintenance and repair services are not available in the development areas, and the additional costs of a special maintenance department may act as a further deterrence to investors (Programme for Israel's Industrial Development, Second Outlook 1965/1970, 1964).

The changing pattern of concentration is seen in Figure 5. The diagram is a Lorenz curve comparing the percent total population to the percent total U.S. investment in manufacturing in each of the 14 subdistricts in Israel. For the first three time periods in the study the Lorenz curve shifts

**Figure 1.**
**Direct U.S. Investment, 1966**

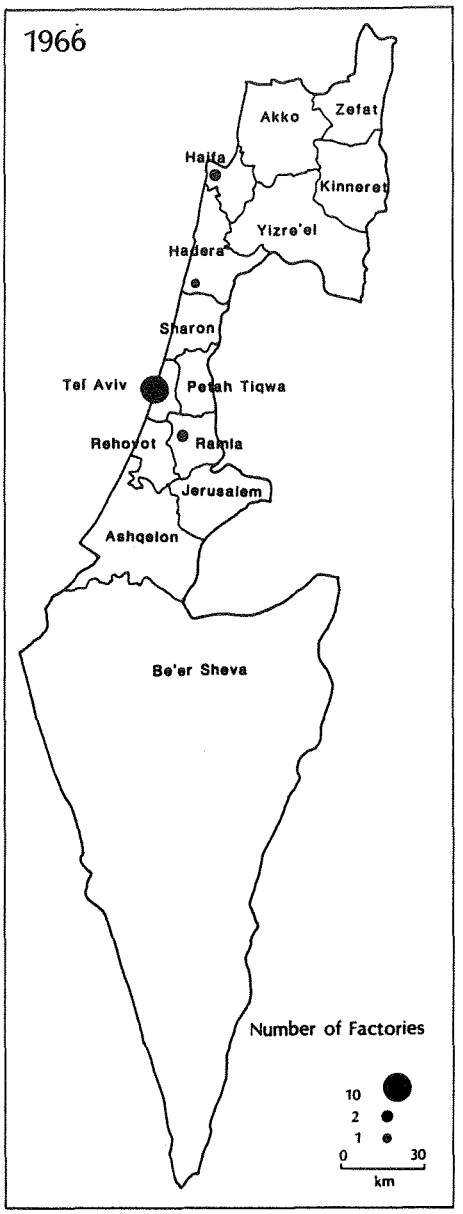


**Figure 2.**
**Direct U.S. Investment, 1969**

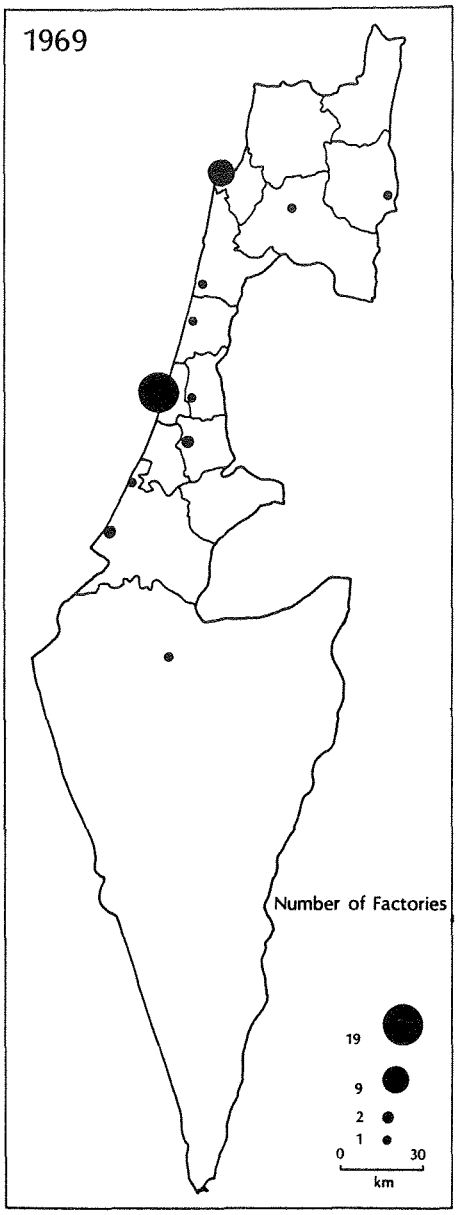


**Figure 3.**
**Direct U.S. Investment, 1975**

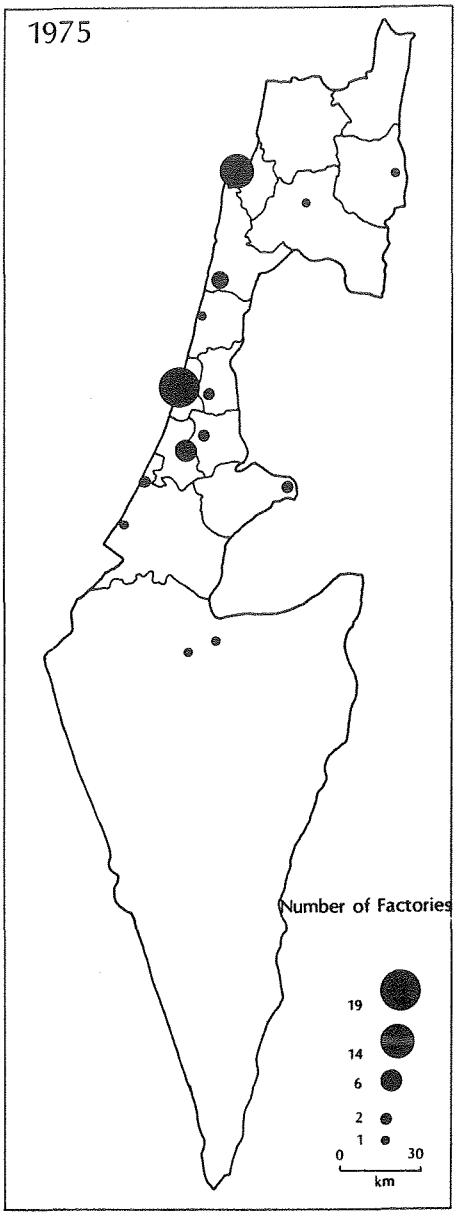


**Figure 4.**
**Direct U.S. Investment, 1979**

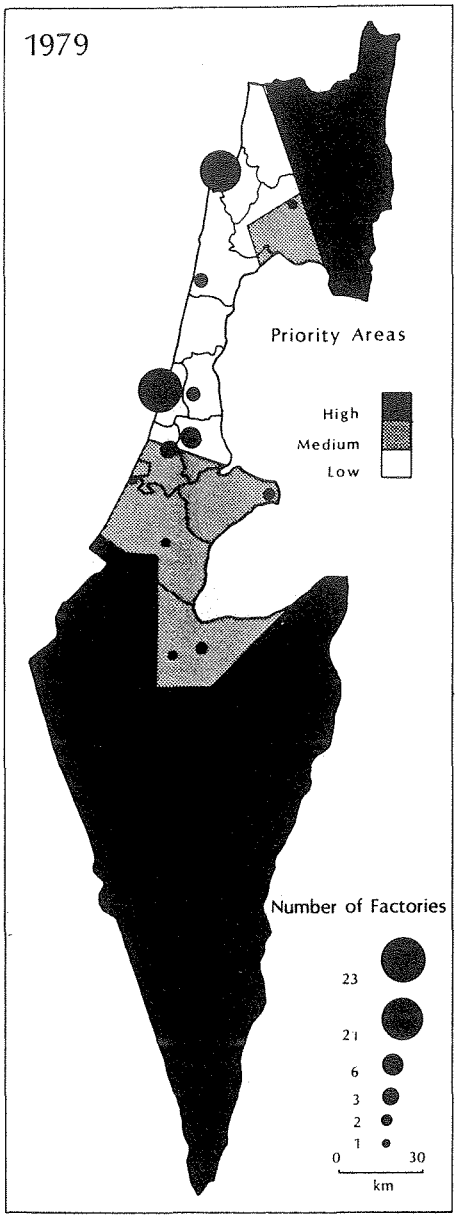
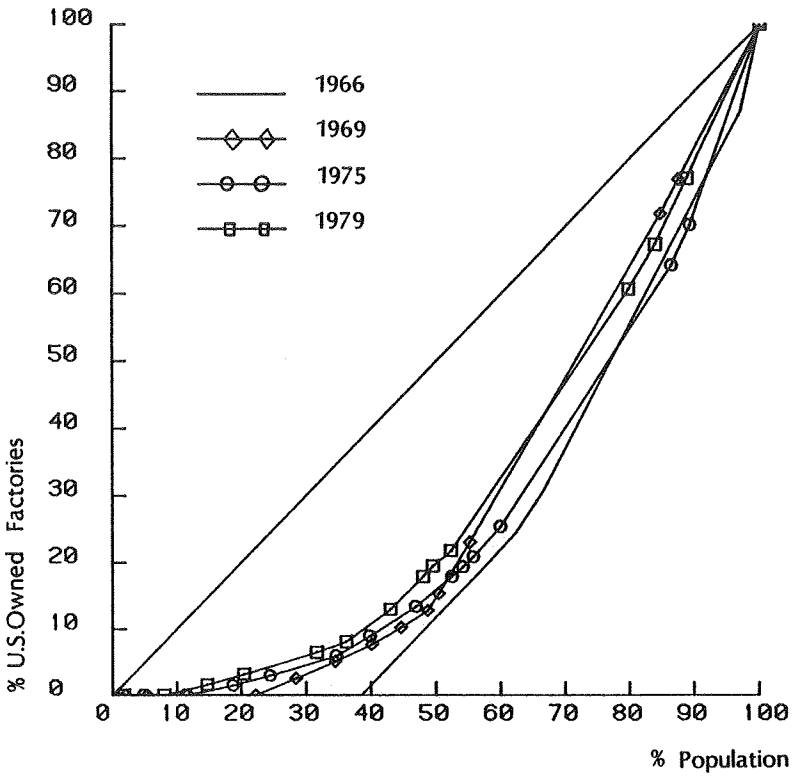


Figure 5.
Lorenz Curve—Population vs. U.S. Owned Industry




closer to the hypothetical line of equality between the two variables. Presumably this indicates that up until 1975 investment was more equally distributed and spreading out from Tel Aviv and Haifa. In 1979 however we see a shift again towards more unequal distribution. The substantial increases in investment in electrical and electronic industries have again favored Tel Aviv and Haifa. A more precise measure of these trends can be seen in Table 3, which shows the indices of dissimilarity for Figure 5. The index represents the maximum distance of the Lorenz curve from the hypothetical line of absolute equality in the distribution of the two variables. The index (see Taylor, 1977) has a range of 0 to 100. The table also shows the indices of dissimilarity for the comparison of the distribution of

Table 3.
Indices of Dissimilarity

| | U.S. Investors | All Industry in Israel |
|---|---|---|
| 1966 | 38.2 | 25.2 |
| 1969 | 35.9 | 27.2 |
| 1975 | 30.1 | 22.9 |
| 1979 | 35.5 | 18.6 |

population and all industry in Israel. Although U.S. investment was becoming more equal until 1975, all industry showed an increase in concentration in 1969 and then a trend toward more equal distribution which continued until 1979. U.S. investors do not appear to be following the lead of local investors in the latter period.

There are several possible explanations for the differences in locational preference. It may be that U.S. investers prefer to locate where they perceive they can minimize commuting, and maximize their access to amenities and the technical and scientific expertise they seek to exploit. Such behavior would be consistent with U.S. investment preferences elsewhere (Blackbourn, 1975; Dicken and Lloyd, 1980; Kobayashi, 1970; Selya, 1983). Another possible explanation lies with the stage in the product life cycle in which the electronics investments are involved. In the electronics industry significant parts of the product line are still in the innovation stage. Thus, investors tend to prefer the established centers where high technology resources are available. As the industry develops and matures, large scale production evolves and location to more peripheral areas takes place (Hekman, 1980). This has occurred: In 1978 National Semiconductor started a design center for micro-processors in Herzalia, some 15 kilometers north of Tel Aviv. In 1984 it built a manufacturing plant in Migdal Haemek, some 30 kilometers southeast of Haifa (Wall Street Journal, 16 April 1984). This life cycle pattern is true for other products as well. The spread of other types of U.S. investment no doubt reflect this.

The location of U.S. investments by sector and place are summarized in Tables 4-7. Here the policy of attracting industries outside the main centers and in development areas appears moderately more successful. Note that

Table 4.
1966 U.S. Investment in Israel by Industry and Place

(Number of factories)

| Sector | Sub-district | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jerusalem | Zefat | Kinneret | Yizre'el | Akko | Haifa | Hadera | Sharon | Petah Tiqva | Ramla | Rehovot | Tel Aviv | Ashqelon | Beer Sheva | Total |
| Textiles | | | | | | | | | | | | 4 | | | 4 |
| Paper | | | | | | | | | | 2 | | 1 | | | 3 |
| Chemicals | | | | | | 1 | 1 | | | | | 1 | | | 3 |
| Petroleum | | | | | | 1 | | | | | | | | | 1 |
| Plastics | | | | | | | | | | | | 1 | | | 1 |
| Rubber | | | | | | | | | | | | 1 | | | 1 |
| Metal Fabrication | | | | | | | | | | | | 1 | | | 1 |
| Electrical/ Electronics | | | | | | | | | | | | 1 | | | 1 |
| Total | | | | | | 2 | 1 | | | 2 | | 10 | | | 15 |

Source: Compiled from Angel (1966).

## Table 5.
## 1969 U.S. Investment in Israel by Industry and Place

(Number of factories)

| Sector | Sub-district | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jerusalem | Zefat | Kinneret | Yizre'el | Akko | Haifa | Hadera | Sharon | Petah Tiqva | Ramla | Rehovot | Tel Aviv | Ashqelon | Beer Sheva | Total |
| Food | | | 1 | | | | | | | | | | | | 1 |
| Textiles | | | | | | | | | | | | 4 | | | 4 |
| Paper | | | | | | | | | | 2 | | | | | 2 |
| Chemicals | | | | | | 6 | | | | | | 3 | 1 | 1 | 11 |
| Rubber | | | | | | | | | | | | 1 | | | 1 |
| Pharmaceuticals | | | | | | 1 | | | | | | | | | 1 |
| Leather | | | | | | | | | | | | 1 | | | 1 |
| Non-metallic Minerals | | | | | | 1 | | | | | | | | | 1 |
| Metals | | | | | | 1 | | | 1 | | | 4 | 1 | | 7 |
| Metal Fabrication | | | | | | | | 1 | | | | | | | 2 |
| Electrical/ Electronics | | | | | | | 1 | | | | | 2 | | | 3 |
| Miscellaneous | | | | 1 | | | | | | | | 3 | 1 | | 5 |
| Total | | | 1 | 1 | | 9 | 1 | 1 | 1 | 2 | | 19 | 3 | 1 | 39 |

Source: Compiled from Angel (1969).

## Table 6.
## 1975 U.S. Investment in Israel by Industry and Place

(Number of factories)

| Sector | Sub-district | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jerusalem | Zefat | Kinneret | Yizre'el | Akko | Haifa | Hadera | Sharon | Petah Tiqva | Ramla | Rehovot | Tel Aviv | Ashqelon | Beer Sheva | Total |
| Food | | | 1 | | | | | | | | | 1 | | | 2 |
| Textiles | | | | | | | | | | | | 2 | 1 | | 3 |
| Paper | | | | | | | 3 | | | 2 | | | | | 5 |
| Leather | | | | | | | | | | | | 1 | | | 1 |
| Chemicals | | | | | | 5 | | | | | 3 | 4 | | 2 | 14 |
| Petroleum | | | | | | 1 | | | | | | | | | 1 |
| Rubber | | | | | | 1 | 1 | | | | | 2 | | | 4 |
| Pharmaceuticals | | | | | | 1 | | | | | 3 | | | | 4 |
| Non-metallic Minerals | | | | | | | | | | | | 1 | | | 1 |
| Basic Metals | 1 | | | | | 3 | | | 1 | | | 4 | 1 | | 10 |
| Machinery | | | | | | | | 1 | | | | 1 | | | 2 |
| Electrical/ Electronics | 1 | | | | | 3 | | | 1 | | | 2 | | 1 | 8 |
| Transportation | | | | | | | | | | | | 1 | | | 1 |
| Miscellaneous | | | | 1 | | | | | | | | 3 | 1 | | 5 |
| Total | 2 | | 1 | 1 | | 14 | 4 | 1 | 2 | 2 | 6 | 22 | 3 | 3 | 61 |

Source: Compiled from Angel (1975).

## Table 7.
## 1979 U.S. Investment in Israel by Industry and Place

(Number of factories)

| Sector | Sub-district | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jerusalem | Zefat | Kinneret | Yizre'el | Akko | Haifa | Hadera | Sharon | Petah Tiqwa | Ramla | Rehovot | Tel Aviv | Ashqelon | Beer Sheva | Total |
| Food | | | 1 | | | | | | | | | 1 | | | 2 |
| Textiles | | | | | | | | | | | | 4 | | | 4 |
| Paper | | | | | | | 2 | | | 2 | | 1 | | | 5 |
| Chemicals | | | | | | 6 | | | | | 1 | 3 | | 2 | 12 |
| Petroleum | | | | | | 1 | | | | | | | | | 1 |
| Rubber | | | | | | 1 | | | | | | 1 | | | 2 |
| Pharmaceuticals | 1 | | | | | | | | | | 3 | | | | 4 |
| Non-metallic Minerals | | | | | | 1 | | | | | | | | | 1 |
| Basic Metals | 1 | | | | | 2 | | | 1 | | | 2 | 1 | | 7 |
| Machinery | | 1 | | | | 1 | | | | 1 | | 2 | | | 5 |
| Electrical/ Electronics | | | | | | 7 | | | 2 | 1 | | 4 | | 1 | 15 |
| Precision Instruments | | | | | | 1 | 1 | | | | 1 | 1 | | | 4 |
| Miscellaneous | | | | 1 | | | | | | | 1 | 4 | 2 | | 8 |
| Total | 2 | 1 | 1 | 1 | | 20 | 3 | | 3 | 4 | 6 | 23 | 3 | 3 | 70 |

Source: Compiled from Angel (1979).

Rehovot, the site of the Weizmann Institute of Science, has attracted investments in pharmaceuticals, chemicals, and precision instruments. These are but some of the major research areas at the Weizmann Institute. The presence of paper manufacturing at Lod is interesting as it is unusual: a rare case of location in a government-sponsored industrial zone. The investment in Arad reflects the proximity to the Dead Sea and the exploitation of minerals there. Conversely we see that investment in Haifa is reasonable: chemicals will be attracted to the chief port and location of the major native chemical and petroleum firms. Similarly, the heavy concentration of electronic investments in Haifa reflects the location there of the Technion, Israel's chief institution of teaching and research in engineering and technology.

## Impact of U.S. Direct Investment

The dollar amounts of U.S. investment in Israeli manufacturing are such that the government's programs and incentives aimed at attracting foreign investment can be said to be at least moderately successful. The government's program for attracting investments to priority regions has been very much less than a success. In this section possible impacts of direct U.S. investment will be discussed.

There are no explicit statements of Israeli government expectations from direct foreign investment. The literature on economic development is explicit in what foreign investment ought to contribute to the host country's economy. Tax revenues should increase, even when tax concessions are granted. This is at least partially achieved through higher employment and income. Industrial output can be expected to rise, with improved, more diverse products being produced. Increased demand on other industries is also envisioned as the new industries seek both raw and intermediate materials. A general increase in productivity can be expected. This is achieved through the mobilization of unused resources, more efficient allocation of previously used resources, and elimination of noncompetitive firms. Improved management practices should develop as native entrepreneurs borrow from the foreign investors. Since investment is preferred in the high-value added industries, new technologies and manufacturing processes are introduced and diffused through the economy. Increased research and development commonly occurs. Improvements in the terms and balance of trade can be expected. Import substitution may be fostered. With increased exports foreign reserves should begin to build up (Bertin, 1970; Carr, 1978; Deluis and Canseco, 1970; Derwa, 1970; Grewlich, 1978; Medhorn, 1970; Mikesell, 1983; Meir, 1964; Saham, 1980).

Unfortunately, data to demonstrate any or all of these potential benefits

are very difficult to obtain in general (Carr, 1978; Hughes, 1969), and in Israel in particular. The Israeli industrial census does not distinguish between native and foreign owned companies (The Development of Manufacturing Industry in Egypt, Israel and Turkey, 1958). According to U.S. government data (Survey of Current Business, 1982), in 1977 total Israeli industrial employment due to U.S. investment amounted to 1.7 percent of the labor force, and 5.79 percent of the labor force in manufacturing. Some 29 percent of all workers in the electrical and electronic industries are employed in U.S. firms. Further, U.S. industrial investments have been estimated to account for one-third of the aggregate nondefense exports of Israeli manufactured goods (IL&B, 1983). These employment and export data compare favorably with the experiences in Hong Kong (Luey, 1969), Singapore (Davies, 1969), Australia (Hughes, 1969; Perkins, 1970), Malaysia (Saham, 1980), and the United Kingdom (Dunning, 1970).

Further, it can be pointed out that few of the negative consequences of direct foreign investment in manufacturing have developed in Israel. Truncation, whereby research and development as well as other management decisions are not permitted in the branch or overseas firm has not developed (Hayter, 1982), and threshold firms (Steed, 1982) continue to flourish and attract other forms of U.S. capital. Perhaps the best indication that few negative consequences have developed is the lack of government restrictions or interventions on continued direct foreign investment. Finally, the lack of negative side effects is indicated by the continued success of Israeli firms and their U.S. owned counterparts in winning international citations and prizes for innovations and applications of in-house research and development (Dean, 1983).

## Summary and Conclusions

U.S. direct investment in Israel consists of contrasting patterns of anomalies and regularities. It is unusual in the Middle East for its emphasis on manufacturing. It has provided employment, increased export possibilities, and furthered technological and technical innovation and application. Investments have been made in industries preferred by the Israeli government, whereas the locations of the plants have been at odds with government regional development and preference plans. Such sectoral and spatial behavior is consistent with foreign investment in Taiwan (Selya, 1983), Japan (Kobayashi, 1970), Ireland (Blackbourn, 1972), France (Bertin, 1970), and the United Kingdom (Dicken and Lloyd, 1980; Watts, 1980).

From Israel's perspective as a host country this U.S. pattern of investment is preferable to the U.S. pattern in the rest of the Middle East. No

dependencies have been fostered, management and technical skills have been transferred, employment has increased, and a diversified economy has expanded. Presumably the Israeli economy in general has been strengthened as a result of the investments, and U.S. firms have achieved new export and earnings opportunities.

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