

THE ISRAELI DEFENSE INDUSTRY: LIMITS TO GROWTH?

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Two conflicting forces are shaping Israel's system of defense. On one side sits the defense industry coalition whose main interest is the development of high-powered weapons. It is opposed by a more conservative sector, concerned with confining the industry to its original mission of enhancing national defense to the extent the country can afford. Blair L. LaBarge examines some of the factors that have contributed to the phenomenal growth of the Israeli defense industry, its impact on the international arms market, and some recently imposed limits to its growth, exemplified by the case of the Lavi fighter.

INTRODUCTION

At a time when global expenditures for defense show a steady upward trend, the group of major exporters of weapons and defense-related services remains a small and exclusive club. International arms exports are dominated by the two superpowers, the United States and the Soviet Union. Other industrial powers such as Britain, France, the two Germanies, Italy, Czechoslovakia, and the People's Republic of China capture smaller shares of the market. In the last decade, they have been joined by leaders of the industrializing nations of the Third World, notably Brazil and India, whose ambitious programs to develop domestic arms industries have been remarkably successful. Countries that have developed domestic arms industries generally are large, have a significant industrial base, access to sophisticated technologies, positive economies of scale and a well-trained work force. These conditions constitute formidable barriers to most developing countries, and it is likely that membership in the arms manufacturing and export club will remain small.

It may come as a surprise, then, that one of the fastest-growing weapons exporters in the global market is the state of Israel. This country, with a population of just over 4 million people, is home to an impressive military-industrial sector which ranks in the top ten in total exports.¹ An estimated 10 percent of the national work force,² including 25 percent of all industrial labor, is employed in weapons production.³ More than a quarter of all Israeli industrial exports come in the form of weapons and security services.⁴ The largest of the many enterprises in the military-industrial sector, Israel Aircraft

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1. Thomas L. Friedman, "How Israel's Economy Got Hooked on Selling Arms Abroad," *New York Times*, 7 December 1986, sec. F, p. 1.

2. *Ibid.*

3. Alex Mintz, "Arms Production in Israel," *The Jerusalem Quarterly* 42 (Spring 1987): 89.

4. *Ibid.*

Industries (IAI), is already the single biggest manufacturing concern in the Middle East,⁵ and the sector as a whole is now of central importance in the national economy.

How did a tiny country that achieved its independence 40 years ago rise to prominence in weapons manufacturing so quickly? The key lies in Israel's security dilemma. Surrounded by hostile neighbors and frequently excluded from international circles, Israel considers domestic weapons production critical to national survival. While it is beyond the scope of this paper to analyze the role of American assistance to Israel, it is important to note that U.S. military aid has allowed the Israelis to pour tremendous amounts of resources into building a defense industry infrastructure.

The defense industry gained heightened economic and strategic importance over the past 20 years. However, it was not until the controversy surrounding the *Lavi* fighter jet project that defense interests coalesced into a bloc with substantial political influence. The debate revealed powerful defense constituencies that exist in society and in the military, industrial and government bureaucracies. The pro-*Lavi* group represented an effort to reorient defense production toward "big ticket" weapons systems that promote economic welfare of special interest groups rather than national security. Yet the coalition of defense interests appears to have come up against economic constraints. A narrow majority of Israelis who realized that their country could not afford the *Lavi* defeated the project in the *Knesset*.

Two poles of opinion thus emerged from the confrontation, each struggling to shape the future of Israeli arms production. One, a powerful bloc of defense industry interests, pushes for more grandiose weapons projects. The other, mindful of Israel's small economy and limited resources, works to confine the industry to its original mission of enhancing national defense wherever economically feasible or strategically expedient. That defense interests suffered a setback over the *Lavi* affair perhaps signals a slowdown to the industry's rapid growth of the past twenty years.

THE RISE OF THE ISRAELI MILITARY-INDUSTRIAL COMPLEX

The roots of the Israeli domestic arms industry are found in the pre-independence period when Jewish fighters had difficulty obtaining adequate weapons. British colonial authorities enforced a strict weapons embargo on Jews in Palestine, forcing the independence movement to produce light arms and explosives clandestinely. These early homemade weapons, although crude, were instrumental to the Israeli expulsion of the British from Palestine. More significantly, Israelis realized that they must depend upon themselves for weaponry.⁶

Following the war of independence, Prime Minister David Ben-Gurion consolidated the scattered domestic arms producers into a single industry to

5. Hesh Kestin, "A \$640 Hammer Is a Bargain," *Forbes* 137, no. 14 (June 30, 1986): 46.

6. Friedman, p. 10.

facilitate production and ensure central administration and quality control.⁷ The continued growth of the defense sector throughout the 1950s and early 1960s led to the establishment of three government-owned manufacturing concerns: Israel Aircraft Industries (IAI), specializing in aircraft, missiles and naval vessels; Israel Military Industries (TAAS), specializing in artillery, small arms and ammunition; and the Armament Development Authority (RAFAEL), specializing in military research and development with an emphasis on electronics.⁸ These pioneers spawned a host of small, privately-owned firms producing high-technology military and electronic equipment.

The Six-Day War of 1967 and subsequent cut-offs by some arms suppliers marked a critical turning point in the Israeli defense industry. Before the war, domestically-produced weaponry focused on small arms, ammunition, artillery and missiles using relatively unsophisticated technology. Israel relied on foreign suppliers, principally France, for major weapons.⁹

The 1967 War changed that. Because of French disapproval over its preemptive strike, the Israelis found it difficult to buy supplies from abroad. France, who supplied Israel with its major weapons systems, levied a total arms embargo — including items already purchased.¹⁰ This cut-off by the primary supplier profoundly affected the thinking of Israeli strategic planners. Since hostilities with the Arabs were likely to continue, it became obvious that Israel could no longer rely on foreign supplies of arms. This conviction was reinforced in 1969 when the British Cabinet abruptly canceled an agreement for the purchase of Chieftain tanks intended to serve as the mainstay of the Armored Corps through the next decade.¹¹ Israel's leaders determined that the nation must seek greater autonomy in weapons manufacturing, including production of major classes of weapons systems.¹²

This goal was first achieved in domestic production of a fighter plane. Agents of Mossad (the Israeli intelligence agency), working through a Swiss, engineer, stole blueprints for the French Mirage V jet that Israel had imported before the 1967 embargo. Engineers at IAI modified the design, and Israel began building the *Kfir* (Hebrew for young lion) in the early 1970s.¹³ IAI also designed and built the patrol boats *Reshef* and *Saar*, and equipped them with the highly successful *Gabriel* anti-ship missile. The IDF designed and built the *Merkava* (Chariot) tank in the late 1970s, which performed well in the invasion of Lebanon in 1982.¹⁴

As the arms industry became more ambitious, the Israelis discovered several comparative advantages in arms production. First, Israel's universities ensure the availability of the expertise needed to develop and adapt advanced tech-

7. Moshe Lissak, "Paradoxes of Israeli Civil-Military Relations: An Introduction," *Journal of Strategic Studies*, 6 no. 3 (September 1983): 3.

8. Friedman, p. 1.

9. Louis Kraar, "Israel's Own Military-Industrial Complex," *Fortune*, 13 March 1978, p. 73.

10. *Ibid.*

11. Peter Hellman, "Israel's Chariot of Fire," *Atlantic*, March 1985, p. 86.

12. Friedman, p. 1.

13. Kraar, p. 73.

14. Hellman, p. 95.

nologies to weapons production. Israel also benefits from a large pool of relatively cheap skilled labor which lowers production costs. In addition, Israel can design systems to meet local strategic needs, thus avoiding the high cost of modifying imported weapons. Moreover, the high domestic demand of the Israeli Defense Force (IDF) enables production runs of many weapons to be large enough to further lower costs through economies of scale. Finally, government-owned defense enterprises, which include Israel's three largest producers of arms, can sell their products to the IDF at cost. International arms dealers, taking advantage of the oligopolistic characteristics of the arms market, usually include a considerable profit margin in their prices.¹⁵

In addition to producing weapons cheaply, Israel has excelled in the production of high-quality weapons. Many are made to accommodate the specific needs of the user — such as the small pilotless drones used to gather battlefield intelligence during the second invasion of Lebanon.¹⁶ The defense industry has also increased the quantity of its output, particularly in the production of munitions.

Between 1965 and 1977 the military industry grew at a real annual growth rate of 12 percent, while the industrial production of Israel as a whole grew by only 7.9 percent. During this same period the military industry received 50 percent of total industrial investment.¹⁷ As a result, in just twenty years, Israel transformed itself from an importer of virtually all types of military equipment to a net exporter of many of the same goods. Today the nation enjoys a significant degree of self-sufficiency in arms procurement.

Israel's weapons — with their reputation for being high-quality and low cost — have made Israel a competitor in the international arms market. Exporters can claim that their weapons have been successfully battle-tested. The IDF has refined and improved its weapons designs based on actual experience in wartime, allowing it to correct many minor glitches that systems inevitably contain when first deployed. This is a powerful advertising tool when the product is marketed overseas. Israeli weapons have also acquired a reputation for ease and facility of use. These are important factors for Third World buyers who are interested in effective weapons that are easy to use and inexpensive to service.¹⁸

Israel's willingness to overlook political differences with foreign clients is a final factor in its success as an arms exporter. Unlike the United States, which subordinates arms exports to foreign policy considerations, Israel generally allows domestic weapons manufacturers to export to any nation willing to buy the goods. Witness, for example, the past sales of weapons to Ayatollah Khomeini's Iran, where political and economic exigencies have taken precedence over official policy in allowing sales to go through. Israel needs foreign

15. Eitan Berglas, "Defense and the Economy," in *The Israeli Economy: Maturing Through Crisis*, ed. Yoram Ben-Porath (Cambridge, MA: Harvard University Press, 1986), p. 185.

16. Friedman, p. 1.

17. Berglas, p. 176.

18. G.M. Steinberg, "Israel: High Technology Roulette," in *Arms Production in the Third World*, eds. Michael Brzoska and Thomas Ohlso (Stockholm: S.I.P.R.I., 1986), pp. 181-182.

exchange, Iranian oil, and some influence over a powerful and hostile neighbor of her Arab opponents. Arms sales have proven an excellent means of acquiring these assets.¹⁹

Weapons and security service deals between Israel and many of its clients are shrouded in secrecy. Nevertheless, intriguing stories have emerged regarding a number of Israeli initiatives. For example, it is no secret today that in 1982 Israel supplied a variety of weapons, ammunition and spare parts to Argentina during the Malvinas/Falklands War when the junta could not obtain the needed equipment from traditional suppliers. The Israelis never admitted their role.²⁰ Elsewhere in Latin America, there is evidence that the Israelis have provided security training and assistance to a number of military governments including Anastasio Somoza's National Guard in Nicaragua and a military regime in Guatemala.²¹ Their involvement, particularly in Central America, has produced unwanted political criticism.

One of the biggest stories, however, concerns Israel's relationship with South Africa. When the United Nations levied an arms embargo on South Africa in 1977, Israel indicated that it intended to comply. Israel, however, violated the embargo on several occasions.²² Indeed, evidence indicates that Israel has cooperated closely with Pretoria to co-produce missile boats, fighter aircraft, battle tanks, and electronics equipment, in return for which Israel has received South African raw materials, industrial products and hard currency payments.²³

Such deals have not gone unnoticed or undisputed in Israeli domestic political circles. In wide-ranging debates, two views have formed on the topic of arms production and exports. One side believes that dependence on weapons sales for economic or political ends contradicts Zionist ideals. The other camp maintains that if Israel fails to take advantage of these opportunities other nations will take its place. At a *Knesset* debate over arms sales to Iran, Rabbi Menachem Hacohen of the Labor Party represented the idealistic camp when he said:

Israel should revert to its normal size and avoid involvement in the sale of arms to corrupt regimes. Can the Jewish state afford to supply weapons for dark and deadly purposes?

Pessah Gruper, a *Likud* Party representative, retorted:

Let's get off the subject of arms to Iran. There are more important things to talk about than ethics and ideology. When a country lives

19. Friedman, p. 10.

20. James Adams, *The Unnatural Alliance* (London: Quartet Books, 1984), pp. 102-104.

21. Nathaniel Lorch, "Latin America and Israel," *The Jerusalem Quarterly*, no. 22, (Winter 1982): 81-82; Jaime Barrios and Ibraheem Malik, "Israeli Penetration Into Central America," *World Marxist Review*, 28, no. 2, (February 1985): 105, 107.

22. "Israel, Other Countries Named as Violators of Weapons Ban," *Congressional Quarterly Weekly Report*, 45, no. 14 (April 4, 1987): 623.

23. Adams, pp. 102-125.

in a state of war, you can't tell the Government to be choosy about its arms transactions.²⁴

Economic gain has not been the only motivation for clandestine arms transactions. Political factors have also played an important role. Arms and security services exports have proven to be a powerful tool of political influence. This is particularly valuable to a state such as Israel that has been partially ostracized by the international community and which must compete against Arab enemies who have used their influence as oil exporters to isolate it further. Weapons exports have become a crucial element in Israel's politics of survival.

DAVID'S SLING: ISRAELI ARMS FOR SALE

Since the 1970s, Israeli weapons exports have grown dramatically — as a percentage of the country's total exports they have grown from 5 percent in 1972 to 16 percent in 1983.²⁵ A quick glance across the globe reveals the extent of Israel's export program. The Ecuadoran air force flies Israeli jets, the Sri Lankan navy employs Israeli gunboats and Chinese tanks are fitted with Israeli cannon. Israeli-made security systems guard oil installations in Australia, army bases in Taiwan, factories in South Korea, and even Britain's Buckingham Palace. Israeli advisers train and equip security forces in Cameroon and Zaire. And the regular armies of Argentina, Belgium, Chile, China, El Salvador, Ethiopia, Guatemala, Honduras, Indonesia, Iran, Kenya, Malaysia, Mexico, Singapore, South Africa, Taiwan, Thailand, Uganda, the United States, Venezuela, the Christians in Lebanon, the Contras in Nicaragua, the Mujahedin in Afghanistan, and the Kurds in Iraq use Israeli weapons.²⁶ With the exception of the East bloc, the reach of Israeli weapons exports is nearly global.

Israel's military exports fall into five major categories: first, small arms, ammunition, missiles and electronics; second, older weapons captured in battle or purchased from abroad and then refitted, upgraded and modified for re-export; third, major weapons systems; fourth, equipment repair and services contracting; and finally, technical training and assistance. Sales in the first two categories have been the most numerous and profitable. Demand for Israeli-made ordnance (especially missiles) has been brisk and sales of captured/refitted equipment are made at tremendous profit.²⁷ The third category, the sale of complete weapons systems, frequently has been limited by the United States since such systems often incorporate U.S.-made components in their manufacture. The fourth category, trade in equipment repair and services, shows significant growth potential; IAI is currently under contract to service

24. Friedman, p. 10.

25. Steinberg, p. 185.

26. Friedman, p. 1.

27. Robert E. Harkavy and Stephanie G. Neuman, "Israel," in *Arms Production in Developing Countries*, ed. James Everett Katz, (Lexington, MA: D.C. Heath & Co., 1984), pp. 208-209.

and maintain U.S. military helicopters in Europe, and many buyers of second-hand U.S. or French equipment contract for Israeli reconditioning services.²⁸

Exports have become an important component of the Israeli defense industry and indeed, the entire economy. The ability to export has unquestionably provided major impetus to industrial expansion; from negligible export levels prior to the Yom Kippur War, overseas sales have mushroomed. Today, IAI and TAAS export over 60 percent of their production. Sales since 1977 have totaled more than \$2.3 billion.²⁹ The Israeli Defense Ministry estimates the total annual value of the arms and security service exports to exceed \$1.2 billion annually.³⁰

Healthy export levels yield needed foreign exchange, which has helped Israel offset the drain on exchange reserves caused by imports of raw materials and intermediate inputs needed in arms production. Moreover, they have allowed for creation of emergency reserve production capability which will serve the country well in any future war. Exports have also allowed the domestic arms industry to take further advantage of economies of scale facilitated by larger production runs.

The Israelis have learned that weapons exports are highly effective in establishing long-term trading relationships with other countries. Purchasing weapons from a particular supplier ensures the buyer's return for future spare parts, servicing, and systems modifications. Few Third World countries can afford to make major shifts between weapons suppliers. Doing so of necessity implies complete replacement of existing military hardware. Exports also have alleviated the defense burden of a state in which up to 50 percent of the annual budget, or 30 percent of annual GNP, goes to defense spending.³¹

INDUSTRY GROWTH: MILITARIZATION OF THE CIVILIANS OR CIVILIANIZATION OF THE MILITARY?

The rapid growth of the Israeli arms industry since the 1967 War has had a significant impact on the nation's political process. The industry now carries unprecedented political clout. The three largest industrial concerns (IAI, TAAS, RAFAEL) alone employ about 40,000 people among them, or roughly 1 percent of Israel's population; this does not include employees of private defense-related concerns, the IDF itself, and the government ministries overseeing defense matters.³² When the families of these employees are included, the resulting electoral bloc has the potential to control a significant number of *Knesset* seats. Only the *Histadrut*, or Labor Confederation, controls a conglomerate of economic enterprises of any comparable strength in the Israeli

28. W. Seth Carus, "Israel: Some Economic and Social Considerations, in *The Implications of Third World Military Industrialization: Sowing the Serpents' Teeth*, ed. James Everett Katz, (Lexington, MA: D.C. Heath & Co., 1986) p. 182.

29. Alex Mintz, "The Military-Industrial Complex: The Israeli Case," *Journal of Strategic Studies* 6 no. 3 (September 1983): 120-121.

30. Friedman, p. 1.

31. Lissak, p. 8.

32. Mintz, "The Military-Industrial Complex: The Israeli Case," p. 115.

OFFICIALLY REPORTED ISRAELI MILITARY EXPORTS, 1972-83*
In US \$ million, current prices

Year	Industrial exports (excluding diamonds)	Military exports as a % of industrial exports (excluding diamonds)	Military exports	Metals and electronics exports	Military exports as a % of metals and electronics exports	Military exports as a % of total exports
1972	540	9.7	52.4	115	45	5
1973	640	-	-	-	-	-
1974	964	-	-	-	-	-
1975	999	17.9	179	297	60	11
1976	1,251	22.8	285	456	62	22
1977	1,575	24.8	390	615	63	15
1978	1,957	25.7	503	795	63	15
1979	2,539	25.9	657	967	68	17
1980	3,340	20.0	668	1,250	53	14
1981	3,637	22.2	807	1,539	52	17
1982	3,520	23.0	809	1,467	55	18
1983	3,320	22.0	730	1,377	53	16

*It is generally believed that the official reports of military exports underestimate this total by at least 25%. This additional amount is probably also not included in total industrial exports.

Source: G.M. Steinberg, "Israel: High-Technology Roulette," in *Arms Production in the Third World*, Michael Brzoska and Thomas Ohlsoh, eds., p. 185.

economy. In political squabbles the defense establishment reminds the government of its important contributions to the national economy and its power at the polls.³³

Moreover, there has been a blurring of the distinction between the civilian government, the arms industry and the IDF. After the War of Independence, Prime Minister David Ben-Gurion established precedents for the relationship of the military with the civilian government and defense industry. Ben-Gurion insisted that the IDF become a professional military subordinate to civilian authority and distinctly separate from civilian governing institutions.³⁴ Thus, while the IDF and attendant defense industry exercised considerable influence in Israeli society, they shared in the broad consensus that ultimate authority must rest in the hands of the civilians.

Important administrative and institutional changes accompanied the drive to expand domestic arms production after 1967. David Ben-Gurion's successor, Prime Minister Levi Eshkol,³⁵ and IDF Chief of Staff Yitzhak Rabin, changed the nature of the IDF's relationship with civilian authorities. Under Ben-Gurion, defense decisions had been the exclusive domain of the civilian leaders in the Defense Ministry and of the Prime Minister himself. Eshkol fostered closer contacts between IDF commanders and civilian officials. This vastly increased IDF influence over the decision-making process.³⁶ His actions thus weakened the civilian/military barrier that Ben-Gurion erected. Increasingly, government officials, IDF officers and defense industry leaders have moved between top posts in various components of the government, military, and industrial bureaucracies. Former top military officers have appeared in key posts in the Cabinet, the *Knesset*, the Defense Ministry, the *Massad*, the Border Police, Civil Guard, and large defense manufacturing concerns (IAI, TAAS, etc.).³⁷ To a lesser degree, top executives of the state defense manufacturing concerns have moved into key Defense Ministry posts.

There has also been a trend toward what one analyst calls "civilianization of the military." Private sector "defense consultancy" firms run by former IDF officers have emerged to assume "civilian" control over some aspects of military planning. This has been accompanied by a massive transfer of skilled IDF technicians to better-paying jobs in the defense industries and increasing subcontracting of IDF work to the private sector.³⁸

An excellent example of the new fluidity within the defense leadership is the career of former Defense Minister Moshe Arens who served as Deputy Director General of IAI before taking his post in the government.³⁹ Today, military leadership experience is an important stepping stone to influential

33. Lissak, p. 8.

34. *Ibid.*, p. 3.

35. Eshkol's personal background was in economics and finance; during his tenure as Prime Minister he poured considerable resources into the industry development process which spearheaded the post-1967 arms industrialization drive; see Lissak, p. 5.

36. *Ibid.*

37. Mintz, "The Military-Industrial Complex: The Israeli Case," p. 108.

38. Mintz, "Arms Production in Israel," p. 96.

39. Mintz, "The Military-Industrial Complex: The Israeli Case," p. 109.

positions in government and industry. This has undoubtedly had a significant, yet unquantifiable effect on decision-making and helped to solidify the defense industry's position as a central economic concern of the government.

Political scientist Alex Mintz states that the growing political clout of the Israeli arms industry and the increasing fluidity between industry, defense and government posts mark the development of an Israeli "military-industrial complex." He defines this as "a loose coalition of powerful groups or actors who share economic, institutional or political interests in the continuance of high military expenditure."⁴⁰ This coalition comprises both inner core and associated members. The military, defense industry, and government bodies concerned with defense issues fall into the former category while various other peripheral groups fall into the latter.⁴¹ Theoretically, according to Mintz, these actors orchestrate their actions to assure continuing high levels of military expenditure justified by an exaggeration of the national security threat.

Mintz believes that civilian, military and government actors in the production of weapons have become homogeneous in interests and outlook. The result has been the creation of a distinct "defense sphere"⁴² in which there exists a problematic entanglement of interests between current IDF officers and former IDF officers now working as defense consultants, arms agents, and industry executives. As current and past IDF officers interact, the "professional" distance maintained between weapons suppliers and their clients in the IDF disappears. Decision-making is concentrated in the hands of individuals with similar backgrounds and interests. Moreover, the occupation of key posts by former IDF officers severely limits access by outside members leading to a greater homogeneity of views.⁴³

Analyst Moshe Lissak holds views compatible with Mintz's thesis. Lissak asserts that the fragmentation of military/civilian boundaries in the Israeli defense sector and resulting "spillover" in both directions has inextricably meshed the two spheres. Lissak concludes that they can no longer functionally be considered truly distinct.⁴⁴

Other analysts, however, challenge Mintz's and Lissak's conclusions that a genuine "complex" is in place in Israel. They counter that the interested elements lack consistent unity of opinion on issues of security. Moreover, they assert, the defense industry is not capable of imposing its priorities on the national decision-making process.⁴⁵

It may be misleading to apply Mintz's theory to Israel. While the size and influence of Israel's arms industry have risen dramatically since the late 1960s and this has been matched by increasing military representation in the country's leadership, the external threat to national security has been undeniable.

40. *Ibid.*, p. 103.

41. Steven Rosen, *Testing the Theory of the Military-Industrial Complex* (Lexington, MA: Lexington Books, 1973), pp. 27-60, quoted in Mintz, p. 103.

42. Mintz, "Arms Production in Israel," p. 97.

43. Mintz, "The Military-Industrial Complex: The Israeli Case," p. 109.

44. Lissak, pp. 8-9.

45. Carus, pp. 143-144; See also Steinberg, pp. 166-167.

Israel is surrounded by past or potential enemies with whom she has fought five wars and various skirmishes since 1948, often at a numerical disadvantage in manpower and weaponry. Under these circumstances, the growth of Israeli weapons production cannot be attributed to deliberate exaggeration of the external threat by a narrow group of profiteers. Moreover the military has occasionally acted to direct defense industry production away from weapons projects that fulfill the economic goals of limited constituencies toward those that promote national security.

Indeed, if such a coalition of interests exists in Israel, it has not met with great public disapproval. Most Israelis view the activities of the "complex" favorably. There is broad societal consensus on the central importance of national security issues, particularly on the belief that greater autonomy in arms production enhances security. Moreover, the technological innovation derived from arms manufacturing is a source of considerable Israeli pride; a needed boost to the prestige of what many citizens would agree is still a developing state.⁴⁶ Many also associate a wide range of economic, political, and social benefits with military industrialization, including: employment opportunities, preferential treatment for industry workers, increased research and development and technological "spinoffs" to other industries, geographical dispersion of the weapons industry fostering local growth, and the promotion of national prestige through technological successes.⁴⁷ In short, Israel's emergence as a major weapons producer has met with the general approval of its citizens.

While Israel's large and powerful defense establishment may appear to fit Mintz's theory, it can by no means be stated conclusively that such a monolithic coalition of interests actually exists on a consistent level. Since the notion of a military-industrial complex is highly theoretical, exact measure of its cohesiveness and influence is extremely difficult to make. The analyst must therefore turn to actual Israeli practice to determine the strength of the phenomenon.

THE *LAVI* FIGHTER PROJECT: THE LION THAT NEVER SOARED

Perhaps the most controversial weaponry issue in recent Israeli history was the decision, made by the Israeli Parliament on August 21, 1987, to scrap the seven-year-old *Lavi* fighter plane development project. The *Lavi* decision was significant for two reasons. First, it represented a concerted effort to undertake a project whose primary importance was as much economic as strategic, indicating perhaps the existence of a military-industrial complex. Second, it underscored the limits to growth of the Israeli arms industry, perhaps foreshadowing an end to the days of rapid military-industrial expansion and ever-grander designs.

The *Lavi* project originated after the 1973 Yom Kippur War when Israeli planners first proposed a plane built in Israel and exclusively designed for

46. Mintz, "The Military-Industrial Complex: The Israeli Case," p. 109.

47. Mintz, "Arms Production in Israel," p. 92.

Israeli needs. Beside the *Kfir*, the rest of the air force consisted of planes purchased from the United States. After severe aircraft losses from Soviet-made SAM ground-to-air missiles in the war, planners conceived of a plane that would combine ground attack and missile evasion capabilities with prowess in air-to-air fighter combat.⁴⁸

But the plan failed to generate much enthusiasm and subsequently lay dormant for several years. Two nagging questions dogged the idea from the beginning and remained crucial throughout its development: Did Israel really need the plane, and who was going to pay for it?

The project was revived in the late 1970s and presented as a plan for a small, compact and inexpensive single-engine fighter. This was a time of great confidence and growth in the Israeli arms industry and other major defense projects such as the *Merkava* tank were coming to fruition. The Israelis were convinced they could build a plane to rival any in the world, and that such a project would produce technological spinoffs of value to the entire economy. The will was there; all they needed was the money, and the United States was the logical source.⁴⁹

The United States became Israel's chief arms supplier in 1969, and after 1973 began furnishing it with extensive economic and military aid. Now receiving \$1.8 billion annually, Israel is the largest recipient of U.S. military aid.⁵⁰ But there is a rope attached: the funds must be spent on U.S.-produced military hardware and services.

Once the *Lavi* project obtained official support in 1981, persistent lobbying pressure was exerted on Washington by the Israeli government to allow Israel to divert some military credits into developing an infrastructure for domestic fighter production. The Israelis insisted that the program could be run economically. Reagan administration and Pentagon officials however, were highly skeptical. Based on American experience, they believed production costs were likely to exceed the original estimates. Israel, they argued, could defend itself just as well by purchasing U.S. late-model F-16 fighters at considerably less cost. Not to be denied, the Israelis took their case to Congress. They convinced a majority of Representatives that the fighter would enhance Israeli security, and that joint production of components would benefit defense contractors in both countries. Over the protests of a few isolated legislators, Congress voted to allow Israel \$450 million of U.S. aid in fiscal year 1983 for the *Lavi*, and \$550 million annually thereafter.⁵¹

Once underway the project took on a life of its own. Original design specifications were substantially altered to a much more sophisticated aircraft,

48. Charles R. Babcock, "How U.S. Came to Underwrite Israel's *Lavi* Fighter Project," *Washington Post*, 6 August 1986, pp. A1, A22.

49. Aharon Klieman, "*Lavi*: The Lion Has Yet to Soar," *Journal of Defense & Diplomacy* 4 no. 8 (August 1986): 23, 25.

50. "Decrease in U.S. Aid to Israel May Force Halt in *Lavi* Program," *Aviation Week & Space Technology* 124, no. 23 (June 9, 1986): 26.

51. David Makovsky, "America's Case Against the *Lavi*," *Jerusalem Post*, 14 August 1987, p. 5.

and costs jumped dramatically. IAI, the primary contractor, expanded its engineering work force and allocated most of its facilities to the *Lavi*. While it subcontracted some of the work it was incapable of doing to American firms, it utilized Israeli firms wherever possible. As work progressed, the *Lavi* became more than just a fighter plane. It was "Israel's equivalent of the American space program," a national endeavor that would raise the entire technological level of Israeli industry, boost employment, provide a degree of military independence never before enjoyed, and perhaps become a big-ticket export item in future years.⁵²

Yet the controversy surrounding the *Lavi* intensified. Israeli proponents fought a war of words and statistics with both the U.S. Department of Defense and Israeli opponents. Americans estimated cost overruns of several billion dollars — making the *Lavi* considerably more costly per plane than a comparably-equipped F-16. The *Lavi* supporters disputed those findings. Nevertheless, the Americans warned the *Lavi* would consume increasingly large amounts of U.S. aid money. U.S. officials were concerned that American taxpayers were footing the bill for a fighter that might eventually compete against U.S.-made jets in the world market.⁵³ Finally, defense specialists were concerned lest a long-term commitment to the *Lavi* condemn Israel to avionics technology that would become obsolete within several years.

Meanwhile in Israel, strong opposition developed from within branches of the IDF itself, which protested that the *Lavi* would absorb funds needed for other important defense concerns. IDF complaints were joined by numerous Israeli economists who insisted that fiscally-strapped Israel could not afford to pay its portion of the *Lavi* bill.⁵⁴

When a showdown brewed over the *Lavi* in mid-1987, Israeli pilots had made numerous successful test-flights of the first prototype. Increasingly, however, Congressional representatives came to feel that the plane was too expensive. Israeli opposition also continued to mount. Defense Minister Yitzhak Rabin and Finance Minister Moshe Nissim pressed hard for cancellation.⁵⁵ The final Cabinet vote on the *Lavi* was postponed seven times as both sides postured and maneuvered; the vote to cancel on August 31 came only after Foreign Minister Shimon Peres reversed his pro-*Lavi* stance and persuaded other key ministers from his Labor Party to follow suit.⁵⁶

The cancellation vote was decried by a great many people in Israel. Ardent *Lavi* supporter Moshe Arens resigned his position as Minister-Without-Portfolio; *Likud* Bloc ministers who had voted against cancellation bitterly accused

52. Thomas L. Friedman, "A Skirmish Over Israel's New Jet," *New York Times*, 20 July 1986, p. A3.

53. Robert S. Greenberger, "GAO Says Planned Israeli Jet Fighter Will Cost Far Beyond Budget Ceiling," *Wall Street Journal*, 23 February 1987, p. 29; Greenberger, "How a Rabbi in the Pentagon Has Stirred Up a Political Dogfight Around an Israeli Jet Fighter," *Wall Street Journal*, 29 September 1986, p. 64.

54. "Israeli Army Reported to Want to Scrap *Lavi*," *New York Times*, 4 March 1987, p. A11; Avi Temkin, "The *Lavi* Must Be Halted Now," *Jerusalem Post*, 14 August 1987, p. 18.

55. Glenn Frankel, "Israel's *Lavi* Jet Fighter May Yet Fly," *Washington Post*, 8 July 1987, p. A21.

56. Glenn Frankel, "Israel Votes to Scrap *Lavi* Fighter," *Washington Post*, 31 August 1987, p. A1.

the Labor Party of selling out to the United States; and IAI employees, many facing immediate layoffs as a result of the decision, staged violent mass protests and vowed vengeance at the polls.⁵⁷ Israel bitterly swallowed the pill.

The demise of the *Lavi* and, indeed, the fact that it was even embarked upon in the first place, raise important questions about the present and future status of arms production in Israel and the nature of the military-industrial complex. Was the *Lavi* really needed for Israel's defense, and if not, why was so much money and effort invested in an unnecessary project? How did Israel ever hope to afford it? And why did so many political leaders favor continuation of the project when faced with clear indications that the United States would not continue to pay the bill?

Arguments about Israel's need for the *Lavi* have been fierce. There is little question that the plane incorporated state-of-the-art avionics and impressive performance capabilities. Former Defense Minister Moshe Arens declared that the *Lavi* was equal or superior to any jet fighter in existence.⁵⁸ However, not all agreed that it was vital to Israel's security. Pentagon experts said that the *Lavi* incorporated no great new technological breakthroughs nor were its capabilities decidedly superior to the F-16, and Israeli military commanders (including the commander of the air force!) admitted that although they liked the *Lavi*, it was not an imperative for national security.⁵⁹ The most vociferous champions of the *Lavi* were industry representatives and politicians.

The question of the *Lavi* costs has also been highly controversial. American calculations based on experience in U.S. defense contracting anticipated massive cost overruns. The *Lavi's* political supporters argued that the United States had wildly overestimated Israeli labor costs and overhead. Yet the strongest evidence that the *Lavi* simply was too expensive came from Israeli experts. Even had U.S. funding continued unabated, the amount of aid that Israel could divert annually to the *Lavi* was fixed: cost increases would have to be borne by Israel herself. This would have meant slashing other defense priorities or incurring ruinous increases in state budget deficits during a time of rigid fiscal austerity. Finance Minister Nissim and Economics Minister Gad Ya'acobi warned that continuation of the *Lavi* project would have far worse effects on the national economy than would the loss of jobs and potential technological benefits that would result from cancellation.⁶⁰ Once again, expert opinion on the project's viability was lacking.

Most aggravating for U.S. opponents of the *Lavi* was the perceived Israeli attitude that the United States had no right to question how Israel spent U.S. money. *Lavi* supporters, on the other hand, claimed the United States was attempting to block Israel's technological progress and accused the United States of interfering in the country's internal affairs, while expecting continued U.S. funding of the project. It may be true, as some Israelis have claimed, that U.S. opposition was partially motivated by fears that the *Lavi* would not

57. "20,000 IAI Workers for Jerusalem Rally," *Jerusalem Post*, 4 September 1987, p. 1.

58. Moshe Arens, "The *Lavi* and the Future of High-Tech in Israel," *IDF Journal* IV, no. 2 (Spring 1987): 9.

59. Yakir Plessner, "The Writing Has Been on the Wall All Along," *Jerusalem Post*, 21 August 1987, p. 16.

60. Avi Temkin, "Opponents Prepare Final Onslaught," *Jerusalem Post*, 14 August 1987, pp. 1-2.

only decrease U.S. fighter sales to Israel, but would become a major international market competitor. However, the inclusion of major U.S.-made components in the jet would have given the United States likely veto power over its sale overseas, a fact which deflates considerably the depiction of American policy as commercially narrow and self-serving.

Rather, U.S. opposition was more likely due to a growing perception that the *Lavi* was a prohibitively expensive plane, being built to serve domestic Israeli political and economic ends, and not for security purposes. Then-U.S. Secretary of Defense Caspar Weinberger made this point clear in early August 1987 when he bluntly told the Israeli Ambassador that U.S. military aid is given purely to address issues of military security, and not to solve economic problems.⁶¹

It appears, then, that what was advertised as a project to enhance Israel's security ultimately became a political and economic pork barrel of questionable military value and serious financial drawbacks. Supporters were pushing for continuation of the *Lavi* because it was a big source of employment and other benefits for a politically powerful sector of society. So entrenched were the "*Lavi* interests" that even massive U.S. pressure and a wide spectrum of domestic opposition were barely sufficient to get it canceled.

The story of the *Lavi* is a potent commentary on the evolution of the Israeli arms industry. It is a clear indication that the industry, if not the dominant force in Israeli politics, has become a central player in the political arena with an agenda and interests of its own to protect. Its original purpose, to supply arms to the IDF, appears to have been increasingly superseded by dedication to projects aimed at providing benefits to constituents and export earnings to the state. While some would argue that the *Lavi's* cancellation is an indication of industry weakness, the depth and seriousness of the crisis that the project provoked suggests the contrary.

Nonetheless, the vote to cancel came as a great surprise to many. Numerous analysts were certain that the *Lavi* would outlive its opposition. Moshe Keret, the president of IAI, declared confidently that "I find it difficult to believe — today — that there is any power that could kill the *Lavi*."⁶² That Keret was proven wrong indicates a serious need for re-evaluation of the direction Israel's defense industry is taking. The *Lavi's* supporters learned that the potential for industry growth is not limitless, and that in a small and poor nation, defense manufacturing capability has powerful constraints. Populist rhetoric and dreams of technological glory are not enough.

The dire economic consequences predicted after cancellation probably will not materialize. Three thousand IAI workers have been temporarily laid off, and some skilled engineers will have to seek employment abroad. However, the Israeli government has authorized subcontractors to push ahead with the avionics package designed for the plane in the hopes of boosting employment prospects in the medium term.⁶³ In addition, the United States plans to

61. Makovsky, p. 5.

62. Friedman, p. A3.

63. Hirsch Goodman, "IAI to Go Ahead With *Lavi* Avionics," *Jerusalem Post*, 6 November 1987, p. 1.

"reward" Israel for scrapping the *Lavi* by giving the Israelis greater access to advanced U.S. defense technology and will allow Israel to co-produce the F-16s required to replace the *Lavi*.⁶⁴ All this should soften considerably any negative impact on Israel's economy.

Gone are the heady days when the Israelis thought they were on their way toward permanent membership in the exclusive league of big-item defense exporters. Since Israel remains dependent on the United States for financing and, to some extent, technology, it seems unlikely that the Israelis will ever be able to fund, design, build, and market major high-tech weapons systems entirely on their own. The August 31 vote not only grounded the *Lavi* — it brought the whole Israeli defense industry back down to earth.

COSTS AND BENEFITS: IMPLICATIONS FOR FUTURE DEVELOPMENTS

The establishment of a large domestic arms industry in Israel has come at considerable cost to the nation. Infrastructure and research and development efforts have been enormous and skilled labor has been siphoned off from other sectors — this in a small economy where resources are limited and economic success or failure is closely tied to their efficient allocation. Infusions of capital into the defense industry have meant that other sectors of the economy have occasionally had to go without.

Yet there is a strong consensus among most analysts that the establishment of the Israeli defense industry justified the concentration of resources. Israel is far more independent today in production of many defense goods than before — a valuable asset in a country that has faced weapons embargoes and shipment delays at crucial junctures. The industry has also provided the IDF with successful weapons systems specifically designed for local operating conditions. It has fulfilled the task for which it was established.

There have been tangible economic benefits as well. The growth of the industry in both productive and technological terms has enabled Israel to become a highly competitive and efficient exporter. While defense-related imports still exceed arms exports in both quantity and value, including imported defense production inputs, export earnings from the defense sector have reduced the negative impact of Israel's defense burden on the balance of payments.⁶⁵

Domestically, the defense industry provides large-scale employment opportunities, contributes to the entire country's technological base through research and development activities, and passes low production costs (relative to foreign producers) on to the state in the form of lower weapons procurement costs. The growth of the defense sector has been the primary force behind the transformation of Israel from an agrarian to a highly industrialized economy. In addition, defense programs continue to help modernize the industrial base and to keep Israeli industry internationally competitive. Israeli leaders envision

64. Makovsky, "The Extent of the New Honeymoon," *Jerusalem Post*, 4 September 1987, p. 6.

65. Carus, pp. 138-139.

that the most promising prospects for growth are found in skill- and technology-intensive goods such as those produced by the defense industry.⁶⁶

Paradoxically, the dramatic growth and success of the defense sector may eventually become a liability for Israel in a number of ways. The rise of the industry has been accompanied by a commensurate increase of the defense sector's influence as a political actor. The economy has become dangerously dependent on military exports. And the demands of continuous technological innovation are exceeding or have already exceeded Israeli resources.

In the political sphere, analyst Mintz warns that the industry could become a creature that its creators find increasingly difficult to control. There are already signs that the defense sector extracts preferential treatment from political leaders because of its recognized power at the ballot box. This may lead to more frequent decisions to produce weapons for political and social, as opposed to genuine military, considerations.⁶⁷ The *Lavi* fiasco indicates that the phenomenon is already in action. In addition, the meshing of civilian and military spheres within the defense sector caused by the dispersion of former IDF leaders throughout economic, financial, and political decision-making posts may exacerbate this trend. Loyalties and interests of military elites may become divided, creating incentives for them to support projects that provide personal or sectoral gains but which produce weapons Israel does not really need. This would involve a tremendous waste of scarce resources and would call into question the genuineness of the defense industry's commitment to national security. The industry lost the *Lavi* vote, but if the trend continues, the outcome of the next round may be different.

Excessive reliance on arms exports is also a matter of concern. Israeli officials have repeatedly stated that it is not in the country's long-term economic interest to be heavily dependent on the military sector.⁶⁸ Yet the truth is that growth in exports has been the primary mover behind the industry's expansion, and, given Israel's tight fiscal situation, it appears that any future opportunities for growth will rely on exports as well. This has already produced problems. A number of Latin American and Asian buyers have had trouble paying for weapons purchased and are in arrears by up to \$300 million to Israel.⁶⁹ In addition, the political fallout associated with sales to a number of regimes has been highly negative. And while Israel still retains a quantitative and qualitative superiority over other big Third World weapons exporters like Brazil and India, the learning process in those countries may eventually clip the Israeli edge. Excessive export dependence would produce serious problems for the Israeli economy in the event of a major economic disruption of any sort. All signs indicate that the Third World markets to which Israel has shipped most of its exports will be highly volatile in the future.

The United States and Western Europe offer the most promising market for Israeli export stability. Increased Israeli integration into the Western

66. Arens, p. 11.

67. Carus, p. 147.

68. Arens, p. 10.

69. Steinberg, p. 185.

defense procurement system would provide bigger markets for Israeli goods and a potential boon in technological cooperation with these countries. Pursuing joint ventures with defense firms in the West (especially the United States) to co-produce components of integrated weapons systems has worked well for Israel in the past and is an avenue for potential growth. To a large extent, however, this depends on U.S. policy; the continued transfer of technology and financing from the United States to Israel is critical for its defense industry growth.⁷⁰ But as past experience has shown, increased domestic U.S. opposition to higher aid levels and greater cooperation with the Israelis is always a possibility and would have serious negative implications for the industry's future.

The mounting costs of high-tech military development programs make it unlikely, particularly in the wake of the *Lavi* affair, that Israel will be able to produce major weapons systems. That final "great leap" to independent production of all major systems, the next significant step in the arms production process, is one which Israel is incapable of taking. The rapid growth of the Israeli defense industry has brought it abruptly to a point where future expansion will entail considerable risks for the economy. Much as many Israelis may not like to admit it, their defense industry may already have reached or even slightly exceeded its feasible limits. For the last twenty years the Israeli defense sector has been one of the great industrialization success stories in the developing world, but it may prove unable to continue to provide the measure of political independence, military security, and economic benefits so far enjoyed.

70. *Ibid.*, p. 189.