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The Impact of Arms Production In The
Third World

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THE IMPACT OF ARMS PRODUCTION IN THE THIRD WORLD

1. Introduction

One of the most noted, though least studied, changes in the Third World in the last years has been the salient increase in the production of armaments. Public attention, as witnessed in newspaper articles and public statements, has focused on the technological and economic successes of some countries' military industries, such as Brazil and India and, especially in the USA, the impact on US foreign policy. Both certainly are appropriate and interesting starting points, but they miss a large area in between: the impact of arms production in and on the countries that are conveniently, if crudely, put under the heading of "Third World". This then will be my focus: the impact of arms production on both the security and development problems of some countries in the Third World. There are many partial aspects which are of relevance here: Military production absorbs funds- and diverts them from other, civilian enterprises. On the other hand it changes the cost structure of arms procurement by allowing a larger domestic contribution. Arms production also influences the structural and technological composition of a country's industrialization. In addition to these and other economic effects there are political ones. Some are domestic, for instance that a new political pressure group is created, consisting of the managers, workers, and owners of the arms industries. Other, more important ones, are in the sphere of international relations: The dependency upon suppliers of arms, in times of peace and in times of war, the foreign policy maneuvering space, the credibility as a non-aligned nation, the status among the hierarchy of nations in the world.

All these and other economic and political elements affect the security of peoples and states in some countries in the Third World and, I may add, in the longer run also in the first and second world. Different social groups within the borders of a state are affected differently, depending upon their status within the state and interests in the

political and economic development of the state and so will be nations with different preconditions for domestic arms production and different aims.

There are some general conclusions from international bodies, including leaders and intellectuals both from industrialized and Third World countries, that are worth noting as starting points in this context. The dictum of the Independent Commission on Development Issues, commonly called the Brandt-Commission, called into operation by the then World Bank President, Robert McNamara, that more weapons do not make mankind safer but only poorer,¹ certainly rings true for the world as a whole, but does not do so for all its parts, be they people within states or states themselves. Another international commission, commonly - and since the death of its chairman also officially - called the Palme-Commission, has extensively dwelled on the connections between common and national security without being able to solve the puzzle.² But what the Palme-Commission has done is to urge leaders in the world, including the leaders in the Third World, to abstain from trying to increase national security at the cost of common security. With respect to the Third World, the Palme-Commission has proposed a strengthening of the UN-security system and regional conferences on confidence building and disarmament, in order to resolve existing problems and lower the present level of armaments. Yet another international commission, though this time not of independent experts, but government representatives, the UN-Expert Commission on Disarmament and Development, has put the emphasis on the economic well-being of the poor in the Third World.³ From a large body of evidence these experts read that military efforts are in general harmful to economic advancement.

These are then my three measurement rods for the impact of arms production in the Third World:

How does it affect the economic development of the countries that undertake it?

How is national security affected?

What about the security within regions and for the world as a whole?

With these grand questions in mind I will still begin with much more petty things, which are nevertheless necessary since they lay the ground for further discussion. I will give a brief overview over the facts of arms production in the Third World, the countries, technologies, aims, achievements and failures. I will then, in turn, discuss the economics of arms production, and the national and international political aspects. In the concluding section, I will try to bring the various elements together again, but I have to warn you that I have no better recipe for the mixing of the elements than the bodies of eminent persons mentioned above.

2. An overview of arms production the Third World

Let us start with the beginning: The motive to set up arms production in a Third World country. And indeed, this was universally the first step. There is no beginning of arms production without the political will to do so.⁴ Arms production does not generally spring up as a consequence of an economic opportunity taken by an industrial firm. This is a first important observation: Arms production is a state controlled and state initiated activity throughout the Third World. There seem to be some cases, like the Brazilian and the Singaporean arms production, that do not fit this model, but in fact they do as I will discuss a bit later. But what then are the statal motives to set up arms production? The most common and persuasive one is to reduce dependence on an outside, unpredictable, and often unreliable arms supplier. The classical case fostering the decision to initiate arms production is the threat of or actual working of an arms embargo. The expansion of arms production in India for example was greatly supported by the arms embargo set into effect by the United States and the United Kingdom against both India and Pakistan during and after their 1965 war. Incidentally, the same embargo also got the Pakistani arms industry started. Israel's arms production was helped in the same manner by the French embargo of 1969 and Chile's arms industry was a result of the embargoes conducted by many industrialized suppliers, including the West European countries and the United States, after the coup of 1973. The list can be extended, i.e. with South Korea

and Taiwan. Their arms production efforts began in earnest when the United States began playing the "China card", and of course South Africa, subject of an UN arms embargo from 1963 and reiterated and made mandatory by the UN Security Council in 1977.

A second motive is related, though it transcends the first one. Weapons are a universal symbol of status in the presently largely unregulated, anarchic international community of nations. The production of weapons domestically gives more status than the import of weapons from another country. This motive of showing the world what one can do, was a very pronounced one in some efforts, i.e. in the Argentinian weapon programmes in the early 1950s, the Egyptian fighter programmes of the early 1960s and in the programmes of the Shah of Iran in the 1970s. It can also be seen in the current Indian, Argentinian, and Brazilian naval programmes, where large ships are built at great costs. This motive, of course, is not only found in Third World countries, it is also an important one in the industrialized countries. In Western Europe it currently is a question of prestige for both the French, the German, and the British government to produce a new fighter aircraft. The eventual necessity to cooperate simply for cost reasons is long buried under national pride of being among the few nations in the world able to produce this ultimate symbol of sophistication in arms production.

Over time, not only in this case, but generally, economics gain in importance as the driving force behind arms production, also in the Third World. Production capacities, once built up, have to be employed. Investments made have to repay. Arms production can also become an important earner of foreign exchange via exports. As a motive for setting up arms production, economic aspects have a dubious role. On the one hand, the hope to save costs, especially foreign exchange costs, is almost universally present. On the other hand, as will be shown in more detail in the next section, arms production in the Third World is only seldomly cost effective in the general sense, and the hope to save is more often than not destroyed by the realities of high cost overruns.

A fourth motive has to do with technology. While it sounds economic, it is really more political than economic. Arms production has been set up in some countries to become the yeast of modern industries in the dough of backwardness. Arms production is generally perceived to be on the forefront of technological development and there are some historical examples, where arms production was instrumental to industrial development, e.g. in Meiji Japan and in pre-revolutionary Russia. Whether this still is the case, or whether not, as some authors have forcefully argued, nowadays arms production is more a burden than a boost for industrial development,⁵ is less important than the fact that there are Third World decision makers, who are trying to use arms production in the way described. The most obvious example is the Brazilian one. Arms production was chosen by both Brazilian industrialists and the government in the late 1960s as one sector which could lead on the path of industrialization via exports. The groundwork had been laid by multinational companies producing a wide array of civilian goods. Arms production offered the advantage of legitimately being a state prerogative even in a very liberal capitalist environment and of having a protected market in the Brazilian armed forces. Other countries trying similar approaches have been the ones in the ASEAN region.

It should be clear, that these various motives push arms production into different directions. Status can best be enhanced by highly sophisticated, technically demanding weapons. These are expensive to produce in the typical Third World country and, since they can only be produced in enclaves, the contribution of such projects to the civilian industry will be negligible. Where technology is the main issue, communality with civilian production processes and civilian products has to be assured. If independence from arms suppliers counts most, then the emphasis will be on those parts of the arsenal whose supply first becomes critical in crisis and war situations; that is ammunition and spare parts. Such differences in approach can easily be seen in the production palettes of the various arms producers. I will exemplify this soon.

But arms production is not only shaped by the wishes of decision makers, rather also by the capabilities of the domestic industry. In fact, the industrial capability to produce is the most important determinant of actual arms production in the Third World. This has been found in several empirical studies using statistical estimation techniques⁶ and it can also be seen from a simple table (Table 1). All the important arms producers in the Third World, like India, Israel, Brazil, South Africa, South Korea, Taiwan, and North Korea also have diversified industrial sectors. Some of the states that would like to build up arms production, and even have the financial means, like Libya and Syria, are greatly hampered by the lack of industrial capacity.

In the case of Mexico, on the other end of the spectrum, a much larger level of arms production would be expected from the figures on the civilian industry. In Mexico, the political will to build up an arms industry has been lacking most of the time. There were some attempts during the Echeverria presidency in the mid 1970s to build up an aircraft industry, but activity has remained on a low level. This reinforces the argument made earlier, that there is no arms production in the Third World without state involvement. The importance of the industrial and technological base is also evident from individual cases. Argentina's arms production program of the early 1950s faulted, despite a comparatively advanced civilian industry and a good manpower base because ambitions were too high.

The Brazilian efforts in the late 1960s and early 1970s succeeded because the ambition was much lower and much more adapted to the capabilities available at the time. India again has been a case of over-ambition, where at several points in time the jump from licensed production to indigenous production was planned but failed. Iran under the Shah was a case of large investments when nothing much was available but money. Large numbers of students were trained in the US and elsewhere, and much money was spent on getting foreign companies to build up a military industrial infrastructure with only limited success.

Table 1

Production of major weapons, value added in manufacturing
and military expenditures, shares in Third World total in %,
5-year- averages

Country	1970			1982		
	(a)	(b)	(c)	(a)	(b)	(c)
Israel	23	(3)	8	27	(4)	4
India	46	9	10	23	7	5
Taiwan	2	(3)	3	9	(6)	3
Brazil	3	16	6	9	18	2
Argentina	2	8	3	7	4	5
South Korea	1	2	2	7	5	4
South Africa	11	(3)	2	6	(3)	3
North Korea	5	(3)	5	6	(3)	2
Egypt	2	2	8	2	2	2
Peru	1	2	1	2	2	1
Indonesia	1	1	2	1	3	3
Chile	1	2	1	1	1	2
Thailand	<	1	1	<	2	1
Singapore	2	1	1	<	1	1
Philippines	-	2	<	<	2	1
Sri Lanka	-	<	<	<	<	<
Mexico	<	12	1	<	.5	1
Pakistan	<	1	4	<	1	2
Algeria	-	1	1	<	1	1
Morocco	-	1	1	-	1	1
Nigeria	-	1	3	-	2	2
Colombia	-	1	<	-	1	<
Cuba	-	<	2	-	1	1
Syria	-	1	1	-	1	2
Malaysia	-	1	1	-	1	2
Venezuela	-	3	1	-	2	2
Iran	-	2	5	-	2	6
Saudi Arabia	-	1	3	-	1	23
Iraq	-	<	2	-	<	5
Oman	-	<	<	-	<	2
Libya	-	<	2	-	<	3

Sources: World Development Report 1985, table 7; SIPRI Yearbook
1978, 1986; SIPRI computer stored data base

- (a) Production of major weapons
(b) Value added in manufacturing
(c) Military expenditures

- no value
< smaller than .5

In addition to industrial base, the availability of funds is a limiting factor. Another reason why Mexican arms production is not on a higher level is that the demand of the Mexican armed forces is low. To some extent, low domestic demand can be substituted by arms exports. The Brazilian success is largely based on the export of weapons on a large scale. In the early 1980s, more than 60 per cent of total arms production was exported. Total amount of exports was more than 1 billion US-Dollars per year.⁷ Another successful arms exporter in the Third World is Israel, though the industry is much less dependent on arms exports as is the Brazilian one. Other countries have tried to follow suit. While the ASEAN countries have been partly successful, others, like the Argentinian and Chilean arms industry have spent millions of dollars in advertisements in arms exhibitions and military journals all over the world without receiving many export orders. The arms market of the 1980s is not nearly the buoyant bazaar it was in the 1970s. It has definitely turned into a buyers' market, where newcomers have great difficulties to convince potential customers of the use value of their products.

Both industrial capacity and financial means are obviously relative to the level of technological ambition. Even the smallest among the countries in the Third World can produce the simplest type of weapons. Thus, in the mid 1980s, 53 countries in the Third World produced small caliber ammunition (Table 2). Amunition production is so simple, since machines can be bought in the industrial countries that form the metal also supplied from the industrialized countries and fill in the powder that also can be bought from the industrialized countries or produced as by-products in fertilizer plants. Small ships were produced in 33 countries. Again, the production of such a ship can be a rather simple task and is not beyond the capabilities of even small Third World countries. On the other end of the spectrum are the production of jet aircraft, artillery, missiles, helicopters, main battle tanks and submarines. Such weapons are only produced in a few Third World countries, and also a few industrialized countries.

Table 2: Qualitative Assessment of Arms Production in Third World Countries, mid-1980s^{a)}

	Ammunition	Small ships	Small arms	Major surface ships	Light armoured vehicles	Light aircraft	Jet aircraft	Artillery	Missiles	Helicopters	Main battle tanks	Submarines
Algeria	2	3	5	3	5	5	5	5	5	4	4	3
Argentina	5	5	5	4	5	5	5	5	5	5	5	5
Bangladesh	..	3	..	..	..	..	..	..	..	..	..	..
Bolivia	2	..	..	..	5	5	5	5	5	3	5	3
Brazil	5	5	5	5	5	5	5	5	5	5	5	5
Burma	2	2	3	..	..	..	..	..	..	..	..	..
Cameroon	2	..	..	..	5	4	3	..	..	4	..	..
Chile	5	5	3	..	5	4	..	..	..	..	..	..
Colombia	2	(5)	..	..	..	4	..	..	..	..	..	..
Congo	2	..	..	..	..	..	..	..	..	..	..	..
Cuba	(2)	..	..	..	..	..	..	..	..	..	..	..
Dominican Republic	2	(5)	..	..	..	..	..	..	..	..	..	..
Ecuador	(2)	..	..	..	5	5	3	3	5	3	..	1
Egypt	5	5	5	5	..	..	..	..	..	..	..	..
Ethiopia	2	..	..	..	..	..	..	..	..	..	..	..
Gabon	..	2	..	..	..	..	..	..	..	..	..	..
Ghana	(2)	..	..	..	..	..	..	..	..	..	..	..
Guatemala	2	..	..	..	..	..	..	..	..	..	..	..
Guinea	(2)	..	(2)	..	..	..	..	..	..	..	..	..
Honduras	..	2	..	..	..	..	..	..	..	..	..	..
Hong Kong	..	2	..	..	..	..	5	4	4	4	5	3
India	5	5	4	3	..	5	5	4	4	4	5	1
Indonesia	5	5	4	3	..	(4)	..	(4)	(4)	..	..	..
Iran	5	..	5	..	..	..	..	..	..	..	..	..
Iraq	2	..	3	..	5	5	5	5	5	1	5	3
Israel	5	5	5	5	5	5	5	5	5	1	5	3
Ivory Coast	1	2	..	..	..	..	..	..	..	..	..	..
Jordan	(2)	..	..	..	4	..	(2)	4	..	..	(4)	3
Korea, North	5	5	5	5	5	3	(2)	5	(4)	3	5	3
Korea, South	5	5	5	5	5	3	3	..	..	..	..	..
Madagascar	..	2	..	..	..	..	..	..	..	..	..	..
Malaysia	5	5	4	3	4	..	..	..	..	..	..	..
Mexico	2	5	4	3	..	..	..	..	..	..	..	..
Morocco	2	..	3	..	..	4	..	..	..	..	..	..
Nepal	2	..	..	..	2	1	..	..	..	..	..	..
Nigeria	2	..	3	..	..	4	1	(2)	3	2	1	..
Pakistan	5	3	4	3	..	..	..	..	..	..	..	..
Panama	..	2	..	..	..	1	1	..	..	..	..	..
Peru	2	5	3	3	..	5	3	..	..	4	..	..
Philippines	5	5	4	..	..	..	..	..	..	..	..	..
Saudi Arabia	2	..	3	..	..	..	..	..	..	..	..	..
Senegal	2	2	..	..	1	1	1	3	..	1	1	1
Singapore	5	5	5	4	5	5	3	..	5	1	1	1
South Africa	5	5	5	4	5	5	3	4	5	1	1	1
Sri Lanka	..	2	..	..	..	..	..	..	..	..	..	..
Sudan	2	..	..	..	..	..	4	..	..	..	..	..
Syria	2	..	..	..	..	5	4	..	..	..	..	..
Taiwan	5	5	5	5	5	4	..	5	5	4	1	1
Taiwan	5	5	5	5	5	4	..	5	5	4	1	1
Thailand	3	5	4	..	..	..	..	..	..	..	..	..
Trinidad & Tobago	..	3	..	..	..	..	..	..	..	..	..	..
Tunisia	(2)	..	..	..	..	..	..	..	..	..	..	..

Key to groups:

- A = diversified and sizeable arms production
- B = production in most categories
- C = production in several categories
- D = limited production

Key to production stages:

- 0 = planned
- 1 = major overhaul and refurbishment capacity
- 2 = assembly
- 3 = licence production of components
- 4 = licence production of weapon systems (import of sophisticated parts)
- 5 = indigenous design and production

But even with respect to such weapon systems, differences can be made. It is for example much easier to make a missile of 1960 vintage than to make one of 1980 vintage. Thus, a Third World military industry may be able to produce a weapon system of older vintage but not one of newer design. Here then is another usual decision point for arms production in the Third World, where the various motives behind it lead into differing directions. The production of older weapon systems may be more cost effective, while it will not enhance status very much and will not have great attraction for foreign customers.

Often it is suggested that Third World arms producers start with simple, dated designs and then increased their capability to produce more sophisticated and newer weapon systems. While this certainly is a prudent way to overcome starting difficulties, this is no way to close the gap between arms production in Third World countries and in the industrialized countries. The technological level of arms production in the industrialized countries does not stand still, quite on the contrary: there is a constant and sometimes rapid advance. Instead of catching up with the developments in the industrialized countries, an arms industry in the Third World, once set up, tends to lose contact, since its internal dynamics are less than the ones in the industrialized countries.

This is an experience, that especially the Indian arms industry has rather frequently made. In spite of large investments, the gap between the level of Indian arms production and the level of arms production in comparable industrialized countries, say Italy, has grown. The Indians have repeatedly bought the newest available technology and then tried to advance from there on their own. After a while, they found themselves to be backward and bought the newest technology on the international market again. Research and development in the industrialized countries - and spread on through the two major alliances - is on a much higher level than military research and development in the Third World countries.⁸ The best qualified manpower, the best available resources and large amounts of money are spent to develop newer and better weapon systems. No

country in the Third World is able to follow, let alone duplicate, this effort. On the contrary: Money is often spent unproductively on reinventing things invented in the industrialized countries earlier; and personnel qualified in Third World military industrial firms leave the country to work in the industrialized countries where more money and better research facilities are offered.

Among the Third World countries it is only Israel that has been able to break through the technological barrier and to generate a dynamic in the arms industry that even surpasses the one in many industrial countries. The most important reason for this breakthrough is the close relationship with the United States both in financial, technological, political, and manpower terms. Still, it is notable, that the Israeli arms industry has reached such a high technological level, that currently even the United States are buying some electronics and remotely piloted vehicles from the Israeli arms industry.

Let me at this point after having made some general remarks about the facts of arms production in the Third World turn to individual countries.

Israel has by far the most advanced arms industry among Third World countries. There was some production of armaments already in the late 1940s and 1950s but the scale was low. The expansion came in the second half of the 1960s and during the 1970s. Much of the technology used in the Israeli arms industry is of foreign origin; mostly French until the end of the 1960s when the French government under de Gaulle declared an arms embargo; and from the U.S.A. after that. But the Israeli arms industry is capable of adapting foreign designs for its own needs and nowadays it is not technology as such that is imported, but rather components, like electronic gadgets, engines, automotive parts, etc. that are then put together for products like the Kfir fighter aircraft, the Gabriel missile and the Merkava tank. The Israeli arms industry is under strong pressure to put out usable products, since the chances that they might be used soon are high. Still, the Israeli industry has been very optimistic about its technological capabilities and has promised to produce products which are superior to the ones of Western industrialized

countries. Currently, the Lavi fighter aircraft is the main witness of this ambition. Initially, though, 60 per cent of the parts for the Lavi have to be imported, and the finance is almost totally from the US.⁹

The Third World country with the largest arms industry is by far *India*, employing more than 250,000 people. The West-German arms industry, for comparison, employs a similar total. The roots of Indian arms production go back to ordnance factories established by the British and then run by the Indian armed forces after independence. The great expansion came in the early 1960s, in parallel to the expansion of military expenditures after the 1962 war with China and the 1965 war with Pakistan. Licenses to produce major weapons were bought both in the East and the West, excepting the United States. There have constantly been efforts to develop sophisticated Indian weapons; efforts that have mostly been frustrated. In order not to lose the edge in the competition with Pakistan, license production projects were started when domestic designs did not prove successful. There is now, in the mid-to-end 1980s a mixture of actual large scale production of Soviet, West German, British and French weapons under license and large scale development efforts of an Indian tank, an Indian helicopter, and an Indian light fighter aircraft.

Taiwan is one of the least known arms producers among the Third World countries. The government which tightly controls the sector is not interested in much publicity about it. The production of aircraft, vehicles and ships was quietly built up during the 1970s with US, Israeli and some South Korean help. The emphasis is on ships and less sophisticated ordnance and aircraft.

While Taiwanese arms producers have tried to stay under cover as much as possible, the *Brazilian* arms producers have tried to receive as much public attention as possible. Brazil represents, as mentioned earlier, the first case of export-led military industrialization. Central sectors are the production of armoured vehicles and aircraft in private or semi-private companies under state control. They need to export to survive and

got the orders after their products had been tested under rough conditions in the Middle East in the 1970s. The technical approach is based on using what is available; that is components like engines, automotive parts, electronics and special metals, mostly produced by multinational companies in Brazil. The use of such components also facilitates maintenance and repair in foreign countries, since multinational companies like Mercedes-Benz, Saab or Cadillac have civilian subsidiaries in many countries. There is one area of arms production in Brazil, though, that is completely different. Naval production is done in military-run arsenals; and there are hardly any efforts to export. The Navy has not cooperated in the joint armed forces/private industry drive for military industrialization and demands more sophisticated weapons that can only be produced with much foreign support. Recently the Air Force and Army also changed their approaches somewhat and currently weapon systems on a much higher technological level are under construction in Brazil, like the Osorio main battle tank and the AM-X fighter aircraft (a joint production program between Brazil and Italy).

The *Argentinian* arms industry was the most advanced among the Third World industries in the 1940s and 1950s, building tanks and jet fighter aircraft. At the time, the government under Juan Peron had great ambitions to surpass Western Europe in industrialization. Arms production was to be the showcase for this import substitution industrialization. Technological expertise came mostly from German ex-Wehrmacht engineers who had gone in great numbers to Argentina to avoid presumed prosecution. When Peron was overthrown in 1955, the military government also abandoned most of the arms production projects, since arms production had come to be identified with Peronist politics. An exception was only made by the Air Force, which is traditionally very nationalist minded. A second beginning was made during the early 1970s, when Peron again was in power and this time not abandoned but rather greatly expanded by the military junta that overthrew the elected government in 1976. Focus was naval construction via importation of sophisticated designs for corvettes and submarines from

West Germany. When military expenditures were decreased by the civilian government coming to power in 1983, arms production entered a big crisis. Export efforts have been largely frustrated. The civilian government is heavily subsidizing overcapacity in arms production in order to avoid more unemployment.

The situation in *South Korea* equals in many respects the one in Taiwan except that arms production was initiated a decade earlier. The state tried to involve private industry by giving rather favourable financial conditions to those companies entering arms production. According to persistent rumors, this way political favours to the government could be repaid. Technology has mostly come from the US. One speciality of the South Korean arms industry is the reverse engineering of US weapons technology. US re-engineered artillery and ammunition has been sold widely in the Third World including Iran in the early 1980s.

South Africa's advance in arms production was made possible by the interpretation of the 1963 arms embargo against the country chosen by a number of major suppliers of weapons in Western Europe, especially France and Italy to exclude transfer of arms production technology. The South African government used these loopholes and built up an arms industry based on licenses from these suppliers. Later licenses were also acquired from Israel. The South African arms industry chose to produce what was imminently needed: first weapons that might be used in a guerilla-war, like light armoured vehicles and small counterinsurgency aircraft, and later, when the Portuguese colonies had become free, weapons against regular armies, like fighter aircraft, warships and small tanks. They adapted the technologies imported for their purpose but, because of the lacking industrial base, had to import many components. The 1977 mandatory UN arms embargo did not totally limit the flow of components South Africa's military still needed, like engines, electronic parts and computers. By the mid-1980s, when most industrialized countries had also stopped the supply of these items, the 20-year South African effort to become independent in arms production had resulted in an arms industry that could

produce a wide range of components and weapons. Almost all of these are of 1950s' design, though. The weak-point of the South African arms industry is technological advance. For a number of years, the South African military did not seem to worry much about this matter, since it was mostly concerned to get sufficient weapons to counter armies also armed with less sophisticated weapons. From the early 1980s, though, the armed forces began to demand more sophisticated weapons and less of the weapons the South African industry can produce. By the mid 1980s a number of improved designs of old weapons, like fighter aircraft, helicopters and surface ships had been developed, but they all do not represent real advances in sophistication.

North Korea's arms industry was built up in the 1950s with the help of Soviet technicians. The emphasis was on small ships and artillery. The North Korean industrial planning of the 1950s gave special emphasis to arms production. In that decade North Korea was, after Argentina, the most important arms producer in the Third World. The range of weapons produced has not changed much since then, despite some attempts to produce modern tanks and fighter aircraft. Reportedly though, the problems were so great, that at least the production of fighter aircraft was stopped. Korea's arms industry has remained large, but has concentrated on the production of less sophisticated weapons of Soviet design.

Egypt's production of weapons is quantitatively smaller than North Korea's, but qualitatively it is of higher standing. The history of arms production in Egypt has been full of changes. It dated back into the last century, before the time of British domination. In the 1960s, under Nasser, there was an overly ambitious program to produce fighter aircraft and long range missiles. Technical advice mostly came from Germans (some of them had been in Argentina earlier), but when West European countries stopped the influx of components, the projects had to be abandoned. At the same time, a domestic small arms and ammunition industry producing Soviet designed weapons was built up. That industry is still functioning and putting out weapons that are mostly

exported. In the 1970s, after the break with the Soviet Union, the grandiose project of the Arab Organization for Industrialization was set up in Egypt, to be financed by Saudi Arabia and some other Arab countries. The AOI faltered after the Camp David agreement in 1977. Egypt continued with some of the projects that had been drawn up with US and West European help but had to abandon most because of lack of finance. Still, there was extensive assembly and license production of aircraft, vehicles and missiles in Egypt in the early 1980s, some of it for Iraq, financed by the conservative Arab countries, thereby emulating the earlier AOI set-up, without a formal agreement.

After Egypt a number of countries are listed in Table 1, in which there is more limited arms production, either in quantity or quality. In *Peru*, e.g. there was some naval ship building activity in the late 1970s and early 1980s. In Indonesia there is a booming aircraft producer within the state sector manufacturing helicopters and transport aircraft produced under license from FR Germany, France and Spain. In *Chile*, a major activity is the production of armoured vehicles under Swiss license and from domestic designs. There also is limited production of ordnance and aircraft copied from US models. Most of the Chilean activity started in the late 70s. In *Thailand, Singapore, the Philippines and Malaysia*, arms production had been rather limited until the late 1970s when some projects were started with assistance from West European countries. In Singapore, there also is a strong presence of foreign arms producers. Singapore is one of the few countries in the world which allows multinational companies to flourish in the arms sector, but tight control is exercised via the Sheng-Li group of companies which is owned by the Ministry of Defence. *Pakistan's* ordnance factories are among the larger arms producers in the Third World. They combine a number of factories run by the military producing everything from clothing to small arms, ammunition and small aircraft under Swedish license. There are many more countries, in which arms production occurs, but in all of them it is a minor, relatively insignificant activity.

3. The Economic Impact of Third World Arms Production

Under this heading I will discuss mainly two aspects:

The costs of arms productions and the civilian-military economic interaction, that is the spin-off from arms production into the civilian sector, as well as the spin-in of civilian advancements into the military industries.

The cost to produce a weapon system can be divided into several parts; the costs for research and development, the costs for tooling up the production line, the costs of training employees, the costs of preproducts and the labour costs. Some of these costs are more or less fixed, independent of the length of production-run, i.e. the research and development costs, the training costs and, to some extent, the tooling costs. They decrease per unit with the number of systems produced. In addition there is the aspect of learning to coordinate production better over time which reduces the unit cost with the number of items produced.

Some of these fixed costs are dependent upon the national technological and industrial environment in which they occur. Research and development costs will be the higher the lower the general level of science and technology is and the less experience there is with prior military research and development projects. Training is more costly when less skilled labour is available. Tooling up is more expensive with less prior experience in doing so.

The advantages of both length of production run and technological environment generally militate against arms production in Third World countries. Military expenditures are smaller, there is less prior experience and a smaller advanced civilian industrial sector, if there is one at all. The one factor that works into the opposite direction, namely to make arms production less costly, is the direct labour costs. Arms production in Third World countries can only be cheaper than production in industrialized countries if the share of labour costs in total costs is high. Weapons with a high share of labour input are e.g. ship construction, and some types of small arms

production. Generally though, arms production is not very labour intensive; and the required craftsmanship tends to be highly paid in Third World countries as well as in industrialized countries.

While not much detailed cost data are available, many statements by officials in arms industry, and the data we have, witness to the correctness of these considerations. The costs of F5-aircraft produced in Spain, South Korea and Taiwan were all higher than the production costs in the United States.¹⁰ In successive South African White Papers it had to be explained to the public why it was important to increase arms production despite the high cost. In one particular case, the cost of producing a communication device in South Africa was nine times the cost of the similar item on the world market.¹¹

One important way to cut costs is to produce weapons under license. The costs of a license are always much below the costs of original research and development. Newcomers on the arms export market, like the FR Germany in the 1960s, Italy, Austria and Israel in the 1970s, have tried to enter the arms market by offering production licenses where the traditional suppliers like the United States and the Soviet Union were not willing to do so. In the contracting arms market of the 1980s all suppliers except the United States and the Soviet Union have become more willing to sell production licenses in arms deals, if the customer so requires. And it is not only easy to get licenses, they are also rather cheap, since in most supplier countries the original research and development was financed by the respective state and exporting companies have no costs to recuperate through the export of know-how. But even for the license production projects where we have cost information, production unit cost regularly seem to be higher than unit costs of the same weapon produced in the originating country. This is because of the high component, tooling and training costs in small series. Examples are the Italian Lupo-class frigates produced in Peru, French Mirage fighter aircraft produced in South Africa, and the Soviet MiG-21 aircraft produced in India. The premium can vary from a few per cent

in the case of the Indian MiGs to several hundred per cents under less favourable conditions.

Simple cost calculations give an indication of the higher cost of domestic arms production with which Third World countries have to deal. But they do not give the full picture.

Total cost may not be a decisive criterion - that may rather be foreign exchange cost. In many countries the availability of freely convertible funds is the real bottleneck, not capital or labour cost. If it is possible to incur a good part of the total costs in local currency, an arms production project may be worthwhile even if total costs are higher than the international market prices. Most of the labour costs are normally spent locally, though it is not unusual that specialists from industrialized countries have to be invited to aid in the production process. Tooling and training costs can be in domestic currency if there is a domestic machine tool industry of high standards and if there are skilled nationals available to train others. But this is the exception in Third World countries. The same applies to preproducts: if there is a broad industrial base, chances are good that foreign exchange costs can be cut. The Brazilian approach, for example, is based upon the use of domestically produced preproducts. It is therefore not surprising that the Brazilian arms industry seems to have been an important foreign exchange earner from the mid 1970s. But Brazil has remained the great exception to the general rule.

If, then, arms production is more costly than imports of weapon systems, either the numbers procured by a Third World armed forces have to be reduced, or military expenditures have to be higher than they would be without domestic arms production. Tax and levy payers have to subsidize the domestic arms industry, either now, or if production is credit financed now, later. If the burden of state expenditure on the economy is increased, then chances for economic development are decreased.

This last point is not undisputed. The economic calculus of arms production in many countries seems to work out to the contrary, namely that arms production is a motor

of industrial development giving impetus and momentum to civilian advances. Investment in arms production therefore often is not viewed as unproductive, but rather possibly more productive than investment in civilian economic activities.

The idea that the military sector is a pull on industrialization was first developed by the German historian Werner Sombart, who at the beginning of this century singled out demand by the armed forces in Western European countries in the 15th and 16th century as the most important force in the creation of capitalism.¹² While his explanation never reached the popularity of Marx' theory or Max Weber's protestant ethic proposition, the idea that Sombart developed at great length is part of the understanding of many decision makers and academics both in the industrialized countries and the Third World. The academic discussion on whether production for the military helps or hampers economic development has raged on at least since the American historian John Nef published a devastating critique of Sombart's theses in the 1940s.¹³ The debate is currently stimulated by the US American SDI program and its consequences for the economic relations among industrialized countries on the one hand and Soviet efforts to use military advancements more productively in the civilian industry on the other hand.

While much less research has been done with respect to Third World countries there are some relevant conclusions on the relation between arms production and the civilian sector which seem to be fairly well established.

One such conclusion is that technological advance in the military industry can spill over but that it is far from always the case. The conditions have to be favourable. The distance between the military and the civilian, in geography, institutionally and in the technological level may not be too great. This of course means, that arms production in Third World countries bears more potential for the civilian industry, if it is shaped in accordance with the available industrial and technological resources. The South African and the Brazilian approaches of producing simple weapons in great numbers are obviously more suited to such requirements than the Indian or Argentinian approach of producing

highly sophisticated weapons in small numbers. A broad base of civilian industries can only profit from domestic arms production, if requirements and specifications of the arms industry can actually be met and components do not have to be imported from foreign countries.

The mentioned favourable conditions for spin-off from arms production to the civilian sector are generally not present in the Third World. The situation gets worse, if the level of ambition in the arms production sector is high and industrial capacities are low.

Another conclusion that can be drawn from empirical studies of the military-civilian economic link is that civilian investment is crowded out by military investment both on the supply and the financial side. Good scientists and engineers can only be employed either in the civilian or in the military sectors and chances are that many of the best ones will work in the military sector. In fact, what can be seen in many countries with fairly good educational institutions is that technicians and engineers trained for civilian purposes are drawn into the military sector including arms production.

A *third* conclusion to be drawn is that investment in military production will generally stimulate the civilian economy less than investment in civilian production simply for the fact that the first aim of military production is not to increase productive activity or to advance the level of technology as such but rather to come up with weapon systems. Spill-over will always be a by-product which, if the military sector is very large and circumstances are very beneficial, may be very important. But nevertheless they remain a by-product, while in the civilian sector productivity and return on investment are the foremost performance criteria.

As the amount of spin-off is greatest if civilian and military production sector are shaped in accordance with each other, decision makers in the Third World have been tempted to model the civilian sector so that as much of the arms production technology as

possible is exploited. Governments in Israel, South Africa, Argentina, South Korea and other countries have been under pressure not only to subsidize arms production directly but also to subsidize an advanced civilian industry in sectors relevant for arms production. In cases where arms production is an important economic activity, as in Israel, India, South Africa and Argentina, the arms production sector in effect becomes the core of the industry; from where the dynamic is expected to come, where the level of technological ambition is set and much money is spent. An interesting case in point was Iran during the 1970s. The Shah's ambition to build up a large, modern arms production complex encompassed not only the arms production sector proper but entailed the build-up of a long string of other industrial projects from chemical factories to machine building industries. The technological level of these supportive industries had to be on the same level as that of the arms industry in order to use as much forward and backward linkages between them as possible. This meant, though, that the gap to the rest of the economy became enormous, and that there were few possibilities for interaction. The economic consequence was the creation of a dual economy. The political consequence was the exclusion of a large part of the population from advances in the economic sector - which turned out to be more detrimental for the regime than the direct economic consequences in the long run.

The Iranian example was an extreme one. In no other country has the leadership been able to finance such a gigantic effort of creating a modern industry geared to the needs of the arms industry. But the structural dilemmas are the same anywhere in the Third World where arms production occurs. Wherever arms production is done at the level of the existing civilian industry, sophisticated weapons cannot be produced. If modern weapons are to be produced more than just an arms industry has to be financed. The latter approach affects the pattern of industrialization. The requirements of arms production influence a good part of the industry and dominate governmental industry policy. Some sectors become highly advanced while others are neglected. A dual or

heterogeneous economy develops. Backward and forward linkages within the civilian sector are limited. The chain of mutual stimulation, which is probably the most important precondition of comprehensive industrialization is broken. While growth rates of industrialization may be high since the modern sector might be expanding, the effect on employment and the betterment of economic conditions for many people will be negative. While one should not overemphasize the importance of arms production in skewing industrialization processes, arms production, where important and not adapted to local capabilities, contributes to an industrial development which is not beneficial in the long run.

4. The national politics of arms production

As was pointed out earlier, the main motive of arms production in the Third World is increase in independence from a single or several suppliers of weapons. Does arms production in fact decrease this kind of vulnerability? The evidence we have on this point is not sufficient to make definite judgments, but some conclusions can be inferred from as diverse cases as Israel, South Africa, India, Pakistan and Iran in the early 1980s.

A first distinction has to be made with respect to time. While short term dependence on suppliers of arms, ammunition and spare parts can be rather easily decreased through arms production, it is as we have seen, very difficult to decrease the longer term dependence on the inflow of know-how and technology.

South Africa, for example has achieved almost total independence from foreign suppliers in servicing, maintaining and supporting the weapon systems the armed forces have in their arsenals. In the case of outright war, South Africa would be able to keep its forces going for a long time. Part of the issue of short term independence is the capability to quickly adjust to and adapt new types of weapon systems. South African and Israeli engineers have shown this capability with respect to captured Soviet designed weapons. So have, to the surprise of many observers, Iranian engineers in the early 1980s. The Iranian arms production factories have also shown to be able to sustain a war effort

at least in some production areas. Argentina's air force was able to keep its domestically produced Pucara-aircraft in the air during the Falkland/Malvinas war while for foreign aircraft, such as French Mirages and US-American Skyhawks, great supply problems arose.

Obviously, short term supply dependence will be lower the fewer components and preproducts have to be imported. If a decrease of short term supply dependence is the aim of arms production, then it makes sense for decision makers to invest as much as possible in a broad and comprehensive civilian support industry - even if costs are raised further and if a large part of the domestic civilian industry has to be shaped according to the needs of the military industry. Such an approach was for instance chosen in South Africa. Where short run supply dependence is hardly an issue, as in the Brazilian case, it can be accepted that most preproducts come from multinational companies. Short run supply dependence can also be accepted in Israel, where the close connection with the USA constitutes mutual leverage, giving Israel some insurance that the USA is drawn into any serious conflict Israel is participating in.

In order to decrease the long run dependence on technology inflow, which, given the dynamic of military innovation in the industrialized countries, is not decreasing but rather increasing, Third World countries either have to substantially scale down their technological ambitions or try to finance large research and development programmes of their own. The first alternative has, as has been said earlier, been accepted for instance by the South African military and also in Brazil with its completely different approach. But in both cases the pressure to change to the second alternative mounts. The military in the two countries, as well as the military elsewhere in the Third World demands the most modern weapons available and is not content with the technology of yesteryear or suitable for export customers that are technologically even less advanced. But the second alternative has so far only been proven possible for Israel for the mentioned reasons. Others that have tried this way have failed, even a country with such a large educational base and such a large arms industry as India.

But how important is this issue of dependence? Probably, its real importance has decreased. The arms trade has become a highly competitive business, with a multitude of suppliers and not a few from the Third World, which are eager to supply even in the most astonishing circumstances. As is, for instance, shown by the supplies to Iran in the early 1980s, even for an outcast of the international system it is possible to get supplies of weapons and spare parts in large quantities from large number of suppliers.¹⁴ There have hardly been any efforts to put an arms embargo on the participants of the Iraq-Iran war. Twenty years ago, during the Indian-Pakistani war, the Near Eastern wars and the Biafra war in Africa, arms embargoes were the rule. Nowadays the only embargo which is in force is the one against South Africa and it is difficult to see that the large number of suppliers in the West, The East, and the South will agree on another one. True, the number of suppliers of arms production technology is smaller than the number of suppliers of weapon systems. These are mainly the industrialized countries of Western Europe, since the United States and the Soviet Union are reluctant to share military production technology. But first, the Western European countries are among the ones least willing to agree on arms restraints or embargoes, and secondly, the transfer of military technology is very difficult to control. When the West German submarine building company H D W supplied the plans to produce submarines in South Africa, not more than a few bags full of microfiches were physically transferred.¹⁵ It was only due to the insisting efforts of the company to get a political go-ahead for the delivery of components that the whole deal became known.

The issue of dependence on arms supply has become - for most countries in the Third World - more a symbolic than a real issue. In the current international system, dependence on the supply of arms is judged by many decision makers as more important than, for example, the dependence on the supply of foodstuffs, which may be a more severe threat to national sovereignty in case of crises.

Independence from foreign supply also has an important domestic propagandistic use in many Third World countries. Even in cases, where the arms industry is far from being able to supply the armed forces comprehensively from its own production lines, it is often claimed, that one is self-sufficient. Examples are the Indian case, where self-sufficiency has been regularly claimed in government reports since the late 1960s and Chile, where self-sufficiency also is a claim since the end of the 1970s. Nationalistic attitudes are supported and given credibility by these claims. Since nationalism is an important ingredient in legitimacy of both civilian and military governments in many countries in the Third World, regimes are supported through these claims and the activities to underline them.

The backside of this nationalism can be aggressiveness towards other states. There are tensions between and within states in many regions of the Third World. The tendency to use nationalistic attitudes as an important ingredient to regime legitimacy increases the danger that domestic crisis is carried over the borders in the form of war. While arms production is not the major cause of nationalism in many Third World countries - those rather have their roots in the history of colonialism, economic backwardness into our time and cultural subordination of the people and the leaders of the Third World - it contributes to the militarization of nationalist feeling. A case in point is the Argentinian invasion of the Falkland/Malvinas Islands, that was stipulated by economic and political crisis at home and made possible both by extensive arms imports and a booming domestic arms production industry.

Since this section is to be about national security, something has to be said about those that determine what is to be understood by this term. The impact of domestic arms production on national security is judged differently by various existing social and political forces. Let us consider the most vocal of them.

First to be named are the *armed forces*. Their judgment on domestic arms production has generally been affirmative, but with important exceptions. As

professional soldiers, their main worry should be to field a military force as capable of preventing interference with national borders as possible. It is not at all obvious that such a consideration leads to the support of a local arms industry. As has been shown above, domestic arms production is often more costly than arms imports and one consequence may be that not the newest weapon systems are procured. On the other hand, increased short term supply independence is an important argument in favour of production of at least ammunition and spare parts. But in the real world, armed forces are not only acting as professional soldiers. They have in many cases taken over political rule and expanded their roles to include the furthering of economic growth. Soldiers as rulers have most often been strongly in favour of arms production, practically independent of their general political orientation. Reform oriented military governments like the Argentinian ones of the 1930s and 1940s or the Nigerian one of the late 1970s were strong supporters of building up arms industries as motors of industrial development. This approach was not only compatible with ideological persuasions that the military had to take a lead in overcoming encrusted structures, but was also immediately practical, as the military could control and steer the arms production sector best. More restorative military governments like the Brazilian one that took power in 1964 or the Chilean one after 1973, while in general favouring free enterprise in trying to cut down government subsidies, have behaved equally favourable to arms production, also seeing it as a strategic economic sector to make their imprint on the economy. An important side effect has always been that military personnel and retired officers were given jobs and income.¹⁶ The objections by economic planners of liberal economic persuasion that there was a contradiction were, for instance in Argentina in the late 1970s, brushed aside. The military's position was sometimes different in cases of interservice rivalries and where a civilian government toppled by the military had strongly supported arms production as was the case in Argentina after the coup in 1955.

Until the 1960s, arms production had almost exclusively occurred in military-run arsenals. There was hardly any involvement of private companies at least in the final production stage. But with the expansion of arms production in the 1960s, the pattern changed. *Private industry* became involved, first in Israel, South Africa and Brazil and later in other countries, too. Here the military planners interested in building up arms industries found partners in private industry that wanted to enter arms production. The industrialists, of course, mainly saw the profits to be made, but they also hoped to get technological advances financed that might later be of value in civilian business. The willingness of the military authorities to share production with private industry stemmed both from the general liberal economic approach that became predominant in many countries in the 60s - not least through the activities of the World Bank and the International Monetary Fund - and because it secured the support of another political force in favour of arms production. The incorporation of national industrialists also strengthened the nationalist image of arms production. Multinational companies had by definition to be excluded from such activities. Nowadays the involvement of state arsenals in arms production has become more the exception than the rule. Such arsenals are for instance run by the Brazilian Navy, the Pakistani Army and countries with a socialist orientation such as Burma and North Korea. Many state arsenals or state companies were turned into commercial enterprises in the 1970s and 1980s, for instance in Indonesia, Argentina and Peru. In a typical move, the South African state owned ARMSCOR concern appointed an industrialist, the former chairman of Barlow-Rand, as its vice chairman in 1979. The state has generally kept control, but has tried to involve domestic industry to a larger degree.

This way, civilian industry, though potentially hurt by less civilian investment has only seldomly voiced opposition against arms production projects, and where, more because of excesses than because of principal considerations. In South Africa, private industry in the late 1970s complained about the unproductivity of the arms industry that

would steal away labour and profits from the civilian industry. In Argentina, at the same time, civilian industry balked at the privileges of the arms industry while its subsidiaries were cut. In Israel some sectors of the civilian industry are concerned about the inflationary effects of the large arms industry and have voiced opposition to some of the big arms industrial projects like the Lavi fighter aircraft.

Another group that has been known in cases to voice opposition against arms production projects are *economic planners*. If they have been economic liberals, the special treatment necessary to let the arms industry survive, violated their textbook models of a free economy, like in Brazil in the 1970s, in Argentina during the late 1970s and Nigeria after the end of military rule and the establishment of a liberal civilian government in 1979. Other economic planners, for instance in India since the 1960s, or in Argentina since the end of military rule in 1982 have been concerned with the extra costs of arms production at the expense of civilian programmes. The ranks of those opposing local arms production for financial reasons have been swelled since the late 1970s by advisors from international financial institutions like the International Monetary Fund - more by chance than by will. Their demands to cut government expenditures have in many cases decreased the funds available for arms industries.

There is then, in summary, no clear-cut case for increased national security through domestic arms production. What is enhanced is the perception of greater foreign policy maneuvering space especially through military action. Arms production, as the focal point of various elite group interests, widens political support for a nationalist foreign policy. The impact on real military capacity is more limited. In cases, where no arms embargo is realistic, domestic arms production may even lead to a decrease in military capabilities through higher costs of procurement and detrimental effects on the economy.

5. Arms production and international security

The international system of nations has witnessed major changes since the early 1960s when it was greatly expanded in numbers. Probably the most important of these changes has been the relative decrease in power experienced by the great powers, first of all the United States. It is not the place here to discuss whether the bipolar world has changed into a multipolar one, but it cannot be overlooked that the maneuvering space of the Third World as a whole with respect to the great powers has increased. This trend was most visible in the early 1970s and has since then only been partly reversed.

With few exceptions Third World governments have sought greater independence from and less influence by the great powers. They have long despised foreign economic exploitation, political domination and cultural estrangement. The countries of the Third World have tried to change a number of world orders; to move up in hierarchies; or to change structures. Propagandistic efforts focused on the international economic order. This was not only because analyses from various schools of thought lead to the conclusion that a new economic international order is at the heart of a changed world but also because the vulnerability of industrialized countries on the supply of some raw materials, especially oil, seemed to make such a move possible from the late 1960s. Third world efforts to introduce a new international economic order, for instance through the establishment of international raw material funds have largely failed. This failure should not detract attention from the fact that even if raw material funds had been established and other measures demanded by the Third World in the early 1970s taken, the economic structure of the world market would not have substantially changed. The industrialized countries are the main exporters of raw materials and would have benefited from raw material regimes, as well as Third World countries would have had to pay for them.¹⁷

At the same time that the attempts to create a new international economic order failed, real changes have occurred in the military sphere, the world military order. The share of military expenditures by Third World countries has increased from less than 15

per cent in the late 1960s to more than 25 per cent in the early 1980s. Only the large increase in military expenditures by the Reagan Administration in the early 1980s has reversed the trend that military expenditures in Third World countries were growing faster than military expenditures in the industrialized countries. While, as in the economic sector, much of the increased share of the Third World cannot be taken to represent real increases, since much money was spent without gaining much in military capability, the Third World as a group and especially some countries within it have enhanced their position vis-a-vis industrialized countries. Nowadays great powers have great difficulties in dominating militarily even rather small Third World countries, e.g., French experiences in Chad or the Soviet Union in Afghanistan. Only real ministates like Grenada are really easy to overtake. Of course, there has been some reaction by the great powers. The United States has created the Rapid Deployment Force and then the Central Command, the Soviet Union has increased its airlifting capabilities, France has created the Force d'Action Rapide and Italy and the United Kingdom are also organizing intervention forces.

Arms production the Third World has brought in a new structuring element within the world military order. Weapons as the primary ordering category are increasingly not only transferred from the North to the South, but also produced in the South. While, given the remaining dependence on the delivery of components and technology, the change has been less profound than it might seem from the numbers alone, in the perception of many Third World leaders, there is now something like a new world military order, in which Third World military sectors are not dominated as much as they were before. Of course, given its close relation to industrial capabilities, arms production has also contributed to the differentiation process within the Third World. Only some countries are capable of pursuing arms production in earnest and have done so. Because of its special technological dynamics, it should not be expected that the number of

important arms producing countries will increase much beyond what we have now - rather some will find it hard to keep current status.

This new military order has not been a more peaceful one than the old one. The number of wars in the Third World has not decreased.¹⁸ Quite to the contrary there have never been more wars going on in Third World countries than at the moment. Some of them like the Iran-Iraq war or the India-Pakistan confrontation are wars for regional domination. But the majority are internal wars, where a well equipped domestic army is fighting against some guerrilla force. One element of the new military order is that Third World guerrilla forces' chances of winning wars have decreased.

While up to now a less hierarchical world military order has not proved to be a more peaceful one, there is no necessity for it to work this way. For quite some time, Third World countries have not been interested in arms control or disarmament, arguing that the superiority of industrialized countries made it their obligation to disarm first. While the argument remains true, its importance has declined with the increase of Third World armaments. The chances for regional arms control or disarmament should be increased.

Unfortunately, this reasoning does not show in reality. One of the reasons is that the anarchic international system does not favour any such regional attempts at arms control and disarmament. It favours the individual struggle of nations against each other. Another is that, as argued before, nationalistic attitudes within Third World countries have gained in importance in conjunction with the build up of military sectors. The situation is different, where the political approach is different, as for instance in some Latin American countries. The re-democratization of Argentina and Peru has resulted in some overtures to overcome the further militarization of the respective societies.¹⁹

Arms production in Third World countries is not the moving force behind changes in the international system, but it is an important instrument and symbol. As such, arms production is not necessarily a positive or negative element in the creation of a safer

world. It both raises the possibility to make the world more peaceful through regional cooperation, arms control and disarmament, but it can also result in more armed conflicts and more insecurity for the world. So far, the later has been the rule.

6. The security choices of arms production

In arms production in Third World countries, some observers and decision makers have been tempted to see a happy marriage between two often competing state functions: the provision of weapons to enhance national security and the furthering of industrialization for economic development. My analysis leads me to a much less positive assessment. Arms production does not in general diminish the contradiction between the resource use for military purposes and for development, in fact, in most cases this contradiction is increased or given a specific twist. This is the result of the high costs of arms production, its pull and push effects that can also shape civilian industry towards the production on high levels of technology, often ill adapted to advancements of the economy.

Arms production can be a net positive contribution to both the enhancement of military capabilities and the economy, if production is focused on weapons easy to produce. Some countries have chosen this way, but it is mostly countries which are under some direct threat, such as South Africa, Taiwan and North Korea. In most cases, arms production is not really designed to contribute to either of the two goals, but rather is, as are many weapon imports, the expression of the attempt by Third World leaders to enhance their status and position in the international system of nations. The suggestion to produce less sophisticated weapons has fared as badly as the suggestion to Third World leaders to build military forces which are not based on doctrines inherited from the industrialized countries, but on doctrines emphasizing what Third World's countries have in abundance - that is manpower.²⁰

The inhabitants of the industrialized world could sit back and neglect these predictably fruitless, or rather - from the point of view of enhancing development -

counterproductive, attempts of Third World leaders to change their status. In fact, that is what is largely happening - see as an example the industrialized countries behavior towards the Iraq-Iran war: the superpowers have marked the limits of their interests and respect them; they and many other industrialized countries have made good profits; and initiatives to stop the fighting are sparse.

That arms production is so aggressively pushed in many Third World countries despite its problems and negative consequences should not come as a great surprise. The current structure of international relations, both in its economic and military spheres greatly support such behavior. We find it in the industrialized countries as well as in the Third World. Historical analysis gives us the insight that economically disadvantaged states often have tried to compensate through militarization. The chances, though, to go on from militarization to economic growth are bad; much worse than they were in the past.

1. See Independent Commission on International Development Issues (under the chairmanship of Willy Brandt), North-South: A Programme for Survival, Pan Books: London, 1980, chapter 13.
2. See International Commission on Disarmament and Security (under the chairmanship of Olof Palme), Common Security: A Programme for Disarmament, Pan Books: London, 1982.
3. United Nations, Study on the Relationship between Disarmament and Development, A/36/356, 5 October 1981.
4. The factual description that follows is largely taken from M. Brzoska, T. Ohlson, Arms Production in the Third World, Taylor & Francis: London, 1986.
5. See e.g. S. Melman, Profits without Production, Knopf: New York, 1983.
6. See e.g. H. Wulf, Rüstung als Technologietransfer, Weltforum: München, 1980; H. Wulf et. al., Transnational Transfer of Arms Production Technology, IFSH: Hamburg, 1980; S. Neuman, 'International Stratification and Third World Military Industries', International Organization, Vol. 38, No. 1, 1984.
7. See Stockholm International Peace Research Institute (SIPRI), Yearbook 1986, Oxford University Press: London 1986, chapter 17.
8. See note 7, chapter 15.
9. On the Lavi project see e.g. B. Rek, D. Boyle, 'Aerospace in Israel - Reaching for Self-Sufficiency', Interavia, Vol. 39, No. 6, 1984.
10. Cost data can be found for instance in International Air Forces and Military Aircraft Directory, Aviation Advisory Service, Stapleford, UK and Interavia Data, Aircraft Prices, Geneva, Switzerland.
11. See e.g. South African Ministry of Defence, White Paper 1977, supplement to Paratus, May 1977.
12. W. Sombart, Krieg und Kapitalismus, Berlin 1911.
13. J. U. Nef, War and Human Progress: An Essay on the Rise of Industrial Civilization, Harvard University Press: Cambridge, 1950.
14. On Iraq/Iran resupplies see e.g. SIPRI, Yearbook 1984, Taylor & Francis: London 1984, chapter 7 and Business Week, December 29, 1986.

15. The West German companies Howaldtswerke/Deutsche Werft AG (HDW) und Industriekontor Lubeck (IKL) delivered blueprints for the construction of submarines to South Africa between September 1984 and July 1985 under the assumption that the government would allow such transfer. The government denied any such consent since the delivery violated the UN embargo on South Africa. The companies were fined for violation of West German export laws for exporting the blueprints without government consent. The actual delivery was done via South African diplomatic personnel.
16. The operation of military run enterprises is most pronounced in Turkey and Indonesia. See e.g. N. Ball, Third World Security: The Economic Dimension, Princeton University Press: Princeton, 1987.
17. An interpretation of Third World negotiation behaviour can be found in S. Krasner, Structural Conflict. The Third World Against Global Liberalism, University of California Press: Berkeley, 1986.
18. According to statistics compiled in K. J. Gantzel, J. Meyer-Stamer (eds.), Die Kriege in der Dritten Welt nach 1945, Weltforum: Munchen, 1986.
19. On the occasion of the inauguration of President Alan Garcia on July 19, 1985 6 heads of state signed the "Declaration of Lima", indicating the will to start a disarmament negotiation process. Since then a few inconclusive meetings have taken place.
20. See e.g. H. Wulf, "Dependent Militarism in the Periphery and Possible Alternative Concepts," in: R. Harkavy, S. Neuman, Arms Transfers in the Modern World, Pergamon, New York, 1979.