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Jacques Fontanel, Jean-Paul Hébert. The end of the French Grandeur Policy. *Defence and Peace Economics*, 1997, External Security and Great-Power Status: Determinants of Military Expenditure in Industrial Democracies, 8 (1), pp.37-55. 10.1080/10430719708404868 . hal-03322691

HAL Id: hal-03322691

<https://hal.univ-grenoble-alpes.fr/hal-03322691>

Submitted on 19 Aug 2021

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The end of the French Grandeur Policy

Jacques Fontanel & Jean-Paul Hébert

Defence and Peace Economics, Vol 8, 1997

The « policy of grandeur » was one of the main characteristics of French policy, since Louis XIV. After the World War II, France became a more modest State, but with de Gaulle and the Fifth Republic a new form of “policy of grandeur” was developed, based on nuclear deterrence, the relative importance of military expenditure, the independence of the national armament industry and arms exports. Since the mid-nineties, there has been a profound change of French defence policy, concerning the definition of means and the organization of armament production. European co-operation no longer appears as one option among others but as the only way out. For France, European co-operation is now placed at the centre of defence policy. The most important transformations in French arms production have yet to come.

La " politique de grandeur " a été l'une des principales caractéristiques de la politique française, depuis Louis XIV. Après la Seconde Guerre mondiale, la France est devenue un État plus modeste, mais avec de Gaulle et la Cinquième République, une nouvelle forme de "politique de grandeur" a été développée, fondée sur la dissuasion nucléaire, l'importance relative des dépenses militaires, l'indépendance de l'industrie nationale de l'armement et les exportations d'armes. Depuis le milieu des années quatre-vingt-dix, on assiste à un changement profond de la politique de défense française, concernant la définition des moyens et l'organisation de la production d'armement. La coopération européenne n'apparaît plus comme une option parmi d'autres mais comme la seule issue. Pour la France, la coopération européenne est désormais placée au centre de la politique de défense. Les transformations les plus importantes de la production d'armement française sont encore à venir.

Key words : Military expenditure, France, Arms production, nuclear forces
Dépenses militaires, production des armes, forces nucléaires.

Introduction

With Louis XIV, Napoleon and the colonial wars, the policy of grandeur was one of the main characteristics of French policy, but at the end of the last World War II, with the politically feeble Fourth Republic and the French economy destroyed by four years of territorial and political occupation, the idea of Grandeur was clearly forgotten, but for Gaullism. The main popular faces of France become the existentialism of Sartre, the revolted man of Camus and the European ideas of Monnet and Schuman. With the crisis of the political institutions, the end of the Algerian War and the failure of the organization of the "Communauté" (with former colony), France seemed to be decadent.

With de Gaulle and under the Fifth Republic, French government introduced a next policy of Grandeur and single-mindedly pursued a policy of national independence by developing nuclear forces, initially with the warlike denomination "Force de frappe" modified to the strategic and politically more acceptable denomination "force de dissuasion", and ultimately labelled "dissuasion du faible au fort". French defence was based on the notion of proportional deterrence, i.e. the national nuclear forces was expected to inflict greater damage on an adversary than the expected gain from attacking national vital interests. French governments jealously guarded national independence, leaving the integrated military organization (NATO) and refusing to identify if, when and how French forces would be available to the Western alliance in response to a Soviet threat. National arms production became very important for technological and economic development (Serfati, 1995).

Until the end of 1980s, this defence policy was maintained, but the end of the socialist system transformed the international security environment. With the disarmament process and its economic effects (Fontanel, 1995), France had to modify its defence policy. After the "policy of Grandeur" and the end of the Soviet Threat, the French government must modify drastically the main characteristics of its defence objectives and means, maybe toward a European "grandeur policy".

THE POLICY OF GRANDEUR OF FRANCE BETWEEN 1958 and 1990

Until 1990, the policy of “grandeur” was based on four characteristics.

- a) The creation of a nuclear force,
- b) The importance of military expenditure,
- c) The development of an autonomous armaments industry,
- d) Arms exports.

a) The creation of a Nuclear force

The Commissariat à l’Energie Atomique (CEA) created in 1945 by de Gaulle was presented as an indispensable tool for French nuclear and economic development. No nuclear military programme was developed until December 1954, when Pierre Mendès-France expresses his commitment to a secret research project on nuclear weapons and atomic submarines. Major financial subsidies were then deducted from the defence budget and transfers anonymously to the CEA without specifying their use. In the French case, civil nuclear R&D was very useful for nuclear weapons, not the opposite. Since 1960, nuclear weapons had a strong priority, because the main basis of national defence was the nuclear forces (Table 1).

In 1986, the resources devoted to military and civilian nuclear research were almost equal. There was a synergy between military and civilian researches, but the plutonium requirements for new French nuclear weapons programmes were not being met by the output of military reactors alone. From 1980 to 1988, greater importance was given to nuclear forces, with special support to tactical nuclear forces (from 6 to 22.5 per cent of the total nuclear forces). At the end of the 1980s, the French civilian nuclear industry was in crisis. NO orders for exports, excess capacity, social and political opposition were drastically reducing the potential of this industry, which was particularly representative of high technology in modern French growth.

Although the French nuclear industry was very competitive and was able to satisfy national demand, the military nature of nuclear production reduced the opportunity of important spin-offs from nuclear R&D. The latest French efforts in nuclear weapons could be seen as an industrial policy in response to the recession in the civil nuclear sector. The nuclear lobby was trying to obtain an increase in military nuclear public allocations in order to compensate for the decline in the civil nuclear orders.

Table 1 The cost of the “deterrence forces” (billion current francs)

| Years | Military nuclear costs (MNC in billion current francs) | Military nuclear costs/Military budget (%) | MNC/GDP (%) |
|-------------------|--|--|-------------|
| de Gaulle | | | |
| 1960 | 0.54 | 3.25 | 0.21 |
| 1961 | 0.91 | 5.22 | 0.31 |
| 1962 | 1.25 | 6.98 | 0.38 |
| 1963 | 2.43 | 12.48 | 0.67 |
| 1964 | 3.70 | 18.77 | 0.92 |
| 1965 | 5.04 | 24.16 | 1.17 |
| 1966 | 5.57 | 25.31 | 1.19 |
| 1967 | 6.28 | 26.41 | 1.23 |
| 1968 | 6.27 | 24.59 | 1.15 |
| 1969 | 5.37 | 20.57 | 0.86 |
| Pompidou | | | |
| 1970 | 5.09 | 18.48 | 0.73 |
| 1971 | 5.08 | 17.37 | 0.65 |
| 1972 | 5.09 | 16.05 | 0.58 |
| 1973 | 5.52 | 15.70 | 0.55 |
| 1974 | 6.22 | 15.74 | 0.55 |
| Giscard d'Estaing | | | |
| 1975 | 6.41 | 13.88 | 0.50 |
| 1976 | 7.02 | 13.42 | 0.48 |
| 1977 | 7.96 | 13.58 | 0.50 |
| 1978 | 9.27 | 13.58 | 0.50 |
| 1979 | 10.86 | 14.08 | 0.51 |
| 1980 | 12.42 | 14.02 | 0.52 |
| 1981 | 14.86 | 14.20 | 0.54 |
| Mitterrand | | | |
| 1982 | 17.75 | 14.38 | 0.58 |
| 1983 | 19.30 | 14.54 | 0.56 |
| 1984 | 21.74 | 15.30 | 0.59 |
| 1985 | 23.39 | 15.57 | 0.60 |
| 1986 | 25.27 | 15.95 | 0.60 |
| 1987 | 27.80 | 16.43 | 0.63 |
| 1988 | 30.55 | 17.52 | 0.65 |
| 1989 | 31.53 | 17.29 | 0.64 |
| 1990 | 32.09 | 16.93 | 0.63 |
| 1991 | 31.07 | 15.97 | 0.59 |

Sources : Jacques Fontanel (1993, p.344), Jacques Percebois (1985)

Nuclear weapons are an important consumer of capital (Table 2), but they are not very expensive. If you compare nuclear expenditures with its strategic importance in contemporary defence thinking, this conclusion seems undeniable.

Table 2 Capital expenditure devoted to French nuclear forces in millions of current francs

| Years | Nuclear equipment | Total equipment | % Nuclear forces |
|-------|-------------------|-----------------|------------------|
| 1981 | 14.86 | 47.68 | 31.17 |
| 1982 | 17.75 | 56.30 | 31.53 |
| 1983 | 19.30 | 60.93 | 31.68 |
| 1984 | 21.74 | 66.60 | 32.64 |
| 1985 | 23.39 | 71.70 | 32.62 |
| 1986 | 25.27 | 75.68 | 33.39 |
| 1987 | 27.80 | 85.81 | 32.40 |
| 1988 | 30.55 | 90.85 | 33.63 |
| 1989 | 31.53 | 98.00 | 32.17 |
| 1990 | 32.09 | 102.10 | 31.43 |
| 1991 | 31.07 | 103.15 | 30.12 |

Source: Fontanel (1989), SIRPA (yearly).

At the very beginning of the 1990s, the “Programmation Militaire” hoped that the nuclear warheads of France would be multiplied four or five times, with the objective for the 21th century of having the capacity to destroy nearly half the human being in the world. During the disarmament process, France has pursued a distinct line of action, modernizing its tactical nuclear forces and creating a Rapid Action Force in order to strengthen France’s deterrent operation. It rejects any limitations of its forces, which would weaken its unilateral capacity to preserve the effectiveness of its deterrence policy.

b) The importance of Military Expenditure

France’s military budget is both a cost that the nation must bear and an indicator of the country’s defence effort. In current francs, French military expenditures have continuously grown (Table 3).

Four main characteristics can be observed in Table 3.

Table 3 Military expenditures of the main French forces (billion francs)

| Years | Army | Navy | Air force | Defence spending |
|-------|-------|-------|-----------|------------------|
| 1970 | 7.87 | 4.72 | 6.04 | 27.19 |
| 1971 | 8.30 | 5.22 | 6.27 | 28.86 |
| 1972 | 8.01 | 5.54 | 6.71 | 31.23 |
| 1973 | 9.20 | 6.10 | 7.28 | 34.80 |
| 1974 | 10.27 | 6.42 | 8.03 | 38.22 |
| 1975 | 11.69 | 7.11 | 8.89 | 43.79 |
| 1976 | 13.76 | 7.93 | 10.06 | 50.00 |
| 1977 | 15.96 | 9.69 | 11.59 | 58.41 |
| 1978 | 18.62 | 11.80 | 14.04 | 67.65 |
| 1979 | 21.31 | 13.60 | 18.90 | 77.11 |
| 1980 | 24.37 | 15.82 | 18.98 | 88.60 |
| 1981 | 28.36 | 19.20 | 22.81 | 104.44 |
| 1982 | 31.66 | 23.01 | 26.86 | 122.86 |
| 1983 | 35.78 | 24.81 | 29.32 | 133.22 |
| 1984 | 38.37 | 25.97 | 30.17 | 142.10 |
| 1985 | 40.20 | 27.80 | 31.80 | 150.20 |
| 1986 | 42.30 | 29.60 | 33.40 | 158.40 |
| 1987 | 45.10 | 31.80 | 35.70 | 169.20 |
| 1988 | 45.50 | 33.30 | 35.90 | 174.30 |
| 1989 | 47.70 | 35.60 | 38.10 | 182.40 |
| 1990 | 49.00 | 37.51 | 39.52 | 189.40 |
| 1991 | 50.01 | 38.44 | 40.28 | 194.55 |

Source: Rapports Parlementaires, Fontanel (1989).

- 1) Since 1970, the increase of French military expenditures is important.
- 2) Military expenditure in 1990-1991 was planned to rise in real terms, despite the increasing clamour for a reduction of military expenditure and disarmament.
- 3) The structure of French defence spending is concerned by inertia effects, although the level of spending on the Navy has shown a constant increase.
- 4) The percentage of GDP devoted to military expenditure, which had fallen regularly from the end of the Algerian war, increased in the years 1977-1982, but the share of the military budget in the State budget has declined continuously (Table 4).

Table 4 Share of defence spending in national output and initial State budget (1958–1991)

| Years | Initial military budget/ Initial State budget (%) | Initial military budget/ GDP (%) |
|-------|--|-------------------------------------|
| 1958 | 27.0 | 6.0 |
| 1959 | 28.2 | 5.9 |
| 1960 | 28.5 | 5.58 |
| 1961 | 26.8 | 5.2 |
| 1962 | 24.7 | 4.79 |
| 1963 | 23.9 | 4.59 |
| 1964 | 23.0 | 4.41 |
| 1965 | 22.5 | 4.3 |
| 1966 | 21.8 | 4.21 |
| 1967 | 20.7 | 4.17 |
| 1968 | 20.1 | 4.07 |
| 1969 | 17.8 | 3.76 |
| 1970 | 17.6 | 3.47 |
| 1971 | 17.9 | 3.31 |
| 1972 | 17.7 | 3.17 |
| 1973 | 17.7 | 3.12 |
| 1974 | 17.4 | 2.99 |
| 1975 | 16.9 | 3.02 |
| 1976 | 17.1 | 2.98 |
| 1977 | 17.4 | 3.10 |
| 1978 | 16.9 | 3.16 |
| 1979 | 16.8 | 3.16 |
| 1980 | 16.9 | 3.30 |
| 1981 | 16.9 | 3.36 |
| 1982 | 15.6 | 3.46 |
| 1983 | 15.1 | 3.42 |
| 1984 | 15.2 | 3.39 |
| 1985 | 15.1 | 3.32 |
| 1986 | 15.4 | 3.24 |
| 1987 | 16.1 | 3.28 |
| 1988 | 16.1 | 3.17 |
| 1989 | 15.8 | 3.15 |
| 1990 | 15.6 | 3.11 |
| 1991 | 15.4 | 3.09 |

Sources : Rapports parlementaires, SIRPA (1980 to 1992)

After the Algerian war, France gave priority to capital expenditure, mainly in order to develop its nuclear deterrence and to modernize the army's weapons. Military equipment became a large economic aggregate in France, in comparison with other developed countries. The stability of the pattern of resources allocation had sustained the group of defence contractors, commonly identified as the military-industrial complex, which was maintained in leading positions in the defence market, because of its ability to respond to new technology, administrative and military requirements. The French army was becoming more and more capital intensive, thus reducing the economic interest of conscription. For Fontanel and Smith (1990), after the Algerian war, strategic factors had no clear influence on the level of military expenditure. Higher defence equipment expenditure and lower current spending primarily financed the nuclear force. Because disarmament is interesting in terms of "opportunity costs", transferring budget resources from the defence sector to education is good for the economy, except for civilian (mainly education) equipment (Aben, Daurès, 1993).

c) The development of an autonomous armament industry

With the introduction of firearms in the fourteenth century, the French government assumed monopolistic control over the production of powder. With Colbert, arms production fell under gradual State control. In 1885, the Third Republic decided to create a modern arms industry and private enterprises, supposed to be motivated by profits and patriotism, obtained priority over State arsenals, for economic and technological reasons of efficiency. The quality and quantity of French arms production in World War I was rather good and similar to those of Germany. France was able to obtain leadership in aircraft production and to equip the American expeditionary army. After 1918, the French arms industry declined with peacetime and a defensive strategy, which relaxed national demand on the arms production system. The Defeat and German occupation of the French territory decimated the arms industries. The Fourth Republic tried to reconstitute and renovate French arms production in the general effort to develop French industry and to support colonial wars. Under the Fifth Republic, the government stressed the development of national arms production. Created in 1961, The "Délégation Générale pour l'Armement (DGA)", an interface between the armed forces and the arms industry, centralized and coordinated the complex sprawl of manufacturing, research and development centres concerned with arms production. It was heavily engaged in arms production, with the direction of the arsenal and shipbuilding complex, the responsibility for the direction of the military

part of output in cooperation with firms producing civilian and military goods and the control of nationalized firms.

The General staffs indicated the main military characteristics of the equipment, the number of units to produce, the time scales, the negotiation of prices with enterprises and the control of production factories (Fontanel, 1992). The independence goals were linked with the importance of state defence R&D (Table 5). Three characteristics of technology developed by military R&D were of particular importance: the propensity toward the highest and most sophisticated technology not suitable for civilian production; and inherent capital-intensiveness without regard to production costs; and an excessive secrecy.

Table 5 State Defence R&D (in billion current French francs)

| Years | State Defence R&D | % Public budget R&D |
|-------|-------------------|---------------------|
| 1976 | 5.05 | 28.3 |
| 1977 | 5.95 | 29.2 |
| 1978 | 7.55 | 32.4 |
| 1979 | 9.35 | 34.3 |
| 1980 | 11.35 | 35.7 |
| 1981 | 15.70 | 43.5 |
| 1982 | 17.30 | 40.0 |
| 1983 | 18.20 | 37.1 |
| 1984 | 20.20 | 36.4 |
| 1985 | 22.40 | 36.9 |
| 1986 | 24.50 | 38.0 |
| 1987 | 26.60 | 39.1 |
| 1988 | 32.40 | 45.8 |
| 1989 | 33.00 | 43.5 |
| 1990 | 34.70 | 31.7 |
| 1991 | 33.00 | 37.6 |

Source: Rapport annexe sur l'état de la recherche et du développement technologique ("jaune budgétaire").

A reduction in defence R&D effort could have two additional effects. First, the French arms industry would lose its military competitiveness in the quality of weapons and so would abandon its markets; then, civil R&D would not replace military R&D and so there would be a major crisis for innovation and high technology in the country.

France had a powerful arms industry, generally considered to be highly competitive in international markets, in spite of occasionally archaic management and a policy of systematic protectionism. The relations between managers of the arms industry, DGA personnel and military staff

were very close, because they are largely composed of military engineers, with the same training and education. At the end of 1980s, the French arms industry was in economic crisis (Table 6).

Table 6 Turnover of the French armament industry (billion francs)

| Years | Turnover MOD | Turnover INSEE | Exports MOD | Exports Customs |
|-------|-----------------|-------------------|----------------|--------------------|
| 1970 | 14.3 | 15.7 | 2.4 | — |
| 1971 | 15.0 | 19.5 | 2.8 | — |
| 1972 | 16.7 | 19.9 | 4.0 | — |
| 1973 | 20.1 | 21.3 | 5.2 | — |
| 1974 | 22.5 | 26.0 | 6.7 | — |
| 1975 | 25.8 | 33.0 | 8.3 | 3.8 |
| 1976 | 31.1 | 38.2 | 11.6 | 6.5 |
| 1977 | 35.8 | 43.8 | 14.7 | 7.9 |
| 1978 | 42.7 | 45.1 | 17.3 | 12.5 |
| 1979 | 50.6 | 47.8 | 20.5 | 12.1 |
| 1980 | 58.7 | 58.2 | 23.4 | 20.2 |
| 1981 | 69.8 | 76.1 | 28.5 | 26.3 |
| 1982 | 75.5 | 85.1 | 28.9 | 26.1 |
| 1983 | 86.1 | 96.5 | 33.1 | 28.0 |
| 1984 | 98.3 | 110.6 | 41.9 | 37.1 |
| 1985 | 104.5 | 106.4 | 43.9 | 36.0 |
| 1986 | 108.0 | 114.3 | 43.1 | 38.3 |
| 1987 | 107.0 | 113.5 | 34.1 | 31.2 |
| 1988 | 116.2 | 123.0 | 38.2 | 33.7 |
| 1989 | 120.2 | 132.5 | 37.3 | 40.7 |
| 1990 | 124.5 | 144.3 | 38.6 | 35.0 |
| 1991 | 115.6 | 147.1 | 29.1 | 20.6 |

Sources: INSEE "Les comptes de l'industrie" (Yearly).

d) Arms Sales and the Competitiveness of French Production

Arms sales abroad are only an imperfect indicator of the competitiveness of the arms industry (Sandler, Hartley, 1995). The question is whether national arms production is still justified. Several economic arguments are generally put forward: the need for military research, the importance of military orders in high-technology sectors, the fluctuations of prices for imports, the savings of foreign currencies and the relationship between State requirements and national production. French military industry has definite handicaps, such as the limited domestic market and the dissipation of industrial efforts among all types of arms. Indeed, if the prices prevailing in the national economy are significantly higher than those of international competitors, the army will

receive fewer arms for the same amount spent. Under these conditions, and in the short run, the country's defence is less well provided by national production than by imports. However; all aspects of security and industrial development must be taken in consideration, such as embargos or the development of the national industrial fabric<: when the domestic market is depressed, the risk of selling arms at a loss is not negligible. Some exports impoverish a country, although not the enterprises concerned. It is obvious that, over the long run, France's arms exports do not fall into this category (Smith and al. 1987).

Since 1983, given the size and volatility of the international arms market, the poor demand and the entry of many new competitors, the likely return from arms exports is not great, particularly in terms of opportunity costs. Arms exports induce 30 per cent of components imports. If a weapon is imported the buyer may gain part of the advantage from the seller's longer production run. For short production runs there is little return in investing heavily in cost-reducing equipment and process innovation. Thus, the cost of a weapon is often reduced by imports, but the exceptional quality of the weapons, the absence of competition for technical or political reasons or the importance of international military supply are more valuable characteristics. Conversely, the foreign power sometimes paid for part of the research expenditure, particularly when the product concerned is much in demand, when the arms market is not too saturated by competitive tenders or when the export contract is awarded before the product concerned has been developed. It was not the case with the actual disarmament process (Hartley, 1994).

Usually, arms exports are analysed as a complement to national defence equipment needs, in order to reduce the collective costs of armaments. It is interesting that econometric models can suggest that a country's military expenditure has conflicting positive or negative effects on arms exports (Hébert, 1990). For France, if total military expenditure seemed to have a positive effect on arms exports, the annual increase of military expenditure produced a negative effect (Fontanel, Smith, 1990). These results indicate that when arms exports forecasts suggest the emergence of a crisis, military expenditure is increased in order to compensate the arms industry for the lack of demand. For the French arms industry, it is vital to export and an official report pleads for a new products policy better defined for international uses (Benichou, 1993 ; Hébert, 1996). Using a macroeconomic model, Fontanel and Ward concluded that it was impossible to prove that arms exports had a positive influence in the global performance of the French economy (Fontanel, Ward, 1990). For recent years, a large share (30 per cent) of

military debt was not honoured and some of them were financed by offset system (Martin, 1996). This is a political, not an economic decision.

THE NEW FRENCH POLICY: TOWARD A EUROPEAN “GRANDEUR” POLICY

The modification of French military policy was clearly expressed by Jacques Chirac on 22 February 1996. Two previous documents, the white book on defence (Balladur, Léotard, 1994) and the “1995-2000 programme law” (Boyon, 1994) predated these modifications. The first, more theoretical, has not been declared outdated so far. The second contained some proposed decisions, some of which have already been implemented. These changes are amplified by the new law programme of 1997-2002 (Millon, 1996). The main features of these changes are the abolition of compulsory conscription, the creation of the new missions of “projection de forces”, the new place of the nuclear deterrence, which become a guarantee of the conventional forces and the important decrease of defence credits. All these changes must conduce to a new European strategic policy. Since the mid-1990s, there is a profound adjustment of French defence policy, concerning the definition of means and the organization of armament production (Hébert, 1995).

a) New definitions of Means

There has been a clear reduction of French defence expenditure, mainly since 1994 (Table 7)

Table 7 French military expenditures and capital expenditures (1990–2002)*

| Years | Military expenditures (billion current francs) | Capital expenditure (billion current francs) |
|--|---|---|
| 1990 | 189.4 | 102.1 |
| 1991 | 195.6 | 103.2 |
| 1992 | 195.3 | 102.9 |
| 1993 | 197.9 | 102.9 |
| 1994 | 193.8 | 94.9 |
| 1995 | 194.3 | 94.9 |
| 1996 | 189.6 | 88.9 |
| 1997–2002 (by year, in 1995 francs) | 185.0 | 86.0 |

* SIRPA (1996).

The share of military equipment expenditure in the defence budget had been continuously increasing since 1977, so as to represent more than half of defence expenditure. It reached a peak in 1990 but since that date it has been noticeably decreasing. The reduction of defence industry equipment is clearly agreed by public opinion and the 1997-2002 programmation laws. It is a major change in French arms policy.

The question of cost escalation is the main problem in an economic crisis situation (Augustine, 1975). The phenomenon affects all the arms industries and it jeopardized the financing of military programmes, even for richest nations? This process is often called "Structural disarmament". It is interesting to illustrate the French situation by comparing the cost of national equipment from one generation to another (Table 8).

Table 8 Escalation of French military equipment costs (1974–1994) in million constant francs (MF)

| Costs (1992 constant MF) | Equipment in 1974* | Equipment in 1994 |
|-----------------------------|--------------------------|----------------------------------|
| 7–9 MF | 1 AMX 30 tank | 1 Super 530D missile |
| 20–25 MF | 1 Mirage III | 1 Apache missile |
| 70–80 MF | 1 Mirage IV | 1 Leclerc tank |
| 200 MF | 1 mine hunter | 1 Tigre helicopter |
| 500–600 MF | 1 classical submarine | 1 M4 missile |
| 1500 MF | 1 frigate | 1 Spy aeroplane Hawkeye |
| 2500 MF | 1 Foch aircraft-carrier | 3 Rafale aircraft |
| 3500 MF | 1 SNLE Nuclear submarine | 4 Atlantique-2 observer aircraft |

* There are no prices, but an estimation of unit costs (total cost of the programme divided by the quantities). The 1974 values have been brought up to date with a coefficient 3.412 (general price index).

With the public budget crisis, growing unemployment and the effects of international competition, it is only very recently those official authorities have grown aware of the problem. There is a strong consequence of cost escalation, namely, the necessity to find industrial partners in order to reduce the unit costs of military equipment. Considering that the evolution of technologies from one generation to another causes a cost increase that become unbearable, the 1994 "white book" considered that the main objective was to cut the cost of arms programmes. The means to achieve the reduction of prices constitute a radical change in the French arms production system; because it proposes to set up procedures and structures that will make the situation as close as possible to that of free competition, which involves a revolution in minds. The political will to reduce the costs of arms

programme has been expressed very precisely in both the 1995-2000 and 1997-2002 programmation law. It is now the main priority of the DGA.

b) New Organization

In the traditional French systems of arms production, the DGA played a major organizational role, but the new regulation of arms industry from an administrative management to a more open international and national competition between firms was needed since 1990 (Hébert, 1995). In the 1994 “white book”, this role is being reassessed; the DGA is almost ignored even in the main chapter concerning “arms policy and industrial strategy”. The same silence has to be noticed in the “Rapport du Commissariat au Plan” concerning the future of defence industries (Bénichou, 1993) and in the February speech of Jacques Chirac about the problems of the arms industry. A new system is being set up, in which DGA will no longer have a central role. The very structure of the arms production system has to be reshaped in the coming months. For the text of the 1995-2000 programmation law, the reinforcement of the DGA role that is often called for the official services does not correspond to the policy of reducing the role of DGA to that of a mere contracting authority. The classical French arms production system, characterized by the prominent role of DGA and the priority of political-strategic over economic targets, is vanishing; it has to be replaced by a more liberal, industrial and European model.

Traditionally, The manufacturing firms, within a national framework closely linked with the State authority, are specialized in military production, around a parent company that represent the main part of the activity. Now, these elements are being disrupted. In 1990, the land arsenal GIAT became a public company, owned by State. The link with the arsenals was reduced. Aerospatiale capital has already been opened (20 % to the Credit Lyonnais). Since 1993, Aérospatiale, SNECMA and Thomson have been put down on the list of firms for privatization Jacques Chirac announced explicitly the privatization of Thomson and implicitly of Aérospatiale, with the creation of a national aeronautic group with Dassault Aviation. In the last five years, arms enterprises have been trying to be less dependent on the State’s military markets and they sought to increase their civilian activities. There is a company tendency to create subsidiaries for their various activities, particularly for military production. Such a situation gives these groups the opportunity to abandon their defence activities if they became less profitable. The arms production system is now breaking away from the government

authorities. Until now, political-strategic choices were the main factors of decision, and therefore of the firms evolutions. In future, economic constraints will have a leading influence that the State will find difficult to oppose, should it ever attempt to do so.

CONCLUSION

In the “General and Final Provisions” of the EEC Treaty, it was established that no Member State shall be obliged to supply information the disclosure of which it considers contrary to the essential interests of its security. Any member States allowed taking such measures as it considers necessary for the protection of the essential interests of its security, which are connected with the production of the arms trade and arms materials. The European Parliament is more and more concerned with security needs. The cooperation objectives are the need to obtain specialized high and varied technical competences which are difficult to develop for a single enterprise; the necessity to reduce R&D investments for each firms; the desire to spread substantial risks; and the possibility of enlarging markets, developing mass production and reducing the unit costs of products. There are some risks in the definition and implementation of industrial cooperation with other countries; the basic needs of military staffs are not exactly similar; the difficulty of deciding an agreed export policy; the tendency of each government to support its national industry and the magnitude of the costs.

The arguments for the French military industry is based on the idea that French weapons are superior, tailored exactly to the national needs and that a domestic defence industrial base is essential for strategic independence and that “unfair trade” arguments justify protection. On the economic side, it is argued that domestic procurement creates employment, boosts tax revenue, improves the balance of payments and produces technological spin-off for civilian production. If cooperating countries do not want exactly the same weapon, new costs occur in meeting the needs of each partner, and then the advantages of large scales production can be insufficient to compensate for the increase in costs.

For the French system, European cooperation no longer appears as one option among others but as the only way out. For the “White book”, in the chapter dealing with arms policy and industrial strategy, the building of European defence is for the French industry and imperative as an opportunity, and, in the future, no major conventional arms programme seems able to avoid the logic of cooperation. Cooperation is meant both as programme cooperation as well as the whole set of industrial alliances

already achieved or about to be achieved, with a European preference. Cooperation is difficult to organize, but the main problem is of political nature (defence doctrine, conceptions of the country's interests and mode of intervention). For France, European cooperation is now placed at the centre of defence policy. The most important transformations in French arms production are yet to come

Bibliography and references

Aben, J, Daures, N. (Chalks vs guns: Some economic consequences of an announced French scenario, *Defence Economics*, I(4).

Aganbeguyan, A., Fontanel, J. (1994), Un monde en transition. Les exemples de la Russie et les industries d'armement, *Revue de l'Espace Europe*, n°5. Mars. Grenoble.

Augustine, N. (1975), One plane, one tank, one ship: Trends for the future ? *Defence Management Journal*, April.

Balladur, E., Léotard, F. (1994), *Préface*. Livre blanc sur la défense 1994, La Documentation française. Paris.

Bénichou, M. (1993), *L'avenir des industries liées à la défense*. La Documentation française, Novembre, Paris.

Boyon, J. (1994), *Rapport au nom de la Commission de la défense nationale et des forces armées sur le projet de loi relative à la programmation militaire pour les années 1995 à 2000*. Assemblée nationale, Document 1218, 10 mai.

Boyon, J. (1996), *Rapport au nom de la Commission de la défense nationale et des forces armées sur le projet de loi relative à la programmation militaire pour les années 1997 à 2002*. Assemblée nationale, Document 2827. 12 juin.

Colard, D., Fontanel, J., Guilhaudis J-F. (1981), *Le désarmement pour le développement*, Fondation pour les Etudes de Défense Nationale, 19.

De Villepin, X. (1996), *Rapport au nom de la Commission des affaires étrangères de la défense et des forces armées sur le projet de loi relative à la programmation militaire pour les années 1997 à 2002*, Sénat, Document 427. 12 juin.

Fontanel, J. (1982), Military expenditures and economic growth (France, Morocco); *Report written for United Nations*.

Fontanel, J., Saraiva, JD. (1986), Les industries d'armement comme vecteurs du développement économique des pays du Tiers Monde? *Etudes Polémologiques*.

Fontanel, J. (1989), French arms industry, *Cahier CEDSI*, n°10, Grenoble.

Fontanel, J. (1989), Les Technologies militaires dans le développement économique contemporain, *Pax Economica*, Grenoble.

Fontanel, J., Smith, R. (1990), The impact of strategy and measurement on models of French military expenditure, *Defence Economics* 1(4).

Fontanel, J., Ward, M. (1990), Exportations d'armes et la croissance économique. *Arès, Défense et Sécurité*, XII, Grenoble.

Fontanel, J. (1993), *Economistes de la paix*, Presses Universitaires de Grenoble, Grenoble.

Fontanel, J., Ward, M. (1994), Military expenditures, armament and disarmament, *Defence and Peace Economics* 4(1).

Fontanel, J. (1994), *La conversion économique du secteur militaire*, Economica, Paris.

Fontanel, J. (1995) *Les dépenses militaires et le désarmement*, Publisud, Paris.

Hartley, K. (ed.)(1994), The Economic of disarmament, *Defence and Peace Economics*.

Hébert, J-P. (1990), L'effort militaire français et les retombées sur l'économie, *Arès, Défense et Sécurité*.

Hébert, J-P. (1995), *Production d'armement, mutation du système français*. Documentation française, Paris.

Hébert, J-P. (1996), Offsets and French Arms Export, in *The Economics of Offsets, Defense Procurement and Countertrade*, Harwood Academic Publishers.

INSEE, *Les comptes de l'industrie* (yearly)

Martin, S., Smith, R., Fontanel, J., de Haan, H. (1987), Time series estimates of the Macroeconomic Impact of defence spending in France and the UK, *Peace, Defence and economic analysis*,

Million, C. (1996) *Projet de loi relatif à la programmation militaire pour les années 1997 à 2002*, Assemblée Nationale 2766, 13 mai.

Paecht (1996), *Avis au nom de la Commission des finances, de l'économie générale et du plan sur le projet de loi relatif à la programmation militaire pour les années 1997 à 2002*, Assemblée Nationale, n°2826, 29 mai.

Percebois, J. (1985), Economie de l'effort d'armement, in *L'aventure de la bombe. De Gaulle et la dissuasion nucléaire*, Plon, Paris.

Sandler, T., Hartley, K. (1995), *The Economics of Defence*. Cambridge University Press.

Serfati, C. (1995), *Production d'armes, croissance et innovation*, Economica, Paris.

SIRPA (1996), *La défense en chiffres*, Annuaire, Paris.

Smith, R., Humm, A., Fontanel, J. (1987), Capital labour substitution in defence provision, in *Defence, Security and development*, Frances Pinter, London

Smith, R., Humm, A., Fontanel, J. (1995), The economics of exporting arms, *Journal of Peace Research*, 22(3).