The main characteristics of French arms industry

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What are the main characteristics of French arms industries? It is possible to mention the relations between lead companies and their suppliers, technologies transfers, high R&D costs, rapidly advancing technologies, relatively low price elasticity of demand, sharply limited spin-off opportunities in the short run, moderate profit margin, the constant obligation to cut cost, the international competition, the scales economies that are reduced by exports, and the links between military contracting, government decisions, industrial structure and technological changes.

Quelles sont les principales caractéristiques des industries françaises de l'armement ? Il est possible de mentionner les relations entre les entreprises leaders et leurs fournisseurs, les transferts de technologies, les coûts élevés de la R&D, les technologies qui progressent rapidement, l'élasticité relativement faible de la demande par rapport au prix , les possibilités de retombées fortement limitées à court terme, la marge bénéficiaire modérée, l'obligation constante de réduire les coûts, la concurrence internationale, les économies d'échelle qui sont réduites par les exportations, et les liens entre les contrats militaires, les décisions gouvernementales, la structure industrielle et les changements technologiques.

Mots clés : Arms industry, scales economies, exports, military technology, spin-off opportunities, France

Industrie d'armement, économies d'échelle, exportations, technologie militaire, retombées économiques.

Some key results must be summarized :
- What are the main problems/inefficiencies ?
- What are the main ways to cut costs ?
- What is the link between military contracting, government décisions, industrial structures and technological change ?

V.1. What are the main problems/inefficiencies ?

There is a considerable need to manage technology within the framework of the relationship between lead companies and their suppliers. The success of military products unambiguously depends on the company's ability to draw upon the services of other enterprises and its clear understanding of the roles and objectives of the industrial contracts. Technology transfers are a very important problem because subcontractors extend their business across the civil/defense boundary and there are conflicting requirements such as competitive mechanisms, secrecy or special quality of the components. The deployment of nuclear submarines requires the synchronization of a dozen different types of technology.

- High value technology end products have differing characteristics from civilian consumer goods. The defense industry is obviously more capital intensive and less labour intensive than many civil industries and this characteristic seems to become more and more marked. Defense enterprises require a higher proportion of scientists, researchers or engineers than civil firms which, when combined with high capital investments, make fixed costs a substantial part of each business.

Other characteristics of the arms industry are :

- high R&D costs,
- rapidly advancing technology,

- extreme complexity of technological and industrial organisations,
- long lead times before deployment,
- government as the only ultimate customer in a semi regulated market,
- a relatively low price elasticity of demand,
- marketing and distribution costs lower than for equivalent civilian goods,
- sharply limited spin-off opportunities and
- secure and moderate profit margins.

Defense has historically stressed maximum performance (almost independent of what it costs) and the defense establishment is constantly emphasizing engineering challenges. Because of the high cost of individual weapons and the competition between military services, the annual quantities procured from any given production line tend to be very small and to become extremely intensive in engineers labour. The military's own specifications are not always justified, but there exists a strong belief in the necessity of tailored materials, with very high additional costs for a small technical advantage.

For the Arsenal, it is fundamental that it is reorganized, in order to meet the economic necessity of profitability. The problem is to know exactly what to do on the status of the workers, status which is not modern and efficient in economic terms.

V.2. What are the main ways to cut costs ?

European common purchases would be a very good procedure to reduce the prices of foreign equipement. For instance, it should be possible to obtain lower prices from an industrial company (from non-EEC area or from EEC) if three or more States decide to choose the same arms system and make a common offer.

The French arms industry suffers from the dispersion and the atomization of industrial forces, compared with the United Kingdom and the FRG, which build up giant enterprises. The takeover of Rover by British Aerospace gives rise to a big Group which can be compared with Aérospatiale, Matra, Citroën and GIAT together. The Group Daimler-Benz - Dornier - MBB in FRG, by governmental policy, has the same turnover as Renault, Aérospatiale, Dassault, Thomson and SNECMA together. If small is sometimes beautiful, it is not always the case for armaments industries which have to cope with cyclical demand, considerable financial resources, important industrial bases, and efficient R&D equipment and personnel. Optimal

coordination between French armament enterprises will be essential and Thomson and Matra want to improve their European alliances in order to reduce the weight of the State. The first action of the government should be to transfer its 46 % stake in Dassault.

The creation of a Common market for weapons, according to the rules of the Rome Treaty, would be a very good idea, above all if community preference and regional competition were decided upon.

The Minister of Defense, Jean-Pierre Chevènement, is arranging an evaluation mission on ideas for improving the nature, the objectives and the management of military research and for showing a civilian spin-off.

V.3. What is the link between military contracting, government decisions, industrial structure and technological change ?

The arms industries are not concerned directly by the Rome Treaty. On the list of products excluded from the agreements (March 31, 1958), a lot of armaments are explicitly placed, like torpedos, explosives, chemical agents, military electronics, bombs, munitions, etc.. The public markets concern 10 % of EEC GDP and defense contracts represent 25 % of the public markets. If the arms which are explicitely protected by the Rome Treaty are not directly affected by the openness of the public markets, it is different for products in common supply, included in the arms systems.

Table 71 - Strengths and weaknesses of the French arms industry

Strengths	Feablenesses
° **Men** - High competence in R&D - Experience in military weapons requirements - Innovative spirit - Cooperative spirit in R&D	- Functional over-employment - Insufficient employment turnover - Operational under-employment - Weak regional mobility
° **Products** - High technology - Product quality - Safety - Reputation	- High prices - Imperfect aftersales service - New competitors - Proliferation of weapons technologies
° **Industrial structures** - International competitiveness of enterprises - Dual investments - Experience in industrial R&D	- Insufficient sales organization - Absence of communication - Rigidities - Localisation
° **Demand structures** - Captive national market - Implantation in foreign countries	- National arms industries from LDCs - Limitation of arms demand from OPEC - Political will for disarmament - Excess supply - International agreements for arms exports
° **Organisational structures** - Decisive influence of DGA - Army support - Government support	- Import substitution policy by foreign countries - International agreements on arms transfers - Arms transfers control by Alliance agreements

Arms sales abroad are only a very imperfect indicator of the competitiveness of the arms industry. It is therefore difficult to conclude that the arms industry is a prerequisite for France's economic development or even that it is essential to her immediate security. 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. This is the choice that has been made, by Sweden, for example, for her aircraft construction activities. Under these conditions, the country's defense is less well provided for, in the short run, by national production than by imports. However, all aspects of security and industrial development must be taken into consideration, such as embargos, national independence, the development of the national industrial fabric, etc. It is still the case however that France is unable on her own to finance completely electronic warfare weapons and space defense systems.

For developed countries, military contracts and armament industries have created definite advantages which are politically and economically difficult to challenge. Although the international arms trade is in crisis, the strategic advantages are not negligible and disarmament could bring, in the short run, an increase in underemployment, some painful restructuring and reductions in wages. The conversion of military activities into civilian activities is not always technologically and economically feasible. Conversion is bound to be costly, because if it is certainly possible to transform a tank factory into a factory for cross-country vehicles, the crucial questions are production costs and the size of the solvent markets. Simply knowing how to transform a military aircraft industry into a civilian aircraft factory does not imply a similar ability to expand an already glutted market. Causation is unlikely to be unidirectional. Inefficiency can lead industries to seek protection within military markets and excessive commitments to these markets may cause a deterioration of the domestic industrial base of the whole French economy.

Bibliography

Assemblée Nationale (1987), Défense. Recherche et Industrie de la défense, Session ordinaire par J-P Brechter. Tome X.

Brzoska, M. (1989), The structure of Arms Production, in *Western Europe Beyond 1992*, ISA, London.

Cars, H.C. and Fontanel, J., 1987. Military expenditure comparisons, in *Peace, defence and economic analysis* (pp. 250-265). Palgrave Macmillan.

Colard, D., Fontanel, J. and Guilhaudis, J.F., 1981. *Le Désarmement pour le développement: dossier d'un pari difficile* (Vol. 19). Fondation pour les études de défense nationale.

Dussauge, P. (1985), *L'industrie d'armement en France*, Economica, Paris.

Fontanel, J. (1984), *L'économie des armes*, La Découverte, Paris.

Fontanel, J., Smith, R. (1984), *L'effort économique de défense*, Arès, Défense et Sécurité, Grenoble.

Fontanel, J., Drummond-Saraiva, J. (1986), L'industrie d'armement comme vecteur du développement économique, *Etudes Polémologiques*, n° 40, Paris, 1986

Fontanel, J., Paul, M. (1987) ; Sixième loi de programmation des équipements militaires, *Arès, Défense et Sécurité*.

Fontanel, J. (1989), Defense costs and budgeting in France, in *Franco-British Defence Cooperation. A new entente cordiale* (Boyer, Lellouche, Roper eds). The Royal Institute of International Affairs, Routledge, London.

Fontanel, J.,(1989) The French arms industry and its present problems. In *International Sociology Association, March.*

Fontanel, J. (1989) *French arms industry,* Cahiers CEDSI, Université des Sciences Sociales de Grenoble.

Guilhaudis, J-F., Fontanel, J. (1988), L'initiative de défense stratégique, *Arès, défense et Sécurité*.

Kolodziej, E. (1983), France, in The structure of the defense industry, Croom Helm, London, 1983.

Lock, P. (1989), Towards a European Arms Industry, ISAConference, London, 1 April.

Ministère de la Défense (1982*), La politique de défense de la France*, Mai.

SIRPA (1988), Ministère de la Défense, Janvier.

Smith, R., Fontanel, J. (1987), Weapons procurement : Domestic production versus imports, in *New Conventional Weapons ansd Western Defense*, Frank Cass, London.

Smith, R., Humm, A. and Fontanel, J., 1987. Capital labour substitution in defence provision. *Defence Security and Development*, pp.69-80.