OCCASIONAL PAPERS

4

SAFEGUARDING EUROPEAN COMPETITIVENESS

STRATEGIES FOR THE FUTURE OF EUROPEAN ARMS PRODUCTION AND PROCUREMENT

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January 1998

Occasional Paper 4

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CONTENTS

EXECUTIVE SUMMARY

This analysis presents a set of recommendations aimed at improving the competitiveness of the European defence industry, while maintaining a stable and equitable transatlantic relationship in the field of defence. The European armaments industry is faced with declining domestic and international demand, spiraling development and production costs and intense international competition, particularly from the American industry. America is currently supplying leading-edge (technologically) weapons at lower prices than its European counterparts. If the European industry is to survive, even in the medium term, that will have to change, and soon. As this study will suggest, corrective action is possible, provided that it is taken immediately.

A thorough analysis of the European defence market reveals a number of **driving factors** which determine its structure and development:

National supply and procurement policies tend to perpetuate overcapacity and fragmentation of the European defence market.

Decreasing perceived threats in the changed international strategic environment result in **shrinking defence budgets**--both due to domestic and to European Monetary Union pressures--and have led to less funds available in individual nations to afford new advanced weapons systems.

Spiraling R&D and production **costs**, ever more complex **technological systems**, as much as the need to stabilize public support, are forcing companies to seek out novel approaches to design and production, mainly by spreading risk through various forms of cooperation.

Competition from the US and other producers in the **global arms market** and the capital return requirements imposed by **international financial markets** further increase the bpressure on European arms producers.

The **interests** and **goals** of the major stakeholders--governments, industries and international institutions--have become divergent. On the governmental level, goals can broadly be classified along an axis with value for money at one end and "national industrial policies" at the other. Internationally, defence suppliers have relatively convergent general objectives of survival, profitability, productivity, shareholder value and market share, which could facilitate their increasing coordination. Nevertheless, differences mainly in size, ownership and culture between large and small, European and US, contractors are responsible for the slowly evolving status quo in market access, competitiveness and financial muscle, which favors US corporations. Finally, international institutions such as the EU, the WEU and NATO, broadly support cooperation-- either on a European or a transatlantic basis or both--and a bigger role for themselves in shaping it.

After this relatively long but necessary overview of the defence market, a wide range of possible **policy alternatives** can be distinguished on both the supply--production--and the demand--procurement--side of the defence market. On the supply side,

industry policies can range from national consolidation--vertical, horizontal or integrating military and civilian activities-- to European consolidation--through joint ventures or trans-European mergers-- to transatlantic cooperation and an intra-NATO defence market. On the demand side, policies can range from national to joint European to joint US-European procurement.

The whole spectrum of policy alternatives was thoroughly evaluated according to criteria resulting from the players' objectives: does the policy increase competitiveness, profitability, market share? Does it preserve healthy, equitable transatlantic links? Can it be readily implemented, as measured by the degree of overlap of the stakeholders' goals?

Based on the above evaluation, this study proposes a **"Grand Bargain"** strategy for the European defence industry, comprising the following central tenets:

I. **A Transitional period of protection** of European defence industries from American competition/ takeover challenge and of efforts to improve the "two-way street".

II. **Political support** for joint ventures, both intra-European and transatlantic.

III. Eventually, with the aim of creating a **Transatlantic Free Trade Area** (TAFTA) covering defence markets.

Deriving from these tenets, four areas of action are identified:

1. **Improvement of operational efficiency** of European defence industries.

2. **Technology management**.

3. **Procurement-driven reform**.

4. **Open market policy** on both sides of the Atlantic, placing fair ownership restrictions.

Finally, building upon these areas of action, detailed implementation proposals are put forward for each of the relevant actors in the European defence industrial stage, in order to accomplish all elements of the "Grand Bargain".

One of the potential key actors on the international-institutional level is the Permanent Council of the Western European Union, which answers simultaneously in an intergovernmental context, to the foreign and defence ministers of the WEU Member States. The Institute for Security Studies of the WEU, a research institution within the intergovernmental framework of the WEU, has as its task to prepare studies for the Council on European security and defence policy issues and to stimulate the broader academic and political debate on such issues.

Within the premises of this role, the Institute has commissioned the author to:

Analyze and assess the current state of the European defence industry, considering both economic-industrial and political aspects;

Project future trends and possible policy alternatives in the global defence market and their impact on the European market, and

Develop operational policy recommendations and a detailed action plan for all actors involved, for:

a) maintaining a healthy, competitive, profitable European defence industry and

b) preserving an equitable and stimulating transatlantic relationship, also in the field of defence.

INTRODUCTION

The defence industry is distinct from traditional industries in that, irrespective of economic measures of performance, its existence has been directly related to a nation's national prestige and, purportedly, its security. The annual output of the defence industry in the European Union is currently worth ECU 50 billion[1] (about $56 bn.)[2] or about 3 percent of total industrial output. Close to 600,000 people are directly occupied in the development and production of defence equipment and another 400,000 jobs are generated indirectly in supplier and service industries.[3] Used as a policy instrument in service of national interests such as sovereignty, independence and influence, the defence industry is seen to be a vital strategic asset to governments. By setting military requirements and export regulations, governments often play a dominant role in directing what their national defence companies produce and--indirectly--to whom they sell the finished product.

The European defence industry is currently seen as losing its competitiveness in the global market. Europe's defence industrial base is simultaneously faced with the following challenges:

Reduced domestic demand for defence equipment due to shrinking national defence budgets after the end of the Cold War has caused a loss of 600,000 of the 1.6 million jobs in the defence sector, a 37% decline, since 1984. Total military expenditure in the EU fell by 5.3% in real terms between 1985 and 1994, whereas the procurement of major weapons fell by 28.5% in real terms in the same period.[4] However, EU imports of major conventional weapons from third countries--including the US--have not declined correspondingly.

International demand is either shrinking or stagnating--with the exception of East Asia. Globally, defence spending has dropped from $1.2 trillion in 1985 to $868 billion in 1993 (1993 prices).[5]

As a result, European industries cannot always make up for lost domestic sales through increased export sales.

Competition from the vastly larger US defence corporations is intensifying. In response to the changing market conditions, the US sector, the world's largest, has consolidated considerably via a series of mergers and acquisitions during the last three years, resulting in the emergence of mega-sized companies which dominate the world market. The three largest defence firms in the world since 1995, are American.[6] This US preeminence is buttressed by the absence of a "two-way street" between Europe and the US in terms of arms purchases, partly due to the Pentagon's Congress-mandated "buy American" practice. Figures of defence equipment imports by

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[1] "The Challenges Facing the European Defence-Related Industry, A Contribution for Action at European Level" Communication from the Commission, Brussels, January 24, 1996, p.4.
[2] Calculation made using current ECU/dollar rates (July 1997).
[3] Ibid., p. 4.
[4] Ibid., p. 3.
[5] "American Monsters, European Minnows". *The Economist*, January 13, 1996, p. 63.
[6] "Raytheon's Rise". *The Economist*, January 18, 1997.

individual EU Member States show that between 1988 and 1992, 75% of imported major conventional weapons--this includes intra-EU trade--came from the US.[7]

Finally, spiraling development and production costs for new defence equipment have put immense strains both on national governments, relating to the affordability of new weapons systems, and on European industries in terms of profitability of those systems.

The implications of these challenges for the European defence industry are as follows:

The international competitiveness of the European defence industry, particularly with respect to the US position, has declined significantly. In terms of export performance, Europe has maintained a market share of one-fifth of the world export market of major conventional weapons between the 1984-1988 period and 1993, but the absolute amount has been halved in real terms.[8] Although this is partly due to the fact that the global arms market has also been halved in the last decade because of declining demand,[9] the European industry has lost ground and is now exporting less than half as much as the US.[10] The deteriorating competitive position of the European defence industry results also from the bilateral EU-US trade balance for major conventional weapons: according to 1994 defence sales figures, Europe buys six times as many American arms as vice versa.[11]

At the same time, intense defence sector competition between Europe and the US results in strained transatlantic ties. The prospect of US domination and how to handle it without destabilizing transatlantic relations will be one of the most sensitive issues related to the policy options for ensuring the future European defence industry.

In response to the above challenges, defence industries and governments have taken various actions ranging from capacity reductions and downsizing to cooperative ventures both in production and procurement projects. Some restructuring has already taken place, mostly at a national level and at sector levels.
In order for the European defence industry to adapt successfully to its new competitive environment, coordinated action should be taken at various levels, namely the governmental and defence industrial level as well as the level of international institutions such as the European Union, Western European Union and NATO.

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[7] Communication from the Commission, p. 7.
[8] Ibid., p. 5-6.
[9] According to SIPRI estimates.
[10] A note must be made here for the fact that the term "competitiveness" in the case of defence exports should be used with caution, as "this kind of sales are highly political", according to Mr. Gilles Marcoin from Dassault Aviation.
Also, many of the shifts in relative export performances are linked to international political events--like the end of the Cold War, the Gulf War, the collapse of the Soviet Union--as well as in changes in national export policies, including export subsidies. Finally, the international political influence exercised by the US benefited their national industry. The aforementioned factors also suggest that part of the shift is due to changes in the underlying competitive positions, including the US dollar depreciation against European currencies since 1985, which has disadvantaged European industries.
[11] The Economist, February 17, 1996.

CHAPTER 1: ANALYTICAL OVERVIEW OF THE EUROPEAN DEFENCE INDUSTRY

A. Supply: Fragmentation

Industrial Structure and Trends

About 90% of total EU defence equipment production is concentrated in France, Germany, UK, Italy and Sweden.[12]

National industries are diverse. In a broad-brush picture one can say that: the British is private, horizontally integrated and highly rationalized; the German, private, vertically integrated, but in early stages of rationalization; the French, more fragmented, substantially state-controlled, experiencing privatization and heavy rationalization at the same time; the Italian, vertically integrated, still state-owned, but on the way of privatization; the Swedish industry is concentrated and almost exclusively private.

According to a European Parliament study[13], the annual European defence equipment output is currently less than half the US output--about 50bn ECU(about $56 bn). The national markets of the UK (12.9 bn ECU or $14.45 bn in 1991) or France (also 12.9 bn ECU) each only represent roughly 10% of the North American market (114 bn ECU or $127.68 bn). However, contrary to what market size would lead us to conclude about market composition, the US market is more concentrated than the European, due to numerous mergers among defence companies. In 1990, the ten largest American defence firms accounted for 29% of the prime contracts awarded annually by the DoD. Today, the top-10 share is 38%; it may be 50% by the end of the decade. Furthermore, the average size of the ten largest US defence companies is now twice that of the ten largest EU companies.

The European defence sector could be seen as possessing a core and a periphery, both across and within countries. Across countries, the British, French and German industries comprise the core of the European defence sector if measured in terms of scale, range of output and innovative capability--80% of defence production and 90% of defence R&D expenditure in Europe come from the "big three".[14]Within countries the core of the defence industry consists of a small number of large weapon systems producers which generally exhibit a high degree of vertical integration. While there are also many smaller but sophisticated specialized firms, the bulk of defence production is concentrated in these large conglomerates.

Furthermore, about 70% of defence sales come from the aerospace and electronics industries. However, much of the value-added behind the weapons systems and other

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[12] Communication from the Commission, p. 7.

[13] European Parliament, Directorate General for Research- The STOA Programme. "The European Armaments Industry: Research, Technological Development and Conversion- Preliminary Report". Luxembourg: June 1993.

[14] De Vestel, Pierre. Defence Markets and Industries in Europe: Time for Political Decisions? (Chaillot Paper 21). Paris: Institute for Security Studies WEU, 1995, p. 71.

defence equipment originates in components and subsystems producers, which are often Small and Medium-Sized Enterprises (SMEs).[15]

Duplication

In 1993, the member countries of the EU and EFTA were developing 125 different types of armament, and the US was developing 53 types[16] (for an illustration of the balkanized nature of Europe's defence industry, please refer to Table 4 in the Appendix). Duplication becomes a persistent problem because it leads to a vicious circle: reduced budgets, fewer orders, production that exceeds new orders, reduced backlog. Production is then reduced in turn, creating even more overcapacity and higher unit costs, making it impossible to increase orders with shrinking budgets, and so on.

According to the European Commission, "Due to duplication, economies of scale in arms production are not fully exploited. The limited size of national orders has made the economic viability of many projects dependent on uncertain export contracts; inefficiencies exist in development and production of weapon systems in domestic defence contracts, due to lack of serious competition for many domestic defence contracts; in international cooperative programs, inefficient work-sharing and juste retour[17] between countries and their respective domestic suppliers have caused overcapacities, additional costs and have not allowed cross-border integration based on comparative advantage."[18]

B. Demand: Oligopsonistic-National Procurement

By the very nature of the defence market, the major--and exclusive--buyers of defence output are national governments. As a result of this relationship, defence contractors are dependent to a great extent on a monopsonistic domestic purchaser. National military requirements often dictate product lines, product design and production runs.

Procurement procedures traditionally involve a payment system--fixed price, cost-plus or some mixture; a bidding system--competitive tender or single supplier; a market--buying from domestic, European or American firms; and a system for contract renegotiation when conditions change. Three approaches are characteristic of different European governments:

1. In a "national preference" procurement, each government tends to satisfy its military requirements by showing clear preference to purchasing from the national industry first. This approach could be extended to a policy of "Europe first" preference, adopted by some procurement authorities.

2. In the value for money approach, the government bases procurement on cost-benefit analysis and purchases from the source which provides the best value--the best

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[15] Ibid., p. 4.
[16] Source: P. De Vestel (ed.). "L'Industrie Européenne de l'Armement: Recherche, Dévelopement, Technologie, Reconversion". Brussels: Dossiers du GRIP, 1994, pp. 26-7.
[17] Industrial and technological compensation, proportional to the share in orders.
[18] Communication from the Commission, p. 7.

quality-price combination. Both national industries and foreign competitors stand--in principle--equal chances of being selected.

3. Finally, there is also a mixed approach, consisting of preference for the national industry, but only to the extent that it does not lead to too unprofitable procurement decisions, usually as defined by the politics of the day.

The first approach is declared as main policy by France--as described in Chapter 3--whereas the UK generally claims to enact the second, more commercial free-market direction. Most European states fall between these two approaches. While often under budgetary pressures to follow the value approach, protection for national industries or compensatory purchases are common. It is noteworthy that, when purchasing from abroad takes place, it is often non-European. A real European market for defence equipment hardly exists as intra-European trade represented only 3-4% of total procurement of major conventional weapons by Member States between 1988-1992.[19] European governments can justify buying American based on the large number of European subcontractors to US prime contractors.

[19] Communication from the Commission, p. 3.

CHAPTER 2: DRIVING FORCES BEHIND INDUSTRY STRUCTURE

1. National supply and procurement

"National preference" supply and procurement policies in Europe usually include:

National champion policies--the practice of awarding major military contracts almost exclusively to major national industries with the objective of maintaining a strong domestic defence industrial and technology base, even if that often means keeping alive relatively unprofitable national champions. Such policies lead to inefficiencies, overcapacity and duplication on a European level.

Security of supply concerns--unwillingness to give up national production capacities to avoid relying on other states for the supply of vital defence materials, especially in times of crises;[20]
y were $39.9bn, up 8% in real terms, while in 1995 they had increased by 13% after falling steadily to $32.
and

Distributional (employment) considerations motivating preservation of national defence industrial base. For example, the French defence industry is a major employment source, representing 7% of total industrial employment--200,000 employed in 1994.[21]

Each European state has its military requirements--equipment specifications, procurement schedules--and is often reluctant to modify them to enable a solution meeting the demands of several national forces.[22] The resulting uncoordinated procurement has often helped uncompetitive national champions to survive. Many European governments still feed most of their procurement budgets to home firms, not permitting foreign ownership of top contractors, leading to overcapacity. For example, in the market for combat aircraft, the Rafale fighter in France, the Gripen in Sweden and the EF-2000 under development by Britain, Germany, Italy and Spain all try to respond to the need for a multi-role combat aircraft.

Nevertheless, even collaborative attempts are often costly, such as the $60bn EF-2000, Europe's largest weapons project. Not only are there four geographically separate production lines, but each country expects a work-share proportional to its investment--irrespective of cost premiums. Moving components between various production sites increases the cost of the aircraft by 15-20%. Duplicating tooling and production lines adds as much again and makes economies of scale impossible.

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[20] For example, during the Gulf War, Belgium refused to supply artillery shells to the UK.
[21] Serfati, Claude. Les Industries Européennes d'Armement. Paris: *La Documentation Française*, 1996, p. 21.
[22] An example is France's refusal to collaborate with Britain, Germany, Italy and Spain on a common design for the European Fighter Aircraft (EFA, now called EF-2000).

2. Attitudes towards European integration

Attitudes towards European integration and the effects of strategic political interaction at the pan-European level also affect the structure of the European defence industry. "Euro-federalists" promote cooperative solutions to the crisis of the European defence industry, whereas "Euroskeptics" favor national solutions.

3. Costs

Development and production costs of new weapon systems are spiraling. National governments and industries nowadays cannot afford to develop new systems alone. They can reduce costs by joining efforts to increase scale of production. It could be argued that collaborative projects can often be costlier than national ones because of the additional costs of coordination, management and inefficient work-sharing intended to accommodate national political interests. Still, individual cost-shares will be much lower and cooperation may often be the only way in which the project can be afforded at all.

4. Technological Trends in Defence Markets

Technological developments in defence markets emphasize two trends: operational mobility--the ability to move armed forces rapidly--, and flexibility--the ability to fight successfully in various geographical conditions against various enemies. Mobility requires fast, relatively specialized, long-range transport assets and air-mobile, high-firepower and precise weapons. Flexibility needs advanced and accurate surveillance and communication systems. Among the technologies central to mobility and flexibility are information technology, propulsion, space and materials technology. These technologies are not specifically military in nature, which reinforces the trend towards dual-use technologies. On the supply side, this trend will increase the competitive advantage of diversified firms with civil and military activities and systems integration ability, that is also the ability to adapt civil technology to military ends. An illustration of that tendency is the recent purchase by Boeing, the American civil aerospace giant, of McDonnell Douglas, a company with significant activity in the defence and aviation markets.

Defence conversion--the shift of resources from military to civilian activities--has not been an option favored by European firms, because it was largely considered as impractical. They have mainly followed the path of rationalization through downsizing or diversification through acquisitions, rather than through conversion or organic diversification.[(23)]

Nevertheless, with changes in military missions--for example, peacekeeping activities require equipment which is sophisticated, precise and non-lethal--and sharp reductions in defence spending, governments will no longer afford to develop defence-unique capabilities to equip their forces. Many leading-edge technologies critical to the success of future battlefields--electronics, computers, information processing, and communications--come from commercial markets. Since these

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[(23)] P. Gummett, "Restructuring of the Arms Industries in Western Europe: Market Rationalization Rather Than Conversion. " Paper presented to conference on Conversion of Military Production, Bratislava, November 16-18, 1992.

markets are international by nature, the trend towards commercialization will mean drawing upon international supplier resources and/or seeking international cooperation.

Following the above trend, future profit potential for the in defence industry could lie in "black box" technologies. Firstly, defence electronics are inherently more profitable to make than bulky platforms, since they require less material, labor and space. Secondly, their technologies can be more easily applied to civilian uses. For example, Rockwell has profitably exploited its defence communications technology in supplying microchips to modem makers; Hughes has done similarly to launch a satellite TV service.[24] Thirdly, shrinking budgets have had a positive effect on defence electronics. Since new weapons systems are not always affordable, upgrading of existing ones is quite frequent, and that requires buying the latest "black boxes". For example, in the US, this has helped Loral earn a well-above-industry-average profit margin[25] of 10.3%[26]see Table 5 in Appendix).

5. Threat Environment

The end of the Cold War has created the expectation that security could be achieved at much lower levels of armaments. Moreover, calls to reduce military spending were marked by other demands on public resources in Europe, such as growing unemployment, health care and other social objectives. As a result, the priority given to military procurement on national and European agendas fell remarkably, as governments struggled with these broader and more immediate political issues.

Governments also had to deal with unfamiliar problems, such as regional and ethnic conflict, organized crime or drug trafficking, which put into question issues like the roles assigned to military forces, their structures and missions (including "Operations Other-Than-War"), the technological capabilities at their disposal. The basic question facing Europe with respect to security became how, with reduced budgets, to maintain military forces that are still effective--though smaller--in facing the new global security threats.

6. Shrinking budgets

With the end of the Cold War states reassessed weapon requirements and real budgets shrunk in most Western countries[27] (see Table 6 in Appendix). In Europe, total military expenditure fell by 5.3% in real terms between 1985 and 1994, with procurement bearing the brunt of reductions, with a total decline of 28.5% in real terms.[28]

The defence budgets of European NATO countries are set to fall by 9 percent in 1997.[29] However, EU imports of major conventional weapons from third countries (including the US) have not declined correspondingly.

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[24] *The Economist*, January 13, 1996.
[25] Profits before interest and tax, in the year to March 1995.
[26] *The Economist*, January 13, 1996.
[27] Such as Sweden and Turkey.
[28] Communication from the Commission, p. 4.
[29] "World Arms Sales Growth Put at 8%." *Financial Times*, October 15, 1997.

The impact of declining budgets has had contrasting effects. The dramatic cuts announced in the various states' annual defence reviews have led in many cases to a reassessment of all cooperative projects, to the restructuring of national armed forces, or to the end of conscription and establishment of professional armies. In European Union countries, additional pressures on national budgetary policies were brought about by the necessity to conform to the Maastricht criteria. Reducing state expenditure and meeting the Maastricht criteria seems to have taken priority over defence programs, which were hard to justify publicly in the current threat environment. On the other hand, Maastricht budgetary pressure may favor consolidation, by forcing nations to form joint ventures and collaborative efforts to afford major new systems, but also by encouraging armaments cooperation. To illustrate, Article 17 of Title V of the Treaty of Amsterdam mentions that armaments cooperation among Member States is a step towards achieving the ultimate goal of a common European defence policy.[30] Finally, the trend to use multinational forces in military operations has created the need for weapon compatibility among national forces.

7. Global Defence Market Trends

7.1. Size of Buyers' Markets

Worldwide demand is another important factor affecting the situation of European arms producers. As a general rule, expanding defence markets increase export potential. However, if larger markets are simultaneously serviced by an expanding number of producers, the effect is not as pronounced. Shrinking or stagnant global markets create pressures on defence industries to consolidate.

Globally, defence spending has dropped from $1.2 trillion in 1985 to $868 billion in 1993 (in 1993 prices).[31]

The declining demand, particularly from developing countries has practically halved the global arms market over the last decade.[32] The European defence industry has seen domestic and intra-NATO demand shrink, however, the combined market share of the UK, France and Germany has increased from 29.4% in 1994 to 37.8% in 1996[33], while the US share has remained relatively steady over the last three years at around 42.4% of the world total.[34] As a result, Europeans are trying to make up for lost domestic sales through increased export sales.

In 1996, international arms sales grew for the second year, after a seven-year decline. The 7bn in 1994 from a peak of $84.9bn in 1987.[35] According to a report by the International Institute for Strategic Studies, this renewed rise is attributed to tensions in north-east Asia and the Middle East, favorable oil prices which enabled Gulf states

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[30] Consolidated Version of the Treaty on European Union, Title V: Provisions on a Common Foreign and Security Policy, Article 17 (ex Article J.7).
[31] *The Economist*, Jan. 13, 1996, p. 63.
[32] Swedish International Peace Research Institute, *SIPRI Yearbook* 1995.
[33] IISS: *Military Balance* 1996.
[34] Ibid.
[35] Ibid.

to finance orders placed after the Gulf war, and modernization of the armed forces in east Asia and South America.[36] Therefore, declining NATO country demand has been offset by sustained arms purchasing in the Middle East and several Asian countries. Particularly, east and south-east Asia is emerging as a major arms market, accounting for a bit less than a quarter (23%) of global arms purchases. Defence spending in East Asian countries has increased by more than a third since 1985 and almost a quarter since 1992.

7.2. Trends in the nature of competition

Defence markets are increasingly acquiring commercial market characteristics, as buyer selection criteria evolve and competition is based more and more on cost/price, quality and speed, rather than differentiation solely on technology. This commercialization is also manifested by the fact that customer-funded (that is state-subsidized) development is increasingly being replaced by industry-financed projects and development cycles are becoming shorter.

8. Export competition

The US remained the world's leading arms exporter, with sales worth $17bn in 1996, slightly increasing its share from 42.3 to 42.6%--while the UK and France in second and third place, increased theirs significantly--the UK from 20.1% ($7.4bn) in 1995 to 22.1% ($8.8bn) in 1996 and France from 10.3% ($3.8.bn) to 14.1% ($5.6bn).[37] Russia surpassed the US and France as the biggest arms seller to developing countries, China being the most important buyer. Also, other countries are gaining competence in defence technologies posing a significant commercial threat to the US and European industries. Israel, Korea and Taiwan already offer up to date military hardware, especially subsystems (e.g. in electronics and communications). There is increased competition from countries such as India, Brazil, Israel and China, which account for almost 10% of the arms export market.

9. International Finance

This factor is more a constraining than a driving force. In the defence industry, like in every other private sector and capital-intensive industry, shareholder value is taking hold. As state-owned groups are being privatized, they face competitive market disciplines: the performance standards set by international capital markets.
Furthermore, the European defence business is sensitive to currency fluctuations. The significant depreciation of the US dollar against European currencies since 1985 put a heavy burden on the competitiveness of European defence-related companies, by diminishing their export potential. A different example is that of British aircraft exporters, BAe among them, who have been lobbying for British membership to EMU to "iron-out exchange-rate fluctuations and help reduce the financial risks of selling products to foreign clients. "[38]

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[36] IISS: *Military Balance* 1996.
[37] Ibid.
[38] *The Times*, February 27, 1997.

CHAPTER 3: KEY PLAYERS, THEIR INTERESTS AND OBJECTIVES

A. National Governments

European countries differ substantially with respect to state-industry relations, degree of public ownership of producers, governments' conception of industrial policy responsibilities and industry lobbying powers.

National defence industries are often big employers--even a downsized British Aerospace employs 40,000 people--as well as big contributors to balances of payments. Additionally, governments:

1 are the unique national buyers of defence equipment; they select the sources, quantities and timing of procurement;

2 set military requirements and equipment specifications; determine programs, schedules and rates of production; and

3 determine export rules for defence equipment.

There is considerable disparity between the goals of the major stakeholders in the European defence market. Government interests and objectives often play-off against each other and the outcome of this can be decisive for the structure of the European defence industry.

I. Governments of Major Arms Producers[39]

The European defence industry may be broadly spread, but the UK, France and Germany between them account for some 85% of the market and for nine out of the top ten companies, in terms of defence and aerospace sales.[40] Even though the interests mentioned below are shared by almost every significant arms producing country, France, Germany and the UK will be used as representative cases. The US--non-European but a major player in the global defence market--will be used mainly as a basis of comparison.

Interests of the governments of France, Germany, the UK and the United States[41] include the preservation of a domestic defence industrial base, maintenance or expansion of export markets and security of supply. The degree to which each state is committed to these objectives varies according to its historical, cultural, social and

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[39] I take the interests of the governments of France, Britain, Germany and the United States as illustrative of the interests shared by most major arms producing countries.

[40] Wiener, Barnaby. "European Defence Consolidation-Untangling the Web". Global Securities Research and Economics Group, Global Fundamental Equity research Department. Merrill Lynch, Pierce, Fenner & Smith Ltd, June 1997.

[41] Unless otherwise quoted, discussion of core interests and goals of governments, industries and international institutions is based on interviews with officials from governments, industries, international institutions and research institutes.

economic background. The national defence--industrial and procurement--policies of the four major players in the armaments market are marked by specific, strong and so far, diverging interests.

I.1. France

De Gaulle's idea of an independent France endowed with a nuclear force as the cornerstone of military autonomy required a strong defence industrial base. Its chief components are a large aerospace and nuclear industry, supported by a defence budget normally 2-3% of GDP.[42] In order to profit from economies of scale, defence industries need markets larger than France alone to be efficient. This led to a French policy with strong export orientation. Active export policy was justified because of its beneficial effect on employment and on financing of weapons development.

Therefore, defence autonomy was until now a main driver of French policy, entailing national procurement, as well as national preference policies.[43] France usually shows reluctance to deal in cooperative programs unless it becomes the dominant partner. Finally, cooperation is generally heavily tilted towards Germany with 53% of French cooperative programs.[44]

France fosters very close links between defence industry and government. A large part of the French defence industry is still partly or wholly state-owned, although there have been some recent attempts by the Juppé government to privatize parts, which may (or may not) be continued by the policies of the Jospin government. The French procurement agency, the Délégation Générale pour l'Armement (DGA), so far conducted not only procurement but also industrial policy, through the supervision of nationalized defence industries.

This French military-industrial complex was perpetuated because of several factors: the existence of strong and lasting political consensus behind a policy of relative autarky; the prudence of public and economic scrutiny of armaments programs (in terms of costs, real revenues, innovation potential); and a limited private industrial tradition, with a dominating state through both ownership and management of the armaments industry and procurement.

The traditional French industrial policy suffered a loss of credibility after a sharp fall in France's share of the world arms export market in the mid- to late 1980s, inducing French interest in European solutions: seeking economies of scale and cost-savings through industrial cooperation and encouragement of a European division of labor; through combined export effort; and, most importantly, through market expansion in Europe, including that part of the NATO European market so far dominated by the US.

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[42] The International Institute for Strategic Studies. The Military Balance 1995/96. London: Oxford University Press, October 1995.

[43] Note: national procurement policies (demand) generally do not necessarily imply national champion policies (supply).

[44] Serfati, Claude. Arms Production in Europe: from Offsets to Integration?, European Seminar (Report from the Credit Network), Brussels, January 23-24, 1995.

With respect to procurement, the French prefer to purchase from other European partners, particularly cooperative ventures, than from American producers. The French government is very sensitive to the consequences of an unbalanced American industrial influence, particularly in the field of high technologies, and as a result places great emphasis on the need for substantial expenditure on cooperative R&D--in defence and civil fields--and for strengthening European presence in defence technology.

Finally, France, concerned about the competitive position of its defence industry, has launched a program of national restructuring--via privatization and mergers[45]

--with the ultimate goal of creating French "champions", which will then form profitable and internationally competitive European alliances. The main constraint on this plan is the scarce time available to all European companies to form transnational mergers which have global bargaining capacities.[46]

I.2. Germany

The German government does not explicitly conduct industrial policy--defence industries are private--however, given that the state is the major buyer of military equipment, there is a tendency to coordinate defence and planning requirements with the industry. The "Bundeswehr plan"[47] partly performs that coordinating task. As seen by German MoD officials, the government should be more than just a buyer of the industry's output; it should be a reliable partner[48] because the industry needs security of planning. Still, in defining military requirements economic- industrial considerations cannot outweigh strategic goals.

An important priority of the German government seems to be the balancing of armaments cooperation on the European level with that on the transatlantic one--in order to preserve access to the US market. "Strengthening the European pillar and adding it to the American pillar" is a policy goal stated by German MoD officials. Some stress that "no priority is given to either relationship in general; it depends on the specific project. "

German government sources emphasize the importance of arms cooperation both on the industrial and on the procurement side, guided by four types of goals: political--alliance cohesion; military--standardization and interoperability within alliances; economic--need for a larger procurement market; and technological--need for exchange of know-how. Most often, trade-offs have to be made between those goals. The emphasis on collaboration is evidenced by the fact that today, the German defence industry produces 75% of its weapons programs in cooperation with other countries, against 10.5% for the UK and 15% for France[49] (see Table 7 in Appendix).

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[45] Most prominent examples include the intended privatization of Thomson-CSF and the pending merger of Dassault and Aérospatiale.
[46] Interview with an analyst from the WEU Institute for Security Studies.
[47] The German government's planning of military requirements.
[48] Executives from the German industry characterized their relationship with the government as "a good business relationship; a customer-supplier relationship."
[49] Calculated in terms of acquisition costs.

Finally, recent defence cuts in Germany reinforced the tendency of recourse to civil technologies. Both government and industry officials stress the importance of intensifying R&D of dual-use technologies, all the more so because almost no German firms are purely defence-oriented.

I.3. United Kingdom

The United Kingdom has traditionally possessed a strong defence industry, although the British government does not conduct explicit industrial policy and deals with an independent, private industry. The British procurement policy, after the Levene reforms of 1985,[(50)] is based on three principles:

4 Competitive tendering, meaning that suppliers, both domestic and foreign, should compete for development and production contracts;

5 Fixed-price contracts[(51)], meaning that suppliers and not the customer should bear the product risks, but should in return be rewarded for efficiency through higher profits; and

6 Payment dependent on progress, which implies that budgetary control should be strengthened at all points.

Procurement is handled by the Procurement Executive of the Ministry of Defence, which is a body of civilian officials and military officers lacking the centralized authority of the French DGA. The real buyer in the end is the Defence Staff which sets weapons requirements.

Value for money as a procurement objective traditionally prevails in British defence procurement decisions. Despite this clearly pro-competitive policy, the largest portion of MoD orders is reserved for national contractors--79% of total MoD purchases, against 12% from cooperative programs and 9% imported products for 1995.[(52)] Traditionally, short-term budget considerations have prevailed over long-term strategy in arms procurement.

Another distinct British objective is transatlantic cooperation. Based on the "special relationship" with the United States, the British government is following a campaign to open a two-way-street in arms procurement between the UK and the US. Currently, the UK has $4bn of US arms on order, while the US has a backlog of only $1bn worth of British defence goods.[(53)] On average, the arms trade between the two countries sees US companies winning orders worth twice that of their British counterparts.[(54)]

[(50)] Named after Sir Peter Levene, who was appointed Chief of Defence Procurement in the Ministry of Defence in March 1985 with the specific task of implementing these reforms.
[(51)] The amount to be paid is specified in the contract and is subject to adjustment only for inflation.
[(52)] British Ministry of Defence. White Paper 1995-1996.
[(53)] "US Forces to Buy British Light Artillery", *Financial Times*, March 17, 1997.
[(54)] The British government has been arguing with the Pentagon that this imbalance must be corrected. Intense lobbying efforts--recently undertaken by British defence secretary Michael Portillo--have not always been successful: a US contract for an advanced short-range air-to-air missile strongly lobbied by the UK last year, did not go to British Aerospace, but to Hughes of the US. However, a vindication

Lately the British government has been demonstrating support for a sensibly managed European preference and the development of a strong European industry. An example is the cruise missile contract awarded in July 1996 to a joint venture between British Aerospace and Matra of France, instead of awarding the deal to the American bidders. According to a statement by the British Defence Secretary, "in principle, it is clear that we encourage mergers and acquisitions and cross-border alliances, whether European or transatlantic."[55] Even more outspoken statements came from British industrialists.

II. Governments of Smaller Producers / Subcontractors

The interests of these governments are mainly based on economic and industrial considerations: maintaining their specialized national industries, key technologies and niche markets. At the same time, these countries seek to maintain transatlantic ties either through subcontracting and licensing relationships or through procurement from the US. Preserving employment and reinforcing European defence integration appear to be further objectives. Compensation programs are also very significant to the survival of small defence "powers", although they sometimes increase program costs and industry "rarely gets 100% compensation."[56]

As an illustrative case, the Dutch government emphasizes its vital interest in maintaining strategic "centers of excellence", arguing that superiority in niches such as high-tech electronic components is a necessary prerequisite of bargaining power with European and American partners. The Netherlands have a strong presence in specialized markets, such as naval communications, and outside these, the government follows an open market policy, purchasing both from the US and Europe. An illustration is the purchase by the Dutch of McDonnell Douglas' Apache helicopters instead of Eurocopter's[57] Tiger which was effectively seen by many as "anti-European". According to Dutch government sources, one of the reasons in favor of the US contract was the lower price, effected by the weak dollar. This decision exemplifies the dilemma of many small European states between value for money and European preference in defence procurement.

Defence industry-government relations in the Netherlands follow the German model. Both sides state that government significantly supports exports--on the political/diplomatic level--and defence R&D, without directly intervening in industrial matters. It is up to the industry to remain competitive and to win orders, as the government's ultimate goal is to ensure that the defence sector follows competitive market rules. The Dutch industry has been open to foreign competition and ownership. For example, one of the most sophisticated Dutch companies in naval electronics and systems, HSA, was sold by Philips to the French Thomson-CSF in 1990.

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of British efforts can be seen in a $500m contract for light artillery given to a British company last March, although the Pentagon was intensely lobbied by US manufacturers for the same contract.

[55] Statement on the Defence Estimates 1996, May 1996.

[56] Interview with Dutch industry executive.

[57] Eurocopter is a Franco-German helicopter producer formed in January 1992, joining Germany's MBB with France's Aérospatiale.

III. United States

Although the US and Europe have long been partners within the NATO framework, transatlantic relations in the defence industrial field have been a very complex issue arousing controversy and debate among Europeans themselves. The fact that the US defence industry, the largest in the world after the end of the Cold War, is Europe's most aggressive competitor in international markets constitutes the basic strain on the relationship.

The same broad concerns shared by large European producers apply to the US as well--preserving a domestic industrial base, technological superiority, export markets, security of supply plus a stated goal to retain a strategic defence technology superiority. The greatest difference between the two markets is size: the US defence budget for FY1995 was $263.5bn compared to the $109bn combined budget for France, Germany, and the UK in the same period.[58] US export volume in 1994 was $11.96bn (55% of total exports of major conventional weapons), compared to $5.46 for France, Germany and the UK (25% of total).[59] According to a report by RAND,[60] the US share of the global arms market may expand to about 60% by the end of the decade.

On the issue of US trade policy, the conventional arms transfer policy announced in February 1995 by the Clinton Administration included an explicit reference to the priority of supporting the US defence industrial base. The US defence market is mostly impervious to European companies. For the few exceptions of industrial cooperation, the US company is always the prime contractor and pressure from the Pentagon is high to maximize the parts of the program allocated to US firms. However, in 1996, Congress passed the McCain amendment allowing the DoD to bypass the "Buy American" Act for its NATO allies.[61] This new effort towards progressive opening of the US market to European industries can be observed in three programs: MIDS (Multifunction Information Distribution System), MEADS (Medium Extended Air Defence System) and the JSF (Joint Strike Fighter). It is supported by recent proposals to open arms trade by the US Department of Commerce and the Department of Defence.

European direct investment possibilities in the US are limited and carefully controlled because of DoD and Commerce Department concerns that foreign-owned US firms may not be able to develop the latest weapons and communication systems, or that carefully targeted purchases could give foreign firms a competitive edge by permitting them early access to, or even control over, critical technologies. The Pentagon tightly controls direct exports of US technology and has a de facto veto power in its re-exports, which it uses with considerable high-handedness. For example, in a competition to supply Finland with fighters, the US blocked Sweden's re-export of the Gripen fighters equipped with Amraam to Finland, but allowed US F/A 18 jets with the missile to be sold there. Such policies consolidate the technological and export lead of the American defence industry significantly.

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[58] *The Military Balance* 1995/96, p. 23-65.
[59] *SIPRI Yearbook* 1995, p. 493.
[60] *International Herald Tribune*, June 25, 1996.
[61] Legislation permitting the administration to impose significant customs barriers on foreign products, invoking threat to the American industry from those products.

In the last four years, there are clear hints that the Clinton Administration has been placing more emphasis on "efficiency, cost-cutting and exports--commercial success in a Darwinian marketplace, rather than having the best weapons no matter what the cost."[(62)] Efficiency does not only refer to the building cost of a weapon, but also to maintenance and operating costs. Affordability and flexibility (multi-force usage) are replacing optimum battlefield performance as a procurement objective. In the past, the US government inhibited most large combinations of weapons-makers to preserve competition. With the demise of the Soviet Union and the ensuing reduction in defence budgets, the administration decided to relax antitrust guidelines and even encourage consolidation as a way of reducing costs and making industry focus on global competition.

The results of this policy are seen in the growing export shares and record profit levels of the remaining defence contractors. Concerns about job losses, less innovation from fewer companies and elimination of certain subcontractors and suppliers by giant contractors, are balanced by remarkable advances in the fastest-growing area of defence procurement--electronics. About 45% of the Pentagon's procurement and research budgets are now devoted to electronics, leading to integrated weapons systems.[(63)]

B. Defence Industries

Contrary to the interests and objectives of governments, those of the defence industries are more homogeneous, driven by basic business-industrial considerations. In those terms, it is the stronger and leaner--that is the conglomerates which are the largest, but also the most efficient, tightly organized and managed--which will survive in a competitive market. Nevertheless, the defence industry is a highly political field and far from being governed by pure competitive market laws.

Defence industries in Europe can be grouped into the following categories:

I. Large industries with fairly comprehensive defence capabilities

These are mainly the defence industries of France, Germany and the UK and to a lesser extent those of Italy and Sweden. All countries have followed a path of national industrial consolidation--four of them have almost completed it, while France is in the midst of it. The major players are for the UK British Aerospace (BAe) and General Electric Company (GEC), and for Germany, Daimler-Benz Aerospace (DASA). In France, although the industrial scene is in flux as this study is written, the major players in the restructuring game are Thomson-CSF (to be combined with Alcatel), the soon-to-be-merged Aérospatiale/Dassault, and Matra-Défense. While the aerospace and defence electronics industries of Italy (Finmeccanica), Spain (Casa) or

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(62) Sterngold, James. "Boeing Deal Highlights Washington-Led Remaking of an Industry". *International Herald Tribune*, December 17, 1996.

(63) Sterngold, James. "Boeing Deal Highlights Washington-Led Remaking of an Industry". *International Herald Tribune*, December 17, 1996.

Sweden (Saab, Ericsson) cannot be ignored, the future strategic players are generally identified in the three "big" countries.[64]

The post-Cold War decline in defence spending has not significantly affected German industries, given their greater diversification in civil markets. On the contrary, French firms, more concentrated in defence and heavily dependent on public procurement, have been vulnerable to defence spending fluctuations, having to drastically reduce capacities in the early 1990s. State-owned Thomson-CSF announced 4,000 job cuts in 1991, whereas private Dassault closed four plants in 1993 (4,000 jobs). The fate of British companies was similar: between 1988-1993 BAe had closed six sites, involving 9,700 job losses.[65]

Common objectives of major defence contractors include:

a) increased profitability by international capital market standards (performance, shareholder value);

b) industry growth and expansion of export sales (global market share);

c) reduction of the life-cycle cost of systems with a simultaneous increase in production efficiency at low volumes (productivity);

d) reduction of development and production risk (increased government funding of these areas);

e) expansion of the industry's political influence and bargaining power, as well as of its competitive ability to win new programs.

II. Small but relatively sophisticated, highly specialized defence industries

These are mainly the industries of smaller countries such as Belgium, the Netherlands, Norway and Switzerland, which import or manufacture under license the bulk of their defence equipment and often tend to be very active in niche markets.[66]

The main objectives of these industries include survival; cost reduction; reduction of lead times; establishment of skills and competitiveness as strategic suppliers/subcontractors; market/technology niche; production efficiency at small order volumes; access to technologies and commercial skills; participation in major programs; compensation arrangements.

III. Developing Defence Industries (DDIs)

These are the cases of Greece, Portugal and Turkey, which are mainly subcontractors to European or American companies. Their interests lie primarily in developing

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[64] In July 1997, Italy's industrial structure might be in a state of flux, due to discussions on the role and future of Finmeccanica.

[65] Walker, William and Susan Willett. "Restructuring the European Defence Industrial Base". *Defence Economics*, 1993, Vol. 4, p. 151.

[66] Belgium in small arms, the Netherlands in naval communications equipment, Switzerland in artillery and Norway in anti-ship missiles.

essential defence capabilities and taking advantage of high technology possibilities, but so far they remain highly dependent on technology transfers and subcontracting relationships with foreign partners, mostly the US.

IV. US Defence Industries

The American defence industry is concentrated around a small number of giant companies. Restructuring was rapid, in response to the changed security environment and shrinking defence budgets. A principal factor behind this swift reaction is private ownership, which implies both the capacity for reaction, and the ability to react without state involvement. At the same time, the Pentagon supports the largest American defence contractors by generous R&D funding, export promotion and national procurement policy.

The general objectives of American companies are not too different than those of their European counterparts: profits, market share, productivity, technological innovation. A main interest with respect to Europe, apart from the intent to maintain or increase access to European markets, is dominance in traditional arms export markets such as the Middle East, as well as in new ones, such as Central and Eastern Europe, through aggressive competition for exports. For example, the American aerospace industry is targeting the latter market as a potentially quite lucrative fighter market for the next decade, given the impending NATO expansion eastward and the subsequent need for these countries to rapidly acquire Western military systems in order to integrate to the infrastructure of the Alliance.

In terms of technology, American industries have overwhelming competitive advantages against the European ones, being leaders in most high technology sectors. US contractors are keen on preserving this leadership, and they are assisted in achieving that objective by the technology export policies of the Pentagon.

C. International Institutions

I. The European Union

The first concerns of the European Union (EU) with respect to the European defence industry are defence market integration following the Single Market model; European Security and Defence Identity; and Common Foreign and Security Policy (CFSP). Integration both on the industrial and the procurement side of the defence market would lead to cost savings for the tax payer between 5 and 11 billion ECU a year[(67)]and would facilitate security of supply between Member States. The restructuring of the European defence industry--"fewer companies-bigger market"[(68)] --before a CFSP is established, is also a particular goal of the European Commission's DG-III, the Directorate-General responsible for industry.

The EU Commission prescribes and conducts competition and antitrust policy. Specifically, DG-IV (Industry) investigates the potential anti-competitive effects of mergers on the European and transatlantic market as a whole. Article 223 of the

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[(67)] Communication from the Commission, p. 3.
[(68)] Interview with a European Commission official.

Treaty of Rome has inhibited the Commission from intervening directly in the field of government defence contracts. One of the Commission's main stated objectives is to extend the application of the Single Market to the defence sector. Even if that happens, when applying competition laws to the defence sector, the Commission will have to take into account the specificity of that sector, as well as the broader aims of a CFSP and the security interests of the member-states. There would also be tension between encouraging defence industry consolidation--which also includes mergers--and attempting to maintain competition.

The main obstacle which the EU faces in the defence field is the resistance of many states to cede to the Commission's competence in defence industrial issues, and their reluctance to become engaged in concrete actions by the EU in so scrupulously guarded areas of national sovereignty such as armaments.[69]

II. The Western European Union

The WEU is an intergovernmental organization declared by the Treaty on European Union as the defence component of the EU, which in itself has no military dimension. It is not clear when or how, according to the revised Treaty on European Union, the WEU will be integrated into the EU structure and if so, what effect that will have on its current role as the "European pillar" or bridge between the EU and NATO.

As the European defence pillar, the WEU aims at promoting a European Security and Defence Identity (ESDI), with three components: a political one (in the EU), a military one (also in cooperation with NATO), and an industrial one--to create a competitive European armaments industry.

Furthermore, the Western European Armaments Group (WEAG), which is, in the WEU framework, the principal policy forum for European armaments cooperation issues, with aims such as increased harmonization of procurement requirements, opening-up of national defence markets to cross-border competition, strengthening of the European Defence Technological and Industrial Base, and cooperation in research and development. Finally, the Western European Armaments Organization (WEAO)--a subsidiary WEU body created in November 1996--has as its ultimate goal to allow an evolutionary approach to a European Armaments Agency, responsible for common European procurement.

As an intergovernmental body acting on consensus, the WEU can hardly formulate and implement binding policies. Additionally, as noted by François Heisbourg, because the WEU "is a single-issue body, there is no room for trade-offs between defence industrial considerations and others" (which could help the progress of negotiations), as could instead now happen in the EU.

The EU and the WEU still lack an institutional master plan defining the responsibilities as well as the objectives of a European armaments policy. This absence is illustrated by the coexistence of two separate lines of negotiations. One is

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[69] At the time of writing, a new orientation (dubbed "Airbus-Plus Model") has been formulated in a study for the European Commission's DG-IA: SWP/ Taylor, T., J. Rohde, P. Schmidt. The Role of the Armaments Industry in Supporting the Preparation and Conduct of Military Operations. 20 March, 1997.

within the EU, with the POLARM working group , with representatives only from the Foreign Ministries, as the EU institution does not yet foresee the participation of Defence Ministers. On the other hand, the WEAG can work without the input of the Commission.

Recently, however, there have been initiatives to coordinate, at a wider policy level, the action of EU, WEU and WEAG at least on a number of non-binding principles, as illustrated in Title V of the revised Treaty on European Union.

III. NATO

NATO aims primarily at preserving the cohesion of the Alliance, while maintaining the operational effectiveness of its military forces and making better use of the relevant economic resources. Effective armaments cooperation contributes to these aims by being "an important means of achieving the crucial political, military and resource advantages of collective defence."[(70)]

Such cooperation is organized under the Conference of National Armaments Directors (CNAD), with four types of objectives: harmonization of military requirements on an Alliance-wide basis; interoperability; improved transatlantic cooperation; and the development of critical defence technologies, including technology sharing. Coordination is also sought in R&D, acquisition practices, materiel standardization, industrial cooperation, exchange of information on national equipment programs and other areas.

NATO--after the Berlin Summit in June 1996--is fundamentally supportive of ESDI, as a reinforcing factor for the "integrity and effectiveness of the Atlantic Alliance as a whole."[(71)] In the armaments field, two sets of interests and goals interact within the NATO framework: the drive for more intra-European armaments cooperation and an effective European defence capability--a view promoted by France and supported by most European countries, although with significant nuances on the means to improve transatlantic cooperation.

There is undeniable overlap between the objectives of the three institutions--EU, WEU and NATO. Although different priorities motivate each institution, the overlap can create opportunities for coordinated action and creation of shared advantages, while the differences might be channeled into mutually beneficial trades through negotiations.

[(70)] NATO handbook, October 1995, p. 121.
[(71)] NATO handbook, October 1995, p. 74.

CHAPTER 4: POLICY ALTERNATIVES

Criteria for Alternative Evaluation

The study will use four sets of criteria to evaluate the policy alternatives the paper will present further:

I. Do the alternatives increase competitiveness and profitability of the European defence industry? Specifically,

a) do they increase profitability (international market standards), survival, growth?
b) do they enhance affordability of major new weapons systems/programs?
c) do they lead to sustained or increased defence export shares?
d) do they lead to increased productivity (cost minimization)?
e) do they increase R&D funding?

II. Do the alternatives preserve a healthy, equitable transatlantic relationship? Specifically,

a) do they avoid strained relations, which are due to aggressive competition?
b) do they increase access of European firms to US defence markets?
c) do they increase the number of "equal partner" transatlantic cooperative projects?

III. Is there a high degree of overlap of the alternative with the goals of the major stakeholders, i.e. the governments, the defence industries and the international institutions?[72] (alternatives overlapping with goals of a larger number of stakeholders' have better chances of actually being implemented).

A. Supply

1. National Consolidation

National consolidation represents the creation of large national companies, which can later integrate with European partners through alliances, mergers and/or joint ventures.[73]

Several versions of this alternative can be distinguished:

1.1 a) pure defence companies or b) companies combining civil and military capacities;

1.2 horizontal integration;

1.3 vertical integration;

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[72] See Chapter 3 for list of major stakeholders.
[73] It is far from certain that Europe will have the luxury to pursue successively both national and European consolidation at the current pace, given the intense competition from the US industry which has almost completed its own process of consolidation.

1.4 niche dominance.

In terms of the nature of activities, two types of companies can be developed for the first version:

1.1. a) Pure Defence Companies

Pure defence companies can be formed by buying defence parts of large diversified companies. Illustrating a trend for companies to concentrate on their core and most profitable businesses and sell or seek partners for the rest, in February 1997 Siemens announced that it was looking for a partner or buyer for its defence electronics business. One of the reasons given for this decision was that "increasing competition and pressure for strategic alliances meant the business was too small to stand alone."[(74)] Siemens' decision is interpreted as a desire to sell some non-core activities to raise funds to be spent in core businesses such as power equipment, telecommunications and transport systems.

Restructuring creates potential for increased company profitability. Clustering can translate into combined export market shares and enhanced R&D funding and facilities. Concentration leads to savings from economies of scale, concentrated overheads, management and R&D. However, efficiency and productivity are contingent on the successful integration of the acquired with the parent company. Since there is no specific conflict of interests/goals in this case, the logic could prevail wherever profitable.

1.1. b) Companies Combining Civil and Military Capacities

The announced merger, in December 1996, between Boeing, world leader in civil aircraft, and McDonnell Douglas, successful mainly in fighter aircraft (but with a significant civil aircraft complement), is an example. Another is the pending merger between French aircraft makers Dassault and Aérospatiale, which should combine France's civil and military aerospace companies,[(75)] in an entity as big as DASA or BAe, Europe's two other large aircraft manufacturers. The Juppé government was hoping the new group would play a "driving role" in Europe and keep up with its main US competitors.

Profitability and affordability could increase for the merged entity as a result of size (expansion of markets, product range, combined funds) and rationalization potential between civil and defence activities. It is not clear whether defence export shares would be increased; that would depend on the composition of the new entity. The defence side could potentially benefit from the spin-on effects of civil technology as well as design and project management methods. Finally, R&D gains could also be made from the combined research capacities and increased R&D funding. Positive effects depend on whether products, technologies, production processes, company culture and management styles are similar or compatible in order to be successfully combined. Potential savings could be outweighed by coordination failure, internal

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[(74)] "Siemens Seeks Defence Partner." *Financial Times*, February 28, 1997.

[(75)] In this case, the merger also implies a partial privatization of state-owned Aérospatiale and a complementarity between military aircraft and missile production.

conflicts or complexity costs. In the longer term (ten-fifteen years) industrial giants could again be split.

In terms of overall market efficiency, civilian/defence companies could have an anti-competitive impact by increasing concentration (reducing number of competitors) in the relevant market, with all the negative effects (higher prices, less innovation, barriers to entry). Governments would generally not object invoking national security interests. However, the mergers create a whole new class of antitrust concerns for policymakers, related not to size but to the potential for unfair competition from cross-subsidization, and this is also the reason why they would be opposed by competitors, both national and international.

1.2. Horizontal integration

Horizontal integration implies the merger of companies in the same or similar fields. An example is the impending merger of Italy's two military training jet makers announced in November 1996. The partly privately owned Aermacchi is buying the smaller, loss-making Siai Marchetti from the state-owned defence group Finmeccanica. The rationale given for the deal is that Italy needs to have one single military training aircraft manufacturer--like other European countries--"to compete effectively."[(76)]

Horizontal mergers can improve profitability as well as productivity. They generally lead to cost savings from concentration of production and R&D, scale economies and elimination of duplication and overcapacity by rationalization of overlapping products. Also, affordability of major new weapons can be increased due to size, although given the financing requirements of most modern systems, affordability may still require cross-border alliances.

Horizontal integration can create strong national companies, transnational alliances and later European companies. For that reason, it is favored by most governments with those goals. Such integration has already occurred in two of the three "big powers"--Britain and Germany--while it is in progress in France. Regulatory authorities--including the European Commission, national authorities, and US anti-trust bodies--tend to view horizontal mergers more favorably than vertical ones. Still, antitrust concerns are raised because the concentration resulting from such mergers creates potential for market dominance.

1.3. Vertical integration

Examples in the US include the merger in January 1997 of aircraft maker Lockheed Martin with the defence electronics business of Loral. During the same period Northrop-Grumman agreed to buy Westinghouse Electric's defence electronics units. Finally, in July 1997, Lockheed Martin announced the takeover of Northrop Grumman in a deal that was characterized as "one of the final consolidations of the post-Cold War US defence industry."[(77)]

[(76)] "Military Training Jet Makers in Italy Set to Merge". *Financial Times*, November 15, 1996.
[(77)] "Lockheed Will Acquire Northrop for $11 Billion." *International Herald Tribune*, July 4, 1997.

Vertical mergers can increase profitability by reducing transaction costs for the parent company. They can also expand export markets by combining those of the parent with those of the acquired entity. Positive technology spill-overs or cross-fertilizations can occur in the field of technology.

Industry can profit from vertical mergers of a specific type: the purchase of electronics companies by "platform" manufacturers, which can allow electronics companies to remain profitable despite declining defence spending.

At the same time, vertical mergers have an uncertain effect on productivity, by posing the challenge of coordination and management of the merged firm's activities. Systems integration capabilities are a key element in vertical mergers. Additionally, there has to be more than modest overlap in the activities of the merging entities to justify the cost of the operation to the shareholders of both. Finally, vertical integration may not always increase competitiveness, as it may not eliminate duplication--in R&D for example--and it may also diminish competition in the home country, inviting a similar response from other states.

Governments favor vertical mergers because of the intended cost savings, translated in lower contract prices. Still, antitrust concerns remain, mainly in the form of "market foreclosure"[(78)], as is illustrated by the intense negotiations between Boeing and the European Commission on the former's announced merger with McDonnell Douglas.

1.4. Niche dominance

Small industries that possess a unique, specialized technology or capability can capture and profitably exploit a niche in the world market. For example, HSA, a Dutch manufacturer of radar and naval communication systems is a global player in its field, as a component producer and subcontractor.

Such companies usually survive and even remain profitable, maintaining or expanding their market share, provided that they can capture scale economies within their niche, that they can secure funding for their operations, that a profitable export market exists to support them, and that they are not raided by a bigger company.

Comments on national consolidation alternatives

A national consolidation policy may be profitable, but not likely to be sustainable in the long-term--excluding niche players--unless it precedes European consolidation. Governments will encourage such a consolidation to cut costs and increase efficiency/affordability, since commercial criteria begin to outweigh maximum performance in procurement decisions. Governments will also favor national consolidation in order to gain better negotiating positions at the European level.

In transatlantic terms, national consolidation can have a double effect, depending on the degree of relative protectionism or openness of European defence markets.

[(78)] Anti-competitive effect resulting from closure of a share of the market otherwise open to competitors.

European restructuring can be seen from the US as positive, creating a strong, reliable transatlantic partner. However, if European governments remain rigidly protective of their national markets, European consolidation could also be regarded as a move to exclude the US from European markets, causing possible friction. National consolidation is wanted by governments for independence, for protecting and controlling strategic high technology sectors, for preserving employment and for preparing future deals. Companies themselves are not necessarily enthusiastic about it--as the former management of French company Thomson showed.

2. European Consolidation

This concept is defined as the consolidation of the supply base directly on a European level, even before national consolidation has been completed.

2.1. Pan-European mergers

The best example comes from the civil sector, the Airbus consortium[(79)]

soon to become an integrated company. In that new entity, company functions such as design and procurement of components, production, testing and servicing, will be managed centrally.

The advantages of a "European" company include all the potential gains from horizontal integration, in addition to facilitated international alliances and outside financial participation (easier to raise financing, especially through stock market). Affordability of major weapons programs would clearly increase due to economics of size and funding. Export capacity could significantly expand; so could profits. Despite important initial subsidies, the commercial success of Airbus--capturing close to 40% of world commercial aerospace market in 1996--is testimony to the fact that once clear parameters are set, European projects can be competitive.

A potential drawback of an Airbus-type company is the difficulty of integration, and coordination, leading--at least initially--to slower, less efficient decision-making. Airbus also demonstrates the political obstacles to pan-European mergers: protectionist instincts by states, which fear to lose control of national companies. The management of companies themselves are also reluctant to share control. These difficulties are compounded by the fact that there is as yet no established regulatory/legal framework for European companies.

2.2. Sector Consolidation/Joint Ventures

In Europe there are currently several cross-border strategic alliances of conglomerates merging their subsidiaries in the same line of business. Missiles, space and defence electronics are three areas where genuine consolidation of this type can be found. For example, BAe and Matra have merged their missile activities to form Matra BAe Dynamics, a joint venture in which both companies "retain a 50 percent stake--so neither has outright control--but at the operational level, the merger has been

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[(79)] Consortium composed of Aérospatiale (France), DASA (Germany), British Aerospace and Casa (Spain).

comprehensive with a single management structure and gradual integration of the manufacturing facilities."[80] Furthermore, BAe and Rheinmetal have teamed to buy the German defence electronics company STN-Atlas, and Matra and GEC have formed Matra Marconi Space, a 51/49 joint venture. DASA and Aérospatiale have a joint venture in helicopters (Eurocopter), and also had joint ventures in satellites (European Satellite Industries) and missiles (EMSYS), which were shelved, however, in December 1996 due to lack of progress--and more specifically government funding--on various common programs.[81]

Joint ventures make commercial sense. They can be profitable for all partners, because they create cost savings through eliminating duplication--in overlapping activities--cutting overheads and concentrating production and R&D. They increase affordability of major weapons systems on the industrial level and also create incentives for respective governments to discuss future requirements in the area of the venture and possibilities for coordinating them.

Although efficient on the operational level, joint ventures can present technical complexities, such as less efficient corporate management or potential conflicts of interest when parent companies retain the right to interfere with the decisions of the joint venture. Inefficiencies and are also created by conflicting industrial and procurement policies in Europe: the French and to a certain extent, the Germans, see joint ventures as a way shoring-up a pan-European defence industrial base with the potential to keep up with the US industry; the British believe in a broader, transatlantic zone of arms-making cooperation.

2.3. Joint Ventures Resulting from Joint Procurement

Examples include the Horizon frigate program (Britain, France and Italy) and the EF-2000 (Britain, Germany, UK, Spain). Joint ventures are likely to increase affordability of major weapons systems which are too expensive to be undertaken by one nation alone. A country that does not cooperate, will either have to pay a very high cost, buy from the US or manufacture under license, with the dependence that entails. However, joint ventures are usually more expensive than national projects because of the juste retour principle that each country's work-share has to reflect the size of its investment. Also, conflicting specifications increase the cost of the project because of the need for several versions for each user. Furthermore, while governments negotiate specifications, industry has to finance design and development, which usually makes producers either reluctant or unable to undertake such projects. Finally, governments are more hesitant to commit to such collaborative ventures, because they cannot guarantee financing, due to lack of multi-annual funding procedures and means.

Critical Issues for The European Alternatives

European defence industrial integration could offer some leverage with which to try to secure improved levels of access to the US market,

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[80] Wiener, Barnaby. "European Defence Consolidation-Untangling the Web". Global Securities Research and Economics Group, Global Fundamental Equity research Department. Merrill Lynch, Pierce, Fenner & Smith Ltd, June 1997.
[81] Ibid.

by enabling European governments to act as effective interlocutors with the US on collaborative programs--having one voice;

by creating companies better able to compete in both domestic and global markets.

This requires simultaneous action on the procurement level (coordination of disparate domestic source preferences at a European level) which could lead to enhanced ability to negotiate measures for reciprocal opening of the transatlantic defence market.

Timing is crucial. The US industry is consolidating at a rapid pace. For the European industry to compete on the global market, restructuring, integration and consolidation has to take place fast.

3. Project-Specific Transatlantic Cooperation

US-European alliances and joint ventures on specific projects through agreements between industries or governments are not very common and they usually involve US primes and European subcontractors.

Transatlantic cooperation can increase the profitability of European companies, which can take advantage of the more advanced technologies and efficient production processes of their American partners. However, the US government requires foreign weapons, to be manufactured at home by an American prime contractor. Thus, European companies have always been subcontractors/component suppliers, even when they brought the core technology to the table. Also, European companies have had to purchase US subsidiaries in order to operate as US companies (GEC acquired Cincinnati Electronics and Lear Astronics; Rolls Royce purchased Allison). The fact that these cooperative projects did happen indicates that ultimately they were profitable for the European partner.

The US concept of "teaming" project-specific relationships is conflicting with the European preference for "banding"[(82)] , that is more long-term formal structures. Alliances with much smaller and less technologically advanced European partners are not very attractive to US industries. Large American defence conglomerates such as Lockheed Martin are likely to seek entrenchment of their domination in the domestic market, as well as intensify competition in global market. They will have little incentive for cooperation when already enjoying good share of US and good access to fragmented European markets.

Some change can be seen in the attitudes of the US defence community, in terms of "a growing acceptance of the unseen dependence of the US on many sub-components, particularly in the electronics sector",[(83)] according to Sir Geoffrey Pattie, Chairman of GEC Marconi. Also, the Pentagon is leading an effort to leverage the commercial

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[(82)] "Teaming" is a standard practice in the US concerning cooperative production, where one firms serves as a prime and lead contractor, while other team members function as subcontractors in a specific project in an agreed way. (definition taken from W. H. Mott. "Transatlantic Defence-Industrial Collaboration. " *RUSI Journal*, Spring 1991). "Banding" is again a US term referring to long-term partnerships with firms of complementary technologies, products or markets, in some formal structure, rather than loose ad-hoc arrangements (*RUSI Journal*, Spring 1991).

[(83)] Speech to RIIA Conference on "European Defence Industry in the Global Market", May 21, 1996.

industrial base in order to cut the costs and time taken in developing new systems. Shifts from US military-unique standards to international quality standards are making it easier for foreign companies to bid for US contracts. Finally, the "Buy America" provisions have been eased recently[84] , although concrete effects still remain to be seen.

Using NATO as a framework for transatlantic defence cooperation could create technical, operational or financial benefits, but such collaborative projects have generally been more costly, involving long, complicated negotiations, complex management structures, and sacrificing operational and technical benefits for political accommodation. Moreover, they have been hostage to sudden congressional or Department of Defence decisions, leading either to cancellation or replacement by "black" programs or even to protracted obstructionist tactics against final procurement (as in the cases of the Beretta pistol or the ADATS mobile air defence system).

4. Intra-Nato Common Defence Market

Such an alternative would involve permanent transatlantic mergers and more balanced alliances and free trade in defence equipment among NATO partners. Increased emphasis within NATO on multinational forces will require allies to achieve far higher levels of materiel standardization and equipment interoperability than in the past. Effective armaments cooperation will play a critical role in meeting these new military requirements. This cooperation could arise on the procurement side, but could most probably expand to the areas of defence trade and competition within the Alliance.

Based on the aim to liberalize trade and to promote an integrated transatlantic industrial and technological base, this process could be the result of industry initiatives leading the way, with government role consisting mainly of creating the legal, political and financial environment for collaboration. As an example, a Code of Conduct in defence trade, would be a political commitment by NATO members to begin to reduce long-standing barriers to defence trade among Alliance members.[85] This could be a first step towards the goal of more open and competitive defence markets, by providing the framework for sustained dialog on defence trade issues within NATO.

The size of its defence budget has allowed the US government to pursue a policy of self-sufficiency (to protect security, high technology base, jobs). During the Cold War, defence exports have been more a foreign policy tool than an economic necessity. It is increasingly recognized, though that no nation, not even the United States, can afford to support an independent, full-spectrum defence industrial base.

The absence of trade barriers means access to new markets, cooperation and collaboration, larger production runs, economies of scale, increased competition and more cost-effective products for customers. However, free trade also exposes national

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[84] Paul Kaminski, Under-Secretary for Acquisitions under Secretary of Defence Bill Perry, has decreed that the US services cannot exclude foreign companies for reasons of domestic protection or mobilization base reasons on contracts over $50 million unless he has given prior approval. He has also emphasized the Foreign Comparative Test Program.

[85] Beard, Robin. "NATO Armaments Cooperation in the 1990s". NATO's Sixteen Nations, No. 3/93.

industries to market forces, with the productivity pressure this implies. Achieving the efficiency gains of free trade in a defence will involve the difficult and slow process of eliminating most US barriers to trade, both formal ("Buy America" legislation, "NOFORN" classification[86], technology transfer restrictions), and informal ("iron majors"[87], Congressional reviews). International programs that take defence dollars overseas are unpopular with the Congress, American public opinion and the Pentagon. Opening up the European market will be hard because although the European Commission wants it, both governments and especially European industrials fear domination by many cheaper, better quality, high technology US defence products, and therefore prefer opening the market through bilateral deals rather than competitive tenders.

B. Demand

1. National Procurement

In this case, the state purchases individually, according to its military requirements and specifications. National procurement currently takes place in all European countries. This policy allows governments to make independent decisions in matters relevant to national sovereignty and also simplifies the process of determining requirements and setting specifications. However, budgets are insufficient and shrinking, and major new weapons programs often cannot be afforded by one nation alone.

If the state buyer purchases almost exclusively from selected national industries (national champion policy), that should has a positive effect on their viability, although similar policies can keep alive inefficient national producers, decreasing the overall efficiency of the market. Besides, guaranteed national demand creates lethargic national industries with few incentives to improve competitiveness or innovation. Protectionistic policies also put significant strains on industrial relations with both European and American counterparts. Increasingly, though, shrinking budgets no longer allow governments to sustain inefficient national champions.

2. European Joint Procurement

This is the case when European governments decide to jointly procure on the basis of a common requirement. Such a process entails harmonization and standardization of defence requirements and equipment specifications among European countries. The most common form of joint procurement is that which is combined with collaborative production of the required equipment. For example, in July 1996, Britain agreed with France and Germany on the development of a new armored personnel carrier (the Multi-Role Armoured Vehicle or MRAV), in a program for 3,000 vehicles that will eventually be worth $4.7bn to industry. Part of the rationale for the program is that Europe has too many armored vehicle producers--at least seven compared to one in the US. On the industrial level, the project will put two multinational consortia into competition.

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[86] Under this regulation, the DoD is permitted to bar foreign prime contractors from bidding for US Requests for Proposals (RFPs).

[87] The term has become synonymous with the resistance among program managers in the US military toward purchasing a foreign system if there is a US option available.

Another example is again the $11bn Horizon frigate program to produce air-defence frigates for the navies of the UK, France and Italy, which has been significantly delayed due to the countries' inability to agree on the specifications of the ship's systems. The most famous example is the EF-2000 (Germany, Italy, Spain, UK), which is being delayed by rows over work-shares and funding of the work.

According to a study carried out in 1992 for the Commission into the "Cost of non-Europe in Defence Procurement", efficient joint defence procurement could result in savings of between 5 to 11bn ECU, or between 7% and 17% of total EU procurement expenditures (1990 figures).[88] Furthermore, joint procurement, by effective coordination of national military requirements, would allow European governments to be effective interlocutors with the US on collaborative programs.

The supply-side benefits of such joint programs were mentioned above. A typical obstacle is the division of the participating nations on the capabilities required by the new equipment, which derive from different national strategic needs, doctrines and procurement philosophies. This division is costly--in terms of time delays and requirement for different versions to be built--but also endangers the technical feasibility and political acceptability of the programs. Still, officials from both national governments and industries claim that the different national military doctrines are progressively converging as Europeans take part in joint operations within WEU or NATO.

3. US-European Joint Procurement

This would probably occur within the NATO framework, again implying harmonization of military requirements. NATO nations appear more ready for common procurement than in the past. According to some sources, [89]NATO could look for purchasing its own, common assets, such as a radar system or a common combat identification system, rather than rely on national assets. But for that, it will have to rely on the political will of the allied governments.

It is interesting to note that a significant proportion of instances of transatlantic joint procurement comes from UK/US cooperation, an old trend. A characteristic example is the Joint Strike Fighter, which brings together the US and Britain in a joint procurement project. Another, the teaming of British Aerospace and Lockheed Martin to bid for a $5bn contract to supply sophisticated battlefield reconnaissance vehicles for the British and US armies[90] (announced in April 1997). The UK plans to order 400 of the vehicles--code-named "Tracer"--whereas the US might buy 1200. The Pentagon and the British MoD will run a competition between two opposing consortia combining US and British contractors.

Common US-European procurement would certainly strengthen transatlantic ties, particularly security and trade relations. It would be profitable for the European partners who could benefit from the technological excellence and quality of American products, while obtaining value for money. The profitability and viability of European

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[88] Communication from the Commission, p.18.
[89] "The Arms Industry: Markets and Maginot Lines". *The Economist*, October 28, 1995.
[90] "Lockheed aims at $5bn Army Contract". *Financial Times*, April 4, 1997.

firms would necessarily be affected, as they would have to become much more efficient and competitive to match up the Americans in a free market. A proposed structure which would pit each time (two) transatlantic industrial alliances against each other, not US vs. European ones, would increase competition/efficiency while protecting the existence of European firms. For the Americans, transatlantic joint procurement projects would be desirable for strengthening transatlantic political ties and for ensuring access to European markets.

The alternatives mentioned above are not mutually exclusive or incompatible. On the contrary, a variety of scenarios can derive from various combinations of supply- and demand-side alternatives.

Alternative Combinations

Matrix of Alternatives

The different potential combinations of alternatives can be placed on the following matrix. The horizontal axis of this matrix represents each combination's political feasibility (political motivations, trade-offs and costs), while the vertical, the productivity gains suggested and achieved by each policy option. The reason for this categorization is that each alternative--in order to be sustainable--should ideally satisfy two broad conditions: promote survival of the European defence industry and be politically acceptable and feasible.

Traditionally, the trade-offs between industrial productivity and political feasibility can be envisaged within the framework of the above matrix, as follows. Various combinations of the supply and demand (production and procurement) alternatives presented in Chapter 4, can be placed into the "productivity/political feasibility matrix".

	HIGH	Transatlantic common defense market	Transatlantic industrial/ procurement cooperation	?
Productivity Gains	MEDIUM		European industrial consolidation/ procurement cooperation	
	LOW			National industrial consolidation/ procurement
		LOW	MEDIUM	HIGH
		Political	Feasibility	

[The upper right--shaded--area with the question-mark represents the desired outcome, that is the long-term survival of the European defence industry.]

1 **National defence industry consolidation** in combination with **national** procurement policies is an option which, preserving the status quo, is politically feasible, and could be shown to increase productivity in the short-term. It is uncertain however, whether this option would do so sustainably in the long term, if it is not combined with the prospect of European consolidation and procurement.

2 **European defence industry consolidation** combined with **joint European procurement** is an option which is becoming increasingly common, but one has to wonder whether it does not come too late. Since the US industry has moved so rapidly with its own consolidation--with the direct and indirect support of the US Administration--Europeans might simply not be able to achieve critical mass in some important defence technology and production fields, even if they consolidate, but without making use of the transatlantic dimension.

3 In the case of **transatlantic industrial cooperation** combined with **transatlantic procurement** cooperation, as long as Europeans would be considered as anything less than equal partners of their American counterparts, this option would not be politically easy to implement (on the European side), although it might allow European companies to survive and profit as subcontractors of American companies. Finally, if market forces finally take over the global defence market--for decades protected by national governments--European firms could simply become takeover targets for American firms (aiming to keep their know-how strictly American), something which would make the European contractors' long-term survival quite uncertain.

4 Finally, an **intra-NATO common defence market**, both in armaments production and procurement, would buy time for Europeans to strike mutually beneficial deals with their American counterparts, since it would hold important markets hostage to US concessions. Such an initiative would certainly involve long series of negotiations and complicated trade-offs, but it would also offer more opportunities for mutually beneficial trades among negotiating partners. This option is by far the hardest politically, but also the most rewarding, as it could ensure the long-term survival of the European defence industry. The method and action plan to implement such an optimal combination is the object of the recommendations in the next chapter.

An important note to the discussion of the matrix is that, given the spiraling weapon development and production costs and shrinking defence budgets, in the future defence companies will increasingly compete not just on the quality of their product, but on the basis of their capacity to achieve superior productivity (dollar value added per employee hour) and to cut down costs through sound operations management techniques. This is particularly significant for European firms, given that their main competitors, US firms, are superior in productivity and operational efficiency.

CHAPTER 5: RECOMMENDATIONS FOR ACTION

Based on a combination of alternatives presented in the previous chapter, I will outline and present a set of recommendations for action towards the achievement of a more competitive European defence industry, while at the same time maintaining a healthy and equitable transatlantic relationship. Table 1 in the Appendix presents more detailed illustrations of actor responsibilities and implementation steps and under each recommended course of action.

The Grand Bargain

The proposed action plan is based on three central tenets:

I. A Transitional period of protection of European defence industries from American competition/ takeover challenge, by placing fair ownership restrictions applicable to both sides. Efforts to improve the two-way street.

II. Goodwill and political support from both European and American governments for joint ventures in every direction (intra-European, transatlantic). Governments should exhibit a stance of benign neglect in terms of letting the industry find the most profitable ways to implement such ventures.

III. Finally, **a transatlantic free trade area** (TAFTA) covering defence markets and providing mutual free market access.

1. Improvement of operational efficiency of defence industries;

2. Technology management/policy;

3. Procurement-driven reform;

4. Open market policy towards the US, but with fair and mutual ownership restrictions (only up to 20% American ownership of European companies and vice versa).

1. Improvement of Operational Efficiency of Defence Industries

Learning from the US industry model, European defence industries should increase profitability by improving operational efficiency in five key areas:

- Aggressive marketing making increased international sales/market share a key strategic objective for senior management. Governments should offer support on the political/diplomatic level.

- Labor productivity improvement measures.

- Simplified manufacturing and inventory management processes.

- Supply chain management--fewer and longer-term supplier relationships with explicit cost-reduction targets.

- Asset management--reduction of inventories by just-in-time "lean manufacturing" processes.

In the future, a large quantity of military equipment will be sold not only on its technical merits, but increasingly on the basis of price. Improved operational performance is crucial.

2. Technology policy

- Increase emphasis on commercial technologies, to benefit from scale economies and keep up with leading-edge technologies.

- Subsume technology policy within defence and security policy, with the aim of increasing European technological competitiveness. Balance R&D versus procurement expenditures.

- Insert commercial technology into defence systems--in developing new systems, MoDs and industries look to commercial markets; military-unique capabilities are developed only after it has been determined that commercial capabilities do not meet requirements.

- Increase R&D of dual-use technologies to increase the pace of innovation in defence systems.

- Concentrate on acquisitions or joint ventures with companies in the field of electronics/ Information Technology.

- Target business strategy in mergers, acquisitions and strategic alliances at increasing company value in terms of technology by: maximizing the civil/military synergies in the company's activities and increasing the value-added effect of electronic developments.

3. Procurement-Driven Reform

- The combined armed forces within each European country procure jointly.

- Common European procurement--as a result of a Common Defence Policy (as specified in the revised Treaty on European Union) and/or by effective coordination of national military requirements (and time schedules)--creates a large and stable government demand, which in turn builds pressures for industrial collaboration.

- Effective communication between government and business community and investment budgeting allows firm, reliable multi-annual orders, enabling the industry to carry out long-term planning of production and financing, and the state to benefit from reduced-price contracts.

- Governments set the requirements and let the industry choose the most efficient solutions in terms of venture type, selection of partners, production, and program management (keep industry competitive).

- Governments are the driving force behind restructuring: they encourage rationalization, first on a national and then on a European level (when joint procurement is established), by

- > concentrating key orders on largest contractors;

- > awarding contracts to cooperative programs (incentive);

- > easing anti-trust regulation;

- > opening up national markets (some countries more than others, see Table 7).

- Affordability and flexibility/multi-force usage, weigh heavier among procurement goals than optimum battlefield performance.

- Governments increase the weight given to R&D (balanced against procurement) as a percentage of total defence expenditures.

4. Open Market Policy Towards the US

European and US governments negotiate and develop--and their legislatures approve--a Transatlantic Free Trade Area (TAFTA). [(91)]

Europe pursues a policy of constructive engagement with the US. Europe needs the US as a political and business partner, as a source of technological knowledge and as an export market.

Such an important development cannot occur at once, but could most probably proceed in a number of small, gradual steps and phases. Thus, most of the recommendations that follow would require significant negotiating time and effort to be realized. Accordingly, governments endorsing the TAFTA would agree to the following action items:

- Create fora for rapprochement and discussion between industry lobbies and associations from both sides of the Atlantic.

- Coordinate guidelines for technology transfer in order to improve mutual access to technologies developed on either side of the Atlantic. Reverse burden of proof in excepting areas of vital national security concerns.

- Seek and establish partnerships both on the political and industrial level.

[(91)] It appears to be legally impossible to create a Free Trade Area for defence products only, due to WTO regulations requiring regional trade associations to comprise "substantially all trade".

- Require the US Congress as well as European governments (parliaments) to authorize waivers for some of their protective measures ("Buy American", European preference) which pose legislative obstacles to defence cooperation.

- Ensure continuity of cooperative programs by establishing guidelines and procedures for funding, including conditions and penalties for violations of those guidelines.

- Define competition policy, sanctioning mechanisms and jurisdiction to be included as part of TAFTA agreement.

- Revise Article 223 of the Treaty of Rome, to include defence products in the Single Market.

- Open European procurement market to international competition, offering equal access to the US as a gesture of goodwill.

- Restrict ownership to 20% of European/American entities respectively to protect from eventual takeovers (could be limited in time, to allow transition period).

APPENDIX

I. Study Methodology

Data Sources

- A series of interviews with:

- > officials from European governments (Ministries of Defence, Economics, Foreign Affairs);

- > executives from European defence industries;

- > representatives from research institutes for security and defence issues;

- > journalists specialized in the field of defence;

- > defence consultants.

Data Analysis

Within the framework of a standard supply-demand model of the European defence market, the author developed policy alternatives, based on identification of the driving forces and key players in that market. The policy alternatives were evaluated according to the criteria outlined in Chapter 4.

II. Glossary of Terms and Acronyms

Amraam--Advanced Medium Range Air-to-Air Missile; world-standard, developed by Hughes of the US in the 1980s.

BAe--British Aerospace.

Black boxes--the electronic components that turn "platforms" (airframes, missiles, warships) into weapon systems.

CFSP--Common Foreign and Security Policy.

CNAD--Conference of National Armaments Directors, bringing together the procurement chiefs of the 16 NATO members.

DASA--Daimler-Benz Aerospace.

DDIs--Developing Defence Industries.

DG-III--Directorate-General III (Industry) of the European Commission.

DG-IV--Directorate-General IV (Competition) of the European Commission.

EDIG--European Defence Industry Group.

EFA--Original designation for the European Fighter Aircraft, now called EF 2000 (produced by the Eurofighter consortium, which includes Germany, Italy, Spain and the UK).

EFTA--European Free Trade Area.

ESDI--European Security and Defence Identity.

ESI--European Satellite Industries.

Fmraam--Future Medium Range Air-to-Air Missile; more sophisticated missile proposed for development to British MoD.

F/A-18--Combat aircraft produced by McDonnell Douglas of the US.

F-16--Combat aircraft produced by Lockheed Martin of the US.

GEC--General Electric Company (UK).

MoD--British Ministry of Defence.

POLARM--Politique d'Armement Européenne; EU ad-hoc working group.

Systems Integration--The process of integrating all the complex components that go into modern weapons and integrating different weapons systems so that they work properly together.

III. List of Tables

TABLE 1

Specific (illustrative) Implementation Steps

RECOMMENDATIONS	NATIONAL GOVERNMENTS	DEFENCE INDUSTRIES	INTERNATIONAL INSTITUTIONS	
			EU	WEU NATO
Improvement of industrial operational efficiency				
Aggressive marketing	-Promote defence exports through diplomatic means, such as bilateral talks (US example).	-Develop and closely pursue aggressive international marketing strategy; -target new lucrative markets e.g. Central/Eastern Europe; -lobby governments for support on political/diplomatic level.		
Supply management		-Outsourcing; -centralized purchasing.		
Technology policy				
Increase emphasis on commercial	-Avoid setting military-unique	-Increase research on dual-use technologies;	-Organize network for	-Organize and coordinate

technologies	specifications when requesting new systems; -increase R&D funding for dual-use technologies.	-pursue cooperation with companies in the civil sector, where potential synergies exist.	consultation and cooperation of national and Europe-wide research centers; -increase R&D funding for dual-use technologies.	transatlantic networks of consultation and technology-sharing.

RECOMMENDATIONS	NATIONAL GOVERNMENTS	DEFENCE INDUSTRIES	INTERNATIONAL INSTITUTIONS		
			EU	WEU	NATO
Procurement-driven					
Combined armed procurement	-Make combined forces procurement a standard procurement procedure; -establish regular tions among armed staff on actual-military requirements equipment -increase % of R&D on multi-task, purpose equipment; -consult with possible solutions.	-Increase R&D on multi-purpose -suggest solutions to forces procurement			
Common European procurement	-Assess needs and specifications in with European -synchronize defence reviews; -consult with multi-role equipment.	-Suggest solutions to and joint procurement		WEAG: of and	

RECOMMENDATIONS	NATIONAL GOVERNMENTS	DEFENCE INDUSTRIES	INTERNATIONAL INSTITUTIONS	
			EU	WEU NATO
"Open market" towards US				
(TAFTA)	- Negotiate and sign TAFTA; - Encourage foreign investment within established limits.			
Seek partnerships	Conduct government-level US-European bilateral talks on defence trade and more general trade issues.	Develop business strategy for "winner" cross-border alliances: -set objectives; -define partner selection criteria; -choose strong partners; -define alliance organization and management	WEAG serve as forum for defence industry and government discussion and consultation.	Forum for US/ European consultation to promote armaments cooperation.

		principles.	
Revise Article 223 of the	Accept revision of list of	Support rather than lobby	EC/DG-III:
Treaty of Rome	excluded products--to	against Article 223	-Revise/reduce list
	promote open defence market.	revision.	of excluded products; -set clear guidelines for list interpretation; -provide for transitional phase of "protected" market.

RECOMMENDATIONS	NATIONAL GOVERNMENTS	DEFENCE INDUSTRIES	INTERNATIONAL INSTITUTIONS		
			EU	**WEU**	**NATO**
Create fora for associations	Encourage and government associations.	-develop contacts with other -develop with one bargaining	Organize of	Forum for	Forum for
Define	Agree to framework policy				

TABLE 2

World's Top Defence Companies, 1995

Company	Country	Defence Revenues ($bn)
1 Lockheed Martin[92]	United States	19.39
2 Boeing/McDonell Douglas	United States	17.90
3 Raytheon/ Hughes Electronics/ Texas Instruments	United States	11.67
4 British Aerospace	Britain	6.47
5 Northrop Grumman	United States	5.70
6 Thomson	France	4.68
7 Aérospatiale/Dassault	France	4.15
8 General Electric Co (GEC)	Britain	4.12
9 United Technologies	United States	3.65
10 Lagardère Group	France	3.29

Source: "Raytheon's rise". The Economist, January 18, 1997.

[92] After the announced merger with Northrop Grumman, Lockheed Martin's defence sales rise to $25 billion.
Source: "Lockheed Gobbles Another". *The Economist*, July 5, 1997

TABLE 3

Defence Industry Concentration

Country	Number of industries	Percentage of total sales 1993	Percentage of total sales 1994	Arms sales 1994 ($bn)
USA	43	61.5	60.2	89.3
Western Europe	*38 from which:*	*30.9*	*31.5*	*46.6*
France	11	12.0	11.3	16.7
Britain	11	9.3	10.5	15.6
Germany	8	5.3	5.0	7.4
Italy	2	1.7	1.8	2.7
Sweden	3	0.9	1.2	1.8
Switzerland	2	1.0	1.0	1.4
Spain	1	0.7	0.7	1.0
Other OECD countries	*11 from which:*	*4.9*	*5.5*	*8.2*
Japan	9	4.5	5.1	7.5
Canada	2	0.4	0.5	0.7
Developing countries	8 from which:	2.7	2.8	4.1
Israel	5	1.7	1.7	2.5
India	2	0.6	0.6	0.9
South Africa	1	0.4	0.4	0.6
	100	100	100	148.1

Source: SIPRI Yearbook 1996.

TABLE 4

Comparison of the number of different armaments produced in Europe (then 12 EU members plus the 5 EFTA countries) and in the US Situation as of June 30, 1993

Category	Number of armaments Europe	USA	European producer countries
Main battle tank	4	1	UK, F, G, IT.
Armoured infantry fighting vehicle	16	3	F(3x),G,UK(2x),IT(3x)SW,GR(2x),SP(2x),AUCH.
155mm howitzer	3	1	F,G,UK.
Fighter bomber	7	5	F(2x),UK,SW,G/IT/UK SP/G/UK/IT.
Ground attack/trainer	6	1	UK,SP,IT(2x),IT/BRA[(93)] G/F.
Strategic bomber	0	1	
Heavy transport aircraft	1	3	IT.
ATK helicopter	7	5	F(2x),UK,IT(2x),G/F.
Transport helicopter	2	4	F/G,IT/UK.
Assault rifle	7	1	B,F,UK,SP,G,IT,AU.
Man launch AA missile	4	1	F,UK(2x),SW.
Anti-ship missile	9	3	F(2x),UK(2x),IT(2x), NOR,SU,G.
Air-to-air missile	8	4	F(3x),UK(2x),SW,IT (2x).
Surface-to-air missile	3	3	UK,F/G,IT.
Anti-radiation missile	3	3	F,UK,IT.
ATK missile	8	5	F/G(2x),UK,IT/BRA, SW,SP/USA.
Anti-submarine torpedo	9	2	UK(2x),SW(3x),IT/G, F(2x).

[(93)] BRA=Brazil

Frigate	11	1	F(3x),UK,G(3x),NL,SPDK,IT.
Minesweeper	4	2	F/NL/B,UK,G,IT.
VSTOL & hel.carrier	3	1	UK,IT,SP.
Aircraft carrier	1	1	F
Cruiser/destroyer	0	1	
Diesel submarine	7	0	G(3x),IT,NL,UK,SW.
Nuclear-fuelled sub.	2	1	F,UK.
TOTAL	125	53	

Source: Dossiers du GRIP, Brussels, 1994, pp. 26-7.

TABLE 5

Future potential - The increasing added value of electronics

Sector (examples)	Electronics content today	Trend
Fighter aircraft	50-60%	
Special-purpose aircraft	70-80%	
Ships	60%	
Air-defence systems	70-80%	
Guided missiles	60%	
Satellites	50%	

Systems competence is determined more and more by expertise in electronics.
Source: Aerospace magazine, Daimler-Benz Aerospace, No. 2/96.

TABLE 6

Military Expenditure, in constant price figures, 1985-1994
(Figures are in US $m, at 1990 prices and exchange rates)

	1985	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**
North America										
Canada	11,014	11,233	11,488	11,631	11,536	11,547	10,413	10,482	10,433	10,151
USA	313,307	335,048	331,215	323,860	320,427	306,170	268,994	284,116	269,111	252,358
Europe										
Belgium	4,789	4,984	5,017	4,806	4,732	4,644	4,579	3,760	3,571	3,549
Denmark	2,613	2,520	2,662	2,714	2,684	2,650	2,697	2,648	2,653	2,608
France	39,918	41,081	42,284	42,243	42,793	42,589	42,875	41,502	41,052	41,235
Germany	38,824	39,889	40,570	40,242	40,146	42,320	39,216	37,697	33,486	31,258
Greece	4,524	3,861	3,856	4,078	3,819	3,863	3,663	3,808	3,716	3,778
Italy	19,538	20,187	22,699	24,113	24,304	23,376	23,706	23,004	23,187	23,492
Luxembourg	74	78	89	101	93	97	107	111	102	110
Netherlands	7,350	7,461	7,598	7,561	7,636	7,421	7,161	7,088	6,548	6,263
Norway	3,339	3,234	3,442	3,279	3,369	3,395	3,293	3,569	3,385	3,523
Portugal	1,336	1,504	1,563	1,738	1,824	1,875	1,925	1,977	1,914	1,948
Spain	9,058	8,827	9,995	9,345	9,668	9,053	8,775	8,113	8,823	8,141
Turkey	4,011	4,532	4,,316	3,802	4,398	5,315	5,463	5,747	6,355	6,173
United Kingdom	43,549	42,867	42,561	40,646	40,792	39,776	41,087	37,141	36,312	35,055
Austria	1,644	1,726	1,612	1,546	1,622	1,542	1,550	1,507	1,502	1,513
Finland	1,826	1,975	1,989	2,085	2,058	2,116	2,447	2,499	2,356	2,167
Ireland	556	571	533	530	525	596	623	617	592	613
Sweden	5,234	5,387	5,499	5,573	5,762	5,909	5,540	5,392	5,273	5,260
EC Total	180,833	182,921	188,527	187,321	188,422	187,827	185,951	176,856	171,087	173,163

Source: SIPRI Yearbook 1995, pp. 440-441.

TABLE 7

Proportion of Cooperative Programs in Europe (percentages)

Country	Exclusively national programs	Cooperative programs	Imported equipment	Total
France	81	15	4	100
Britain	80.6	10.5	8.9	100
Germany	10	75	15	100
Italy	30	50	20	n.a.
Spain	55	12	33	100
Sweden	70	15	15	100

Source: C. Serfati. Les Industries Européennes d' Armement. Paris: La documentation Française, 1996, p. 59.
Note: The data on Italy are derived from an interview in July 1997 with an Italian defence analyst.