

Developments in the Major Arms Producing Countries, 1990-2008

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The global defence industry has undergone serious restructuring since the end of Cold War. Military production has increasingly become concentrated in the hands of fewer but larger defence firms. The 1990s also saw mergers and acquisitions within the defence industry across the national boundaries. The resulting mega-defence firms especially in the United States dominate several sectors ranging from aerospace to shipbuilding to land systems. The European arms industry, on the other hand, has been under stress as the national markets are too small to support a heavily rationalised market. This has resulted in trans-national companies or joint venture across the European Union to remain globally competitive. Lately, the collaboration between the European and American arms manufacturers has also been on the rise.

The past two decades have been a rollercoaster for the global arms industry. In the early 1990s, the collapse of Communism and the end of the Cold War resulted in major cuts in defence spending. Global defence expenditures fell by nearly 35 per cent from 1989 to 1999. Defence spending as a percentage of global GNP fell by nearly half, from 4.7 per cent to 2.4 per cent, while worldwide per capita spending on defence dropped from US \$254 to \$142. In addition, the size of the world's armed forces declined from 28.6 million in 1989 to 21.3 million in 1999. In the United States (US), defence expenditures fell 28 per cent in real terms during the 1990s.

The impact on the global arms industry was undeniable. The so-called 'peace dividend' left the world with considerably more capacity and capability to develop and produce arms than it either needed or could reasonably afford. This state of affairs, in turn, forced a major rationalisation and consolidation among leading arms producers. Among the large advanced arms producing countries; e.g., US, Britain, and France; hundreds of thousands of defence workers were made redundant and untold numbers of communities were adversely affected as military factories have cut back production or even closed down. Furthermore, the post-Cold War era witnessed an unprecedented restructuring of the arms industry, both on a national and on a

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global scale. The number of major defence firms contracted dramatically as defence firms have either merged or purchased the military assets of other corporations exiting the defence business. Consequently, armaments production became increasingly concentrated in the hands of fewer but larger defence firms, as these companies either merged or acquired the military assets of other corporations exiting the defence business altogether. In particular, the 1990s saw the emergence of several mega-defence firms: Lockheed Martin, Northrop Grumman and Boeing in the US, for example, and BAE Systems, Thales and DASA in Europe.

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As domestic arms markets shrank, the overseas market grew in importance. European defence firms are highly dependent upon foreign markets. By the start of the twenty first century, companies such as BAE Systems (United Kingdom), Thales (France), Dassault (France) and Finmeccanica (Italy) were earning up to 75 per cent of their revenues from foreign sales. In the US, several major weapons systems, such as the F-15 and F-16 fighters and the M-1A1 main battle tank, were being produced solely for export. For many firms, foreign sales were no longer a supplemental form of income, they were increasingly critical to the health of the defence industrial base.

Also during the 1990s, these mergers and acquisitions also began to cross national boundaries, as these emerging defence giants decided to 'go global' in seeking out new partners and subsidiaries. The effects of these developments are still being felt, as governments must wrestle with their implications for national security, domestic economic growth and development, and international relations.

United States

The consolidation and rationalisation of the US defence industry since the end of the Cold War has left it much more adept than its European counterparts, when it comes to innovating and competing in the global arms marketplace. During the 1990s, the US defence sector downsized considerably, closing down excess production facilities and eliminating hundreds of thousands of positions from the workforce. At the same time, several large-scale mergers and acquisitions (M&As) took place within the US defence industrial base, resulting in the emergence of five mega-defence companies: Boeing, Lockheed Martin, Northrop Grumman, Raytheon and General Dynamics. These M&As have greatly reduced competition in the US defence sector and concentrated armaments production in the hands of just a few, very large defence firms.

Whereas in the past, most US defence firms were engaged in just one or two areas of armaments production, today's mega-defence companies are active in several different sectors, ranging from aerospace to shipbuilding to land systems. Moreover, each mega-company has expanded its reach into the all-important information-technologies sector and is now as engaged in electronics and software as in military aircraft or armoured vehicles or naval shipbuilding.

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Consequently, these five mega-firms now control more key US military programmes and have access to more US Department of Defence (DoD) R&D funding – particularly important as US expenditures for military equipment have increased dramatically since the turn of the millennium; US spending on procurement and R&D more than doubled between FY 2000 and FY 2008, from \$116 billion to \$255

billion in recent years. Whereas in FY 1990, the ten largest US defence contractors accounted for only 28 per cent of all prime contracts, in FY 2006, the top five alone accounted for 28.5 per cent – in addition to receiving 56 per cent of all DoD funding for RDT&E.

As a result, just a handful of US defence firms dominate the global arms industry. Four of the world's top five defence companies, and seven of the top ten, are American, according to Defence News; only BAE Systems (which in 2008 ranked number three in the world, up from number four in 2003) is as large in the defence business as these firms. In addition, these US mega-defence companies have emerged as critical 'lead systems integrators', capable of managing very large, complicated acquisition programmes that require amalgamating several disparate pieces of military hardware (and, increasingly, software) into a single functioning 'system of systems'. As such, these firms can offer themselves as 'one-stop' shops for customers seeking solutions to highly complex military requirements.

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US arms manufacturers dominate in two of the world's most critical arms markets—at home and in the global arms export business. The US defence market accounts for almost half of all the world's arms purchases and it is one of the few arms markets that have grown over the past decade. At the same time, US defence firms easily capture more than 90 per cent of all defence contracting in its home market. This large-and admittedly highly protected-national market gives US defence firms a solid base of money-spinning procurement

contracts and lucrative R&D funding from which to expand into the global arms market.

In addition, the US defence industry dominates the global trade in off-the-shelf arms sales, regularly capturing 40 per cent to 50 per cent of a worldwide arms market worth around \$60 billion in 2007. Despite this predominance, the major US defence firms actually have a low dependency upon on non-US markets for their overall incomes. In 2002, for example, overseas military sales accounted for only 15 per cent of Lockheed Martin's total revenues, 9 per cent of Boeing's, 10 per cent of General Dynamics' and 8 per cent of Northrop Grumman's (2003 revenues). Raytheon received 21 per cent of its income in 2002 from foreign sales, although this likely included commercial deals as well.

Ironically, therefore, US firms, almost as a sideline effort, are confronting European arms producers in third-party markets that are essential to their survival. The US defence industry is under much less economic pressure overall to aggressively look for business beyond its borders, and yet it leads the global arms export business. US arms producers have considerable influence when it comes to foreign arms sales. Large domestic production runs permit it to sell systems overseas at very competitive prices. It can also offer very attractive industrial and technological inducements (i.e., offsets and coproduction rights). The US government can use its superpower status to pressure allies to 'buy American'. In addition, the US defence industry's 'deep pockets' that is, its ability to access considerable R&D funding from the US Defence Department – ensures that it will remain on the technical-industrial cutting-edge, and that it will be able to develop and manufacture military systems that will be very attractive, both technologically and financially, on the international market.

Overall, the US defence industry has profited greatly from the uptick in defence spending since the September 11, 2001, terrorist attacks. As already noted, DoD spending on equipment and R&D more than doubled between FY 2000 and FY 2008, and these statistics do not include the roughly \$700 billion in supplemental spending for the Global War on Terror (GWOT) and the wars in Afghanistan and Iraq – some of which has gone to US defence contractors in the form of replacement equipment, spare parts, maintenance, repair, and overhaul (MRO), etc. The open question is whether US defence spending will be static or even contracted in the new Obama administration; already, there are indicators that future supplemental budgets are unlikely. The US defence industry may have had its biblical 'seven fat years', and could be

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looking at a significant trough in new spending, particularly as certain programmes, such as the F-22 fighter and the C-17 transport plane, soon reach the end of their production runs. Consequently, the US defence industry may find the overseas arms market increasingly appealing. That, in turn, could mean that in the future US defence firms may be increasingly ready to offer potential foreign buyers incentives such as industrial participation ('offsets'), technology transfers, and even foreign direct investments.

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Western Europe

The European arms industry has long been under strain. In recent years, however, pressures on the European defence sector have increased as the US defence industry—Europe's largest competitor in this area—has widened the economic and technological gap. This disparity has been further exacerbated by the process of US defence transformation, which threatens to drive this trans-Atlantic wedge even wider. Increasingly, the European defence industry faces a fundamental challenge of maintaining its economic and technological competitiveness.

Making matters worse, European defence spending fell significantly after the Cold War. Total defence spending for the six largest arms producing countries in Europe (United Kingdom, France, Germany, Italy, Spain, and Sweden) fell 12 per cent between 1991 and 2004 (as measured in constant 2003 US dollars). Defence R&D—the 'seed corn' for transformational technologies and systems—was hit particularly hard. According to the Aerospace and Defence Industries Association of Europe (ASD), R&D spending by the EU member states on military aerospace fell by 47 per cent from 1999 to 2003, from €5.7 billion to €3 billion (\$3.9 billion). Since then, defence spending has been mostly static.

Moreover, the US continues greatly outspends Europe when it comes to defence. According to statistics put out by the European Defence Agency (EDA), the EU, as a whole, in 2007 spent €41.8 billion on equipment and R&D. In comparison, US expenditures on equipment and R&D for the same year totalled approximately €154.9 billion. Washington spent more than three times on equipment as the EU combined and almost six times as much on R&D. In addition, the share of the US defence budget going to procurement and R&D is

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nearly two-thirds as large again as Europe's, i.e. 34 per cent of all military expenditures versus 20.5 per cent for the EU combined.

As with the US, the European defence sector underwent its own radical downsizing, eliminating roughly half of its workforce – approximately 450,000 jobs – during the 1990s; within just the aerospace industry, the number of workers employed in defence production fell from 276,000 in 1990 to 148,000 in 2003. At the same time, Europe also witnessed considerable consolidation within national defence industrial bases, resulting in the rise of 'national champions dominating armaments production in each country': BAE Systems in Britain, Aerospatiale-Matra in France, DASA in Germany, Finmeccanica in Italy, and Saab in Sweden.

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Nevertheless, strictly national industrial adjustments, such as consolidation and rationalisation, turned out to be inadequate solutions. National markets are too small to support even a heavily rationalised defence industry. The escalating financial and technological demands of state-of-the-art arms production, declining defence spending at home, and stiffening competition from US defence firms have increasingly driven European arms manufacturers to look beyond their own national borders in order to leverage technology breakthroughs, rationalise military R&D and production, increase efficiencies and economies of scale in arms production and penetrate foreign markets. Internationalising their operations, therefore, has become more or less a simple matter of economic survival for Europe's defence firms, while European governments and militaries need to collaborate with each other in order to achieve any significant technological synergies or cost-efficiencies.

Consequently, Europe's defence sector is generally pursuing internationalisation—both on a regional and, increasingly, on a global scale—as a core strategy. Since the end of the Cold War, the European defence industry has increasingly engaged in pan-European solutions to pan-European problems of economic and technological competitiveness, particularly when it comes to critical, next-generation technologies and military systems. The past decade has seen the European defence industry expand – on a regional, cooperative basis – into programme areas that were previously ceded to the US industry, such as strategic airlift, advanced air-to-air missiles, space systems, unmanned systems, standoff precision-guided weapons, and missile defences. Hence, European arms production is increasingly concentrated in transnational companies or joint ventures, such as the European Aeronautic Defence and Space Company (EADS – created through the merger of DASA, Aerospatiale Matra and CASA of Spain), MBDA (an Anglo-French-Italian joint venture

missile company, which additionally owns minority stakes in two German missile firms), and Astrium (a Franco-German-Spanish satellite joint venture company). As such, in the case of Europe, the regionalisation of arms production can be viewed as a transnational extension of the overall consolidation process taking place within the defence industry.

In addition, Europe's leading defence firms have increasingly expanded beyond Europe and the trans-Atlantic relationship in order to create a truly global network of ownership arrangements, international joint ventures and other cooperative approaches. In this regard, European arms manufacturers are much more globalised than their opposite numbers in the US, particularly when it comes to the so-called second-tier arms producing states in Africa, Asia and Latin America, and increasingly, when it comes to reaching out to defence industries in Russia and China.

As the European defence industrial base continues to regionalise and internationalise its operations in order to remain globally competitive, there is growing concern that this process will reinforce a 'Fortress Europe' approach to armaments production that, in turn, will be to the detriment of the US defence industry. The new European Defence Agency (EDA), for example, in working to strengthen the European defence technology and industrial base, is generally regarded as inwardly focused on Europe's domestic defence industrial challenges.

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Despite the prevailing currents driving European defence firms to seek supranational solutions to the challenges of technological and economic competitiveness, this process is by no means a predetermined or clear-cut process. For one thing, protectionist and parochial interests still exert very powerful influences on national decision making when it comes to arms procurement and production. Governments continue to give considerable thought to national requirements when it comes to economic benefits (jobs, industrial participation, export potential, keeping public monies from flowing out of the country), security of supply (self-sufficiency, reducing a country's vulnerability to foreign sanctions or embargoes), and technology (maintaining the national defence technology base).

In addition, many European arms producers remain keen on building bridges to the US defence industry. The US is easily the world's single-largest arms buyer, easily accounting for around half of all worldwide defence purchases, and no European firm is prepared to write off the US market completely.

Consequently, many of Europe's arms manufacturers, particularly in Britain, Sweden, Spain, and Italy, have laboured hard in recent years to enter the US arms market or to partner with US firms on export-oriented products. BAE Systems has particularly expanded its North American activities in recent years, and since the late 1990s the company has acquired more than a dozen US defence firms. Most recently, BAE Systems bought United Defence Ltd. (UDL) and Armor Holdings, on the expectation that it will earn significant revenues servicing, maintaining, and upgrading armoured vehicles for the US military. Finally, BAE Systems is the only Level One partner in the US-led F-35 Joint Strike Fighter (JSF) programme. Consequently, BAE Systems does more business in North America (£6.4 billion worth of sales in 2007) than in the rest of Europe (£2.6 billion), or, indeed, even the United Kingdom (£3.4 billion)! North America, in fact, has become the company's single largest market, accounting for 41 per cent of all corporate income in 2007 and making BAE Systems the sixth largest contractor to the US Department of Defence.

Conclusion

In general, both the arms industries in North America and in Western Europe – home to perhaps 75 per cent of all global armaments production – have recovered somewhat from their respective nadirs in the 1990s. That decade was a period of particular upheaval and uncertainty, but it was also one of fundamental transformation. Military spending cuts forced a considerable restructuring and reorientation among the leading arms producing nations, in the form of rationalisation, consolidation and globalisation. Consequently, when defence spending rebounded in the first decade of the twenty first century, or, as in the case of Western Europe, as many large and long-anticipated military programmes finally entered into production (e.g., the Eurofighter Typhoon, the Rafale fighter jet, the NH-90 helicopter, all of which had their start in the 1980s or 1990s), industry was much better positioned – that is, 'leaner and meaner' – to take advantage of the situation. In general, therefore, the beginning of this century appears to be one of stabilisation and growth – even boom-times – for the global arms industry.

The question today is, as we enter the second decade of the twenty first century, will the arms industry in these countries over resemble more the 1990s or the 2000s? Will the expansion continue, or is a contraction sure to follow, given the highly cyclical nature of this particular business sector? And in any event, bust or boom, how will the Western arms industry evolve and transform, in terms of size, structure, ownership? Those are the questions that will shape and guide the future direction of the defence industry in the West. 