The Arms Trade as Illiberal Trade

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While free trade quickens the pace of world economic integration, the arms trade remains an anomaly. Protected from the rules and enforcement of new institutional regimes, arms sellers are free to refuse transfers to any party while arms buyers may extract commitments of 100% or more in countertrade or buy only from indigenous industry. Yet the world arms market and the defense industries that supply it are markedly more international today than they were a decade ago. Illiberal trade practices in this unique market have created a complex web of state-to-state, firm-to-state and firm-to-firm relationships that make it difficult to analyze the overall security and economic consequences of the arms trade in the post Cold War era.

In this paper, I chart the proliferation and changing nature of relationships involved in international weapons trade, which I call “diagonalization.” I then postulate a set of economic and security outcomes that appear to be linked to illiberal arms trade practices and to the phenomenon of offsets in particular. These include national hyper-specialization, competitive disadvantages for non-arms sectors, the transformation of defense contractors into trading companies, faster weapons proliferation and an exacerbation of the one-team arms race, world over-spending on arms and the rise of an international military industrial cartel. I make the case for each of these and marshal what evidence I can on its significance, drawing on secondary data, published and trade association accounts and interviews with participants in the process.

In the present environment, most nations and firms participating in or tolerating offsets are uncertain as to whether they gain or lose from them in the aggregate and are, in any case, skeptical that the trend toward illiberalism can be reversed. I argue that the damage from these forms of illiberal arms trade practices is under-estimated, severe and increasing. Concerted multi-lateral, and even unilaterial, actions to curtail such practices by major market participants are in order.

I. The Diagonalization of the International Arms Market

Up through the end of the Cold War, the major protagonists - the US, Soviet Union, Britain, France, Germany, Italy - possessed cradle-to-grave defense industries which procured supplies within a single nation, engaged in research and development for a single government and sold the great bulk of their output and services to that same government. The arms trade, while not unimportant, accounted for a relatively small share of the output of any nation's military industrial complex and was largely conducted for strategic reasons - to bind client states to the major protagonists in particular. Relationships among actors were predominantly "horizontal" - between sellers and buyers in a single national market (Figure 1). While more complex than this – North-South and Trans-Atlantic trade has a long history, including offsets – the domestic market formed the major source of demand for most prime contractors up through the end of the Cold War (Keller, 1995: 28-9; U.S. Congress, Office of Technology Assessment, 1991: Ch. 1; Neuman, 1985).
The arms trade shrunk substantially from 1989 to 1996 (Gold, 1999). As world arms demand plummeted by 40%, the locus of production, especially of leading edge weaponry, shifted from the former Soviet states in favor of the US in particular (Table 1). European and second tier developing countries abandoned some weapons lines in favor of purchasing American systems that enjoyed the deep R&D pockets of the federal government and superior economies of scale. Even though the absolute value of American arms exports fell, the share of American firms’ output sold internationally rose significantly, and in some weapons lines reached 100% - current sales of Lockheed-Martin’s F16, for example. In a related implosion of large defense contractors, some firms merged across national borders, especially in Europe but also across the Atlantic (Markusen, 1999a, 1999b, 2000).

Since 1989, then, the horizontalized market changed dramatically (Figure 2). For one thing, partnerships between firms — some mergers, some joint ventures — have created “vertical” bonds between large companies, such as the Lockheed-Martin/British Aerospace teaming on the joint strike fighter, the new partnership of Raytheon and the French Thales (recently Thomson-CSF) and above all the ambitious EADS (Europan Aeronautic, Defence and Space Company), formed of the French Aerospatiale-Matra, Germany’s DASA and Spain’s CASA. New teaming arrangements between governments, such as between Britain and the US on the joint strike fighter, create vertical ties among buyers, too, though these are reportedly weaker than those between firms. In the joint strike fighter program, for instance, the US and British governments deal respectively with Lockheed Martin and British Aerospace but spend little time talking to each other about the program.

Above all, new and more numerous diagonalized exchanges are taking place across national boundaries, as prime contractors in one country sell to government customers in other countries, and suppliers in one country sell to primes in another, often the result of offsets. A single offset deal on a large weapons system, for instance might require an American firm to purchase components from several buyer country firms, to market agricultural output from farmers in that country, and to transfer technology to an unrelated civilian firm whose goal is to sell to into yet other international markets. The same firm, to sell the same weapon system into a Middle Eastern country, might have to invest in a new line of gasoline stations in Europe. And, for another Middle Eastern customer who is willing to pay, it might develop a state-of-the-art radar system that even its American user does not yet enjoy.

In return for yielding up autarchic industries and national champions, many buyers have intensified their demands for offsets - agreements by the sellers to buy components, transfer technology, market unrelated goods and services or invest in buyer country enterprises (U.S. General Accounting Office, 1998). Their ability to do so was enhanced by the “buyer’s market” created by post-Cold War excess capacity (Willett and Anthony, 1998: 2). Meanwhile, most governments are clinging to ambitious strategic and military policies while facing less-than-enthusiastic publics, parliaments and legislatures. To try to finance their ambitions, they increasingly try to forge cooperative R&D strategies and to tie down future international sales even before a weapon emerges from the drawing board.

It is difficult to "unpack" the motivations of the multiple actors in this highly regulated yet highly competitive market. The complexity of gains and losses,
initiatives and responses, mean that even large companies and government agencies are uncertain whether they are gaining or losing by engaging in offsets and partnerships. In the ongoing deliberations of the National Commission on Offsets in the Arms Trade, for instance, American government officials disagree across agencies on the security and economic costs and benefits, while defense industry officials admit their concern with proliferation of offsets while defending their latitude to contract for them.

Just two apparently anomalous behaviors exhibit the changes in this market. Recently, in an assessment of the armed services’ export reform effort in the 1990s, Major Ike Wilson (2001) finds that practices have shifted away from a dominant concern with restraining proliferation toward an overarching concern with making the weapons sale “work” for customers, i.e. foreign governments. The services come to believe that they cannot afford all the weapons purchases and upgrades that they need without spreading the cost over a larger number of buyers. If offsets are part of the deal, their tendency is towards a permissive stand on these as well. In this way, they see themselves primarily as agents for the foreign buyer rather than guardians of the American technological edge. Of course the calculus is more complex than this - the services strongly favor inter-operability with allies, and so on - but Wilson argues that this is a major shift in attitude and practice inside the Pentagon.

In a second example, the major American defense companies, traditionally hostile to offsets, have come to see them as a part of their business, indeed as a service that they can offer and even profit from. In 1984, a year-long study by sixty aerospace companies warned that offsets negatively affect U.S. surge capacity and pressed for an end to mandated foreign offsets (cited in Neuman, 1984: 210, footnote 94; see also Hammond, 1990: 42). But in the past few years, major firms have set up extensive offset operations, manned by self-made deal-makers whose work is essentially that of a trading company - evaluating offset demands, marketing offset products, building plants in or working with potential foreign suppliers, searching for saleable technologies, training foreign firms’ managers and engineers, identifying sources of credit, bargaining with buyers over commitments and performance, trading offset credits and debits, and accomplishing the paperwork that documents the fulfillment of obligations. The cost of offsets - that is the transactions costs involved in fulfilling them - is currently running between 7 and 10% of the value of the arms sale, and thus we might expect that an equivalent share of personnel within the firm is now devoted to these activities. Concomitantly, the Aerospace Industries Association, a major industry trade group, has developed a staunch position opposing unilateral action against offsets and approaches even multi-lateral negotiations gingerly (Johnson, 1999).

The proliferation of offsets agreements and long term offset obligations has introduced considerable diagonalization into our simple conception of the geo-economics of the arms trade. American and European firms, as the major sellers in the world market, are deeply engaged in relationships with governments and diverse kinds of firms in buyer countries. Because the American government refuses to broker offset deals itself, firms are forced to develop this expertise and exercise it. To make matters more complex, in some buyer countries, offsets deals are negotiated with Ministries of Economics, not Ministries of Defense. As soon as the Dutch Navy, for instance, decides to purchase an American weapons system, it
hands off the contract to its Ministry of Economics to develop the offset component of the sale. In turn, the Ministry of Economics may require the selling firm to deal directly with a multiplicity of Dutch firms - as subcontractors, as technology recipients, as merchandisers.

Offsets are a sizeable and long-term factor in the international arms trade. In the five years from 1993-1997, for instance, 35 reporting American prime contractors signed agreements with 30 nations totaling $19 billion in offsets on $35 billion in sales, with an average fulfillment period of 84 months. Over the same period, US primes fulfilled $12 billion in offsets transactions, for which they received offset credit of $14 billion (US Bureau of Export Administration, 1999: i).

There is substantial evidence that offsets as a trade-distorting practice are increasingly important in international arms trade and that this trend will continue. The most recent US Bureau of Export Administration study (1999: i-iv) finds that although offset agreements have remained roughly equal in percentage terms over the last twenty years worldwide, the number of countries resorting to them has increased, more of them are moving towards 100% offset requirements, contracts are more complex and lengthy, and performance requirements have risen (see also General Accounting Office, 1996: 3). European offsets on American contracts rose from an average of 72% in the 1980s to 88% in the mid 1990s.

What can be said about the overall industrial, economic and security dimensions of distortion that result from these trends? In what follows, I explore a series of distortions associated with the offsets phenomenon. Offsets are only a sub-set of illiberal trade practices in arms - we could eliminate them without insisting that governments eliminate "buy domestic" practices. Indeed, in what follows, I assume the persistence of preference for domestic suppliers as a matter of economic and security policy, exploring only what would happen in the absence of offset arrangements. In the conclusion, in reflecting on offsets policy, I return to the complex interrelationship between offsets and other illiberal trade practices, such as "Buy America."

II. Industry Distortions

Any less-than-free trade regime is hypothesized by economists to lead to distortions in the location and composition of industry and thus in the use of resources. As Zysman and Cohen (1983) conclude in their review, the arms trade is a prototype of the new mercantilism. Three axes of distortion can be traced in the case of arms sales in the presence of offset practices. These include national hyper-specialization in the weapons' industry, hidden losses to non-military sectors, and resource misallocation within defense industrial firms. In this section, I take up each of these in turn, marshalling what evidence I can on the likely scale of each.

A. National Hyper-specialization in Weapons

If offsets were prohibited by international agreement, it is quite likely that the patterns of international specialization which held for the western allies up through the 1980s would have persisted to a much greater extent than they have. Countries would be less apt to opt to import weaponry from abroad, even if superior, if they could not extract economic activity and know-how in return for patronizing another nation's industry. Seven of eight large American aerospace systems integrators, in a recent survey by the Office of Management and Budget, expressed the conviction
that they would lose between 50% and 90% of their export sales without offsets (Presidential Commission on Offsets in International Trade, 2001: 32). Countries on balance would be buying more of their equipment in their domestic markets. The large decade-long gain in the American export market share would have been truncated.

With offsets, a pattern of hyper-specialization is put into place where nations with superior technologies and products succeed in exporting these at the expense of underperforming buyer country facilities. To a large extent, this specialization reflects differential government investments, themselves a function of size and economic success, in military R&D. At the same time, the size and vertical integration of these winner complexes is eroded, as work-sharing arrangements and subcontracts are awarded to firms in the buyer country. Of the offsets obligations on the 180 US weapons systems settled by American firms in the mid-1990s, 37% of the transactions consisted of direct offsets, meaning that portions of the actual work related to the system sold were allocated to the buyer country, 67% in the form of subcontracts and another 30% in tech transfer, training, co-production and licensed production (US Bureau of Export Administration, 1999: 29).

These offsets come at the expense of companies' own operations and those of their domestic suppliers. In military aircraft, American parts imports grew by 74% over the period 1993-98. The Department of Commerce estimates that as much as one-third of current military aircraft parts imports could be the direct result of offsets. Furthermore, this figure does not take into account the cumulative effect of past offsets (US Bureau of Export Administration, 1999: iii-iv). In fact, giving foreign suppliers a cut of components business often leads to a permanent supply relationship. For example, in an F16 coproduction arrangement with General Dynamics, a Dutch firm, DAF, became a subcontractor for landing gear equipment and subsequently supplied the gear not only to GD but also to other manufacturers, competing with American subcontractors (Hammond, 1990: 31).

While the large systems integrators "export" portions of their own capability through direct offsets, the larger burden falls on their suppliers (Mowery, 1999: 87). Although it is difficult to separate out offsets impacts from other adversities in the 1990s, they have contributed to the disappearance of 50% of the supplier base in the US. One survey of suppliers suggests that offsets have to date played a minor role in this restructuring, but that in the future, as offsets become even more important, the adverse effects on suppliers will grow in significance (Bozdogan 1997: 28).

American workers lose jobs under offsets arrangements as well. In a sample survey of 64 transactions by the eight largest US aerospace companies over the period 1993-98, a staff study for the Presidential Commission on Offsets in International Trade found that direct offsets completed during this period supplanted $2.3 billion of US work, or 25,300 work-years - the equivalent of 4200 full time jobs per year, more than two-thirds of which was borne by their suppliers (Presidential Commission on Offsets in International Trade, 2001: 28; see also Scott, 1999). In the same survey, firms estimated that they would have lost $7.8 billion annually in sales, a drop of 50%, if they had not granted offsets, or a total of 85,800 work-years. However, this latter estimate is highly speculative (Ibid., iii).

Offsets practices, then, intensify weapons platform specialization among nations and extend the division of labor across national borders. By encouraging
the purchase of "best weapons" where "buy domestic" practices already distort trade, they are in fact eliminating distortion.

It is, in my view, impossible to estimate with any certainty the extent to which prime contractors secure or lose sales as a result of offsets. To the extent that offsets redistribute component production and outsourcing to "second best" producers in other countries or build their own future competition, they enhance trade-distorting international patterns of production. Disproportionate growth in parts imports suggests that this is a fairly significant phenomenon.

Overall, then, for the nations specializing in systems integration (US, Europe), offsets arrangements produce overall aerospace production gains, absolute increases in the aerospace trade balance but relative gains in aerospace imports over exports as a result of the emerging international division of labor. In the US, for instance, aerospace (both civilian and military) exports rose by $18 billion between 1989 and 1999, 59%, while imports rose by $10 billion, or 104% (Figure 3).

B. The Hidden Injuries of Privileged Trade

Potentially greater than the distortion of capacity distribution within military production per se is the displacement of economic activity from non-defense sectors associated with offsets practices. Subcontractors displaced by their prime contractors switch to a foreign product generally know that they have lost these sales. It is in non-related sectors that the hidden injuries of privileged trade are inflicted, often without the affected firms' knowledge.

The mechanics of such displacement were dramatically showcased in an incident which led to the creation of the current National Offsets Commission in the US. In 1992, a small northern Wisconsin paper company, Beloit Corporation, faced losing a large contract for paper-making machinery to sudden competition from a Finnish corporation, Valmet. In return for a profitable sale of F/A18 fighters to Finland, Northrop was offering American firms incentive payments to buy the Finnish machinery (Lumpe, 1994). Beloit appealed to Wisconsin Senator Russell Feingold. Senator Feingold, Democrat, teamed up with Senator Trent Lott, a Republican, to establish the Commission. Shipyards in Lott’s Louisiana jurisdiction were reporting that aerospace companies were offering offsets that cut into naval work by American contractors.

How common are such instances of artificial competition and how severe is the displacement? The distribution of offsets by type is shown in Figure 4. Indirect offsets comprised 59% of the nearly $7 billion in transactions the 35 reporting American primes completed over the period 1993-7 (US Bureau of Export Administration, 1999: 29). Half of these fell in the transportation equipment and electronics/electrical equipment categories, with another 16% in metals and machinery and the rest in business, technical and educational services (Figure 5). While direct offsets were heavily concentrated in aerospace-related industries, indirect offsets were more widely diffused, including motor vehicle parts, mining machinery, paper-making machinery, industrial chemicals, machine tools, wine and food products and computer software (Ibid., p. 32-33).

Civilian aerospace and its suppliers are particularly affected by these indirect offsets, since prime contractors in aerospace are better positioned to know the civilian market than they do other industries. Civil sector imports into the US
more than doubled between 1995 and 1998, increasing faster than the growth in civil aircraft as a whole. Of course, offsets are associated with civilian aircraft sales as well, and these are not reported to the government and are thus not included in the summary figures above. Scholars studying Japan have concluded that a large and internationally competitive auto parts industry in Japan has been created by military coproduction and offset programs (Samuels, 1994; Flamm, 1999: 32).

The impact of offsets in less-closely-allied sectors is almost impossible to gauge. As a rough approximation, we could speculate that because indirect offsets are actually larger than direct offsets, they contribute as much or more to resource misallocation as do direct offsets, at least in the US case.

The negative consequences of indirect offsets are likely to grow in significance over the coming decade. US data and anecdotal industry intelligence suggest that buyer countries are increasingly asking for indirect rather than direct offsets. Often, this choice is linked to strategic economic development policy, where countries foresee relative stagnation in the international military market and choose to use their offset credits to construct comparative advantage in sectors with greater income elasticity and growth potential. This dynamic could further exacerbate American crowding into the relatively mature aerospace industry and undercut diversification and expansion in other American sectors.

Evidence for this trend can be inferred from responses to the Presidential Commission survey by the large US aerospace companies. When offsets take the form of technology transfers, they improve the recipient firms' competitiveness and rarely result in technology transfer back to the US. Of all offset transactions studies, 32% resulted in the transfer of U.S. technology to foreign firms. Of these, 65% were moderately or very important in reducing the foreign form's costs or increasing its quality, while 29% were moderately or very important in enabling the foreign firm to compete in world markets and 24% were similarly important in enabling competition in the US market. Only 4% of offset transactions resulted in the transfer of technology from foreign firms back to the US (Presidential Commission on Offsets in International Trade, 2001: 35.) Samuels (1994, 1997) documents the asymmetry in technology transfer in the US/Japanese F-15 relationship. Some 130 American firms are participating in teaching Japanese firms how to develop new capabilities and utilize new technologies.

C. Defense Contractors as Trading Companies

An additional industrial distortion arising from offsets concerns the internal division of labor in the major contracting firms. As noted above, the growth and increasing sophistication of offset arrangements has prompted the creation of new occupations and areas of expertise within companies (Hammond, 1990: 17.) Hammond describes these new functions as follows, “defense contractor offset organizations are typically fairly small but high-powered. They are not internationally based but have the majority of their workers in the USA. The jobs are demanding, require special skills, are stressful and have more in keeping with venture capital firms than management in a manufacturing context...Increasingly, the offsets, more than the products themselves, are the critical aspect of obtaining a contract” (p. 42-3).

One indicator of the significance of this activity is the emergence and fast growth in recent years of the Defense Offsets Industry Association (DOIA). DOIA
brings together American industry offsets employees, government officials and sometimes, representatives of buyer nations to share information on the problems and challenges of negotiating offsets. Because the offsets world is changing so rapidly, they meet every six months.

The growth of offsets efforts has forced companies to develop capabilities that are not part of their traditional "core competency." Individuals engaged in this work report that at DOIA conferences, a robust topic of conversation is the convoluted career paths by which industry people end up doing offsets. Sometimes, consultants must be brought in to deal with certain types of demands, and sometimes, firms decide to outsource the job of, say, selling foreign goods in unrelated fields into the American market. Sometimes, in desperation, a firm will attempt to buy offset credits in the market from brokers who have emerged to fill this role.

The resource misallocation associated with this effort can be roughly gauged by the industry's current ballpark figure on the total cost of offset management - around 8% of the value of an export sale. Hammond concludes that "the costs of financing countertrade deals are higher than if access to regular credit markets was available" (Hammond, 1990: 51). He points to telephone and travel costs inflated by long lead times and legal and monitoring expenses. Contractors attempt to externalize this cost by asking the buyer country to absorb it, but this does not always work. In fact, the seller and buyer are by this point engaged in something close to bilateral monopoly - the buyer will attempt to extract as much as possible of the oligopolistic consumer surplus from the selling firm, a surplus enhanced by the fact that the development costs have already been covered by the US customer. Because the buyer can threaten not to buy the product, or may be willing to buy elsewhere if it's conditions are not met, defense contractors sometimes eat this cost out of profits, which are reputed to be substantially higher on export sales than on sales to the home government.

This resource misallocation is mirrored by a similar commitment of personnel within the buyer nations to negotiating their sides of the contract. Hard bargaining is not restricted to the largest and European buyers - the Netherlands, Greece and Korea are currently viewed as the most sophisticated at extracting offsets. Just as the American defense contractors have created their own trade association, the buyer nations, led by the Dutch, have created a twenty-one country consortium of nations sharing information and techniques for crafting offsets. It is quite likely that this network will quicken the pace of learning about smart buyer offset practices across countries.

III. Security Distortions

American national security policy rests squarely on the nation's superiority in military technologies and weapons systems. That superiority is contingent upon the ability to control the proliferation of conventional weapons. To the extent that offsets multiply the possibilities for leakage of leading edge weapons and the technology for producing them, they undermine national and world security. Even where the current system cost and interoperability concerns favor technology sharing, the export of current generation military aircraft and other systems can and does end up becoming an argument that the industry and armed services use to push for the next
generation sooner than they otherwise would, which is costly for taxpayers and contributes to an unnecessary arms race among allies (see also Markusen, 2001.) The United States has one of the strongest licensing regimes in the world, but enforcement is inadequate. Diversion of technologies to unauthorized uses and to prohibited third parties happens frequently. Although there is no systematic study of these lapses available, several can be cited, many of them involving current or past offsets:

The Japan Aviation Electronics Industry was discovered to have illegally sold US licensed weapons components – gyroscopes and accelerometers for Japan’s F-4 fighters – to Iran and was fined $10 million in 1992 (Lumpe, 1994: 35)

South Korea violated the terms of its license for M-16A1 submachine guns by selling them to hostile countries (Lumpe, 1994: 35)

Israel has repeatedly transferred US-licensed missile and radar technology to China in the 1980s and 1990s, and it has been charged with illegally incorporating U.S. designs and technology into weapons exported to South Africa, Chile and Ethiopia, countries to whom the US would not sell for human rights or foreign policy reasons (Lumpe, 1994: 35)

Brazil transferred American technology, gained with an offset deal, to Iraq, where it was used to improve the targeting capability of Iraqi Scud missiles (Evans, 1997)

In small arms, there are numerous examples of violations of licensing agreements, many of them the product of offset arrangements. Small arms proliferation is a significant security concern for the US because regional conflicts in areas such as the Balkans, the middle East, and Africa require peacekeeping and humanitarian operations which are rendered much more dangerous as small arms spread.

Since the arms trade includes a large black market, students of the arms trade believe that beyond these discovered cases lie many more transfers that have gone undetected.

The American military services harbor intense debates internally over the security implications of offsets and pressures to slacken arms export controls. Many officers see interoperability as very important for their European and peacekeeping operations. Since this generally implies American-style weapons, they see no way of convincing allies to purchase these without some form of compensation. At the same time, the trends detected by Wilson (2001) suggest that offsets are also tolerated as a means of getting around budget constraints in the short term.

Remarkably, the evolution of a post-Cold War arms trade policy is taking place without integration of security evaluations and economic imperatives. In the US, despite a new inter-agency working group, the Departments of State, Commerce and Defense still spar over arms trade policy. Reflecting the
ascendancy of economic over foreign policy or security concerns, the Department of Defense appears to be emerging as the lead agency in this process, undermining the State Department’s traditional arms control function. Multi-lateral arms trade forums such as the Waasanaar arrangements are in limbo, while economic bargaining over the arms trade heats up. Inside the Pentagon, as a result of a “reinventing government” exercise under the Clinton administration, the Air Force and Navy have each consolidated their arms trade functions, with security assistance officers subordinate to those who are intent upon speeding up and simplifying the arms transfer process for economic reasons (Wilson, 2001). Evidence suggests that in other major arms supplying countries, too, governments “have become more reluctant to subordinate the economic aspects of the arms trade to foreign and security policy considerations” (Willett and Anthony, 1998: 2).

Compounding the problem is the asymmetry between the US industry, which supplies about half of all world sales and enjoys almost exclusive access to US R&D contracts that comprise 72% of all Allied R&D expenditures, and the Europeans, who bargain hard for an opportunity to buy the components and technology that result from this investment. Flamm (1999:30-31) concludes, “it becomes more important for the United States to maintain its technological lead by building even more-advanced weapons systems domestically. Thus, the United States has a system whereby it cooperates technologically to create its own competitors.”

The negative security consequences of offsets arrangements — arms proliferation and a quickening of pressures for new arms research and development — have economic consequences in the longer run. The upward pressures on the defense budget in technology-rich countries like the US include anxieties over the need to develop next generation weapons, and when other countries are asked to help funds these systems or eventually buy them, this process contributes to inflation in military budgets, a subject to which I next turn.

IV. Geo-Economic Distortions

Arms trade offsets and protections in a world where other sectors must submit to free trade lead to macro-economic distortions beyond the micro-economic phenomenon of resources misallocation. These include a tendency toward higher overall military spending world-wide and the rise of an international arms industry cartel whose actions compound macro-economic impact.

A. Bloated World-wide Military Spending

One sobering outcome of the illiberal nature of the arms trade is the tendency for countries to spend more on military equipment than they would in the absence of the ability to buy domestic and to extract offsets on imported systems. This is because spending on defense meets a dual purpose for governments - it not only enables military strategy but it serves as an economic development policy (Hammond, 1990: 37), ensuring a strong Keynesian impact on the domestic economy and enabling the cultivation of comparative advantage in military-related and dual use sectors. Politically, this cycle is closed by the associated strong pressures from defense-dependent firms, workers and communities to continue weapons programs and aggregate military expenditure levels. Defense ministries collaborate in defending offsets arrangements as a means to convince electorates
and politicians that buying foreign can produce longer term gains for the domestic economy, and not just in military sectors (Udis, 1994: 34). The deepening diagonal relationships between firms in one country and government in another mean that this political engagement of firms happens even across national borders (Evans, 1997: 15).

Developing countries, in particular, whose leaders desire to pursue industrial policies despite free trade regimes, find military spending on dual use industries and negotiation of offsets attractive. South Korea, for instance, has deliberately cultivated a dual use military industrial sector, using the military mantle to evade free trade strictures on certain governmental practices in support of industry. In the 1990s, Korean military expenditures have increased, in large part in response to US insistence on post-Cold War burden sharing. The Korean military has chosen to import greater shares of its weaponry from abroad, sacrificing uncompetitive domestic military industrial capability with poor export prospects. It is, however, adroitly using offsets arrangements on these purchases to enhance the capability of its non-defense sectors (Markusen and Lee, 2001).

As in the Korean case, buyer governments may believe that offsets provide a back-door way of constructing comparative advantage, thus encouraging higher levels of military spending than in the absence of such arrangements. Illiberal trade allows nations room to parlay spending on national needs into economic activity and investments in longer term comparative advantage. Without this circuitous economic development impact, military spending would be less attractive in the competition for scarce national government funds, especially in this era of fiscal austerity. It is this amplifying effect on total sales that defense companies are acutely aware of when they estimate that some countries would simply choose not to buy at all in the absence of offsets!

However, using arms purchases and tied offsets as an economic development policy may not pay off for recipient countries. In a recent study of South Africa’s decision to spend R30 billion in imported weapons, Batchelor and Dunne (2000) show that the government invested considerable effort into negotiating offset offers from the foreign equipment suppliers to benefit its local defense industry and national economy. They show that this is costly: “at no point has government considered trying to limit the purchase costs of the SANDF’s acquisition programme, by simply buying the cheapest off-the-shelf weapons (or even second-hand weapons)” (p. 23). They anticipate that the impact on the local economy will be smaller than expected and point out that it is very difficult for South Africa to judge whether the prices they are paying for weaponry are reasonable. “Off the shelf purchases would have been cheaper,” they conclude, “and would have allowed the government to allocate the savings to encourage conversion in defense related industries. This would have allowed it to develop those areas of the economy with the highest potential for economic growth and job creation, thereby dealing more effectively with the current high levels of unemployment” (p. 24).

The South Korean and South African cases suggest that if offsets were prohibited, countries would still choose to buy weapons and might buy more of them domestically. But they would be unlikely to spend as much as they do currently, viewing investments in military industrial sectors as unpromising in the longer run. Furthermore, if they chose to buy internationally, they would be apt to drive hard bargains on price and quality alone.
It is difficult to separate out this “supply side” upward pressure on military budgets because of the overall plunge in military spending following the end of the Cold War (Table 2). However, since reaching a low in the mid-1990s, military spending has slowing increased in some countries, notably the US.

B. The Rise of an International Military Industrial Cartel

One fascinating implication of this work on offsets is the apparent emergence of the makings of an international cartel in leading edge weapons systems. If the logic and significance of the illiberal regime which I have laid out above is correct, then we can anticipate that the major prime contractors, to the extent they can police their ranks, have a great stake in maintaining offsets practices and the exclusion of the defense industry from free trade regimes. Overspending on weapons by governments and substitution effects that favor aerospace over other sectors in the economy through the operation of offsets mean bigger markets, cost advantages and a margin of pricing power overall for aerospace producers at the expense of other public and private sector goods and services. Of course, members of the cartel would continue to compete on individual weapons sales, just as oil companies and oil countries in OPEC do.

The number of competitors in the world arms market has imploded even though each has somewhat greater access to each others’ domestic markets (Figures 1 and 2). The competition remains oligopolistic but is more international in scope. The lead firms remain highly dependent on defense business (Table 3): Lockheed-Martin, Raytheon, British Aerospace, Northrop Grumman, Thomson and General Dynamics were 60-84% defense-dependent in 1998. Furthermore, greater shares of these firms’ sales are international rather than domestic.

At least one researcher has hypothesized a “trade creation” effect of offsets (Hammond, 1990: 62). The data on recent US aerospace trade offers some evidence for this view. From 1995-9, increased US government procurement accounted for $2 billion in new sales for American aerospace firms, or only 7% of the industry’s overall $30 billion rise in sales, while military exports increased by more than $4 billion, or 15% of the total (Presidential Commission on Offsets in the Arms Trade, 2001: 24; Aerospace Industries Association, 1999: 116). Despite the export component outpacing sales to the Pentagon, the modesty of these figures compared with civil aerospace sales suggests just how intensely competitive the military aerospace market is. They bear out a precocious 1994 Pentagon study suggesting that the ability to use exports as a substitute for deep cuts in Pentagon spending would be limited (U.S. Department of Defense, 1994).

The formation of such a cartel is greatly facilitated by the implosion in the numbers of defense firms operating in the systems integration military market during the 1990s. Desirable elimination of Cold War excess military industrial capacity, as I have demonstrated elsewhere, would not necessarily have required fewer, military conglomerate firms. The latter resulted from the interaction of Wall Street investment banking machinations and Pentagon policy (Markusen, 1999a). The outcome - fewer, larger and more defense dependent firms, not just in the US but internationally - makes it easier for companies to compare notes and forge a geopolitical strategy that solidifies into something very like an international industrial policy for aerospace.
US firms dominate in this process. Robert Trice, Vice President for International Business Development at Lockheed Martin, characterizes the world market as follows:

In order to compete internationally in this new environment, the U.S. industry has consolidated into three large, globally competitive companies (Boeing-McDonnell, Lockheed-Martin and Raytheon-Hughes) and a number of “smaller” companies in their own right. The only real competitors in the global market are the European companies which are smaller, generally less productive state-owned firms, with the exception of British Aerospace and DASA... At present, the U.S. companies can rely on a highly protected core domestic market of approximately $80 billion – defense procurement and R&D combined. No other country can match that, nor do other countries spend more than 50 percent of their defense budget on procurement. On top of that, they must use those funds to feed their own weak, noncompetitive, state-controlled domestic companies... Arms control critics argue that the U.S. industry dominates the world market. This is true. (1997: 4-5).

This development is also facilitated by unrealistic military and security strategies on the part of lead governments in the post-Cold War period. Pressed to keep Cold War systems in production while investing in the "revolution in military affairs" and national missile defense and in military manpower, buyers like the US armed forces - arguably the most favorably located of all the players in this game - behave as if they have the fewest options and must capitulate to pressures to streamline and underwrite arms sales and to engage in joint development projects with acceptable foreign partners. The short-termism driving firms to accept offsets that could cut into their future expertise is spreading to the American services as well, driving them to relax vigilance on potentially proliferating arms sales in order to be able to fund today's weapons programs. To the extent that American and European governments permit international mergers and are jointly developing new generation weapons, such as the Joint Strike Fighter, they further the cartel-building project by enabling closer working relationships among companies, relationships that are reportedly not mirrored by equally close cooperation between the governments themselves.

An emergent military industrial cartel centered on aerospace is suggested by the configuration of the recently created National Commission on Offsets in the Arms Trade. Despite its charge to cover all military industrial sectors, to investigate indirect as well as direct offsets, and to weigh the security as well as economic consequences of offsets, the Commission, as manifest in its interim report, has confined itself to looking at the economics of offsets from the point of view of the largest aerospace prime contractors. Companies and unions from the shipbuilding, ordnance and military vehicle sectors are not represented on the Commission. No subcontractors or representatives of firms adversely affected by indirect offsets are represented nor were any surveyed in the OMB survey preparatory to the
Commissions’ work. None were asked to testify at the initial meeting. Security matters also receive short shrift in the interim report.

This suggests that in the US, at any rate, the arms policy-making apparatus has been captured by the interests of the lead military industrial aerospace firms. It is not difficult to predict that the final Report to Congress will steer clear of any meaningful recommendations for restraint in arms offset policy. The Report might counsel multi-lateral negotiations. But like arms control and arms trade negotiations since the end of the Cold War, such efforts would be unlikely to result in anything very dramatic in the near future.

VI. Conclusion

Scholars espouse widely diverse views on the effectiveness and desirability of offsets (Martin, 1996: 18). My own research and participation in the Presidential Commission suggests to me that offsets are growing in significance and do indeed produce distortions in the structure of firms, industries and the composition of national spending for both buyer and seller countries. I have tried in this paper to lay out the arguments, marshalling what evidence I can. Others have arrived at different conclusions about the magnitude of the problem (e.g. Martin and Hartley, 1995). These are empirical questions, and I hope that better data will permit us to test competing theories adequately in the future.

If we do determine that offsets present a longer term and significant problem on both economic and security fronts, what can be done to reverse the growth trend? At present, policies of international organizations and national governments are contradictory and ineffective, permitting the spread of offset arrangements geographically and towards indirect and novel forms of barter. Organizations such as the GATT, IMF and OECD hold hostile views toward countertrade as both prejudicial to exporter countries and as harmful at the global level (Martin, 1996: 18). However, the World Trade Organization’s Agreement on Government Procurement prohibits the use of offsets in government procurement generally, but explicitly exempts a nation’s “action...necessary for the protection of its essential security interests relating to the procurement of arms, ammunition or war materials, or to procurement indispensable for national security or national defense purposes” (Presidential Commission on Arms Trade Offsets, 2001: 13).

For much of the Cold War period, the US government officially considered offsets “market distorting” and left responsibility for their negotiation and implementation to U.S. exporters, a policy put in place in 1978. This policy supplanted a more hands-on policy that had created significant problems for the Pentagon. In effect, the new policy allowed the industry to pursue offsets with no effective regulation beyond screening and licensing functions. In the 1980s, concern on the part of Treasury and Commerce economists and some members of Congress led to official reporting requirements on offsets annually that began in 1996 and were strengthened in 1994, when responsibility was shifted from an inter-agency group to the Department of Commerce and contractors were required to notify the government of offsets on military sales in excess of a certain sum (Udis and Maskus, 1996: 358-61.) A review of American offsets policy in the 1990s suggests concern and modest tightening of regulations, but no real will to either unilaterally or multi-laterally stem the rising tide of offsets (Ibid., 360-71).
The American government must play a lead role in the illiberal trade log jam if things are to change. As long as American policy is ineffectual on offsets, no other country – all of them beneficiaries of offsets – will take the lead. Countries like the UK and France, who would like to free themselves of the necessity to grant offsets to developing countries, benefit too much from the offsets they can extract on purchases of American weapons systems.

A major impediment to American leadership on offsets is its own Buy America practices, which for all practical purposes render the home market the exclusive domain of American prime contractors. In those instances where the Pentagon does buy foreign, it regularly demands offsets by requiring foreign suppliers to hire American subcontractors and use U.S. supplies for spare parts. In practice, the U.S. policy is to establish domestic production capabilities for any weapons system purchased abroad wherever possible (Hammond, 1990: 71, 87; Mowery, 1999: 90-1). To our allies and buyer nations, demanding the cessation of offsets without opening up our domestic market is a non-starter. Thus offsets as a policy issue and subject of international negotiations cannot meaningfully be approached without a reconsideration of the de facto domestic content practice. Offsets plus Buy America practices produce a world market in which each nation may, if it makes the effort and bargains well, ensure itself economic activity equivalent to the amount it is willing to spend on weapons. This is the antithesis of the kind of national specialization envisioned by Adam Smith and David Ricardo, where nations specialize on the basis of comparative advantage.

This brings us full circle to the international aerospace cartel, led by American firms and exercising considerable clout not only in the market for weapons but in political arenas where military spending levels, arms trade policy and even military and foreign policy are shaped. In his review, Hammond concludes, “Perhaps the most important insight into offsets is that they occur for political rather than economic reasons (Hammond, 1990: 86).” I would restate this as “for reasons of political economy.” The attractiveness of offsets to both buyer countries and seller firms is increasingly economic, not political, especially because private sector defense contractors facing short term profit pressures in a relatively stagnant market are gaining political power and influence, while governments face conditions of fiscal austerity and a skeptical public vis-à-vis the salience of defense programs. But these economic pressures are filtered through the political decision-making machinery in each nation, particularly the Parliaments and Ministries of Economics/Industry in buyer countries and the Pentagon in the US.

Illiberal trade in other markets has been eroded by a very long and concerted campaign, including an ideological struggle, to eliminate illiberal practices. It has been successful in large part because it serves the interests of dominant fractions of capital in both more and less developed countries. That contest is not over, and questions of pace, dislocation, environment and protection of labor and human rights continue to be intruded into the project of international institution-building. But the ability to convince large groups in the electorate that liberalized trade is in their interests has played a very important role in this success. A similar campaign that addresses publicly the overall consequences of defense offsets and other illiberal arms trade practices will be required to rein in a process which will otherwise deepen the economic distortions addressed in this paper and the destabilizing security consequences of faster and broader arms proliferation.
References


