

ARMS TRADE OFFSETS: THE KEY TO ENERGISE OUR DEFENCE INDUSTRY

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Under a \$3.3 billion agreement for the sale of 40 F-15K Strike Eagle jets to South Korea, Boeing will transfer jobs and skills to South Korea that will enable it to produce its own fighter jet by 2015. Korea will be given avionics, software and design technology that Boeing values at \$1.5 billion, and while the plane's final assembly will be done by Boeing in St. Louis, the wings and front fuselage will be made in Korea.

— Leslie Wayne¹

This, of course, is not the biggest offsets deal in recent years. South Africa had also claimed a virtually 400 per cent offsets arrangement to support its defence and civil industry for its import of Swedish-designed Gripen combat aircraft in an import deal worth around \$3 billion. South Korea, of course, is a military ally of the United States, with US forces based in the country, and interoperability, including facilities for repair and overhaul of US combat aircraft, is a major factor shaping such arrangements. This is besides the extensive trade and economic relations not to talk of political relations built over sixty years. India would obviously not fit into that sort of paradigm for reasons that we need not go into here. But the examples demonstrate the importance of examining the basic logic and process of arms trade offsets and their place in the current trends across the world affecting arms procurement.

Arms trade offsets are basically compensatory mechanisms in arms sales across countries which have been going on for more than four decades. The

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1. Leslie Wayne "Foreigners Exact Trade-Offs From US Contractors," *New York Times*, February 16, 2003.

phenomenon of offsets has certainly shown a marked upturn during the past decade driven essentially by the arms suppliers' need to improve their sales in the face of stiff competition in a globally shrinking defence industry, and arms sales providing the importing countries greater negotiating demands for a variety of reasons. Historically, most of the arms transfers in the early years of the Cold War were in the form of aid by the two superpowers to build and strengthen alliances and geopolitical reasons in pursuit of their perceived national interests, although their offsets agreements with their European allies were aimed also at building the recipient countries' defence industry while ensuring interoperability and burden sharing. With the passage of time, arms aid started to give way to increased arms trade and a compensatory mechanism started to assume greater importance. Now as much as 82 per cent of US arms sales abroad include offsets; and 80-90 per cent of global offsets are concentrated in the aerospace sector, primarily because of the high costs involved.

But before we examine the offsets phenomenon and its relevance to us, it may be useful to briefly look at our situation and arms acquisition strategies.

FORCE MODERNISATION DYNAMICS

Indian defence modernisation has been facing serious deficiencies for a decade and a half during which the defence forces have been starved of funds for modernisation. In the early 1990s, there was essentially an acute shortage of funds, and the primary source of our supply of weapons and equipment, the USSR, having rapidly slid into a serious political-economic crisis from which its main successor state is just about recovering. By the late 1990s, we started to possess more resources, but found in the last six-odd years that we could not spend the budgeted amount. The result has been that defence spending has averaged a mere 2.33 per cent of the Gross Domestic Product (GDP) for more than a decade and rose to 2.49 per cent

in 2004-05, the highest since 1993-94. Meanwhile, the widespread concerns and their political dynamics commonly known as the Bofors-Tehelka-Coffins Syndrome slowed down procurement decision-making not only in defence but also with respect to other high-cost procurements like airliners for Air India and Indian Airlines, the two public sector carriers. It is only in 2004-05 that Rs. 77,000 crore (amounting to approximately 2.49 per cent of the GDP) was allocated for defence and the full budgeted amount was actually spent.

What was equally significant was that 43 per cent of the annual defence services budget for 2004-05 was allocated under the capital expenditure head which is almost entirely devoted to modernisation although even the revenue budget head also includes a notable element of modernisation. Capital expenditure for the 2005-06 financial year is budgeted at a notional decrease at 41 per cent of the total defence budget. For the previous decade and more, the capital head was allocated an average of only about 25 per cent of the total defence budget (which, as noted above, was much lower than previous levels). The result was that not only did the backlog of weapons and equipment, whose life had expired, start to accumulate, but additional equipment started to fall due for replacement. It is not surprising that the force level of the Indian Air Force (IAF) has already dropped down and is on the down slope for at least a couple of years; and the Indian Navy would face shortages of capital warships and submarines soon if procurement is not activated on priority at a sustainable and effective level.

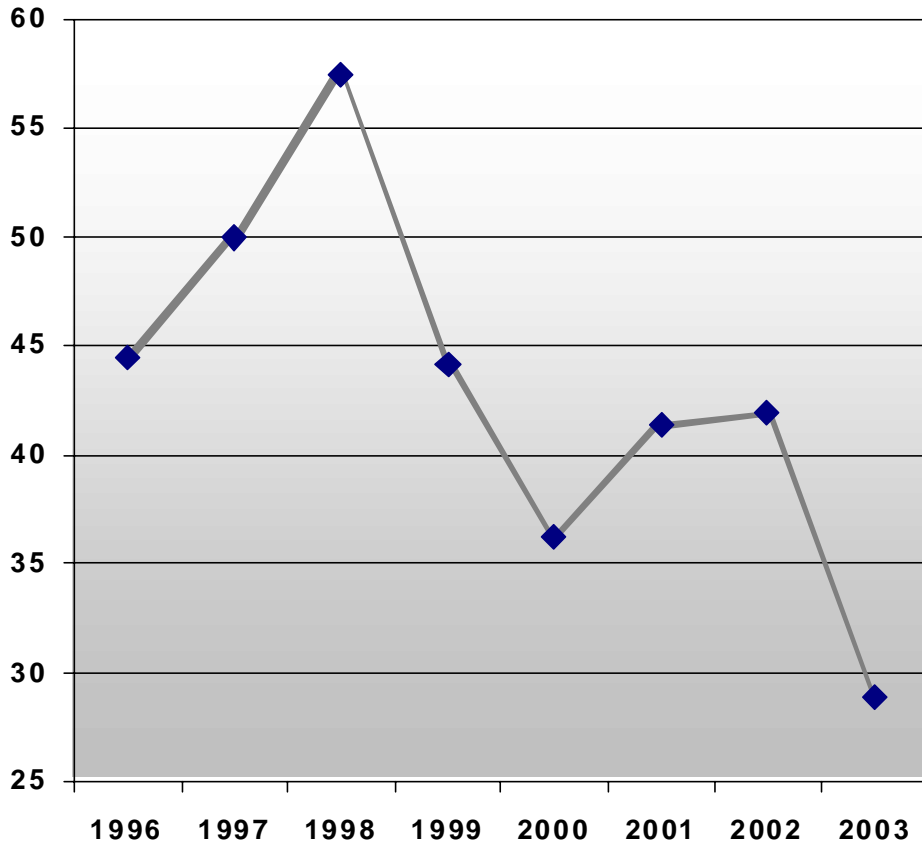
Unless the country wants to depend primarily on early use of nuclear weapons in a potential conflict, it must pay serious attention to conventional force modernisation.

There is an undeniable need to optimise our defence spending, especially to control the revenue budget which keeps growing at an annual rate of more than 11 per cent in spite of inflation remaining at around 4-5 per cent. But what is clear is that unless the country wants to depend primarily on

early use of nuclear weapons in a potential conflict, it must pay serious attention to conventional force modernisation. Four macro trends would have to be taken into account in this regard:

- Overall retrenchment of the global arms industry with smaller production runs and consequent higher unit cost of weapon systems. In turn, this has put great pressure on major defence industries to cut back manpower, resort to mergers and internationalisation of arms industry. Arms imports have been reducing as seen from Fig. 1. On the other hand, this has also

Fig. 1: Arms Deliveries to the World, 1996-2003 (in billions of 2003 US dollars)



Source: Richard Grimmet, *Conventional Arms Transfers to Developing Nations, 1996-2003*, CRS Report to Congress, Congressional Research Service, Library of Congress, Washington DC, August 26, 2004, p. CRS-81.

provided the buyers with leverages that were not really available a decade ago. This is one of the factors why “offsets” and other compensatory mechanisms have been playing a greater role in arms procurement deals during the past few years.

- Greater emphasis on high-technology weapons and equipment for critical advantage in war; this, in turn, requires that all components of defence forces shift toward greater technology-intensive capabilities. In turn, this implies greater costs of weapon systems needed for modernisation.
- As much as 70-80 per cent of our defence equipment (both direct purchase as well as produced under licence) has been sourced in the past from the former Soviet Union at terms that were mutually advantageous to both sides. This has been changing and with it the dynamics affecting our defence modernisation. For example, the cost differential between Russian systems and those from Europe is progressively narrowing and credit lines or rupee payments (which, in effect, led to counter-trade without formal contracts) are altering. The remaining 20-odd per cent is sourced from the West European industry which has been getting more deeply integrated with the US defence industry. This has obvious implications for the degree of dependence already creeping into our defence needs, especially as Russia of tomorrow would not have the same imperatives for a close strategic relationship with India as the Soviet Union.
- While we have one of the most sophisticated and extensive defence industry infrastructures (besides China, South Africa and Brazil) among the developing world, our infrastructure has remained underutilised while we continue to suffer from a design capability deficit for a variety of reasons.

A conservative level of defence modernisation would imply an annual investment of approximately Rs. 35,000 crore at current prices for at least the next decade. Another 10-15 per cent of this amount may be assumed as expenditure for spares purchases, etc. It is not clear how much of this amount ultimately is paid out to the exporting country. But even a very rough estimate would indicate a defence market for foreign arms manufacturers to

the extent of Rs. 25,000 crore per year, that is, an annual flow of around \$5.6 billion to foreign manufacturers in the coming decade, whether directly from the government contracts, or by purchases through the public sector (and even private sector)! This may appear to be an overestimate. But if we simply add up the arms procurement contracts approved during the past

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two years and the fact that this would not hold the slide down in force levels (leave alone cater for future modernisation), we may come to recognise that this level of expenditure, in fact, may not be adequate for our needs, especially in view of China's military modernisation and its spin-off effect on Pakistan. With an average of \$ 50 billion annual transnational arms deliveries in respect of only the major weapon systems (not counting the spares and product support market) during the past eight years, our requirements would amount closer to 10 per cent of the global arms transfer market in the coming decade after which it may well drop if force levels do not change.

At the same time, our civil aviation sector is now well into a procurement process of around \$10 billion worth of as many as 230 passenger airliners (mostly from Boeing and/or Airbus Industries) with an estimated \$11 billion for ground infrastructure reportedly during the next 5-7 years to cater for the tremendous growth in civil aviation taking place in the country. In other words, the combined annual expenditure for defence and civil aviation modernisation would amount to \$7-8 billion per year, mostly for import of arms and civil aviation needs. And no wonder, defence expositions like Aero India 2005 attracted top of the line defence manufacturers (including Boeing whose annual turnover is greater than the total GDP of Pakistan) and yet the show was oversubscribed! By any calculation, this is a huge expenditure and requires very careful management.

One challenge is to find the money for defence modernisation in the national budget on a sustained basis which is compatible with our developmental goals. The current level of around Rs. 35,000 crore per year has resulted in an overall defence expenditure taking a share of 2.4 per cent of the GDP. Various studies, including those that the 11th Finance Commission took into account to stipulate a target of 3 per cent of GDP for defence by 2004, concluded that that sort of figure would remain affordable. The second factor is to ensure that what we buy should energise our defence industry to reduce our dependence on foreign suppliers in perpetuity. The third factor is that while the earlier perennial problem of foreign exchange as a major factor in arms imports is no longer critical with reserves in the order of \$130 billion, we must also ensure that defence does not consume an inordinate proportion of capital flow out of the country. This becomes obvious when other realities like the rise in oil prices and our need to import large quantities of crude oil, natural gas and even coal for electricity generation is taken into account. The fourth factor is that in the larger interest of national security, our procurement decisions must take into account the issues of dependencies and vulnerabilities of imports. Here the issue of self-reliance needs a closer look.²

EVOLUTION OF OUR DEFENCE INDUSTRY

Prime Minister Jawaharlal Nehru had once said that no country is truly independent unless it is independent in matters of its armaments. This had led to the view that as independent India, we must set for ourselves the goal of self-sufficiency in weapons and defence equipment. Many factors led to the shift of this rather absolutist goal to that of self-reliance; and now interdependence, as a means to strengthen autonomy in military equipment and national self-reliance has increasingly become the norm rather than self-sufficiency. But the central reason was that at the time of independence, the

2. For a comprehensive study on the self-reliance-paradigm, see Ajay Singh, "Quest for Self-Reliance," originally commissioned by the Rajiv Gandhi Foundation and published in Jasjit Singh, *India's Defence Spending: Assessing Future Needs* (New Delhi: Knowledge World, 2001 (2nd edition)), pp. 125-156.

country had very little national industry, leave alone the defence industry which could boast of only a couple of dozen workshops created largely to cater for the needs of World War II. While India accounted for nearly 24 per cent of the global manufacturing output in 1750 (with only China ahead of us), the historical coincidence of the Industrial Revolution in the West and

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Western colonisation of the country reduced that to less than one per cent by the beginning of the 20th century. Re-industrialisation of India started slowly under the British rule after World War I because of the rising cost of labour, etc. in Great Britain. In fact, the example of Hindustan Aircraft Ltd. (now Hindustan Aeronautics Ltd.—HAL) set up by a private entrepreneur (Walchand Hirachand) which started a comprehensive

programme of design, development and licensed manufacture of aircraft with the American private sector's participation in 1940 is symptomatic.³ But the war led to its takeover by the British Indian government to overhaul aircraft for the Pacific theatre, regressing its progress from a designer/manufacturer to a mere overhaul workshop, a task it performed with great credit.

Independent India set out to establish a coherent self-reliance model by adopting multiple routes for diversification of the sources of supply as well as the methods of procurement. At the time of independence, virtually all the military weapons and equipment in the country were of British make. This naturally had to continue; but attempts were made to procure weapons

3. For an excellent historical account of the aircraft industry and aviation in India, see Pushpinder Singh, *Diamonds in the Sky: Sixty Years of HAL 1940-2000* (New Delhi: Society for Aerospace Studies, 2001), and Pushpinder Singh, *History of Aviation in India: Spanning the Century of Flight* (New Delhi: Society for Aerospace Studies, December 2003).

and equipment from the USA and European countries and reduce the British content in the inventory. American C-119 Packet aircraft, Sikorsky S-55 helicopters and French Ouragon and Mystere IVA are some of the examples. As regards the methods of procurement, a series of programmes commenced which relied on: (i) direct purchase of complete weapon systems, either new or partially used stocks (like the aircraft carrier, Hunter, Ouragon and Mystere fighters, Centurion tanks, etc.); (ii) licensed manufacture (like the Vampire fighters); (iii) development of weapons after acquisition of designs and their partially developed systems (like the Gnat fighter aircraft, Vijayanta main battle tank, etc.); and (iv) indigenous design and development (like the HF-24 multi-role combat aircraft designed by a team led by the German designer Dr. Kurt Tank, besides the basic flying trainer from the HAL design bureau).⁴

Uncomfortable political relations between the Soviet Union and India between 1947-54 were accompanied by a general antipathy in the Indian defence establishment about the utility, technological quality and implications of arms procurement from the Soviet Union during that period, leaving the self-reliance model to rely almost exclusively on diversification among the European sources of supply. The end of the Stalin era and reorientation of Soviet policy toward the developing world, especially India, under Nikita Khrushchev, started the process of Soviet supplies of heavy industries and economic relations without direct political strings which started a new era of bilateral relations which was to build greater confidence in military-technical cooperation between the two countries over the next four decades.⁵ But it was the Sino-Indian War of 1962 that gave a boost to expansion of Indian arms procurement arrangements from the Soviet Union. It was not till 1961 that India started to access Soviet weapons and equipment, an experience that became extremely successful at one level but which also led

4. Singh, n. 2.

5. Contrary to conventional wisdom, there was never a defence cooperation (as normally defined) arrangement between the two countries. For example, the Indian defence forces did not adopt Soviet military doctrines for employment of Soviet weapons, and evolved their own, while remaining conscious of the excessive dependence on Soviet sources of supply. Hence, the attempt to acquire licensed production capabilities wherever possible to reduce that dependency provided a partial solution.

to strategic complacency at another, leading to licensed manufacture of a large number of Soviet systems, but with little collaboration with the Soviets to acquire design technology, leave alone joint ventures to produce weapons and equipment.

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A combination of the need for rapid expansion of the defence forces, frequent wars, urgency of operational needs overriding long-term planning and the comfort level of mutual benefit of Indo-Soviet military-technical cooperation led to a strategic shift in the Indian self-reliance paradigm during the decades of the 1960s and 1970s.

Indigenous design and development programmes receded into the background and licensed production became the central piece of arms acquisition policies. The result is symbolised by the three-decade gap in efforts to design a combat aircraft between the HF-24 multi-role combat aircraft of late 1957 and the LCA (light combat aircraft) in the late 1980s—three decades during which aviation technology experienced exponential growth, while our own design capabilities eroded due to absence of projects. And then an ad-hoc arrangement had to be created with the Aeronautics Development Agency (ADA) under the Defence Research and Development Organisation (DRDO) to design the LCA rather than rely on the design bureau of the public sector giant, HAL.

While India had made good use of the compensatory mechanisms and arrangements in its arms acquisitions from Europe and the Soviet Union, these were not really negotiated contractual or formal arms trade offsets as generally defined. They grew more out of complementary, mutually compatible national interests rather than a conscious policy, except in seeking trade terms like credits and licensed manufacture wherever possible. With

the disintegration of the Soviet Union in 1991, a historic opportunity was left unutilised to shift the self-reliance paradigm to a new level through joint ventures in design, development, production and sales. In fact, US Undersecretary of State for Arms Control and International Security Lynn Davis had acknowledged in 1993 that “practically every arms purchaser demands some form of offsets.”⁶ At the same time, the path breaking American offer for transfer of Northrop TF-5 lead-in fighter trainer (an advanced jet trainer, or AJT in Indian parlance) upgraded with modern systems, production and future sales rights to be transferred to India in the late 1980s was not utilised in spite of the urgency of acquiring the capability to procure an AJT and upgrading our aviation industry capabilities. A unique opportunity for a major offsets programme was, thus, lost while the air force continued to suffer from lack of suitable aircraft and had to finally start sending pilots abroad by 2004 due to lack of aircraft!

The weakness in our offsets strategy, for whatever reason, may be seen in the fact that the upgrade of MiG-21, an aircraft whose three variants were manufactured in India since the late 1960s in hundreds at HAL, and which accounted for nearly 60 per cent of the IAF fighter fleet by the end of the 1980s, had to rely on Russia for assistance (in terms of contractual obligations as well due to lack of design data). In more recent times, some movement has started in the area of joint ventures, especially in design and development. But the very emphasis on the Indo-

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Russian Brahmos cruise missile development indicates the failure to pay adequate attention to the role and potential of introducing offsets arrangements in our arms procurement strategy at a time when offsets were to become the norm in international arms trade. There is, thus, an obvious

6 Cited by Lora Lumpe, “Sweet Deals, Stolen Jobs,” *The Bulletin of the Atomic Scientists*, September/October 1994.

need to understand the dynamics of arms trade offsets, especially to energise our defence industry that has been ready for a suitable catalyst for a long time.

WHAT ARE OFFSETS?

Offsets form part of compensatory transactions used by industry in trade and transfer of technology. The nature of compensatory mechanisms generally referred to in open literature and government publications ranges from licensed production to co-production, barter, counter-trade and offsets arrangements, mostly focussing on the last two, that incorporate some method of reducing the amount of foreign exchange needed to buy a military item or some means of creating revenue to help pay for it.⁷ The terms have been used as umbrella concepts evolving over time as the nature of activities and circumstances changed, often in an inconsistent manner. For example, the US International Trade Commission had defined “counter-trade” in 1985 as the umbrella term to include all forms of compensatory arrangements; and the US Administration in its annual reports to the Congress in recent years has been using the term “offsets” as the umbrella term that includes counter-trade as a form of offsets arrangement, besides a range of other industrial and commercial compensation practices in the procurement programmes. The latter formulation has now found widespread acceptance internationally in arms trade as well as non-military industrial transactions and activities. Offsets, therefore, are a form of counter-trade (a reciprocal exchange involving little or no transfer of funds) required by foreign governments when they procure certain military and large civilian products.⁸ We aim to use the term offsets in this essay as an umbrella term of broader industrial and commercial compensation practices required as a condition (mandated or voluntarily

7. Stephanie G. Neuman, “Coproduction, Barter, and Countertrade: Offsets in the International Arms Market,” *Orbis*, vol.29, Spring 1985, pp. 183-213.

8. Kwabena Anyane-Ntow & Santhi C. Harvey, “A Countertrade Primer: A Look at a Growing Trend That Demands Management,” *Management Accounting* (USA) April 1, 1995.

negotiated) of purchase in either government-to-government or commercial sales of military or civilian equipment, technology and services.

It may be useful at this stage to note some definitions of the term offsets to grasp its full dimensions. In 1986, a US inter-agency group defined offsets as “industrial compensation practices required as a condition of purchase in either government-to-government or commercial sales of defence articles and/or defence services as specified in the International Traffic in Arms Regulations.”⁹ Three years later (in 1989), the US Congress described offsets in defence trade as:

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Many contracts entered into by the United States firms for the supply of weapons systems or defence-related items to foreign countries and foreign firms are subject to contractual arrangements under which United States firms must agree

- (A) to have a specified percentage of work under, or monetary amount of, the contract performed by one or more foreign firms;
- (B) to purchase a specified amount or quantity of unrelated goods or services from domestic sources of such foreign countries; or
- (C) to invest a specified amount in domestic businesses of such foreign firms.

Such contractual arrangements, known as offsets, are a component of international trade and could have an impact on United States defence industry opportunities in domestic and foreign markets.¹⁰

Offsets arrangements commit the seller country/firm to provide technology, purchase locally produced components, or provide other forms of assistance to the buyer country that go beyond compensation economically

9. Department of Commerce, “Offsets in Defence Trade: Third Annual Report to the Congress,” Washington DC, US Department of Commerce, August 1998, p.1.

10. US National Defence Authorisation Act for FY 1989, Pub L. 100-456, Sec. 825(a).

necessary to support the sale.¹¹ Hence, defence offsets cover the full range of industrial and commercial benefits that firms provide to foreign governments as the inducements or conditions for the purchase of military goods and services. They include, for example, co-production arrangements and sub-contracting, technology transfers, in-country procurements, marketing and financial assistance, and joint ventures. Foreign governments use offsets as a means of reducing the financial impact of their purchases, obtaining valuable technology and manufacturing knowhow, supporting domestic employment, creating or expanding their defence industries, and making the use of their national funds for foreign purchases more politically palatable.¹²

One of the leading authorities on offsets arrangements and practices lists the means to implement offsets (as seen by the US government) as follows:¹³

Co-production—Overseas production that permits a foreign government or producer to acquire the technical information to manufacture all or part of a US-origin article.

Co-production related to military exports is based upon a government-to-government agreement. It includes government-to-government licensed production and excludes licensed production based upon direct commercial arrangements by US manufacturers. Co-production in non-military exports is based on an agreement contracted directly between the exporter and importer.

11. David C. Mowery, *Offsets in Commercial and Military Aerospace: An Overview*, Symposium Papers on Trends and Challenges in Aerospace Offsets, January 1998, cited in "Foreign Offset Demands in Defence and Civil Aerospace Transactions," Minority Staff Report, Committee on Government Reform and Oversight, US House of Representatives, October 23, 1998, p. 1.

12. Katherine V. Schinasi, "Defence Trade: Issues Concerning the Use of Offsets in International Defence Sales," Testimony Before the Committee on Armed Services, House of Representatives, Report of United States General Accounting Office, GAO-04.952T dated July 8, 2004.

13. Pompiliu Verzariu, *The Evolution of International Barter, Countertrade, and Offset Practices: A Survey of the 1970s Through the 1990s* (Washington DC: US Department of Commerce, International Trade Administration, Office of Finance, US Government, March 2000), pp. 6-7.

Licensed production—Overseas production of a US-origin article based upon transfer of technical information under direct commercial arrangements between a US manufacturer and a foreign government or producer.

Sub-contractor production—Overseas production of a part or component of a US-origin article. The sub-contract does not necessarily involve a licence of technical information and is usually a direct commercial arrangement between the US manufacturer and a foreign producer.

Overseas investment—Investment arising from the offsets agreement, taking the form of capital invested to establish or expand a subsidiary or joint venture in the foreign country.

Technology transfer—Transfer of technology that occurs as a result of an offsets agreement and that may take the following forms: research and development conducted abroad, technical assistance provided to the subsidiary or joint venture of overseas investment, or other activities under direct commercial arrangement between the US manufacturer and a foreign entity.

Counter-trade—In addition to the types of offsets defined above, various types of commercial counter-trade arrangements may be required as part of offsets commitments. They may include one or more of the following mechanisms:

Barter—A one-time transaction only, bound under a single contract that specifies the exchange of selected goods or services for another of equivalent value.

Counter-purchase—An agreement by the initial exporter to buy (or to find a buyer for) a specific value of goods (often stated as a percentage of the value of the original export) from the original importer during a specified time period.

Compensation (or buyback)—An agreement by the original exporter to accept as full or partial repayment products derived from the original exported product.

Offsets associated with military exports are frequently divided into direct and indirect classes.

Direct offsets—Contractual arrangements that involve goods and services referenced in the sales agreement for military exports.

Importing countries have generally mandated offsets requirements by law, often to 100 percent of the arms contract value, with the bottom line being drawn at contracts worth as low as \$5 million.

Indirect offsets—Contractual arrangements that involve goods and services unrelated to the exports referenced in the sales agreement.

While the objectives, and hence their characteristics, would vary from country to country

depending upon their priorities, capabilities and interests, it is possible to outline some of them which may be considered applicable in most cases. These would almost always include:

- While offsets in the past have not necessarily been formally included in arms trade contracts, more and more of them are now formalised in the contracts as a separate clause binding the exporters to a variety of penalties for non-fulfilment of the offsets obligations.
- Importing countries have generally mandated offsets requirements by law, often to 100 per cent of the arms contract value, with the bottom line being drawn at contracts worth as low as \$5 million.
- One or more of the following objectives may drive the motivation for offsets in the importing countries:
 - That offsets would lead to transfer of technology and, hence, enhance indigenous capabilities and economic prosperity so important for developing countries. But what technology is transferred depends upon the terms of the contract. Very often, as in the case of India, such transfers have been limited to transfer of production technologies for specific weapons under a licensing programme. Even in these cases, full production of the weapon system, its sub-systems and components may not be included for a variety of reasons largely due

to economies of scale at the time orders are placed. The case of the British Aerospace Jaguar contract is a prime example, although this was also very much in evidence in the licensed manufacture of hundreds of MiG-21 aircraft in India over two decades.

- One of the important criteria for offsets sought by countries is to reduce the net cost of arms purchases. For example, in 1996-97, as a consequence of offset agreements, Australia is believed to have managed to ensure that “87 per cent of expenditure on defence logistics was spent in-country, 55 per cent of capital equipment was sourced locally, and 99 per cent of expenditure on capital facilities was spent in-country.”¹⁴ For obvious reasons, this is an important consideration for developing countries, and almost an imperative for those with narrow margins in balance of payment accounts.
- An expectation that offsets would help to build indigenous defence and non-defence industry, in turn, leading to broader support for greater economic development and advantages. The scale of offsets is often limited by the ability of countries to absorb the offsets deals. Some states (like the UK as an arms importer) have viewed offsets as an instrument to work toward an advantage in a globalising arms manufacturing system, especially for components.
- That offsets would help to create jobs and employment opportunities in the importing countries.
- The exporting countries also hope to take advantage of offsets to expand their production runs through economies of scale in an

The exporting countries also hope to take advantage of offsets to expand their production runs through economies of scale in an environment where arms sales are much more a buyer’s market.

14. S. Markowski, and P. Hall, “Mandatory Defense Offsets – Conceptual Foundations,” in J. Brauer and J.P. Dunne, eds., *Arms Trade and Economic Development: Theory, Policy and Cases in Arms Trade Offset* (London: Routledge, 2004), p.273.

environment where arms sales are much more a buyers market, "... and offset occurs when the supplier places work to an agreed value with firms in the buying country, over and above what it would have bought in the absence of the offset" and offsets "... are usually designed to achieve a relocation of economic activity from the country of the equipment supplier to the purchasing nation."¹⁵ For example, South Africa, as part of its \$8.7 billion offsets agreement (against a purchase of \$2.2 billion worth of aircraft) from BAE Systems/Saab led to the development of high-tech aircrew helmets with weapon aiming sights, which are now standard equipment with BAE/Saab's Gripen fighter aircraft.¹⁶ Lower cost of skilled labour, industrial infrastructure and production (as in Poland, China and India), therefore, are important incentives for US and European arms producers to outsource defence equipment to other countries for political, economic and military-strategic reasons.

OFFSETS IN US ARMS TRADE

The offsets arrangements employed by the US arms trade are a useful indicator of the global trend for a variety of reasons ranging from their being governed by official regulations and policy, the transparency in the system, and above all, the fact that the US continues to be the largest arms exporter in the world. There is a new interest in the US and India to open up arms trade between the two countries due to changing dynamics of bilateral relations as well as the attraction of Indian large arms procurement potential in the coming decade.

The US has been one of the two major exporters of weapons and equipment in the world during the Cold War, and the biggest since the end

15. Stephen Martin and Keith Hartley, "UK Firms' Experience and Perceptions of Defence Offsets: Survey Results," *Defence and Peace Economics*, vol. 7, 1995, pp. 371-371.

16. The total offsets deal, for \$14 billion worth of economic activity, in defence and non-defence domestic industry, including national airline and telephone system, against imports of \$2.2 billion worth of fighter aircraft makes the South Africa deal the largest offsets agreement so far (see http://www.fdimagazine.com/news/fullstory.php/aid/283/Jet-propelled_investment.html).

of the Cold War and collapse of the Soviet Union. It has been engaged in defence trade offsets since 1961. The US government sees offsets as a valuable instrument to serve important foreign policy and national security objectives such as increasing industrial capabilities of allied countries, standardising military equipment, and modernising allied forces. Predictably, therefore, the main focus of the US offsets programmes and activities has been its allies. But this has been changing in recent years as evidenced by the latest data. In essence, virtually all of the defence trading partners of the US impose some type of offsets requirement.

US laws require the Department of Commerce (Bureau of Industry and Security) to submit annual reports to the Congress on the offsets programme and its implications for the US arms industry, including employment, etc. The latest (eighth such annual) report by the Department of Commerce analyses the impact of offsets on US defence preparedness, industrial competitiveness, employment, and trade of the US based on data for ten years from 1993 through 2002.¹⁷ The main points of the report are summarised below:

- US companies reported sales of 181 different defence systems or sub-systems (including services) valued at \$63.6 billion during 1993-2002. Included in these sales were a total of 434 offsets agreements with 36 countries valued at \$41.8 billion (that is 65.7 per cent of the export contract value). Sales of aerospace defence systems were valued and accounted for nearly 82 per cent of the total export contracts.
- Compared to the earlier nearly all offsets being contracted with the European allies, about two-thirds (65 per cent) of the value of offsets agreements were contracted with European countries during this period although less than half (46 per cent) export contracts were concluded with them. This is in spite of the fact that European offsets demands as a percentage of exports increased from 78.3 per cent to 94.3 per cent. But the increase for the rest of the world was much greater, rising from 22.5

17. "Offsets in Defence Trade: Eighth Study," by Department of Commerce, Bureau of Industry and Security, US Government, Washington DC, July 2004, at <http://www.bxa.doc.gov/DefenseIndustrialBasePrograms/OSIES/offsets/8thOffsetsReport.htm>

per cent to 77.3 per cent (an increase of 55 per cent compared to the increase of European offsets demands by 16 per cent for the same period).

Among the European countries Austria stood at the highest level, with

Asian share of the total US export contracts and the region's level of offsets demands have been growing dramatically.

offsets agreements worth 174.2 per cent of the value of the weapon systems being sold. Netherlands (with 120.5 per cent), Greece (with 110.5 per cent) and Sweden (with 103.9

per cent) followed Austria, according to the report.

- The Asian share of the total US export contracts and the region's level of offsets demands have been growing dramatically. These countries are capturing an increasing share of offsets agreements and export contracts as well as demanding higher offsets. For example, in 2000, Asia accounted for only 2.8 per cent of the value of the offsets agreements with the US; by 2002, this had increased to 64.8 per cent of the total (compared to 34 per cent of the agreements with Europe).
- The level of demands from non-European nations as a group is rising (although India is not party to the process).
- The six sectors of the US industrial base most commonly involved in offsets transactions (to the extent of 85 per cent) are: transportation equipment (which includes aircraft, guided missiles, ships and motor vehicles as per US government definitions, and accounted for 51.6 per cent of the total value), industrial machinery, electronic/electrical equipment, business services, measuring and analysing instrumentation, and technical services and consultants.
- Based on the empirical data, the report concludes that "defence exports sales had a net positive effect on employment in the defence sector during the period from 1993 to 2001, although the net positive effect was diminished by the offset agreements."

During the five-year period of 1998-2002, US defence contractors documented exports of defence products and services totalling over \$28.6

billion (see Table 1). This includes only exports which have a corresponding offsets agreement. Such exports rose from approximately \$3.3 billion in 1998 to about \$7.4 billion in 2002, representing a 124 per cent increase within five years. During this period, US defence contractors documented offsets agreements related to defence contracts of almost \$22.8 billion as shown in Table 1. This is 79.5 per cent of the value of the corresponding defence exports for the same five-year period. The value of offsets agreements rose from \$1.85 billion in 1998 to \$6.09 billion in 2002, an increase of 230 per cent for the period.¹⁸

Table 1: Defence Export Contracts and Offsets Agreements Value by Year and Total, 1998-2002 (in \$ million)

Year	Export Value in US Million Dollars	Offsets Agreements Value in US Million Dollars
1998	3,257.8	1,846.6
1999	4,681.2	3,851.4
2000	6,278.3	5,498.1
2001	7,039.2	5,497.3
2002	7,406.2	6,094.8
TOTAL	28,662.7	22,788.2

Source: US Department of Commerce/BIS Offsets Database

Offsets values, as a percentage of defence sales, vary by year. This percentage is primarily dependent on the offsets policies and requirements of individual foreign governments purchasing defence systems. The more industrialised nations in Europe and elsewhere have traditionally demanded higher percentages of offsets as compensation, pushing offsets percentages closer to 100 per cent of the contract value. Less industrialised countries

18. "Offsets in Defence Trade and the US Subcontractor Base," Special Report prepared by US Department of Commerce, Bureau of Industry and Security, Office of Strategic Industries and Economic Security, US Government, Washington DC, August 2004, pp. 2-3.

generally require offsets valued at 50-60 per cent of the contract value; however, this percentage has been increasing steadily over time, as less industrialised nations improve their ability to absorb industrial offsets. Nations are also sharing information and experiences about offsets agreements and offsets transactions, further adding to foreign offsets

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demands. In 1998, offsets as a percentage of exports was 56.7 per cent. This rose to a high of 87.6 per cent in 2000. In 2002, the percentage dropped to 82.3 per cent.

Prime contractors documented offsets agreements related to defence contracts of almost \$22.8

billion for the period 1998-2002. This is 79.5 per cent of the value of the corresponding defence exports for the same five-year period. The value of offsets agreements rose from \$1.85 billion in 1998 to \$6.09 billion in 2002, an increase of 230 per cent for the period. The average term of such offsets agreements (see Table 2) was 81 months.

**Table 2: Average Term of Offsets Agreements
in Months 1998–2002**

Year	Average Terms in Months
1998	83
1999	76
2000	79
2001	82
2002	85

Source: US Department of Commerce/BIS Offsets Database

A global decline in defence spending since the end of the Cold War has significantly increased competition and highlighted the economies of scale in production as well as economies of cooperation in defence acquisitions besides foreign policy implications which lead to closer relations between the seller and buyer country with offsets arrangements since they go beyond simple sales. Raytheon, by its sales of the Patriot missile system to Japan, with offsets arrangements “stands to realise at least \$776 million from its coproduction deal, mostly clear profit since the US government funded the development of the missile”

There is no fixed yardstick for the proportion of offsets in any arms trade agreement although countries have laid down rules and laws to define the proportion.

besides benefiting from follow-on upgrades and spares well into the future.¹⁹ At the same time, the US economy and military stand to gain from such larger production runs for weapon systems and spares due to economies of scale.

There is no fixed yardstick for the proportion of offsets in any arms trade agreement although countries have laid down rules and laws to define the proportion. Such mandated offsets have, more often than not, had to be spread into indirect arrangements. For example, South Africa had demanded a 400 per cent offsets for their planned purchase of light fighters from UK/Sweden.²⁰ Canada established a 150 per cent offsets for the \$2.3 billion acquisition programme for F/A-18s from the United States. The UK offsets have normally ranged between 50-130 per cent (mostly above 100 per cent) for its arms export deals.²¹ While systems like the Anglo-French Jaguar have been assembled/produced in India since the early 1980s, it is not certain

19. Michael W. Chinworth and Ron Mathews, “Defence Industrialisation Through Offsets: The Case of Japan,” in Stephen Martin, ed., *The Economics of Offsets* (Amsterdam: Harwood Academic Publishers, 1996), p. 203.

20. Barbara Opall-Rome, “Consolidation Breeds New Thinking on Offsets,” *Defence News*, February 1, 1999, p. 3.

21. General Accounting Office, Military Exports, “Offsets Continue to Grow,” Washington DC, US General Accounting Office, April 1996, p. 6.

what sort of offsets beyond the assembly and partial production capabilities were transferred to India which has traditionally been the biggest buyer of British weapon systems and product support.

SOME POINTERS FOR POLICY

India is now one of the newly industrialising countries with a robust economic and technological growth which has been sustained at an average rate of growth of 5.7 per cent of the GDP for the past quarter century. Globalisation of the defence industry requires that we join the process if we are to remain abreast of technological developments and make use of them

Globalisation of the defence industry requires that we join the process if we are to remain abreast of technological developments and make use of them for our own defence.

for our own defence. The country has made seminal progress in acquiring defence technology over the years. But the capacity to design and develop our own weapon systems with state-of-the-art technological quality continues

to remain marginal in spite of tremendous resources being invested into the process. On the other hand, international technology denial regimes have had a further debilitating impact on acquisition of capabilities, especially at the upper end of the military technological spectrum. Our offsets arrangements in the past have focussed, consciously or unconsciously, on licence agreements and acquisition of production technologies where the weapon after the current one has again to be imported. Arms imports with offsets arrangements focussed on acquisition of technology and capacity for future design and development, with or without joint development, manufacture and sales programmes, provide the obvious route to energising our defence industry for the future.

Our strategic goal in looking closely at arms trade offsets would have to be to strengthen national security and defence capability through building comprehensive national power, especially in the technological-economic arenas, including where they impact on defence. In turn, this process,

especially where it intersects design and development capabilities, would contribute to supporting domestic defence industry and increasing the participation of the private sector in it. India is one of the countries with a high economic growth and has enormous assets, not the least being a large professional military establishment. While it has around 35 per cent people in middle and higher standards of living, it would continue to have a huge population living in poverty. But, with its 272 universities and nearly 14,000 institutions of higher learning producing on an average 4,000 doctorates and 35,000 post-graduates (besides 75,000 students entering US institutions) annually it would also have the world's largest pool of professional workforce. No wonder, that 132 of the world's leading multinational companies, including 100 out of Fortune 500 companies, have already set up high-technology R&D activities in India. The US National Intelligence Council report concludes that India is well placed to be a leader (along with the US and China) in the expected next technological revolution (through the convergence of nano-, bio-, information and materials technology).²²

Our strategic goal in looking closely at arms trade offsets would have to be to strengthen national security and defence capability through building comprehensive national power, especially in the technological-economic arenas, including where they impact on defence.

Empirical data indicates that the cost of defence equipment is almost always higher when the offsets route is adopted as compared to direct purchase. But the advantages of access to new technologies and the ability to strengthen the foundations of research and design capability would normally also far outweigh the higher cost in terms of long-term advantages. These advantages essentially would rest in integration with the global arms industry in a variety of ways, including increase in domestic and foreign

22. *Mapping the Global Future*, Report of the National Intelligence Council's 2020 Project, Washington DC, NIC 2004-13, December 2004.

investments in a broad range of defence ancillary and sub-contractor industry. Legal provisions for such investments have already been approved by the government in terms of 26 per cent foreign equity in the defence sector. What is needed is the linking of opportunities with specific programmes which an offsets strategy could provide, especially in view of the likely

Large buyers always have substantive bargaining power which could be used to leverage economic as well as technological and industrial benefit.

substantial investments in defence modernisation in the coming decade.

As noted above, India's sheer size and defence commitments of a long land border and coastline, besides the Exclusive Economic

Zone (EEZ) with energy resources to be protected necessitate a credible robust defence capability virtually in the shape of full spectrum forces. With limited capability to indigenously design and develop weapon systems, it is inevitable that substantive arms imports would continue to be a phenomenon for a long time to come. In the coming decade, the force modernisation imperative would lead to substantive acquisitions from abroad. What we need to note is that large buyers always have substantive bargaining power which could be used to leverage economic as well as technological and industrial benefit. There is a natural tendency to seek cost reduction benefits in such deals; and our concerns about balance of payments had also implied reduction of foreign exchange flows from the country as a major factor in procurement decision-making. The licensed production route as a compensatory mechanism was employed wherever possible to support this goal as well as acquire technology. What we need now is to build on our existing capabilities to leverage an offsets strategy to build future capabilities.

One of our major concerns in recent years has been related to the sanctions regime coming into effect to place severe restrictions on spares and product support of weapon systems acquired much earlier. European defence industries have been increasingly integrated into a trans-Atlantic partnership for a variety of reasons. But that has also resulted in new challenges for our

defence capabilities. The post-1998 sanctions by the US under its national laws had led to a bizarre situation where the Indian Navy's Harrier aircraft bought from the UK in 1980s could not be supplied or maintained effectively due to US sanctions! Similarly, the gear boxes of the British Sea King helicopters which the Indian Navy sent to the UK for overhaul, could not be sent back to India due to US sanctions. The sanctions regime effect and the need for sovereign guarantees had to be built into the contract for 66 British Hawk advanced jet trainers, undoubtedly

An offsets regime would help to build interdependence and create stakeholders, especially if are able to access American arms directly.

raising the costs and adding to time delays in the finalisation of the contract.

On the other hand, an offsets regime would help to build interdependence and create stakeholders, especially if are able to access American arms directly. There is a clear and growing interest among American major arms producers in the sale of weapons and equipment to India as their presence at Aero India 2005 testified. Given the changing nature of Indo-US relations and the scale of our arms procurement needs, the US may find substantive incentive to supply weapons and equipment that it earlier was unwilling to supply to India. Supply of arms to India would make it easier for the US to continue its arms supplies to Pakistan, while helping to build the Indian defence capability would reduce India's dependence on the former Soviet Union. Contrary to conventional wisdom, procurement of weapon systems from the US may in fact be a far greater asset to support self-reliance than simply relying on Russian and European sources as we have done in the past.

Many countries have adopted mandatory offsets policies, including through legislation, laying down minimum levels in terms of value of contract. But most of such mandatory offsets policies have been found to restrict the scope for negotiations and could lead to lack of economies of scale while adding to the bureaucratic load with all its attendant complications. It would, therefore, be desirable for us to approach each offsets arrangement on its own merit, at least at this stage.

Global trends in arms trade offsets are altering the terms of trade and technology acquisition by developed as well as developing countries in fundamental ways. India cannot stay out or simply keep going along the earlier path of licensed production and looking for new weapons at the end of the production run without a capability to design the follow-on weapon

Global trends in arms trade offsets are altering the terms of trade and technology acquisition by developed as well as developing countries in fundamental ways.

systems. The rapid recovery and growth of the defence (especially aerospace) industry in Brazil and South Africa owe, in no small measure, to the offsets programmes initiated by the mid-1990s. Offsets generally help to bring in new technologies, boosting investment and economic productivity with the potential of increasing employment, especially in skilled categories. For a country like India, they would provide opportunities to acquire a foothold with export partnerships in new markets otherwise far more difficult to penetrate in an era of retrenchment of arms procurements. Above all, a robust offsets programme would go a long way in supporting indigenous defence industry besides many other segments of national industrial enterprise. In turn, this would strengthen national security in multiple ways.

The starting point for future policy would necessitate a deeper empirical study to look closely at our specific needs and potential capabilities to efficiently and scientifically address the issues related to future offsets programme. Since offsets, both direct as well as indirect ones, would impact on a number of areas dealt with by different ministries and departments, there is an obvious need for inter-ministerial coordination. At the very minimum, the Ministries of Defence, Commerce and Industries, Science and Technology, Finance and the Prime Minister's Office (PMO) would have a major stake and role in any offsets programme and decision-making related to it.

In view of the specialised nature of the task of leveraging an offsets strategy for national security, it may be advisable (or perhaps, inescapable)

for the government to set up a standing National Task Force for Offsets under the prime minister's chief adviser for science and technology. At the same time, the Confederation of Indian Industries (CII) and Federation of Indian Chambers of Commerce and Industry (FICCI) would need to set up their own cells for independent studies as well as in interacting with the government to help optimise an ongoing offsets strategy and programme. Within the defence establishment, the Defence Acquisition Council may perhaps be the best institution to look at the issues closely and coordinate inter-departmental and inter-Service policies. The Defence Acquisition Council may have to rely on a more specialised group under the National Task Force for Offsets to look closely at the offsets potential and the various dimensions in the process of procurement decision-making. This would naturally bring in greater supervision of the arms acquisition process while obviating the necessity of looking toward the Central Vigilance Commission (CVC) or the Comptroller Auditor General (CAG) for prior scrutiny of procurement decisions which actually is beyond their charter anyway. ■

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