OFFSETS IN DEFENSE TRADE

Ninth Study

Conducted Under Section 309 of the Defense Production Act of 1950, as Amended

Prepared by
U.S. Department of Commerce
Bureau of Industry and Security

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Executive Summary

This is the ninth annual report on the impact of offsets in defense trade prepared pursuant to Section 309 of the Defense Production Act of 1950,[3] as amended (DPA). The Department of Commerce's Bureau of Industry and Security (BIS) has been delegated responsibility for preparing the reports required under Section 309. The report analyzes the impact of offsets on the defense preparedness, industrial competitiveness, employment, and trade of the United States.

To assess the impact of offsets in defense trade, the Department of Commerce obtained data from U.S. defense firms involved in defense exports and related offsets and supplemented this information with statistics from the Bureau of the Census and other sources. This report covers offset agreements entered into and offset transactions carried out from 1993 through 2003 and their implications for the U.S. industrial base. It also reports on the progress of the newly formed Interagency Team on offsets in defense trade, which is chartered to engage in consultations with foreign governments on eliminating the adverse effects on offsets in defense trade. Finally, the report summarizes the results of Commerce's August 2004 Supplemental Offsets Report to Congress.

Offset Activity

Agreements

Total offset activity can be measured by the number and value of new offset agreements entered into between U.S. defense contractors and foreign governments in connection with a U.S. defense-related export.

Offset Agreements 2003: U.S. defense contractors reported entering into 32 new offset agreements with 13 countries in 2003. New offset agreements had a total value of $8.9 billion, and were attached to defense export contracts totaling $7.3 billion. The offset requirement equaled 121.8 percent of the value of the defense exports.[4]

European nations received offsets equal to an average of 148.8 percent of the total export values in 2003, up from 94.3 percent in 2002. Without the large sale mentioned in footnote 2, the

[3] Codified at 50 U.S.C. app. § 2099 (2000).

[4] One large weapon system export in 2003 with an offset percentage of more than 150 percent skewed the data for that year. Without this export and its related offset agreement, the average offset percentage for 2003 for the world would fall to 75.1 percent (from 121.8 percent with the sale).

average for Europe would fall to 103.9 percent for 2003. For non-European nations, the average offset requirement was 48.4 percent in 2003, down from 77.3 percent in 2002.

Offset Agreements 1993-2003: U.S. companies reported entering into 466 offset agreements with 36 countries during the time period from 1993 to 2003. U.S. companies reported export sales totaling $70.9 billion. Offset agreements related to those export contracts were valued at $50.7 billion, or 73.8 percent of the export contract value, up from 65.7 percent for 1993-2002. Sales of aerospace defense systems (i.e., aircraft, engines, and missiles) were valued at $59.6 billion and accounted for 84 percent of the total export contracts.

Over the eleven-year period, European countries alone accounted for 69.6 percent of the value of offset agreements, but less than half (49.1 percent) of the value of related export contracts. European offset demands continued to increase over the eleven-year period. Between 1993 and 2003, European offset demands as a percentage of exports increased by 70.5 percentage points, going from 78.3 percent in 1993 to 148.8 percent in 2003;[5] for the rest of the world, the increase was almost 26 percentage points, rising from 22.5 percent to 48.4 percent. Overall, 73.3 percent of offset agreements (by number) with European countries totaled 100 percent or more of the value of the weapon system export during the period.

By comparison, Middle Eastern countries and most countries in the Pacific area generally demand lower offset levels than European countries. Of the 219 offset agreements with non-European countries, 150 (68.5 percent) had offset percentages of 50 percent or less. Only 69 of the 219 offset agreements (31.5 percent) had percentages of more than 50 percent. Eleven of the 69 (15.9 percent) had offset requirements in excess of 100 percent.

In a country-by-country analysis, Austria led Europe and the rest of the world in terms of its offset requirement percentage. On average, sales of U.S. weapons systems to Austria were associated with offset agreements worth 174.2 percent of the value of the weapon systems. Austria was followed closely by a number of Eastern European countries with offset requirements well above 100 percent. Other countries with offset percentages greater than the value of the weapon systems exported were the Netherlands (120.5 percent), South Africa (116.7 percent), Greece (110.0 percent), and Sweden (103.9 percent).

[5] Ibid.

Offset requirement trends are more representative when viewed as a moving, weighted average.[6] A moving average smoothes out the yearly fluctuations in weapon system sales and related offset agreements. The weighted world trend in offset percentages rose from 52.9 percent to 94.1 percent. For the eleven-year period European offsets had a 35.2 percentage point increase (from 77.8 percent to 113.0 percent); the rest of the world nearly doubled its offset requirements, from 32.4 percent to 60.3 percent.

Transactions

Offset activity can also be measured by the number and value of individual offset transactions carried out in fulfillment of offset agreements during the reporting period.

Offset Transactions 2003: U.S. companies reported offset transactions with a total actual value of $3.6 billion in 2003, the highest value reported for the eleven-year period, up from $2.6 billion in 2002. The 2003 figure represents a 38.5 percent increase from the 2002 total. The percentage of the value of offset transactions classified as indirect rose during 2003, reaching 68.6 percent, up from 64.0 percent in 2002. This was the highest percentage classified as indirect transactions for all years in the period. Direct transactions accounted for 31.2 percent of the value of transactions in 2003, the lowest level of direct transactions over the eleven-year period. The remaining 0.2 percent of the value was unspecified.

Offset Transactions 1993-2003: For 1993-2003, U.S. companies reported 6,593 offset transactions executed in 46 countries. The actual value of the offset transactions from 1993 to 2003 was $27.1 billion. Indirect offsets accounted for 61.1 percent of the total value of transactions and direct offsets made up 38.1 percent of the value. The remaining 0.8 percent of the value was unspecified.

The categories of Purchases, Subcontracts, and Technology Transfers accounted for the majority of offset transaction activity during 1993-2003: for that eleven-year period, they accounted for 79.9 percent of the total value of offset transactions. Purchases accounted for 39.6 percent of the total value, and subcontracts accounted for 26.6 percent. The value of technology transfer offset transactions was 13.8 percent of the total value. The categories of Miscellaneous, Credit Transfer, Training, Overseas Investment, Co-production, and Licensed Production made up the remaining 20.1 percent of the total value of offset transactions.

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[6] Here, the value of export contracts and offset agreements is totaled for each successive three-year period, beginning with 1993-1995, followed by 1994-1996, and so forth; then the offset percentage is determined. This leads to nine three-year observations over the eleven-year reporting period (1993-2003).

The majority of offset transactions fell in the manufacturing sectors; manufacturing-related transactions accounted for $21.9 billion, or 80.8 percent of all transactions. Service-related transactions accounted for $3.2 billion, or 11.8 percent of the total. Financial, insurance, and real estate industries accounted for an additional 4.8 percent of the total value of transactions during the period.

The Role of Multipliers

Multipliers are incentives used by purchasing countries to stimulate particular types of offset transactions. Prime contractors receive added credit toward their obligation above the actual value of the transaction when multipliers are used. In a small number of cases, a negative multiplier is used to discourage certain types of offsets. In Europe, 83 percent of transactions (by number) have no multiplier involved for the prime contractor when fulfilling the offset commitment. For North and South America, 85.5 percent of transactions (by number) have no multiplier involved; for Asia, the figure is 76.6 percent, and 87.9 percent for the Middle East and Africa.

For the small percentage of transactions that did have multipliers, Overseas Investment and Training transactions were most widely used: 44.3 percent of Overseas Investment transactions and 39.3 percent of Training transactions had positive multipliers. The categories of Purchases and Subcontracts together accounted for 73.4 percent of the 6,593 transactions reported over the eleven-year period, but only 8.4 percent of transactions in each of these categories had positive multipliers applied.

Supplemental Offset Report

In December 2003, Congress passed the Defense Production Act Reauthorization of 2003 (Act).[7] Section 7 of the Act required the Department of Commerce to prepare a report to the Congress on offsets in defense trade, with a focus on the U.S. defense subcontractor base. This report was submitted to Congress in August 2004.

To meet the requirements of the Act, BIS administered two surveys, one for prime contractors and another for the lower tier subcontractors. These surveys focused on employment levels for the five-year period 1998-2002. In addition, subcontractors were asked to discuss their level of involvement in and experience with offset activities.

[7] Pub.L. No. 108-195 (Dec. 19, 2003) (50 U.S.C. App. § 2099 Note)

For all tiers of the subcontractor base, 104 companies, or 15.5 percent of all 672 subcontractor respondents, indicated that they were involved in offsets. The majority of subcontractors indicated that they were not involved in offsets (485, or 72.1 percent of all subcontractors responding). The remaining respondents were unsure. A slight majority of responding firms (53 of 104) indicated that they had positive experiences with offsets; 37 described negative experiences. Another nine respondents indicated that offsets had both positive and negative impacts.

The 485 subcontractors who were not involved in offsets were asked whether they benefited from or were negatively affected by offset agreements. The majority of firms (374) did not respond; 40 of the firms said that their firm had benefited from offsets in defense trade, and 71 firms indicated that they had been negatively affected.

Subcontractors cited "cost of doing business" and "fair trade" as the two most important factors leading to decreases in their employment levels between 1998 and 2002. "Offsets in defense trade" ranked fifth out of eight factors leading to drops in employment levels.

Subcontractors indicated that "increased defense related contracts" and "increased non-defense related contracts" were the top two factors leading to increases in employment in the same period. Among nine categories, "offsets in defense trade" was the category deemed least responsible for growth in employment.

Subcontractors that were involved in helping prime contractors fulfill offset agreements had on average a 20 percent gain in employment over the 5-year period. In contrast, subcontractors that were not involved in offsets had an overall employment drop of about 2.5 percent from 1998-2002. Overall, there was no discernible pattern for employment gains or losses by industry sector based on the company's positive or negative views on offsets.

Interagency Offset Team

In December 2003, President Bush signed into law a reauthorization of, and amendments to, the Defense Production Act of 1950 (DPA). Section 7(c) of P.L. 108-195 amended Section 123(c) of the DPA by requiring the President to designate a chairman of an interagency team to consult with foreign nations on limiting the adverse effects of offsets in defense procurement without damaging the economy or the defense industrial base of the United States, or United States defense production or defense preparedness. The statute provides that the team will be comprised of the Secretaries of Commerce, Defense, Labor, and State, and the United States Trade Representative. On August 6, 2004, the President formally established the Team with the

Department of Defense as chair. The Secretaries and the U.S. Trade Representative delegated membership on the team to appropriate officials within their departments.

On September 15, 2004, the Defense Department activated a working group to support the consultation process of the interagency team. The working group met three times in 2004: September 30, November 4 and December 7. The interagency team met on December 8 to review the efforts of the working group. The interagency team reviewed and approved the terms of reference for the team and the working group, a top-level plan of work, and a submission for this annual report to Congress.

The goals of the Interagency Team and Working Group are as follows:

1. Establish a plan of work to fulfill the requirements of the statute.
2. Identify and define meaning of "effects" of offsets in defense procurement.
3. Identify potential strategies for limiting "adverse effects."
4. Identify foreign nations and other parties, both domestic and foreign, for consultation.
5. Develop methods and objectives of consultation.
6. Develop schedule for and engage in consultations.
7. Provide annual report to Congress describing meetings and the results of consultations.
8. Submit to the President any recommendations that may result from these consultations.

The top-level plan of work will involve the following steps:

1. During the 1st Quarter CY2005, the interagency team will:

    a. Develop an offset consultation strategy, which will include the U.S. Government's objectives and detailed plan of work to achieve those objectives.
    b. Identify domestic and foreign entities for consultation, and
    c. Commence consultations with domestic entities, and possibly foreign entities.

2. During the 2nd Quarter CY 2005 and continuing beyond, the interagency team will implement the plan of work through continuing consultations with the identified foreign and domestic entities on limiting the adverse effects of offsets in defense procurement.

Findings

In the Eighth Report to Congress on Offsets in Defense Trade, Commerce reported that Europe's already high offset requirements were rising, but at a slower rate. In 2003, however, Europe's average offset percentage rose significantly to 148.3 percent across NATO and non-NATO countries.[8] Non-European nations, meanwhile, returned to historical offset levels, ranging between 40 and 50 percent of the value of the sale. In 2003, non-European offset percentages averaged 48.4 percent.

In 2003, direct offset transactions (related to weapon systems sold) accounted for just 31.1 percent of the value of all transactions, the lowest percentage for the eleven-year period. Similarly, indirect offsets (not related to weapon systems sold) were 68.9 percent of the value of all transactions, which was the highest percentage for the period. Whether direct or indirect, the great majority of offset transactions fell in the manufacturing sectors; $21.9 billion, or 80.8 percent of all transactions were manufacturing related.

Multipliers are applied to only a small number of offset transactions. For Europe, transactions with a multiplier greater than 1 only accounted for 8.4 percent of the value of all European transactions; the Middle East/Africa, 6.9 percent; Asia, 5.3 percent; and North and South America, 1.5 percent. For each region, multipliers of less than 1 and transactions with no multiplier together accounted for over 90 percent of the value of transactions. It should be noted that transactions with multipliers less than 1 further add to the costs of fulfilling offsets, as countries for certain transactions give less than full credit for offset transactions completed.

BIS estimated the impact on defense productive capacity by combining BIS offsets data with aerospace industry data from the Census Bureau's 2002 Economic Census (2002 is the most recent data published). BIS estimates that 2002 U.S. defense export contracts ($7.4 billion) with offset agreements attached supported 47,122 work-years. This calculation is based on the supposition that this value represents 100 percent U.S. content in all defense exports, which is not necessarily an accurate assumption.

For 2002, the $7.4 billion in defense export contracts had a related $6.1 billion in offset commitments. Subcontracting, Purchasing, Co-production, and Licensing offset transactions, compared to other kinds of offset transactions, are most likely to shift production and sales from U.S. suppliers to overseas firms. Therefore, BIS bases its estimate of employment impacts only

[8] One large weapon system export in 2003 with an offset percentage of more than 150 percent skewed the data for that year. Without this export and its related offset agreement, the average offset percentage for 2003 would fall to 75.1 percent (from 121.8 percent with the sale).

on Subcontracting, Purchasing, Co-production, and Licensing offset transactions. Assuming that the offset commitments have the same proportion as the offset transactions for 2002, then the Subcontracting, Purchasing, Co-production, and Licensing portions would account for approximately 66 percent of the total, or about $4 billion. Applying the same value added figure used above ($157,173) leads to the loss of 25,450 work-years associated with the agreements entered into in 2002.

Based on these calculations, it appears that 2002 defense export sales had a net positive effect on work-years in the defense sector, although the net positive effect was diminished by the offset agreements. It should be noted that the above analysis does not include an additional $338.3 million in 2002 of Technology Transfer, Training, Overseas Investment, and Marketing transactions, because the impact of these transactions on the U.S. defense industrial base is difficult to calculate. Nor does this calculation include consideration of the long-term effects of creating new or enhanced foreign competitors.

To address the effects of offsets on defense productive capability, this analysis compares 2002 offset transactions dealing with transportation equipment (SIC 37)[9] to 2002 value added data from the industry as reported in the Census Bureau's 2002 Economic Census. The comparison between transactions and value added stems from the lost current and future opportunities to U.S. companies caused by offset transactions. Over time, these lost opportunities can yield unused production capacity, affecting capacity utilization and ultimately, domestic productive capability. Value added, in turn, is a measurement of the productive capability of an entire industry, encompassing productivity of labor, efficient capital use, and full production capacity.

In sum, 2002 offset transactions related to transportation equipment totaled 0.8 percent of the 2002 value added for that industry. This value does not indicate that the domestic defense productive capability in the transportation industry declined by 0.8 percent, but it is instead a measure of lost potential opportunity, with corresponding impacts on capacity utilization and in the end, domestic productive capability.

[9] This industry was chosen because it was involved in the most frequent and the highest level of offset transactions for 2002. The year 2002 was chosen as a sample because it was the most recent available data for value added from the Economic Census during the preparation of this report.

Purpose of Report

DPA Section 309(b)(1) requires BIS to identify the cumulative effects of offset agreements on "the full range of domestic defense productive capability with special attention paid to the firms serving as lower-tier subcontractors or suppliers" and "the domestic defense technology base as a consequence of the technology transfers associated with such offset agreements." To address the effects of offsets on defense productive capability, this analysis compares 2002 offset transactions dealing with transportation equipment[10] to 2002 value added data for this industry, as reported in the Census Bureau's most recent Economic Census. Over time, the lost current and future opportunity of offset transactions can negatively affect capacity utilization and, ultimately, domestic productive capability. Value added, in turn, is a measurement of the productive capability of an entire industry, encompassing productivity of labor, efficient capital use, and full production capacity.

No other U.S. Government agencies have assessed the impact of offsets on the domestic defense productive capability.

Contents of Report

Chapter 1 provides background information on the legislation and regulations that require the Department of Commerce to prepare this report and outline the data required from U.S. industry. The chapter also covers U.S. Government policy on offsets in defense trade. The offset-related terminology used throughout the report is defined, and the countries where offset activity has been reported are divided into four geographic regions: Europe, Africa and the Middle East, North and South America, and Asia.

Chapter 2 contains a detailed summary of offset arrangements (agreements and transactions) entered into during 1993-2003, along with a full listing of industrial sectors (based on Standard Industrial Classification or SIC codes) affected by offsets. Chapter 3 discusses the impact of offsets on defense preparedness and employment. It also includes an analysis of the impact of technology transfer on the domestic defense production capability.

Chapter 4 provides a more detailed analysis of aggregated offset agreements for 1993-2003 as well as in 2003 specifically. Included in this analysis are data that indicate a small number of

[10] This industry was chosen because it was involved in the most frequent and the highest level of offset transactions for 2002. The year 2002 was chosen as a sample because it was the most recent available data for value added from the Economic Census during the preparation of this report.

U.S. companies and weapon systems dominated offset agreements during the reporting period. The top five companies (of 39 reporting offset agreements) accounted for 82.3 percent of the value of defense export contracts and 85.0 percent of the value of offset agreements reported for 1993-2003.

Chapter 5 provides a similar more detailed analysis of offset transactions aggregated from 1993 to 2003 as well as 2003 specifically. The six sectors of the industrial base most commonly involved in offset transactions are: transportation equipment, electronic/electrical equipment, industrial machinery, business services, technical services and consultants, and measuring and analyzing instrumentation. These industrial sectors comprise 86 percent of all offset transactions. More than half (51.1 percent) of the total value of offset transactions for the eleven-year period fell into the transportation equipment group (SIC 37) that includes aircraft, guided missiles, ships, and motor vehicles. Chapter 5 also provides an in-depth discussion of the use of multipliers in crediting particular offset transactions.

Chapter 6 provides a summary of the results of the supplemental offset analysis conducted by the Department of Commerce at the request of Congress. This analysis focused on the effects of offsets on employment in the U.S. defense industrial base, particularly in the subcontractor tiers.

As described in Chapter 7, the December 2003 reauthorization of, and amendments to, the Defense Production Act of 1950 (DPA) required the President to designate a chairman of an interagency team to consult with foreign nations on limiting the adverse effects of offsets in defense procurement without damaging the economy or the defense industrial base of the United States, or United States defense production or defense preparedness. In August 2004, the President named the Department of Defense as chair of the team, and the team and its related working group have since drafted terms of reference and a top-level plan of work. The agencies involved in this effort include the Departments of Commerce, Defense, Labor, and State, and the Office of the U.S. Trade Representative. This report provides a summary of the team and group's actions to date, as required by Subpart (E).

Although the Department of Commerce is authorized by the Defense Production Act to make recommendations for appropriate remedial action, at this time no recommendations are provided.

1. Background

1.1 Legislation and Regulations

In 1984, the Congress enacted amendments to the DPA, which included the addition of Section 309 addressing offsets in defense trade.[11] Section 309 required the President to submit an annual report on the impact of offsets on the U.S. defense industrial base to the Congress's then-Committee on Banking, Finance, and Urban Affairs of the House of Representatives[12] and the Committee on Banking, Housing, and Urban Affairs of the Senate.

When Section 309 was first enacted, the Office of Management and Budget was appointed the interagency coordinator for preparing the report for Congress. Other agencies involved in the process included the Departments of Commerce, Defense, Labor, State, and Treasury, and the Office of the U.S. Trade Representative. In 1992, Section 309 of the DPA was amended, and the Secretary of Commerce was directed to function as the President's Executive Agent for carrying out the responsibilities set forth in Section 309 of the DPA.[13] See Appendix A for the text of Section 309.

Under Section 309, the Secretary of Commerce is authorized to develop and administer the regulations necessary to collect offset data from U.S. defense exporters. The Secretary of Commerce delegated this authority to the Bureau of Industry and Security (BIS). The BIS published its first offset regulations in the Federal Register in 1994.[14] See Appendix B for a copy of the regulations.

The 1992 amendments to Section 309 of the DPA also reduced the offset agreement reporting threshold from $50 million to $5 million for U.S. firms entering into foreign defense sales contracts subject to offset agreements. Firms are also required to report all offset transactions for which they receive offset credits of $250,000 or more. Every year, U.S. companies report offset agreement and transaction data for the previous calendar year to BIS. The data elements collected each year from the firms are listed in Section 701.4 of the Department's offset regulations and are attached in Appendix B.

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[11] See Pub. L. 98-265, April 17, 1984, 98 Stat. 149.
[12] Section 309 of the DPA was amended in 2001 to reflect the change in the name of the House committee to the "Committee on Financial Services of the House of Representatives." See 50 U.S.C. app. § 2099(a)(1).
[13] See Pub. L. 102-558, Oct. 28, 1992, 106 Stat. 4198; see also Part IV of Exec. Order No. 12919, 59 Fed. Reg. 29525 (June 3, 1994).
[6] See 59 Fed. Reg. 61796, Dec. 2, 1994, codified at 15 C.F.R. § 701.

1.2 U.S. Government Policy

The U.S. Government policy on offsets in defense trade was developed by an interagency offset team. On April 16, 1990, the President announced a policy on offsets in military exports.[15] In 1992, Congress passed the following provision, which closely reflects the policy announced by the President:[16]

> (a) In General. Recognizing that certain offsets for military exports are economically inefficient and market distorting, and mindful of the need to minimize the adverse effects of offsets in military exports while ensuring that the ability of United States firms to compete for military export sales is not undermined, it is the policy of the Congress that--
>
> (1) no agency of the United States Government shall encourage, enter directly into, or commit United States firms to any offset arrangement in connection with the sale of defense goods or services to foreign governments;
>
> (2) United States Government funds shall not be used to finance offsets in security assistance transactions, except in accordance with policies and procedures that were in existence on March 1, 1992;
>
> (3) nothing in this section shall prevent agencies of the United States Government from fulfilling obligations incurred through international agreements entered into before March 1, 1992; and
>
> (4) the decision whether to engage in offsets, and the responsibility for negotiating and implementing offset arrangements, reside with the companies involved.
>
> (b) Presidential Approval of Exceptions. It is the policy of the Congress that the President may approve an exception to the policy stated in subsection (a) after receiving the recommendation of the National Security Council.
>
> (c) Consultation. It is the policy of the Congress that the President shall designate the Secretary of Defense to lead, in coordination with the Secretary of State, an interagency team to consult with foreign nations on limiting the adverse effects of offsets in defense procurement. The President shall transmit an annual report on the results of these consultations to the Congress as part of the report required under section 309(a) of the DPA.

Provisions in the Defense Offsets Disclosure Act of 1999[17] supplemented the offset policy:

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[15] See April 16, 1990 statement by Press Secretary Fitzwater on offsets in military exports.

[16] Congress incorporated this policy statement into law with the Defense Production Act Amendments of 1992 (Pub. L. 102-558, Title I, Part C, § 123, 106 Stat. 4198).

[17] See Pub. L. No. 106-113, Div. B, § 1000(a)(7) 113 Stat. 1536, 1510A-500 to 1501A-505 (1999) (enacting into law Subtitle D of Title XII of Division B of H.R. 3427 (113 Stat. 1501A-500) as introduced on Nov. 17, 1999) (found at 50 U.S.C. App. 2099, Note).

(1) A fair business environment is necessary to advance international trade, economic stability, and development worldwide, is beneficial for American workers and businesses, and is in the United States national interest.
(2) In some cases, mandated offset requirements can cause economic distortions in international defense trade and undermine fairness and competitiveness, and may cause particular harm to small- and medium-sized businesses.
(3) The use of offsets may lead to increasing dependence on foreign suppliers for the production of United States weapons systems.
(4) The offset demands required by some purchasing countries, including some close allies of the United States, equal or exceed the value of the base contract they are intended to offset, mitigating much of the potential economic benefit of the exports.
(5) Offset demands often unduly distort the prices of defense contracts.
(6) In some cases, United States contractors are required to provide indirect offsets which can negatively impact nondefense industrial sectors.
(7) Unilateral efforts by the United States to prohibit offsets may be impractical in the current era of globalization and would severely hinder the competitiveness of the United States defense industry in the global market.

The Defense Offsets Disclosure Act of 1999 continues with the following declaration of policy:

> It is the policy of the United States to monitor the use of offsets in international defense trade, to promote fairness in such trade, and to ensure that foreign participation in the production of United States weapons systems does not harm the economy of the United States.

1.3 Offsets Terminology

Several basic terms are used in discussions of offsets in defense trade. For more definitions and an illustrative example of an offset arrangement, please see the Glossary in Appendix I.

Offsets: Compensation practices required as a condition of purchase in either government-to-government or commercial sales of "defense articles" and/or "defense services" as defined by the Arms Export Control Act (22 U.S.C. § 2751, et seq.) and the International Traffic in Arms Regulations (22 C.F.R. §§ 120-130).

Direct Offsets: Contractual arrangements that involve defense articles and services referenced in the sales agreement for military exports. These transactions are directly related to the defense items or services exported by the defense firm and are usually in the form of co-production, subcontracting, technology transfer, training, production, licensed production, or financing activities.

Indirect Offsets: Contractual arrangements that involve defense goods and services unrelated to the exports referenced in the sales agreement. These transactions are not directly related to the defense items or services exported by the defense firm. The kinds of offsets that are considered "indirect" include purchases, investment, training, financing activities, marketing/exporting assistance, and technology transfer.

Co-production: Overseas production based upon government-to-government agreement that permits a foreign government or producer(s) to acquire the technical information to manufacture all or part of a U.S.-origin defense article. Co-production includes government-to-government licensed production, but excludes licensed production based upon direct commercial arrangements by U.S. manufacturers.

Licensed Production: Overseas production of a U.S.-origin defense article based upon transfer of technical information under direct commercial arrangements between a U.S. manufacturer and a foreign government or producer.

Subcontractor Production: Overseas production of a part or component of a U.S.-origin defense article. The subcontract does not necessarily involve license of technical information and is usually a direct commercial arrangement between the defense prime contractor and a foreign producer.

Overseas Investment: Investment arising from an offset agreement, often taking the form of capital dedicated to establishing or expanding a subsidiary or joint venture in the foreign country.

Technology Transfer: Transfer of technology that occurs as a result of an offset agreement and that may take the form of 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 defense prime contractor and a foreign entity.

1.4 Countries and Regions

Countries and country groups actively requiring offsets in tandem with purchases of U.S. defense systems during the period of 1993-2003, as reported by industry, were divided into four geographic regions: Europe, Africa and the Middle East, North and South America, and Asia. This was done for ease of analysis and in some cases to protect company confidentiality. The countries found in each region are listed in Table 1-1.

Table 1-1: Purchasing Countries and Groups with Offset Agreements (by Region, 1993-2003)	
Europe	**Middle East and Africa**
Austria	Israel
Belgium	Kuwait
Czech Republic	Saudi Arabia
Denmark	South Africa
EPG – The European Participating Group (Belgium, The Netherlands, Norway)	Turkey
	United Arab Emirates
Finland	**North and South America**
France	Brazil
Germany	Canada
Greece	Chile
Italy	**Asia**
Lithuania	Australia
NATO	Indonesia
Netherlands	Malaysia
Norway	New Zealand
Poland	Singapore
Portugal	South Korea
Romania	Taiwan
Slovenia	Thailand
Spain	
Sweden	
Sweden/Norway	
Switzerland	
United Kingdom	

Source: BIS Offsets Database

1.5 Scope of Report

This is the ninth report on Offsets in Defense Trade prepared by the Department of Commerce's Bureau of Industry and Security. The report is prepared after analyzing offset data reported to the Department of Commerce by U.S. firms, in compliance with regulations established under Section 309 of the DPA.

The ninth report reviews offset data for the eleven-year period from 1993 to 2003. The initial offsets report, issued in 1996, covered the time period from 1993 to 1994; each subsequent offset report added an additional year to the reporting period, with the exception of the eighth report,

which added two years. The ninth report was prepared in consultation with the Departments of Defense, State, Treasury, and Labor; the Office of the U.S. Trade Representative; and the Central Intelligence Agency.

This report begins with an overview of the data collected from U.S. industry for 1993-2003, followed by an analysis of the effects of offsets on the U.S. defense industrial base. Next, the report presents a statistical analysis of offset agreements entered into from 1993 to 2003. This is followed by a similar analysis of offset transaction activity over the same period, including a detailed review of the role of multipliers. Next, the report summarizes the Department of Commerce's August 2004 Supplemental Offset Report to Congress, which analyzed the impact of offsets on U.S. subcontractors. Lastly, the report includes a description of the activities of the newly established interagency team and working group on offsets in defense trade.

2. Statistical Overview

This chapter provides a general overview of offset statistics collected by BIS for the years 1993 through 2003 along with a review of some of the terms used to organize the data for analysis.

The following data points are used to organize and analyze the information collected:

1. Offset Agreement – Year – Country – Weapon System – Export Contract Value – Agreement Value - % Agreement Value to Export Value; and

2. Offset Transaction – Year – Country – Referenced Weapons System – Recipient – Actual Value – Credit Value – Multiplier (credit value ÷ actual value) – Type – Category – Description – Industry Identification.

2.1 General Overview

A summary of offset activity for 1993 through 2003 is provided in Table 2-1. Detailed sections on offset agreements and transactions will follow in Chapters 4 and 5.

Table 2-1: General Summary of Offset Activity, 1993-2003
($ millions)

Offset Agreements

Year	Export Value	Offset Value	% Offset	Companies	Agreements	Countries
1993	$13,957.0	$4,806.7	34.4%	18	30	17
1994	$4,792.4	$2,048.7	42.8%	18	49	20
1995	$7,402.0	$6,034.1	81.5%	19	45	18
1996	$2,987.8	$2,270.7	76.0%	15	50	19
1997	$5,822.8	$3,831.8	65.8%	13	57	19
1998	$3,257.8	$1,846.6	56.7%	11	44	17
1999	$4,681.2	$3,851.4	82.3%	10	45	11
2000	$6,278.3	$5,498.1	87.6%	8	38	14
2001	$7,039.2	$5,497.3	78.1%	11	35	14
2002	$7,406.2	$6,094.8	82.3%	12	41	17
2003	$7,284.9	$8,872.0	121.8%	11	32	13
11 Years	**$70,909.6**	**$50,652.2**	**71.4%**	**39**	**466**	**36**

Offset Transactions

Year	Actual Value	Credit Value	Multiplier*	Companies	Transactions	Countries
1993	$1,815.1	$2,162.1	1.191	24	440	27
1994	$1,891.1	$2,161.5	1.143	21	550	26
1995	$2,713.7	$3,390.9	1.250	20	670	27
1996	$2,731.5	$3,098.9	1.135	21	623	26
1997	$2,725.5	$3,276.2	1.202	18	577	26
1998	$2,364.8	$2,684.6	1.135	19	582	30
1999	$2,080.4	$2,824.1	1.358	13	512	25
2000	$1,998.5	$2,613.0	1.307	14	601	23
2001	$2,588.1	$3,295.7	1.273	15	620	25
2002	$2,616.0	$3,284.5	1.256	17	729	27
2003	$3,565.5	$4,010.6	1.125	16	689	30
11 Years	**$27,090.0**	**$32,802.0**	**1.211**	**42**	**6,593**	**46**

Source: BIS Offsets Database
Note: Due to rounding, totals may not add up precisely.
*Multipliers are used only in a small percentage of the total number of transactions. See Chapter 5 for further discussion.

2.2 Types of Offset Transactions

Table 2-2 presents offset transaction data by offset type (direct, indirect, or unspecified) and the percent distribution for each year from 1993 to 2003. As discussed in Chapter 1, direct offset transactions are those that are directly related to the weapon system that is exported. Indirect transactions are not related to the exported weapon system. A transaction is classified as

unspecified when there is not enough information available to determine the whether it is direct or indirect.

Table 2-2 also shows the total actual and credit values of the transactions for each year. The credit value is sometimes more than the actual value assigned to transactions; some foreign governments give greater credit as an incentive for certain kinds of offset transactions. This incentive varies by country and by the kind of transaction (i.e., Purchase, Technology Transfer, Investment). The multiplier, also shown in Table 2-2, is the percentage difference between the actual value and the credit value. For the 1993-2003 period, the multiplier is 1.211. This multiplier means that, for the database as a whole, the total credit value of the transactions is 21.1 percent more than the actual value. However, it is important to note that a significant majority of transactions do not include multipliers or have multipliers that provide less than actual credit for the transaction. Offset transaction data and multipliers are more fully discussed in Chapter 5.

Table 2-2: Offset Transactions by Type, 1993-2003
($ millions)

Year	Total	Direct	Indirect	Unsp.	Dir.	Ind.	Unsp.
	Actual Value				**% Distribution**		
1993	$1,815.1	$584.2	$1,167.1	$63.9	32.2%	64.3%	3.5%
1994	$1,891.1	$600.7	$1,186.1	$104.3	31.8%	62.7%	5.5%
1995	$2,713.7	$1,064.1	$1,649.6	NR	39.2%	60.8%	NR
1996	$2,731.5	$1,097.5	$1,632.5	$1.4	40.2%	59.8%	0.1%
1997	$2,725.5	$1,030.3	$1,673.8	$21.4	37.8%	61.4%	0.8%
1998	$2,364.8	$1,464.2	$900.5	$0.1	61.9%	38.1%	0.0%
1999	$2,080.4	$690.2	$1,378.7	$11.4	33.2%	66.3%	0.5%
2000	$1,998.5	$779.9	$1,210.7	$7.9	39.0%	60.6%	0.4%
2001	$2,588.1	$949.1	$1,639.0	NR	36.7%	63.3%	NR
2002	$2,616.0	$941.7	$1,673.0	$1.3	36.0%	64.0%	0.1%
2003	$3,565.5	$1,113.0	$2,447.0	$5.6	31.2%	68.6%	0.2%
Total	**$27,090.0**	**$10,314.9**	**$16,557.8**	**$217.3**	**38.1%**	**61.1%**	**0.8%**
	Credit Value				**% Distribution**		
1993	$2,162.1	$709.3	$1,384.1	$68.7	32.8%	64.0%	3.2%
1994	$2,161.5	$774.1	$1,278.6	$108.8	35.8%	59.2%	5.0%
1995	$3,390.9	$1,257.9	$2,132.9	NR	37.1%	62.9%	NR
1996	$3,098.9	$1,188.7	$1,874.3	$36.0	38.4%	60.5%	1.2%
1997	$3,276.2	$1,171.1	$2,055.4	$49.7	35.7%	62.7%	1.5%
1998	$2,684.6	$1,621.8	$1,060.3	$2.5	60.4%	39.5%	0.1%
1999	$2,824.1	$1,121.8	$1,632.0	$70.3	39.7%	57.8%	2.5%
2000	$2,613.0	$1,135.8	$1,469.2	$7.9	43.5%	56.2%	0.3%
2001	$3,295.7	$1,282.3	$2,013.3	NR	38.9%	61.1%	NR
2002	$3,284.5	$1,111.2	$2,171.9	$1.3	33.8%	66.1%	0.0%
2003	$4,010.6	$1,215.5	$2,783.2	$12.0	30.3%	69.4%	0.3%
Total	**$32,802.0**	**$12,589.5**	**$19,855.2**	**$357.3**	**38.4%**	**60.5%**	**1.1%**

	Multiplier*				**# of Transactions**			
Year	Total	Direct	Indirect	Unsp.	Total	Direct	Indirect	Unsp.
1993	1.191	1.214	1.186	1.076	440	133	303	4
1994	1.143	1.289	1.078	1.043	550	157	388	5
1995	1.250	1.182	1.293	NR	670	203	467	NR
1996	1.135	1.083	1.148	25.714	623	220	401	2
1997	1.202	1.137	1.228	2.327	577	200	373	4
1998	1.135	1.108	1.177	19.976	582	237	344	1
1999	1.358	1.625	1.184	6.154	512	200	307	5
2000	1.307	1.456	1.214	1.000	601	208	392	1
2001	1.273	1.351	1.228	NR	620	222	398	NR
2002	1.256	1.180	1.298	1.000	729	194	534	1
2003	1.125	1.092	1.137	2.151	689	179	506	4
Total	**1.211**	**1.221**	**1.199**	**1.644**	**6593**	**2153**	**4413**	**27**

Source: BIS Offsets Database
NR=None Reported
Due to rounding, totals may not add up precisely.
* Multipliers are used only in a small percentage of the total number of transactions (see Chapter 5 for further discussion).

2.3 Offset Transaction Categories

In addition to classifying offset transactions by type (direct or indirect), offset transactions are identified by various categories, which more particularly describe the nature of the arrangement or exchange. These categories include *Purchases, Subcontracts, Technology Transfers, Credit Assistance, Training, Overseas Investment, Co-production, Licensed Production,* and *Miscellaneous.*

Table 2-3 presents a summary of offset transactions by category and type for the eleven-year reporting period (1993-2003). Appendix I contains a listing of relevant offset definitions. A brief description of each category follows:

Purchases result in overseas production of goods or services usually for export to the United States. Purchases are always classified as indirect offsets to distinguish them from subcontracts, because the purchases are of items unrelated to the exported defense system. The U.S. exporter may make the purchase, or they can also involve brokering and marketing assistance that result in purchases by a third party. For 1993-2003, Purchases represented 39.6 percent of the actual value of all offset transactions, the largest share of all categories. They made up 64.7 percent of the value of indirect offsets.

Subcontracts result in overseas production of goods or services for use in the production or operation of a U.S. exported defense system subject to an offset agreement. Subcontracts are always classified as direct offsets. During the 1993-2003 reporting period, Subcontracts represented 26.6 percent of the actual value of all offset transactions, and 69.9 percent of the value of all direct offsets.

Technology Transfer includes research and development conducted abroad, exchange programs for personnel, data exchanges, integration of machinery and equipment into a recipient's production facility, technical assistance, education and training, manufacturing know-how, and licensing and patent sharing. Technology Transfer, as used here, is normally accomplished under a commercial arrangement between the U.S. prime contractor and a foreign company. A major subcontractor may also accomplish the Technology Transfer on behalf of the U.S. prime contractor. During the reporting period, 34.9 percent of Technology Transfers were classified as direct offsets and 62.3 percent were indirect offsets; the balance was unspecified. Technology Transfers accounted for approximately 13.8 percent of the actual value of all offset transactions.

Table 2-3: Offset Transactions by Category and Type, 1993-2003								
Transaction Category	**Actual Values in $ millions**				**Percent by Column Total**			
	Total	**Dir.**	**Ind.**	**Unsp.**	**Total**	**Dir.**	**Ind.**	**Unsp.**
Purchases	$10,717.1		$10,717.1		39.6%		64.7%	
Subcontracts	$7,210.1	$7,210.1			26.6%	69.9%		
Technology Transfers	$3,724.3	$1,298.6	$2,321.6	$104.1	13.7%	12.6%	14.0%	47.9%
Miscellaneous	$2,016.7	$361.8	$1,645.1	$9.8	7.4%	3.5%	9.9%	4.5%
Credit Assistance	$1,191.3	$5.1	$1,186.2		4.4%	0.05%	7.2%	
Training	$665.7	$390.6	$273.2	$1.9	2.5%	3.8%	1.6%	0.9%
Overseas Investment	$694.0	$215.5	$401.0	$77.5	2.6%	2.1%	2.4%	35.6%
Co-production	$716.0	$716.0			2.6%	6.9%		
Licensed Production	$154.8	$117.2	$13.6	$24.0	0.6%	1.1%	0.1%	11.1%
Total	$27,090.0	$10,314.9	$16,557.8	$217.3	100.0%	100.0%	100.0%	100.0%
Transaction Category	**Credit Values in $ millions**				**Percent by Column Total**			
	Total	**Dir.**	**Ind.**	**Unsp.**	**Total**	**Dir.**	**Ind.**	**Unsp.**
Purchases	$11,735.9		$11,735.9		35.8%		59.1%	
Subcontracts	$8,133.7	$8,133.7			24.8%	64.6%		
Technology Transfers	$4,868.1	$1,671.0	$3,085.0	$112.1	14.8%	13.3%	15.5%	31.4%
Miscellaneous	$3,031.6	$869.6	$2,089.5	$72.4	9.2%	6.9%	10.5%	20.3%
Credit Assistance	$1,348.5	$70.6	$1,277.9		4.1%	0.6%	6.4%	
Training	$1,173.4	$639.2	$520.9	$13.4	3.6%	5.1%	2.6%	3.7%
Overseas Investment	$1,519.2	$281.1	$1,109.9	$128.2	4.6%	2.2%	5.6%	35.9%
Co-production	$790.1	$790.2			2.4%	6.3%		
Licensed Production	$201.5	$134.1	$36.1	$31.2	0.6%	1.1%	0.2%	8.7%
Total	$32,802.0	$12,589.5	$19,855.2	$357.3	100.0%	100.0%	100.00%	100.00%
Transaction Category	**Multiplier***				**# of Transactions**			
	Total	**Dir.**	**Ind.**	**Unsp.**	**Total**	**Dir.**	**Ind.**	**Unsp.**
Purchases	1.095		1.095		3414		3414	
Subcontracts	1.128	1.128			1464	1464		
Technology Transfers	1.307	1.287	1.329	1.077	687	303	374	10
Miscellaneous	1.503	2.404	1.270	7.388	452	96	351	5
Credit Assistance	1.132	13.843	1.077		87	7	80	
Training	1.763	1.636	1.906	7.053	227	107	115	5
Overseas Investment	2.189	1.304	2.768	1.654	98	19	74	5
Co-production	1.103	1.104			132	132		
Licensed Production	1.302	1.144	2.662	1.300	32	25	5	2
Total	1.211	1.221	1.199	1.644	6593	2153	4413	27

Source: BIS Offsets Database

Note: Due to rounding, totals may not add up precisely.

* Multipliers are used only in a small percentage of the total number of transactions. See Chapter 5 for further discussion.

Credit Assistance includes direct loans, brokered loans, loan guarantees, assistance in achieving favorable payment terms, credit extensions, and lower interest rates. Credit Assistance transactions accounted for 4.4 percent of the actual value of all transactions for 1993-2003. Credit Assistance is nearly always classified as an indirect offset transaction, with indirect transactions making up 99.6 percent of the actual value of all Credit Assistance for the period.

Training transactions relate to the production, maintenance, or actual use of the exported defense system or a component thereof. Training may be required in areas such as computers, foreign language skills, engineering capabilities, or management. This category can be classified as either direct or indirect offset transactions; by value, 58.7 percent of the value of Training transactions during the reporting period was direct and 41.0 percent was indirect. Training accounted for only 2.5 percent of the total value of offset transactions between 1993 and 2003.

Overseas Investments include capital invested to establish or expand a subsidiary or joint venture in the foreign country as well as investments in third-party facilities; the latter received the highest multipliers. Overseas Investments accounted for just 2.6 percent of the actual value of all offset transactions; 57.8 percent of Overseas Investment transactions were classified as indirect and 31.1 percent as direct.

Co-production is overseas production based upon a government-to-government agreement that permits a foreign government or producer to acquire the technical information to manufacture all or part of a U.S.-origin defense system. Co-production is always classified as a direct offset. It includes government-to-government licensed production, but excludes licensed production based upon direct commercial arrangements by U.S. manufacturers. Virtually all of the Co-production reported during the 1993-2003 period was aerospace-related.

Co-production accounted for 2.6 percent of the value of offset transactions. Past Co-production transactions have involved constructing major production facilities in foreign countries (primarily at the expense of the foreign government) for the assembly of entire defense systems, such as aircraft, missiles, or ground systems. Co-production arrangements of this kind generally impose a high cost on the foreign government, including upfront construction and tooling costs and increased unit costs for limited production runs.[18] Some countries negotiate with prime

[18] Primary examples include an Egyptian co-production facility which – since its 1988 inception – has only contracted enough orders to build half of what the government originally planned and a Japanese co-production program that cost the government nearly 2 times more per unit than an off-the-shelf purchase. See Military Aid to Egypt: Tank Co-production Raised Costs and May Not Meet Many Program Goals, U.S. General Accounting Office, GAO/NSIAD-93-2003, and U.S. Military Aircraft Co-production with Japan, U.S. General Accounting Office, GAO/T-NSIAD-89-6.

contractors for production or assembly contracts related to future sales to third countries of the weapon system or system components.

Licensed Production is overseas production of a U.S.-origin defense article. Licensed Production differs from Co-production in that it is based on commercial arrangements between a U.S. manufacturer and a foreign entity as opposed to a government-to-government agreement. In addition, Licensed Production virtually always involves a part or component for a defense system, rather than a complete defense system. Licensed Production is the smallest among the offset categories, accounting for only 0.6 percent of the total value of offset transactions; 75.7 percent of the Licensed Production transactions (by actual value) were directly related to the weapon systems sold.

Miscellaneous transactions include activities such as feasibility studies, marketing assistance, export assistance, administrative support, business plan development, and trade conferences, among others. These varied transactions comprise 7.4 percent of the total.

2.4 Industry Classification – SIC Codes

Table 2-4 shows the offset transactions classified by industry type using the Standard Industrial Classification (SIC) system. The SIC system is managed by the Office of Management and Budget in consultation with a number of other U.S. Government agencies. Forty SIC categories are listed which represent a wide cross section of the U.S. defense industrial base.

A little over half (51.1 percent) of the actual value of all transactions fell into the Transportation Equipment (SIC 37) industry group, along with 60.7 percent of the value of direct offset transactions, 44.7 percent of indirect offset transactions, and 82.5 percent of unspecified offset transactions. Transactions in this sector were composed mostly of aerospace products, including aircraft parts, engines, hydraulic subsystems, and guided missiles.

Other major industry groups include Electronic/Electrical Equipment (SIC 36) with 15.2 percent of the actual value. SIC 36 includes products such as radar, communications equipment, and electronic components, as well as completed avionics equipment and material inputs for avionics such as circuit boards. Industrial Machinery (SIC 35) accounted for 5.5 percent of the actual value of transactions. This industry group includes capital equipment used in the production of both defense and non-defense items. Transactions in Business Services (SIC 73) made up 4.8 percent of the value of offset transactions. Measuring & Analyzing Instruments (SIC 38) accounted for 4.7 percent. This industry group also includes photographic, medical and optical goods, and watches and clocks. Together, these industry groups comprised 81.3 percent of the total value of all transactions reported to date.

Table 2-4: Offset Transactions by Major Industrial Sector and Offset Type, 1993-2003 (in $ millions)									
2-Digit SIC Code and Description		Total	Direct	Indirect	Unsp.	Total	Direct	Indirect	Unsp.
07	Agriculture	$45.0		$45.0		0.2%		0.3%	
13	Crude Petrol. & Natl. Gas	$19.6		$19.6		0.1%		0.1%	
15	Building Construction	$26.6	$11.6	$15.0		0.1%	0.1%	0.1%	
16	Heavy Construction	$1.5	$1.2	$0.3		0.01%	0.01%	0.00%	
17	Construction - Spec. Trades	$20.2		$20.2		0.1%		0.1%	
20	Food And Kindred Products	$15.5		$15.5		0.1%		0.1%	
22	Textile Mill Products	$6.4		$6.4		0.02%		0.04%	
23	Apparel & Other Fin Prods	$3.8		$3.8		0.01%		0.02%	
24	Lumber & Wood Products	$0.3		$0.3		0.00%		0.00%	
25	Furniture and Fixtures	$0.3		$0.3		0.00		0.00	
26	Paper Mills & Allied Prod	$21.1		$21.1		0.1%		0.1%	
27	Printing & Publishing	$33.9	$23.9	$10.0		0.1%	0.2%	0.1%	
28	Chemicals & Allied Prod	$189.3	$14.7	$174.6		0.7%	0.2%	1.0%	
29	Petroleum Refining	$3.2		$3.2		0.01%		0.02%	
30	Rubber & Misc Plast Prod	$5.9		$5.9		0.02%		0.04%	
32	Cut Stone & Stone Prod	$12.9		$12.9		0.1%		0.1%	
33	Primary Metal Industries	$256.2	$9.1	$247.1		1.0%	0.1%	1.5%	
34	Fabricated Metal Products	$597.6	$148.5	$449.1		2.2%	1.4%	2.7%	
35	Indl Machinery, Exc Elec	$1,486.9	$140.3	$1,346.6		5.5%	1.4%	8.1%	
36	Electronic/Electrical Equip	$4,122.8	$1,560.5	$2,557.0	$5.3	15.2%	15.1%	15.4%	2.4%
37	Transportation Equipment	$13,847.0	$6,260.4	$7,406.5	$180.1	51.1%	60.7%	44.7%	82.5%
38	Measuring & Analyzing Inst	$1,276.4	$737.0	$539.4		4.7%	7.2%	3.3%	
39	Misc Manuf Industries	$5.1	0.00	$5.1		0.02%	0.00%	0.03%	
42	Motor Frt & Warehousing	$1.5		$1.5		0.01%		0.01%	
44	Water Transportation	$40.2		$40.2		0.2%		0.2%	
45	Transportation By Air	$70.1	$55.1	$15.0		0.3%	0.5%	0.1%	
47	Transportation Services	$3.4	0.00	$3.4		0.01%	0.00%	0.02%	
48	Communications	$95.2	$21.3	$73.9		0.4%	0.2%	0.5%	
49	Electric, Gas, & San Serv	$2.5		$2.5		0.01%		0.02%	
61	Non-Depos Credit Inst	$658.9	$10.2	$648.7		2.4%	0.1%	3.9%	
62	Security & Comm Brokers	$46.5		$46.5		0.2%		0.3%	
67	Holding & Other Invest Off	$589.4	$191.9	$373.9	$23.6	2.2%	1.9%	2.3%	10.8%
73	Business Services	$1,294.4	$316.4	$970.3	$7.7	4.8%	3.1%	5.9%	3.5%
76	Misc Repair Shops	$8.6	$2.4	$6.1	$0.1	0.03%	0.02%	0.04%	0.1%
80	Health Services	$0.0		$0.0		0.00%		0.00%	
81	Legal Services	$0.1		$0.1		0.00%		0.00%	
82	Educational Services	$566.9	$272.6	$294.3		2.1%	2.6%	1.8%	
87	Technical Servs & Cons	$1,268.0	$394.1	$872.3	$1.6	4.7%	3.8%	5.3%	0.7%
89	Misc. Services	$60.5	$37.4	$23.1		0.2%	0.4%	0.1%	
99	Undetermined	$386.3	$100.0	$286.3		1.4%	1.0%	1.7%	
	Total	**$27,090.0**	**$10,308.6**	**$16,563.0**	**$218.4**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: BIS Offsets Database

2.5 Countries and Regions

Table 2-5 is a compilation of the average offset requirements and multipliers for all countries requiring offsets in connection with defense export sales during the 1993-2003 period. The multipliers presented are averages; as mentioned earlier, a significant majority of transactions do not include multipliers or have multipliers that provide credit that is less than their actual value. The countries are divided into four regions: Europe, North and South America, the Middle East and Africa, and Asia. The notation NR (None Reported) is used when the offset requirement or multiplier cannot be calculated or was not reported; and W (Withheld) is used to protect company confidentiality.

Austria had the largest offset percentages; on average, U.S. weapon systems exports to Austria were associated with offset agreements worth 174.2 percent of the value of the weapon systems. It is interesting to note that Austria also offered the lowest reported multiplier (0.84 -- a negative multiplier) where multipliers were granted for the offset transactions carried out in fulfillment of the agreements.

Austria was followed closely by a number of Eastern European countries with offset requirements above 100 percent. Other European countries also required offset percentages equal to or greater than the value of the weapon systems exported to them. These countries included the Netherlands (120.5 percent), Greece (110.0 percent), Sweden (103.9 percent), Denmark (100.0 percent), and Finland (100.0 percent).

The percent offset averages for the Middle East/Africa and Europe increased since the previous report on offsets in defense trade; since the last report that covered 1993-2002, the Middle East and Africa's percent offset average for the reporting period increased from 44.0 percent to 45.1 percent for 1993-2003. For Europe, the average offset percentage grew from 92.6 percent for 1993-2002 to 101.2 percent for 1993-2003.

The regional offset averages for Asia and North and South America both decreased since the previous report on offsets in defense trade; Asia's average went from 40.0 percent for 1993-2002 to 39.9 percent for 1993-2003. North and South America's average fell from 90.8 percent to 84.2 percent for 1993-2003.

Table 2-5: Countries with Offset Agreements and Transactions By Region, 1993-2003

EUROPE			MIDDLE EAST AND AFRICA		
Country	**% Offsets**	**Multiplier***	**Country**	**% Offsets**	**Multiplier***
Austria	174.2%	0.84	Egypt	NR	1.00
Belgium	80.1%	1.08	Israel	49.2%	1.04
Czech Republic	W	W	Kuwait	30.4%	2.48
Denmark	100.0%	1.17	Saudi Arabia	34.9%	NR
EPG**	27.8%	1.23	South Africa	116.7%	1.00
Finland	100.0%	1.07	Turkey	57.1%	1.06
France	84.6%	1.81	United Arab Emirates	55.3%	2.33
Germany	99.9%	1.00	**Region Total**	**45.1%**	**1.49**
Greece	110.0%	2.51	**ASIA**		
Italy	93.8%	1.02	**Country**	**% Offsets**	**Multiplier***
Lithuania	W	NR	Australia	45.6%	1.02
Luxembourg	NR	1.00	Indonesia	NR	1.21
NATO	55.8%	1.0	Malaysia	37.3%	1.12
Netherlands	120.5%	1.21	New Zealand	W	2.97
Norway	99.5%	1.39	Singapore	58.3%	2.25
Poland	W	W	South Korea	63.7%	1.33
Portugal	27.9%	1.99	Taiwan	21.7%	2.04
Romania	NR	W	Thailand	26.6%	1.60
Slovenia	W	NR	**Region Total**	**39.9%**	**1.69**
Spain	88.4%	1.23			
Sweden	103.9%	1.13			
Switzerland	78.1%	1.01			
United Kingdom	92.6%	1.01			
Region Total	**101.2%**	**1.24**			
N. AND S. AMERICA					
Country	**% Offsets**	**Multiplier***			
Brazil	W	W			
Canada	83.1%	1.00			
Chile	W	W			
Region Total	**84.2%**	**1.70**			

Source: BIS Offsets Database

Notes: NR=None Reported; W=Withheld to protect company proprietary information

*Multipliers are used only in a small percentage of the total number of transactions. See Chapter 5 for further discussion.

**EPG is the European Participating Group (Belgium, The Netherlands, Norway)

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3. Impact of Offsets on the U.S. Defense Industrial Base

The DPA requires that Commerce determine the impact of offsets on defense preparedness, industrial competitiveness, employment, and trade of the United States. This chapter discusses the impact of offsets on defense preparedness and employment.

3.1 Defense Preparedness

The relationship of offsets to the defense preparedness of the United States is complex. Exports and the revenue generated by export sales are crucial to producers of U.S. defense systems and, by extension, to U.S. foreign policy and economic interests; almost all purchasers of U.S. defense systems require offset agreements as a condition of the sale. Exports of major defense systems help defray high overhead costs for the U.S. producer and help maintain production facilities and expertise in case they are needed to respond to a national emergency. Exports also provide additional business to many U.S. subcontractors and lower-tier suppliers, promote interoperability of weapon systems between the United States and allied countries, and add positively to U.S. international account balances.

An offset package – particularly one with a high proportion of subcontracting or purchases – can negate many of these benefits. U.S. subcontractors and suppliers are displaced by exports that include Subcontract or Licensed Production offsets. More than 80 percent of offset transactions reported fell in the manufacturing sectors of the U.S. economy. Previous incidents indicate that U.S. contractors sometimes develop long-term supplier relationships with overseas subcontractors based on short-term offset requirements.[19] These new relationships can reduce future business opportunities for U.S. subcontractors, with possible consequences for the industrial base. Offsets can also increase spending and capital investment in foreign countries for defense or non-defense industries, helping to create or enhance current and future competitors.

3.2 Employment

While it is difficult to determine precisely the impact of offset agreements and transactions on employment in the U.S. defense sector, BIS has developed an estimate by using employment data collected by the Bureau of the Census. Given that sales of aerospace weapon systems

[19] See GAO report on offset activities, "Defense Trade: U.S. Contractors Employ Diverse Activities to Meet Offset Obligations," December 1998 (GAO/NSIAD-99-35), pp. 4-5.

account for nearly 85 percent of the value of defense exports connected with offset agreements, this method appears to provide a reliable estimate.

For 2002,[20] industry reported approximately $7.4 billion in defense export contracts with an offset agreement attached. According to the Economic Census, the value added per employee for the aerospace product and parts manufacturing industry in 2002 was $157,713. Dividing this figure into the defense export sales total results in a total of 47,122 work-years that were supported by defense exports associated with offset agreements.[21]

For 2002, the $7.4 billion in defense export contracts had a related $6.1 billion in offset commitments. Although it takes on average almost seven years of offset transactions to fulfill an offset agreement, in order to more accurately assess the impact of offset transactions on work-years, we compared the export contract to the prime contractor's offset obligation at the time of the sale.

Subcontracting, Purchasing, Co-production, and Licensing offset transactions are most likely to shift production and sales from U.S. suppliers to overseas firms. Other categories of offset transactions (Technology Transfer, Training, Overseas Investment, and Marketing), in the short or long run, can shift sales from U.S. suppliers as well; however, their impact is more difficult to calculate. Therefore, BIS bases its estimate of employment impacts only on Subcontracting, Purchasing, Co-production, and Licensing offset transactions.

Assuming that the offset obligations entered into in 2002 have the same proportions as past offset transactions, then the Subcontracting, Purchasing, Co-production, and Licensing portions would account for approximately 66 percent of the total, or about $4 billion. Applying the same value added figure used above ($157,173) leads to the loss of 25,450 work-years associated with the agreements entered into in 2002.

Based on these calculations, it appears that 2002 defense export sales had a net positive effect on employment in the defense sector during 2002, although the net positive effect was diminished by the offset agreements. It should be noted that the above analysis does not include an additional $338.3 million of Technology Transfer, Training, Overseas Investment, and Marketing transactions, because the impact of these transactions on the U.S. defense industrial base is difficult to calculate.

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[20] The value added data was taken from the 2002 Economic Census, Manufacturing Industry Series (see http://www.census.gov/econ/census02/index.html). The year 2002 is the most recent year for which value added data was available.

[21] This calculation is based on the supposition that this value represents 100 percent U.S. content in all exports, which is not necessarily an accurate assumption.

3.3 Domestic Defense Productive Capability

The DPA Section 309(b)(1) requires identification of the cumulative effects of offset agreements on "the full range of domestic defense productive capability with special attention paid to the firms serving as lower tier subcontractors or suppliers" and "the domestic defense technology base as a consequence of the technology transfers associated with such offset agreements." To address the effects of offsets on defense productive capability, this analysis compares 2002 offset transactions dealing with transportation equipment (SIC 37)[22] to 2002 value added data from the industry as reported in the Census Bureau's 2002 Economic Census. The comparison between transactions and value added stems from the lost current and future opportunities to U.S. companies caused by offset transactions. Over time, these lost opportunities can yield unused production capacity, affecting capacity utilization and ultimately, domestic productive capability. Value added, in turn, is a measurement of the productive capability of an entire industry, encompassing productivity of labor, efficient capital use, and full production capacity.

Table 3-1: Domestic Defense Productive Capability: Transportation Equipment Offset Transactions and Value Added, 2002

Transactions (% of total)	$1,234,841,810 (47.2%)
Value Added for Industry	$148,346,832,000
Transactions as a % of Industry Value Added	0.8%

Source: Transaction data from DOC/BIS Offsets Database.
Value Added data from Bureau of the Census, Economic Census for 2002

As seen in Table 3-1, 2002 offset transactions related to the transportation equipment industry averaged 0.8 percent of the 2002 total value added for the industry. This percentage does not indicate that the domestic defense productive capability is 0.8 percent less because of offsets. However, the 0.8 percent is the value added that was gained abroad instead of domestically because of an offset agreement. This loss of current and future opportunities can affect capacity utilization and in the end, domestic productive capability.

There are no indicators from other agencies that suggest that domestic defense productive capability has decreased cumulatively because of offsets. At the same time, there is also no

[22] This industry was chosen because it was involved in the most frequent and the highest level of offset transactions for 2002. The year 2002 was chosen as a sample because it was the most recent available data for value added from the Economic Census during the preparation of this report.

indication that offsets have directly enhanced defense productive capability, particularly for lower tier subcontractors.

To identify the effects of technology transfer on the domestic defense technology base, this analysis compares total 2002 technology transfer transactions for the aerospace manufacturing industry to total 2002 R&D spending for the aerospace manufacturing industry collected by the Aerospace Industry Association from U.S. Bureau of the Census data.

Table 3-2: Domestic Defense Technology Base: Technology Transfer Offsets and R&D Spending, 2002	
Aerospace-Related Technology Transfer Transactions	$34,000,760
Aerospace Industry R&D Spending (Federal and Industry)	$9,654,000,000
Aerospace Technology Transfer Transactions as % of R&D Spending	0.4%

Source: Transaction data from DOC/BIS Offsets Database.
Research and development spending from Aerospace Industry Association, Aerospace Facts and Figures 2004/2005

As seen in Table 3-2, 2002 offset transactions that involved technology transfer for this industry totaled $34 million. This value is equivalent to 0.4 percent of total R&D spending for the aerospace industry in 2002. As with the value added comparison, this figure does not mean that domestic firms in this industry lost 0.4 percent of their R&D spending in 2002. However, it does indicate that offset activities provided to foreign companies technology equivalent in value to 0.4 percent of 2002 domestic R&D spending in this industry. Indeed, at some point in the past, U.S. R&D funding was used to develop that transferred technology.

4. Offset Agreements, 1993-2003

4.1 Overview

As was shown in Table 2-1, during the eleven-year period from 1993 to 2003, 39 prime contractors reported that they had entered into 466 offset agreements valued at $50.7 billion. The agreements were signed in connection with defense weapon system exports totaling $70.9 billion to 36 different countries. The value of the offset agreements represented 71.4 percent of the total value of the related export contracts during the entire reporting period. The average term for completing the offset agreements was 83 months, or just under seven years. Sales of aerospace defense systems (i.e., aircraft, engines, and missiles) were valued at $59.6 billion, 84 percent of all export contracts. In 2003, the percentage of offset agreements to export contracts (by value) reached its highest point during the eleven-year period: 121.8 percent.[23] The lowest percentage was recorded in 1993 at 34.4 percent.[24]

The annual values of defense export contracts and offset agreements (including offset percentages) are presented in Chart 4-1. The value of the offset agreements as a percentage of the value of defense export contracts increased an average of approximately 8.0 percentage points per year over the eleven-year reporting period.

4.2 Concentration of Offset Activity

The data reported by U.S. firms show that a small number of companies, countries, and weapon systems dominated offset agreements between 1993 and 2003. The top five U.S. exporters (of 39 companies reporting data on offsets) accounted for 82.3 percent of the value of defense export contracts and 85.0 percent of the value of offset agreements during this eleven-year period. This market concentration reflects the high costs of developing and manufacturing defense systems and the small number of firms that have the financial and productive resources to produce them.

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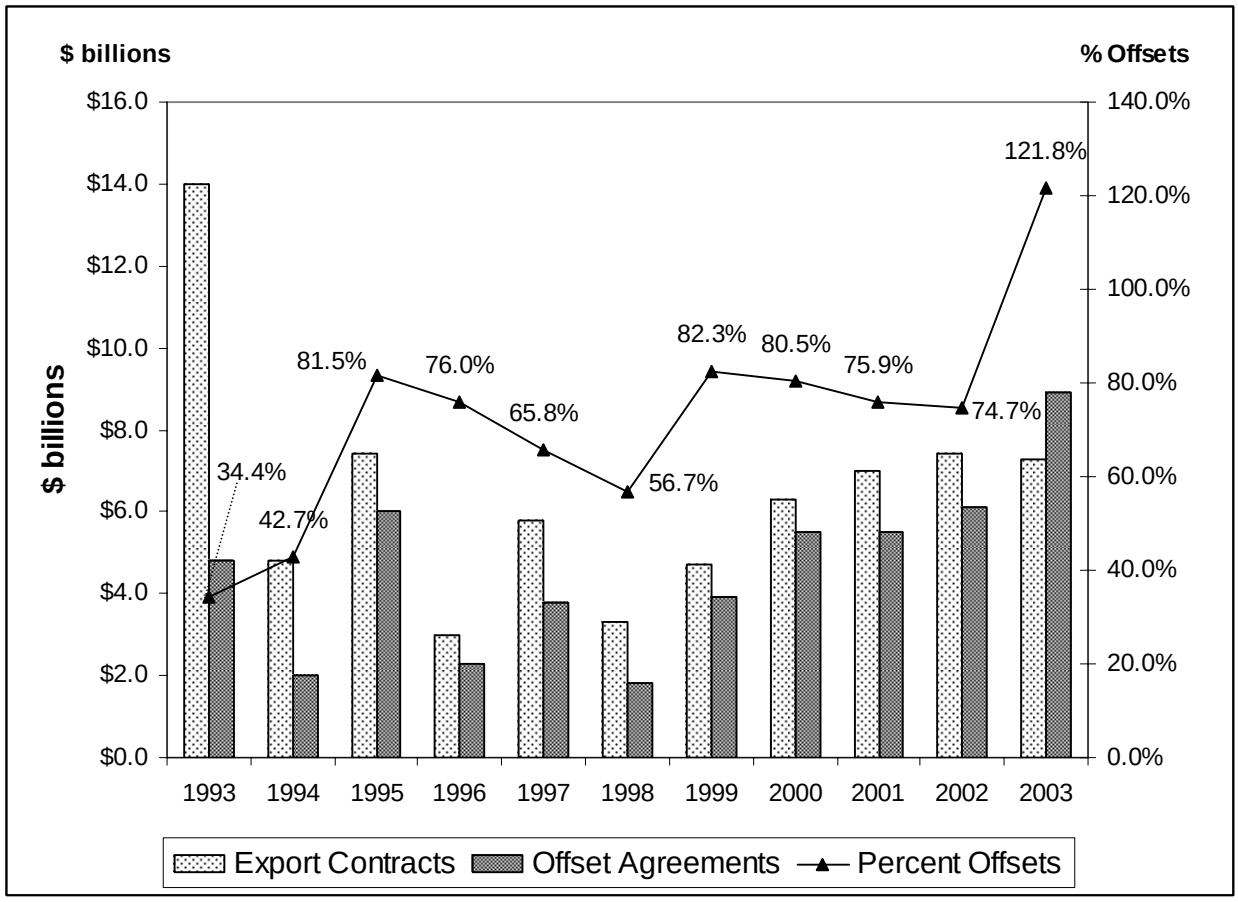
[23] One large weapon system export in 2003 with an offset percentage of more than 150 percent skewed the data for that year. Without this export and its related offset agreement, the average offset percentage for 2003 would fall to 75.1 percent (from 121.8 percent with the sale). This export also affected the average offset percentage for the entire period. With this sale and offset, the average offset percentage for 1993-2003 is 71.4 percent; without it, the percentage is 66.2 percent.

[24] A similar event occurred in 1993, when two large exports with low offset percentages skewed the average offset percentage downward.

Each prime contractor coordinated the activities of hundreds, if not thousands, of subcontractors and suppliers that contributed to the systems production, as well as the work of thousands of employees.

Chart 4-1: Export Contracts and Offset Agreements, 1993-2003 (in $ billions)



Source: BIS Offsets Database

Similarly, offsets and related defense system exports appear to be concentrated in a few purchaser countries. The top five countries (of a total of 36 involved in the reported offset activity) accounted for 56.2 percent of the value of defense systems purchased and 60.1 percent of the value of offset agreements during 1993-2003. The top 10 countries (of 36 total) represented 79.1 percent of defense system purchases and 80.1 percent of the offset agreements. In turn, these countries also accounted for the majority of the impact offsets have on the U.S. defense industrial base. In addition, these countries set a visible standard for offset demands for other countries to imitate. The weighted average of the offset percentage required by the top five countries is 66.0 percent.

According to data provided by U.S. prime contractors, the top five weapon systems exported were aircraft systems. These top five exports accounted for 43.1 percent of the value of all export contracts and 43.4 percent of the offset agreements during the reporting period. Nine of the top 10 defense systems were aerospace-related; the top ten accounted for 57.0 percent of the export contracts and 59.5 percent of the offset agreements during the eleven-year period.

4.3 Regional Distributions

Chart 4-2 shows offset agreements and export contracts by region for 1993-2003. European countries accounted for the majority of offset activity and weapon system exports during the eleven-year reporting period. Europe accounted for 69.6 percent of the value of offset agreements and 49.1 percent of the value of U.S. defense export contracts. Asian countries ranked second in both categories, with 18.7 percent of the value of offset agreements and 33.5 percent of related U.S. export contract values.

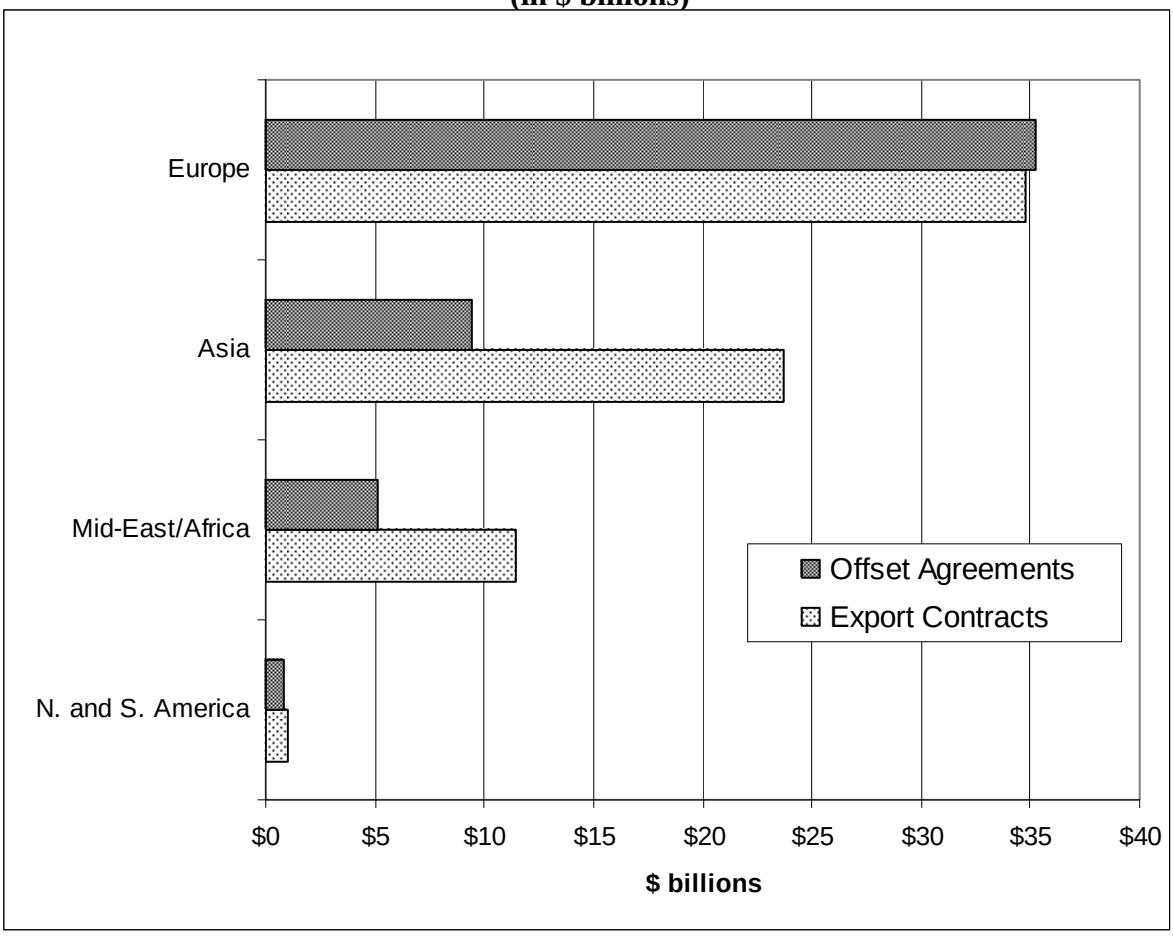
In 2003, however, the Middle East and Africa played a larger role than did Asia. For the first time, the Middle East/Africa share of offsets and sales was greater than Asia's: the region accounted for 20 percent of weapon systems exports and 8.7 percent of the value of new offset agreements. In contrast, Asia made up just 6.9 percent of the value of defense exports and 2.0 percent of the value of new offset agreements.

4.4 Europe vs. All Other Countries

As mentioned above, Europe alone accounted for almost 70 percent of total offset agreements (by value), but less than half (49.1 percent) of the value of U.S. defense export contracts (see Table 4-1). These figures show the impact of the high offset percentages typically demanded by European nations in connection with U.S. defense export sales. The average offset percentage demanded by the 17 European countries involved in offset activity during the eleven-year reporting period was 101.2 percent of the export contract values – a percentage that was more than double that of any other region. As shown in Table 4-1, the average offset percentages for Europe have exceeded 90 percent in each year since 1999, reaching a peak of 148.8 percent in 2003, up from 94.3 percent in 2002.

During 1993-2003, U.S. firms reported entering into 247 offset agreements with European countries with a total value of $35.2 billion. These offset agreements ranged from less than $2 million to more than $6 billion in offset demands, and averaged $142.6 million per agreement. The average offset agreement had a term of 87 months, with the longest at 180 months.

Chart 4-2: Regional Totals of Export Contracts and Offset Agreements, 1993-2003 (in $ billions)



Source: BIS Offsets Database

Many European governments require a minimum of 100 percent offsets on purchases of foreign defense systems. Of the 247 offset agreements with Europe during the period, 160, or 64.8 percent, had offset percentages of 100 percent. Another 21 agreements specified offset percentages of greater than 100 percent, including one for which the offset percentage was 200 percent. In sum, 73.3 percent (by number) of offset agreements with Europe featured offset percentages of 100 percent or more during the period.

Table 4-1: Offset Agreements: Europe vs. Rest of World 1993-2003						
Year	**Area**	**# of Agreements**	**Export Contracts**	**Offset Agreements**	**Percent Offsets**	**Duration (months)**
	Europe	14	$2,985,017,012	$2,338,052,745	78.3%	132
	Non-Europe	16	$10,972,022,686	$2,468,671,450	22.5%	117
1993	**World**	30	$13,957,039,698	$4,806,724,195	34.4%	124
	Europe	20	$1,508,233,660	$764,829,660	50.7%	99
	Non-Europe	29	$3,284,186,291	$1,283,885,998	39.1%	102
1994	**World**	49	$4,792,419,951	$2,048,715,658	42.7%	101
	Europe	26	$4,944,349,000	$5,159,249,000	104.3%	132
	Non-Europe	19	$2,457,697,200	$874,868,816	35.6%	98
1995	**World**	45	$7,402,046,200	$6,034,117,816	81.5%	127
	Europe	34	$1,924,154,000	$1,919,144,000	99.7%	110
	Non-Europe	16	$1,063,668,414	$351,532,595	33.0%	73
1996	**World**	50	$2,987,822,414	$2,270,676,595	76.0%	104
	Europe	28	$3,732,590,000	$3,043,800,000	81.5%	115
	Non-Europe	29	$2,090,229,255	$788,036,633	37.7%	91
1997	**World**	57	$5,822,819,255	$3,831,836,633	65.8%	110
	Europe	21	$1,390,307,668	$1,200,271,496	86.3%	115
	Non-Europe	23	$1,867,517,244	$646,374,000	34.6%	111
1998	**World**	44	$3,257,824,912	$1,846,645,496	56.7%	113
	Europe	22	$2,968,749,184	$2,707,962,710	91.2%	69
	Non-Europe	23	$1,712,460,302	$1,143,426,500	66.8%	94
1999	**World**	45	$4,681,209,486	$3,851,389,210	82.3%	75
	Europe	24	$3,892,796,045	$4,324,000,090	111.1%	113
	Non-Europe	14	$2,385,535,153	$1,174,104,050	49.2%	64
2000	**World**	38	$6,278,331,198	$5,498,104,140	87.6%	79
	Europe	18	$3,972,372,462	$3,808,280,100	95.9%	83
	Non-Europe	17	$3,066,806,355	$1,688,974,355	55.1%	80
2001	**World**	35	$7,039,178,817	$5,497,254,455	78.1%	82
	Europe	23	$2,168,281,468	$2,045,362,683	94.3%	79
	Non-Europe	18	$5,237,949,615	$4,049,449,367	77.3%	93
2002	**World**	41	$7,406,231,083	$6,094,812,050	82.3%	85
	Europe	17	$5,321,609,122	$7,921,158,137	148.8%	74
	Non-Europe	15	$1,963,263,350	$950,800,350	48.4%	80
2003	**World**	32	$7,284,872,472	$8,871,958,487	121.8%	80
	Europe	247	$34,808,459,621	$35,232,110,621	101.2%	87
Totals	**Non-Europe**	219	$36,101,335,865	$15,420,124,114	42.7%	78
	World	466	$70,909,795,486	$50,652,234,735	71.4%	83

Source: BIS Offsets Database

The 16 countries representing all other regions (i.e., non-European countries) shown in Table 4-1 accounted for 30.4 percent of offset agreements (by value) but more than half (50.9 percent) the value of reported U.S. defense export contracts. The non-European countries' average offset requirement for the eleven-year reporting period was 42.7 percent. Although Europe still accounts for the preponderance of offset agreements by value, non-European countries' offset requirement percentages are increasing significantly. For 1993-2000, the average offset requirement for non-European countries totaled only 33.9 percent; for 2001-2003, the average offset requirement was 60.3 percent; for 1993-2003, their offset requirements averaged 45.4 percent. For 2003 alone, offsets totaled 48.4 percent of the value of U.S. weapon exports to non-European countries.

U.S. prime contractors reported that they had entered into 219 offset agreements with non-European countries totaling $15.4 billion from 1993-2003. The average offset agreement for non-European countries was valued at $70.4 million and had a term of 78 months.

Overall, Middle Eastern countries and most countries in the Pacific area generally demand lower offset levels than European countries. Of the 219 offset agreements with non-European countries, 150 (68.5 percent) had offset percentages of 50 percent or less. Only 69 of the offset agreements (31.5 percent) had percentages of more than 50 percent, and 11 of these had offset requirements in excess of 100 percent.

The data show that over the eleven-year period, countries with developed, technically advanced economies typically have demanded higher levels of offsets than other countries. As more economies and their military programs advance technically, higher levels of offset requirements are likely to continue. More advanced economies are better able to absorb both direct and indirect offsets. Their infrastructures are better developed, and they are more likely than other countries already to have in place a variety of industries among which to distribute offset transactions.

4.5 Are Offset Demands Increasing?

The data show not only that offset demands are increasing over time, but also that more countries outside Europe are demanding these higher offset percentages. Chart 4-3 shows that, although historically low, offset requirements outside Europe are rising. Two-thirds of the non-European offset agreements valued at 100 percent or more of the export contract value have occurred since 1998. Of the 36 agreements with offset requirements of 100 percent or more, 13 were with Canada and another six were with Turkey. Moreover, in the last three years, countries entering

into offset agreements with U.S. firms for the first time have demanded 100 percent or more, emulating their European counterparts.

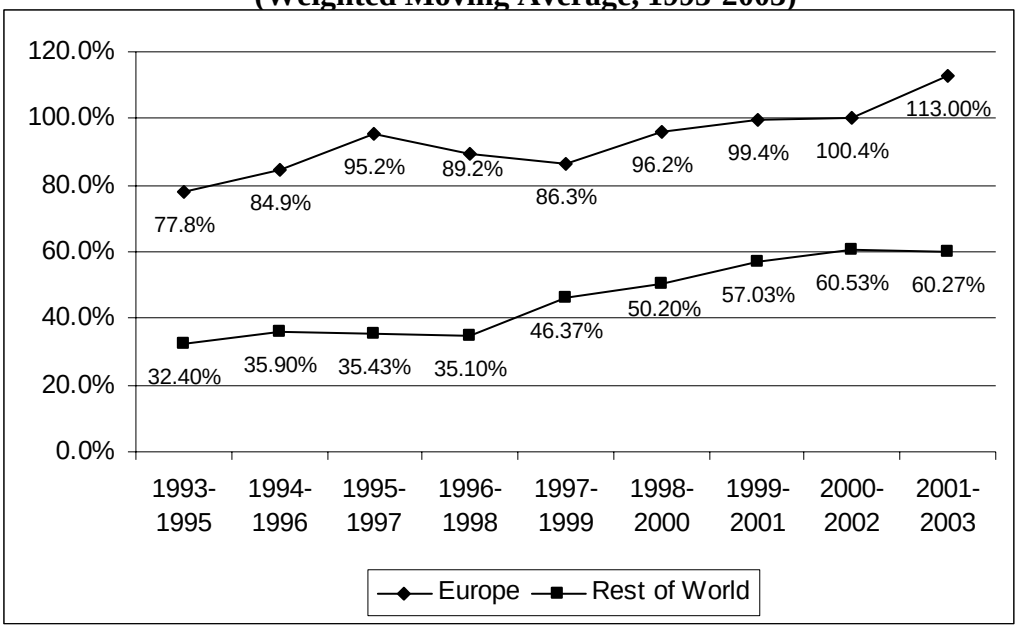
Agreements entered into by South Korea and Turkey illustrate the growing trend in non-European offset demands. From 1993 to 1998, the average offset requirement (by value) demanded of U.S. firms by South Korea was 36.5 percent. In contrast, from 1999 to 2003, that average nearly doubled, to 69.6 percent. From 1993 to 1998, offset percentages (by value) demanded by Turkey of U.S. firms averaged 52.3 percent. However, Turkey's offset requirements rose in 1999-2003 to 60.1 percent.

European offset demands also continued to increase over the eleven-year period, although more slowly than offset demands in the rest of the world. As shown in Table 4-1, offset requirements for European countries increased at an annual rate of 6.4 percentage points. For the rest of the world, the average increase in offset percentages was 5.5 percentage points per year. Using the three-year weighted averages shown in Chart 4-3, European offset requirements increased an average of 3.2 percentage points each year in the eleven-year period, while non-European demands increased 2.5 percentage points.

Offset requirement trends are more representative when viewed as a moving, weighted average.[25] A moving average smoothes out the yearly fluctuations in weapon system sales and related offset agreements. The weighted world trend in offset percentages rose from 52.9 percent to 94.1 percent; the averages for Europe and all other countries are shown in Chart 4-3. In the same eleven-year period that European offset percentages rose by 35.2 percentage points (from 77.8 percent to 113.0 percent), the rest of the world nearly doubled its offset requirements, from 32.4 percent to 60.3 percent.

[25] Here, the value of export contracts and offset agreements is totaled for each successive three-year period, beginning with 1993-1995, followed by 1994-1996, and so forth; then the offset percentage is determined. This leads to nine three-year observations over the eleven-year reporting period (1993-2003).

Chart 4-3: Percentage Offsets for Europe vs. Rest of World (Weighted Moving Average, 1993-2003)



Source: BIS Offsets Database

Defense offset requirements have increased as the supply of defense systems has exceeded the demand for such items. In the last decade, shrinking worldwide defense expenditures and the overcrowding in the defense supplier sector have forced defense industries in many nations to consolidate. As sales opportunities narrowed, competition for such sales became more intense. Higher-than-normal overhead related to low levels of capacity utilization in defense industries coupled with competitive pressures on prices also have squeezed corporate profits.

On the other hand, foreign purchasing governments are under pressure to sustain their indigenous defense companies or to create new ones (defense and commercial) and, accordingly, are demanding more offsets. Significant public outlays for foreign-made weapon systems become even more controversial, leading to higher offset demands to deflect political pressure and increase domestic economic development. In a growing number of cases, defense purchases are being driven by the competitiveness of the offset package offered rather than the quality and price of the weapon system purchased.

5. Offset Transaction Activity, 1993-2003

An offset agreement typically requires the prime contractor to complete multiple transactions over a period of years to satisfy the requirements of the agreement. Analyzing transactions provides the basis upon which the impacts of offsets on the U.S. defense industrial base are estimated. For the purpose of analysis, offset transactions are grouped by type (i.e., direct, indirect, and unspecified), and then grouped again into the nine categories described in Chapter 2 (Purchases, Subcontracts, Technology Transfer, Credit Assistance, Training, Overseas Investment, Co-production, Licensed Production, and Miscellaneous).

5.1 Overview

From 1993 to 2003, 42 U.S. defense companies reported 6,593 offset transactions with 46 countries totaling $27.1 billion. The values of offset transactions by type are reflected in Table 5-1. U.S. firms received a total of $32.8 billion in credit (see Table 5-2) toward open offset obligations during the reporting period. The yearly value of offset transactions averaged $2.46 billion.

Table 5-1: Offset Transactions Analysis

Offset Transaction Comparisons	
Data Element	**All Transactions**
Total Value	$27,090,039,493
Direct Offsets	$10,314,928,359
Indirect Offsets	$16,557,825,885
Unspecified Offsets	$217,285,249
Percent Distribution	
% Direct Offsets	38.1%
% Indirect Offsets	61.1%
% Unspecified Offsets	0.8%

Source: BIS Offsets Database

U.S. companies reported offset transactions with a total actual value of $3.6 billion in 2003, the highest value reported for the eleven-year period, up from $2.6 billion in 2002. The 2003 figure represents a 38.5 percent increase from the 2002 total. The percentage of the value of offset transactions classified as indirect rose during 2003, reaching 68.8 percent, up from 64.0 percent in 2002. This was the highest percentage of indirect for all years in the period. Direct transactions accounted for 31.1 percent of the value of transactions in 2003, the lowest level of direct transactions over the eleven-year period. The remaining 0.1 percent of the value was unspecified.

Table 5-2 shows the countries receiving the most offset transactions (by actual value) during 1993-2003, along with the actual and credit values and multipliers for the transactions, and the portion of transactions granted multipliers. The 19 countries listed in Table 5-2 were the recipients of approximately 96.3 percent of the actual value of all offset transactions from 1993 to 2003. The multipliers for the countries listed ranged from 0.998 for Canada to 2.508 for Greece.

For the reporting period of 1993 to 2003, the United Kingdom and Finland were the two largest recipients of offset transactions, with total actual values of $5.0 billion and $3.2 billion, respectively. The two countries combined accounted for 30.4 percent of the total actual value of offset transactions during the reporting period. However, the United Kingdom and Finland accounted for 25.9 percent of the total credit value, because their multipliers were lower than those of some of the other countries.

The fifth column in Table 5-2 shows the percentage of the number of each country's transactions with multipliers greater than one – in other words, offset transactions for which the credit value received was greater than the actual value. France led, with 46.6 percent of the transactions having multipliers greater than one, followed by Greece and Taiwan, both with 43.4 percent. However, these countries are not typical. For all countries, only 13 percent of the transactions had a multiplier greater than one. Conversely, almost 87 percent of the number of transactions had no multiplier (or had a negative multiplier) applied. For the 19 countries listed in Table 5-2, the overall percentage of transactions with multipliers greater than one was 12 percent, lower than the percentage for all countries (13 percent).

Table 5-2: Offset Transactions by Countries with Highest Total Actual Value (Total, 1993-2003)				
Country	**Actual Value**	**Credit Value**	**Multiplier**	**% of Transactions with Multiplier >1**
1. United Kingdom	$5,008,303,563	$5,037,424,541	1.006	1.0%
2. Finland	$3,228,137,843	$3,457,807,399	1.071	22.9%
3. Israel	$3,003,051,089	$3,125,982,392	1.041	5.6%
4. Netherlands	$1,675,325,707	$2,009,865,606	1.200	10.0%
5. South Korea	$1,600,049,256	$2,129,274,493	1.331	21.0%
6. Greece	$1,360,944,494	$3,413,544,611	2.508	43.3%
7. Switzerland	$1,198,226,265	$1,206,881,646	1.007	1.5%
8. Canada	$1,133,186,265	$1,131,126,557	0.998	1.8%
9. Australia	$1,123,016,982	$1,146,113,610	1.021	2.7%
10. Italy	$1,114,412,777	$1,139,903,777	1.023	4.9%
11. Spain	$1,055,111,613	$1,295,616,711	1.228	30.6%
12. Turkey	$878,787,871	$930,518,635	1.059	8.2%
13. Taiwan	$824,028,358	$1,679,148,369	2.038	43.3%
14. Germany	$724,241,540	$724,241,540	1.000	0.0%
15. Norway	$708,482,461	$983,947,765	1.389	25.7%
16. Denmark	$455,207,245	$534,119,249	1.173	14.3%
17. France	$438,046,928	$794,754,494	1.814	46.6%
18. Malaysia	$294,807,399	$329,507,399	1.118	12.0%
19. Belgium	$256,995,553	$278,442,931	1.083	2.4%
Total	**$26,080,363,210**	**$31,348,221,725**	**1.202**	**12.0%**
All Countries (46)	**$27,090,039,493**	**$32,802,032,552**	**1.211**	**13.0%**

Source: BIS Offsets Database

5.2 Regional Distributions

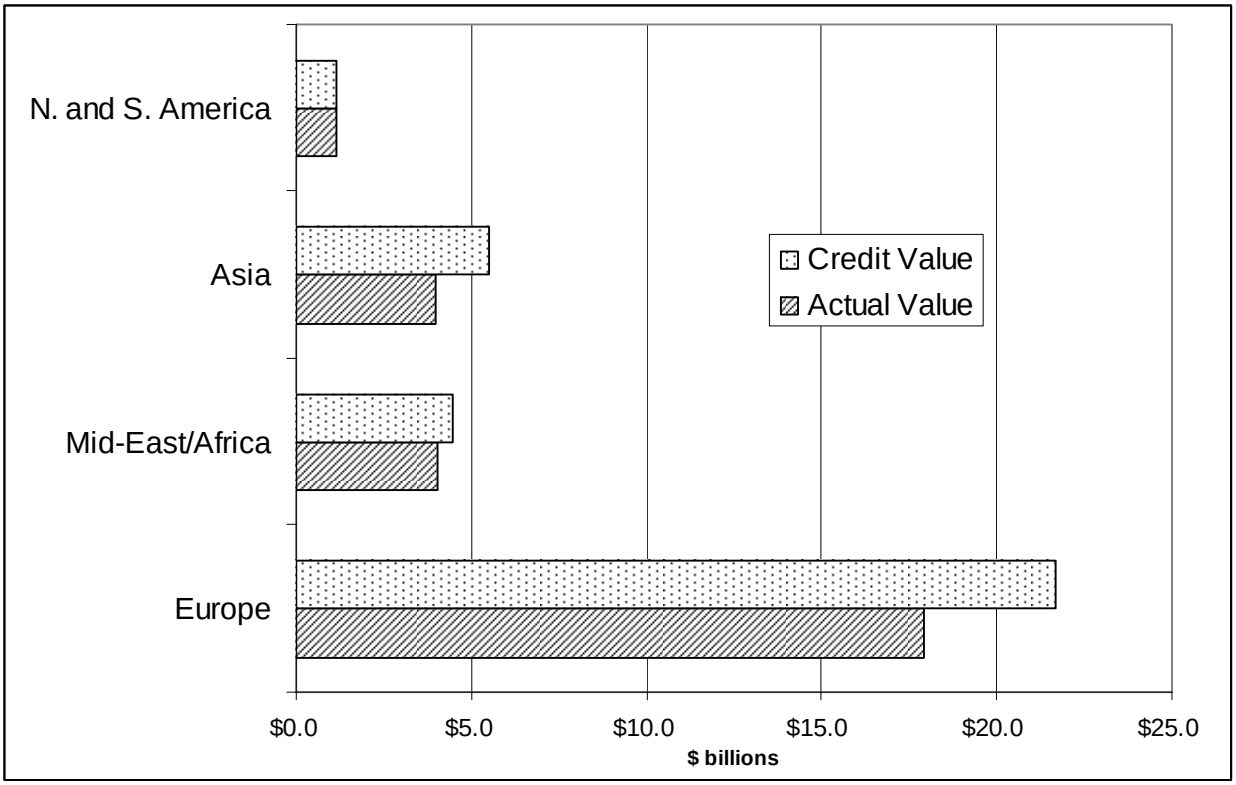
The regional distribution of offset transactions mirrors the pattern of offset agreements (see Chart 5-1). As with offset agreements, European countries dominated offset transactions, with 66.2 percent of the value of offset transactions during 1993-2003. The region's multiplier was slightly smaller than average (1.209), and the multiplier was applied to only 15.6 percent of the number of transactions (84.5 percent of transactions had no multiplier or a negative multiplier applied); therefore, European countries accounted for only 66.1 percent of the total credit value applied toward open offset agreements.

Asian countries were ranked second with 16.8 percent of the total actual value of the offset transactions. Asia's larger than average multiplier (1.39) applied to just 21.6 percent of the

transactions (78.4 percent of transactions had no multiplier or a negative multiplier applied); as a result, the region accounted for 16.8 percent of the total credited value of offset transactions.

Middle Eastern and African countries together accounted for 15 percent of the total actual value of offset transactions and 13.5 percent of the credit value. The multiplier for Middle Eastern and African countries was 1.09, lower than the overall average. Multipliers were applied to 9.9 percent of the region's transactions (90.1 percent of transactions had no multiplier or a negative multiplier applied).

Chart 5-1: Regional Totals of Offset Transactions, 1993-2003 (in $ billions)



Source: BIS Offsets Database

Countries in the Western Hemisphere ranked fourth, with just 4.2 percent of the actual value of transactions and 3.5 percent of the credit value. The multiplier for North and South America was the lowest of the four regions at only 1.001. Over 95 percent of transactions by number in South America received multipliers; in North America, 1.8 percent of transactions received multipliers (98.2 percent of transactions did not receive multipliers or had negative multipliers).

5.3 The Role Of Multipliers

Multipliers can make it easier for prime contractors to fulfill their offset obligations. However, further inspection of multipliers by region provides a better understanding of how infrequently multipliers are being utilized by purchasing nations to reward prime contractors for certain types of offset transactions. Table 5-3 highlights the use of multipliers by region as a percentage of the number of all transactions for the 1993-2003 period. In Europe, for example, 83 percent of transactions by number have no multiplier involved for the prime contractor when fulfilling the offset commitment (multiplier =1). For North and South America, 85.5 percent of transactions by number have no multiplier involved; for Asia, the figure is 76.6 percent, and 87.9 percent for the Middle East and Africa.

Table 5-3: Multipliers by Region, by Number 1993-2003

	% Multipliers <1	% Multipliers =1 (No Multiplier)	% Multipliers >1
Europe	1.5%	83.0%	15.6%
Mid-East/Africa	2.2%	87.9%	9.9%
Asia	1.8%	76.6%	21.6%
N. and S. America	8.9%	85.5%	5.6%

Source: BIS Offsets Database

In reviewing European multiplier data further, 15.6 percent of the European transactions (by number) have a multiplier greater than one applied to them, and an additional 1.5 percent of transactions with Europe have a multiplier of less than one applied. Multipliers of less than one mean that prime contractors are only credited a portion of the total actual value of a transaction. In Asia, 21.6 percent of the transactions (by number) have multipliers greater than one applied, while 1.8 percent of transactions have multipliers of less than one. For the Middle East/Africa, only 9.9 percent of transactions have multipliers greater than one applied, while 2.2 percent of transactions have multipliers of less than one. In North and South America, 8.9 percent of transactions by number receive less than full credit.

Table 5-4: Multipliers by Region, by Dollar Values 1993-2003				
	Value of transactions with multiplier <1	**Value of transactions with multiplier =1 (no multiplier)**	**Value of transactions with multiplier >1**	**Total Value**
Europe	$233,324,176	$16,196,051,004	$1,501,951,530	$17,931,326,710
Percentage	1.3%	90.3%	8.4%	
Middle East/Africa	$35,023,930	$3,741,702,819	$277,616,815	$4,054,343,564
Percentage	0.9%	92.3%	6.9%	
Asia	$93,183,240	$3,656,446,991	$209,159,104	$3,958,789,335
Percentage	2.4%	92.4%	5.3%	
N. and S. America	$101,398,099	$1,026,782,430	$17,399,355	$1,145,579,884
Percentage	8.9%	89.6%	1.5%	

Source: BIS Offsets Database

Reviewing transactions with multipliers in terms of the value further highlights the small role multipliers play in offset transactions. Table 5-4 classifies multiplier usage by region and by whether the multiplier is greater than 1, equal to 1, or less than 1. It should be noted that transactions with multipliers less than 1 further add to the costs of fulfilling offsets, as countries for certain transactions give less than full credit for offset transactions completed.

For Europe, transactions with a multiplier greater than 1 only accounted for 8.4 percent of the value of all European transactions; the Middle East/Africa, 6.9 percent; Asia, 5.3 percent; and North and South America, 1.5 percent. For each region, transactions with multipliers of less than 1 and transactions with no multiplier together accounted for over 90 percent of the value of transactions.

Table 5-5: Multipliers by Category of Offset, All Countries 1993-2003				
ALL COUNTRIES Offset Category	**Number of Transactions**	**Number & Percent with No Multiplier**	**Number & Percent with Multipliers >1**	**Number & Percent with Multipliers <1**
Co-production	132	125	7	0
		94.7%	5.3%	0.0%
Credit Transfers	84	74	10	0
		88.1%	11.9%	0.0%
Licensed Production	31	25	5	1
		80.6%	16.1%	3.2%
Overseas Investment	97	54	43	0
		55.7%	44.3%	0.0%
Purchases	3383	3014	285	84
		89.1%	8.4%	2.5%
Subcontracts	1452	1317	122	13
		90.7%	8.4%	0.9%
Technology Transfer	656	454	183	19
		69.2%	27.9%	2.9%
Training	219	130	86	3
		59.4%	39.3%	1.4%
Miscellaneous	444	341	100	3
		76.8%	22.5%	0.7%

Source: BIS Offsets Database

Table 5-5 highlights the use of multipliers by category of offset transaction. Purchases and Subcontracts, the two highest categories in terms of the number of transactions, each have 8.4 percent of their transactions sharing multipliers greater than 1. Over 89 percent of Purchase transactions and more than 90 percent of Subcontract transactions have no multiplier applied. At the other extreme, Overseas Investment has 44.3 percent and Training has 39.3 percent of its transactions with multipliers greater than one.

Table 5-6: Multipliers by Category of Offset, Europe 1993-2003				
EUROPE Offset Category	**Number of Transactions**	**Number & Percent with No Multiplier**	**Number & Percent with Multipliers >1**	**Number & Percent with Multipliers <1**
Co-production	105	97	7	1
		92.4%	6.7%	1.0%
Credit Transfers	70	61	9	0
		87.1%	12.9%	0.0%
Licensed Production	9	7	1	1
		77.8%	11.1%	11.1%
Overseas Investment	57	38	19	0
		66.7%	33.3%	0.0%
Purchases	2445	2185	232	28
		89.4%	9.5%	1.1%
Subcontracts	917	823	88	6
		89.7%	9.6%	0.7%
Technology Transfer	362	254	97	11
		70.2%	26.8%	3.0%
Training	99	58	40	1
		58.6%	40.4%	1.0%
Miscellaneous	291	218	70	3
		74.9%	24.1%	1.0%

Source: BIS Offsets Database

Tables 5-6 and 5-7 break out the categories of offset transactions, and the number of transactions and multipliers applied for Europe and Asia, respectively. These regions have the highest use of multipliers. For Europe, Training transactions received the most positive multipliers (40.4 percent), while Co-production received the fewest multipliers (6.7 percent).

Table 5-7: Multipliers by Category of Offset, Asia 1993-2003				
ASIA Offset Category	**Number of Transactions**	**Number & Percent with No Multiplier**	**Number & Percent with Multipliers >1**	**Number & Percent with Multipliers <1**
Co-production	6	6	0	0
		100.0%	0.0%	0.0%
Credit Transfers	4	3	1	0
		75.0%	25.0%	0.0%
Licensed Production	20	0	4	0
		0.0%	20.0%	0.0%
Overseas Investment	14	10	4	0
		71.4%	28.6%	0.0%
Purchases	202	176	22	4
		87.1%	10.9%	2.0%
Subcontracts	244	223	20	1
		91.4%	8.2%	0.4%
Technology Transfer	233	154	72	7
		66.1%	30.9%	3.0%
Training	83	49	32	2
		59.0%	38.6%	2.4%
Miscellaneous	76	54	22	0
		71.1%	28.9%	0.0%

Source: BIS Offsets Database

As in Europe, Training transactions in Asia also received the most multipliers; 38.6 percent of all Training transactions received multipliers. Co-production transactions received no multipliers.

5.4 Offset Transactions by Type

Direct offset transactions accounted for 38.1 percent ($10.3 billion) of the total value of offset transactions during 1993-2003, while indirect offsets accounted for 61.1 percent ($16.6 billion) of the value of offset transactions. The remaining 0.8 percent ($217.3 million) consisted of transactions that were not specified as direct or indirect.

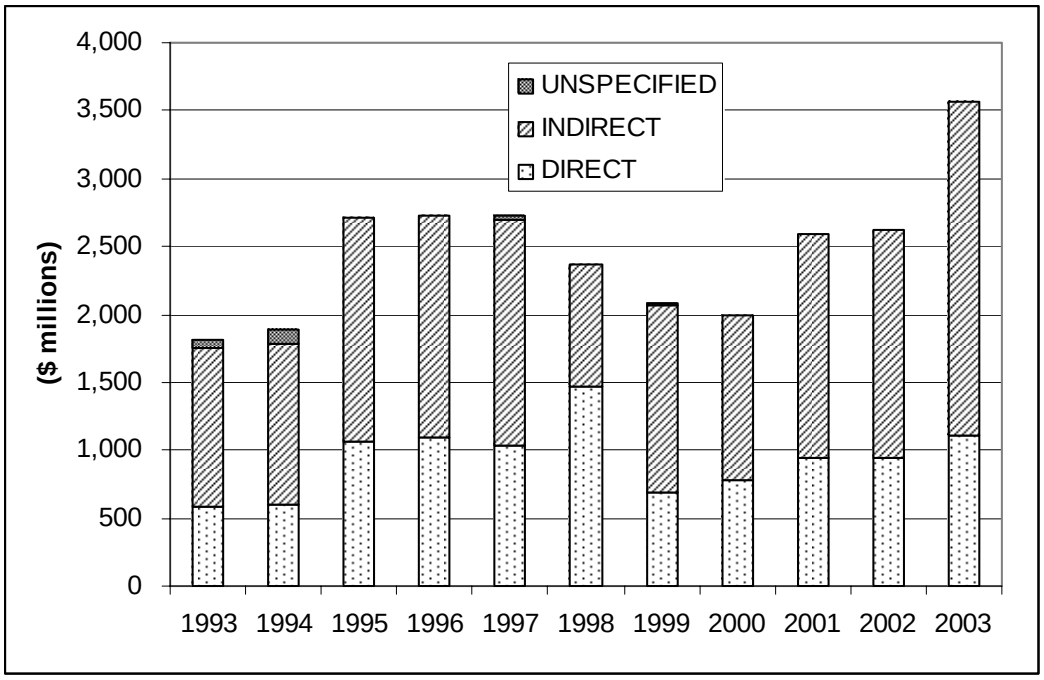
In 2003, direct offset transactions (related to weapon systems sold) accounted for just 31.2 percent of the value of all transactions, the lowest percentage for the eleven-year period. Similarly, indirect offsets (not related to weapon systems sold) were 68.6 percent of the value of all transactions, which was the highest percentage for the period. The mix of direct and indirect offset transactions changes from year to year, depending on which countries dominated the offset activity. However, for ten of the eleven years in the reporting period, indirect offsets have accounted for significantly more than half of all offset transactions.

The United Kingdom was the largest recipient of indirect offsets for the eleven-year period, with 18.8 percent of the total value of indirect offset transactions. The United Kingdom also led all countries in the value of direct offset transactions received during 1993-2003, with 18.5 percent of the direct offset total. Its direct offset transactions were concentrated heavily in aerospace; 46.5 percent of the United Kingdom's total direct offset transactions were aerospace-related.

Calculated on an annual basis, the value of direct offsets ranged from $584.2 million in 1993 to $1.46 billion in 1998, averaging $937.7 million for 1993-2003. The value of indirect offset transactions ranged from $900.5 million (1998) to $2.4 billion (2003), averaging $1.5 billion per year during the 1993-2003 reporting period.

As mentioned above, direct offset transactions reached their lowest point relative to indirect and unspecified transactions in 2003. Direct offset transactions also started the eleven-year period at low levels relative to indirect offset transactions; in 1993 and 1994, direct transactions accounted for about 32 percent of the total value of offset transactions. Direct offset transactions as a percentage of all transactions hit their peak in 1998 at 61.9 percent. During that year, Italy, Israel, and the Netherlands received high direct offset transactions. The distribution of direct and indirect offset transactions for the eleven-year period is presented in Chart 5-2.

Chart 5-2: Direct, Indirect, and Unspecified Offset Transactions 1993-2003

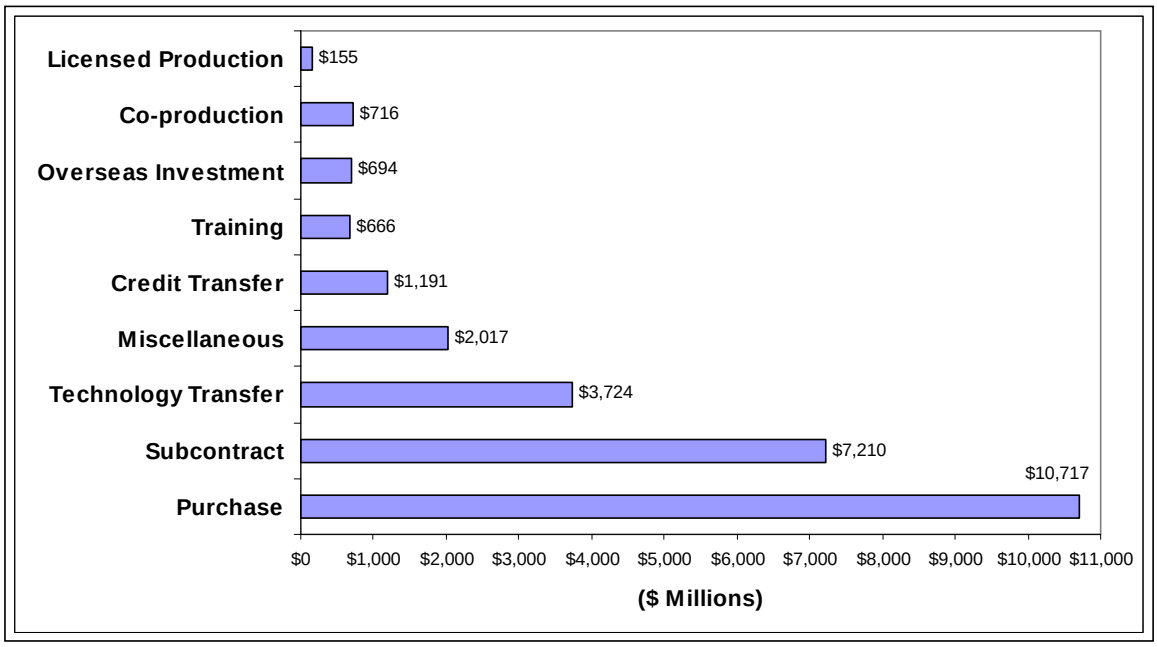


Source: BIS Offsets Database

5.5 Offset Transactions by Category

As in previous offset studies, the categories of purchases, subcontracts, and technology transfers accounted for the majority of offset activity during 1993-2003: for that eleven-year period, they accounted for 79.9 percent of the total value of offset transactions. Purchases accounted for 39.6 percent of the total value, and subcontracts accounted for 26.6 percent. The value of technology transfer offset transactions was 13.8 percent of the total value. Chart 5-3 shows the distribution of offset transactions by category and dollars.

Chart 5-3: Offset Transactions by Category, 1993-2003 (in $ millions)



Source: BIS Offsets Database

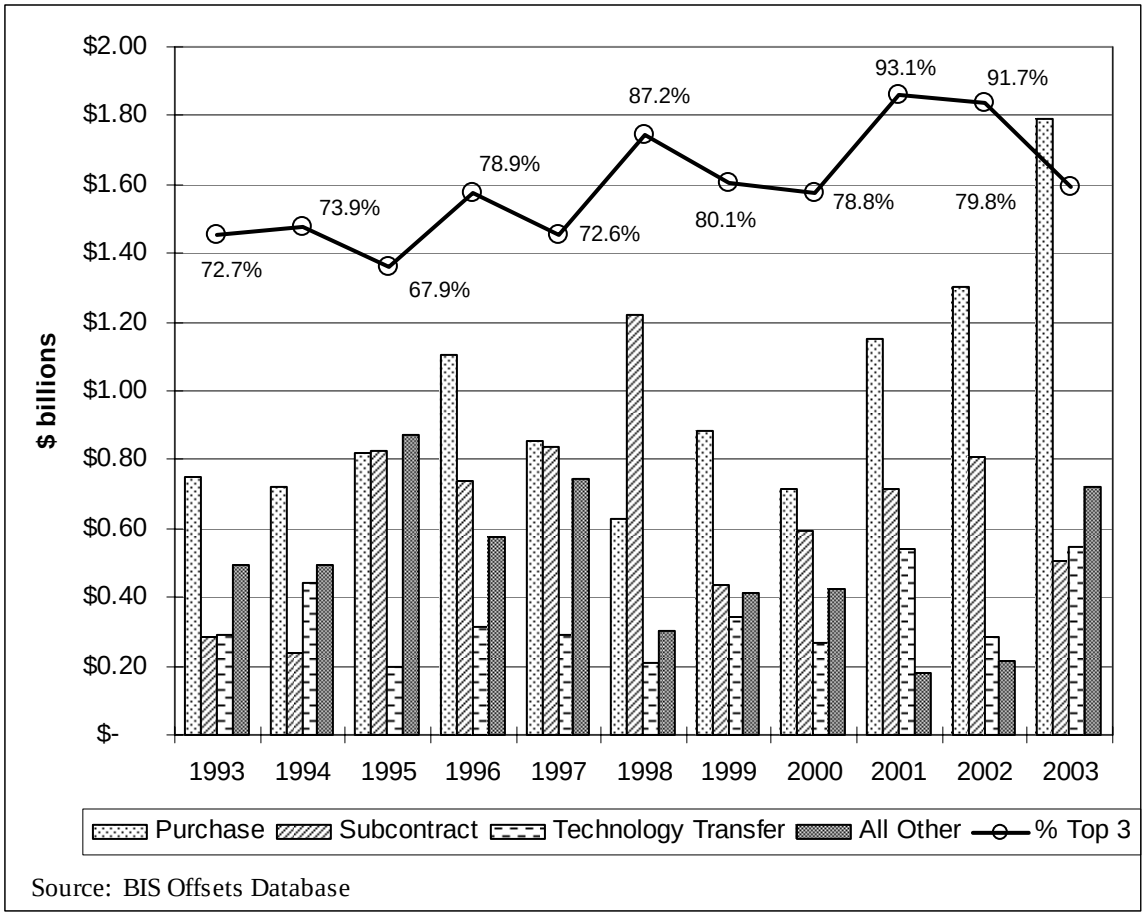
Data showing the percentage of total offset transactions accounted for by purchases, subcontracts, and technology transfers are shown in Chart 5-4. The dominance of these three categories ranged from 66.3 percent of all offset transactions (by value) in 1993 to 93.1 percent in 2001.

Of the 46 countries where offset transactions were carried out (see Table 2-1), 43 were recipients of offset transactions categorized as purchases, which were all classified as indirect offsets. These purchases were comprised mostly of manufactured goods and services, including metal castings and forgings, aircraft parts, night vision components, agricultural equipment, software, machined parts, electronic components, and educational and consulting services. The United Kingdom had the most purchases, with 25.5 percent of the value of all purchases, followed by Israel with 9.6 percent, and Finland with 7.9 percent. Of all offset transactions categorized as purchases, 52.6 percent were aerospace-related.

During 1993-2003, 27 countries were recipients of offset transactions classified as subcontracts. As discussed earlier, subcontracts are considered direct offset transactions. The vast majority of subcontracts involved aerospace-related manufactured parts, components, and services. Aerospace-related transactions accounted for 82.3 percent of the total value of all subcontract transactions. The United Kingdom received 25.4 percent of the value of all subcontracts, followed by Israel with 19.2 percent and Italy with 8 percent of all subcontracts. These three

countries together accounted for 52.6 percent of the value of all offset transactions categorized as subcontracts.

Chart 5-4: Percentage of Total Annual Offset Transactions Accounted for by Top Three Transaction Categories, 1993-2003



Source: BIS Offsets Database

Twenty-eight countries accounted for all technology transfers, which totaled $3.7 billion during 1993-2003. Finland accounted for 19.5 percent of the value of transactions classified as technology transfers, followed by South Korea with 15.5 percent and Taiwan with 11.1 percent. Aerospace-related technology transfers accounted for 59.6 percent of the value of all technology transfers during 1993-2003.

5.6 Offset Transactions by Category and Type

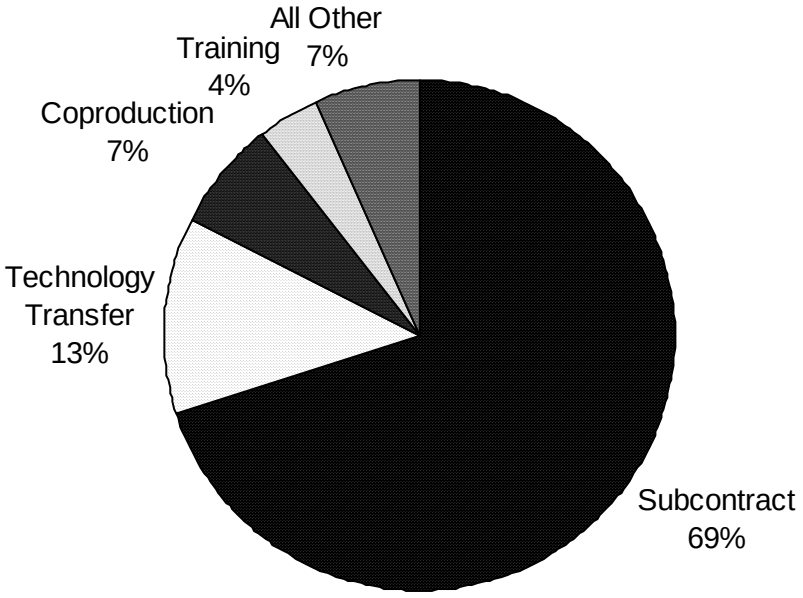
One way to examine the effects of offsets on the U.S. defense industrial base is to analyze the distribution of offset transactions by category and by type. For example, subcontracts, co-production, and licensed production each involve foreign production of goods or services related to the weapon system sold. For 1993-2003, these three categories totaled 78 percent of the value of all direct offset transactions. Subcontracts, co-production, and licensed production may result in U.S. suppliers being displaced from participation in the manufacture and/or assembly of a U.S. defense system as well as its future maintenance requirements. Offset transactions in these three categories totaled $8.0 billion during the 11-year period; subcontracts alone accounted for $7.2 billion.

Similarly, the purchases category of indirect offsets involved foreign production of goods and services. Purchases totaled $10.7 billion during 1993-2003, or 64.7 percent of the total value of indirect offset transactions. As a result, direct or indirect offset transactions involving overseas production of goods or services totaled $18.7 billion in overseas production – or an average of $1.7 billion per year.

While technology transfers, training, credit assistance, and overseas investment offset transactions do not directly involve foreign production of goods and services, these offsets also can enhance the abilities of foreign competitors and increase their chance of success in the U.S. and world market. These categories of offset transactions can be either direct or indirect. The value of direct offset transactions in these four categories was $1.9 billion during 1993-2003; 68 percent of this value was accounted for by technology transfer. Together, the four categories accounted for approximately 18.5 percent of the actual value of all direct offset transactions for the eleven-year period. The value of indirect offset transactions in these four categories during 1993-2003 was $4.2 billion. Technology transfer alone accounted for 55 percent of this total.

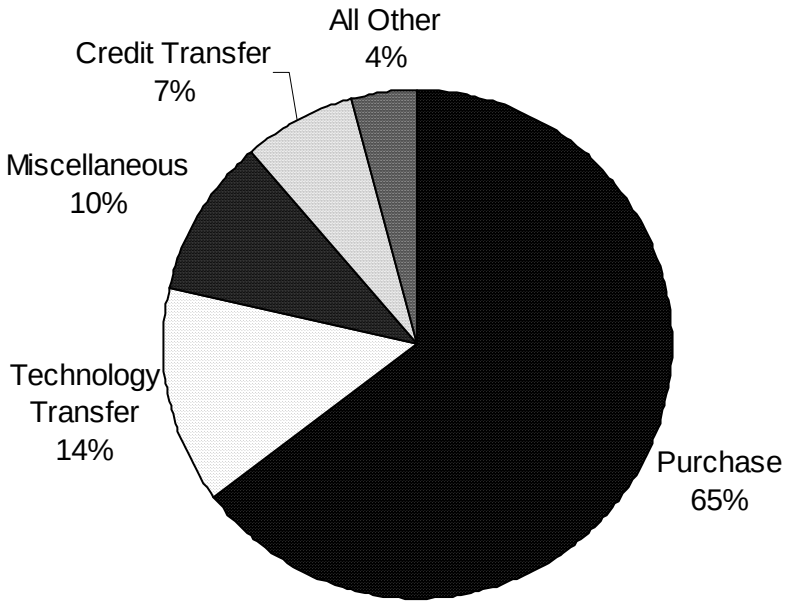
For direct and indirect transactions combined, these four categories accounted for $6.1 billion during 1993-2003, an annual average of $553.8 million. Charts 5-5 and 5-6 show the distribution of offset transactions by category.

Chart 5-5: Direct Offset Transactions by Category, 1993-2003



Source: BIS Offsets Database

Chart 5-6: Indirect Offset Transactions by Category, 1993-2003



Source: BIS Offsets Database

5.7 Offset Transactions by Industrial Sector

Identifying offset transactions by industry sector allows for an even more detailed analysis of the effect of offsets on the U.S. defense industrial base. According to the BIS database, during 1993-2003 offset transactions generally fell into a small number of major industries associated with defense production, as shown by the data in Table 5-8. The transactions for each industry shown are both direct and indirect. More detailed data by Standard Industrial Classification (SIC) code appear in Appendix G.

Table 5-8: Offset Transactions by Major Industrial Sectors, 1993-2003

SIC	Sector Description	Number of Transactions	Value in $ millions	Percent of Total Value
37	Transportation Equipment	2,976	$13,846.6	51.11%
36	Electronic/Electrical Equipment	1,126	$4,122.8	15.22%
35	Industrial Machinery	621	$1,487.0	5.49%
73	Business Services	348	$1,294.4	4.78%
87	Technical Services & Consultants	350	$1,268.0	4.68%
38	Measuring & Analyzing Instrumentation	316	$1,276.4	4.71%
	Sub-Total	5,737	$23,295.2	85.99
	Total – All Transactions	6,593	$27,090.0	

Source: BIS Offsets Database

As shown in Table 5-8, offset transactions related to transportation equipment dominated both the value and number of transactions. Transportation equipment transactions made up 45.1 percent of the number and 51.1 percent of the value of all offset transactions. Transactions in this sector were composed mostly of aerospace products, including aircraft parts, engines, hydraulic subsystems, and guided missiles. Between 1993 and 2003, offset transactions related to transportation equipment totaled $13.85 billion. Direct transportation equipment transactions accounted for 60.7 percent (or $6.26 billion) of the total value of direct offsets. Indirect transportation equipment transactions made up 44.7 percent of the value of all indirect transactions.

The electronic and electrical equipment sector was a distant second to the transportation equipment sector. Offset transactions in this sector made up 17.1 percent of the number of all transactions and 15.2 percent of their total value. This sector includes products such as radar, communications equipment, and electronic components, as well as completed avionics equipment and material inputs for avionics such as circuit boards.[26]

[26] The completed avionics equipment arguably could be part of sector SIC 38 – Measuring and Analyzing Instrumentation, but the appropriate sector could not be determined based on the data provided.

Transactions in the industrial machinery sector accounted for 5.5 percent of the value ($1.49 billion) and 9.4 percent of the number of all offset transactions during 1993-2003. Industrial machinery includes capital equipment used in the production of both defense and non-defense items. This includes metal-working machine tools, conveyors, air and gas compressors, textile machinery, mining equipment, off-road vehicles, and welding equipment.

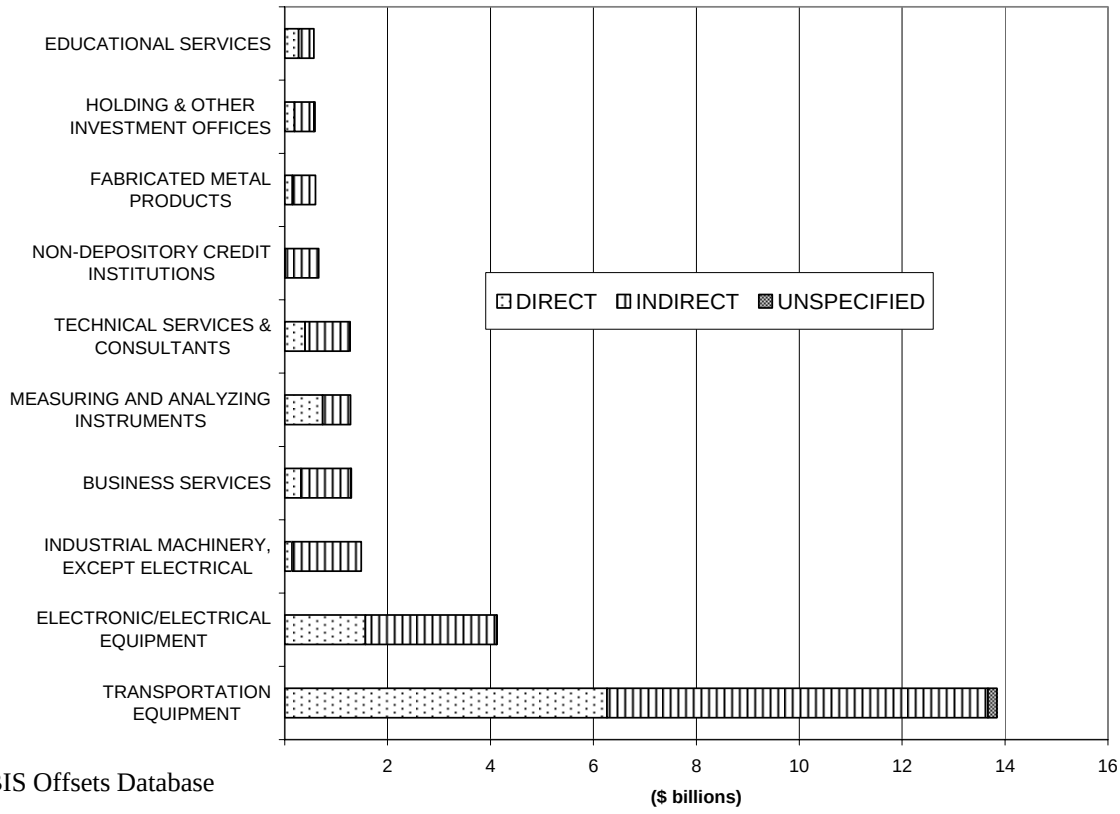
Over the eleven-year period, offset transactions have been categorized into a total of 40 industrial sectors, including one labeled undetermined (SIC 99). The 34 sectors not specifically listed in Table 5-4 accounted for approximately 14 percent of the total value of all offset transactions. All but five of these sectors accounted for less than one percent of the total value of offset transactions. The five were Non-Depository Credit Institutions (SIC 61) with 2.4 percent, Fabricated Metal Products (SIC 34) with 2.2 percent, Holding and Investment Offices (SIC 67) with just under 2.2 percent, Educational Services (SIC 82) with 1.8 percent, and Undetermined (SIC 99) with 1.4 percent. These five sectors accounted for an additional 10.3 percent of the total value of offset transactions.

Two other sectors had noteworthy offset activity – Primary Metal Industries (SIC 33) and Chemicals and Allied Products (SIC 28). The value for Primary Metal Industries ($256.2 million) was just under one percent of the total, while the value for Chemicals and Allied Products ($189.3 million) was 0.7 percent of the total. Offset transactions in both sectors were composed almost exclusively of indirect offsets.

None of the remaining 27 sectors totaled more than $100 million over the eleven-year period. Together, these sectors totaled $549.7 million.

The majority of offset transactions fell in the manufacturing sectors; $21.9 billion, or 80.8 percent of all transactions were manufacturing related. Service-related transactions accounted for $3.2 billion, or 11.8 percent of the total. Financial, insurance, and real estate industries accounted for an addition 4.8 percent of the total value of transactions during the period. Chart 5-7 shows the top ten sectors where offset transactions occurred.

Chart 5-7: Offset Transactions by Industry and Type for Top 10 Sectors, 1993-2003 (in $ billions)



Source: BIS Offsets Database

6. Supplemental Offsets Report to Congress

At the request of Congress, in August 2004, SIES submitted a Supplemental Report titled "Offsets in Defense Trade and the U.S. Subcontractor Base." This one-time report differs from the BIS Annual Report to Congress on Offsets in Defense Trade, as it primarily focused on the impact of offsets on U.S. defense subcontractors. Data was collected by BIS from subcontractors representing three tiers of the U.S. defense industrial base that directly support defense prime contractors. By comparison, the BIS annual report relies on data provided by defense prime contractors. The following is a summary of the results of the August 2004 report.[27]

6.1 Background

In December 2003, Congress passed the Defense Production Act Reauthorization of 2003 (Act).[28] Section 7 of the Act required the Department of Commerce to prepare a report to the Congress on offsets in defense trade, with a focus on the U.S. defense subcontractor base. The Act required the Department of Commerce to submit this report to Congress as part of the annual report the Department prepares under Section 309(a) of the Defense Production Act of 1950, as amended.[29] The legislation required the analyses outlined in paragraphs (A)–(C) of Section 7(a)(1):

> (A) Detail the number of foreign contracts involving domestic contractors that use offsets, industrial participation agreements, or similar arrangements during the preceding 5-year period;
>
> (B) Calculate the aggregate, median, and mean values of the contracts and the offsets, industrial participation agreements, and similar arrangements during the preceding 5-year period;
>
> (C) Describe the impact of international or foreign sales of United States defense products and related offsets, industrial participation agreements, and similar arrangements on domestic prime contractors and, to the extent practicable, the first 3 tiers of domestic contractors and subcontractors during the preceding 5-year period in terms of domestic employment, including any job losses, on an annual basis.

[27] The entire report is available for download at http://www.bis.doc.gov/defenseindustrialbaseprograms/OSIES/offsets/SuppOffsetsReportFinalAug_04.pdf

[28] Pub.L. No. 108-195 (Dec. 19, 2003) (50 U.S.C. App. § 2099 Note)

[29] Codified at 50 U.S.C. App § 2099(a)

The requirements outlined in paragraphs (A) and (B) were met using the data covering 1998-2002 that BIS had collected from prime contractors for use in its annual reports to Congress. A full discussion of this analysis can be found in the complete report on our website.

To meet the requirements set out in paragraph (C), BIS administered two surveys, one for prime contractors and another for the lower tier subcontractors. These surveys focused on employment for the five-year period 1998-2002. Prime contractors provided their employment data in terms of domestic vs. foreign, production vs. non-production, and defense-related vs. non defense-related. Subcontractors in turn provided the same employment figures and also discussed their level of involvement in and experience with offset activities. Both prime contractors and subcontractors were asked to provide lists of their suppliers (contact names, addresses, phone numbers, etc.), which were used to send out surveys to the next lower tier in the supplier base.

6.2 Subcontractor Survey Responses- Involvement and Views on Offsets

For all tiers of the subcontractor base, 104 companies, or 15.5 percent of all 672 subcontractor respondents, indicated that they were involved in offsets. First tier respondents were more likely than second and third tier respondents to respond that they were involved in offsets. The majority of subcontractors indicated that they were not involved in offsets (485, or 72.1 percent of all subcontractors). The remaining firms were uncertain. The second and third tier respondents were most likely to indicate they were not involved in offsets; 78.8 percent of these firms said they did not participate in offsets.

Sixteen foreign subcontractors from ten countries responded to the BIS survey. Thirteen of the 16 firms stated that they were involved in offset activities.

6.3 Involvement in Offsets

Subcontracting – Sixty-one companies (38 first tier, 23 second and third tier) indicated that subcontracting was one way in which they helped fulfill an offset agreement. The top SIC code for subcontracting involves aircraft and parts. Other top subcontracted products included industrial machinery, fabricated metal products, and electronic components and accessories.

Co-production - A total of 21 companies indicated that they used co-production as one way of fulfilling offset agreements. Of these 21 companies, 12 were first tier subcontractors, and nine were second and third tier subcontractors. Similar to subcontracting, the most popular type of

co-production included aircraft and parts, fabricated metal products, and electronic components and accessories.

Licensed Production - Thirteen first tier companies and four second and third tier companies, or 17 companies in total, indicated that they used licensed production as a means of fulfilling offset agreements. Again, aircraft and parts was the top type of licensed product. This was closely followed by electronic components and accessories, computer and office equipment, and search and navigation equipment.

Purchases - Twenty-five companies (16 first tier, 9 second and third tier) in total indicated that they used purchases as a way to fulfill offset agreements. The types of firms that used purchases to fulfill offsets included aircraft and parts, search and navigation equipment, and electronic components and accessories, and secondary smelting and refining of nonferrous metal.

Technology Transfer - Of the 19 companies who used this method, 15 were first tier subcontractors and four were second and third tier subcontractors. Aircraft and parts, search and navigation equipment, and electronic components and accessories were the top three types of firms involved.

Overseas Investment – Two companies indicated that they used overseas investment as a means of fulfilling offset agreements - one first tier subcontractor and one second tier subcontractor.

Training - Eighteen companies (15 first tier, 3 second and third tier) indicated that they used training programs to meet an offset requirement. Aircraft and parts and search and navigation equipment firms ranked one and two respectively as the most common industries of companies using training as a means to fulfill offsets.

Other - There were 20 companies (9 first tier, 3 second and third tier) that indicated that they used “other” ways (e.g., research and development, or establishing local repair capability) to fulfill offset agreements. Aircraft and parts and iron and steel foundries ranked one and two respectively as the industries who most often used other means to fulfill offsets.

Positive or Negative Experiences with Offsets

A slight majority of firms (53 of 104) indicated that they had positive experiences with offsets; 37 described negative experiences. Another nine respondents indicated that offsets had both positive and negative impacts.

Offset Activity Involving Foreign Subsidiaries

Seventeen subcontractors who were involved in fulfilling offsets indicated that they had offset activities that involved their foreign subsidiaries (newly created or established). There were a total of 22 subsidiaries identified in 11 countries. The United Kingdom was the leading location of foreign subsidiaries involved in offsets, with eight mentions.

6.4 Non-Involvement in Offset Activities

The 485 subcontractors who were not involved in offsets were asked whether they benefited from or were negatively affected by offset agreements. The majority of firms (374) did not respond; 40 of the firms said that their firm had benefited from offsets in defense trade, and 71 firms indicated that they had been negatively affected. The 83 companies who indicated that they were uncertain whether or not they had been involved in offsets responded to the same question; 19 indicated that they were positively affected by offsets, and 14 said they were negatively affected. Fifty companies did not respond.

6.5 Employment Impacts – Prime Contractors and Subcontractors

Prime Contractors

Total prime contractor employment for the 13 firms surveyed rose from almost 403,000 workers in 1998 to more than 423,000 workers in 2002, a 5.1 percent increase. The average employment for the 13 prime contractors was almost 33,000 in 2002.

The distribution of U.S.-based and foreign-based prime contractor employment shifted slightly over the 5-year period. U.S. employment went from almost 375,000, 93.1 percent of the workforce, in 1998 to nearly 387,000, 91.3 percent of the workforce, in 2002. Foreign-based prime contractor employment rose from more than 27,000, 6.9 percent of workers, in 1998 to more than 36,000, 8.7 percent of workers, in 2002.

Subcontractors - All Tiers

Overall, for the 672 subcontractors surveyed, employment grew from almost 419,000 in 1998 to over 508,000 in 2002, a 21 percent increase over the five year period. Employment peaked in 2000 at slightly over 547,000 workers.

The subcontractors' U.S.-based employment during the period rose, from almost 188,000 to more than 195,000, a 4.2 percent increase. Foreign-based employment during 1998-2002 increased from almost 100,000 to over 129,000, a 29.7 percent increase. As percentages of the total workforce, U.S.-based employment decreased, from over 65 percent of the total workforce in 1998 to slightly more than 60 percent of the total workforce in 2002; foreign employment increased, from almost 35 percent of the workforce in 1998 to almost 40 percent of the workforce in 2002.

Factors Affecting Subcontractor Employment

Subcontractors cited "cost of doing business" and "fair trade" as the two most important factors leading to decreases in employment between 1998 and 2002. "Offsets in defense trade" ranked fifth out of eight factors leading to drops in employment.

Subcontractors indicated that "increased defense related contracts" and "increased non-defense related contracts" were the top two factors leading to increases in employment in the same period. Among nine categories, "offsets in defense trade" was the category deemed least responsible for growth in employment.

Subcontractors that were involved in helping prime contractors fulfill offset agreements had on average a 20 percent gain in employment over the 5-year period. Firms' positive or negative opinions of offsets did not correlate with changes in employment. In contrast, subcontractors that were not involved in offsets had an overall employment drop of about 2.5 percent from 1998-2002. Firms with a positive view of offsets gained 2.7 percent; firms with a negative view of offsets recorded a 10.9 percent drop in employment. Overall, there was no discernible pattern for employment gains or losses by industry sector based on the company's positive or negative views on offsets.

7. Report of the Interagency Team on Consultation with Foreign Nations on Limiting the Adverse Effects of Offsets in Defense Procurement

7.1 Background

In December 2003, President Bush signed into law a reauthorization of, and amendments to, the Defense Production Act of 1950 (DPA). Section 7(c) of P.L. 108-195 amended Section 123(c) of the DPA by requiring the President to designate a chairman of an interagency team to consult with foreign nations on limiting the adverse effects of offsets in defense procurement without damaging the economy or the defense industrial base of the United States, or United States defense production or defense preparedness. The statute provides that the team will be comprised of the Secretaries of Commerce, Defense, Labor, and State, and the United States Trade Representative.

The law requires the interagency team to meet quarterly, and to send to Congress an annual report describing the results of the consultations and meetings. The report is to be included as part of the annual assessment to Congress of offsets in defense trade that is prepared by the Department of Commerce's Bureau of Industry and Security. On August 6, 2004, President Bush formally established an interagency committee (hereafter referred to as the interagency team, as in the statute) chaired by the Secretary of Defense. The Secretaries and the U.S. Trade Representative delegated membership on the team to appropriate officials within their departments. Within the Department of Defense, chairmanship has been delegated to the Under Secretary of Defense for Acquisition, Technology and Logistics.

On September 15, 2004 the Acting Under Secretary of Defense (Acquisition, Technology & Logistics) activated a working group to support the consultation process of the interagency team. The working group met three times in 2004: September 30, November 4 and December 7. The interagency team met on December 8 to review the efforts of the working group. The interagency team reviewed and approved the terms of reference for the team and the working group, the following top-level plan of work, and this annual report to Congress for 2004.

7.2 Plan of Work

The top-level plan of work will involve the following steps:

3. During the 1st Quarter CY2005, the interagency team will:

a. Develop an offset consultation strategy, which will include the U.S. Government's objectives and detailed plan of work to achieve those objectives.
b. Identify domestic and foreign entities for consultation, and
c. Commence consultations with domestic entities, and possibly foreign entities.

4. During the 2nd Quarter CY 2005 and continuing beyond, the interagency team will implement the plan of work through continuing consultations with the identified foreign and domestic entities on limiting the adverse effects of offsets in defense procurement.

7.3 Terms of Reference

The interagency team and working group developed the following terms of reference to guide their work. They include the composition of the interagency team and working group; the operation of the team and group; and the goals of the team and group.

Table 7-1: Composition of the Interagency Team and Working Group

Department	Principal	Working Group Member
Commerce	Assistant Secretary for Export Administration	Director, Office of Strategic Industries and Economic Security
Defense	Under Secretary of Defense (Acquisition, Technology & Logistics)	Director, International Cooperation
Labor	Deputy Secretary of Labor	Senior International Economist
State	Principal Deputy Assistant Secretary for Economic and Business Affairs	Economic/Commercial Officer, Office of Multilateral Trade Affairs, Bureau of Economic and Business Affairs
United States Trade Representative	Assistant U.S. Trade Representative (WTO and Multilateral Affairs)	Director, International Procurement

Operation of the Interagency Team and Working Group

1. The Department of Defense will chair the interagency team and working group.
2. The Department of Defense will provide administrative support to the interagency team and working group.

3. The interagency team will meet quarterly; the working group will meet as often as the chairman deems necessary.
4. A quorum for a meeting of the interagency team or working group will be three of the five members.
5. The interagency team and working group will operate by consensus, but dissenting views of a principal may be presented in the annual report.
6. The interagency team will provide an annual report to Congress describing the results of meetings and consultations.
7. The Department of Commerce principal will ensure that the report is included in their annual assessment to Congress on offsets in defense trade.

Goals of the Interagency Team and Working Group

1. Establish a plan of work to fulfill the requirements of the statute.
2. Identify and define meaning of "effects" of offsets in defense procurement.
3. Identify potential strategies for limiting "adverse effects."
4. Identify foreign nations and other parties, both domestic and foreign, for consultation.
5. Develop methods and objectives of consultation.
6. Develop schedule for and engage in consultations.
7. Provide annual report to Congress describing meetings and the results of consultations.
8. Submit to the President any recommendations that may result from these consultations.

8. Conclusions

Eleven years of Commerce Department data highlight the sustained increase in foreign governments' offset demands relating to defense trade. European nations continue to lead the world in offset requirements, accounting for 69.6 percent of the value of offset agreements, but less than half (49.1 percent) of the value of related export contracts. Between 1993 and 2003, European offset demands as a percentage of the value of exports increased by 70.5 percentage points, going from 78.3 percent to 148.8 percent; for the rest of the world, the increase was almost 26 percentage points, rising from 22.5 percent to 48.4 percent. Overall, 73.3 percent of offset agreements (by number) with Europe totaled 100 percent or more of the value of the weapon system export during the period.

By comparison, Middle Eastern countries and most countries in the Pacific area generally demand lower offset levels than European countries. Of the 219 offset agreements with non-European countries, 150 (68.5 percent) had offset percentages of 50 percent or less. Only 69 of the offset agreements (31.5 percent) had percentages of more than 50 percent, and 11 of these (15.9 percent) had offset requirements in excess of 100 percent.

An examination of the role of multipliers granted by foreign governments in crediting offset transactions leads to the conclusion that they are used infrequently. In Europe, 83 percent of transactions (by number) have no multiplier involved for the prime contractor when fulfilling the offset commitment. For North and South America, 85.5 percent of transactions (by number) have no multiplier involved; for Asia, the figure is 76.6 percent, and 87.9 percent for the Middle East and Africa.

U.S. companies reported offset transactions with a total actual value of $3.6 billion in 2003, the highest value reported for the eleven-year period. The percentage of the value of offset transactions classified as indirect rose during 2003, reaching 68.6 percent, the highest percentage of indirect for all years in the period. Direct transactions accounted for 31.2 percent of the value of transactions in 2003, the lowest level of direct transactions over the eleven-year period.

The offset transaction categories of Purchases, Subcontracts, and Technology Transfers accounted for the majority of offset transaction activity during 1993-2003: for that eleven-year period, they accounted for 79.9 percent of the total value of offset transactions. The majority of offset transactions fell in the manufacturing sectors; $21.9 billion, or 80.8 percent of all transactions were manufacturing-related.

BIS estimates that 2002 U.S. defense export contracts ($7.4 billion) with offset agreements attached supported 47,122 work-years. This calculation is based on the supposition that this value represents 100 percent U.S. content in all exports, which is not necessarily an accurate assumption.

For 2002, the $7.4 billion in defense export contracts had a related $6.1 billion in offset commitments. Subcontracting, Purchasing, Co-production, and Licensing offset transactions are most likely to shift production and sales from U.S. suppliers to overseas firms. Therefore, BIS bases its estimate of employment impacts only on Subcontracting, Purchasing, Co-production, and Licensing offset transactions. Assuming that the offset commitments have the same proportion as the offset transactions for 2002, then the Subcontracting, Purchasing, Co-production, and Licensing portions would account for approximately 66 percent of total, or about $4 billion. Applying the same value added figure used above ($157,173) leads to the loss of 25,450 work-years associated with the agreements entered into in 2002.

Based on these calculations, it appears that 2002 defense export sales had a net positive effect on employment in the defense sector, although the net positive effect was diminished by the offset agreements. It should be noted that the above analysis does not include an additional $338.3 million of Technology Transfer, Training, Overseas Investment, and Marketing transactions, because the impact of these transactions on the U.S. defense industrial base is difficult to calculate.

While Commerce has not identified any specific recommendations for remedial action concerning offsets in defense trade for this report, the Department is playing an active role in the newly-formed interagency offset team and related working group (see Chapter 7). The team was formed to consult with foreign nations on limiting the adverse effects of offsets in defense procurement without damaging the economy or the defense industrial base of the United States, or United States defense production or defense preparedness. The team has developed a comprehensive action plan and will rely on Commerce's extensive offset database to provide background information on the countries chosen for consultations.