

Offsets in Defense Trade

Tenth Study

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



**U.S. Department of Commerce
Bureau of Industry and Security**

December 2005

For more information, please contact the
Office of Strategic Industries and Economic Security at 202-482-4060
www.bis.doc.gov/osies

*We dedicate this report to our friend and colleague,
David Villarreal
1953-2005*



UNITED STATES DEPARTMENT OF COMMERCE
Assistant Secretary for Export Administration
Washington, D.C. 20230

The Honorable Richard C. Shelby
Chairman, Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

I am pleased to submit the Bureau of Industry and Security's (BIS) tenth *Offsets in Defense Trade* report, which is required pursuant to Section 309 of the Defense Production Act of 1950 (50 U.S.C. app. §2099), as amended.

To gather information for this report, BIS used authority under the Defense Production Act to collect data from U.S. firms involved in offset agreements relating to overseas sales of weapon systems or defense-related items. The data that industry provided for this report cover offset transactions and agreements entered into from 1993 through 2004. The cooperation of private industry in this undertaking was noteworthy.

If you would like further information on this report, please contact me or have your staff contact Scott Kamins, Director of BIS's Office of Congressional and Public Affairs, at (202) 482-2721.

Sincerely,

Peter Lichtenbaum

Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
Assistant Secretary for Export Administration
Washington, D.C. 20230

The Honorable Paul S. Sarbanes
Ranking Member, Committee on Banking,
Housing, and Urban Affairs
United States Senate
Washington, DC 20510

Dear Senator Sarbanes:

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Sincerely,

A handwritten signature in black ink, appearing to read "Peter Lichtenbaum".

Peter Lichtenbaum

Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
Assistant Secretary for Export Administration
Washington, D.C. 20230

The Honorable Michael G. Oxley
Chairman, Committee on Financial Services
United States House of Representatives
Washington, DC 20515

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Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
Assistant Secretary for Export Administration
Washington, D.C. 20230

The Honorable Barney Frank
Ranking Member, Committee on Financial Services
United States House of Representatives
Washington, DC 20515

Dear Representative Frank:

I am pleased to submit the Bureau of Industry and Security's (BIS) tenth *Offsets in Defense Trade* report, which is required pursuant to Section 309 of the Defense Production Act of 1950 (50 U.S.C. app. §2099), as amended.

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Executive Summary

This is the tenth annual report on the impact of offsets in defense trade prepared by the U.S. Department of Commerce's Bureau of Industry and Security (BIS), Office of Strategic Industries and Economic Security pursuant to Section 309 of the Defense Production Act of 1950,³ as amended (DPA). The report analyzes the impact of offsets on the defense preparedness, industrial competitiveness, employment, and trade of the United States.

Offsets in defense trade are industrial compensation required by a foreign government as a condition of purchase of U.S. defense articles and services. This mandatory compensation can take many forms; it can be directly related to the purchased weapon system and related services, or it can involve activities or goods unrelated to the weapon system. The compensation can be further classified as a Subcontract, Purchase, Co-production, Technology Transfer, Licensed Production, Credit Transfer, Overseas Investment, or Training.

Some have raised concerns about the effects of offsets on the U.S. industrial base, since most offset arrangements involve purchasing, subcontracting, and co-production opportunities for U.S. competitors, as well as transferring technology and know-how. The official U.S. Government policy on offsets in defense trade states that the Government considers offsets to be "economically inefficient and trade distorting," and forbids Government agencies from helping U.S. contractors to fulfill their offset obligations.⁴ U.S. prime contractors generally see offsets as a reality of the marketplace for companies competing for international defense sales.

In order to assess the impact of offsets in defense trade, BIS obtained data from U.S. defense firms involved in defense exports and offsets. These firms report their offset activities to BIS annually. This report covers offset agreements entered into and the offset transactions carried out to fulfill these offset obligations from 1993 through 2004. It also reports on the progress of the Interagency Team on Offsets in Defense Trade, which is chartered to consult with foreign nations on limiting the adverse effects of offsets in defense procurement.

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

⁴ Defense Production Act Amendments of 1992 (Pub. L. 102-558, Title I, Part C, §123)

Offset Activity

Agreements

Total offset activity is 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 2004: In 2004, U.S. defense contractors reported 40 new offset agreements with 18 countries. These new offset agreements totaled \$4.3 billion and were associated with defense export contracts totaling \$4.9 billion. The offset requirement that year equaled 87.9 percent of the value of the defense exports.

In 2004, European nations received offsets averaging 63.9 percent of the total export values for the year, down from 153.3 percent in 2003. In contrast, for non-European nations, the average offset requirement was 93.2 percent in 2004, up from 48.4 percent in 2003.

Offset Agreements 1993-2004: During the twelve-year period of 1993-2004, U.S. companies reported entering into 513 offset agreements with 41 countries. Export sales totaled \$77.2 billion. Offset agreements related to those export contracts were valued at \$55.1 billion, or 71.4 percent of the export contract value, down from 73.8 percent for 1993-2003. Sales of aerospace defense systems (i.e., aircraft, engines, and missiles) were valued at \$64.8 billion and accounted for 84 percent of the total export contracts.

During the period of 1993-2004, European countries alone accounted for 65.1 percent of the value of offset agreements, but less than half (47.2 percent) of the value of related export contracts. European offset demands generally increased throughout the period, although the figure for 2004 was the second lowest recorded. Between 1993 and 2003, European offset demands as a percentage of exports increased by 75 percentage points, going from 78.3 percent in 1993 to 153.3 percent in 2003; in 2004, European offset demands averaged 63.9 percent. For 1993-2004, the European offset average was 99.1 percent.

In contrast, for the rest of the world in 2004, the average offset demand was 93.2 percent, higher than any other year in the period. For the period of 1993-2004, the offset average for non-European countries was 46.6 percent. Overall, 72.9 percent of offset agreements entered into with European countries totaled 100 percent or more of the value of the weapon system export during the period.

Middle Eastern countries and most countries in Asia generally demand lower offset levels than European countries. Of the 239 offset agreements with non-European countries, 155 (64.9 percent) had offset percentages of 50 percent or less. Only 47 of the 239 offset agreements (19.7 percent) had percentages of more than 50 percent but less than 100 percent. Thirty-seven of the 239 (15.5 percent) had offset requirements of 100 percent or more.

For 1993-2004, on a country-by-country basis, 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 by Poland, with 172.2 percent, and the Netherlands, with 119.3 percent. Other countries with offset percentages greater than the value of the weapon systems exported were South Africa (116.7 percent), Greece (113.4 percent), Norway (104.8 percent), and Sweden (103.9 percent).

Offset requirement trends are more representative when viewed as a moving, weighted average.⁵ 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 49.3 percent to 99.5 percent. In the same twelve-year period that European offset percentages rose by 41.5 percentage points (from 87.1 percent to 128.5 percent), the rest of the world nearly tripled its offset requirements, from 27.6 percent to 77.9 percent.

Transactions

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

Offset Transactions 2004: Offset transactions reported by U.S. companies reached \$4.9 billion in 2004, the highest for the twelve-year period and a 38.4 percent increase over 2003. Indirect transactions, those that are non-defense related, accounted for 46.6 percent of the value of offset transactions, down from 68.6 percent last year. This was the second lowest percentage of indirect offsets for the twelve-year period. At the same time, direct transactions accounted for 53.4 percent of the value of transactions in 2004. This was the second highest level of direct transactions and the second time direct offsets were over 50 percent during the twelve-year period.

⁵ In this report, 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 twelve-year reporting period (1993-2004).

Offset Transactions 1993-2004: For 1993-2004, U.S. companies reported 7,396 offset transactions in 44 countries. The actual value of the offset transactions from 1993 to 2004 was \$32.6 billion. Indirect offsets accounted for 58.9 percent of the total value of transactions and direct offsets made up 40.4 percent of the value. The remainder was unspecified direct or indirect.

The categories of Purchases, Subcontracts, and Technology Transfers accounted for 76.6 percent of the value of offset transaction activity during 1993-2004. These categories have consistently accounted for the majority of offset activity. Purchases accounted for 37 percent of the total value, and subcontracts accounted for 25 percent. The value of technology transfer offset transactions was 14.5 percent of the total value.

The majority of offset transactions fell in the manufacturing sectors, Standard Industrial Classification (SIC) 20-39; manufacturing-related transactions accounted for \$26 billion, or 79.7 percent of all transactions. Service-related transactions (SIC 70-89) accounted for \$3.6 billion, or 11.1 percent of the total. Financial, insurance, and real estate industries (SIC 60-67) totaled \$1.5 billion, approximately 4.5 percent of transactions for 1993-2004.

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, 85.9 percent of transactions have no multiplier involved for the prime contractor when fulfilling the offset commitment. For North and South America, 84.6 percent of transactions have no multiplier involved; for Asia, the figure is 79.2 percent, and 88.7 percent for the Middle East and Africa.

Some categories of transactions were more likely to garner multipliers: 42.5 percent of Overseas Investment transactions, 39.7 percent of Training transactions, and 26.6 percent of Technology Transfer transactions had positive multipliers. However, just 8.1 percent of Subcontracts and 8.4 percent of Purchases – the two largest categories – received multipliers. These two categories together accounted for 72 percent of the 7,396 transactions reported over the twelve-year period.

Interagency Team on Offsets in Defense Procurement

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 Interagency Team be comprised of the Secretaries of Commerce, Defense, Labor, and State, and the United States Trade Representative. A staff level Interagency Working Group was also established by the Team.

The Interagency Team and Working Group, chaired by the U.S. Department of Defense, accomplished a number of important milestones during 2005. The first was identifying and meeting with domestic entities affected by offsets: U.S. defense prime contractors, subcontractors/suppliers to the prime contractors, labor representatives and industry advisors from the United States Trade Representative and Department of Commerce administered International Trade Advisory Committees. The meetings were designed to allow the various domestic entities to inform the Interagency Team members of their views regarding offsets in defense trade. They also made suggestions on what specific issues should be addressed when consulting with U.S. trading partners.

The domestic entities were often at odds as to whether the effects of offsets were adverse, beneficial, or a mix. Some industry advisors insisted that offsets are a persistent and growing problem. The adverse effects of offsets may include erosion of U.S. industrial competitiveness through the transfer of technology and employee work-years to foreign firms, diminished U.S. export sales, and enhancement or creation of foreign competitors.

Others highlighted the beneficial effects of offsets. For example, compliance with mandatory offset requirements makes it possible for U.S. companies to compete for foreign defense contracts, and promote interoperability with U.S. and coalition forces for those weapon systems. Defense exports and related offsets may also reduce unit costs and keep U.S. production lines open for certain defense systems currently not being procured.

The Interagency Working Group developed a comprehensive set of questions for use during the planned foreign consultations. These questions were designed to stimulate a dialogue with U.S. foreign counterparts, as well as to attempt to find common ground for limiting the adverse

effects of offsets through bilateral or multilateral consensus. The questions were based on the research of the Interagency Working Group and supplemented with the views and suggestions resulting from the domestic consultations.

Consultations with foreign nations began in November 2005. For the first round of meetings the Interagency Team selected France, Germany, Italy, and the United Kingdom. These nations were selected because they both sell defense systems in the global market and provide offsets, as well as procure defense systems and demand offsets or industrial participation. For the second round of consultations, the Team initially selected Canada, Greece, the Netherlands, Spain and Sweden; Denmark and Turkey were later added to the list. These seven countries were selected because they primarily procure defense systems from offshore suppliers and require mandatory offsets or industrial participation.

At this time, the Interagency Team has not determined any findings nor drawn any conclusions nor decided upon any recommendations as a result of this first round of consultations. The findings of these consultations, and those from the second round, will be reviewed and incorporated into the final annual report of the Team, which will be included in the next annual report to Congress.

Findings

In 2004, U.S. defense weapon exports were at their lowest level since 1998, totaling \$4.9 billion. In conjunction with these exports, offset agreements totaled \$4.3 billion in 2004. The average offset percentage for 2004 was 87.9 percent, down from 124.9 percent in 2003.⁶ This is a sharp decrease in value, but still the second highest recorded level of offset percentage in the 1993-2004 reporting period.

Offset transactions have reached their highest point since 1993. Transactions normally lag a few years behind the offset agreements that they fulfill. In 2004, transactions totaled \$4.9 billion, an increase of \$1.3 billion (38.4 percent) from 2003. This is due to the high level of export sales and related offset agreements since 2000.

⁶ One large weapon system export in 2003 with an offset percentage of more than 170 percent skewed the data for that year. Without this export and its related offset agreements, the average offset percentage for 2003 would fall from 124.9 percent to 81.3 percent. The 2004 level of 87.9 percent would then be the highest percentage on record. This export also affected the average offset percentage for the entire period. With this sale and offset, the average offset percentage for 1993-2004 is 71.4 percent; without it, the percentage is 66.6 percent.

Multipliers continue to be applied to only a small number of offset transactions. The average multiplier for the twelve-year period is 1.185. In 2004, the multiplier was 1.087. This 2004 multiplier means that, as a whole, the total credit value of the transaction is 8.7 percent more than the actual value. Therefore, the total actual value of transactions for 1993-2004 is \$32,570 million, but the credit value is \$38,595 million.

In 2004, direct transactions accounted for 53.4 percent, or \$2.6 billion, of the value of transactions for that year. This was the second highest level of direct transactions and the second time direct offsets were over 50 percent during the twelve-year period from 1993-2004. Indirect transactions, in contrast, accounted for 46.6 percent, or \$2.3 billion, of the value of offset transactions, down from 68.6 percent last year. This was the second lowest percentage of indirect offsets for the twelve-year period. The remaining 0.8 percent of the value was unspecified direct or indirect. From 1993-2004, direct offset transactions (related to weapon systems sold) accounted for just 40.4 percent, or \$13.2 billion, of the value of all transactions. Indirect offset transactions were valued at 58.9 percent, or \$19.2 billion, of the value of all transactions for the twelve-year period.

BIS has several ways of classifying offset data for analysis. One way is categorizing by global region, and then distinguishing by country. During 1993-2004, European countries and U.S. firms entered into the most number of offset agreements, had the highest total value of agreements, and typically demanded the highest offset percentages. U.S. firms reported 273 new offset agreements with European countries from 1993-2004, a total value of \$36.1 billion. In 2004, the European average offset percentage dropped to the lowest point in 10 years at 63.9 percent. This, however, has had minimal effect on the overall average level of offsets demanded. For the twelve-year period, the European average was 99.1 percent, down just 2.1 percentage points from the previous reporting period of 1993-2003. 72.9 percent of offset agreements with Europe from 1993-2004 feature offset percentages of 100 percent or more.

Not only are offset demands increasing over time, but also more countries outside Europe are participating in the international defense weapons market and demanding higher offset percentages as compensation. Non-European countries entered into 18 defense export contracts, valued at \$4.03 billion, in 2004 with related offset agreements totaling \$3.8 billion. This is the highest recorded level - 93.2 percent - of offsets in the twelve-year period for non-European countries. In total, non-European countries had 240 agreements from 1993-2004, with export contracts valued at almost \$40.8 billion and offset agreements totaling a little more than \$19 billion, or 46.6 percent. BIS notes that two-thirds of the non-European offset

agreements valued at 100 percent or more of the export contract value have occurred since 1998.

When analyzing data on a country basis, statistics show that the United Kingdom was the largest recipient of offsets for the twelve-year period; 18.9 percent, or \$3.6 billion, of the total value were indirect transactions. The United Kingdom also led all countries in the value of direct offset transactions received from 1993-2004, with 17.8 percent, or \$2.3 billion, of the direct offset total. The second and third-ranked countries are non-European. Taiwan had export contracts valued at over \$10.8 billion, with 39 offset agreements worth \$2.2 billion total; and South Korea had \$8.3 billion of export contracts and 58 offset agreements of \$5.1 billion.

BIS has developed an estimate of employment impacts caused by offsets by using U.S. aerospace-related employment and value added data collected by the U.S. Department of Commerce, Bureau of the Census.

U.S. prime contractors reported about \$7.3 billion in defense export contracts with offset agreements for 2003. According to the Census Bureau's Annual Survey of Manufactures, the value added per employee for the aerospace product and parts manufacturing industry in 2003 was \$174,577. Dividing this figure into the 2003 defense export sales total results in a total of 41,776 work-years that were maintained by defense exports associated with offset agreements during 2003.⁷

For 2003, the \$7.3 billion in defense export contracts had a related \$9.1 billion in offset commitments. It takes on average almost seven years of offset transactions to fulfill an offset agreement, but in order to more accurately assess the impact of offset transactions on work-years, BIS compared the export contract to the prime contractor's offset obligation contractually committed 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.

⁷ 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.

These conservative calculations are based on the assumption that the offset obligations entered into in 2003 are made up of nearly the same proportion of offset transaction categories as past offset obligations. Those categories which can be most directly related to employment – Subcontracting, Purchasing, Co-production, and Licensing – accounted for approximately 72 percent of the total value of offset obligations in 2003, or about \$2.6 billion. Applying the same value added figure used above (\$174,577) leads to the loss of 37,450 work-years associated with the offset agreements entered into in 2003.

Based on these calculations, it appears that 2003 defense export sales of \$7.3 billion had a slight net positive effect on employment in the defense sector during that year (4,326 work years), although the net positive effect was diminished by the offset agreements. This compares to 2002 defense export sales of \$7.4 billion and related work-years of 47,122, offsets of \$6.1 billion and the loss of 25,450 work-years, for a net gain of 21,672 work-years. It should be noted that the 2003 analysis does not include the potential impacts of an additional \$809.9 million of Technology Transfer, Training, and Overseas Investment transactions.

Purpose of Report

Section 309(b)(1) of the Defense Production Act 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 measure the effects of offsets on defense productive capability, this analysis compares 2003 offset transactions dealing with transportation equipment to 2003 value added data for this industry, as reported in the Census Bureau’s most recent Annual Survey of Manufactures.

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 1993-2004, 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 1993-2004 as well as in 2004 specifically. Included in this analysis are data that indicate a small number of U.S. companies and U.S. produced weapon systems dominated offset agreements during the reporting period. The top five U.S. exporters (of 42 companies reporting data over the 12 year period) accounted for 80.3 percent of the value of defense export contracts and 82.1 percent of the value of offset agreements.

Chapter 5 provides a similar more detailed analysis of offset transactions aggregated from 1993 to 2004 as well as 2004 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 84.9 percent of all offset transactions. More than half (52.4 percent) of the total value of offset transactions for the twelve-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 activities of the interagency team that was first called for in the December 2003 reauthorization of, and amendments to, the Defense Production Act of 1950 (DPA). The language 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. The agencies involved in this effort include the Departments of Commerce, Defense, Labor, and State, and the Office of the U.S. Trade Representative.

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 due to the ongoing consultation process.

I Background

I-1 Legislation and Regulations

In 1984, the Congress enacted amendments to the Defense Production Act (DPA), which included the addition of Section 309 addressing offsets in defense trade.⁸ Section 309 requires 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 Representatives⁹ and the Committee on Banking, Housing, and Urban Affairs of the Senate.

The Office of Management and Budget was appointed the interagency coordinator for preparing the report for Congress when Section 309 was first implemented. Other agencies involved in the process included the Departments of Commerce, Defense, Labor, State, Treasury, and the Office of the U.S. Trade Representative. Section 309 of the DPA was amended in 1992, 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.¹⁰ *See Appendix A for the text of Section 309.*

Section 309 authorizes the Secretary of Commerce 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 1994.¹¹ *See Appendix B for a copy of the regulations.*

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

⁸ See Pub. L. 98-265, April 17, 1984, 98 Stat. 149.

⁹ 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).

¹⁰ 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).

¹¹ See 59 Fed. Reg. 61796, Dec. 2, 1994, codified at 15 C.F.R. § 701.

I-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, President George H.W. Bush announced a policy on offsets in military exports.¹² In 1992, Congress passed the following provision, which closely reflects the policy announced by the President:¹³

(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, resides 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.

¹² See April 16, 1990 statement by Press Secretary Fitzwater on offsets in military exports.

¹³ 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).

Provisions in the Defense Offsets Disclosure Act of 1999¹⁴ supplement the offset policy:

- (1) A fair business environment is necessary to advance international trade, economic stability, and development worldwide; this 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 non-defense 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.

I-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).

¹⁴ 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).

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 defense items or services export referenced in the sales agreement. 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.

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 an unrelated foreign entity or expanding a subsidiary or joint venture in the foreign country.

Purchases: Procurement of off-the-shelf items from the offset recipient. Often, but not always, purchases are indirect by nature. Indirect purchases are similar in definition to countertrade, while direct purchases are analogous to buy-backs.

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.

I-4 Countries and Regions

Countries and country groups actively requiring offsets in conjunction with purchases of U.S. defense systems during the period of 1993-2004, 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 in each region are listed in Table I-1.

**Table I-1: Purchasing Countries and Groups with Offsets Agreements
(by Region, 1993-2004)**

<p><u>Europe</u> Austria Belgium Czech Republic Denmark EPG – the European Participating Group (Belgium, the Netherlands, Norway) Finland France Germany Greece Italy Lithuania NATO The Netherlands Norway Poland Portugal Romania Slovenia Spain Sweden Sweden/Norway Switzerland United Kingdom</p>	<p><u>Middle East and Africa</u> Israel Kuwait Saudi Arabia South Africa Turkey United Arab Emirates</p>
	<p><u>North and South America</u> Brazil Canada Chile</p>
	<p><u>Asia</u> Australia Indonesia Malaysia New Zealand Singapore South Korea Taiwan Thailand</p>

I-5 Scope of Report

This is the tenth report on Offsets in Defense Trade prepared by the Department of Commerce's Bureau of Industry and Security, Office of Strategic Industries and Economic

Security. The report is prepared after analyzing offset data reported to the Department of Commerce by U.S. defense firms, in compliance with regulations established under Section 309 of the DPA.

This tenth offset report reviews offset data for the twelve-year period from 1993 to 2004. 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. This 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 2004 alone, and from the time period of 1993-2004, 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 for 2004 alone, and for the 1993-2004 period. This is followed by a similar analysis of offset transaction activity over the same period, including a detailed review of the role of multipliers. Lastly, the report includes a description of the activities of the Interagency Team and Working Group which is chartered to engage in consultations with foreign governments on eliminating adverse effects of offsets in defense trade.

2 Statistical Overview

This chapter provides a general overview of BIS offset data for the years 1993 through 2004, a discussion of offset transactions by type, kind, and industry, the countries involved in offset activity, and 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:

<u>Offset Agreements</u>	<u>Offset Transactions</u>
Year	Year
Country	Country
Weapon System	Referenced Weapon System
Export Contract Value	Recipient
Offset Agreement Value	Actual Value
Percent Agreement Value to Export Value	Credit Value
	Multiplier (credit value ÷ actual value)
	Type
	Category
	Description
	Industry Involved

2-1 General Overview

Table 2-1 provides a summary of all offset agreement and transaction activity for the twelve-year period from 1993 through 2004. Detailed sections on offset agreements and transactions will follow in Chapters 4 and 5, respectively.

In 2004, the total value of offset agreements was \$4.3 billion. These agreements were made in conjunction with U.S. defense weapon exports totaling \$4.9 billion in 2004. Fourteen prime contractors reported that they entered into 40 offset agreements with 18 countries that year. The average offset percentage (offset value ÷ value of exported system) for 2004 was 87.9 percent, down from 124.9 percent in 2003; despite this decline, 2004 had the second highest percent recorded over the twelve-year period. The average offset agreement for the period was worth 71.4 percent of the value of the weapon system exported. The upward trend in offset requirements is also evident in Table 2-1. For the time period of 1993-1998, offset

agreements totaled 54.7 percent of the value of the weapon system exported; for the time period of 1999-2004, that percentage had grown to 87.9 percent.

Offset transactions rose in 2004 to a total value higher than that of any other year reported. The transactions in 2004 totaled \$4.9 billion, up from \$3.6 billion in 2003. Prime contractors carried out 706 transactions in 2004 with 33 countries. On average, prime contractors received slightly more than the value of the transactions as credit toward their offset obligation. However, multipliers have dropped steadily over the last five-year period. The average multiplier in 2004 was 1.087, one of the lowest multipliers for the twelve-year period of 1993-2004; the highest multiplier, 1.363, came in 1999. The average multiplier granted for the twelve-year period was 1.185. Multipliers are granted on a decreasing level of transactions over time.

Table 2-1 : General Summary of Offset Activity, 1993-2004
(\$ millions)

Offset Agreements						
Year	Export Value	Offset Value	% Offset	Companies	Agreements	Countries
1993	\$13,935.0	\$4,784.4	34.3%	17	28	16
1994	\$4,792.4	\$2,048.7	42.7%	18	49	20
1995	\$7,529.9	\$6,102.6	81.0%	20	47	18
1996	\$3,119.7	\$2,431.6	77.9%	16	53	19
1997	\$5,925.5	\$3,825.5	64.6%	15	60	20
1998	\$3,029.2	\$1,768.2	58.4%	12	41	17
1999	\$5,656.6	\$3,456.9	61.1%	10	45	11
2000	\$6,576.2	\$5,704.8	86.7%	10	43	16
2001	\$7,017.3	\$5,460.9	77.8%	11	34	13
2002	\$7,406.2	\$6,094.8	82.3%	12	41	17
2003	\$7,293.1	\$9,110.4	124.9%	11	32	13
2004	\$4,927.5	\$4,329.7	87.9%	14	40	18
12 Years	\$77,208.6	\$55,118.5	71.4%	42	513	41
Offset Transactions						
Year	Actual Value	Credit Value	Multiplier*	Offset Fulfillers	Transactions	Countries
1993	\$1,897.9	\$2,213.6	1.166	43	444	27
1994	\$1,934.9	\$2,206.1	1.140	38	566	26
1995	\$2,890.5	\$3,592.6	1.243	57	711	26
1996	\$2,875.8	\$3,098.0	1.077	54	634	26
1997	\$2,720.6	\$3,272.3	1.203	51	578	26
1998	\$2,312.2	\$2,623.2	1.135	50	582	29
1999	\$2,059.7	\$2,808.3	1.363	41	513	25
2000	\$2,208.2	\$2,846.4	1.289	40	627	24
2001	\$2,555.8	\$3,274.4	1.281	53	617	25
2002	\$2,616.0	\$3,284.5	1.256	50	729	26
2003	\$3,565.5	\$4,010.7	1.125	56	689	31
2004	\$4,933.1	\$5,364.3	1.087	62	706	33
TOTAL	\$32,570.1	\$38,594.5	1.185	275	7,396	44

Source: BIS Offsets Database

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

*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 2004. Table 2-2 also shows the total actual and credit values of the transactions for each year.

The actual value of transactions for 2004 was \$4.9 billion, more than any other year during the 1993-2004 period. This is due to the high level of export sales and related offset agreements since 2000. Transactions lag a few years behind the offset agreements that they fulfill.

In 2004, the percentage of transaction value attributed to indirect offset transactions fell to 46.6 percent from a high of 68.6; the second lowest level in the period. Direct transactions, however, increased from 31.2 percent of all transactions in 2003 to 53.4 percent in 2004. This percentage was the second highest for transactions classified as “direct;” 1998 had the highest percentage with 63.6 percent of transactions being the direct type. For the twelve-year period, 40.4 percent of offset transactions by value were direct (up from 38.1 percent for 1993-2003), and 58.9 percent were indirect (down from 61.1 percent in 1993-2003).

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, called a multiplier, varies by country and by the kind of transaction – usually indirect offset transactions (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. This multiplier means that, for the database as a whole, the total credit value of the transactions is 18.5 percent more than the actual value; this is a decrease from 1.211 for 1993-2003. In 2004, the multiplier dropped to 1.087, and has dropped steadily since the 1999 level of 1.363. The great majority of offset transactions neither include multipliers nor have multipliers that provide less than the credit value of the transaction. Offset transaction data and multipliers are more fully discussed in Chapter 5.

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 and are usually commercial in nature. A transaction is considered unspecified when there is not enough information available to determine whether it is direct or indirect.

Table 2-2: Offset Transactions by Type, 1993-2004 (\$ millions)

Year	Total	Direct	Indirect	Unsp.	Dir.	Ind.	Unsp.	
Actual Value				% Distribution				
1993	\$1,897.9	\$583.6	\$1,250.5	\$63.9	30.7%	65.9%	3.4%	
1994	\$1,934.9	\$599.8	\$1,230.8	\$104.3	31.0%	63.6%	5.4%	
1995	\$2,890.5	\$1,108.8	\$1,756.8	\$24.9	38.4%	60.8%	0.9%	
1996	\$2,875.8	\$1,248.8	\$1,625.6	\$1.4	43.4%	56.5%	0.0%	
1997	\$2,720.6	\$1,041.7	\$1,657.5	\$21.4	38.3%	60.9%	0.8%	
1998	\$2,312.2	\$1,469.7	\$842.4	\$0.1	63.6%	36.4%	0.0%	
1999	\$2,059.7	\$685.2	\$1,363.1	\$11.4	33.3%	66.2%	0.6%	
2000	\$2,208.2	\$785.6	\$1,411.9	\$10.6	35.6%	63.9%	0.5%	
2001	\$2,555.8	\$940.9	\$1,614.9	NR	36.8%	63.2%	NR	
2002	\$2,616.0	\$941.8	\$1,673.0	\$1.3	36.0%	63.9%	0.1%	
2003	\$3,565.5	\$1,113.0	\$2,447.0	\$5.6	31.2%	68.6%	0.2%	
2004	\$4,933.1	\$2,635.2	\$2,297.4	\$0.5	53.4%	46.6%	0.0%	
Total	\$32,570.1	\$13,153.8	\$19,170.9	\$245.4	40.4%	58.9%	0.8%	
Credit Value				% Distribution				
1993	\$2,213.6	\$684.3	\$1,460.6	\$68.7	30.9%	66.0%	3.1%	
1994	\$2,206.1	\$774.1	\$1,323.2	\$108.8	35.1%	60.0%	4.9%	
1995	\$3,592.6	\$1,302.6	\$2,250.7	\$39.3	36.3%	62.6%	1.1%	
1996	\$3,098.0	\$1,182.0	\$1,880.0	\$36.0	38.2%	60.7%	1.2%	
1997	\$3,272.3	\$1,183.5	\$2,039.1	\$49.7	36.2%	62.3%	1.5%	
1998	\$2,623.2	\$1,629.4	\$991.3	\$2.5	62.1%	37.8%	0.1%	
1999	\$2,808.3	\$1,119.4	\$1,618.7	\$70.3	39.9%	57.6%	2.5%	
2000	\$2,846.4	\$1,146.4	\$1,689.5	\$10.6	40.3%	59.4%	0.4%	
2001	\$3,274.4	\$1,292.3	\$1,982.1	NR	39.5%	60.5%	NR	
2002	\$3,284.5	\$1,111.2	\$2,171.9	\$1.3	33.8%	66.1%	0.0%	
2003	\$4,010.7	\$1,215.5	\$2,783.2	\$12.0	30.3%	69.4%	0.3%	
2004	\$5,364.3	\$2,764.3	\$2,599.5	\$0.5	51.5%	48.5%	0.0%	
Total	\$38,594.5	\$15,404.9	\$22,789.8	\$399.8	39.9%	59.0%	1.0%	
Multiplier*				# of Transactions				
Year	Total	Direct	Indirect	Unsp.	Total	Direct	Indirect	Unsp.
1993	1.166	1.173	1.168	1.076	444	132	308	4
1994	1.140	1.291	1.075	1.043	566	157	404	5
1995	1.243	1.175	1.281	1.579	711	204	505	2
1996	1.077	0.947	1.156	25.714	634	228	404	2
1997	1.203	1.136	1.230	2.326	578	202	372	4
1998	1.135	1.109	1.177	19.538	582	241	340	1
1999	1.363	1.634	1.187	6.152	513	203	305	5
2000	1.289	1.459	1.197	1.000	627	216	409	2
2001	1.281	1.374	1.227	NR	617	224	393	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
2004	1.087	1.049	1.131	1.000	706	375	330	1
Total	1.185	1.171	1.189	1.629	7,396	2,555	4,810	6

Source: BIS Offsets Database

NR=None Reported

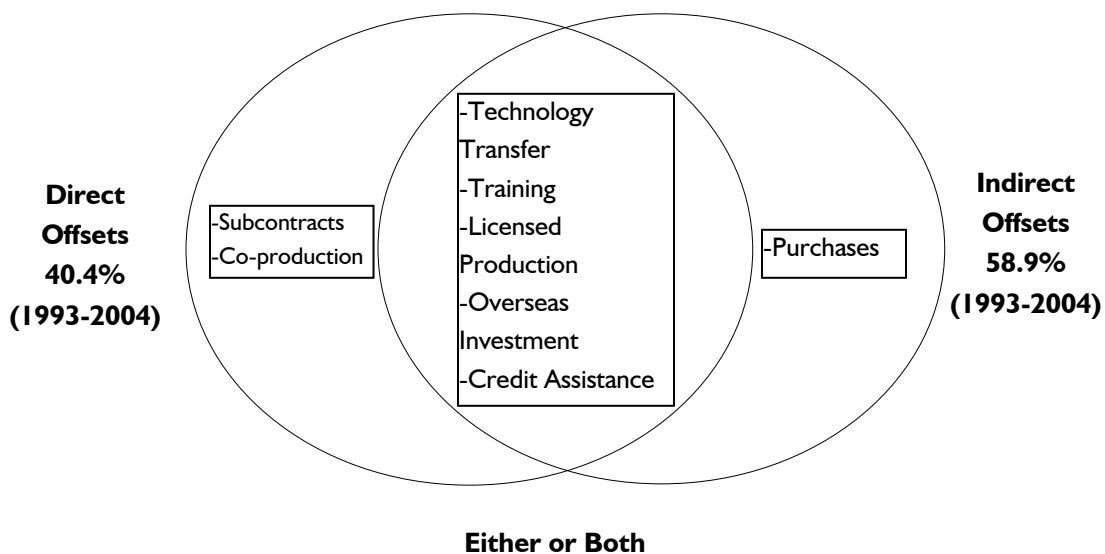
Unsp.=Unspecified Direct or Indirect

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).

2-3 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*. The diagram below shows that each category is considered direct or indirect, or could be either one (e.g., Technology Transfer, Training, etc.). Definitions for the categories begin below; Appendix I contains additional relevant offset definitions as well as illustrative examples.



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 1993-2004, Purchases represented 37 percent of the actual value of all offset transactions, larger than any other category. They made up 62.9 percent of the value of indirect offsets. Aerospace-related transactions made up almost 42 percent of the value of Purchases during 1993-2004.

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 1993-2004, Subcontracts made up one-quarter of the

actual value of all offset transactions, and 62 percent of the value of all direct offsets. Almost 60 percent of the value of Subcontracts was aerospace-related.

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 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. For 1993-2004, Technology Transfer totaled just over \$4.7 billion, up from \$3.7 billion for 1993-2003. During the reporting period, 33.8 percent of the value of Technology Transfers was classified as direct offsets and 63.4 percent was indirect offsets; the balance was unspecified. Technology Transfers accounted for approximately 14.5 percent of the actual value of all offset transactions.

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. During 1993-2004, 96 percent of the value of Co-production reported was aerospace-related.

Co-production accounted for 6.6 percent of the value of offset transactions for 1993-2004, up from 2.6 percent for 1993-2003. 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.¹⁵ Some countries negotiate with prime contractors for production or assembly contracts related to future sales to third countries of the weapon system or system components.

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 1993-2004.

¹⁵ 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.

Credit Assistance is nearly always classified as an indirect offset transaction but can be either direct or indirect. Indirect transactions made up 99.5 percent of the actual value of Credit Assistance for the period.

Overseas Investment includes 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; 58.1 percent of the value of Overseas Investment transactions was classified as indirect and 32.8 percent as direct.

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; during the reporting period, direct offset transactions made up 60 percent of the value of training transactions; 39.8 percent was indirect. The remaining 1.2 percent was unspecified direct or indirect. Training accounted for only 2.5 percent of the total value of offset transactions between 1993 and 2004.

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. These transactions can be either direct or indirect. Licensed Production is the smallest among the offset categories, accounting for only 0.4 percent of the total value of offset transactions; 75.2 percent of the Licensed Production transactions (by actual value) were directly related to the weapon systems sold.

Table 2-3 presents a summary of offset transactions by category and type for the twelve-year reporting period (1993-2004).

Table 2-3: Offset Transactions by Category and Type, 1993-2004

Transaction Category	Actual Values in \$ millions				Percent by Column Total			
	Total	Dir.	Ind.	Unsp.	Total	Dir.	Ind.	Unsp.
Purchase	\$12,055.1		\$12,055.1		37.0%		62.9%	
Subcontract	\$8,156.7	\$8,156.7			25.0%	62.0%		
Technology Transfer	\$4,723.3	\$1,597.1	\$2,994.0	\$132.2	14.5%	12.1%	15.6%	53.9%
Miscellaneous	\$2,257.1	\$375.5	\$1,871.8	\$9.8	6.9%	2.9%	9.8%	4.0%
Co-production	\$2,148.5	\$2,148.5			6.6%	16.3%		
Credit Transfer	\$1,428.7	\$7.2	\$1,421.5		4.4%	0.1%	7.4%	
Overseas Investment	\$856.1	\$280.9	\$497.7	\$77.5	2.6%	2.1%	2.6%	31.6%
Training	\$805.9	\$483.6	\$320.4	\$1.9	2.5%	3.7%	1.7%	0.8%
Licensed Production	\$138.8	\$104.4	\$10.4	\$24.0	0.4%	0.8%	0.1%	9.8%
Total	\$32,570.1	\$13,153.8	\$19,170.9	\$245.4	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.
Purchase	\$13,175.2		\$13,175.2		34.1%	0.0%	57.8%	
Subcontract	\$9,054.8	\$9,054.8			23.5%	58.8%		
Technology Transfer	\$5,890.1	\$1,864.8	\$3,870.7	\$154.6	15.3%	12.1%	17.0%	38.7%
Miscellaneous	\$3,334.2	\$885.5	\$2,376.3	\$72.4	8.6%	5.7%	10.4%	18.1%
Co-production	\$2,100.7	\$2,100.7			5.4%	13.6%		
Credit Transfer	\$1,615.0	\$72.7	\$1,542.4		4.2%	0.5%	6.8%	
Overseas Investment	\$1,913.0	\$568.6	\$1,216.3	\$128.2	5.0%	3.7%	5.3%	32.1%
Training	\$1,325.9	\$736.5	\$576.0	\$13.4	3.4%	4.8%	2.5%	3.3%
Licensed Production	\$185.5	\$121.4	\$32.9	\$31.2	0.5%	0.8%	0.1%	7.8%
Total	\$38,594.5	\$15,404.9	\$22,789.8	\$399.8	100.0%	100.0%	100.0%	100.0%
Transaction Category	Multiplier*				# of Transactions			
	Total	Dir.	Ind.	Unsp.	Total	Dir.	Ind.	Unsp.
Purchase	1.093		1.093		3652		3652	
Subcontract	1.110	1.110			1680	1680		
Technology Transfer	1.247	1.168	1.293	1.169	821	346	461	14
Miscellaneous	1.477	2.358	1.270	7.385	488	101	382	5
Co-production	0.978	0.978			242	242		
Credit Transfer	1.130	10.091	1.085		109	8	101	
Overseas Investment	2.235	2.024	2.444	1.655	113	25	83	5
Training	1.645	1.523	1.798	7.178	258	126	127	5
Licensed Production	1.336	1.162	3.171	1.300	33	27	4	2
Total	1.185	1.171	1.189	1.629	7396	2555	4810	31

Source: BIS Offsets Database

Dir.=Direct

Ind.=Indirect

Unsp.=Unspecified Direct or Indirect

Note: Totals are rounded figures.

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

2-4 Industry Classification – SIC Codes

Table 2-4 shows the offset transactions classified by major industrial sector for the 12-year period, 1993-2004. Each industry sector is defined using the Standard Industrial Classification (SIC) system. Forty-one SIC categories are listed which represent a wide cross section of the U.S. defense industrial base.

Of the various sectors, Transportation Equipment (SIC 37) accounted for more than half – 52.4 percent from 1993-2004, up from 51.1 percent for 1993-2003 – of the actual value of all transactions. Transportation Equipment was 60.6 percent of the value of direct offset transactions, 46.4 percent of indirect offset transactions, and 84.7 percent of unspecified offset transactions. Transactions in this sector were composed mostly of aerospace products, including aircraft parts and components, engines and parts, hydraulic subsystems, and guided missiles and components.

Other major industry groups include Electronic/Electrical Equipment (SIC 36) with 14.6 percent of the actual value of all transactions. 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. Combined, transactions falling in SIC 37 and SIC 36 constitute 67 percent of the total value of offset transactions for the twelve-year period.

Industrial Machinery (SIC 35) accounted for 4.8 percent of the actual value of transactions; this industry group includes capital equipment used in the production of both defense and non-defense items. Technical Services & Consulting (SIC 87) made up 4.6 percent of the value of all transactions, while transactions in Business Services (SIC 73) made up 4.2 percent of the value of offset transactions. These five industry groups comprised 80.6 percent of the total value of all transactions reported to date.

Table 2-4: Offset Transactions by Major Industrial Sector and Offset Type, 1993-2004
(in \$ millions)

2-Digit SIC Code and Description		Total	Direct	Indirect	Unsp.	Total	Direct	Indirect	Unsp.
7	Agriculture	\$53.6		\$53.6		0.2%		0.3%	
10	Metal Mining	\$3.2		\$3.2		0.0%		0.0%	
13	Crude Petrol. & Natl. Gas	\$19.6		\$19.6		0.1%		0.1%	
15	Building Construction	\$26.6	\$11.6	\$15.1		0.1%	0.0%	0.1%	
16	Heavy Construction	\$1.5	\$1.2	\$0.3		0.0%	0.0%	0.0%	
17	Construction - Spec. Trades	\$21.2	\$1.0	\$20.2		0.1%	0.0%	0.1%	
20	Food And Kindred Products	\$15.5		\$15.5		0.0%		0.1%	
22	Textile Mill Products	\$6.4		\$6.4		0.0%		0.0%	
23	Apparel & Other Fin Prods	\$3.8		\$3.8		0.0%		0.0%	
24	Lumber & Wood Products	\$0.3		\$0.3		0.0%		0.0%	
25	Furniture And Fixtures	\$0.3		\$0.3		0.0%		0.0%	
26	Paper Mills & Allied Prod	\$21.9	\$0.9	\$21.1		0.1%	0.0%	0.1%	
27	Printing & Publishing	\$34.0	\$23.9	\$10.1		0.1%	0.2%	0.1%	
28	Chemicals & Allied Prod	\$215.4	\$14.7	\$200.7		0.7%	0.1%	1.0%	
29	Petroleum Refining	\$3.2		\$3.2		0.0%		0.0%	
30	Rubber & Misc Plast Prod	\$6.6	\$0.7	\$5.9		0.0%	0.0%	0.0%	
32	Cut Stone & Stone Prod	\$12.9		\$12.9		0.0%		0.1%	
33	Primary Metal Industries	\$259.9	\$9.4	\$250.5		0.8%	0.1%	1.3%	
34	Fabricated Metal Products	\$599.2	\$148.5	\$450.7		1.8%	1.1%	2.4%	
35	Indl Machinery, Exc Elec	\$1,555.3	\$151.9	\$1,402.9	\$0.5	4.8%	1.2%	7.3%	0.2%
36	Electronic/Electrical Equip	\$4,759.1	\$1,977.6	\$2,777.3	\$4.2	14.6%	15.0%	14.5%	1.7%
37	Transportation Equipment	\$17,075.0	\$7,977.5	\$8,889.7	\$207.8	52.4%	60.6%	46.4%	84.7%
38	Measuring & Analyzing Inst	\$1,394.0	\$737.9	\$656.1		4.3%	5.6%	3.4%	
39	Misc Manuf Industries	\$5.8	\$0.6	\$5.1		0.0%	0.0%	0.0%	
42	Motor Frt & Warehousing	\$1.5		\$1.5		0.0%		0.0%	
44	Water Transportation	\$60.6		\$60.6		0.2%		0.3%	
45	Transportation By Air	\$69.7	\$54.7	\$15.0		0.2%	0.4%	0.1%	
47	Transportation Services	\$3.5	\$0.0	\$3.4		0.0%	0.0%	0.0%	
48	Communications	\$179.0	\$104.4	\$74.5		0.5%	0.8%	0.4%	
49	Electric, Gas, & San Serv	\$2.5		\$2.5		0.0%		0.0%	
61	Non-Depos Credit Inst	\$676.3	\$10.2	\$666.1		2.1%	0.1%	3.5%	
62	Security & Comm Brokers	\$119.3	\$2.1	\$117.2		0.4%	0.0%	0.6%	
67	Holding & Other Invest Off	\$664.2	\$205.5	\$435.2	\$23.6	2.0%	1.6%	2.3%	9.6%
73	Business Services	\$1,375.2	\$320.8	\$1,046.7	\$7.7	4.2%	2.4%	5.5%	3.1%
76	Misc Repair Shops	\$8.5	\$2.4	\$6.1		0.0%	0.0%	0.0%	
80	Health Services	\$0.0		\$0.0		0.0%		0.0%	
81	Legal Services	\$0.1		\$0.1		0.0%		0.0%	
82	Educational Services	\$651.7	\$273.1	\$378.6		2.0%	2.1%	2.0%	
87	Technical Servs & Cons	\$1,501.3	\$482.6	\$1,017.0	\$1.7	4.6%	3.7%	5.3%	0.7%
89	Misc. Services	\$79.1	\$39.6	\$39.5		0.2%	0.3%	0.2%	
99	Undetermined	\$1,083.6	\$601.0	\$482.6		3.3%	4.6%	2.5%	
	Total	\$32,570.1	\$13,153.8	\$19,170.9	\$245.4	100.00	100.0%	100.0%	100.0%

Source: BIS Offsets Database

Unsp. = Unspecified Direct or Indirect

Note: In some cases, the amounts were too small to show in \$ millions

2-5 Countries and Regions

Table 2-5 shows the country offset percentage calculated from the data reported by U.S prime contractors as well as the offset percentages highlighted in each country's official offset policy.

The first column, "% Offsets," is an average percentage derived from the BIS Offsets Database for the period covering 1993 to 2004, which is calculated by dividing the offset value by the export value. These twelve-year average percentages tend to be lower than the official offset policy percentage. Offset demands have increased significantly over time, so the twelve-year average percentage lags behind the actual current offset percentage required by the foreign government.

The second column, "Country," reflects current offset percentages as required by the government of each individual country. Most countries set a single target percentage offset value; however, a few countries vary the percentage depending on the significance of each individual offset agreement to the local economy. Some countries have formulas which place more emphasis on indirect offset agreements rather than direct, thereby reflecting a country's desire to develop civilian industry rather than the defense sector of the economy. Other countries demand almost entirely direct offsets, reflecting the desire to maintain and enhance their defense sector. Therefore, offset percentages and type depend on the importance of each contract with respect to the economic direction of any given country government.

Regional offset percentages are greater in Europe and North and South America, with demands of 89.3% and 99% respectively, followed by the Middle East and Africa with 55.7 % and Asia with 45.7%.

Table 2-5: Offset Percentages by Country and Region 1993-2004
From BIS Offsets Database and Country Policies

EUROPE			MIDDLE EAST AND AFRICA		
Country	% Offsets	Country %	Country	% Offsets	Country %
Austria	174.2%	200%	Egypt	NR	Case-by-Case
Belgium	80.1%	Case-by-Case	Israel	48.6%	50%
Czech Republic	W	100%	Kuwait	31.4%	35%
EPG	27.8%	NA	Saudi Arabia	W	35%
Denmark	100.0%	100%	South Africa	W	30%
Finland	100.0%	100%	Turkey	46.6%	Min. 50%
France	84.6%	100%	United Arab Emirates	56.1%	Min. 60%
Germany	100.0%	Up to 100%	Region Total	55.7%	
Greece	113.4%	80% to 300%	ASIA		
Italy	93.8%	Min. 70%	Country	% Offsets	Country %
Lithuania	W	100%	Australia	45.8%	60%
NATO	55.8%	NA	Indonesia	NR	100%
Netherlands	119.3%	Up to 150%	Malaysia	37.3%	100%
Norway	104.8%	100%	New Zealand	W	30%
Poland	W	100%	Philippines	100.0%	80%-100%
Portugal	27.9%	100%	Singapore	W	Case-by-Case
Romania	W	80%	South Korea	61.9%	30%
Slovenia	W	100%	Taiwan	20.0%	40%
Spain	88.5%	Up to 100%	Thailand	26.6%	50%
Sweden	103.9%	100%	Region Total	45.7%	
Switzerland	78.5%	100%			
United Kingdom	84.6%	100%			
Region Total	89.3%				
N. AND S. AMERICA					
Country	% Offsets	Country %			
Brazil	W	100%			
Canada	96.9%	100%			
Chile	W	100%			
Region Total	99.0%				

Source: BIS Offsets Database and Country Policy Research

NA=Not Applicable

NR=None Reported

W=Withheld to protect company-proprietary information

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

The Defense Production Act of 1950, as amended, requires that the U.S. Department of 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 revenue generated by export sales, and the exports themselves, are important to U.S. defense prime contractors and to U.S. foreign policy and economic interests. Exports of major defense systems help defray high overhead costs for the U.S. producer and help maintain production facilities and workforce expertise for current and future U.S. defense needs. The production capabilities and workforce are also available 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 contribute positively to U.S. international trade account balances. Prime contractors believe that they must make their systems more attractive in the sales competition by adding offsets. In fact, nearly all governments other than the United States require offsets as a condition of sale.

When an offset package requires a high proportion of Subcontracting, Co-production, Licensed Production, or Purchases, it can negate many of the economic and industrial base benefits accrued through the export sale. U.S. defense subcontractors and suppliers, and in some cases portions of the prime contractor's business, are displaced by exports that include Subcontract, Co-production, or Licensed Production offsets. Purchases, which are indirect offsets, can displace sales from the commercial manufacturing sectors of the U.S. economy. Almost 80 percent of offset transactions reported for the 1993-2004 period fell in the manufacturing sectors of the U.S. economy, eroding U.S. production and workforce capabilities and the balance of payments benefits of the export.

Previous studies and discussions indicate that U.S. prime contractors sometimes develop long-term supplier relationships with overseas subcontractors based on short-term offset requirements.¹⁴ These new relationships, combined with mandatory offset requirements and obligations, can endanger future business opportunities for U.S. subcontractors and suppliers,

¹⁴ 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.

with possible negative consequences for the domestic industrial base. Other kinds of offsets can increase research and development spending and capital investment in foreign countries for defense or non-defense industries and help create or enhance current and future competitors for U.S. subcontractors and suppliers, and in some cases prime contractors.

3-2 Employment

Given the variety of defense weapon systems sold and offset transactions carried out, and the limited data available, 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 aerospace-related employment and value added data collected by the U.S. Department of Commerce Bureau of the Census.¹⁵ Since sales of aerospace weapon systems accounted for 86.1 percent of the value of defense exports connected with offset agreements during 2003, this method appears to provide a reliable estimate (2003 data is the most recent available for comparison from the Bureau of the Census). This method takes into account work-years maintained because of the export sales as well as the work-years lost through certain kinds of offset transactions carried out in fulfillment of offset agreements.

U.S. prime contractors reported about \$7.3 billion in defense export contracts with offset agreements for 2003. According to the Census Bureau's Annual Survey of Manufactures, the value added per employee for the aerospace product and parts manufacturing industry in 2003 was \$174,577. Dividing this figure into the 2003 defense export sales total results in a total of 41,776 work-years that were maintained by defense exports associated with offset agreements during 2003.¹⁶

For 2003, the \$7.3 billion in defense export contracts had a related \$9.1 billion in offset commitments. 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, BIS compared the export contract to the prime contractor's offset obligation contractually committed 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

¹⁵ BIS's offset database uses SIC codes to define industries; in preparing its value added estimates, the Census Department uses the North American Industrial Classification System (NAICS). The SIC definition of the aerospace industry differs slightly from the NAICS definition, but the results are not significantly altered.

¹⁶ 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.

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.

These conservative calculations are based on the assumption that the offset obligations entered into in 2003 are made up of nearly the same proportion of offset transaction categories as past offset obligations. Those categories which can be most directly related to employment – Subcontracting, Purchasing, Co-production, and Licensing – accounted for approximately 72 percent of the total value of offset obligations in 2003, or about \$2.6 billion. Applying the same value added figure used above (\$174,577) leads to the loss of 37,450 work-years associated with the offset agreements entered into in 2003.

Based on these calculations, it appears that 2003 defense export sales of \$7.3 billion had a slight net positive effect on employment in the defense sector during that year (4,326 work years), although the net positive effect was diminished by the offset agreements. It should be noted that the 2003 analysis does not include the potential impacts of an additional \$809.9 million of Technology Transfer, Training, and Overseas Investment transactions. This compares to 2002 defense export sales of \$7.4 billion and related work-years of 47,122, offsets of \$6.1 billion and the loss of 25,450 work-years, for a net gain of 21,672 work-years.

3-3 Domestic Defense Productive Capability

The Section 309(b)(1) of the DPA 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 2003 offset transactions involving Transportation Equipment Manufacturing (SIC 37) with the 2003 value added data from the industry as reported in the Census Bureau’s 2003 Annual Survey of Manufactures. *See Table 3-1.* According to the Census Bureau, almost 19 percent of SIC 37 is aerospace-related. The remainder of SIC 37 includes motor vehicles and motorcycles, shipbuilding and repair, guided missiles and space vehicles, and railroad equipment.¹⁷

¹⁷ See Appendix G for full listing of offset transactions by economic sector (SIC).

Offset transactions in SIC 37 involved a wide range of activities, from technology transfer and training to components and repair. For 1993-2004, aerospace-related offset transactions in the BIS database made up 83.9 percent of the value of all transactions in SIC 37.

Comparing transactions to value added gives a more accurate picture of 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, 2003	
Transactions (% of total)	\$1,717,291,573 (48.2%)
Value Added for Industry	\$258,539,566,000
Transactions as a % of Industry Value Added	0.7%

Source: Transaction data from U.S. DOC/BIS Offsets Database.
Value Added data from Bureau of the Census, Annual Survey of Manufactures

In 2003, offset transactions in the transportation equipment industry averaged 0.7 percent of the 2003 total value added for the industry. While this figure does not translate into a 0.7 percent loss in domestic defense productive capability, it does represent the value added that was gained abroad instead of domestically because of an offset agreement.

There are no indicators from other agencies that suggest that domestic defense productive capability has decreased cumulatively because of offsets. However, there is also no 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 2003 technology transfer transactions for the aerospace manufacturing industry to total 2003 R&D spending for the aerospace manufacturing industry.¹⁸

¹⁸ Data 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, 2003	
Aerospace-Related Technology Transfer Transactions	\$142,857,191
Aerospace Industry R&D Spending (Federal and Industry)	\$15,731,000,000
Technology Transfer Transactions as % of R&D Spending	0.9%

Source: Transaction data from U.S. DOC/BIS Offsets Database.

Research and development spending from Aerospace Industry Association, Aerospace Facts and Figures 2005/2006

As seen in Table 3-2, in 2003, aerospace-related offset transactions that involved technology transfer totaled \$142.9 million. This value is equivalent to 0.9 percent of total R&D spending for the aerospace industry in 2003. This figure does not mean that domestic firms in this industry lost 0.9 percent of their R&D spending in 2003; rather, the number indicates that offset activities provided to foreign companies' technology is equivalent to 0.9 percent of 2003 domestic R&D spending in this industry. BIS notes that most U.S. weapon systems include U.S. government-funded R&D.

4 Offset Agreements, 1993-2004

4-1 Overview

From 1993 to 2004, 42 prime contractors reported entering into 513 offset agreements valued at \$55.1 billion. The agreements were signed in connection with defense weapon system exports totaling \$77.2 billion to 41 different countries. The value of the offset agreements represented 71.4 percent of the total value of the related export contracts during the entire twelve-year period. The average term for completing the offset agreements with specific transactions was 79 months, or just over six and one-half years. Sales of aerospace defense systems (i.e., aircraft, engines, and missiles) made up 84 percent of all export contracts, totaling \$64.8 billion.

The data for defense export contracts and related 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 2.6 percentage points per year over the twelve-year reporting period. In 2003, offset agreements as a percentage of export contracts (by value) reached the highest point during the twelve-year period: 124.9 percent;¹⁹ 2004 ranked second highest with offset agreements totaling 87.9 percent of the export contracts. The lowest percentage was recorded in 1993 at 34.3 percent of the value.²⁰

4-2 Concentration of Offset Activity

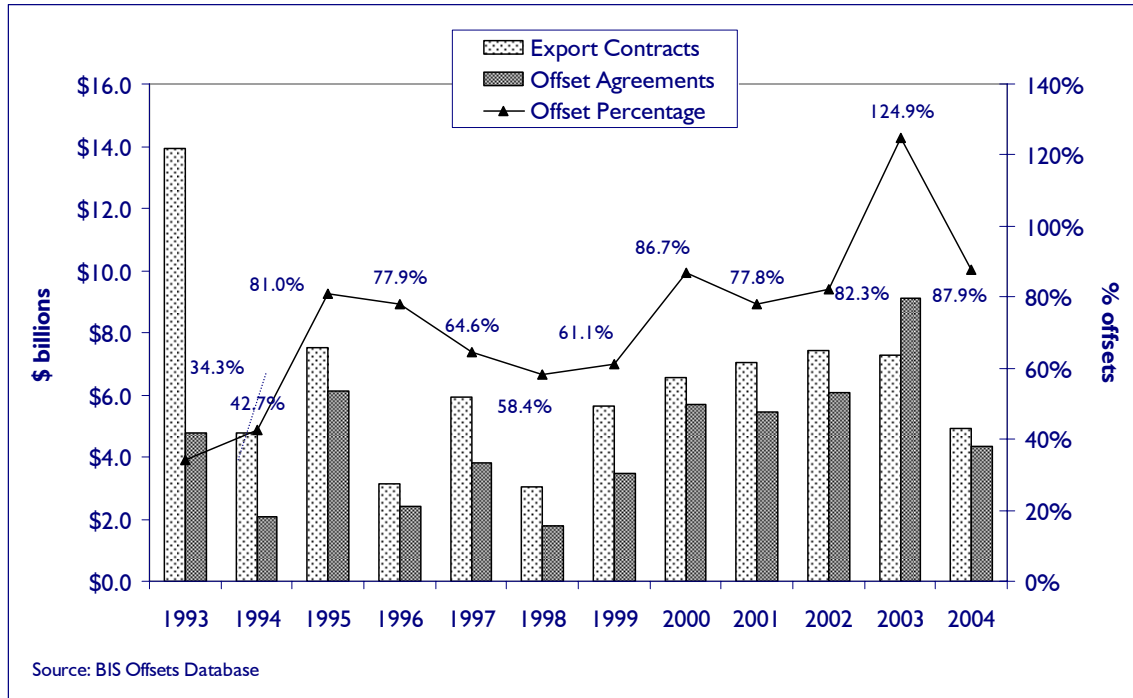
The data reported by U.S. firms confirm that a small number of companies, countries, and weapon systems dominated offset agreements between 1993 and 2004. The top five U.S. exporters (of 42 companies reporting data on offsets over the 12 year period, 15 of which reported offsets in 2004) accounted for 80.3 percent of the value of defense export contracts and 82.1 percent of the value of offset agreements. This market concentration reflects industry consolidation, the high costs of developing and manufacturing defense systems, and the small number of firms that have the financial and productive resources to produce and export them. Each prime contractor coordinated the activities of hundreds, if not thousands, of

¹⁹ One large weapon system export in 2003 with an offset percentage of more than 170 percent skewed the data for that year. Without this export and its related offset agreement, the average offset percentage for 2003 would fall to 81.3 percent (from 124.9 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 1993-2004 is 71.4 percent; without it, the percentage is 66.6 percent.

²⁰ Much like the outlier from 2003 (above footnote), a similar occurrence took place in 1993 when two large exports with low offset percentages skewed the average offset percentage downward.

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
1993-2004**



Similarly, offsets and related defense system exports appear to be concentrated among a few purchaser governments. Table 4-1 lists the top 25 governments and their total export contract and offset agreement values for 1993-2004. The top five governments of the total 41 involved in the reported offset activity (United Kingdom, Taiwan, South Korea, Greece, and Canada) accounted for 54.1 percent of the value of defense systems purchased and 52.2 percent of the value of offset agreements during 1993-2004. With Taiwan removed (and instead including Israel, ranked 6th for defense system exports), the averages for the top 5 governments drop to 45.5 percent of the defense systems purchased and 52 percent of the value of offset agreements. The top 10 governments of the 41 total (United Kingdom, Taiwan, South Korea, Greece, Canada, Israel, Saudi Arabia, Poland, Australia, and Turkey) represented 77.4 percent of defense system purchases and 74.7 percent of the offset agreements. Including Italy as part of the top 10 and excluding Taiwan, the value of the defense system purchases and offset agreements would be 66.8 percent and 75.3 percent, respectively. *See footnote 2.*

Table 4-1: Top 25 Governments by Export Contracts (Total, 1993-2004)			
Country	# of Agreements	Export Contracts	Offset Agreements
1. United Kingdom	41	\$11,888,701,286	\$10,054,332,643
2. Taiwan	39	\$10,844,770,700	\$2,171,542,030
3. South Korea	58	\$8,279,008,808	\$5,126,339,429
4. Greece	48	\$6,307,742,343	\$7,154,272,271
5. Canada	25	\$4,421,962,694	\$4,282,932,872
6. Israel	46	\$4,239,230,606	\$2,061,076,627
7. Saudi Arabia	W	\$4,091,600,000	\$1,427,400,000
8. Poland	W	\$3,500,000,000	\$6,028,000,000
9. Australia	16	\$3,497,662,000	\$1,602,085,000
10. Turkey	17	\$2,693,543,000	\$1,253,850,000
11. Italy	9	\$2,680,257,000	\$2,515,257,000
12. Switzerland	9	\$2,469,212,040	\$1,938,412,040
13. Netherlands	41	\$1,925,703,657	\$2,298,263,657
14. Spain	25	\$1,848,492,588	\$1,636,313,004
15. Norway	28	\$1,237,901,824	\$1,296,801,824
16. NATO	W	\$989,749,000	\$552,000,000
17. France	4	\$785,200,000	\$664,200,000
18. Malaysia	4	\$759,100,000	\$283,500,000
19. Denmark	32	\$755,719,000	\$755,729,000
20. Kuwait	9	\$570,353,822	\$179,237,066
21. Thailand	6	\$539,729,463	\$143,696,539
22. EPG	W	\$539,500,000	\$150,200,000
23. Portugal	W	\$442,061,000	\$123,393,000
24. United Arab Emirates	6	\$398,900,000	\$223,900,000
25. Czech Republic	W	\$312,600,000	\$62,500,000
Total	474	\$76,018,700,831	\$53,985,234,002
All Countries	513	\$77,208,609,509	\$55,118,532,679

Source: BIS Offsets Database

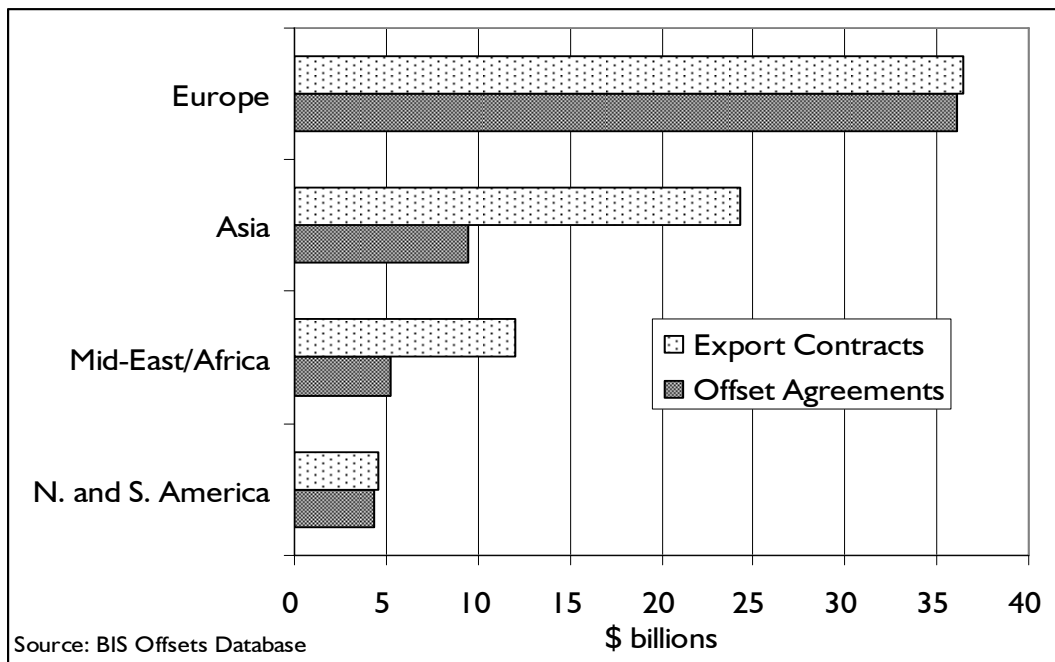
W=Withheld

According to data provided by U.S. prime contractors, the top five weapon systems exported were aircraft systems. These top five exports accounted for 41 percent of the value of all export contracts and 43.9 percent of the offset agreements during the reporting period. Nine of the top 10 defense systems were aerospace-related; the top ten accounted for 56.8 percent of the export contracts and 58.8 percent of the offset agreements during the twelve-year period.

4-3 Regional Distributions

Chart 4-2 shows offset agreements and export contracts by region for 1993-2004. European countries accounted for the majority of offset activity and weapon system exports, reporting 47.2 percent of the value of U.S. defense export contracts and 65.5 percent of the value of offset agreements. Asian countries ranked second in both categories, with 17.1 percent of the value of offset agreements and 31.4 percent of related U.S. export contract values.

Chart 4-2 Regional Totals of Export Contracts and Offset Agreements, 1993-2004
(in \$ billions)



In 1999, 2000, and 2003, however, contracts and agreements with the Middle East and Africa significantly increased. In 2003, 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 8.5 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 percent of the value of new offset agreements. In 2004, the Middle East/Africa had 6 percent of weapon system exports and 3.8 percent of the value of new offset agreements. Asia, on the other hand, had 5.6 percent of weapon system exports for that year, and 2.7 percent of the new offset agreements.

Participating countries in the western hemisphere have consistently played the smallest role, signing only 27 contracts in the twelve-year reporting period. In sum, North and South America

have contributed 11 percent of weapon system exports, at a value of \$4.5 billion, and 22.9 percent of the offset agreements, at a value of \$4.3 billion, between 1993 and 2004.

4-4 Europe vs. the Rest of World

As mentioned above, Europe alone accounted for roughly 65 percent of total offset agreements (by value), but less than half (47.2 percent) of the value of U.S. defense export contracts. See Table 4-1. During 1993-2004, U.S. firms reported entering into 273 offset agreements with European countries with a total value of \$36.1 billion. These offset agreements ranged from less than \$2 million to more than \$6 billion in offset demands, and averaged \$132.2 million per agreement. The average offset agreement with a European country had a term of just under 84 months, with the longest at 180 months.

These figures show the impact of the high offset percentages typically demanded by European nations in connection with U.S. defense export sales. Despite annual fluctuations of various degrees, the average offset percentage demanded by the 23 European countries involved in offset activity during the twelve-year reporting period was 99.1 percent of the export contract values – a percentage more than double that of any other region. As shown in Table 4-1, the average offset percentages for Europe exceeded 90 percent from 1999-2003. These percentages reached a peak of 153.3 percent in 2003, up from 94.3 percent in 2002. In 2004, the European average offset percentage dropped to the lowest point in 10 years at 63.9 percent;²¹ however, this had a minimal effect on the overall average level of offsets demanded. The European average from 1993-2003 was 101.2 percent; during the twelve-year period of 1993-2004, it was 99.1 percent.

Many European governments require a minimum of 100 percent offsets on purchases of foreign defense systems. Of the 273 offset agreements with Europe during the twelve-year period, 175 (64.1 percent) had offset percentages of 100 percent. Another 24 agreements specified offset percentages of greater than 100 percent, including two for which the offset percentage was at least 200 percent. In sum, 72.9 percent (by number) of offset agreements with Europe featured offset percentages of 100 percent or more during the period of 1993-2004.

²¹ One large weapon system export in 2003 with an offset percentage of more than 170 percent skewed the data for that year. Without this export and its related offset agreement, the average offset percentage for 2003 would fall to 81.3 percent (from 124.9 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 1993-2004 is 71.4 percent; without it, the percentage is 66.6 percent.

Table 4-2: Offset Agreements: Europe vs. Rest of World 1993-2004						
Year	Region	# of Agreements	Export Contracts	Offset Agreements	Percent Offsets	Avg. Duration (months)
1993	Europe	13	\$2,975,011,352	\$2,328,047,085	78.3%	85.2
	Non-Europe	15	\$10,959,987,068	\$2,456,381,450	22.4%	84.3
	World	28	\$13,934,998,420	\$4,784,428,535	34.3%	84.7
1994	Europe	20	\$1,508,233,660	\$764,829,660	50.7%	87.6
	Non-Europe	29	\$3,284,186,291	\$1,283,885,998	39.1%	71.2
	World	49	\$4,792,419,951	\$2,048,715,658	42.7%	77.9
1995	Europe	28	\$5,072,223,272	\$5,227,714,629	103.1%	103.8
	Non-Europe	19	\$2,457,697,200	\$874,868,816	35.6%	77.3
	World	47	\$7,529,920,472	\$6,102,583,445	81.0%	92.6
1996	Europe	36	\$2,001,002,040	\$2,063,592,040	103.1%	104.4
	Non-Europe	17	\$1,118,668,414	\$368,032,595	32.9%	65.9
	World	53	\$3,119,670,454	\$2,431,624,635	77.9%	92.1
1997	Europe	30	\$3,760,090,000	\$3,065,000,000	81.5%	81.3
	Non-Europe	30	\$2,165,379,255	\$760,531,633	35.1%	78.4
	World	60	\$5,925,469,255	\$3,825,531,633	64.6%	79.9
1998	Europe	20	\$1,384,538,811	\$1,183,174,983	85.5%	83.7
	Non-Europe	21	\$1,644,663,336	\$584,971,899	35.6%	83.7
	World	41	\$3,029,202,147	\$1,768,146,882	58.4%	83.7
1999	Europe	22	\$3,453,509,184	\$2,546,662,710	73.7%	72.3
	Non-Europe	23	\$2,203,110,302	\$910,226,500	41.3%	80.5
	World	45	\$5,656,619,486	\$3,456,889,210	61.1%	76.4
2000	Europe	24	\$3,892,796,045	\$4,324,000,090	111.1%	87.9
	Non-Europe	19	\$2,683,417,953	\$1,380,814,850	51.5%	66.4
	World	43	\$6,576,213,998	\$5,704,814,940	86.7%	80.4
2001	Europe	18	\$3,972,372,462	\$3,808,280,100	95.9%	82.7
	Non-Europe	16	\$3,044,924,355	\$1,652,574,355	54.3%	77.3
	World	34	\$7,017,296,817	\$5,460,854,455	77.8%	80.4
2002	Europe	23	\$2,168,281,468	\$2,045,362,683	94.3%	79.0
	Non-Europe	18	\$5,237,949,615	\$4,049,449,367	77.3%	92.6
	World	41	\$7,406,231,083	\$6,094,812,050	82.3%	85.0
2003	Europe	17	\$5,322,590,122	\$8,159,639,137	153.3%	73.9
	Non-Europe	15	\$1,970,463,350	\$950,800,350	48.3%	80.7
	World	32	\$7,293,053,472	\$9,110,439,487	124.9%	77.1
2004	Europe	22	\$898,000,000	\$574,250,000	63.9%	61.1
	Non-Europe	18	\$4,029,513,954	\$3,755,441,750	93.2%	73.1
	World	40	\$4,927,513,954	\$4,329,691,750	87.9%	66.5
Totals	Europe	273	\$36,408,648,416	\$36,090,553,117	99.1%	83.6
	Non-Europe	240	\$40,799,961,093	\$19,027,979,563	46.6%	77.6
	World	513	\$77,208,609,509	\$55,118,532,680	71.4%	81.4

Source: BIS Offsets Database

The 17 countries representing all other regions (i.e., non-European countries) shown in Table 4-2 accounted for 34.5 percent of offset agreements (by value), but more than half (54.1 percent) the value of reported U.S. defense export contracts. U.S. prime contractors reported that they had entered into 240 offset agreements with non-European countries totaling \$19 billion from 1993-2004. The non-European countries' average offset requirement for the twelve-year reporting period was 46.6 percent. The average offset agreement for these countries was valued at \$79.3 million and had an average term of 78 months.

Although Europe still accounts for the preponderance of offset agreements by value, non-European countries' offset requirement percentages are increasing significantly. For the period of 1993-2000, the average offset requirement for non-European countries totaled only 32.5 percent; for the period of 2001-2004, however, the average offset requirement was 72.8 percent. For 2004 alone, offsets totaled 93.2 percent of the value of U.S. weapon exports to non-European countries.

Middle Eastern countries, as well as many countries in Asia and in the western hemisphere, generally demand lower offset levels than European countries. Of the 240 offset agreements with non-European countries, 165 (68.8 percent) had offset percentages of 50 percent or less. Only 75 of the offset agreements (31.3 percent) had percentages of more than 50 percent, and 10 of these had offset requirements in excess of 100 percent.

The data show that over the twelve-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 of all types. Their infrastructures and trained workforces are better developed, and are more likely, compared to other countries, to have in place a variety of defense and commercial 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 lower than European demands, 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; these 36 agreements with offset requirements

of 100 percent or more, 14 were with Canada and another four 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.

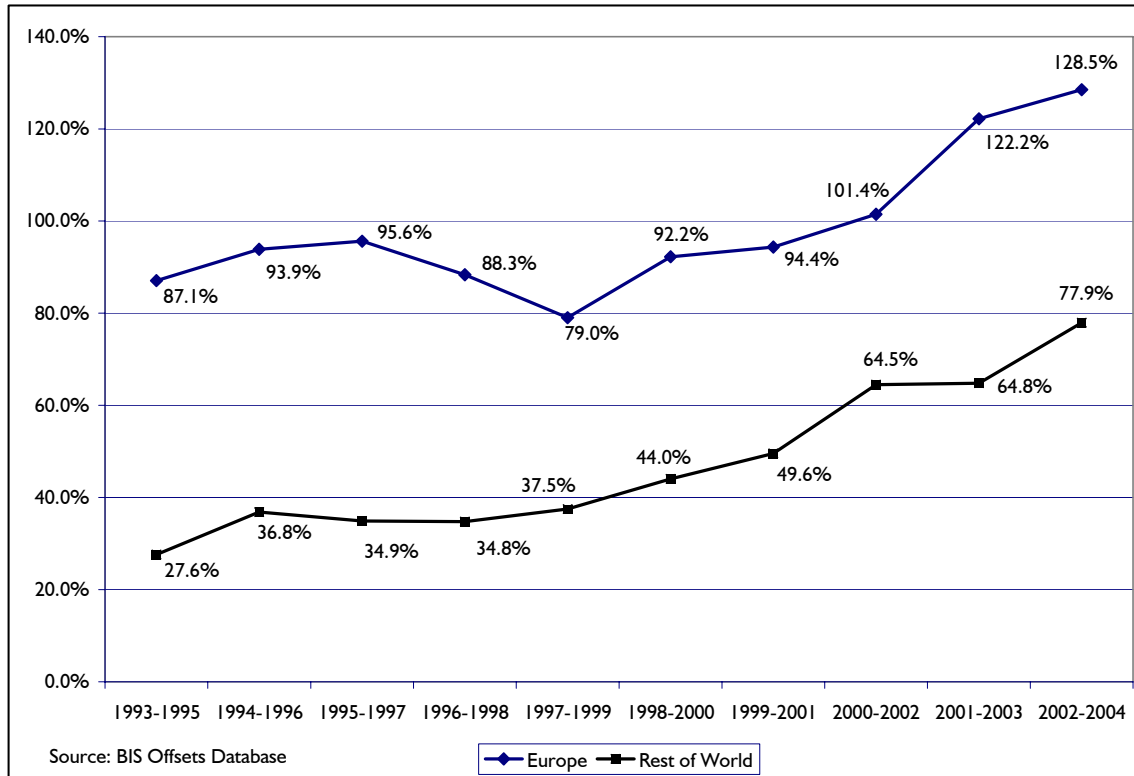
Agreements entered into by South Korea and Turkey illustrate the growing trend in non-European offset demands. From 1993 to 1998, the average offset requirement (by value) demanded of U.S. firms by South Korea was 32.7 percent. In contrast, from 1999 to 2004, that average more than doubled, to 68.6 percent. From 1993 to 1998, offset percentages (by value) demanded by Turkey of U.S. firms averaged 30.5 percent. However, Turkey's offset requirements rose in 1999-2004 to 32.7 percent.

Even with the lower offset percentages reported in 2004, European offset demands have continued to increase over the twelve-year period, although more slowly than offset demands in the rest of the world.

Using the three-year weighted averages shown in Chart 4-3, it is evident that European offset requirements increased an average of 3.5 percentage points each year in the twelve-year period, while non-European demands increased 4.2 percentage points. Offset requirement trends are more representative when viewed as a moving, weighted average.²² A moving average smoothes the annual fluctuations in weapon system sales and related offset agreements. The weighted world trend in offset percentages rose from 49.3 percent to 99.5 percent; the averages for Europe and all other countries are shown in Chart 4-3. In the same twelve-year period that European offset percentages rose by 41.5 percentage points (from 87.1 percent to 128.5 percent), the rest of the world more than doubled its offset requirements, from 27.6 percent to 77.9 percent.

²² 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 ten three-year observations over the twelve-year reporting period (1993-2004).

**Chart 4-3: Percent Offsets for Europe vs. Rest of the World
(Weighted Moving Average, 1993-2004)**



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 and related offsets 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.

At the same time, 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, but decreasing, 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, 1993-2004

In order to fulfill the terms of offset agreements, prime contractors engage in a variety of activities (called transactions) over the life of the agreement. 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 2004, 42 U.S. defense companies reported 7,396 transactions of varying value, category and type with 44 countries totaling \$32.6 billion. The value and percentages of offset transactions by type are reflected in Table 5-1.

Table 5-1: Offset Transactions Analysis	
Offset Transaction Comparisons	
Data Element	All Transactions
Total Value	\$32,570,124,731
Direct Offsets	\$13,153,833,268
Indirect Offsets	\$19,170,886,288
Unspecified Offsets	\$245,405,175
Percent Distribution	
% Direct Offsets	40.4%
% Indirect Offsets	58.9%
% Unspecified Offsets	0.8%

Source: BIS Offsets Database

As shown in Table 5-2, U.S. firms received a total of \$38.6 billion in credit for these transactions toward open offset obligations during the reporting period. The yearly value of offset transactions averaged \$2.7 billion.

For 2004, U.S. companies reported offset transactions with a total actual value of \$4.9 billion, the highest annual value reported during the twelve-year period, up 38.4 percent from \$3.6 billion in 2003. Indirect transactions accounted for 46.6 percent of the value of offset transactions, down from 68.6 percent in 2003. This was the second lowest percentage of indirect offsets for the twelve-year period. At the same time, direct transactions accounted for 53.4 percent of the value of transactions in 2004. This was the second highest level of direct transactions and the second time direct offsets were over 50 percent during the twelve-year period. The remaining 0.8 percent of the value was unspecified.

Table 5-2 shows the countries receiving the highest value of offset transactions during 1993-2004, along with the actual and credit values and multipliers for the transactions, and the portion of transactions granted multipliers.

For the reporting period of 1993 to 2004, the United Kingdom and Israel were the two largest recipients of offset transactions, with total actual values of \$6.0 billion and \$3.7 billion, respectively. The two countries combined accounted for 29.6 percent of the total actual value of offset transactions during the reporting period. At the same time, the United Kingdom and Greece accounted for 25.8 percent of the total credit value.

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. Poland led, with 83.3 percent of the transactions having multipliers greater than one, followed by the United Arab Emirates with 64.5 percent, and Kuwait with 58.3 percent. However, such instances with multipliers greater than one are not typical. For all countries, only 12.7 percent of the transactions had a multiplier greater than one. Conversely, almost 87.3 percent of the number of transactions had no multiplier (or had a negative multiplier) applied. For the 25 countries listed in Table 5-2, the overall percentage of transactions with multipliers greater than one was 11.9 percent, lower than the percentage for all countries (12.7 percent).

**Table 5-2: Offset Transactions by Countries with Highest Total Actual Value
(Total, 1993-2004)**

Country	Actual Value	Credit Value	Multiplier	% of Transactions with Multiplier > 1
1. United Kingdom	\$5,961,576,587	\$5,993,127,231	1.005	0.9%
2. Israel	\$3,694,943,227	\$3,839,215,399	1.039	5.2%
3. Finland	\$3,500,957,518	\$3,737,767,114	1.068	20.6%
4. South Korea	\$2,377,207,872	\$2,692,750,591	1.133	18.5%
5. Netherlands	\$1,881,929,335	\$2,218,125,234	1.179	9.6%
6. Greece	\$1,835,123,943	\$3,949,150,766	2.152	41.2%
7. Italy	\$1,763,279,492	\$1,783,279,744	1.011	5.7%
8. Australia	\$1,389,940,819	\$1,425,207,447	1.025	2.9%
9. Switzerland	\$1,250,378,636	\$1,256,034,017	1.005	0.8%
10. Canada	\$1,189,373,185	\$1,161,813,477	0.977	1.6%
11. Spain	\$1,132,982,595	\$1,379,047,963	1.217	28.1%
12. Taiwan	\$928,505,577	\$1,851,361,122	1.994	38.4%
13. Turkey	\$927,588,886	\$989,012,817	1.066	9.0%
14. Germany	\$881,661,468	\$881,661,468	1.000	0.00%
15. Norway	\$786,647,707	\$1,074,807,011	1.366	25.5%
16. Poland	\$615,154,000	\$897,921,000	1.460	83.3%
17. Denmark	\$514,533,350	\$586,569,124	1.140	15.1%
18. France	\$455,952,025	\$833,989,761	1.829	46.4%
19. Belgium	\$303,058,267	\$324,549,945	1.071	3.3%
20. Malaysia	\$294,807,399	\$341,629,000	1.159	15.4%
21. Sweden	\$174,103,176	\$202,393,278	1.162	9.1%
22. United Arab Emirates	\$101,659,940	\$224,520,496	2.209	64.5%
23. Portugal	\$85,516,639	\$150,272,639	1.757	32.4%
24. Kuwait	\$77,954,845	\$153,349,808	1.967	58.3%
25. Austria	\$69,404,406	\$58,467,436	0.842	16.7%
Total	\$32,194,240,894	\$38,006,023,888	1.181	11.9%
All Countries	\$32,570,124,731	\$38,594,491,320	1.185	12.7%

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 related offset transactions, with 65.6 percent of the actual value of offset transactions during 1993-2004. The

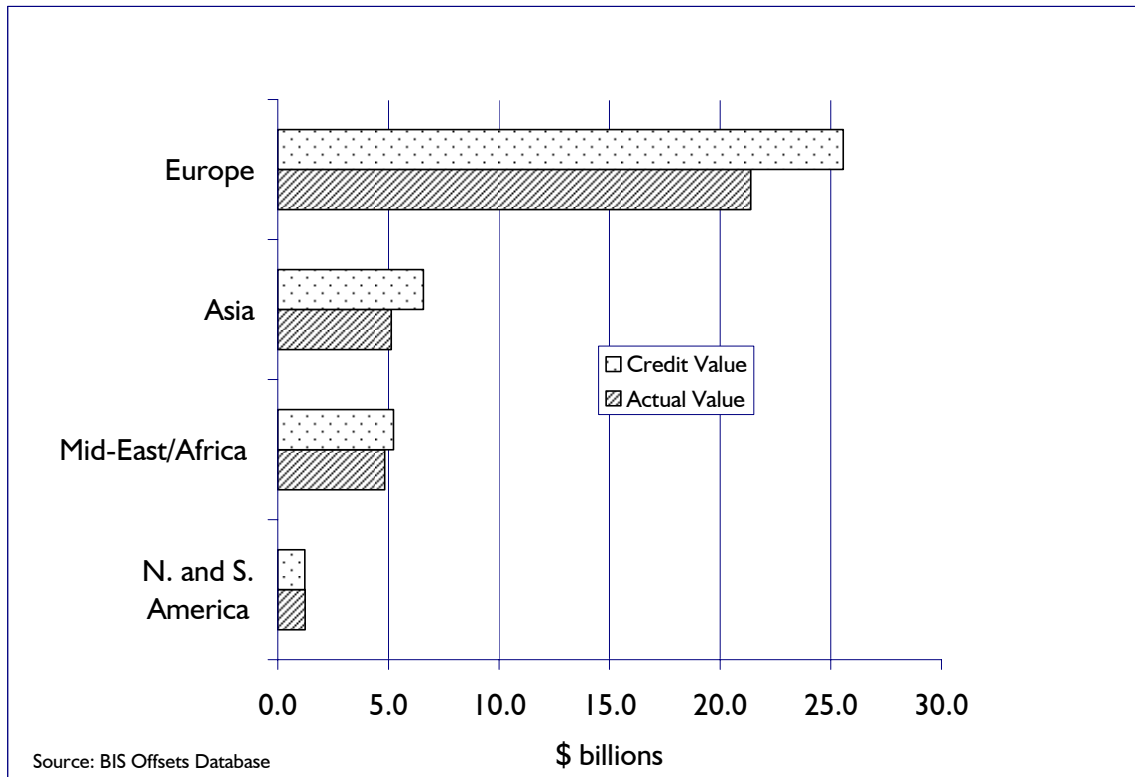
region's multiplier was slightly above average (1.195), and the multiplier was applied to only 12.6 percent of the number of transactions (87.4 percent of transactions had no multiplier or a negative multiplier applied); therefore, European countries accounted for only 66.2 percent of the total credit value applied toward outstanding offset agreements.

Asian countries were ranked second with 15.7 percent of the total actual value of the offset transactions. Asia's larger than average multiplier (1.284) applied to just 18.9 percent of the transactions (81.1 percent of transactions had no multiplier or a negative multiplier applied); as a result, the region accounted for 17.1 percent of the total credited value of offset transactions.

Middle Eastern and African countries together accounted for 18.6 percent of the total actual value of offset transactions and 16.8 percent of the credit value. The multiplier for Middle Eastern and African countries was 1.084, lower than the overall average. Multipliers were applied to 9.1 percent of the region's transactions (90.9 percent of transactions had no multiplier or a negative multiplier applied).

Countries in the Western Hemisphere ranked fourth, with just 3.8 percent of the actual value of transactions and 3.2 percent of the credit value. The multiplier for North and South America was the lowest of the four regions at only 0.995. Approximately 87.8 percent of transactions by number in South America received multipliers, while 12.2 percent had no multipliers. In North America, 1.7 percent of transactions received multipliers (98.3 percent of transactions did not receive multipliers or had negative multipliers).

**Chart 5-1 Regional Totals of Offset Transactions
1993-2004**



5-3 The Role of Multipliers

Multipliers can make it easier for prime contractors to fulfill their offset obligations by allowing for higher offset credit levels than normally granted. 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. The limited use of multipliers makes it more difficult for prime contractors to fulfill offset obligations. *See Chapter 2, Table 2-1 for annual global utilization of multipliers.*

Over the twelve-year reporting period, the usage and value of multipliers have dropped. Table 5-3 highlights the use of multipliers by region as a percentage of the number of all transactions for the 1993-2004 period. In Europe, for example, 85.9 percent of transactions by number have no multiplier involved for the prime contractor when fulfilling the offset commitment (multiplier = 1). This is an increase from the 1993-2003 date range when 83 percent of transactions had no multipliers. For North and South America, 84.6 percent of transactions by number have no

multiplier involved; for Asia, the figure is 79.2 percent, and 88.7 percent for the Middle East and Africa.

	% Multipliers < 1	% Multipliers = 1 (No Multiplier)	% Multipliers > 1
Europe	1.6%	85.9%	12.6%
Mid-East/Africa	2.2%	88.7%	9.1%
Asia	2.0%	79.2%	18.9%
N. and S. America	7.4%	84.6%	8.1%

Source: BIS Offsets Database

In reviewing European multiplier data further, 12.6 percent of the European transactions (by number) have a multiplier greater than one, and an additional 1.6 percent of transactions with Europe have a multiplier of less than one. Multipliers of less than one mean that prime contractors are only credited a portion of the total actual value of a transaction. For the 1993-2003 reporting period, 15.6 percent of European transactions had a multiplier greater than one.

In Asia, 18.9 percent of the transactions (by number) have multipliers greater than one, while 2 percent of transactions have multipliers of less than one. For the Middle East/Africa, only 9.1 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, 8.1 percent have multipliers greater than one, and 7.4 percent of transactions by number receive less than full credit.

**Table 5-4: Multipliers by Region, by Dollar Values
1993-2004**

	Value of transactions with multiplier < 1	Value of transactions with multiplier = 1 (no multiplier)	Value of transactions with multiplier > 1	Total Value
Europe	\$788,182,928	\$18,794,843,506	\$1,799,083,598	\$21,382,110,032
Percentage	3.7%	87.9%	8.4%	
Middle East/Africa	\$53,572,526	\$4,495,755,415	\$279,305,957	\$4,828,633,898
Percentage	1.1%	93.1%	5.8%	
Asia	\$254,032,930	\$4,603,645,245	\$271,482,215	\$5,129,160,390
Percentage	5.0%	89.8%	5.3%	
N. and S. America	\$96,955,462	\$1,114,207,396	\$19,057,553	\$1,230,220,411
Percentage	7.9%	90.6%	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 one, equal to one, or less than one. It should be noted that transactions with multipliers less than one further add to the costs of fulfilling offsets; for certain transactions, countries give less than full credit for offset transactions completed.

For Europe, transactions with a multiplier greater than one only accounted for 8.4 percent of the value of all European transactions; the Middle East/Africa, 5.8 percent; Asia, 5.3 percent; and North and South America, 1.5 percent. For each region, transactions with multipliers of less than one 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 1993-2004				
ALL COUNTRIES Offset Category	Number of Transactions	Number & Percent with Multipliers < 1	Number & Percent with Multipliers = 1 (no multiplier)	Number & Percent with Multipliers > 1
Co-production	242	2	228	12
		0.8%	94.2%	5.0%
Credit Transfers	106	1	91	14
		0.9%	85.9%	13.2%
Licensed Production	33	2	26	5
		6.1%	78.8%	15.2%
Overseas Investment	113	3	62	48
		2.7%	54.9%	42.5%
Purchases	3645	95	3243	307
		2.6%	89.0%	8.4%
Subcontracts	1679	17	1526	136
		1.0%	90.9%	8.1%
Technology Transfer	805	32	559	214
		4.0%	69.4%	26.6%
Training	252	4	148	100
		1.6%	58.7%	39.7%
Miscellaneous	481	7	368	106
		1.5%	76.5%	22.0%

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, have 8.4 percent and 8.1 percent, respectively, of their transactions sharing multipliers greater than one. Eighty-nine percent of Purchase transactions and more than 90 percent of Subcontract transactions have no multiplier applied. At the other extreme, 42.5 percent of Overseas Investment and 39.7 percent of Training transactions had multipliers greater than one.

Table 5-6: Multipliers by Category of Offset, Europe 1993-2004				
EUROPE Offset Category	Number of Transactions	Number & Percent with Multipliers < 1	Number & Percent with Multipliers = 1 (no multiplier)	Number & Percent with Multipliers > 1
Co-production	155	2	144	9
		1.3%	92.9%	5.8%
Credit Transfers	88	1	74	13
		1.1%	84.1%	14.8%
Licensed Production	10	1	8	1
		10.0%	80.0%	10.0%
Overseas Investment	68	0	44	24
		0.0%	64.7%	35.3%
Purchases	2642	39	2348	255
		1.5%	88.9%	9.7%
Subcontracts	1086	11	981	94
		1.0%	90.3%	8.7%
Technology Transfer	457	20	322	115
		4.4%	70.5%	25.2%
Training	108	1	65	42
		0.9%	60.2%	38.9%
Miscellaneous	321	6	242	73
		1.9%	75.4%	22.7%

Source: BIS Offsets Database

Tables 5-6 and 5-7 review the categories of offset transactions, and the number of transactions and multipliers applied for Europe and Asia, respectively. For Europe, Training transactions received the most positive multipliers (38.9 percent), while Co-production received the fewest multipliers (5.8 percent) greater than one.

Table 5-7: Multipliers by Category of Offset, Asia 1993-2004				
ASIA Offset Category	Number of Transactions	Number & Percent with Multipliers < 1	Number & Percent with Multipliers = 1 (no multiplier)	Number & Percent with Multipliers > 1
Co-production	45	0	43	2
		0.0%	95.6%	4.4%
Credit Transfers	5	0	4	1
		0.0%	80.0%	20.0%
Licensed Production	22	1	17	4
		4.6%	77.3%	18.2%
Overseas Investment	15	1	10	4
		6.7%	66.7%	26.7%
Purchases	211	3	187	21
		1.4%	88.6%	10.0%
Subcontracts	266	2	243	21
		0.8%	91.4%	7.9%
Technology Transfer	282	11	189	82
		3.9%	67.0%	29.1%
Training	96	3	59	34
		3.1%	61.5%	35.4%
Miscellaneous	76	0	52	24
		0.0%	68.4%	31.6%

Source: BIS Offsets Database

As in Europe, Training transactions in Asia also received the most multipliers; 35.4 percent of all Training transactions received multipliers. Co-production transactions received the fewest multipliers with only 4.4 percent of transactions having multipliers greater than one.

5-4 Offset Transactions by Type

Offset transaction data is better understood when categorized by direct, indirect and unspecified transactions. From 1993-2004, direct offset transactions accounted for 40.4 percent, or \$13.2 billion, of the total value of offset transactions, and indirect offset transactions totaled 58.9

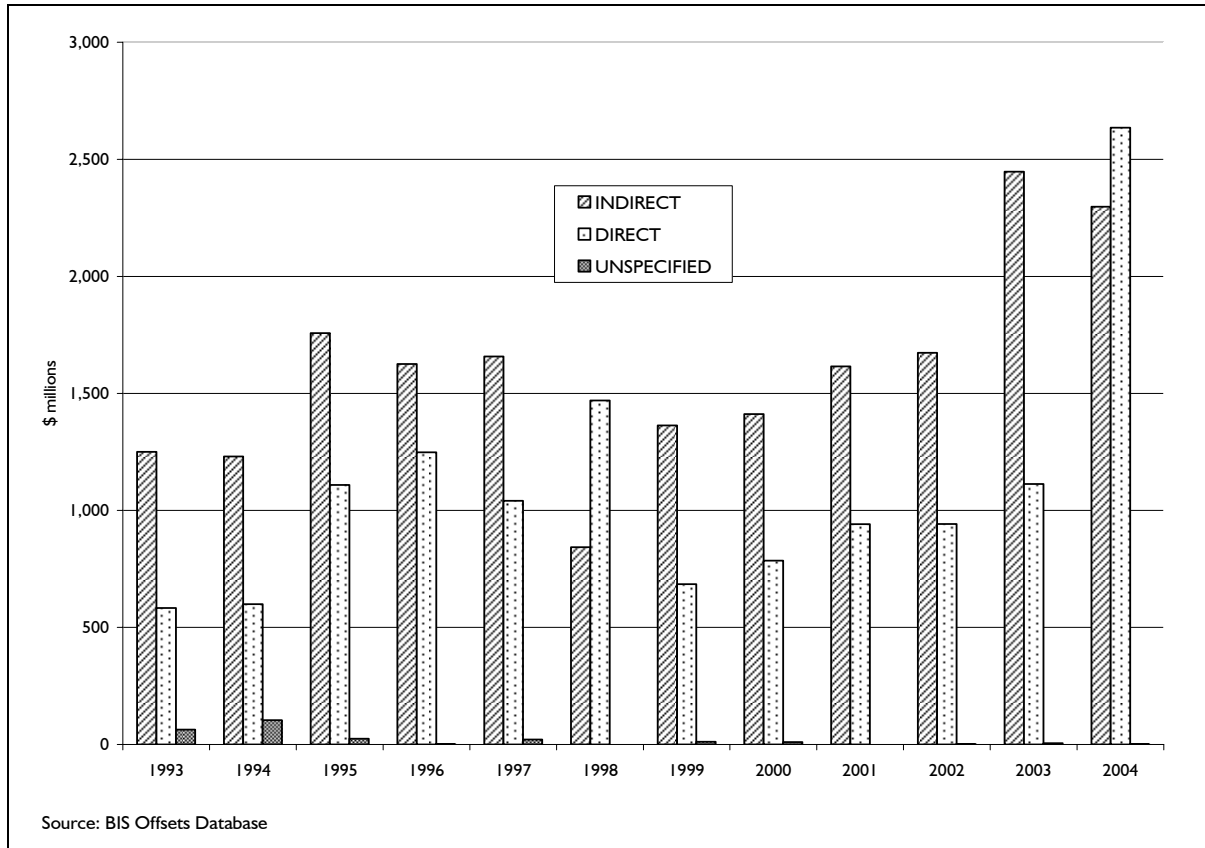
percent, or \$19.2 billion. The remaining 0.8 percent, or \$245.4 million, was categorized as unspecified transactions.

In 2004, direct offset transactions (related to weapon systems sold) accounted for 53.4 percent (\$2.6 billion) of the value of all transactions, up from 31.2 percent from the previous year. Indirect offsets (not related to weapon systems sold) comprised 46.6 percent (\$2.3 billion) of offset transactions, down from 68.6 percent from 2003. Only one transaction in 2004 was labeled unspecified, valued at 0.01 percent (\$500,000) of all transactions. The mix of direct and indirect offset transactions changes from year to year, depending on which countries dominated defense purchases and related offset activities. However, for ten out of the twelve years in the reporting period, indirect offsets have accounted for significantly more than half of all offset transactions. Only in 1998 and 2004 did direct offset transactions account for more than indirect offset transactions.

The United Kingdom was the largest recipient of indirect offsets for the twelve-year period, with 18.9 percent (\$3.6 billion) of the total value of indirect offset transactions. Of these indirect transactions by the United Kingdom, almost 51 percent were aerospace-related. The United Kingdom also led all countries in the value of direct offset transactions received from 1993-2004, with 17.8 percent (\$2.3 billion) of the direct offset total. Of the direct offset total for the United Kingdom, 82.2 percent of these transactions were aerospace-related.

Calculated on an annual basis, the value of direct offsets ranged from \$583.6 million in 1993 to \$2.6 billion in 2005, averaging \$1.1 billion for 1993-2004. The value of indirect offset transactions was lowest in 1998 at \$842.4 million, and highest in 2003 at \$2.4 billion. As mentioned above, in 2004 indirect offset transactions totaled \$2.3 billion. The value for indirect offset transactions for the 1993-2004 reporting period averaged \$1.6 billion annually. The distribution of direct and indirect offset transactions for the twelve-year period is presented in Chart 5-2.

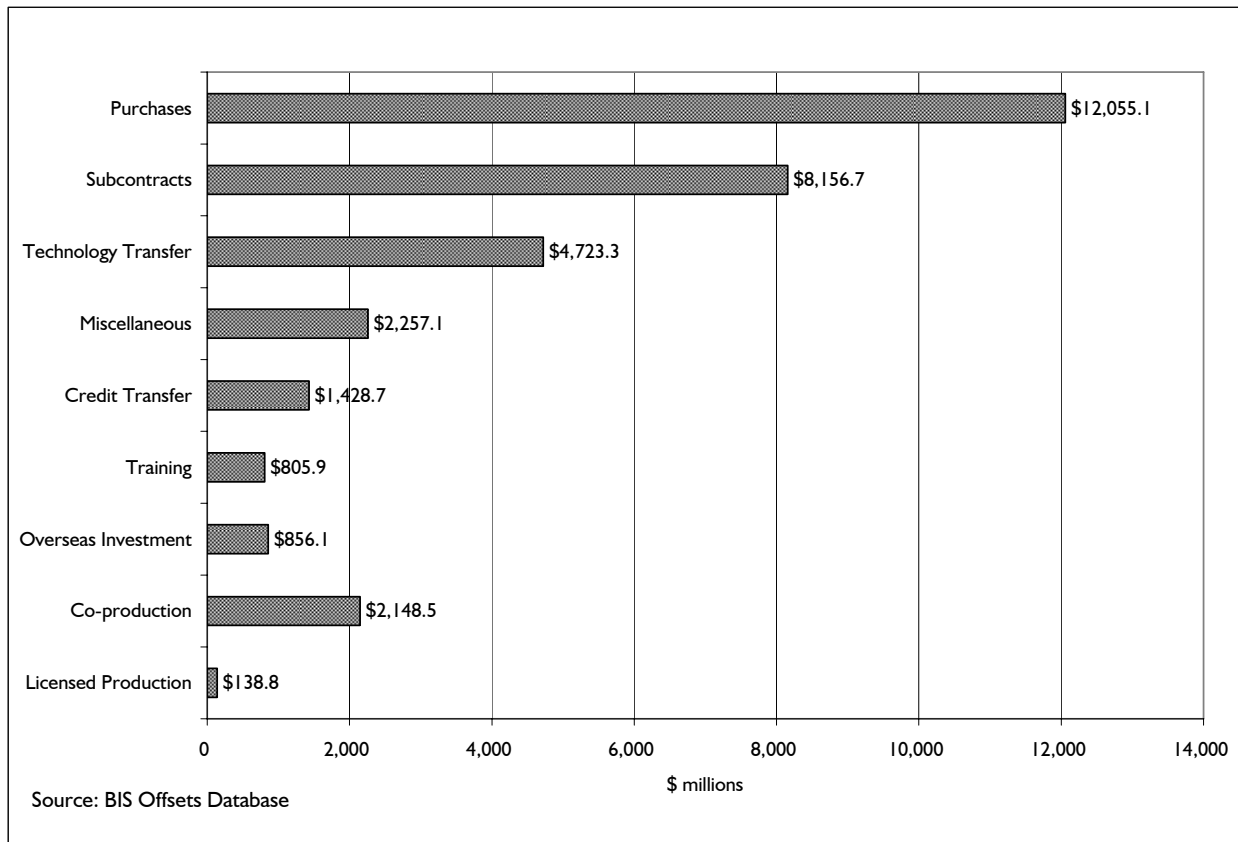
**Chart 5-2: Direct, Indirect, and Unspecified Offset Transactions
1993-2004**



5-5 Offset Transactions by Category

Another method for evaluating offset transaction activity is classifying the transactions by category. As in previous offset studies, the categories of Purchases, Subcontracts, and Technology Transfer accounted for the majority of offset activity during 1993-2004; for the twelve-year period, they accounted for 76.6 percent of the total value of offset transactions. Purchases accounted for 37 percent of the total value, and Subcontracts accounted for 25 percent. The value of Technology Transfer offset transactions was 14.5 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
1993-2004**

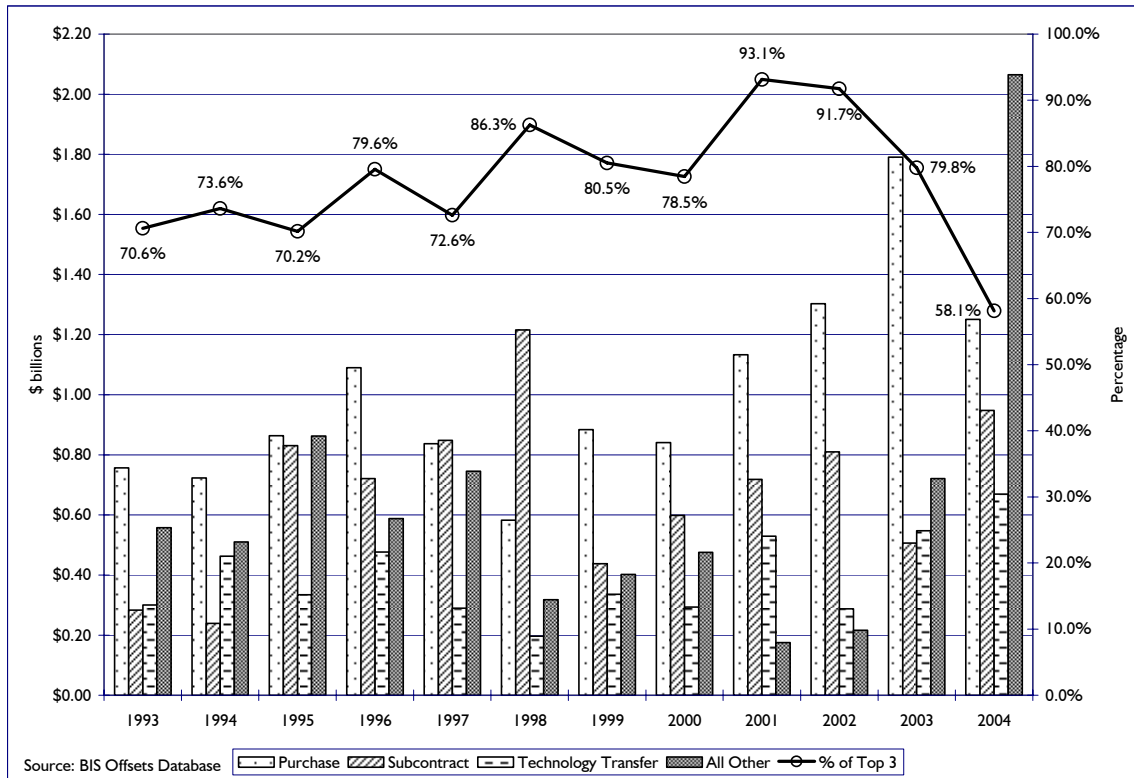


Data showing the percentage of total offset transactions accounted for by Purchases, Subcontracts, and Technology Transfer are shown in Chart 5-4. The dominance of these three categories ranged from 70.6 percent of the total value of transactions in 1993, to 93.1 percent in 2001, and sinking again to 58.1 percent in 2004. The category of co-production had a significant increase from 2003 to 2004, going from \$716 million to almost \$2.15 billion.

Of the 44 countries where offset transactions were carried out (see Table 2-1), 40 participated in 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 26.9 percent of the value of all Purchases, followed by Israel with 11.8 percent, and Finland with 7.2 percent. Of all offset transactions categorized as Purchases, more than half were aerospace-related.

During 1993-2004, 32 countries engaged in 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 the majority of the total value of all Subcontract transactions. The United Kingdom accounted for 27.2 percent of the value of all Subcontracts, followed by Israel with 17.8 percent and Italy with 7.4 percent of all Subcontracts. Together, these three countries accounted for 52.4 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
1993-2004**



* Bar portion measured in dollar value.

** Line reflects annual percentage of the top three transaction categories.

5-6 Offset Transactions by Category and Type

Another 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. 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.

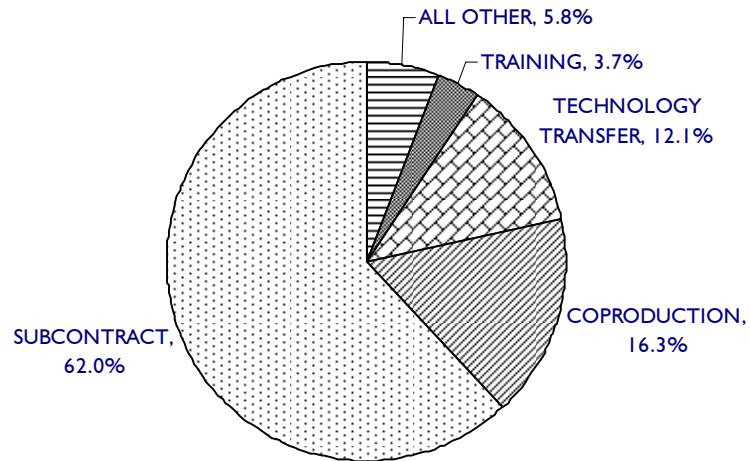
For example, Subcontracts, Co-production, and Licensed Production each involve foreign production of goods or services related to the weapon system sold. For 1993-2004, these three categories totaled 79.4 percent of the value of all direct offset transactions. Offset transactions in these three categories totaled \$10.4 billion during the twelve-year period; subcontracts alone accounted for \$8.2 billion.

Similarly, the purchases category of indirect offsets involved foreign production of goods and services. Purchases totaled \$12.1 billion during 1993-2004, or 62.9 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 \$22.5 billion in overseas production – or an average of \$1.9 billion per year.

While Technology Transfer, Training, Credit Assistance, and Overseas Investment offset transactions do not directly involve foreign production of goods and services, these offsets can enhance the manufacturing and other 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. Examining these four categories as direct offset transactions, the value was \$2.4 billion for 1993-2004, 67.4 percent of which was accounted for by Technology Transfer. The value of indirect offset transactions for these four categories in the same time frame was \$5.2 billion, with Technology Transfer accounting for 57.2 percent of this total. In sum, Technology Transfers, Training, Credit Assistance, and Overseas Investment contributed 18 percent of the actual value of all direct offset transactions for 1993-2004, and roughly 27.3 percent of the total indirect offset transactions for the same reporting period.

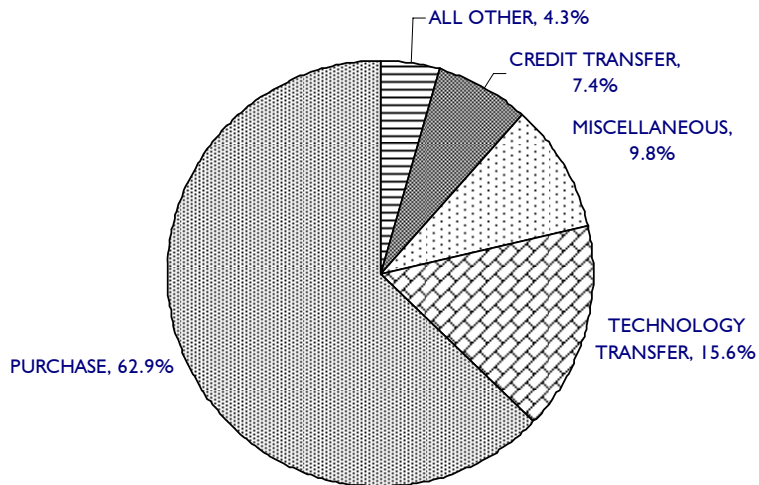
For direct and indirect transactions combined, these four categories accounted for \$7.6 billion during 1993-2004, an annual average of \$633.5 million. The distribution of offset transactions by category is graphically shown in Charts 5-5 and 5-6.

**Chart 5-5: Direct Offset Transactions by Category
1993-2004**



Source: BIS Offsets Database

**Chart 5-6: Indirect Offset Transactions by Category
1993-2004**



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 1993-2004 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.

SIC	Sector Description	Number of Transactions	Value in Millions	% of Total Value
37	Transportation Equipment	3,350	\$17,075.0	52.4%
36	Electronic/Electrical Equipment	1,210	\$4,759.1	14.6%
73	Business Services	378	\$1,375.2	4.2%
35	Industrial Machinery	663	\$1,555.3	4.8%
87	Technical Services & Consultants	407	\$1,501.3	4.6%
38	Measuring & Analyzing Inst	323	\$1,394.0	4.3%
Subtotal		6,330	\$27,659.90	84.9%
Total Value -- all Transactions		7,396	\$32,570.1	---

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 accounted for 45.3 percent of the total number of transactions, and 52.4 percent of the value of all offset transactions. Between 1993 and 2004, offset transactions related to transportation equipment totaled \$17.1 billion. Direct transportation equipment transactions accounted for 60.6 percent, or approximately \$8 billion, of the total value of direct offsets. Indirect transportation equipment transactions made up 46.4 percent, or roughly \$8.9 billion, of the value of all indirect transactions. Transactions in this sector were composed mostly of aerospace products, including aircraft parts and components, jet engines and parts, hydraulic subsystems, and guided missiles and components.

The electronic and electrical equipment sector was a distant second to the transportation equipment sector. Offset transactions in this sector made up 16.4 percent of the number of all

transactions, and 14.6 percent of their total value. This sector includes products such as radar, communications equipment, and material inputs for avionics such as circuit boards.²³

Transactions in the industrial machinery sector accounted for 4.8 percent, or \$1.6 billion, of the value of all transactions from 1993 to 2004, contributing 9 percent to the number of all offset transactions. 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 twelve-year period, offset transactions have been categorized into a total of 41 industrial sectors, including one labeled “unclassifiable establishments” (SIC 99). The 35 sectors not specifically listed in Table 5-4 accounted for approximately 15.1 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 Unclassifiable Establishments (SIC 99) at 3.3 percent, Non-Depository Credit Institutions (SIC 61) at 2.1 percent, Holding and Other Investment Offices (SIC 67) and Educational Services (SIC 82) both valued at 2 percent, and Fabricated Metal Products (SIC 34) at 1.8 percent. These five sectors accounted for an additional 11.2 percent, or \$3.7 billion, of the total value of offset transactions, up one percent from 2003.

Four other sectors contributed between 0.4 and 0.8 percent of the total value of offset transactions. These included Primary Metal Industries (SIC 33) accounting for 0.8 percent, Chemicals and Allied Products (SIC 28) at 0.7 percent, Communications (SIC 48) at 0.5 percent, and Security Brokers, Dealers, Exchanges and Services (SIC 62) at 0.4 percent. Together, these sectors accounted for 2.4 percent, or roughly \$774 million, of the total value offset transactions.

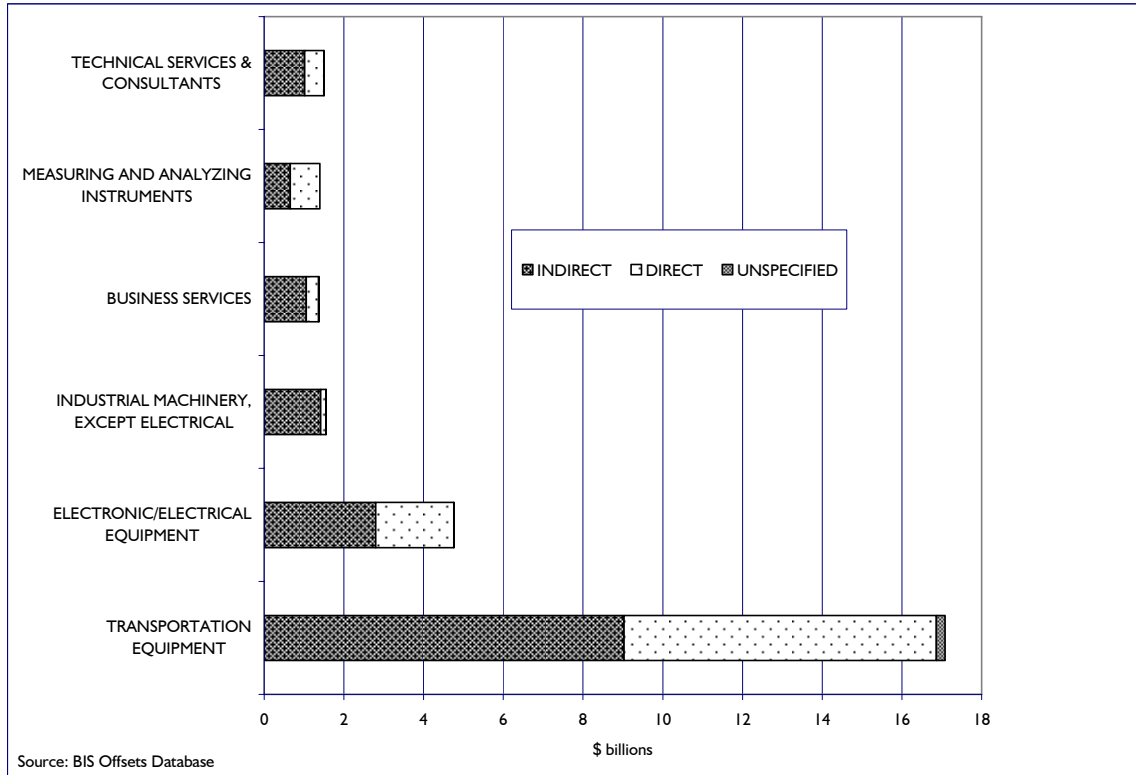
Of the remaining 26 sectors, none totaled more than \$80 million over the twelve-year period. Together, these sectors totaled \$461.8 million, roughly 1.4 percent of the total value of offset transactions for 1993-2004.

The majority of offset transactions fell in the manufacturing sectors (SIC 20-39); a little under \$26 billion, or 79.7 percent, of all transactions were manufacturing related. Service-related transactions (SIC 70-89) accounted for \$3.6 billion, or 11.1 percent, of the total value of offset transactions. Financial, insurance, and real estate industries (SIC 60-67) totaled \$1.5 billion,

²³ 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.

approximately 4.5 percent of transactions for 1993-2004. Chart 5-7 shows the top ten sectors where offset transactions occurred.

**Chart 5-7: Offset Transactions by Industry and Type for Top Six Sectors
1993-2004**



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

6-1 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 recommending that the President 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 Interagency Team be comprised of the Secretaries of Commerce, Defense, Labor, and State, and the United States Trade Representative. A staff level Interagency Working Group was also established.

The law provides for the interagency team to send an annual report to Congress describing the results of offset consultations. The report is to be included as part of the annual assessment report to Congress on offsets in defense trade that is prepared by the U.S. Department of Commerce's Bureau of Industry and Security.

6-2 Domestic Consultations

The Interagency Team and Working Group, chaired by the Department of Defense, accomplished a number of important milestones during 2005. The first was identifying and meeting with domestic entities affected by offsets: U.S. defense prime contractors, subcontractors and suppliers to the prime contractors, labor representatives and industry advisors from the United States Trade Representative and Department of Commerce administered International Trade Advisory Committees. The organizations that participated in the domestic consultations included the Defense Industry Offset Association, National Defense Industrial Association, Aerospace Industries Association, American Shipbuilding Association, U.S. Business and Industrial Council, AFL-CIO, International Association of Machinists & Aerospace Workers and the United Automobile, Aerospace and Agricultural Implement Workers of America.

The meetings were designed to allow the various domestic entities to inform the interagency team members of their views regarding offsets in defense trade and to make suggestions on what specific issues should be raised when consulting with U.S. trading partners. In many cases the responses by the various groups were in direct conflict with each other. The following are representative of the comments made by the domestic entities. They do not necessarily represent the views of the interagency team. The interagency team will release its findings in its final report.

1. Greater than 90 percent of countries require mandatory offsets or industrial participation as part of international defense purchases.
2. Offsets are a persistent and growing problem.
3. Generally, the prime contractor reports all transactions undertaken to meet offset requirements to the foreign government. This accounts for 70 to 100 percent of the offsets reported, although the amount directly fulfilled by the prime contractor varies significantly. The remaining portion (if any) of the offset is reported and fulfilled by:
 - a. U.S. defense subcontractors.
 - b. Foreign defense subcontractors.
 - c. U.S. non-defense subcontractors.
 - d. Foreign non-defense subcontractors.
4. Adverse effects of offsets include:
 - a. Undercut domestic subcontractors and suppliers, and the domestic industrial base, through loss of sales and enhancement or creation of foreign competitors;
 - b. Transfer technology and know-how as well as employee work-years to foreign firms, eroding U.S. industrial competitiveness;
 - c. Reduce support for U.S. Department of Defense (DOD) programs and foreign military sales in specific Congressional districts, regardless of any net beneficial effect on the defense industrial base;
 - d. Increase total cost of weapon systems for our foreign/coalition partners;
 - e. Increase program (sale and offset) risk: mandatory offset performance penalties increase the risk associated with export sales;
 - f. Foreign Governments view offsets as a form of economic development aid to be gained through defense purchases; and
 - g. Perception of inequity - U.S. firms and the DOD should receive offset credits when buying any European and other foreign defense equipment and parts/components. This is not currently the case.
5. Beneficial effects of offsets include:
 - a. Compliance with mandatory offset requirements makes it possible for U.S. companies to compete for foreign defense contracts;
 - b. Provide a vehicle for opening foreign defense markets for the introduction of U.S. goods and services;

- c. Keep U.S. production lines open for certain defense systems not being procured or procured in uneconomic quantities by the DOD;
 - d. May reduce weapon system unit costs for all purchasers;
 - e. Maintain employee work-years for defense systems, at the prime and subcontractor level for portions of exports not subject to mandatory offsets; and
 - f. Promote interoperability with U.S. and coalition partner forces for those weapon systems using common parts/components and support systems.
6. Certain offset requirements are perceived to be burdensome. Examples include:
- a. Offsets with onerous terms and conditions, including large and non-liquidating penalties.
 - b. Offsets that require the use of directed offshore sources of supply for subcontracting and purchases (direct employee work-year loss).
 - c. Offsets that are outside the company's core expertise.
 - d. Offsets that require the transfer of technology, know-how and production capability.
7. Do the beneficial effects of offsets outweigh adverse effects?
- a. Responses varied depending whether or not a U.S. company, industry or labor force were the target of the offset arrangement.
 - b. U.S. firms, industries or workers not covered by the offset arrangement usually benefited from the export sale.
8. Should the U.S. Government (USG) play an active role in helping U.S. firms negotiate offset agreements or ban offsets for specific economic sectors?
- a. USG should consider more international cooperative development programs as an incentive to reduce or eliminate offsets.
 - b. USG should develop an offset policy for purchases of foreign systems or parts/components, to counter foreign offset demands.
 - c. USG should negotiate enforceable guidelines at the multinational level to control the use and adverse effects of mandatory offsets.
 - d. USG should regulate the use of offsets; should tighten and eliminate waivers to Buy America statutes as a strategy to reduce or eliminate offset demands by our trading partners.
 - e. USG should provide incentives to foreign companies/countries that do not engage in offsets.
 - f. USG should not take any action that would unilaterally restrict U.S. companies from participating in offset transactions, as this would restrict business opportunities.

9. Should U.S. commercial trade deficits be addressed in trade agreements, offset agreements or other agreements?
 - a. No - Restrictions on offsets could harm the U.S. defense industry, which has a defense trade surplus.
 - b. Yes - Negotiate to either eliminate offsets altogether, or reduce foreign offset requirements to 51 percent -- similar to the Buy American Act (or eliminate Buy American waivers for countries granted Buy American waivers).

10. What differences do you see between the Department of Defense's implementation of restrictions on foreign participation in DOD contracts and foreign countries' offset (sometimes called "industrial participation") requirements?
 - a. The U.S. Buy American restriction requires that a minimum of 51 percent of the value of the defense product purchased be built or sourced in the U.S. (restriction is waived for most allied nations). Most countries require a 100 percent offset for the value of the purchased system to be fulfilled by direct or indirect offset transactions.
 - b. The U.S. Buy American restriction is not a contractual requirement with a performance period and penalties for non-performance, as found with offset agreements.
 - c. The U.S. does not require indirect offsets (mandatory compensation not related to defense system purchased) when procuring foreign weapon systems or parts/components.

6-3 Foreign Consultations

Selection of Countries for Consultations

For the first round of consultations the Interagency Team selected France, Germany, Italy, and the United Kingdom. This group was selected because these countries sell defense systems in the global market and provide offsets, as well as procure defense systems and demand offsets or industrial participation. For the second round of consultations, the Team initially selected Canada, Greece, the Netherlands, Spain and Sweden; Denmark and Turkey were later added to the list. These seven countries were selected because they primarily procure defense systems from offshore suppliers and require mandatory offsets or industrial participation.

These eleven countries were also selected because their governments require high levels of offsets or industrial compensation when purchasing defense systems and services from U.S. defense contractors. Data collected by the U.S. Department of Commerce for 1993-2004

shows that combined, these countries account for 56 percent of all offset agreements (by value). Ten of the eleven countries selected for consultations are in Europe; Europe accounts for 65.5 percent of total offset agreements (by value).

Development of Consultation Questions

The Interagency Working Group developed a comprehensive set of questions for use during the planned consultations. These questions were designed to stimulate a dialogue with U.S. foreign counterparts, as well as attempt to find common ground for limiting the adverse effects of offsets through bilateral or multilateral consensus. The questions were based on the research of the Interagency Working Group Members and supplemented with the views and suggestions resulting from the domestic consultations.

Pre-Consultation Meetings in Washington, D.C.

The Interagency Working Group prepared for the foreign consultations by contacting and meeting with Embassy representatives from the nine countries. These pre-consultation meetings in Washington D.C. enabled the local Embassy staffs to assist with in-country preparations for the planned foreign consultations. Embassy staffs also forwarded the USG prepared questions to the proper Ministries abroad for review and action in advance of the Interagency Working Group foreign consultations.

First Round of Consultations with Foreign Nations

The first round of consultations took place in mid-November 2005 with representatives from the governments of France, Germany, Italy and the United Kingdom. The findings of these consultations are being reviewed and will be included in the next annual report.

6-4 Next Steps

The goal of the Interagency Team is to complete its foreign consultations and submit a report to the U.S. Department of Commerce for inclusion in their annual assessment of offsets provided to Congress in December 2006. At this time, the Interagency Team has not determined any findings, drawn any conclusions, nor decided upon any recommendations as a result of this first round of foreign consultations. The second round of consultations is scheduled for early 2006.

