

**COMMITTEE ON FOREIGN
INVESTMENT IN THE UNITED
STATES
ANNUAL REPORT
TO CONGRESS
PUBLIC VERSION**

December 2008

UNCLASSIFIED

**CFIUS ANNUAL REPORT TO CONGRESS
PUBLIC VERSION**

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SECTION I: REPORT ON COVERED TRANSACTIONS

Introduction

Section 721(m)(2) of the Defense Production Act of 1950 (50 U.S.C. App. 2170(m)(2)), as amended by the Foreign Investment and National Security Act of 2007, or “FINSA” (Pub. L. 110-49), requires that the Committee on Foreign Investment in the United States (“CFIUS” or “the Committee”) produce an annual report on covered transactions that provides:

“(A) A list of all notices filed and all reviews or investigations completed during the period, with basic information on each party to the transaction, the nature of the business activities or products of all pertinent persons, along with information about any withdrawal from the process, and any decision or action by the President under this section.”

“(B) Specific, cumulative, and, as appropriate, trend information on the numbers of filings, investigations, withdrawals, and decisions or actions by the President under this section.”¹,

“(C) Cumulative and, as appropriate, trend information on the business sectors involved in the filings which have been made, and the countries from which the investments have originated.”

“(D) Information on whether companies that withdrew notices to the Committee in accordance with subsection (b)(1)(C)(ii) of this section have later refiled such notices, or, alternatively, abandoned the transaction.”

“(E) The types of security arrangements and conditions the Committee has used to mitigate national security concerns about a transaction, including a discussion of the methods that the Committee and any lead agency are using to determine compliance with such arrangements or conditions.”

“(F) A detailed discussion of all perceived adverse effects of covered transactions on the national security or critical infrastructure of the United States that the Committee will take into account in its deliberations during the period before delivery of the next report, to the extent possible.”

This Annual Report was provided to Congress in a classified version on November 14, 2008. This unclassified version contains no information on specific transactions notified to CFIUS due to the prohibition in Section 721(c) (50 U.S.C. App. 2170(c)) against public disclosure of such information.

¹ For purposes of this report, “filings” is understood to refer to notices filed under section 721.

A. Information on 2007 Covered Transactions

The classified version of this report contains a table listing all 138 notices of transactions that were filed with CFIUS in 2007 and that CFIUS determined to be covered transactions under section 721 (“covered transactions” or “notices”). That table sets forth information on each party to the notice, including the nature of their business activities or products, and details on any withdrawal. While that table is not included here, provided below is aggregate information regarding those 138 notices:

- Ten notices, about seven percent of all notices, were withdrawn during review, and five (four percent) were withdrawn during investigation.
- CFIUS conducted a 45-day investigation for six of the 138 notices.
 - The parties to five of the six investigations withdrew their notices during the 45-day period.
 - In three of the investigations, the companies subsequently provided a new notification and CFIUS concluded action without objection within the next 30-day review period.
 - In two of the investigations, the companies abandoned the transaction.
 - For the remaining investigation, changes to the structure of the transaction resulted in the foreign party no longer gaining control over the U.S. person, leading to the determination that the transaction was not a covered transaction.
- The President did not take action to suspend or prohibit any transactions during 2007.

B. Specific Cumulative, and Trend Data on Covered Transactions, Withdrawals and Investigations

In the years 2005 to 2007, companies filed 313 notices of transactions. Roughly eight percent of such notices (24) were withdrawn during the review stage, five percent (15) resulted in an investigation, and less than one percent (2) resulted in a Presidential decision.

There was an upward trend over the last three years in the number of notices, but there was no clear trend in the percentage of notices that resulted in withdrawals or investigations. The number of covered transactions increased from 64 in 2005, to 111 in 2006 and 138 in 2007. As shown below in Table B-1, in 2005, only one resulted in an investigation. In 2006, 13 percent of total notices (14) resulted in withdrawal during the review stage, and six percent (7) resulted in investigations. In 2007, seven percent of total notices (10) resulted in withdrawals during the review stage, and four percent (6) resulted in investigations.

During the three-year period, 2005-2007, there were two Presidential decisions. In each of these cases the President decided not to suspend or prohibit the transaction.

Covered Transactions, Withdrawals, and Presidential Decisions 2005 – 2007					
Year	Number of Notices	Notices Withdrawn During Review	Number of Investigations	Notices Withdrawn During Investigation	Presidential Decisions
2005	64	1	1	1	0
2006	111	14	7	5	2
2007	138	10	6	5	0
Total	313	25	14	11	2

Table B-1: Covered Transactions, Withdrawals, and Presidential Decisions 2005-2007

C.1 Covered Transactions by Business Sectors of U.S. Companies: 2005-2007

The U.S. businesses that were parties to the notices filed with CFIUS are from a wide range of industrial sectors, including real estate, leasing, and automotive parts. Almost half of such notices filed with CFIUS during the 2005-2007 period involved U.S. businesses in the manufacturing sector (148, or 47 percent), which includes computer and electronics products, while more than one third were in the information sector (112, or 36 percent), which includes publishing and telecommunications.

The table and charts below give a breakdown by sector and by year for the 313 cumulative notices that came before CFIUS from 2005 through 2007.

Covered Transactions by Sector and Year, 2005 – 2007						
Year	Information	Manufacturing	Mining, Utilities and Construction	Other	Wholesale Trade	Grand Total
2005	24 (38%)	34 (53%)	1 (2%)		5 (8%)	64
2006	32 (29%)	53 (48%)	15 (14%)	1 (1%)	10 (9%)	111
2007	56 (41%)	61 (44%)	11 (8%)		10 (7%)	138
Total	112 (36%)	148 (47%)	27 (9%)	1 (0%)	25 (8%)	313

Table C-1: Covered Transactions by Sector 2005-2007

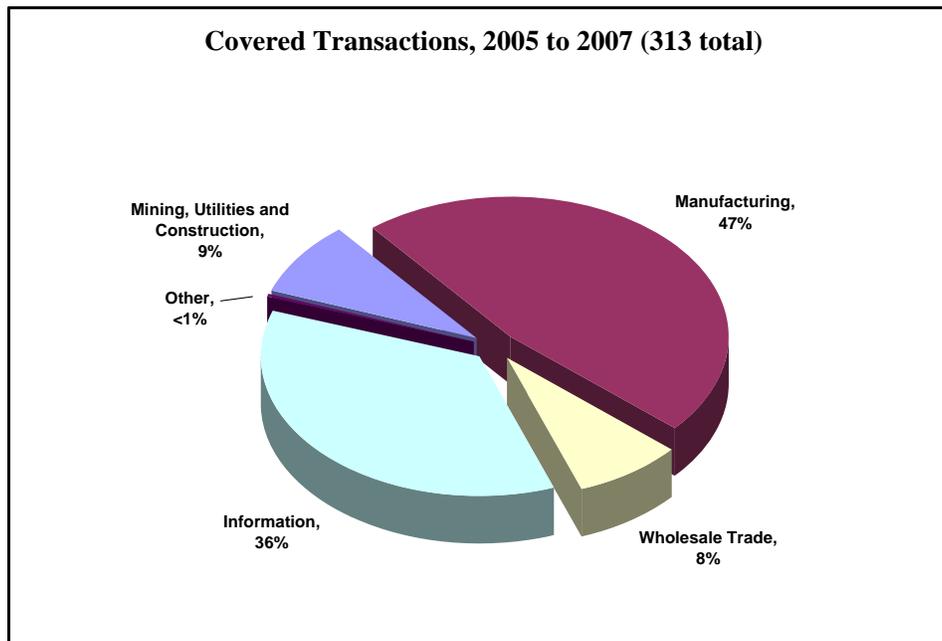


Figure C-1: Covered Transactions by Sector 2005-2007

Manufacturing Sector

The manufacturing sector accounted for 47 percent of all notices filed with CFIUS from 2005 through 2007. Computer and electronic products comprised 34 percent of manufacturing sector notices during the period. Transportation equipment accounted for another 20 percent of the notices in the sector.

The data show that, while manufacturing was the most active sector for notices between 2005 and 2007, the trend has been towards a declining percentage of the total in this sector each year. Notices in the manufacturing sector fell from 53 percent of the total in 2005 to 48 percent in 2006 and 44 percent in 2007.

Manufacturing	NAICS Code	Number of Notices	% of Total Manufacturing
Textile Product Mills	314	1	1%
Petroleum and Coal Products	324	4	3%
Chemical	325	12	8%
Plastics and Rubber Products	326	5	3%
Nonmetallic Mineral Product	327	3	2%
Primary Metal	331	7	5%
Fabricated Metal Product	332	5	3%
Machinery	333	16	11%
Computer and Electronic Product	334	51	34%
Electrical Equip., Appl., & Comp.	335	9	6%
Transportation Equipment	336	30	20%
Miscellaneous	339	5	3%

Table C-2: Covered Transactions from the Manufacturing Sector

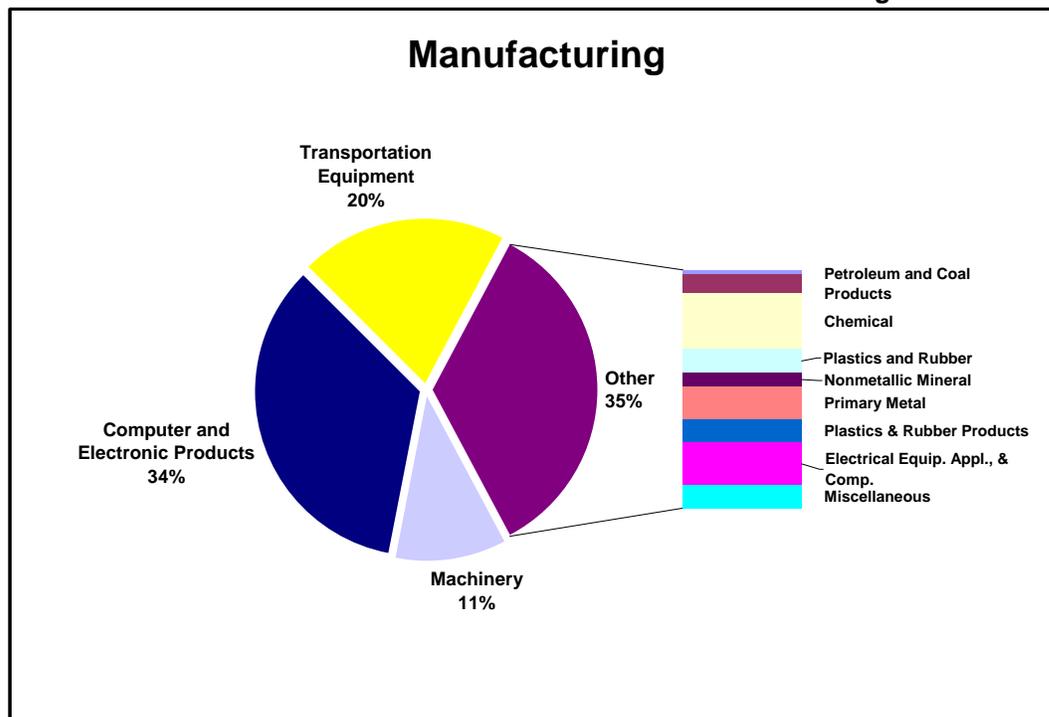


Figure C-2: Covered Transactions from the Manufacturing Sector

Semiconductor and other electronic component manufacturing accounted for 41 percent of the 51 notices in the computer and electronic products subsector from 2005 through 2007. Navigational, measuring, electromedical, and control instruments manufacturing accounted for an additional 25 percent of these notices.

Computer and Electronic Products	NAICS Code	Number of Notices
Computer and Peripheral Equipment Manufacturing	3341	8
Communications Equipment Manufacturing	3342	9
Semiconductor and Other Electronic Component Manufacturing	3344	21
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	3345	13

Table C-3: Covered Transactions from the Computer and Electronics Subsector

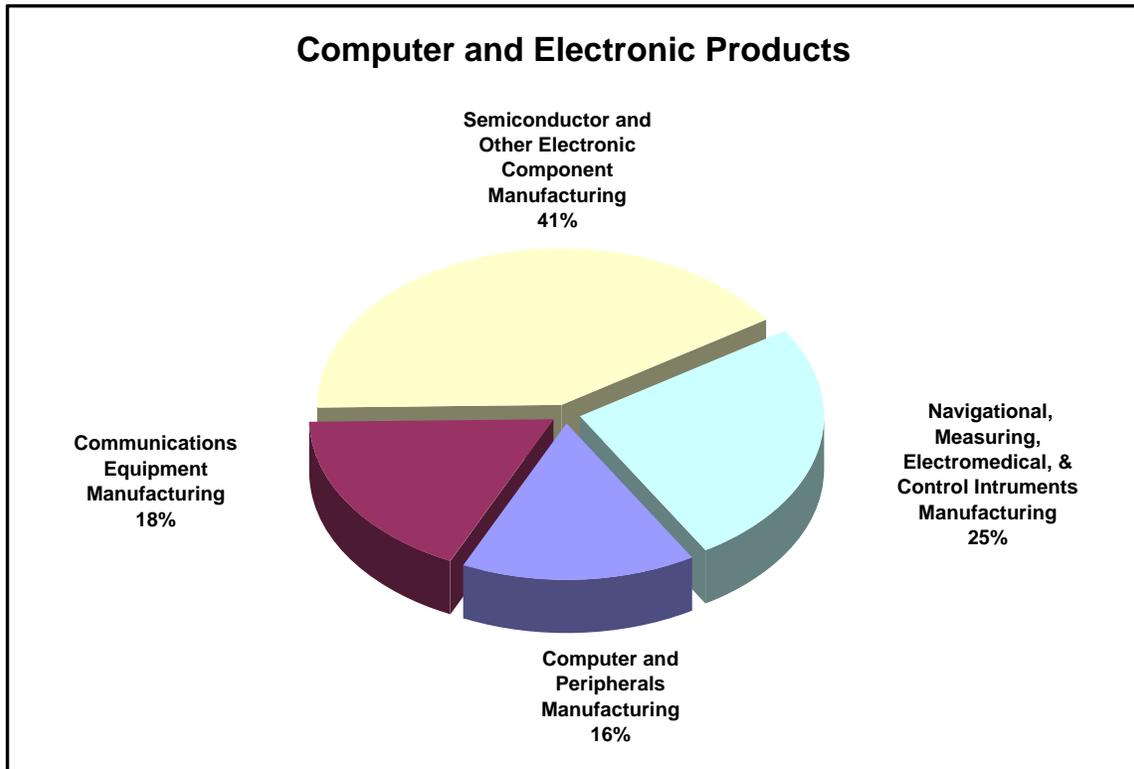


Figure C-3: Covered Transactions from the Computer and Electronics Subsector

Information Sector

The information sector accounted for 36 percent of all notices filed with CFIUS from 2005 through 2007. Professional, scientific, and technical services accounted for nearly half of all information sector notices during the 2005-2007 period. Publishing industries (except Internet) accounted for another 24 percent.

Information	NAICS Code	Number of Notices	% of Total Information
Publishing Industries (except Internet)	511	27	24%
Telecommunications	517	23	21%
Securities and Other Financial Investments	523	2	2%
Funds, Trusts, and Other Financial Vehicles	525	1	1%
Professional, Scientific, and Technical Services	541	52	46%
Administrative and Support Services	561	7	6%

Table C-4: Covered Transactions from the Information Sector

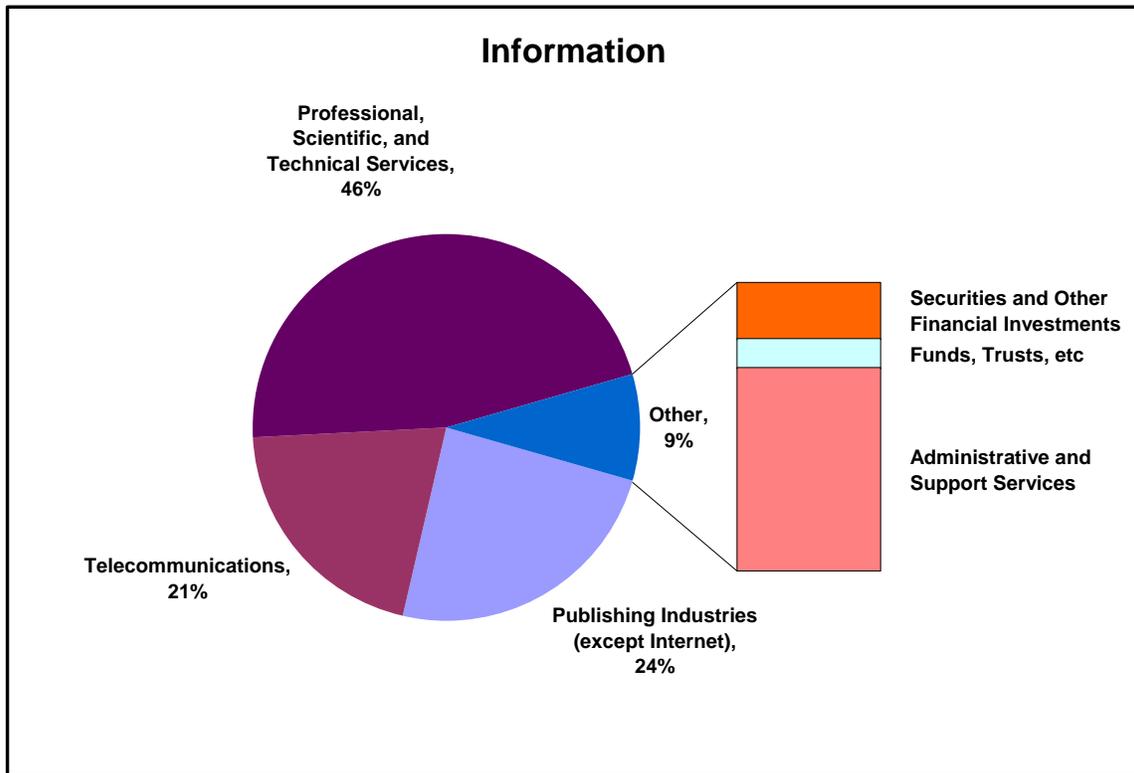


Figure C-4: Covered Transactions from the Information Sector

Architectural, engineering, and related services accounted for 40 percent of the notices in the professional, scientific, and technical services subsector. Another 40 percent took place in computer systems design and related services.

Professional, Scientific, and Technical Services	NAICS Code	Number of Notices
Architectural, Engineering, and Related Services	5413	21
Computer Systems Design and Related Services	5415	21
Management, Scientific, and Technical Consulting Services	5416	7
Scientific Research and Development Services	5417	3

Table C-5: Covered Transactions from the Professional, Scientific, and Technical Services Subsector

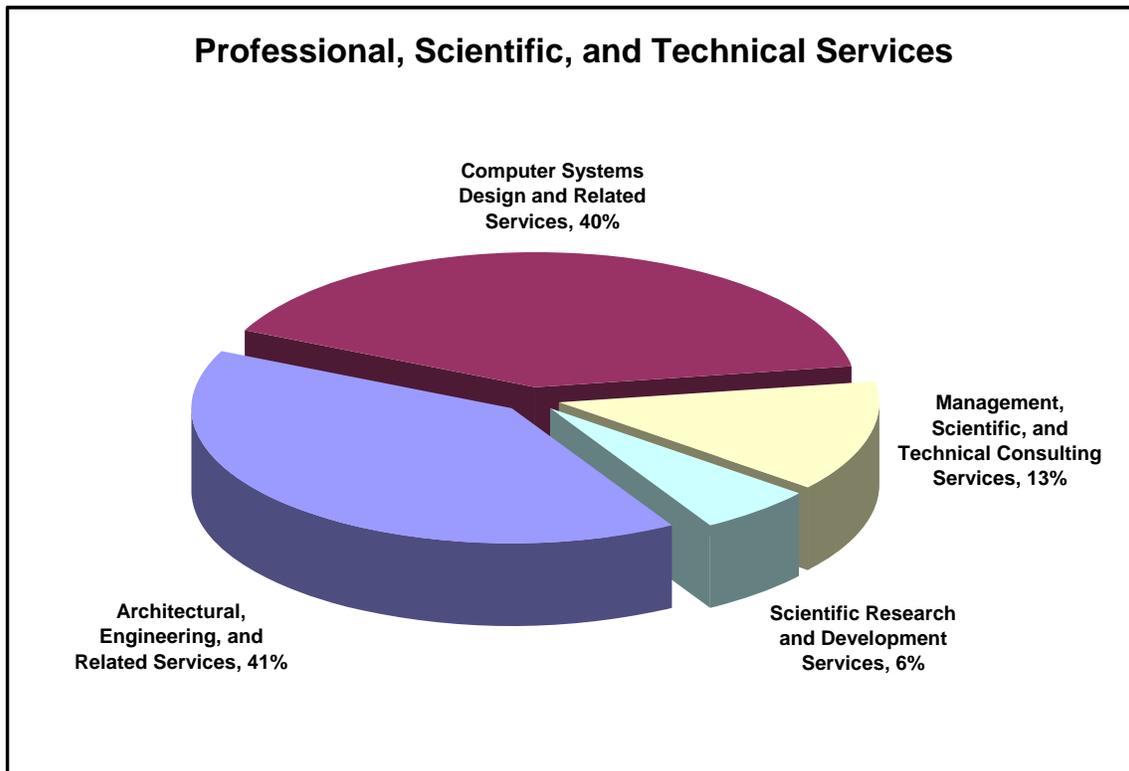


Figure C-5: Covered Transactions from the Professional, Scientific, and Technical Services Subsector

Mining, Utilities, and Construction Sector

The mining, utilities, and construction sector accounted for 9 percent of notices filed with CFIUS from 2005 through 2007. Utilities – electric power generation, transmission and distribution accounted for the largest percentage of activity in this sector with 15 notices (56 percent).

Mining, Utilities and Construction	NAICS Code	Number of Notices	% of Total M-U-C
Oil and Gas Extraction	211	3	11%
Mining (except Oil and Gas)	212	4	15%
Support Activities for Mining	213	2	7%
Utilities - Electric Power Generation, Transmission and Distribution	221	15	56%
Construction of Buildings	236	3	11%
Heavy and Civil Engineering Construction	237	0	0%

Table C-6: Covered Transactions from the Mining, Utilities, and Construction Sector

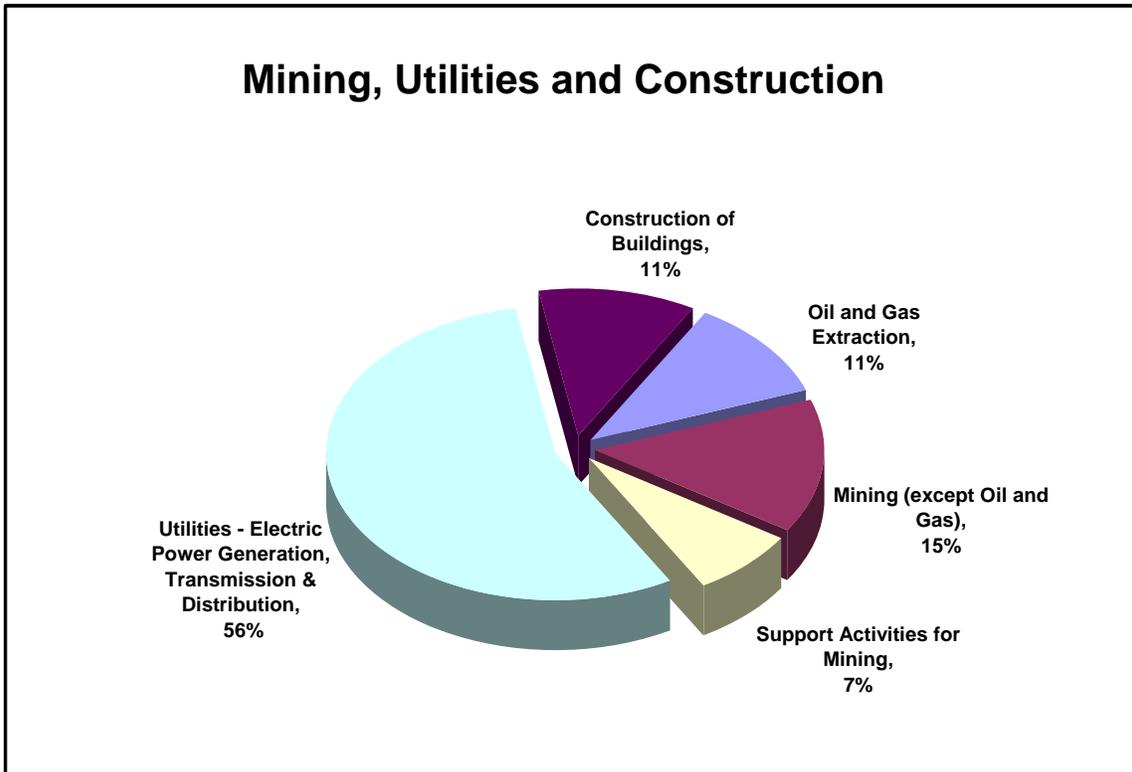


Figure C-6: Covered Transactions from the Mining, Utilities, and Construction Sector

Wholesale Trade Sector

The wholesale trade sector accounted for 8 percent of notices filed with CFIUS from 2005 through 2007. Support activities for transportation accounted for 64 percent of wholesale trade sector notices during the period. Merchant Wholesalers-Durable Goods accounted for another 16 percent of the sector.

Wholesale Trade	NAICS Code	Number of Notices	% of Total Wholesale Trade
Merchant Wholesalers, Durable Goods	423	4	16%
Merchant Wholesalers, Nondurable Goods	424	1	4%
Electronics and Appliance Stores	443	1	4%
Water Transportation	483	1	4%
Transit and Ground Passenger Transportation	485	1	4%
Support Activities for Transportation	488	16	64%
Couriers and Messengers	492	1	4%

Table C-7: Covered Transactions from the Wholesale Trade Sector



Figure C-7: Covered Transactions from the Wholesale Trade Sector

C.2 Covered Transactions by Country: 2005-2007

The first table below breaks down the notices from 2005 through 2007 by country and year. There is no clear trend in the breakdown of notices by year. Investors from the United Kingdom, Canada, and France accounted for 44 percent of the total over this three-year period (139 notices). Companies in the United Kingdom alone accounted for 25 percent of the total (79 notices) over the three-year period.

The second table below shows that there is no clear tendency of companies in one country to prefer transactions in a specific industry sector. Multiple notices from a single country were typically spread amongst different sectors.

Covered Transactions by Country, 2005 - 2007				
Country	2005	2006	2007	Total, 2005-07
Australia	2	7	9	18
Austria			1	1
Bahrain	2		1	3
Belgium		2	1	3
Bermuda	2	1		3
Brazil		4	1	5
Canada	6	8	21	35
Cayman Islands	1			1
China	1		3	4
Denmark	1			1
Finland		3	1	4
France	9	9	7	25
Germany	2	4	6	12
Hong Kong		1	1	2
India	2		5	7
Ireland		1	1	2
Israel	1	9	6	16
Italy	1	3	3	7
Japan	3	6	1	10
Korea		1		1
Kuwait	1	2	2	5
Luxembourg		3	1	4
Malaysia			1	1
Mexico		2		2
Netherlands		4	7	11
Norway	1	1	1	3
Pakistan		2		2
Qatar		1	1	2
Russia		2		2
Saudi Arabia		1	1	2
Singapore	2	3	1	6
South Africa			1	1
Spain		2	6	8
Sweden	1	1		2
Switzerland	1	1	6	8
Taiwan			3	3
UAE	1	2	7	10
United Kingdom	24	23	32	79
Venezuela & Spain		2		2
Total	64	111	138	313

Table C-8: Covered Transactions by Country 2005-2007

Covered Transactions by Sector, 2005 - 2007						
Country	Information	Manufacturing	Mining, Utilities and Construction	Other	Wholesale Trade	Total
Australia	6	3	5		4	18
Austria		1				1
Bahrain	2	1				3
Belgium		3				3
Bermuda	1	2				3
Brazil		4	1			5
Canada	21	7	5		2	35
Cayman Islands		1				1
China	1	3				4
Denmark					1	1
Finland	4					4
France	6	14	1		4	25
Germany	5	4	1		2	12
Hong Kong		2				2
India	7					7
Ireland	1	1				2
Israel	5	11				16
Italy		7				7
Japan	5	5				10
Korea					1	1
Kuwait	1	1			3	5
Luxembourg	3				1	4
Malaysia		1				1
Mexico	2					2
Netherlands	2	8			1	11
Norway	1	2				3
Pakistan		2				2
Qatar			2			2
Russia		2				2
Saudi Arabia		1		1		2
Singapore	3	3				6
South Africa	1					1
Spain	1		7			8
Sweden	2					2
Switzerland	2	6				8
Taiwan		3				3
UAE	2	4	1		3	10
United Kingdom	28	44	4		3	79
Venezuela & Spain		2				2
Total	112	148	27	1	25	313

Table C-9: Covered Transactions by Country and Sector

D. Withdrawn Notices

Parties may withdraw notice of a transaction once the Committee approves a written request for withdrawal from the parties.

In 2007, 10 notices of covered transactions were withdrawn during the review period, and five were withdrawn during investigation. In 13 of these 15 notices, the companies re-notified their transactions and CFIUS concluded review without objection in a new 30-day review period. In the remaining instances, the companies withdrew their notices and subsequently abandoned the transaction.

E. Mitigation Measures

The Committee has adopted procedures to evaluate and ensure that parties to a covered transaction remain in compliance with any risk mitigation measure entered into with CFIUS agencies, whether through a mitigation agreement, assurances, or other conditions. For all mitigation measures entered into since FINSA became effective, Treasury appoints a lead agency or agencies for monitoring of compliance with such mitigation. Lead agencies carry out their monitoring responsibilities on behalf of the Committee and report back to the Committee. In addition, the Committee requests that signatory agencies to mitigation entered into before FINSA became effective report on compliance with those measures. As described below, all lead agencies appointed to monitor mitigation compliance have implemented processes to carry out their responsibilities. The mitigation measures covered by this report were all entered into prior to the January 23, 2008, issuance of Executive Order 13456.

Since 1997, when CFIUS first negotiated a mitigation measure in the context of a transaction notified under section 721, CFIUS agencies have entered into a total of 52 mitigation agreements with private parties. Mitigation measures have included a number of different types of legally binding undertakings, ranging from national security agreements (NSAs), which are generally contracts that seek to address a number of specific risks, to letters of assurance, which are simpler documents appropriate for less complex cases.

In 2007, CFIUS agencies negotiated, and parties entered into, 14 mitigation agreements related to 12 different covered transactions.² For two of these transactions, CFIUS negotiated two separate agreements.

- Four USG agencies served as the USG parties to these agreements.
 - For seven of these 14 agreements, just one CFIUS member agency served as the USG party.
 - For the remaining seven agreements, two or more CFIUS member agencies served as the USG parties.
- The agreements involved transactions in the following industries: basic manufacturing; energy; operations services for the aviation and maritime industries; and information technology, both hardware and software.
- Eleven of the agreements were letters of assurance to a USG agency or agencies from parties to notices filed with CFIUS. These letters outline the actions the parties to transactions agreed to take to address the national security concerns raised by CFIUS.
- Three of the agreements were NSAs, of which two were new NSAs and one was an amendment to an existing NSA.

² By way of comparison, 15 mitigation agreements were signed in 2006 and six mitigation agreements were signed in 2005.

- All of the agreements required the businesses involved to take specific and verifiable actions to address identified national security risks.
- Some of the agreements also required the companies to notify the concerned USG agency in the event of certain changes that could affect national security.

The USG agencies that are parties to these agreements use a variety of means to monitor compliance by the companies that are parties, including, where appropriate:

- periodic reporting to USG agencies by the companies;
- on-site compliance reviews by USG agencies;
- third-party audits when provided for by the terms of the mitigation agreement; and
- investigations and remedial actions if anomalies or breaches are discovered.

In light of the number and complexity of mitigation agreements, CFIUS agencies have taken a variety of actions to maximize their capacity to monitor compliance, including:

- increasing USG staffing levels and assigning staff responsibilities for monitoring of compliance;
- designing tracking systems to monitor required reports; and
- instituting internal instructions and procedures to ensure that in-house expertise is drawn upon to analyze compliance with agreements.

F. Perceived Adverse Effects of Covered Transactions

In reviewing a covered transaction, CFIUS evaluates all relevant national security considerations identified by its members during the review and does not conclude action on a covered transaction if there are unresolved national security concerns. Depending on the particular facts and circumstances regarding a covered transaction, the determination of whether a covered transaction threatens national security involves an evaluation of a broad range of issues, including the following “national security factors” listed under section 721(f) of the Defense Production Act of 1950, as amended:

1. domestic production needed for projected national defense requirements;
2. the capability and capacity of domestic industries to meet national defense requirements, including the availability of human resources, products, technology, materials, and other supplies and services;
3. the control of domestic industries and commercial activity by foreign citizens as it affects the capability and capacity of the United States to meet the requirements of national security;
4. the potential effects of the transaction on sales of military goods, equipment, or technology to a country that
 - a. the Secretary of State has identified as supporting terrorism, being of concern regarding missile proliferation, or being of concern regarding the proliferation of chemical and biological weapons;
 - b. the Secretary of Defense has identified as posing a potential regional military threat to the interests of the United States; or
 - c. is listed on the Nuclear Non-Proliferation-Special Country List at 15 C.F.R. Part 778, Supp. 4, or any successor list;
5. the potential effects of the transaction on U.S. international technological leadership in areas affecting U.S. national security;
6. the potential national security-related effects on U.S. critical infrastructure, including major energy assets;
7. the potential national security-related effects on U.S. critical technologies;

8. whether the transaction could result in the control of a U.S. business by a foreign government or entity controlled or acting on behalf of a foreign government;
9. the relevant country's adherence to nonproliferation control regimes;
10. the relevant country's record of cooperating with United States in count-terrorism efforts;
11. the potential that the transaction presents for transshipment or diversion of technologies with military applications, including the relevant country's export control laws and regulations;
12. the long-term projection of U.S. requirements for sources of energy and other critical resources and materials; and
13. such other factors as the President or the Committee may determine to be appropriate, generally or in connection with a specific review or investigation.

These statutory national security factors focus CFIUS's analysis solely on the genuine national security effects of covered transactions. Several of these factors have been further defined in statute, and others have been further defined by regulation. For example, section 721 defines "critical infrastructure" as "systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems or assets would have a debilitating impact on national security." The regulations that the Treasury Department issued on November 21, 2008, further clarify that the determination of whether a covered transaction involves foreign control over "critical infrastructure" depends on what the "particular" systems or assets are, rather than on the assets' sector or class more broadly. Thus, in the context of a review or investigation under section 721, CFIUS would have to consider whether the incapacity or destruction of the "particular" systems or assets that would be subject to foreign control would have a debilitating impact on national security.

In addition, section 721, as amended by FINSAs, provides that "critical technologies" include "critical technology, critical components, or critical technology items essential to national defense," as identified under section 721 and subject to regulations. The issued regulations define critical technologies to include certain articles, materials, software, technology, and services that are already subject to various existing regulatory regimes, such as the Export Administration Regulations (EAR), International Traffic in Arms Regulations (ITAR), nuclear materials and activities regulations, and regulations related to certain agents and toxins. The acquisition of such technologies by a potential adversary of the United States could lead to the enhancement of the offensive capabilities of that adversary to the detriment of the national security of the United States.

In evaluating transactions, the Committee considers the national security risks related to the statutory national security factors listed above, and will continue to do so. The Committee engages the intelligence community in evaluating the risks and threat involved in each transaction. The Office of the Director for National Intelligence via the National Intelligence Council provides an all-source assessment of each of the proposed transactions that CFIUS reviews.

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SECTION II: REPORT ON FOREIGN ACQUISITIONS OF U.S. CRITICAL TECHNOLOGIES COMPANIES

EXECUTIVE SUMMARY

ES.1 Overview

This section of the Annual Report to Congress has been prepared in accordance with Section 721(m)(3) of the Defense Production Act of 1950 (50 U.S.C. App. 2170(m)(3)), as amended by the Foreign Investment and National Security Act of 2007, or “FINSA” (Pub. L. 110-49). Section 721(m)(3) requires yearly a report which provides:

“(i) an evaluation of whether there is credible evidence of a coordinated strategy by 1 or more countries or companies to acquire United States companies involved in research, development, or production of critical technologies for which the United States is a leading producer; and”

“(ii) an evaluation of whether there are industrial espionage activities directed or directly assisted by foreign governments against private United States companies aimed at obtaining commercial secrets related to critical technologies.”

This year’s report covers a two-year period, 2006-2007, starting from the end of the period covered by the 2006 quadrennial Report to Congress on Foreign Acquisition of and Espionage Activities Against U.S. Critical Technology Companies (the “2006 Report”), the predecessor to this section of the report. This report uses the same definition of the term “critical technologies” that was used in the 2006 Report, namely: “those that satisfy long-term national economic and scientific objectives, such as strong national defense, improved economic competitiveness, a rising standard of living, improved public health, and energy independence.”

ES.2 Approach

The Department of the Treasury adopted the processes used for the 2006 Report to prepare this report and to define the data sources and list of critical technologies upon which this report is based.

Using the data sources and methodology established for the 2006 Report, Treasury’s Office of Investment Security identified specific transactions involving foreign acquisitions of or mergers with U.S. critical technology companies. Treasury then distributed the merger and acquisition (“M&A”) data to CFIUS member agencies’ subject matter experts (“SMEs”), who reviewed the industry- and country-specific M&A data and identified the M&A transactions that might signal a coordinated strategy on behalf of a foreign government or company. This report presents the results of the comprehensive analysis of 1,073 M&A

transactions between foreign investors and U.S. companies in industrial sectors that include critical technology capabilities.

ES.3 Key Findings

- 1) Based on the analysis of M&A data, there is no credible evidence of a widespread coordinated strategy among foreign governments or corporations to acquire U.S. companies involved in research, development, or production of critical technologies through foreign direct investment.
- 2) Foreign firms are not concentrating their investments solely in critical technology areas or taking an increasingly dominant position in U.S. critical technology industries.

1 INTRODUCTION

This section of the Annual Report to Congress of the Committee on Foreign Investment in the United States (CFIUS Annual Report) has been prepared in accordance with Section 721(m)(3) of the Defense Production Act of 1950 (50 U.S.C. App. 2170), as amended by the Foreign Investment and National Security Act of 2007 (FINSIA) (Pub. L. 110-49). This report covers M&A activity in the years 2006 and 2007.

Unless otherwise specified, references to the country of origin of a foreign investor or company do not imply an association of the company with the country's government.

1.1 *Scope of the Report*

This section of the report is divided into the following subsections:

1. Introduction
2. Foreign Investment in Critical Technology Industries
3. Whether there is Credible Evidence of a Coordinated Strategy to Acquire U.S. Critical Technology Companies
4. Whether Foreign Governments Used Espionage Activities to Obtain Commercial U.S. Secrets Related to Critical Technologies
5. Appendices

Subsection 1 explains the background, approach, and scope of this report.

Subsection 2 uses data compiled by the Department of Commerce's Bureau of Economic Analysis ("BEA") to demonstrate the extent to which foreign direct investment in the United States is concentrated in industries that include critical technologies.

Subsection 3 presents findings based on a review of critical technology M&A transactions obtained from a subscription-based database of publicly available information on mergers and acquisitions.³ This section also presents the analysis of a comprehensive survey of 1,073 M&A transactions between foreign investors and U.S. companies in industrial sectors with critical technology capabilities during the period from January 1, 2006, through December 31, 2007. This section focuses on **completed** deals by companies from countries that were most active in mergers with and acquisitions of U.S. critical technology companies. Of the 1,073 proposed M&A transactions, 869 were completed⁴.

³ The team searched the Thomson One Banker database for mergers and acquisitions of each critical technology.

⁴ The data presented in Section 3 and in the charts in Appendix C focus on completed deals rather than proposed deals to give an accurate historical account of technologies that may have been acquired by foreign governments within the period of the report. There were 204 proposed deals that Thomson lists as "intended," "pending," or "rumored." It is difficult to ascertain whether some of the transactions in

Subsection 4 discusses economic intelligence gathering, including espionage, used to obtain commercial secrets involving critical technologies, and is not limited to foreign direct investment.

Appendix A contains the list of Critical Technologies. Appendix B provides a country-by-country review of foreign M&A transactions involving U.S. critical technology companies and evaluates the evidence of government involvement in a private sector strategy. Appendix C contains detailed charts of each sector with the regional and country breakdown of foreign mergers with or acquisitions of U.S. critical technology companies. Appendix D contains a list of abbreviations and acronyms used within this report.

1.2 Approach for Evaluation of Foreign Acquisition of U.S. Critical Technology Companies

The Treasury Department prepared this report using the same data sources and definitions as those used in the 2006 Report, specifically:

- **Data** – The primary source of data was the Thomson One Banker database (hereafter the Thomson database) augmented by data from the BEA and intelligence sources. The Thomson database is a comprehensive source of publicly announced M&A activity and was also used as the primary source for M&A data in the two quadrennial Reports to Congress on Foreign Acquisition of and Espionage Activities Against U.S. Critical Technology Companies.
- **Definitions**

Critical Technologies. “Critical technologies” include a list of technologies identified⁵ based on the “Military Critical Technologies List,” a compendium of existing goods and technologies that the Department of Defense assesses would permit significant advances in the development, production, and use of military technologies by potential adversaries. That list was augmented with additional input provided by the White House Office of Science and Technology Policy. The technologies were classified into 14 sectors and specific technologies, with North American Industry Classification System (NAICS) or Standard Industrial Classification (SIC) codes assigned to each technology, in order to be able to identify the M&A transactions of interest and facilitate their analysis by specific sector/technology.

Coordinated Strategy. For purposes of this report, a coordinated foreign acquisition strategy was considered to be a plan of action reflected in directed efforts developed and implemented by a foreign government in association with one or more foreign companies to acquire U.S.

those categories may in fact have been completed, especially those involving privately-held companies, which are under no regulatory obligation to disclose deals publicly.

⁵ FINSA provides the following definition of critical technology: “The term ‘critical technologies’ means critical technology, critical components, or critical technology items essential to national defense, identified pursuant to this section, subject to regulations issued at the direction of the President”

companies with critical technologies. The efforts of a single company in pursuit of business goals were not considered to be a coordinated strategy. Individual company strategies encompass such business goals as: entry into the U.S. market; increased market share; increased sales; access to new technologies; and diversification out of mature industries.

- Examples of suspect behaviors that could be evidence of a coordinated strategy include:
 - A pattern of actual or attempted acquisitions of U.S. firms by foreign entities;
 - Evidence that specific completed or attempted acquisitions of companies with critical technologies had been ordered by foreign governments or foreign-controlled firms; or
 - The provision of narrowly targeted incentives by foreign governments or foreign-controlled firms (e.g., grants, concessionary loans, or tax breaks), especially those that appear to market observers to be disproportionately generous, to acquire U.S. firms with critical technologies.

The Treasury Department and the other CFIUS agencies addressed the requirements of Section 721(m)(3) by:

- Analyzing the pattern of mergers with or acquisitions of U.S. companies in industries involved in the research, development, or production of critical technologies over the report period from January 1, 2006, through December 31, 2007, by investors based in foreign countries.
 - The report team concentrated on foreign direct investment through mergers with and acquisitions of companies involved in all critical technologies, not only those companies solely supporting military and defense industries.
 - The report team did not attempt to evaluate issues relating to other avenues of foreign access to U.S. commercial critical technologies, such as licensing, contracting, or other arrangements that do not represent "acquisitions" of U.S. companies.
- Assessing attempts by governments of major economic competitors to obtain commercial and dual-use critical technologies, recognizing the distinction between espionage and legal economic intelligence gathering.
 - Treasury and the other CFIUS agencies did not attempt to evaluate foreign espionage in areas other than commercial, dual-use, military, or other U.S. critical technologies or against companies not headquartered in the United States.
 - In addition, the report team briefly reviewed other countries that have historically sought information on critical technologies through the use of those countries' intelligence services.

The methodology used in the development of this report is outlined in Figure 1-1. Treasury gathered the data on M&A activity by NAICS/SIC code and technology sector and distributed the data to CFIUS agencies' SMEs for review.⁶ The SMEs reviewed each transaction and identified a list of M&A transactions for further investigation. The team further examined the identified transactions and prepared the report.

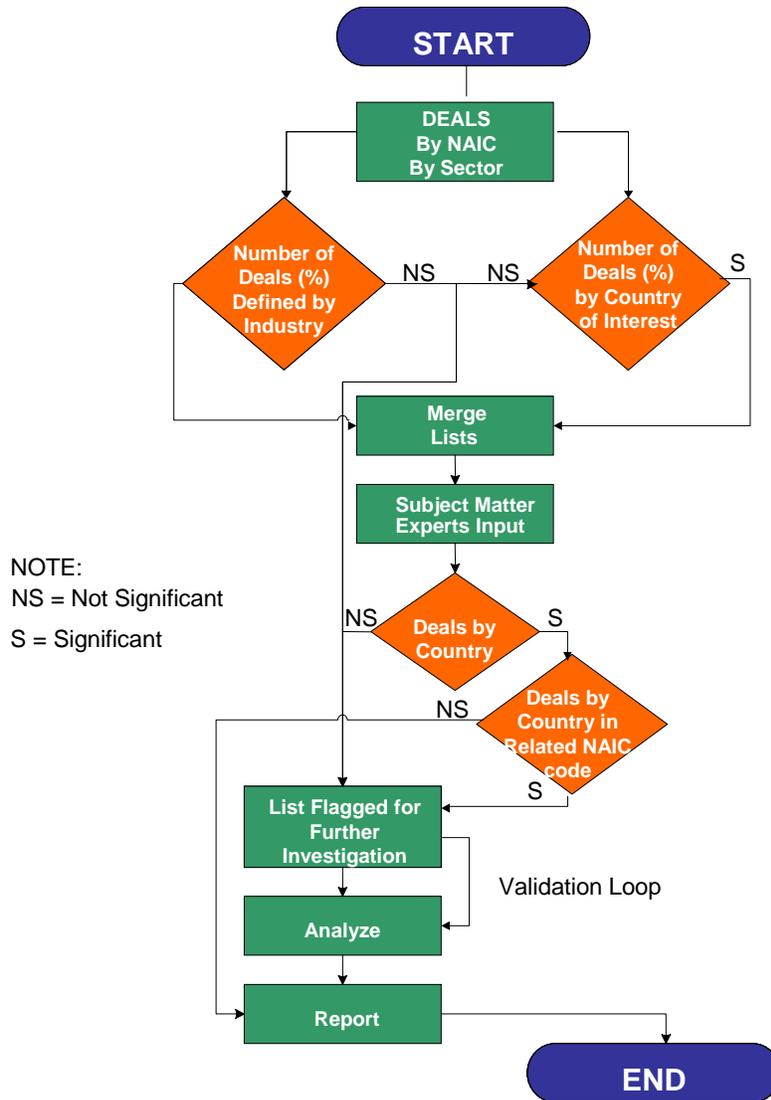


Figure 1-1. Report Process

The Thomson database was used to identify the M&A data for the report. The data covered a two-year period of foreign companies' mergers with and acquisitions of U.S. companies that provide goods or services that are included in the critical technologies list. As noted previously, not all proposed M&A transactions were completed. For

⁶ The subject matter experts involved in this report are individuals with specific expertise in the particular critical technology sectors. Some of these individuals regularly participate in the CFIUS process for their respective agencies.

purposes of this report, the critical technology firms acquired by foreign interests were classified for review according to the 14 Critical Technology sectors identified for the 2006 Report.

Table 1-1 lists the 14 critical technology sectors, as defined for purposes of this report and the preceding 2006 Report. The 14 sectors are further sub-divided by specific technology and assigned a relevant NAICS and/or SIC code. Appendix A on page 40 provides the detailed sub-divided mapping of the technologies and their assigned NAICS/SIC codes for each sector.

Critical Sectors List
1. Advanced Materials and Processing
2. Chemicals
3. Advanced Manufacturing
4. Information Technology
5. Telecommunications
6. Microelectronics
7. Semiconductor Fabrication Equipment
8. Electronics: Military Related
9. Biotechnology
10. Professional and Scientific Instruments
11. Aerospace and Surface Transportation
12. Energy
13. Space Systems
14. Marine Systems

Table 1-1. Critical Sectors List

Treasury searched the Thomson database and identified 1,073 deals (*proposed M&A transactions*⁷) across all NAICS or SIC codes defined in the Critical Technologies List. The deals were sorted by technology/NAICS code and by country and sent to the designated SMEs for review. Over the reporting period, investors from 57 countries were involved in critical technology M&A transactions, all of which were reviewed by the SMEs.

The next step in the report process was to hold a series of telephone conference calls with the SMEs for each of the critical technology sectors. During these calls, SMEs had the opportunity to discuss any of the deals and to identify transactions for further analysis.⁸ The identified deals were then subjected to further scrutiny and additional data were gathered and analyzed to see if patterns could be identified. The SMEs provided additional information from their respective agencies to help determine if a

⁷ Initially proposed transactions for which the offer was subsequently withdrawn and rumored transactions that the parties later disavowed were not included.

⁸ SMEs used technical expertise, counterintelligence information, and market segment knowledge to identify any practices that appeared to be outside of normal business practice.

deal was within normal business practices⁹ for a company or potentially part of a coordinated strategy. Through this process, SMEs identified 67 deals that warranted additional study and analysis.

The SMEs identified limitations of the database including:

- Publicly announced transactions – the database does not contain all M&A transactions proposed or completed by privately held companies, but only those that are publicly announced. SMEs partially addressed this shortcoming by including a number of transactions that were reviewed by CFIUS, but not publicly announced, in the list of transactions subjected to further scrutiny.¹⁰
- NAICS/SIC code assignment
 - The Thomson database is most easily searched for critical technologies using the primary six-digit NAICS code or 4-digit SIC code (in cases in which the technology did not have an assigned 6-digit NAICS code) associated with the targeted company. This resulted in three difficulties with the resulting dataset:
 - NAICS codes at the 6-digit level and SIC codes at the 4-digit level (which is the level used in the database) are more general than the specific technology of concern. A significant share of the 1,073 deals identified did not involve the acquisition of a critical technology company, but rather a company producing another product that falls into the same general industry classification as the critical technology of interest.
 - A company may associate itself with many NAICS or SIC codes, but only the primary code was searched to obtain the deals most likely to have affected the technology in question. Additionally, a company's primary NAICS or SIC code may change over time but not be changed in the database. This means it is possible that transactions involving critical technologies were never included in the dataset for review.
- Transaction Value – Nearly half of the completed deals did not contain transaction value information, therefore making it difficult to derive

⁹Among a number of factors evaluated, normal business practices were considered to be practices that appeared to be based on rational commercial considerations. A “normal business practices” transaction would be one in which a company acquires another company operating in the same or complementary markets. An example of something “outside of normal business practices” would be a company buying another company with products or technology in completely unrelated markets and that did not reflect strategic revenue considerations such as counter-cyclical sales volumes, i.e., a company with revenues that typically rise when the other company's market may experience downturns.

¹⁰Comprehensive data on transactions among privately held companies are not available in any database. While the BEA collects this type of information as required by law for statistical purposes, statutory restrictions on the disclosure of company proprietary information precluded access to that database.

statistics based on transaction value. Transaction value is a commonly used indicator in the economic analysis of foreign direct investment.

1.3 Report Participants

Departments and agencies that participated in the development of this section of the report were:

- Department of Commerce
 - Bureau of Industry and Security
 - International Trade Administration
 - National Institute of Standards and Technology
 - National Telecommunications Information Administration
- Department of Defense – Defense Technology Security Administration
- Department of Justice
 - Federal Bureau of Investigation
 - Committee on Foreign Investment in the United States (CFIUS)/Federal Communications Commission (FCC) Unit
 - Counterintelligence Division
- Department of State
 - Bureau of Economic and Business Affairs
 - Bureau of Intelligence and Research
 - Bureau of International Security and Nonproliferation
- Department of the Treasury - Office of Investment Security
- Director of National Intelligence
 - Office of the National Counterintelligence Executive/Community Acquisition Risk Section
 - National Intelligence Council
- Executive Office of the President
 - Council of Economic Advisors
 - National Security Council
 - Office of Science and Technology Policy

2 EXTENT OF FOREIGN DIRECT INVESTMENT IN CRITICAL TECHNOLOGY INDUSTRIES

2.1 Key Foreign Direct Investment Finding

The key finding is:

Overall, foreign firms are neither concentrating their investment solely in critical technology areas nor taking an increasingly dominant position in the overall development or production of U.S. critical technologies.

2.2 Have Foreign Firms Concentrated their Investment in Critical Technology Industries?

The available data indicate that while foreign firms have increased their investment in U.S. critical technology industries in recent years, foreign investors have not focused exclusively on critical technology industries. As of the end of 2006, 23 percent of the stock of total foreign direct investment in the United States was in industries that include critical technologies, up from 19 percent in 1997.¹¹ However, the share of value added by foreign-owned firms in industries that include critical technologies rose less sharply, from 22 percent of all value added by all foreign-owned U.S. firms in 1997 to 23 percent in 2005.¹² Similarly, the share of employment by foreign-owned firms in industries that include critical technology sectors increased from 19 percent of all employment by U.S. affiliates of foreign firms in 1997 to 21 percent in 2005.

2.3 Foreign-Owned Affiliates' Share of U.S. Critical Technology Industries

There is only limited evidence to suggest that foreign-owned firms are taking a growing or dominant position in U.S. critical technology industries as a whole. U.S. affiliates of foreign firms accounted for 10 percent of value added by all firms in the U.S. industries that include critical technologies in 2002, up from 8 percent in 1997. And employment at U.S. affiliates of foreign firms in critical technology industries was 12 percent of total U.S. employment in those industries in 2005, unchanged from the 12 percent share in 1997.

The importance of foreign-owned affiliates in specific U.S. critical technology industries varies. The specific critical technology-related industry with the largest employment by U.S. affiliates of foreign firms in 2005 was “pharmaceuticals and medicines manufacturing,” with 145,000 employees. The critical technologies-related industry

¹¹Foreign investment in critical technology industries was computed from BEA estimates of the foreign direct investment position in the United States on a historical-cost basis. BEA's data on the direct investment position, employment, and value added of foreign-owned U.S. firms discussed in this section do not allow precise calculations of foreign investment in critical technology industries. The BEA data were classified by industry at roughly the four-digit industry level in the NAICS. At this level of classification, BEA totals for a number of industries combine data for critical technology industries with data for other industries, while other industries that were not designated as critical technology industries may include critical technology components that cannot be separately identified. As a result, the estimates presented here should be regarded as approximations of foreign direct investment in critical technology industries, rather than precise measures.

¹²Not all of the BEA data cited in this section are available for all years. The differing start or end dates cited here reflect the most recent available data for the measure cited.

with the next-largest amount of U.S. employment by foreign-owned companies was medical equipment and supplies, with 118,000 employees in 2005.

3 WHETHER THERE IS CREDIBLE EVIDENCE OF A COORDINATED STRATEGY TO ACQUIRE CRITICAL TECHNOLOGY COMPANIES

3.1 Key Coordinated Strategy Findings

The key finding is:

There is no credible evidence of a widespread coordinated strategy among foreign governments or corporations to acquire critical U.S. technologies through the use of foreign direct investment.

Of the 1,073 deals (*proposed* M&A transactions)¹³ identified across all NAICS and SIC codes defined in the Critical Technologies List, 56 individual companies and a total of 67 individual proposed deals were identified by the SMEs for additional study and analysis.

The report team did not find sufficient evidence to conclude that any individual company had a coordinated strategy, or was acting on a coordinated strategy on behalf of its respective government.

3.2 Summary of Foreign M&A Activity in the United States

Table 3-1 lists the foreign companies most active in completing deals (4 or more) involving U.S. critical technology firms during the period of this report (2006-2007). Of note is the fact that only four of the companies on the list were also listed as most active during the period covered by the previous report (1993-2005): Thomson Corporation of Canada had 10 mergers with or acquisitions of U.S. critical technology companies during the period, compared to 18 during the previous period; Siemens AG of Germany had eight deals during the period, compared to 15 during the previous period; Nokia of Finland had seven deals during the period, compared to 15 during the previous period; and Koninklijke Phillips of the Netherlands had four deals during the period, compared to 14 during the previous period.¹⁴

¹³This section focuses on completed deals rather than proposed deals to give an accurate historical account of technologies that may have been acquired by foreign governments within the period of the report. There were a number of proposed deals that were never completed for a variety of reasons.

¹⁴It is possible that some parent companies were more active than shown in table 3-2, if Thomson listed the acquirer as a subsidiary with a different name from that of the parent company.

Acquiror Name	Country	Number of Acquisitions
Thomson Corp	Canada	10
RAB Capital PLC	United Kingdom	10
Harris Computer Systems	Canada	8
SAP AG	Germany	8
Siemens AG	Germany	8
Reed Elsevier NV	United Kingdom	8
Nokia	Finland	7
Essilor International SA	France	7
Accenture Ltd	Bermuda	6
Wolters Kluwer NV	Netherlands	6
Roche Holding AG	Switzerland	6
Laird Group PLC	United Kingdom	5
Stantec Inc	Canada	4
Sonepar USA	France	4
Bayer AG	Germany	4
CDC Software	Hong Kong	4
Sony	Japan	4
Koninklijke Philips Electronic	Netherlands	4
Jobserve Ltd	United Kingdom	4
Pearson PLC	United Kingdom	4
United Business Media PLC	United Kingdom	4
WPP Group PLC	United Kingdom	4

Table 3-1. Foreign Companies Most Active in Acquiring U.S. Critical Technology Firms (January 2006 – December 2007)

The 1,073 proposed or completed foreign mergers with or acquisitions of U.S. critical technology companies examined for this report involved acquirers from 57 countries. Of those 57 countries, 51 countries' investors *completed* 869 transactions.¹⁵ The M&A activity was dominated by investors from five countries (in order by number of acquisitions): the United Kingdom (U.K.), Canada, Japan, Germany, and France. Appendix B provides a detailed evaluation of each of the top five countries by number of deals, plus India. Together, acquisitions by investors from those six countries accounted for 569 of the 869 completed mergers with or acquisitions of U.S. critical technology companies, or 65 percent of the total.

Germany, the United Kingdom, France, and Japan were the four largest foreign acquiring countries of U.S. critical technology companies in terms of value. As shown in Table 3-2, although the United Kingdom was the home country to the acquirers of the most U.S. critical technology companies by number, German acquirers ranked first in terms of value. Canada ranked eighth in value, although it was ranked second in

¹⁵Investors from six countries were involved in proposed deals not listed as completed in the Thomson database — the Czech Republic, Guatemala, Lebanon, Mauritius, Pakistan, and Thailand.

terms of number of deals. The discrepancy between deal numbers and deal value by country reflects the difference in the reported values of the transactions. Overall, the Thomson database listed values for 52 percent of the completed mergers with or acquisitions of U.S. critical technology companies by all foreign investors, with an average reported value of \$183 million. In comparison, Thomson reported values for 54 percent of the acquisitions by investors from Canada, with an average reported transaction value of \$33 million.¹⁶

Country	Number of Deals	Deal Value (\$mn)
United Kingdom	203	28,404
Canada	170	5,563
Japan	58	11,764
Germany	55	36,125
France	49	20,050
India	34	1,416
Netherlands	34	9,731
Switzerland	31	8,603
Australia	28	3,267
Israel	22	1,103

Table 3-2. Transactions & Deal Value by Country

Figure 3-1 provides additional detail on the breakdown of reported deal value by country.¹⁷

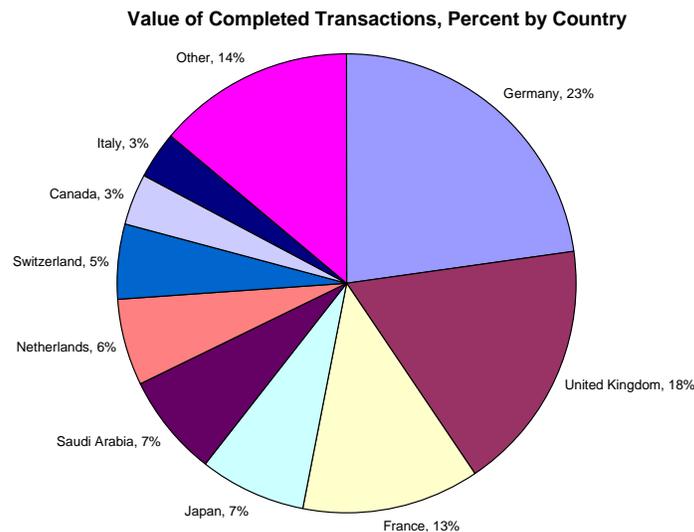


Figure 3-1. Total Value of Completed Transactions by Country

¹⁶ We would also note that there have been a number of recent M&A transactions in the U.S. steel sector, including by Russia. We further note that steel is not considered a critical technology and that market share remains widely diversified.

¹⁷ Actual aggregate deal value by country likely exceeds the values reported here, given the large number of transactions with no reported value in the Thomson database.

As shown in Figure 3-2 the information technology sector had the most M&A activity of all the critical technology sectors.

Completed Foreign Deals of U.S. Companies by Technology and Year

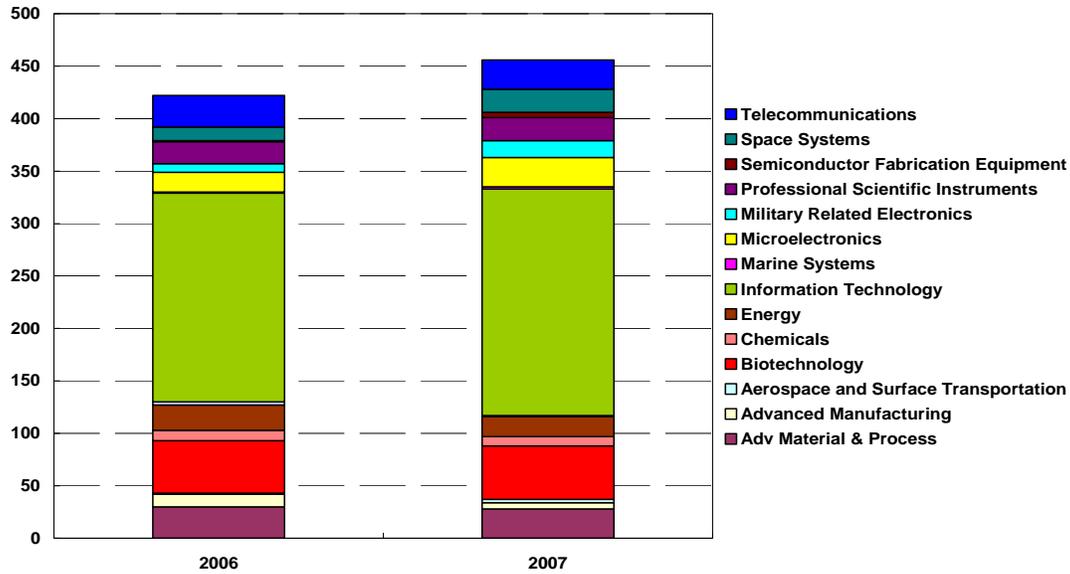


Figure 3-2. Completed Transactions by Technology and Year

The data can also be analyzed by dividing it into four regions: 1) Europe,¹⁸ 2) Canada, Australia, and New Zealand,¹⁹ 3) East Asia,¹⁹ and 4) other remaining countries. Figure 3-3 displays the data by region for the 2006-2007 period. European investors accounted for more than half of all transactions by value, with investors from the Canada/Australia/New Zealand region accounting for 23 percent. Figure 3-4 provides additional historical context.

¹⁸ For this report, “Europe” refers to the European Union’s 27 member states plus Switzerland, Norway, and Iceland.

¹⁹ For this report, the term “East Asia” includes China, Hong Kong, Indonesia, Japan, Malaysia, Philippines, South Korea, Taiwan, and Vietnam.

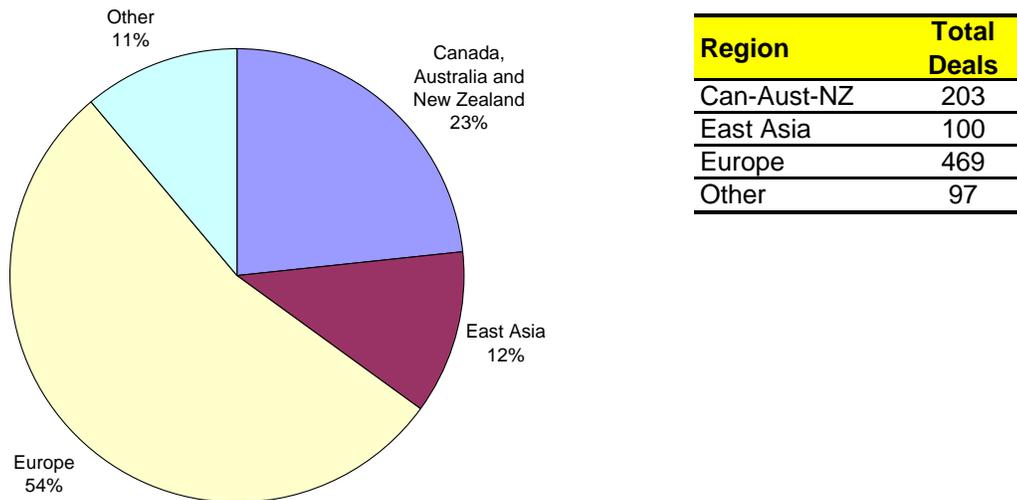


Figure 3-3. Completed Foreign Deals in Critical Technologies, by Region

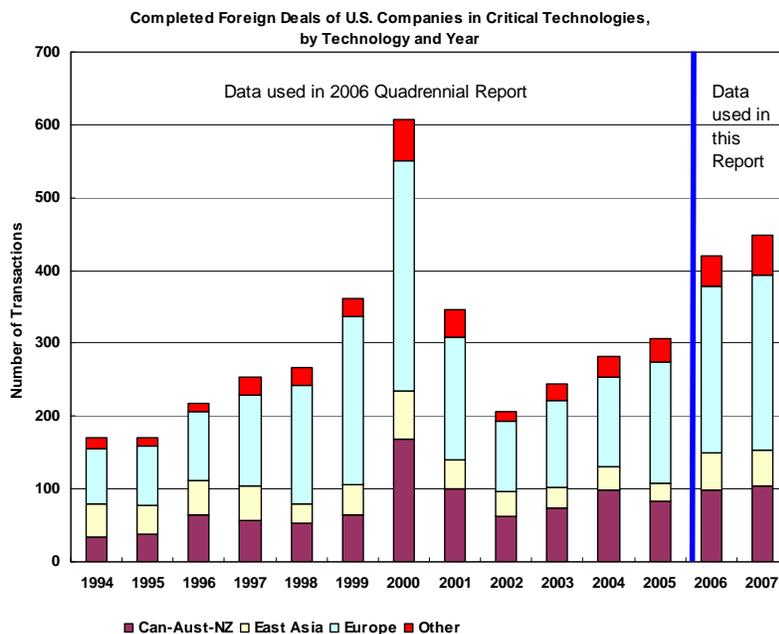


Figure 3-4. Regional Breakdown of Transactions, 1994-2007

Figure 3-5 shows the regional breakdown of activity by number of deals in each sector. European investors were the most active acquirers of U.S. critical technology companies in each of the 14 sectors except marine systems, which had only three transactions during the report period.

Completed Foreign Deals of US Companies in Critical Technologies, by Technology and Region

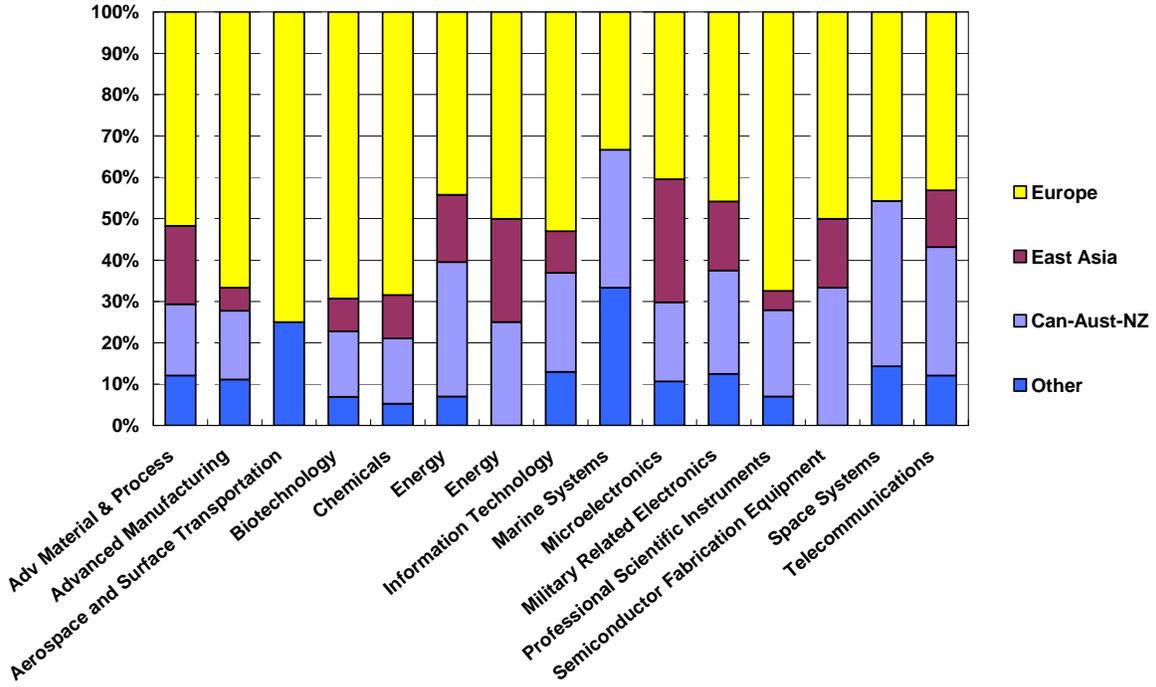


Figure 3-5. Completed Transactions by Region within Each Sector

Appendix C provides detailed trends by industry and country.

4 WHETHER FOREIGN GOVERNMENTS USED ESPIONAGE ACTIVITIES TO OBTAIN COMMERCIAL SECRETS RELATED TO CRITICAL TECHNOLOGIES

4.1 Key Espionage Finding²⁰

Although there is no evidence of a *widespread coordinated strategy* to obtain U.S. critical technologies through foreign direct investment, there is significant evidence that foreign governments are involved in other efforts to acquire such technologies.²¹

4.2 The “Asymmetric” Foreign Intelligence Threat

Foreign government entities—including intelligence organizations and security services—have learned to capitalize on private-sector technology acquisitions. Some governments have established quasi-official organizations, either in the United States or in their home countries, to facilitate contact with overseas scientists, engineers, and businessmen. These organizations enable foreign government officials to directly gauge the level of access that various foreign experts have, or may gain, to sensitive U.S. technology. The identified experts can be approached for sensitive information when they return to their home countries, thereby avoiding the need for meetings in the United States that could fall under the watchful eyes of the U.S. law enforcement community.

²⁰ Economic espionage is used here as defined 18 U.S.C. § 1831.

²¹ For additional information, see, “The Annual Report to Congress on Foreign Economic Collection and Industrial Espionage, 2006,” and the classified version of this report.

APPENDIX A – CRITICAL TECHNOLOGIES

The critical technologies identified for this report have been categorized into 14 sectors and assigned an SIC or NAICS code. Those with no code association were technologies or sectors for which no appropriate code exists. See Table A-1 (below).

SIC	NAICS	1 Advanced Materials and Processing	
3313	331112	1.1	Processes for Super Alloys, Polymers, etc.
2899	3259	1.2	Semiconductor Materials
3299	327112	1.3	Ceramics
2821	325211	1.4	Fiber-reinforced Composites and Metal Matrix Composites
3341	331314	1.5	Super Alloys
3087	325991	1.6	Polymeric Materials, Plastic Fabricators, Homogenous Injections, Extrusions, etc.
2892	3259	1.7	Energetic Materials (explosives, propellants, etc.)
8731	541710	1.8	Metamaterials (nanostructures with special properties)

SIC	NAICS	2 Chemicals	
		2.1	Chemical Defense Systems
3829	339112	2.2	Chemical Detection, Warning, and Identification
		2.3	Obscurants

SIC	NAICS	3 Advanced Manufacturing	
3823	334513	3.1	Industrial Automation, Robotics
3823	334513	3.2	Industrial Measurement and Sensing Equipment
		3.3	Process Control Equipment and Systems
3823	334513	3.3.1	5-axis or more Motion Controllers
3823	334513	3.3.2	5-axis or more Contouring Software
3823	334513	3.3.3	Coating Deposition Controllers
		3.4	Micro and Nanofabrication (nanotech)
3559	333295	3.4.1	Fabrication Equipment – Nano-manipulation Equipment
3827	333314	3.4.2	Nano-imaging Equipment
3827	333314	3.4.2.1	Scanning Electron Microscopes
3827	333314	3.4.2.2	Scanning Tunneling Microscopes
3827	333314	3.4.2.3	Other Imaging Equipment
3559	333295	3.5	Polymeric Composite Processing Equipment or Technology
3544	333511	3.6	Precision Super Alloy Investment Casting
		3.7	Rapid Prototyping / Additive Material Manufacturing (especially metals)
3549	333518	3.7.1	Laser Sintering
3549	333518	3.7.2	Ultrasonic Consolidation
3549	333518	3.7.3	E-beam Sintering
		3.8	Non-destructive Inspection Equipment (aircraft composite testing)
3829	339112	3.8.1	Ultrasonic Tools Having 3 or more Axes of Motion
3844	334517	3.8.2	X-ray Tomography Inspection Tools
		3.9	High Precision Machine Tools
3542	333513	3.9.1	Lathes 2-axes or more with < 4 Micron Positioning Accuracy
3542	333513	3.9.2	Mills 5 axis or more with <4 Micron Positioning Accuracy
3542	333513	3.9.3	Grinders 5 axis or more with < 4 Micron Positioning Accuracy
3542	333513	3.9.4	Any Tools with < 2 Micron Positioning Accuracy
		3.10	Composite Production Equipment (aircraft, missile, nuclear applications)
3549	333518	3.10.1	Filament Winders
3549	333518	3.10.2	Fiber Placement Tools
3549	333518	3.10.3	Tape Laying Tools
3549	333518	3.10.4	Composite Weaving Tools

SIC NAICS		4 Information Technology	
		4.1	Computers and software
3571	334111	4.1.1	Electronic Computers
3575	334113	4.1.2	Computer Terminals
7372	5112	4.1.3	Prepackaged Software
7375	518110	4.1.4	Internet Service Providers and Web Search Portals
7374	518210	4.1.5	Data Processing Services, Hosting
7371	541511	4.1.6	Computer Programming Services
8243	61142	4.1.7	Data Processing Schools
7373	541512	4.2	Computer Graphics and Scanning, CAD/CAM, CAE systems
7373	541512	4.3	Computer Simulation and Modeling
3577	334119	4.4	Peripherals
3572	334112	4.5	Data Storage

SIC NAICS		5 Telecommunications	
4813	517110	5.1	Telecommunications Carriers
		5.2	Internet Router Equipment and Software
3661	334210	5.2.1	Routers
3661	334210	5.2.2	Voice-over-Internet-Protocol
3661	334210	5.3	Digital Telephone Switches and Software
3661	334210	5.4	Digital Transmission Equipment and Software
3663	334220	5.5	Communications Satellites
		5.6	Radio Communications Equipment and Software
3661	334210	5.6.1	Novel Modulation Techniques
3661	334210	5.6.2	Software-defined Radio (SDR)
		5.7	Digital Cryptographic Hardware and Software
3661	334210	5.7.1	Internet Firewall/Access Control Systems and Software
3661	334210	5.7.2	Novel Techniques
3661	334210	5.8	Telecommunications Test Equipment
3812	334310	5.9	Passive Radiolocation/ Emitter Measurement/ Targeting Systems
4812	513322	5.10	Wireless Data
		5.11	Satellite Communications
4899	517410	5.11.1	Satellite Telecommunication Carriers
4899	517410	5.11.2	Satellite Telecommunications

SIC NAICS		6 Microelectronics	
3674	334413	6.1	Semiconductors
3672	334412	6.2	Bare Printed Circuit Boards
		6.3	Hardened Electronics

SIC NAICS		7 Semiconductor Fabrication Equipment	
3559	333295	7.1	Semiconductor Fabrication Equipment
3674	334413	7.2	Semiconductor Wafers
3825	334515	7.3	Automated Test Equipment

SIC	NAICS	8 Electronics: Military Related	
3699	333618	8.1	Electronic Warfare Systems, Subsystems, or Components
3812	334310	8.2	Identification Equipment
3663	334220	8.3	Communications Systems, Subsystems, or Components
3571	334111	8.4	Computers Specifically Built or Modified for Military Applications
3812	334310	8.5	Radar Systems
3812	334310	8.6	Sensors (optical, RF, infrared, acoustic)
		8.7	Navigation
3812	334310	8.7.1	Inertial Navigation Systems and Components
3812	334310	8.7.2	Global Positioning Systems, Components, and Technology
3812	334310	8.7.3	Gravity Meters and Gravity Gradiometers
3812	334310	8.7.4	Radio and Data-based Referenced Navigation Systems
3812	334310	8.7.5	Magnetic and Electromagnetic Sensor Systems
3679	334419	8.8	Monolithic Microwave Integrated Circuit (MMIC) Power Amplifiers
3679	334419	8.9	Traveling Wave Tubes and Microwave Power Modules
3571	334111	8.10	Cryptographic Systems or Components
3569	333999	8.11	Battlefield Robotics

SIC	NAICS	9 Biotechnology	
2836	325414	9.1	Human, Animal, Agricultural and Industrial Biotechnology
8733	541710	9.2	Biotech Research and Production Equipment
2835	325413	9.3	Medical Diagnostics
		9.4	Pharmaceuticals
2833	325411	9.4.1	Medicinal and Botanical Manufacturing
2834	325412	9.4.2	Pharmaceutical Preparation Manufacturing
		9.5	Genetic Engineering
2836	325414	9.5.1	Bacterial Agents
2836	325414	9.5.2	Viral Pathogens

SIC	NAICS	10 Professional/Scientific Instruments	
3845	334510	10.1	Laser Related Equipment
3826	334516	10.2	Analytical and Scientific Instrumentation
		10.3	Advanced Medical Equipment
3844	334517	10.3.1	Irradiation Apparatus Manufacturing
3841	339112	10.3.2	Surgical and Medical Instrument Manufacturing
3842	339113	10.3.3	Surgical Appliance and Supplies Manufacturing
3843	339114	10.3.4	Dental Equipment and Supplies Manufacturing
3851	339115	10.3.5	Ophthalmic Goods Manufacturing

SIC	NAICS	11 Aerospace and Surface Transportation	
3721	541710	11.1	Commercial Air Vehicle Products
3721	541710	11.2	Military Air Vehicle Products
3724	541710	11.3	Gas Turbine Engine Products, Manufacturing and Controls
3721	541710	11.4	Air Vehicle/Airframe/Gas Turbine Engine Design Technologies
3711	336992	11.5	Surface Transportation Technologies
7371	541511	11.6	Systems Integration Technologies

SIC NAICS		12 Energy	
		12.1	Integrated Energy and Power Systems
4911	221111	12.1.1	Hydroelectric Power Generation
4911	221113	12.1.2	Nuclear Electric Power Generation
4911	221119	12.2	Energy Conversion and Power Generation
1381	213111	12.3	Energy Storage
		12.4	Power Conditioning, Control, and Distribution
4911	221121	12.4.1	Electric Power Control
4911	221122	12.4.2	Distribution of Electric Power

SIC NAICS		13 Space Systems	
3663	334220	13.1	Space Avionics and Autonomy
3571	334111	13.2	Electronics and Computer Technologies for Space
3761	541710	13.3	Space Launch Vehicles
3229	327212	13.4	Space Optics
3822	334512	13.5	Power and Thermal Management
3764	541710	13.6	Launch Propulsion for Space Systems
3764	541710	13.7	Propulsion for Space Systems
3812	334310	13.8	Space Sensor Systems
8711	541330	13.9	Space Survivability
3663	334220	13.10	Space Communication/Connectivity with Ground Controls, User Platforms and Other Customer Systems
3845	334510	13.1	Space-Based Laser Technologies
8711	541330	13.1	Space Systems Engineering and Design Tools

SIC NAICS		14 Marine Systems	
4499	488330	14.1	Ocean Salvage
3699	333618	14.2	Propulsion
8711	541330	14.3	Signature Control and Survivability
3731	336611	14.4	Undersea Vehicles
3731	336611	14.5	Advanced Hull Forms

Table A-1. Critical Technologies List

APPENDIX B – M&A TRANSACTIONS: COUNTRY-BY-COUNTRY EVALUATION

The report team reviewed 1,073 proposed or completed mergers with or acquisitions of U.S. companies in industries with critical technology capabilities during the report period involving investors from 57 countries. Of those, investors from 51 countries completed 869 deals. Just under 62 percent of the completed deals were with investors from five countries, as shown in Table B-1: the United Kingdom (23 percent), Canada (20 percent), Japan (7 percent), Germany (6 percent), and France (6 percent). This appendix reviews the transactions involving those countries in greater detail, plus the transactions involving Indian investors (4 percent).

Country	Number of Acquisitions	% of Total	Cumulative %
United Kingdom	203	23%	23%
Canada	170	20%	43%
Japan	58	7%	50%
Germany	55	6%	56%
France	49	6%	62%
India	34	4%	65%

Table B-1. Foreign Countries Most Active in Completed Acquisitions of U.S. Critical Technology Firms

The top five countries followed the overall trend across critical technology sectors as evidenced in Figure B-1 with information technology (IT) representing the largest number of deals from each country. The United Kingdom or Canada had the largest number of completed deals in each sector except for Advanced Materials, where Japanese investors had the largest number of deals with seven, and Semiconductor Fabrication Equipment.

Completed Foreign Deals of U.S. Companies in Critical Technologies, by Technology and Country

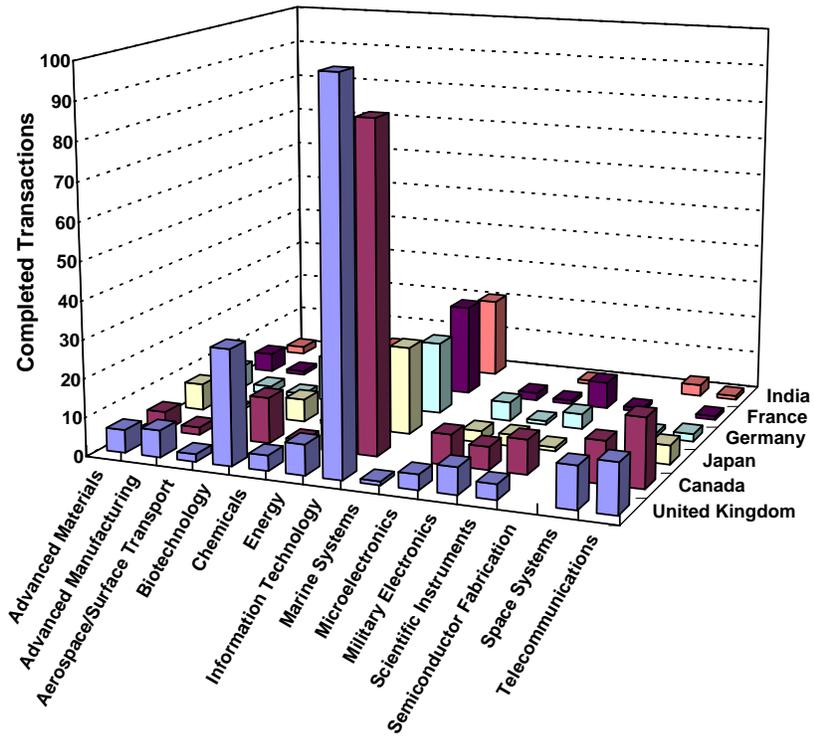


Figure B-1. Completed Foreign Deals by Technology & Country

Figure B-2 shows the M&A activity of each country as a percent of completed deals within each sector.

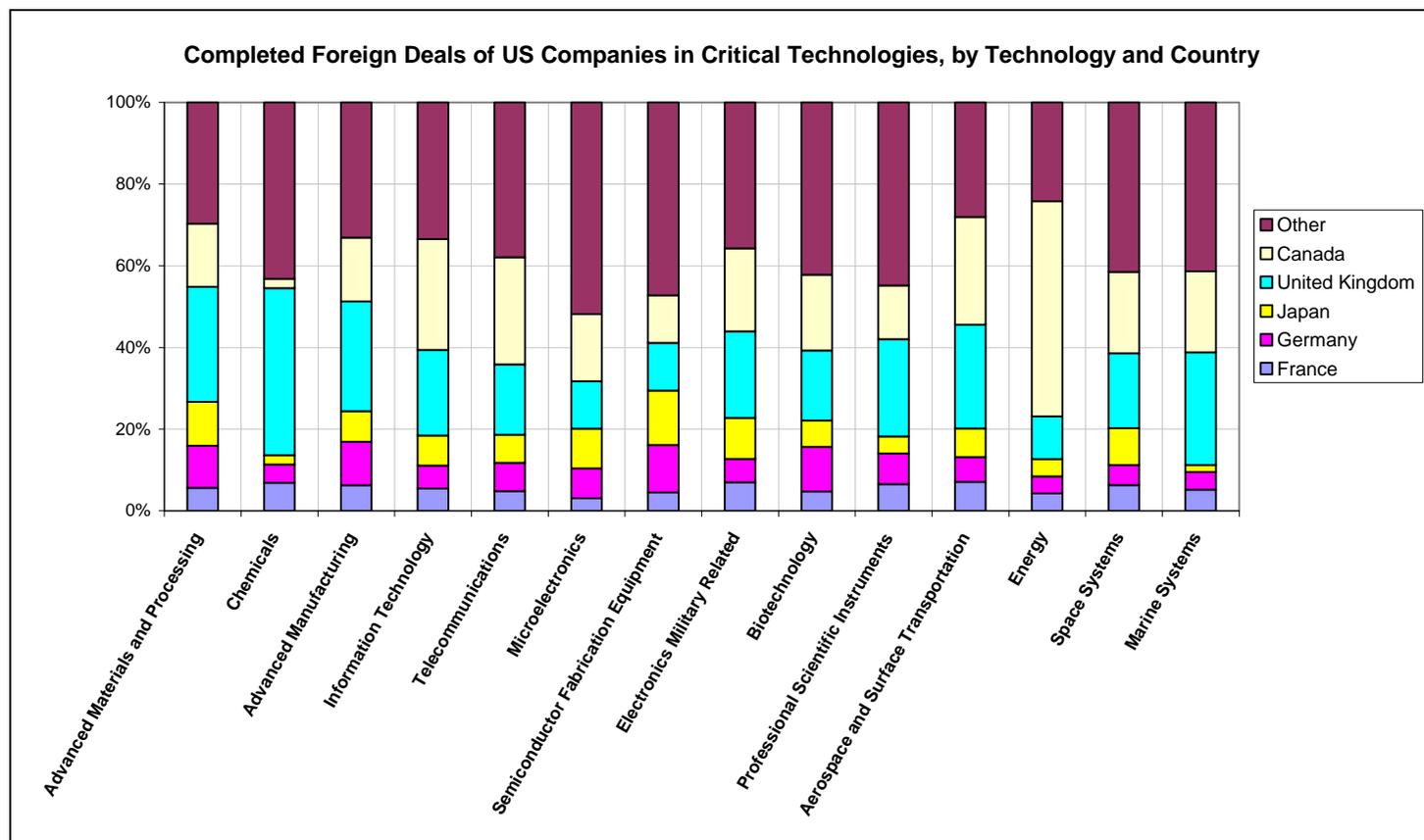


Figure B-2. Completed Foreign Deals by Country in Each Sector

B.1 United Kingdom

Summary of M&A activity in the United States: There were 203 completed mergers with or acquisitions of U.S. critical technology companies by U.K. investors between January 1, 2006, and December 31, 2007. Of these, 107 were in the IT sector followed by 30 in the Biotechnology sector. The United Kingdom ranked first among foreign acquirers in IT and Biotechnology M&A transactions, the two sectors with the largest number of transactions, as well as in Chemicals, Advanced Manufacturing, Military Electronics, and Space Systems (tied with Canada). U.K investors also accounted for the second largest number of M&A transactions in Telecommunications and Advanced Materials, the sectors with the third and fourth largest number of deals, as well as in Energy M&A transactions.

Evidence of government direction: The report team did not find credible evidence demonstrating a coordinated strategy on the part of the Government of the United Kingdom to direct its firms to acquire U.S. companies with critical technologies. In addition, the strong political and economic relationship, including the extensive two-way sharing of even the most sophisticated technologies, tends to make such activity

unnecessary and, if discovered, potentially counterproductive. This general assessment has not changed since the 2006 report.

Evidence of private sector strategy: U.K. investors were the most active acquirers of U.S. critical technology companies – accounting for 23 percent of completed deals. Nevertheless, the report team did not find any credible evidence demonstrating a widespread coordinated strategy. U.K. firms have historically been active in the U.S. market; M&A transactions, joint ventures, and strategic alliances between U.S. and U.K. firms are common.

Specific U.K. companies making the most deals include: RAB Capital PLC (10), Reed Elsevier NV (8), and Laird Group PLC (5).

Rab Capital PLC is an investment company with \$6.3 billion under management. All 10 of its deals are described in the Thomson database as “undisclosed minority investments.”

Reed Elsevier NV, the owner of LexisNexis Group and various publishing and data management services, acquired a number of software and online service companies.

Laird Group PLC, a technology company, acquired a range of U.S. manufacturers in the electronics and related sectors.

B.2 Canada

Summary of M&A activity in the United States: Canadian investors completed 170 mergers with or acquisitions of U.S. critical technology companies between January 1, 2006, and December 31, 2007. Of these, 86 were in the IT sector followed by 18 in the Telecommunications sector and 13 in the Energy sector. Canada ranked first among foreign acquirers in Telecommunications and Microelectronics M&A transactions, the third and fifth largest sectors by number of deals, as well as in Energy, Space Systems (tied with the United Kingdom), and Scientific Instruments. Canadian investors also accounted for the second largest number of transactions in Information Technology, Biotechnology, and Military Electronics

Evidence of government direction: The report team did not find credible evidence demonstrating a coordinated strategy on the part of the Government of Canada directing its firms to acquire U.S. companies with critical technologies. In addition, the strong political and economic relationship, including the extensive two-way sharing of even the most sophisticated technologies, tends to make such activity unnecessary and, if discovered, potentially counterproductive. This general assessment has not changed since the last report.

Evidence of private sector strategy: The report team did not find any credible evidence demonstrating a coordinated strategy. Although Canadian firms were active acquirers of U.S. critical technology companies – accounting for 20 percent of completed foreign

M&A transactions, the deals tended to be smaller than average and involved a large number of Canadian acquirers each making a small number of deals. As noted in Section 3.2, the average Canadian acquisition had a reported value of \$33 million, compared to \$183 million on average overall. In addition, 124 different investors were involved in Canada's 170 acquisitions in those sectors.

Specific companies doing the most deals were Thomson Corporation (10) and Harris Computer Systems (8).

Thomson Corporation provides integrated information services to business and professional customers worldwide. It operates in four segments: Thomson Legal and Regulatory, Thomson Learning, Thomson Financial, and Thomson Scientific and Healthcare. It operates in Canada, the United States, Europe, Asia-Pacific and other countries.

Harris Computer Systems is a software and technology services company with offices in Canada and the United States. The company's primary customers are municipalities, schools, and utility companies.

B.3 Japan

Summary of M&A activity in the United States: Japanese investors completed 58 mergers with or acquisitions of U.S. critical technology companies between January 1, 2006, and December 31, 2007. Of these, 23 acquisitions were in the IT sector. Japan ranked first among foreign acquirers in Advanced Materials M&A transactions, with seven deals, and second in Energy M&A transactions, with eight.

Evidence of government direction: The report team did not find credible evidence demonstrating a coordinated strategy on the part of the Japanese Government to direct its firms to acquire U.S. companies with critical technologies. However, the group was able to find evidence of Japanese strategies to promote world-leading industries in certain sectors. The existence of the strategies could be one factor in explaining some of the Japanese activity.

The Japanese Government declared the start of the broadband era (as of July 2001) with various high-speed network services spreading rapidly and expected to grow amid decreasing broadband service fees. The "IT New Reform Strategy" was announced in 2006 as the new national strategy to maintain Japan's position as the most advanced information and communications technology (ICT) nation. The 2007 White Paper from the Japanese Ministry of Internal Affairs and Communications (MIC) reports that the country's internet penetration rate stood at 68.5 percent in 2006, with 26.4 million broadband contracts that year. Some evidence suggests that the Japanese Government may be involved in other similar initiatives in which the government subsidizes private industries to help them attain national strategic levels. The broad goal is to become the "world's leading nation for ubiquitous network society" by 2010.²²

²² "Japan: Tokyo Announces ICT Strategy for FT2008 Stressing Ubiquitous Platform," Tokyo Nikkan Kogyo Shimbun, in Japanese 20070802, retrieved through FBIS.

In August 2007, the MIC announced its FY 2008 priority technology strategy, which is aimed at strengthening the international competitiveness of Japan's ICT industry. The MIC strategy selected seven priority R&D themes that include "the ubiquitous platform," from which network connections can be made anywhere and at any time, and "ultrahigh-definition video technology." The strategy calls for Japan to allocate generous budgets for those R&D themes and to support R&D through measures that promote cooperation among industry, universities, and government.²³

Additionally, the Energy Committee of the Ministry of Economy Trade and Industry announced in 2006 "The New National Energy Strategy," which established policy targets to be accomplished by 2030. The sixth and seventh major points of the strategy are most applicable to this report:

“6) To strengthen international cooperation particularly in Asia by promoting transfers of know-how and technology in areas such as energy conservation, environmental protection and oil stockpiling.

7) To encourage technological innovation in alternative energy and energy conservation technologies such as Fuel Cell, GTL [i.e., gas-to-liquid technology] and DME [i.e., dimethyl ethyl technology], etc. These targets are certainly very challenging, but we need to do our utmost to achieve them.”²⁴

Evidence of private sector strategy: Japanese firms accounted for nine percent of proposed foreign M&A transactions involving U.S. critical technology companies. The report team did not find any credible evidence demonstrating a coordinated strategy of acquiring U.S. companies. Japan was not an M&A leader in any of the fourteen critical technology areas.

No Japanese company made more than four acquisitions of U.S. critical technology companies during the reporting period.

B.4 Germany

Summary of M&A activity in the United States: German investors completed 55 mergers with or acquisitions of U.S. critical technology companies between January 1, 2006, and December 31, 2007. Of these, 19 were in the Information Technology sector. Germany ranked second among foreign acquirers in Biotechnology with 12 deals and in Microelectronics with five.

Evidence of government direction: The report team found no credible evidence demonstrating a coordinated strategy on the part of the German Government directing its firms to acquire U.S. companies with critical technologies.

²³ “Japan: Tokyo Announces ICT Strategy for FY 2008 Stressing Ubiquitous Platform,” Tokyo Nikkan Kogyo Shumbun, in Japanese 20070802, retrieved through FBIS.

²⁴ “Japan's New National Oil Strategy Explained at International Conference,” Tokyo Institute of Energy Economics, Japan; 20060706.

Evidence of private sector strategy: German firms accounted for 6 percent of completed foreign mergers with or acquisitions of U.S. critical technology companies. The report team found no credible evidence demonstrating a coordinated strategy. German firms have historically been active in the U.S. market; M&A transactions, joint ventures, and strategic alliances between U.S. and German firms were not unusual.

Siemens AG and SAP AG were among the most active companies in acquiring U.S. critical technology companies, with 8 deals each.

Siemens AG's activities are carried out through eight main business segments. The Information and Communications segment offers IT solutions and services for the private and public sectors. The Automation and Control segment supplies products, systems solutions, and services for industrial and building automation. The Power segment offers energy solutions. The Transportation segment supplies products and systems for railway and automotive industries. The Medical segment provides products, solutions, services, and consulting for the healthcare community. The Lighting segment provides lighting sources, electronic control gear, and light management systems. The Financing services area offers financial solutions in the areas of financing, investment, treasury, and fund management. The Real Estate area manages, develops, buys, and sells real estate.

SAP AG provides business software applications and services to customers worldwide

B.5 France

Summary of M&A activity in the United States: French investors completed 50 mergers with or acquisitions of U.S. critical technology companies between January 1, 2006, and December 31, 2007. Of these, 24 deals were in the IT sector followed by the Scientific Instruments sector with 12.

Evidence of government direction: The report team found no credible evidence demonstrating a coordinated strategy on the part of the French Government directing its firms to acquire U.S. critical technology firms.

Evidence of private sector strategy: French firms accounted for 6 percent of the completed foreign mergers with or acquisitions of U.S. critical technology companies. The report team found no credible evidence demonstrating a coordinated strategy. French firms have historically been active in the U.S. market; M&A transactions, joint ventures, and strategic alliances between U.S. and French firms are common.

Essilor International SA, a manufacturer of corrective lenses and other ophthalmic products, was the only French firm involved in more than four critical technology M&A transactions, with seven deals.

B.6 India

Summary of M&A activity in the United States: Indian investors completed 34 mergers with or acquisitions of U.S. critical technology companies between January 1, 2006, and

December 31, 2007. Of these, 21 were in the IT sector, followed by five deals in the Biotechnology sector.

Evidence of government direction: The report team found no credible evidence demonstrating a coordinated strategy on the part of the Indian Government directing its firms to acquire U.S. critical technology firms.

India has a National Biotechnology Strategy with a target of a \$5 billion biotechnology industry by the year 2010.²⁵ To that end, there was a higher concentration of acquisitions of biotechnology-related firms by Indian companies than previously identified.

²⁵ The National Science and Technology Policy of the Government of India and the Vision Statement on Biotechnology issued by India's Department of Biotechnology have directed notable interventions in the public and private sectors to foster life sciences and biotechnology.

APPENDIX C – CHARTS AND GRAPHS

This appendix presents detailed charts of the annual, industry, and regional trends of the 869 completed foreign M&As of U.S. companies in critical technology sectors announced between January 2006 and December 2007. Figure C-1 shows the distribution of completed deals by country within each geographic region. The United Kingdom had the largest number of deals among European countries, followed by Germany and France. Japan had the largest number of deals from East Asia. Of the remaining countries in other regions, India and Israel had the largest number of deals.

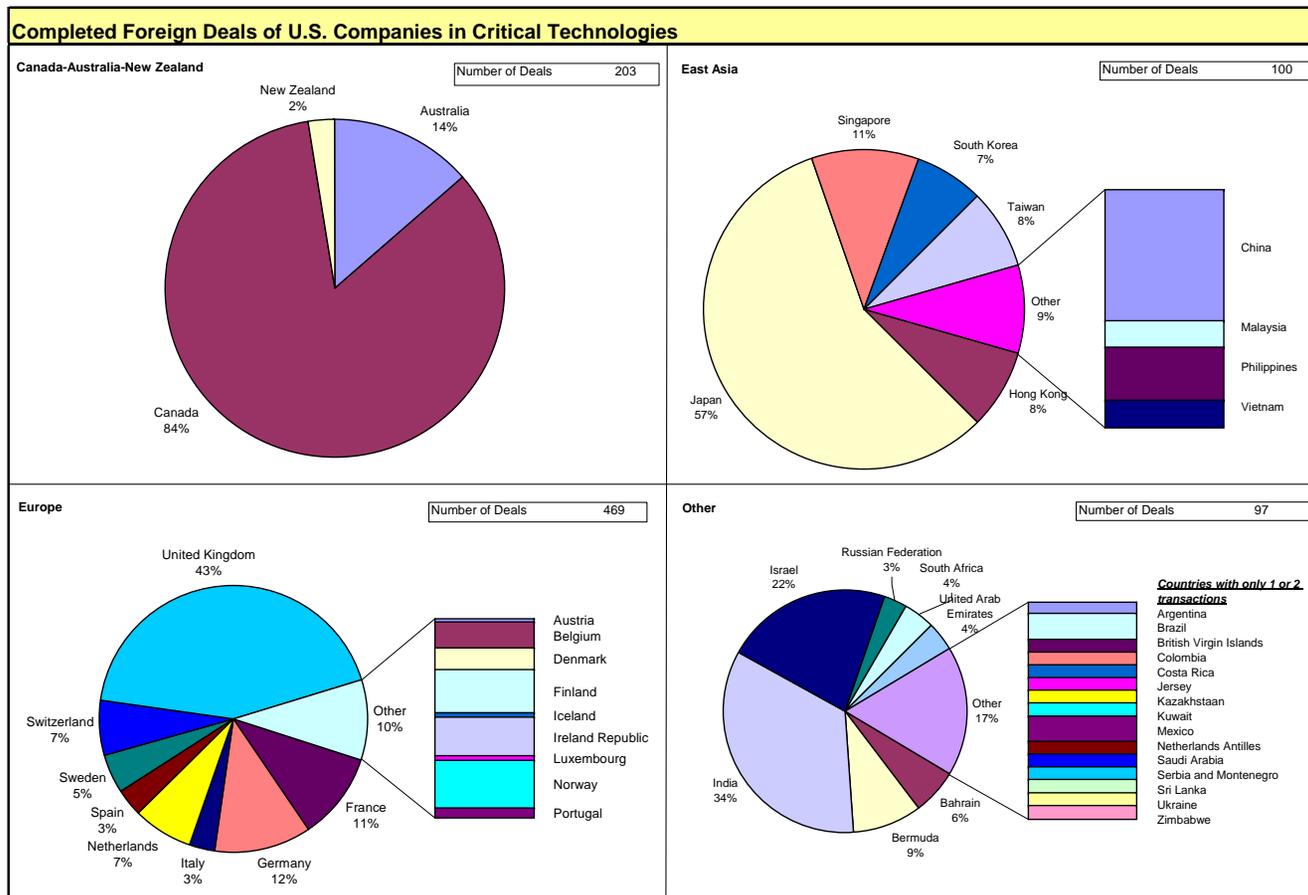


Figure C-1. Completed Foreign Deals in Critical Technologies with Region Detail

Sector: Advanced Materials & Processing

Number of Deals

58

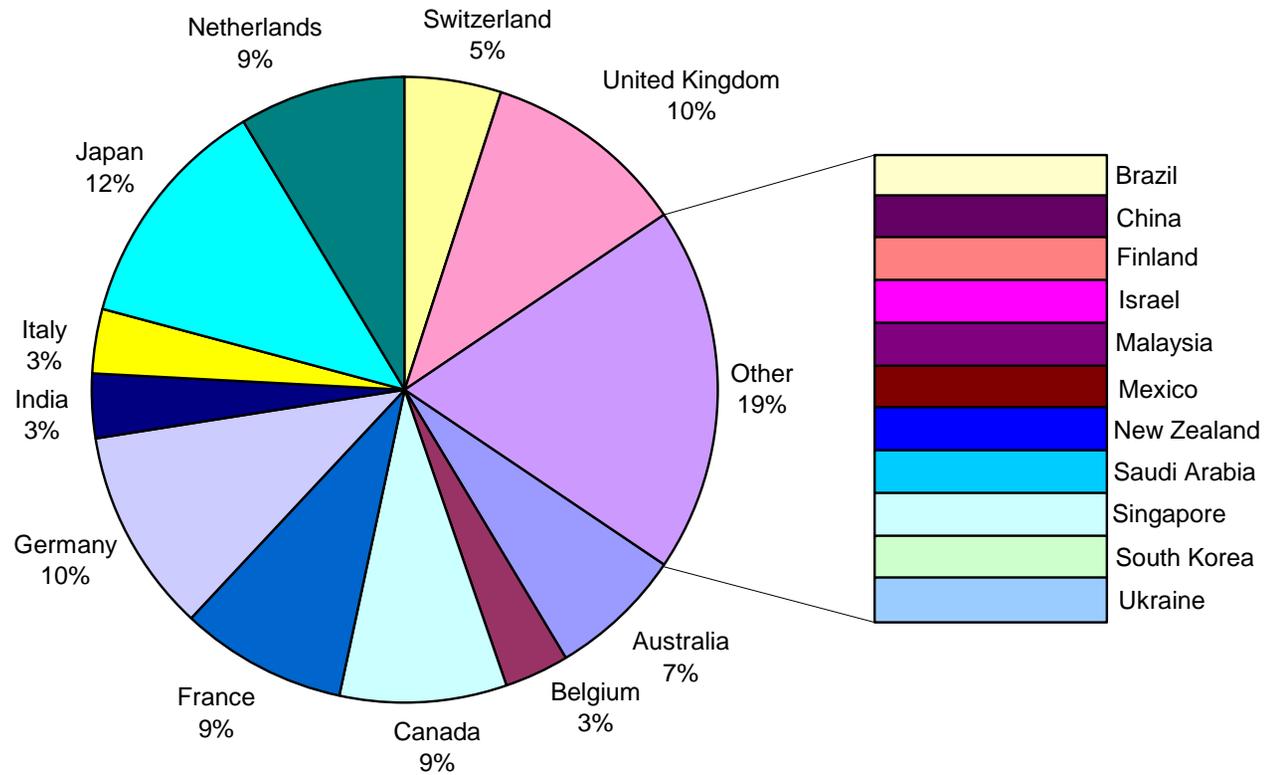


Figure C-2. Completed Foreign Deals in Advanced Materials and Processing

Sector: Chemicals

Number of Deals 19

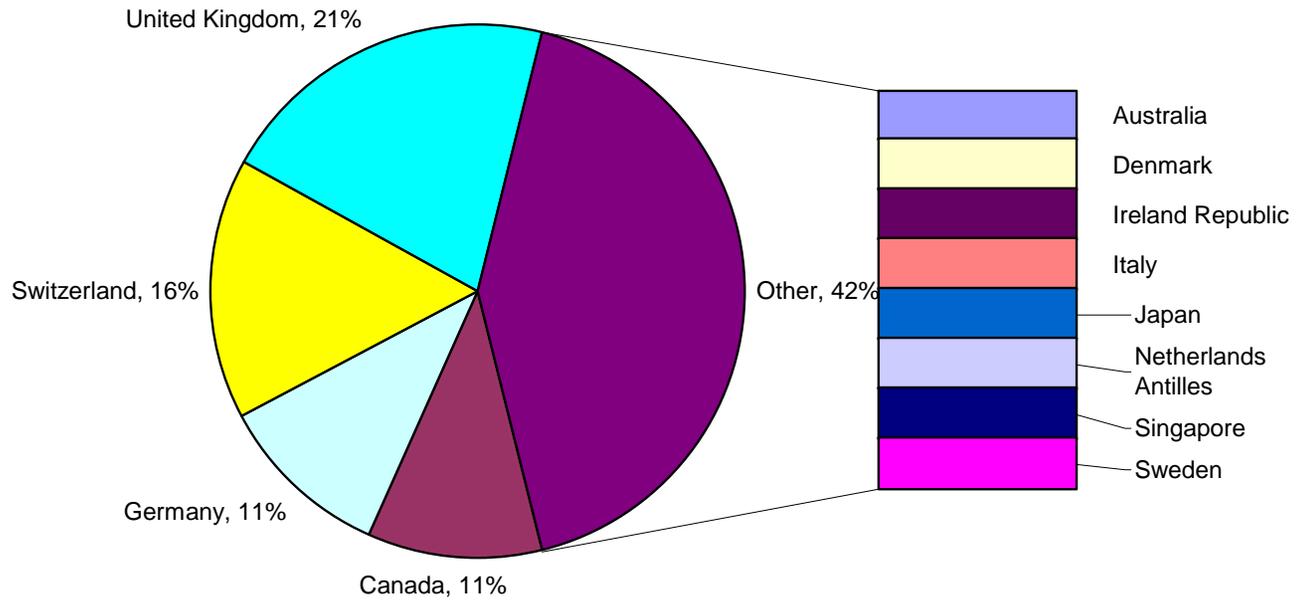


Figure C-3. Completed Foreign Deals in Chemicals

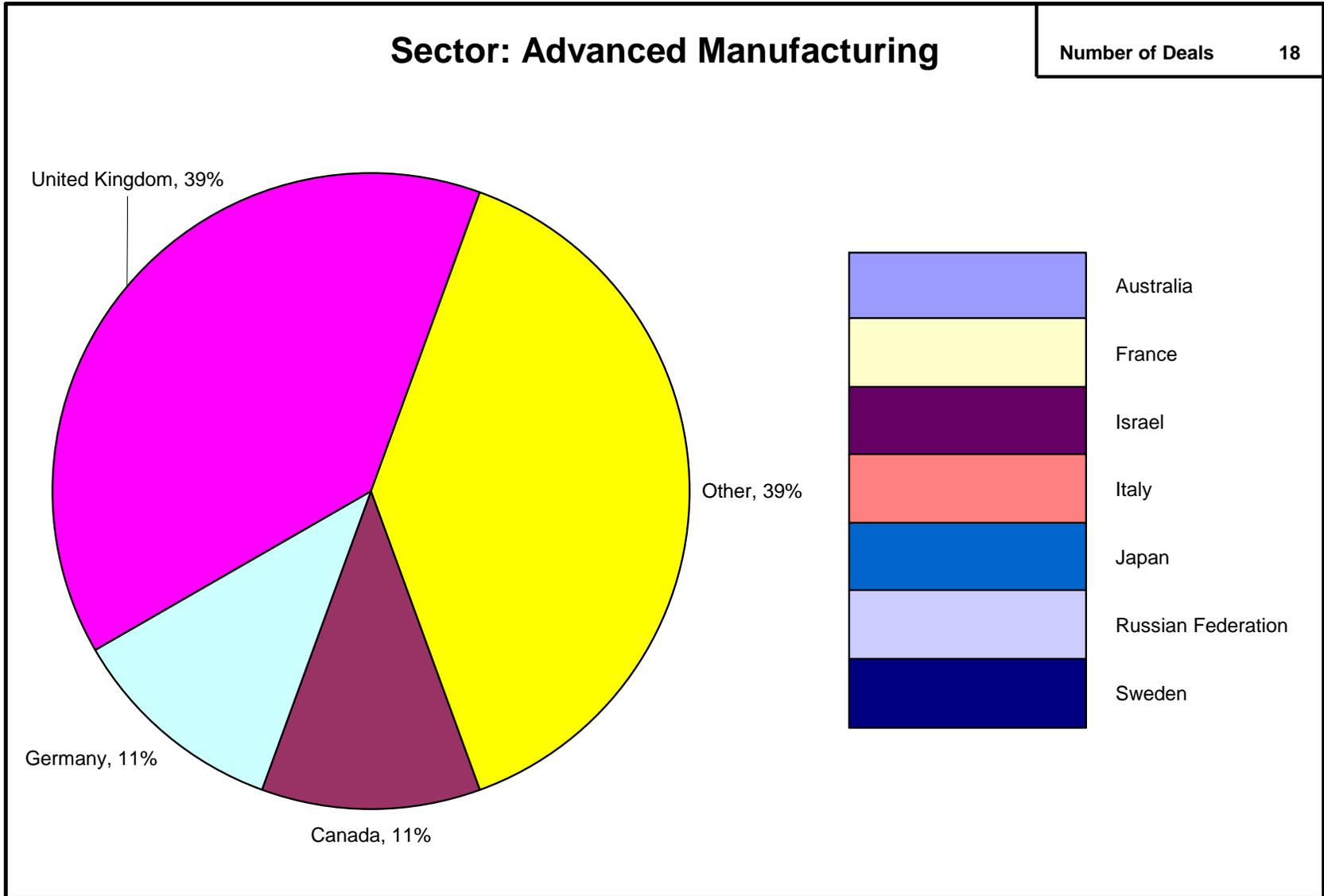
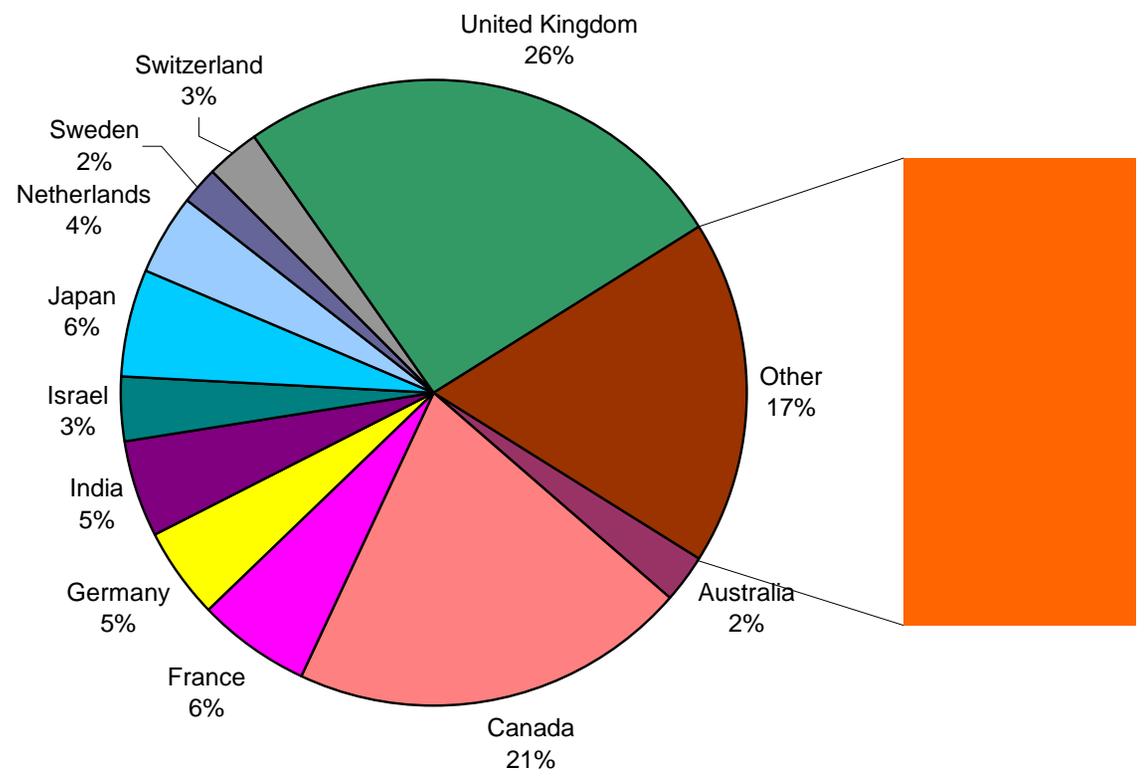


Figure C-4. Completed Foreign Deals in Advanced Manufacturing

Sector: Information Technology

Number of Deals 415



Countries with less than 8 transactions

- Argentina
- Bahrain
- Belgium
- Bermuda
- China
- Costa Rica
- Finland
- Hong Kong
- Ireland-Republic
- Italy
- Jersey
- Kuwait
- Mexico
- New Zealand
- Norway
- Philippines
- Portugal
- Russian Fed
- Singapore
- South Africa
- South Korea
- Spain
- Taiwan
- Vietnam
- Zimbabwe

Figure C-5. Completed Foreign Deals in Information Technology

Sector: Telecommunications

Number of Deals 58

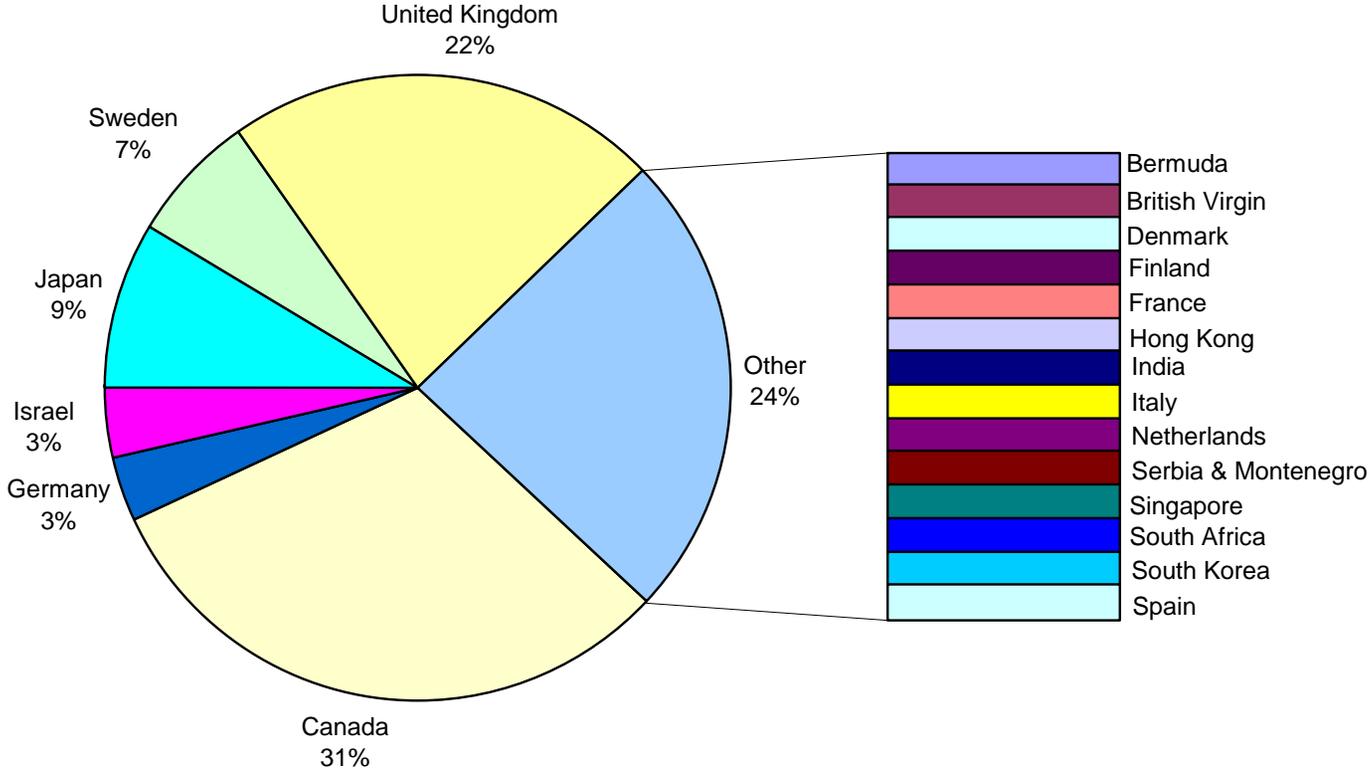


Figure C-6. Completed Foreign Deals in Telecommunications

Sector: Microelectronics

Number of Deals 47

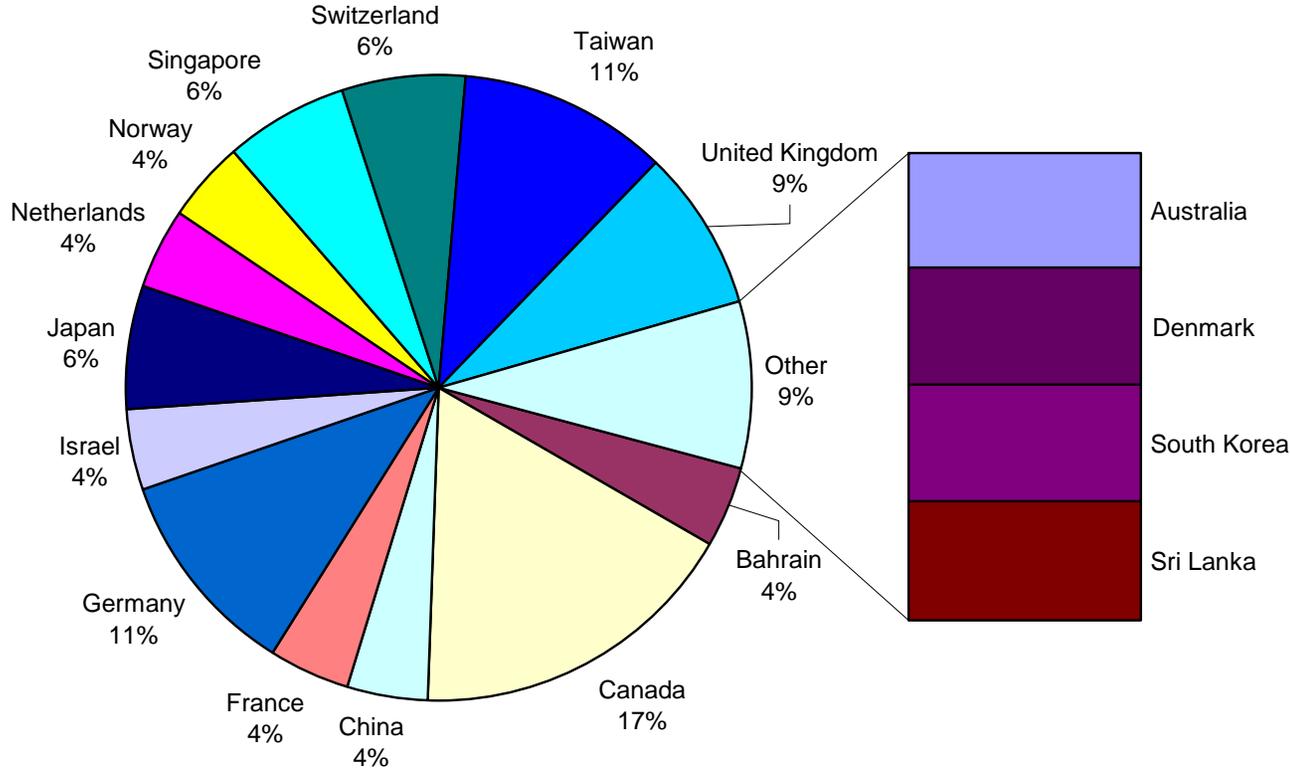


Figure C-7. Completed Foreign Deals in Microelectronics

Sector: Semiconductor Fabrication Equipment

Number of Deals 6

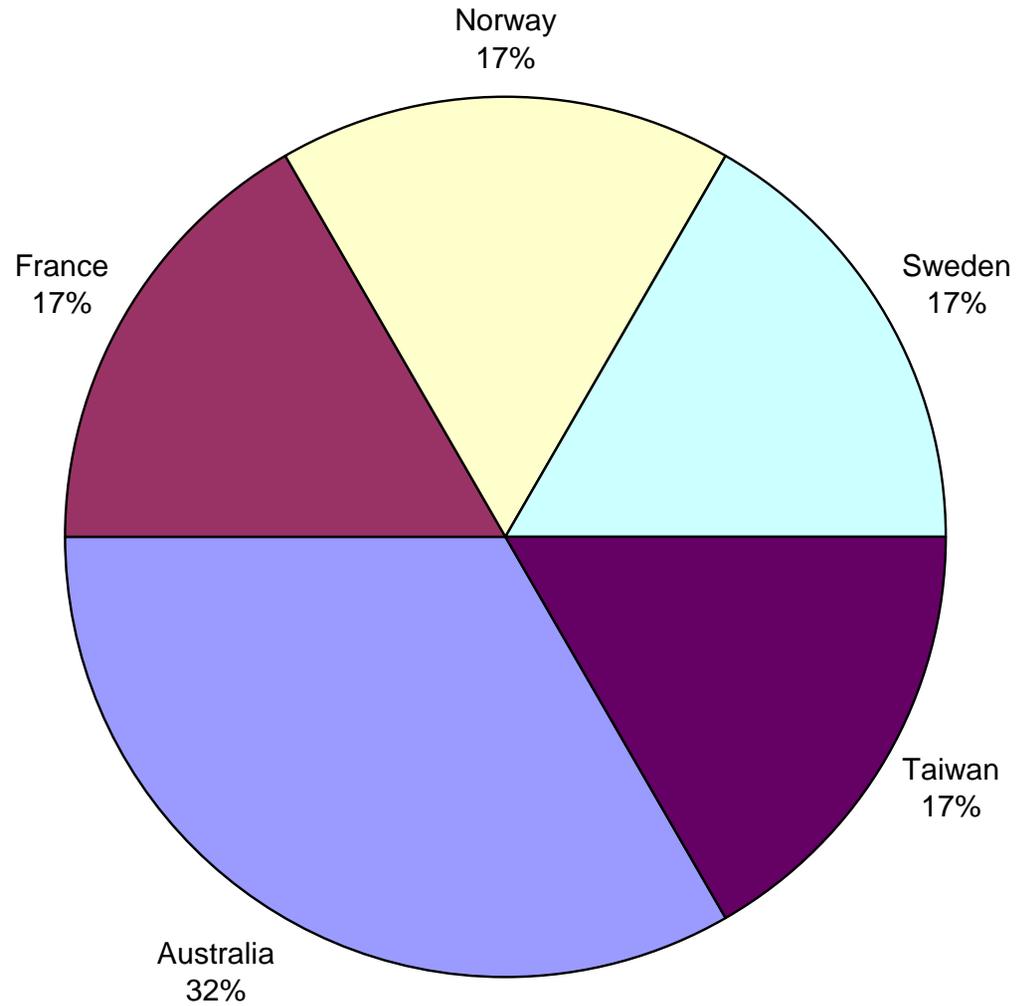


Figure C-8. Completed Foreign Deals in Semiconductor Fabrication Equipment

Sector: Military Related Electronics

Number of Deals 24

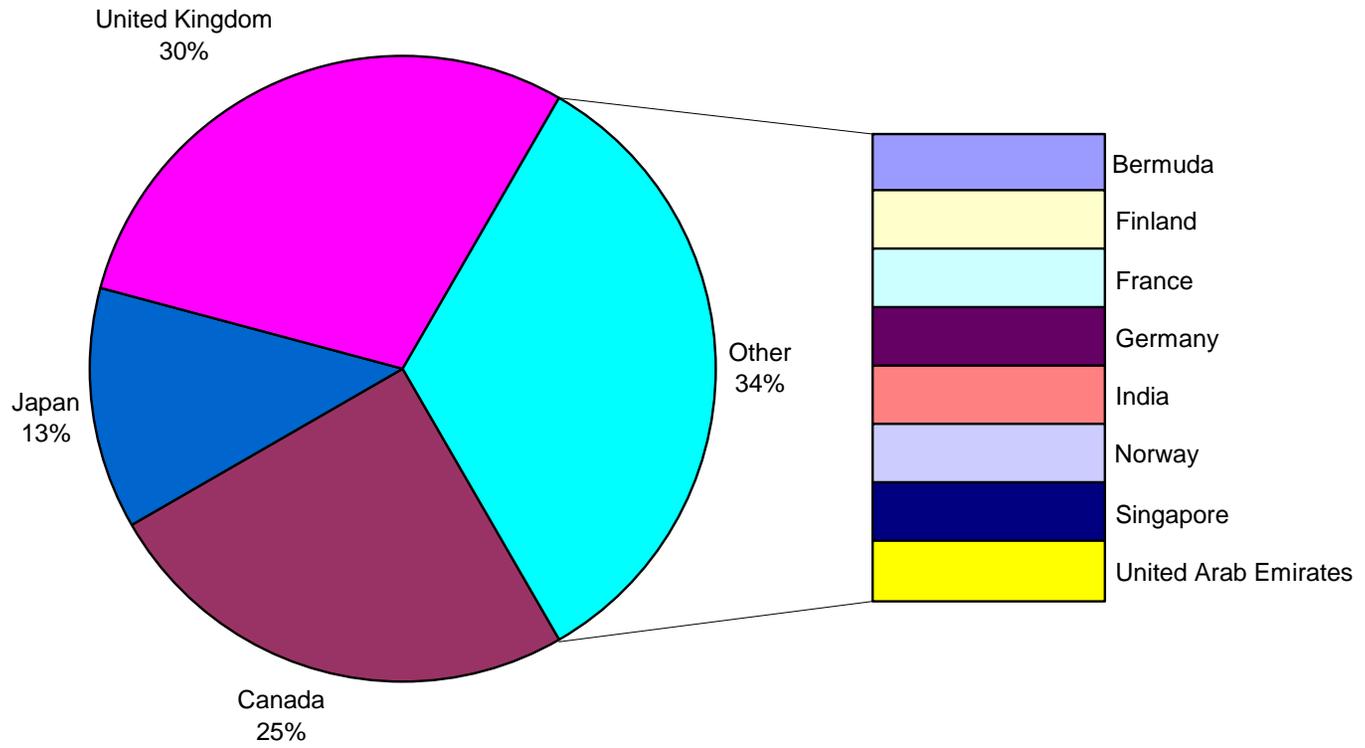


Figure C-9. Completed Foreign Deals in Military Related Electronics

Sector: Biotechnology

Number of Deals 101

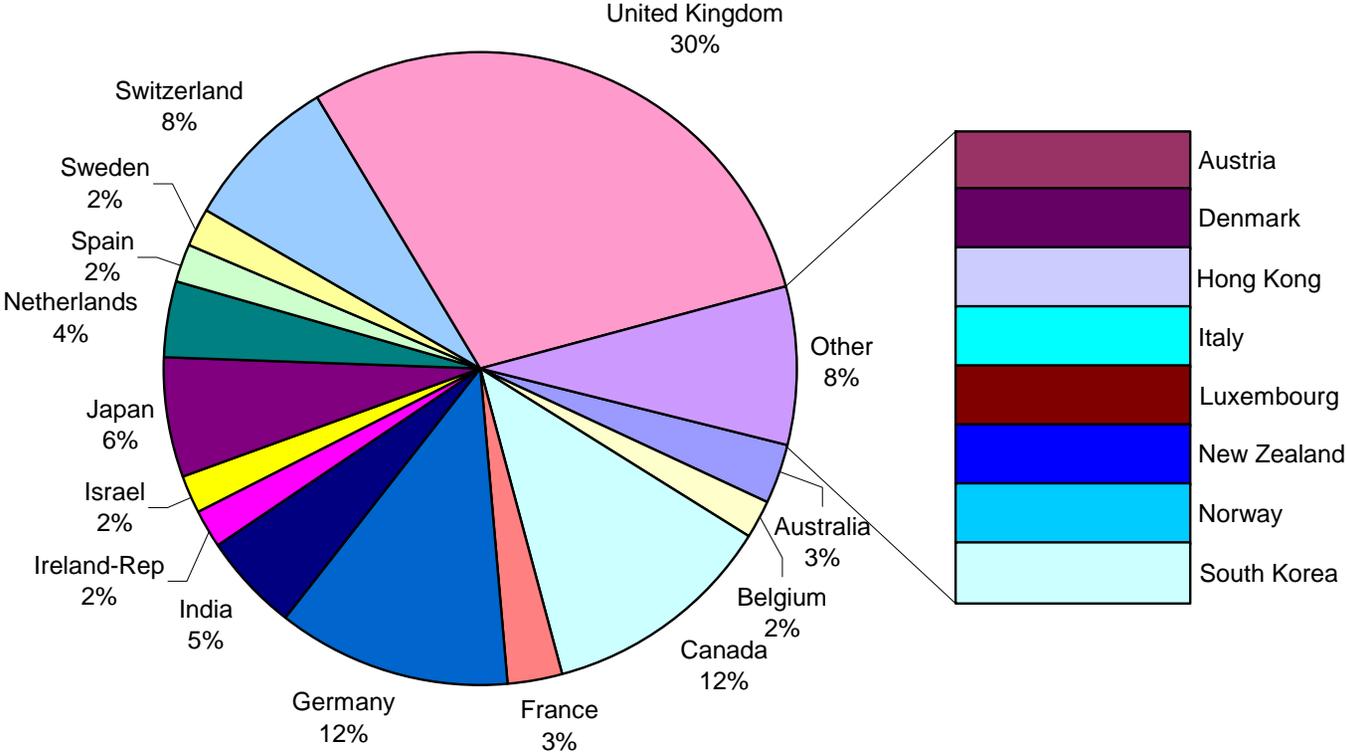


Figure C-10. Completed Foreign Deals in Biotechnology

Sector: Professional and Scientific Instruments

Number of Deals

43

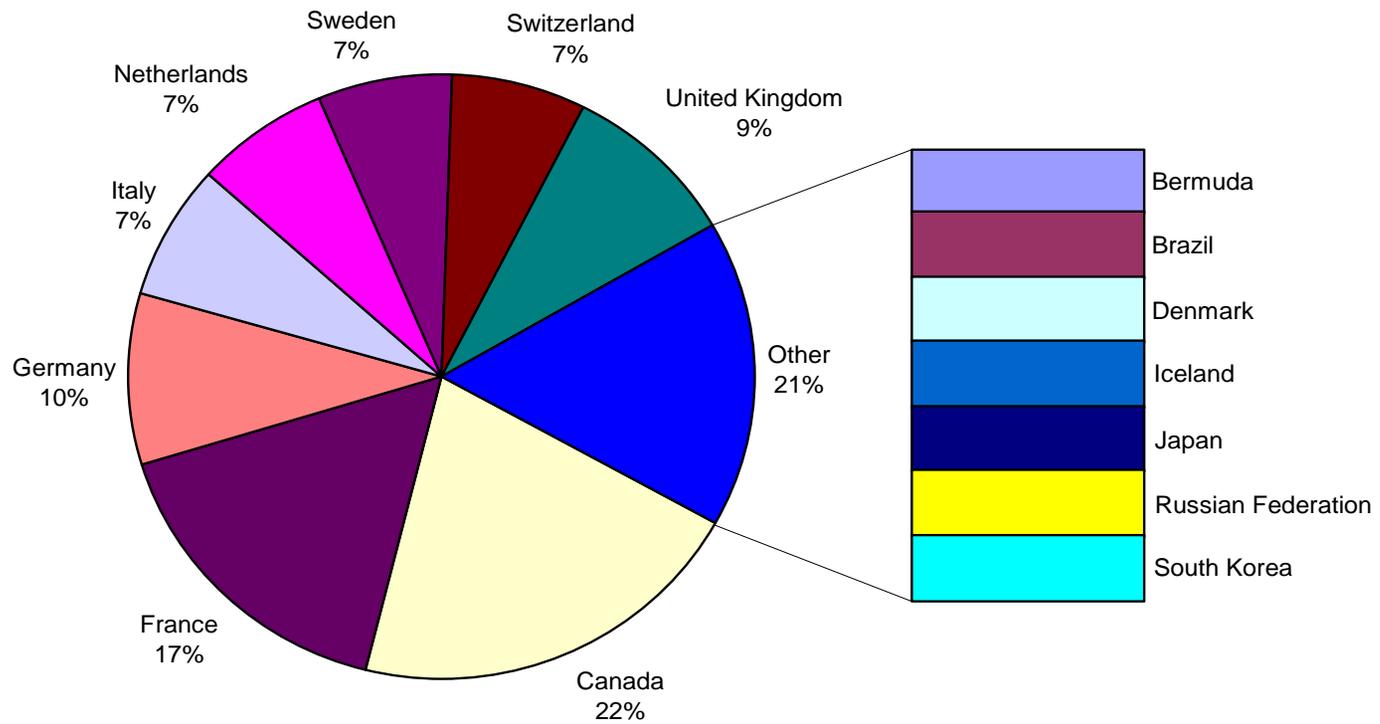


Figure C-11. Completed Foreign Deals in Professional/Scientific Instruments

Sector: Aerospace and Surface Transportation

Number of Deals 4

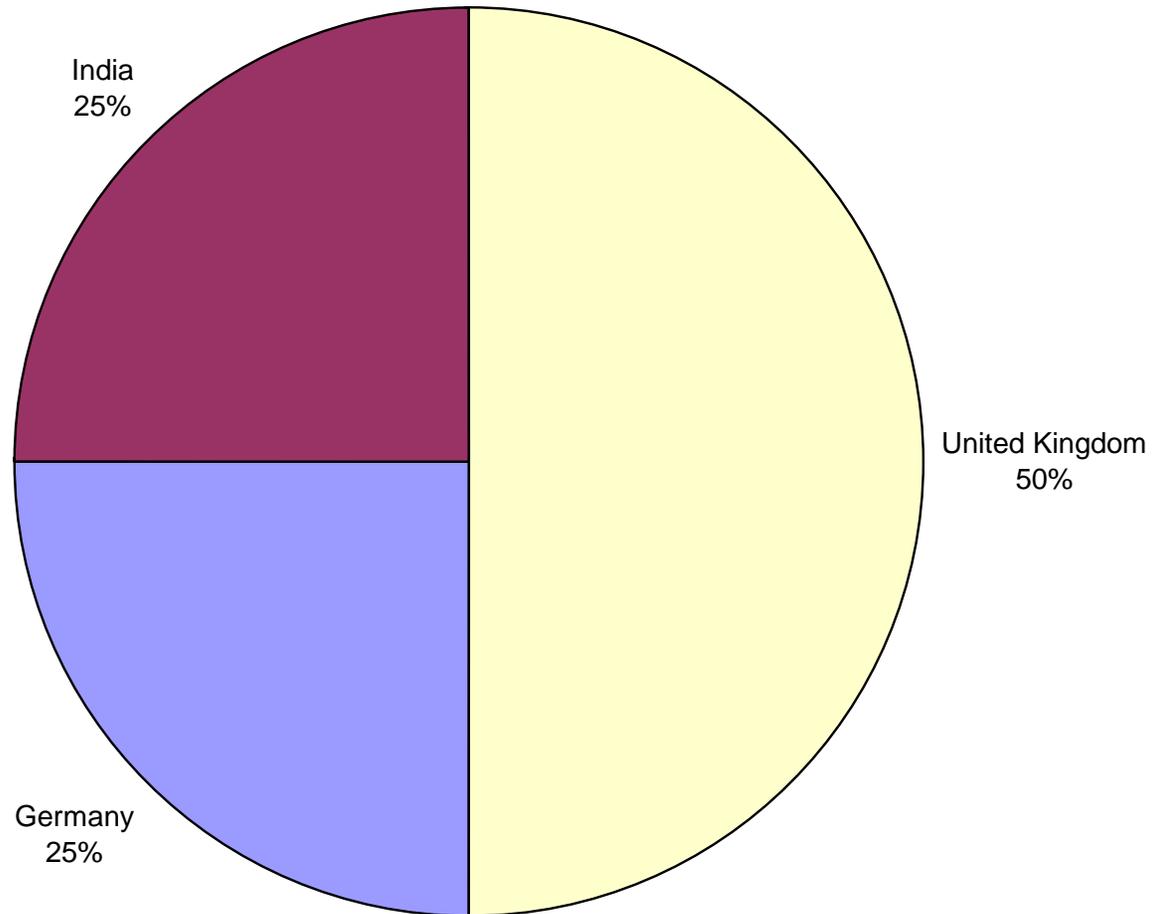


Figure C-12. Completed Foreign Deals in Aerospace and Surface Transportation

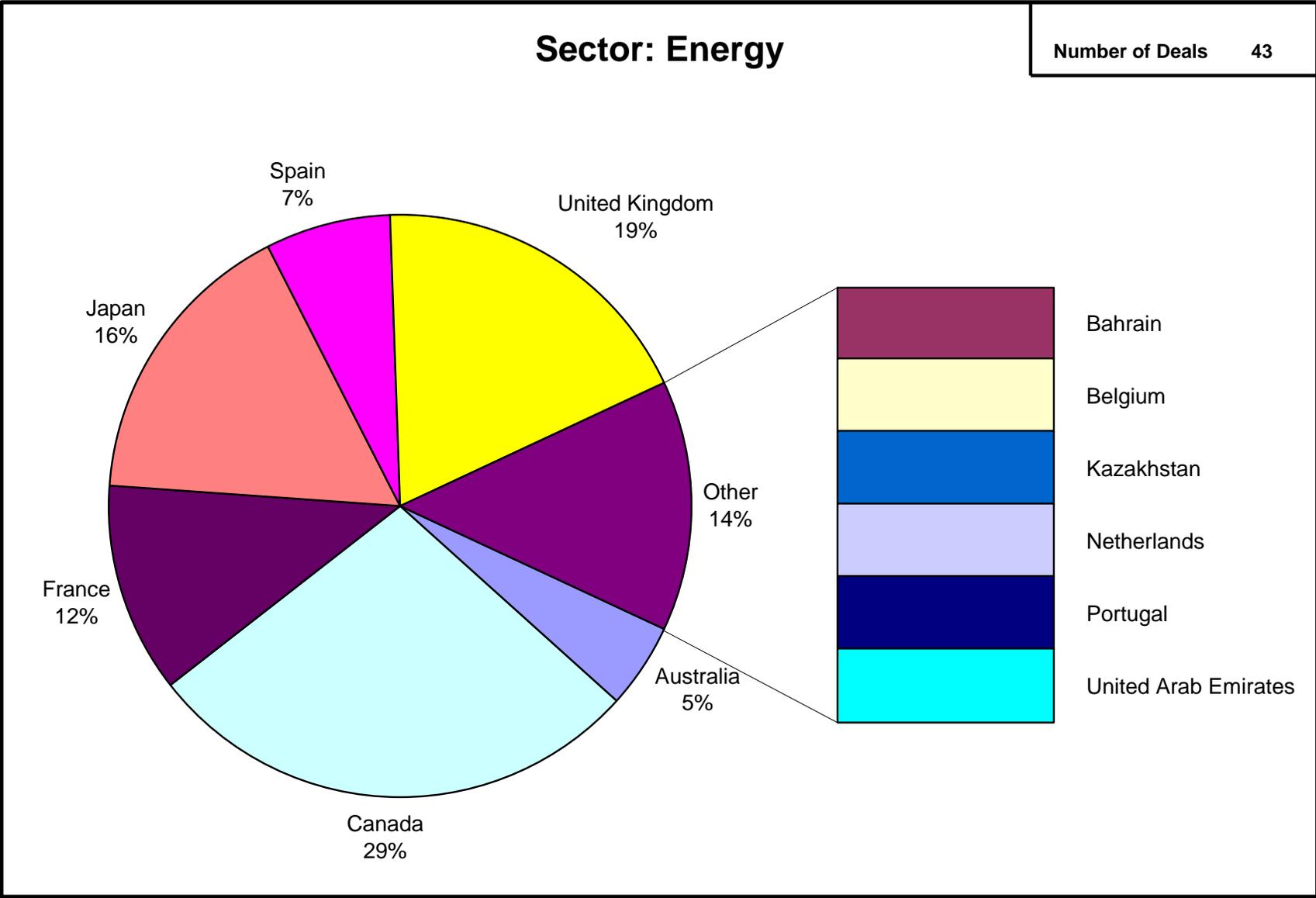


Figure C-13. Completed Foreign Deals in Energy

Sector: Space Systems

Number of Deals 35

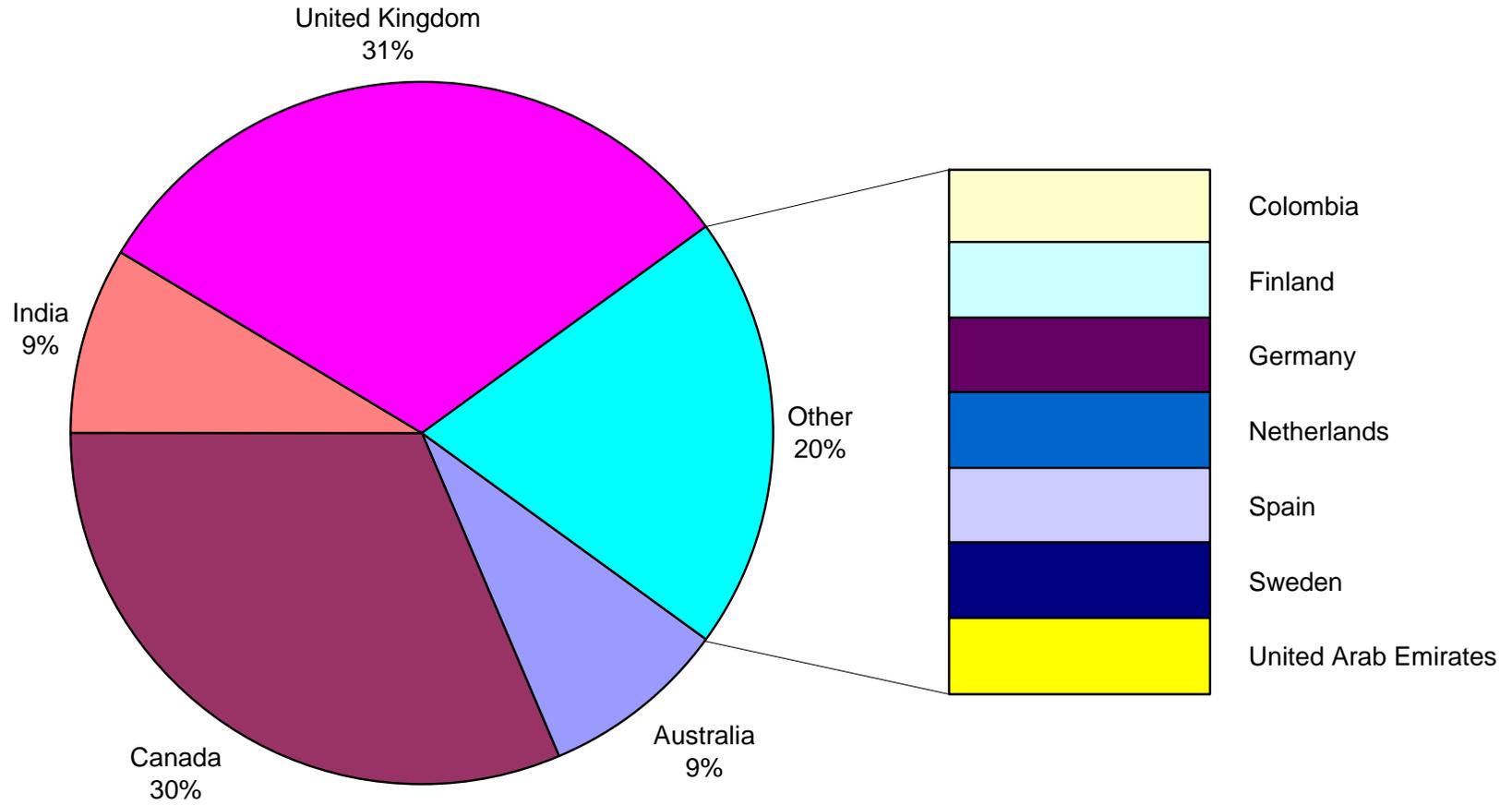


Figure C-14. Completed Foreign Deals in Space Systems

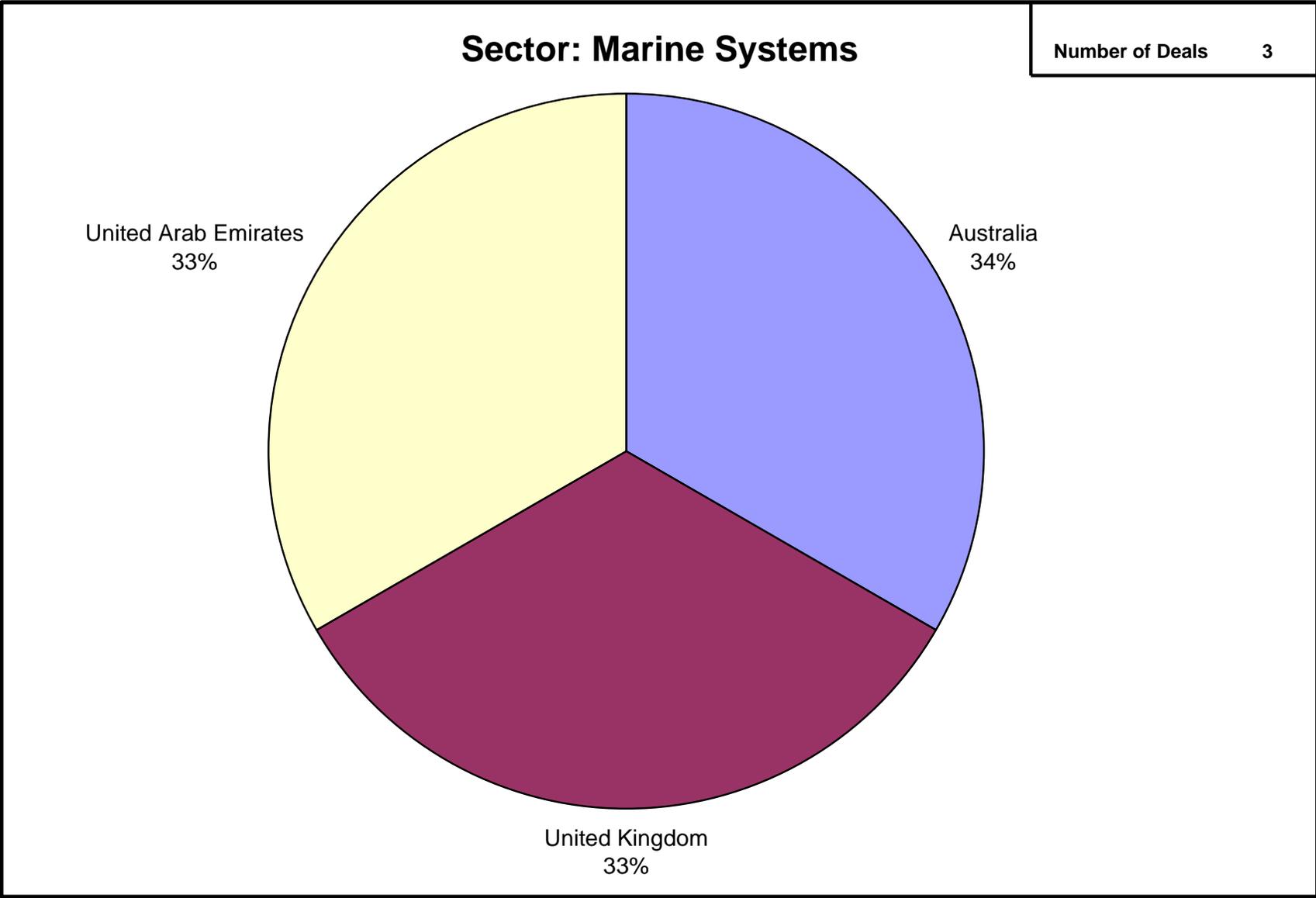


Figure C-15. Completed Foreign Deals in Marine Systems

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APPENDIX D – Abbreviations and Acronyms

BEA	Bureau of Economic Analysis, Department of Commerce
CFIUS	Committee on Foreign Investment in the United States
DNI	Director of National Intelligence
EAR	Export Administration Regulations
EMS	Electronics Manufacturing Services
FCC	Federal Communications Commission
GSM	Global System for Mobile communications
IT	Information Technology
ITAR	International Traffic in Arms Regulation
M&A	Mergers and Acquisitions
NAICS	North American Industry Classification System
NTT	Nippon Telegraph and Telephone Corporation
OECD	Organization for Economic Co-operation and Development
ONCIX	Office of the National Counterintelligence Executive
R&D	Research and Development
SIC	Standard Industrial Classification
SME	Subject Matter Expert
U.K.	United Kingdom
UMTS	Universal Mobile Telecommunications Systems
U.S.	United States
USG	United States Government
VoIP	Voice-over Internet Protocol

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