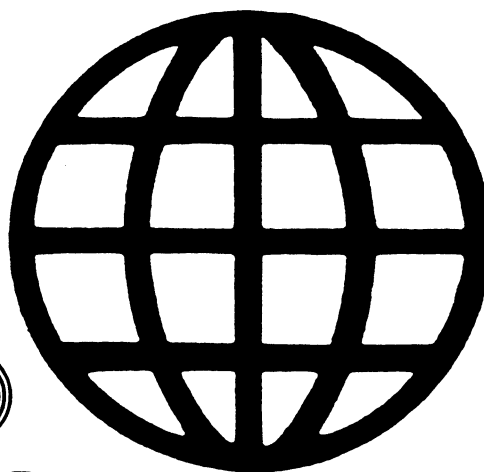


October 1999

INDUSTRY TRADE AND TECHNOLOGY REVIEW



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Quarterly Review Staff

Larry Brookhart

assisted by

Zema Tucker
Sharon Greenfield

Contributing Authors

Elizabeth Howlett
Karl S. Tsuji

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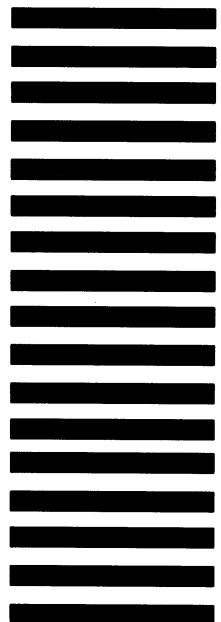
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■

Outsourcing by the Pharmaceutical Industry Provides Opportunities for Fine Chemical Producers Worldwide

Elizabeth Howlett¹
ehowlett@usitc.gov
(202) 205-3365

The increased research and development (R&D) costs and risks in the global pharmaceutical industry, along with the added complexity of drug formulations, have quickened a trend toward outsourcing of both chemical intermediates and active pharmaceutical ingredients. This outsourcing trend enables pharmaceutical companies to use resources on R&D and to develop relationships with fine chemical producers to streamline the drug development process. Fine chemical companies benefit from pharmaceutical sales growth, which has resulted in merger and acquisition activity and expansion into new regions. Considering the pharmaceutical outsourcing trend, this article examines the competitive climate driving structural adjustments, domestic and foreign growth in demand and capacity, and effects on the U.S. trade balance.

In the United States and abroad, the pharmaceutical² industry is experiencing steady growth. By one estimate, pharmaceutical sales in the United States increased by 14 percent during the years 1997-98, reaching a total of \$128 billion.³ This growth has been attributed primarily to the new products and product line extensions from innovative research and development (R&D) investment, rather than to increased sales of existing drugs.⁴ In the United States alone, an estimated \$17.2 billion was spent on R&D in 1998, more than a 150-percent increase in spending over the 1990 expenditures of \$6.8 billion (figure 1).⁵

¹ The views expressed in this article are those of the author. They are not the views of the International Trade Commission or any of the Commissioners.

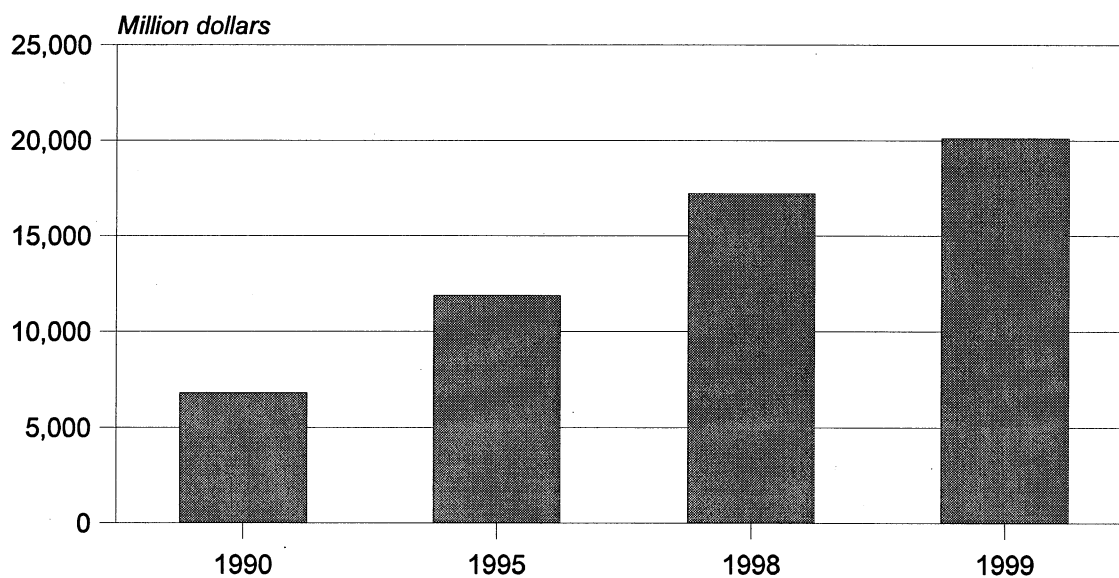
² Throughout this article the terms "pharmaceutical" and "drug" will be used interchangeably to describe legal medicinal products. Unless the industry of a country or region is specified, "pharmaceutical industry" and "fine chemical industry" refer to the respective industries at the global level.

³ Peter Farley and Alex Scott, "Slicing the Drug Pie: Suppliers Hunger for More," *Chemical Week (CW)*, Apr. 21, 1999, p. 25.

⁴ Feliza Mirasol, "Drug Manufacturers Post Solid 4th Quarter Growth," *Chemical Market Reporter (CMR)*, Feb. 8, 1999, p. 5.

⁵ Pharmaceutical Research and Manufacturers of America (PhRMA), *Industry Profile 1999*, p. 15.

Figure 1
R & D expenditures by pharmaceutical companies in the United States



Source: PhRMA, *Industry Profile 1999*, p. 15.

Even more significant, the portion of sales invested back into R&D by research-based U.S. pharmaceutical companies has risen from 11.9 percent in 1980, to an estimated 20 percent in 1998, an increase of nearly 70 percent (see tabulation).⁶

<u>Year</u>	<u>Ratio of R&D to sales</u> <u>(Percentage)</u>
1980	11.9
1985	15.1
1990	16.2
1995	19.4
1998 ¹	20.0
1999 ²	20.8

¹ Estimated by PhRMA.

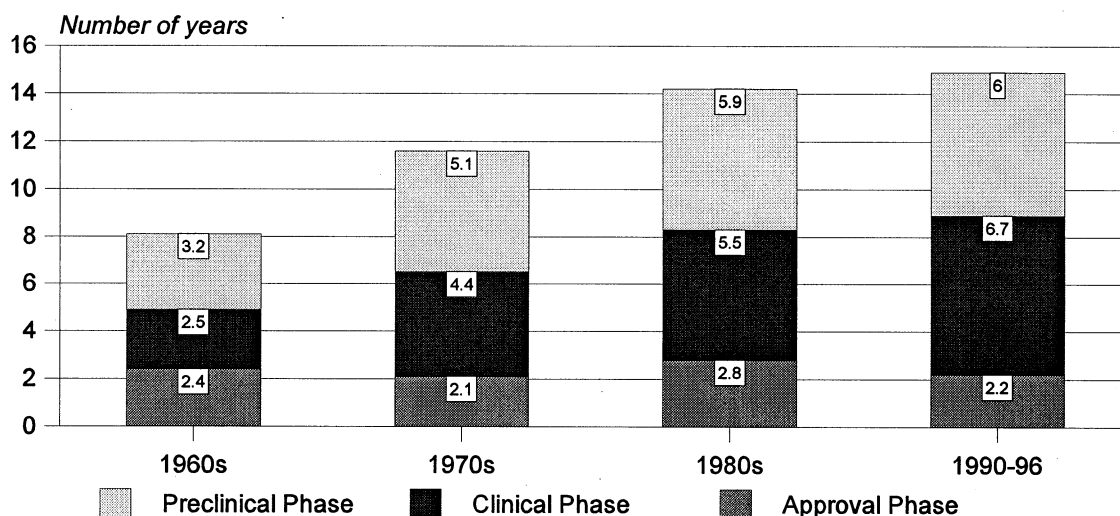
² Forecast by PhRMA.

⁶ PhRMA, p. 16.

Competitive Climate Drives Greater R&D Focus

The pharmaceutical industry faces a changing climate for its R&D: costs are increasing, and the business risks associated with bringing pharmaceutical products to market are on the rise. A significant cost factor of drug development is the expanded requirements for clinical evaluation of patients and the number of trials, which has in turn lengthened the time required for drug development (figure 2).⁷ The increasing complexity of new, innovative drugs, such as new therapies for treating AIDS, has also driven up costs. Such complex molecules frequently require more reaction steps for synthesis, which encourage drug companies to invest resources in R&D rather than in complex chemical facilities.⁸ Moreover, the risks associated with pharmaceutical R&D are considerable. Of the drugs that began U.S. clinical trials during 1980-84, less than one-fourth have been or are expected to be approved for the U.S. market (figure 3).⁹

Figure 2
U.S. drug development, by major phases, in years, 1960-96



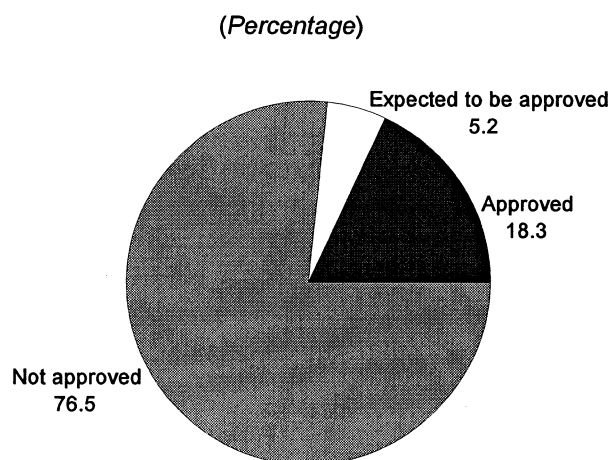
Source: PhRMA, *Industry Profile* 1999, p. 29.

⁷ PhRMA, p. 29.

⁸ Joseph Chang, "M&A Activity Heating Up in Fine Chemicals Sector," *CMR*, Mar. 16, 1998, p. 19.

⁹ PhRMA, p. 27.

Figure 3
Approval status of drugs that began U.S. clinical trials in 1980-84



Source: PhRMA, *Industry Profile* 1999, p. 27.

Rapid product development is a growing priority for the industry.¹⁰ Although pharmaceutical companies have developed such research tools as combinatorial chemistry and genomics¹¹ that provide them with multiple lead candidates for a specific drug application, pharmaceutical companies must quickly evaluate the chemical most likely to lead to a successful product. As a result, pharmaceutical companies typically prefer to concentrate resources on drug discovery and development, allowing fine chemical¹² companies to assist in production.¹³ As a result of the significant financial benefits of exclusive marketing rights to a drug,¹⁴ as protected by patents, the pharmaceutical companies strive to minimize the period of time that elapses between the date the company receives the patent (usually early in the discovery process) and the date the drug is put on the market (after regulatory agency approval).

Heightened competition in the pharmaceutical industry has made time-to-market and cost containment even more important. Since multiple companies are often developing similar products, upon FDA approval companies want to be able to market the drug without lengthy

¹⁰ Feliza Mirasol, "Pharma and Ag Are the Main Drivers in the Fine Chemicals Market Sector," *CMR*, May 25, 1998, p. 5.

¹¹ Combinatorial chemistry is a research technique involving the systematic combination of molecules and molecular building blocks to develop thousands of new compounds, which are then tested for potential use as pharmaceutical products, in a short period of time. Genomics is the study of genes and their functions.

¹² Specialty chemical product valued at greater than \$50/kg. Clay Bozwell, "Outsourcing in a New Era," *CMR*, Jan. 18, 1999, p. FR3.

¹³ *Ibid.*, p. FR3.

¹⁴ *Ibid.*, p. FR3.

delays in scaling up production processes.¹⁵ By outsourcing production, a pharmaceutical company lessens its development burden and expedites the overall drug development process.¹⁶ Further, outsourcing offers the opportunity to cut costs by avoiding investment in specialized manufacturing facilities.¹⁷ Additionally, the worldwide increase in environmental regulations on the chemical industry has encouraged pharmaceutical companies to contract out manufacturing to avoid the time and cost of facility upgrades and the production-monitoring required by law.¹⁸

These combined factors have led to an increase in outsourcing by pharmaceutical companies.¹⁹ Most frequently pharmaceutical firms contract fine chemical companies to manufacture chemical intermediates²⁰ or active pharmaceutical ingredients, thereby allowing drug companies to focus on R&D. It seems to be an effective trend for drug companies: firms that outsource reportedly have achieved 22 percent higher revenues than those that do not.²¹ A broad range of pharmaceutical companies are outsourcing. Large firms including American Home Products, Bristol-Myers Squibb, Glaxo Wellcome, Hoechst Marion Roussel, Searle, Novartis, Pharmacia and Upjohn, and SmithKline Beecham have all been described as "aggressive outsourcers,"²² while smaller companies, particularly those in biopharmaceuticals,²³ are also making use of fine chemical producers' resources. Although often the source of innovative science, small biopharmaceutical companies are not always scientifically or financially equipped to develop production processes. By outsourcing to a fine chemical company, these specialty biotech firms also avoid the high capital costs involved in manufacturing.²⁴

¹⁵ Bruce Gain, "Offering the Right Fit," *CW*, May 6, 1998, p. S4.

¹⁶ Bozwell, p. FR3.

¹⁷ Gain, p. S4.

¹⁸ Bill Macdonald, "Middle Management," *European Chemical News*, June 9-15, 1997, p. 30.

¹⁹ Drug companies are also outsourcing the production of finished drugs; industry sources anticipate a 7.5-percent average annual increase in outsourcing through 2000, rising from \$3.8 billion in 1997 to \$4.7 billion. "Outsourcing Dosage Formulations on the Rise," *CMR*, June 8, 1998, p. 23. Although most outsourcing is in manufacturing, there is also a trend toward outsourcing drug discovery. Given the complexity of innovative pharmaceutical products and the tight competition among drug companies, firms might seek outside assistance to complement their own research, e.g., with combinatorial chemistry libraries, or to benefit from advanced tools, such as chiral technologies, that might expedite drug discovery. Vic Comello, "Companies Join to Provide Drug Discovery Solutions," *Research and Development*, Sept. 1998, p. U32.

²⁰ Chemical intermediates are those chemicals that form during interim chemical reaction steps in production processes requiring multiple chemical reactions. As such, the chemical intermediates referred to are chemical precursors to active pharmaceutical ingredients.

²¹ Macdonald, p. 28.

²² Joseph Chang, "M&A Activity Heating Up in Fine Chemicals Sector," *CMR*, Mar. 16, 1998, p. 19.

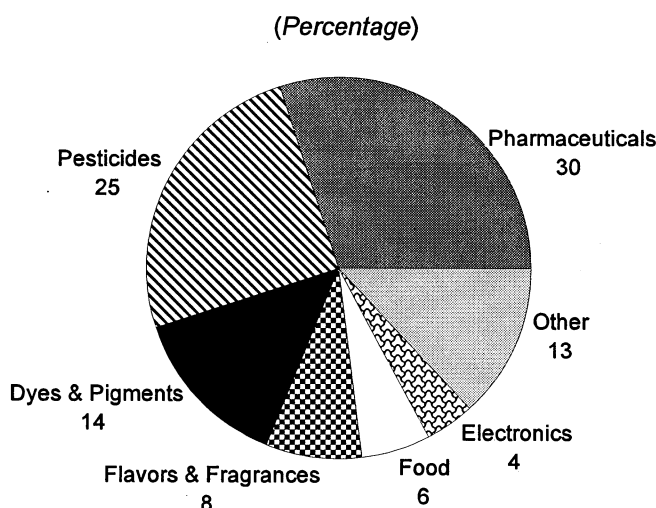
²³ Biopharmaceuticals are drugs produced with the tools of biotechnology rather than by strictly chemical means.

²⁴ Bozwell, p. FR3.

Fine Chemical Manufacturers Adjust to Changing Demand

Since the growth rate in pharmaceutical sales is higher than most other specialty chemical sectors, fine chemical manufacturers have an incentive to establish themselves as suppliers to drug companies.²⁵ In fact, industry sources indicate that pharmaceuticals generated an estimated 30 percent of 1998 global sales by fine chemical companies (figure 4).²⁶ The fine chemical industry appears to be benefitting from the outsourcing trend, as sales in all markets combined rose from \$50 billion in 1992 to \$63 billion in 1998.²⁷

Figure 4
Global fine chemical sales in 1998 to major chemical sectors



Source: Claudia Hume, Rick Mullin, Samuel K. Moore, Bill Schmitt, and Kerri Walsh, "Fine Chemicals: Firing Up New Operations," *Chemical Week*, Jan. 20, 1999, p. 45.

Compared with R&D-based drug companies, most fine chemical companies are quicker and more proficient in developing processes for the complex molecules often used in the production of today's innovative medicines.²⁸ Additionally, fine chemical producers typically have established groupings of products based on a specific chemical building block, with several associated derivative products. From these established product lines, the chemical companies often start from an advanced position in development of the necessary processes and technologies.²⁹ Fine chemical producers, especially those that specialize in

²⁵ Gain, p. S4.

²⁶ Claudia Hume, Rick Mullin, Samuel K. Moore, Bill Schmitt, and Kerri Walsh, "Fine Chemicals: Firing Up New Operations," *CW*, Jan. 20, 1999, p. 45.

²⁷ "A Market Like No Other?" *CW*, Jan. 20, 1999, p. 5.

²⁸ MacDonald, p. 28.

²⁹ *Ibid.*, p. 30.

a particular branch of chemistry, are often able to simply modify their existing technology to fit the specifications of a new product chemical structure.³⁰

Structural Arrangements with the Pharmaceutical Industry

To expedite the drug development process, pharmaceutical companies are involving fine chemical manufacturers in earlier stages of the development timeline. These arrangements require an investment risk by both parties on a drug that may never reach the market place: pharmaceutical companies must incur the financial costs of contracting another firm to develop a production process, and fine chemical companies must invest time and resources in establishing a process that may not yield a return.³¹ If the drug is never marketed, the fine chemical producer has diverted resources to develop a process and small-quantity production facility without the financial reward of a commercial production contract.³²

According to industry sources, two models of fine chemical-pharmaceutical company partnerships have emerged. In the "preferred partner" model, a select group of fine chemical producers provides the majority of services to the pharmaceutical company. In such an arrangement, a strong relationship is developed with selected chemical manufacturers that enables improved management and coordination of production, although this reportedly can limit the incentive of selected producers to improve efficiency and cut production costs. The "cafeteria" model, whereby pharmaceutical companies hire the services of various companies, increases competition among fine chemical producers, which reportedly provides greater incentive to improve efficiency.³³ However, due to intellectual property concerns, a drug company might be hesitant to involve multiple manufacturers as its product moves along the R&D pipeline, instead preferring a "partner" producer. By using the same fine chemical producer for gram-quantity production as for mass production, the pharmaceutical company has better control over information leaks.³⁴ However, some pharmaceutical companies prefer to negotiate new contracts at each stage of development, thereby maintaining a stronger bargaining position.³⁵

Existing strong relationships between some fine chemical suppliers and their pharmaceutical customers suggest that optimizing size has become a critical factor for success. Reportedly, a company must be large enough to offer the wide range of services required by some drug companies, yet not so large so as to be inflexible.³⁶ Strong ties, sometimes leading to partnerships, often result in an advantage in securing future projects and can enable chemical companies to avoid losses from failed bid attempts.³⁷ The needs of the

³⁰ MacDonald, p. 30.

³¹ Bozwell, p. FR3.

³² Gain, p. S4.

³³ Bozwell, p. FR6.

³⁴ Rick Mullin, "Gauging Custom Opportunities," *CW*, May 19, 1999, p. 39.

³⁵ *Ibid.*, p. 36.

³⁶ John Baker, "A Question of Leadership," *European Chemical News*, June 9-15, 1997, p. 15.

³⁷ Baker, p. 16.

pharmaceutical companies are better met by working in conjunction with chemical manufacturers, particularly in the transition to full-scale production.³⁸

The reliability and speed of fine chemical suppliers is very important because a pharmaceutical company reportedly loses an estimated \$1 million each day a drug is delayed from the market.³⁹ Setting up manufacturing plans when the new drug application is submitted to the FDA is ideal for U.S. pharmaceutical companies. The certification of all manufacturing facilities is a lengthy process,⁴⁰ and the FDA warns against any deviations that might produce purity levels that differ from that of the tested product.⁴¹

Company Size Considerations

As pharmaceutical companies outsource earlier in the development process, the fine chemical industry is adjusting to better fulfill this widening range of needs.⁴² Many of the large fine chemical companies have recently acquired or invested in facilities to expand their range of manufacturing capabilities, including both production scale and breadth of technology. Some industry sources have speculated that larger firms will be increasingly successful in this market.⁴³ One such source believes that fine chemical producers must be sufficiently large (sales of \$50 million -100 million per year) to "ensure safety, R&D, and process development."⁴⁴

Mergers and acquisitions in the fine chemical industry have been attributed, at least in part, to the pharmaceutical industry's increasing use of its services. Fine chemical producers with U.S. pharmaceutical customers find it easier to purchase an existing plant that has already been approved by the FDA rather than investing the time necessary for greenfield projects. The high margins enjoyed in pharmaceutical intermediates sales, reportedly just under 20 percent, are sufficient incentive to justify such investment.⁴⁵ Notably, drug companies have been selling their own manufacturing facilities, ostensibly to focus resources on R&D. However, as more fine chemical manufacturers enter drug production, these same pharmaceutical companies are likely to benefit from the increased competition, which they are helping to intensify by increasing the number and capacity of competitors.⁴⁶

³⁸ Ibid., p. 16.

³⁹ MacDonald, p. 30.

⁴⁰ Ibid., p. 30.

⁴¹ Farley and Scott, p. 25.

⁴² Mullin, p. 39.

⁴³ Mullin, p. 31.

⁴⁴ Kerri Walsh and Bill Schmitt, "Custom Makers Respond to Tougher Competition," *CW*, Feb. 24, 1999, p. 28.

⁴⁵ "M&A Activity Heating Up," p. 20.

⁴⁶ "A Market Like No Other?" p. 5.

Challenges to Developing U.S. Capacity

As the strength and profitability of supplying the pharmaceutical industry entices many fine chemical companies to enter the sector or to expand operations, U.S. fine chemical companies seek capacity that meets the standard of "current Good Manufacturing Practices" (cGMP)⁴⁷ by acquiring existing plants as well as initiating more greenfield projects. Although cGMP capacity is slowly expanding, there is no surplus of these facilities on the market. Moreover, when a company can find a plant to buy, much of the facility's capacity is typically dedicated to the previous owner's customers. Finding new capacity can be a challenge. Even a new facility has a hard time bringing cGMP production online. Management must learn more than just how to build the equipment, it must also learn the GMP "culture," including staff training, and production management. Reportedly the United States lags behind Europe in this matter.⁴⁸

Pharmaceutical companies often prefer to work with fine chemical manufacturers that are able to produce both in preclinical kilogram units and in full-scale quantities. Fine chemical companies are responding by increasing kilogram-quantity cGMP capacity for pharmaceutical intermediates. However, some industry sources suggest that such investment may be risky given the low rate of pharmaceuticals that survive the development and approval processes and get produced commercially (figure 3), which is typically the more lucrative aspect of the business.⁴⁹ However, others argue that compensation is increasing for fine chemical development, and that the benefits of cultivating a pharmaceutical company relationship may yield future opportunities. For smaller companies in particular, the risks are considered significant although long-term advantages may make the investment worthwhile.⁵⁰

The United States has less cGMP capacity than Europe (the world leader) has, in part because U.S. fine chemical companies have preferred to concentrate their attention on existing or short-term business demand. The United States is at a disadvantage with regard to production capacity, because initiating full-scale production of pharmaceutical chemicals tends to have a protracted test-to-market cycle vis-a-vis any dealings with other fine chemical customers.⁵¹ Reportedly, U.S. chemical companies also are discouraged from establishing themselves in the pharmaceutical outsourcing market because of the disparity in FDA domestic and overseas inspection standards for facilities.⁵² The result is a shortage

⁴⁷ The FDA and certain other national regulatory agencies have established an evolving set of quality product standards, known as cGMP, that are designed to ensure the safe manufacture of pharmaceuticals.

⁴⁸ Alice Naude, "Bringing a cGMP Culture to the US," *CMR*, Jan. 19, 1998, p. FR29.

⁴⁹ Claudia Hume, "Small-scale cGMP Reflects Complex Demands," *CW*, Jan. 6, 1999, p. 40.

⁵⁰ *Ibid.*, p. 40.

⁵¹ Bozwell, p. FR3.

⁵² Andrea Foster, "FDA Foreign Inspections Faulted," *CW*, May 13, 1998, p. 54. In a March 29, 1999, conversation, an FDA official stated that both foreign and domestic inspections of facilities for a new drug application are identical; however, limited resources result in less frequent routine "followup" inspections of overseas facilities as compared with inspections of
(continued...)

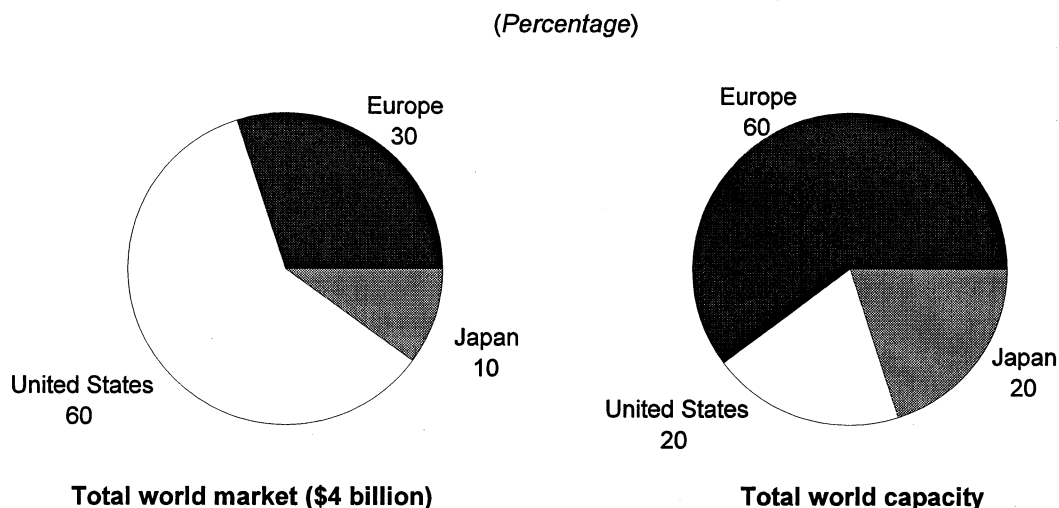
of U.S. fine chemical facilities that both have FDA approval and can also perform the highly specialized processes required for the complex chemicals used by drug companies.⁵³

Global Competitive Developments

World competition in the fine chemical industry is strong, including the established European industry and, more recently, the industries of Ireland, Singapore, India, and China. Some industry sources have argued that because of the globalization of the pharmaceutical industry, U.S.-based facilities are not critical for the success of a fine chemical company.⁵⁴ In fact, about one-half of recent U.S. and European investment in cGMP capacity has been in foreign countries.⁵⁵

Among the leading pharmaceutical industries (at the national level), the U.S. research-based companies have played a significant role in outsourcing. In 1997, the world market for outsourced services in the patented and brand name pharmaceutical industry was estimated at \$4 billion; of this total, the U.S. pharmaceutical industry share accounted for about 60 percent (figure 5).

Figure 5
Pharmaceutical outsourcing: Share of consumption and production capacity, 1997 estimate



Source: Claudia Hume, Rick Mullin, Samuel K. Moore, Bill Schmitt, and Kerri Walsh, "Fine Chemicals: Firing Up New Operations," *Chemical Week*, Jan. 20, 1999, p. 40.

⁵² (...continued)
facilities located in the United States.

⁵³ Ibid.

⁵⁴ Naude, p. FR30.

⁵⁵ Ibid., p. FR30.

However, U.S. capacity for outsourced services to support the pharmaceutical industry was about 20 percent of the total world capacity and equaled only one-third of European production capacity for outsourced services.⁵⁶ This shortfall in U.S. capacity has contributed to the growing U.S. trade deficit in medicinal chemicals noted later. Although Europe has about 60 percent of the global fine chemical capacity to supply to the patented and brand name pharmaceutical industry, European pharmaceutical firms supply 30 percent of world consumption.⁵⁷ With the trend towards establishing relationships between intermediate suppliers and drug producers, the European pharmaceutical industry is expected to increase its outsourcing demand in the future.⁵⁸

Outsourcing has become increasingly important to the Western European pharmaceutical industry. As in the United States, many European pharmaceutical companies are channeling internal resources toward R&D and marketing while contracting out the manufacture of intermediates and active ingredients to quick and efficient fine chemical producers.⁵⁹ After years of limited interaction between European drug companies and fine chemical producers, trust and established expertise have led to the development of long-term strategic partnerships, with the chemical manufacturers involved earlier in the process of drug development.⁶⁰

In Germany and the United Kingdom, fine chemical manufacturers are doing well. Europe's rapidly developing biotechnology industry has spurred growth in demand, to complement that of the substantial existing base of European pharmaceutical companies. However, there is a dichotomy of producers between the large chemical companies that have consolidated to improve their international competitiveness and the small specialized producers. Some industry sources have questioned whether small companies can continue to compete.⁶¹

India and China are competitive with Europe and the United States in some standard chemical intermediates, but they are not yet active in the area of innovative, complex intermediates for pharmaceutical manufacture.⁶² India and China are typically competitive in areas (for example, generic drugs) where price rather than technology is the key factor.⁶³

The outsourcing market for generics (off-patent pharmaceutical products) differs from that for brand name products. Although many producers of bulk active ingredients⁶⁴ are in Europe, import competition also exists from such low-cost sources as Asia. The ruling on patent laws in the European Union has also made it illegal for companies in member states

⁵⁶ Bruce Gain, "U.S. Lags Europe in Outsourcing Capacity," *CW*, Sept. 10, 1997, p. 44.

⁵⁷ *Ibid.*, p. 34.

⁵⁸ Sean Milmo, "Outsourcing in Europe Adapts," *CMR*, Aug. 5, 1996, p. SR8.

⁵⁹ Macdonald, pp. 28, 30.

⁶⁰ *Ibid.*

⁶¹ Sean Milmo, "Europe in Contract Mode," *CMR*, Jan. 18, 1999, p. FR11.

⁶² Macdonald, p. 30.

⁶³ Kerri Walsh and Bill Schmitt, "Custom Makers Respond to Tougher Competition," *CW*, Feb. 24, 1999, p. 28.

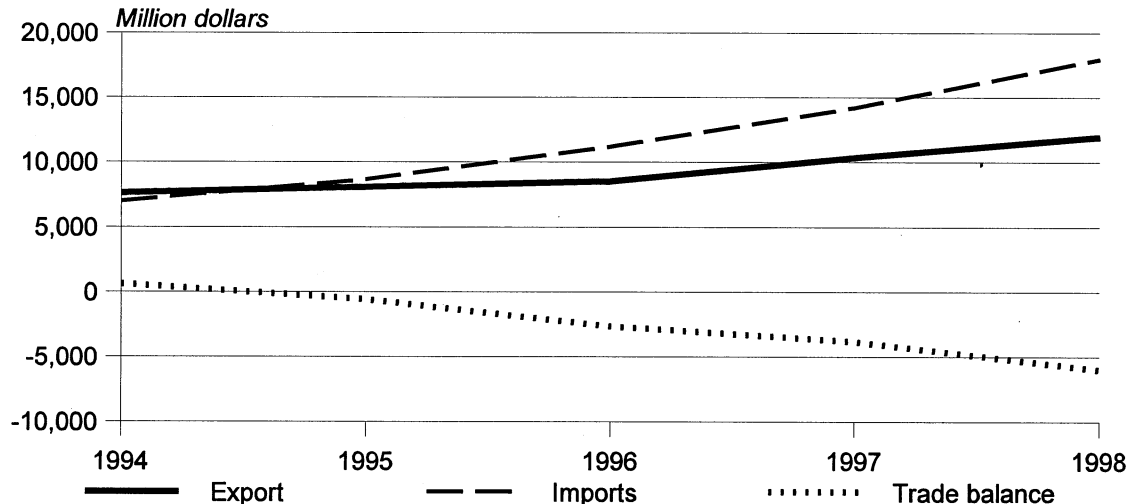
⁶⁴ Bulk active ingredients are pharmaceutical chemicals that have not yet been put up in individual dosages and are therefore sold in bulk form.

to sell active ingredients for products still under patent anywhere in the world.⁶⁵ In many countries, including the United States, it is legal to sell patented active ingredients for the development and clinical trials of generic products, even though the generics cannot be marketed legally until the expiration of the patent. As a result, U.S. manufacturers of generics that had traditionally used European producers for supplies were at a loss. They had to find other sources of patented active ingredients to market a product immediately after patent protection ended for the brand name product.⁶⁶ Imports from Europe remain strong and shipments from India and China are increasing, but the domestic pharmaceutical industry is optimistic that this situation will encourage the U.S. fine chemicals industry to develop its outsourcing services for bulk active ingredients.⁶⁷

Effects on U.S. Trade Balance in Medicinal Chemicals

The U.S. trade deficit in medicinal chemicals (including pharmaceuticals and certain chemical intermediates) increased by \$2.1 billion (56 percent) to \$6.0 billion in 1998 (figure 6). Although U.S. exports continued to increase, the growing deficit reflects a larger rise in imports, particularly from Western Europe, as outsourcing to existing European fine chemical producer capacity contributed significantly to the U.S. trade deficit for these products.

Figure 6
Medicinal chemicals: U.S. exports, imports, and trade balance, 1994-98



Source: Compiled from official statistics of the U.S. Department of Commerce.

⁶⁵ Sean Milmo, "EU Court Ruling Deals a Setback to Generics Arm," *CMR*, Aug. 4, 1997, p. 7.

⁶⁶ Matthew Lerner, "Bulk Pharma Taking Root in Americas," *CMR*, May 20, 1996, p. 5.

⁶⁷ Bill Macdonald, "Asian Plants Relish in Custom Synthesis," *Asia-Pacific Chemicals*, May 1998, p. 31.

Global trade in the pharmaceutical industry has generally increased since January 1, 1995, following the elimination of duties on most medicinal chemical products under the Uruguay Round Agreement.⁶⁸ The world pharmaceutical industry is dominated by multinational corporations and is characterized by substantial intracompany trade. U.S. exports increased by \$1.6 billion (16 percent) to \$12.0 billion in 1998. By value, the top three markets for U.S. pharmaceuticals (by value) were Canada, the Netherlands, and Germany. Overall, the combination of higher drug prices, increasing demand by aging populations, and an industry environment conducive to trade led to the continued rise in U.S. exports (by value). U.S. imports of pharmaceuticals increased by \$3.8 billion (27 percent) to \$17.9 billion in 1998. Imports from Germany, the United Kingdom, and Ireland, the top three suppliers (by value) to the United States in 1998, increased of \$1.2 billion (50 percent) to \$3.5 billion, \$454 million (18 percent) to \$3.0 billion, and \$1.3 billion (71 percent) to \$3.2 billion, respectively, and together accounted for 54 percent of total U.S. imports of these products. The United Kingdom and Germany in particular benefitted from the outsourcing trend. The many prominent multinational pharmaceutical companies that are active in these two countries (e.g., Glaxo Wellcome, SmithKline Beecham, and Hoechst Marion Roussell), and their reputations for well-trained organic chemists, make both the United Kingdom and Germany attractive sites for contract manufacturing.⁶⁹

The Irish economy has been strong over the past decade, largely because of its membership in the EU and a national tax policy that is favorable to large corporations. The most significant growth has been in high-technology areas such as pharmaceuticals. Reportedly, 13 of the 15 leading multinational drug companies worldwide have set up manufacturing facilities in Ireland.⁷⁰ Low Irish production costs make Ireland's medicinal chemicalshighly price-competitive in the U.S. market, leading to a rise in imports that continued in 1998.⁷¹

Outlook

The increased outsourcing of production by the pharmaceutical industry has had a significant effect on both the domestic and foreign fine chemical industry. Although the exact nature of the structural relationship between the customer (drug companies) and supplier (fine chemical manufacturer) continues to emerge, the trend has been toward strengthening such relationships. However, not all suppliers and drug companies agree that such arrangements always lead to such competitive advantages. For example, a closer partnership can lead to better service for the pharmaceutical company, and largely avoids proprietary concerns often raised in using multiple suppliers, but the investment risks of a drug never reaching the

⁶⁸ The United States, the United Kingdom, Germany, Ireland, Japan, and several other large pharmaceutical-producing countries participated in this agreement. For a more detailed assessment, see USITC, *Industry, Trade, and Technology Review*, "The Uruguay Round Elimination of Duties on Pharmaceuticals: Developments in the 2 Years Since Implementation" (USITC Publication 3071, Oct. 1997), p. 1.

⁶⁹ Milmo, "Europe in Contract Mode," p. FR11.

⁷⁰ Charles W. Thurston, "Branded Offshore Manufacturing Finds a Home in Ireland and Singapore," *CMR*, June 8, 1998, p. FR12.

⁷¹ Dyan Machan, "Irish Tiger," *Forbes*, Mar. 9, 1998, p. 86.

market may eventually be too great for the suppliers. However, the increasing competition in the fine chemical industry, as well as reported higher compensation for developmental work and future lucrative opportunities, may convince some manufacturers that the risk is worthwhile. It seems that both industries continue to perform strongly, and there is a place for both the “preferred partner” and “cafeteria”-style relationships.

As in many industries, there is a trade-off between the size and diversity that offer many different services to the customer, and smallness and flexibility that allow quick response to changing customer requirements. To meet the characteristic needs of the pharmaceutical industry, an optimal midsize fine chemical producer is likely to emerge. Certain small, highly specialized manufacturers are also likely to remain.

In the longer term, the appeal of the pharmaceutical industry as a customer could decrease as the competition among fine chemical producers rises, rendering the market less profitable than currently. The difficulty of meeting FDA standards for added cGMP capacity may prove a further deterrent as fine chemical companies turn to less highly-regulated manufacturing options. Nevertheless, the increasing importance of R&D to drug companies makes it likely that they will continue to hire outside suppliers for their chemical intermediates and active ingredients. ■

Thailand's Financial Crisis and Progress Towards Recovery—Implications for U.S. Trade

Karl S. Tsuji¹
tsuji@usitc.gov
(202) 205-3434

More than 2 years have elapsed since the Thai economy succumbed to a financial and economic crisis that engulfed the "Tiger economies" of East/Southeast Asia. Diligently adhering to the International Monetary Fund's structural-adjustment policy package, Thailand has made significant progress in implementing corrective actions. Its economy began to show revival signs early this year, but sustained recovery depends on tackling still-significant structural problems. Hence, some observers advocate a "wait and see" outlook. Thailand, of course, has an important role in the political stability and economic growth of Southeast Asia, as well as being a long-standing U.S. partner in the region. This article examines the roots of Thailand's financial crisis, its economic stabilization efforts, and the outlook for the Thai economy and U.S.-Thai trade.

Free-market approaches and outward-oriented national development strategies that emphasized export- and investment-led growth transformed Thailand from a less-developed country, dependent primarily on agriculture and natural-resource extraction, into a newly industrialized country, diversified by export-oriented manufacturing, tourism, and financial services (text box 1).² During the 1980s to mid-1990s, Thailand had one of the world's fastest-growing economies.³ Likewise, Thai citizens enjoyed unprecedented improvements in living standards and reduction of poverty⁴ to the point where their nation's per-capita

¹ The views expressed in this article are those of the author. They are not the views of the International Trade Commission or any of the Commissioners.

² The agricultural sector, which once dominated Thailand's economy, contributed 36.5 percent to the Thai GDP in 1966, whereas manufacturing accounted for only 13.7 percent. By the early 1980s, the contribution of manufacturing output to Thai GDP had overtaken that of the agricultural sector. World Bank Group, "Thailand at a Glance," *Trends in Developing Economies* (various years).

³ Real annual growth in Thai GDP averaged around 7 percent during the 1980s and more than 8 percent during the early to mid 1990s. World Bank Group, "Countries, Thailand," *Trends in Developing Economies*, Sept. 1997, found at Internet address <http://www.worldbank.org/html/extdr/offrep/eap/th2.htm>, retrieved Oct. 20, 1998.

⁴ For example, the incidence of poverty has been reduced from over 57 percent of the population in the late 1960s to about 13 percent by 1996. World Bank Group, "Thailand at a Glance."

Text box 1: The Kingdom of Thailand at a glance

Population: 62.1 million (1999 estimate).

Government: Multiparty parliamentary system, with a constitutional monarchy since 1932.

Economy: Mixed, with both private and parastatal enterprises.

Shares of 1996 GDP (percent, preliminary):

Agriculture, livestock, forestry, fisheries	11.0
Mining, quarrying, construction, utilities	11.1
Manufacturing	28.4
Services	45.8
Public administration, defense	3.7

Significant sectoral products:

Rubber, rice, shrimp, canned fish and pineapple, tropical hardwoods
Gemstones, tin
Electronic equipment and components, apparel, jewelry, footwear, motor vehicles, petrochemicals
Banking and finance, tourism

Sources: Official statistics of the Bank of Thailand, Export-Import Bank of Thailand, and Thai Board of Investments.

GNP reached \$2,960 by 1996.⁵ However, more than 2 decades of sustained expansion masked certain policy shortcomings and structural weaknesses in the Thai economy. These problems became increasingly evident in 1996 as exports stalled, massive capital inflows reversed direction, and economic growth slowed (table 1), leading to the mid-1997 Thai currency devaluation and financial crisis.

Political Economy and Development Strategies

Despite frequent administrative changes,⁶ Thailand's political system has evolved towards increased economic, trade, and foreign-investment liberalization. Formulation of economic policy was traditionally guided by the professional "technocrats" of the civil bureaucracy⁷ and successive administrations generally adhered to the overall goals of the 5-year National

⁵ Thailand ranked near the top of the lower half of the middle-income category of nations having 1996 per-capita GNPs ranging from \$786 to \$3,115. World Bank Group, *1998 World Development Indicators*, table 1.1, "Size of the Economy," 1998, pp. 12-14.

⁶ Constitutional government in Thailand dates back to 1932, with the military overthrow of the absolute monarchy. Changes in government have been frequent as political parties rule by often short-lived coalitions, with periodic military intervention (attempted as recently as May 1992). During the financial crisis in July 1997, the government was the 52d in power since 1932. Royal Thai Embassy, Washington, DC, "Government and Politics, Prime Ministers of Thailand," May 1998, found at Internet address <http://www.thaiembdc.org/bio/pms/pmlist.htm>, retrieved Jan. 20, 1999.

⁷ These professional technocrats were employed by the NESD Board, Finance Ministry, Budget Bureau, Bank of Thailand, and Prime Minister's economic advisory staff. Further, most economic ministers were also technocrats who lacked political party affiliations. Suchit Bunbongkarn, *State of the Nation, Thailand* (Singapore: Institute of Southeast Asian Studies, 1996), pp. 14-15.

Table 1
 Thailand, economic indicators, 1993-99

Economic indicator	1993	1994	1995	1996	¹ 1997	² 1998	1999
GDP (<i>billions</i> of current U.S. dollars)	125.2	144.4	168.1	181.8	150.5	112.8	⁽³⁾
Real GDP growth rate (<i>percentage</i> change)	8.6	8.9	8.7	5.9	-1.8	-10.0	⁴ 3.0-4.0
Consumer price inflation rate (<i>percentage</i> change)	3.3	5.0	5.8	5.9	5.6	8.1	⁵ 0.5
Prime rate (<i>percent</i>)	10.50	11.50	13.75	13.38	14.63	11.50-12.00	⁶ 8.75-9.75
Exchange rate (<i>baht per dollar</i>)	25.32	25.15	24.92	25.34	31.37	41.37	⁶ 37.11
Stock Exchange of Thailand (SET) index	1,683	1,360	1,281	832	373	356	⁷ 410
Current account balance (<i>percentage</i> of GDP)	-4.9	-5.4	-7.8	-7.9	-2.0	12.6	⁸ 8.0
Net capital movements (<i>billions</i> of current U.S. dollars)	10.5	12.2	21.9	19.5	-9.5	-10.0	⁸ -2.9
Official reserves (<i>billions</i> of current U.S. dollars)	25.4	30.3	37.0	38.7	27.0	29.5	⁸ 32.0-34.0
Debt service ratio (<i>percentage</i> of goods and services)	11.3	11.7	11.4	12.3	15.6	20.7	⁸ 19.8
Merchandise exports to all partners (<i>billions</i> of current U.S. dollars)	36.8	45.3	56.7	55.9	58.3	54.5	⁸ 37.2
Merchandise imports from all partners (<i>billions</i> of current U.S. dollars)	46.2	54.4	70.7	72.2	63.2	42.4	⁸ 31.4
Net foreign direct investment from all sources (<i>millions</i> of current U.S. dollars)	1,730	1,322	2,003	2,268	3,751	4,729	⁹ 1,702
Unemployment (<i>percentage</i> of workforce)	2.6	2.6	1.7	1.5	1.9	4.0	² 3.1

¹ Preliminary.

² Estimate.

³ Not available.

⁴ Revised projection.

⁵ Projection.

⁶ Estimate, Jan.-July.

⁷ Estimate, Jan.-Sept.

⁸ Estimate, Jan.-Aug.

⁹ Estimate, Jan.-May.

Sources: Official statistics of the Bank of Thailand, International Monetary Fund, Thai Board of Investment, and World Bank Group.

Economic and Social Development (NESD) Plans.⁸ Throughout the early 1970s, import substitution and domestic market-led growth dominated the national development strategy. State-owned (parastatal) enterprises played significant roles in the economy, and light agro-processing was the extent of industrial activity. By the early-mid 1970s, the problems of severe imbalance of payments, limited domestic market base, and declining foreign investment prompted a shift of strategy towards export promotion.⁹ Promotion policies included granting numerous tariff and tax concessions; developing export processing zone facilities; and providing concessional financing, insurance, and marketing assistance.¹⁰ During the 1980s, increased and diversified manufactures exports (e.g., canned seafood and pineapple, apparel, footwear, leather products, jewelry, petrochemicals, and office machines)¹¹ and promotion of tourism helped to spur real annual economic growth of around 7 percent.¹² However, export promotion also exposed inadequate transportation and power-generation infrastructure, and labor-supply constraints, that drove up production costs and began to erode the international competitiveness of Thailand's labor-intensive agricultural and manufacturing base.¹³

The early 1990s saw a more balanced strategy that promoted investment and rural development, and divided incentives between export and domestic sectors. The goal was stable economic expansion, while improving income distribution, decentralizing economic activity, upgrading skilled labor, conserving natural resources, and protecting the environment. Policy measures included--

- Restructuring the tariff system,
- Extensive reduction of import licensing requirements,
- Investment incentives for rural areas,
- Initial privatization of parastatal enterprises, and
- Phase-out of export-oriented incentives.¹⁴

Agro-industry and food processing, textiles and apparel, electronics, metal working, petrochemicals, and iron and steel were identified by Thai authorities as sectors in which Thailand could have an international competitive advantage.¹⁵ Investment incentives

⁸ For main features of the First (1961-66) through Seventh (1992-96) NESD Plans, see Royal Government of Thailand, "Report by the Government of Thailand," in General Agreement on Tariffs and Trade (GATT), *Trade Policy Review, Thailand 1991*, vol. II, part B (Geneva: GATT, Dec. 1991), pp. 38-40.

⁹ GATT, "Report of the General Agreement on Tariffs and Trade Secretariat," *Trade Policy Review, Thailand 1991*, vol. I (Geneva: GATT, Dec. 1991), pp. 46-47.

¹⁰ Ibid., pp. 137-146.

¹¹ Ibid., pp. 32-33.

¹² World Bank Group, "Countries, Thailand."

¹³ World Trade Organization (WTO), Trade Policy Review Board (TPRB), "Report of the World Trade Organization Secretariat," *Trade Policy Review, Thailand 1995*, vol. I (Geneva: WTO, TPRB, Dec. 1995), p. 19.

¹⁴ Ibid.

¹⁵ Ibid., p. 20.

generally took the form of tax concessions, particularly for projects in rural areas.¹⁶ Real annual economic growth averaged more than 8 percent during the early to mid 1990s,¹⁷ as Thailand diversified its industrial base and expanded its exports of higher value-added technology-intensive manufactures, attracted increased foreign capital investment towards the private sector, and supported ambitious national industrial development programs. One outcome was that the country became a leading regional producer of electronic products and motor vehicles.¹⁸ Liberalization of the financial services sector was also initiated in the early 1990s. To promote Bangkok as a regional financial center and to channel foreign investment into the country, Thailand--

- Relaxed controls on interest rates and international transactions,
- Revised securities industry regulations,
- Established a mutual fund industry,
- Expanded permissible activities for financial institutions,
- Opened further the banking sector to foreign firms, and
- Established the Bangkok International Banking Facility (BIBF) to develop an offshore banking industry.¹⁹

However, the stepped-up pace of national development since the early 1990s also exacerbated existing problems: severe strains on transportation and power-generation infrastructure, shortages of skilled labor, widening income disparities, and accelerated air and water pollution in the central urban and the Eastern Seaboard regions.²⁰ These social and environmental strains made "sustainable development" a major theme for the Seventh NESD Plan for 1992-96.²¹

Thai Financial Crisis

The Thai financial crisis is widely recognized as developing not from purely domestic fiscal problems, but rather from fundamental economic weaknesses, often exacerbated by miscues of policymakers.²² Reportedly, four structural economic conditions, dating back to the early

¹⁶ Ibid., pp. 61-64, 129-133.

¹⁷ World Bank Group, "Countries, Thailand."

¹⁸ U.S. Department of Commerce (USDOC), *1999 Country Commercial Guide, Thailand*, ch. 5, "Leading Prospects for U.S. Business and Investment."

¹⁹ WTO, TPRB, *Trade Policy Review, Thailand 1995*, pp. 113-115.

²⁰ Ibid., pp. 72, 88-89.

²¹ Bunbongkarn, p. 42.

²² Unlike the massive public spending or hyperinflation which characterized past Latin American crises, national budgets were in relative balance and inflation low in most East/Southeast Asian countries, including Thailand. Other important aspects that distinguish the East/Southeast Asian countries included stronger economic growth, higher investment, and higher domestic savings. However, in both Thailand and Latin America, inadequate macroeconomic policies provided incentives for the private sector to take on excessive risks. See, among numerous others, Nayan Chanda and Michael Vatikiotis, "Let This Be a Lesson, Thailand's Maladies are Painful, But Probably Not Contagious, At Least They Should Serve as a (continued...)"

1990s, rendered the outward-oriented Thai economy vulnerable to external shocks and changing investor sentiment,²³ both of which caused significant capital outflows.²⁴ The structural conditions are as follows:

(1) Exchange-rate misalignment

Since 1984, Thailand has pegged its currency (baht) to a basket of its major trade-partner currencies, with the U.S. dollar accounting for the predominant share—80 percent according to one estimate.²⁵ By maintaining the baht within a narrow trading range of around 25 to the dollar, the central bank (Bank of Thailand) and the Finance Ministry ostensibly sought to enhance domestic financial stability and to encourage inflows of foreign investment.²⁶ However, beginning in early 1995, appreciation of the dollar against other major currencies drove up the nominal value of the baht. When the Thai inflation rate exceeded the U.S. inflation rate, the baht became significantly overvalued.²⁷

(2) Short-term foreign debt burden

In the early 1990s, liberalization of the financial sector and establishment of off-shore banking allowed Thailand to attract massive inflows of foreign capital, based on foreign perceptions of favorable investment prospects associated with macroeconomic stability and sustained economic

²² (...continued)

Valuable Warning to Other Asian Policy Makers,” *Far Eastern Economic Review*, June 12, 1997, pp. 70-74; *Economist*, “Frozen Miracle, a Survey of East Asian Economies,” Mar. 7, 1998, 18 pp; Javier Hamann, “Background to the Crisis,” *IMF-Supported Programs in Indonesia, Korea, and Thailand, a Preliminary Assessment*, International Monetary Fund (IMF) Occasional Paper 178, 1999, pp. 9-17; Lawrence B. Krause, *The Economics and Politics of the Asian Financial Crisis of 1997-98*, Council on Foreign Relations, Washington, DC, found at Internet address <http://www.foreignrelations.org/studies/transcripts/crisis.html>, retrieved Sept. 8, 1998; and Shigemitsu Sugisaki, “Economic Crises in Asia,” IMF, 1998 Harvard Asia Business Conference, Harvard Business School, Jan. 30, 1998, found at Internet address <http://www.imf.org/external/np/speeches/1998/013098.HTM>, retrieved Oct. 16, 1998.

²³ The simultaneous presence of these four factors in an economy as crucial for a financial crisis to be triggered was emphasized by Lawrence B. Krause, Professor Emeritus of the Graduate School of International Relations and Pacific Studies, University of California, San Diego. Krause.

²⁴ Reversal of capital inflows as the immediate initiator of Thailand's financial crisis was noted most explicitly by Shigemitsu Sugisaki, Deputy Managing Director of the IMF. Sugisaki.

²⁵ Michael Vatikiotis and Gary Silverman, “State of Denial, Thailand Needs to Come to Grips with Its Debt Problem and Other Economic Ills, But the Business Community and Government are Reluctant to Face the Facts,” *Far Eastern Economic Review*, Mar. 6, 1997, pp. 48-50.

²⁶ Krause.

²⁷ Ibid.

growth.²⁸ Much of this inflow was short-term (less than 1 year to maturity), denominated in foreign currency, and unhedged. Domestic Thai interest rates that were above prevailing international rates, willingness of foreign banks (especially of the BIBF²⁹) to lend, and the Bank of Thailand's pledge to defend a relatively fixed exchange rate encouraged two errors in borrowers: to look abroad for cheap sources of funds and to ignore exchange-rate risks.³⁰ Net capital inflows reached a peak of \$21.9 billion in 1995, amounting to as much as 13 percent of Thai GDP for that year (table 1). By 1996, Thailand's total external debt reached \$90.5 billion (a sum equivalent to about one-half of the Thai GDP for that year), with 42 percent (\$37.6 billion) having short-term maturities. However, Thailand differed from many other significantly indebted nations because most of the foreign capital flowing into Thailand went into the private rather than the public sector; Thailand's private-sector debt reached \$73.7 billion in 1996, or 81 percent of its total external debt in that year.³¹

(3) Financial-sector vulnerability

Extensive undercollateralized lending, stemming largely from misallocation of credit, inflated asset prices, and inadequate assessment of credit risks, was the primary weakness of the Thai financial sector.³² This weakness was sustained by (i) lack of transparency in accounting and in financial data,³³ (ii) "crony" personal connections with implicit bank guarantees rather than creditworthiness,³⁴ and (iii) a lax regulatory framework.³⁵ Thai

²⁸ Hamann, p. 10.

²⁹ Rather than attracting foreign savings that could be lent to foreigners, as envisioned by Thai authorities, the BIBF facilitated foreign currency-denominated lending to Thai firms, through foreign-owned facility banks as the intermediaries. Through the BIBF, foreign lenders could contract for short-term foreign currency and still earn a margin over prevailing international rates on their loans to Thai customers, whereas the latter could obtain foreign funds at interest rates 4 to 6 percentage points less than from domestic sources. The amount of foreign lending (both short-term and long-term) facilitated by the BIBF reached \$31.2 billion by the end of 1996. Krause.

³⁰ U.S. Department of State, "Thailand—Economic Trends and Forecast for 1998," Economics Section, U.S. Embassy, Bangkok, May 1998, found at Internet address <http://usa.or.th/embassy/eco.htm>, retrieved Oct. 15, 1998.

³¹ Compiled from official statistics of the Bank of Thailand (BOT).

³² Hamann, pp. 9-10.

³³ For example, both BOT statistics and irregular accounting practices of many Thai firms tended to mask the magnitude of Thailand's burgeoning bad debt. U.S. Department of State.

³⁴ Close relationships among banking, corporate, and government representatives encouraged borrowers and lenders to believe that they would be rescued by the government, if necessary. *Economist*, pp. 5 and 7.

³⁵ Government oversight of the financial sector was further weakened during the early-mid 1990s as many of the BOT's best staff and new graduates found higher paying positions in the fast-growing financial sector. Public-sector salaries were estimated at one-third of those offered

(continued...)

corporate borrowers preferred to finance corporate growth by contracting debt,³⁶ but much of the growth was overexpansion of industrial capacity in capital-intensive sectors such as petrochemicals, steel, motor vehicles, and electronic products.³⁷ Nor could commercial banks and finance companies convert the large inflows into productive uses. The inflows were channeled into the booming real estate and stock markets, inflating asset prices and deteriorating financial institutions' loan portfolios.³⁸ When the real estate boom collapsed in 1996, commercial banks and finance companies were stuck with nonperforming loans to developers, which totaled an estimated \$31 billion, with much of them non-performing.³⁹

(4) Administrative uncertainty

The sustained Thai economic growth enabled business leaders and their political parties to make inroads into the government decision-making process, bypassing the technocrats of the civil bureaucracy.⁴⁰ At the same time, many regulators and legislators were major debtors and creditors.⁴¹ Hence, oversight of the financial sector and formulation of macroeconomic policy became increasingly politicized.⁴²

Although the Thai economy had expanded at annual rates of 8.9 and 8.7 percent during 1994 and 1995, respectively, growth slowed in 1996 to 5.9 percent (table 1), exposing underlying economic weaknesses. However, the speed and extent to which the economy deteriorated exceeded even the Thai Government's expectations.⁴³ Domestic credit had expanded

³⁵ (...continued)

for comparable positions in the private-sector. Chanda and Vatikiotis, "Let This Be a Lesson," p. 74; and *Economist*, p. 5.

³⁶ In closely held Thai firms, shareholders preferred not to issue additional equity to avoid diluting their control. Further, relatively generous corporate tax provisions favored corporate debt over equity. By year-end 1996, Thai corporations became highly leveraged to the point where the amount of debt was twice that of equity for nonfinancial firms. Hamann, p. 10; and Krause.

³⁷ *Economist*, p. 12; and U.S. Department of State.

³⁸ Hamann, p. 10.

³⁹ Rodney Tasker, "Surface Measures, Thai Property Bailout Fails to Attack Problem's Core," *Far Eastern Economic Review*, Apr. 10, 1997, pp. 54-55.

⁴⁰ In this regard, Suchit Bunbongkarn, professor and dean at Chulalongkorn University, Bangkok, labeled the technocrats of the civil bureaucracy as "victims of their own success," for the economic growth that they guided also gave rise to the urban middle class and the business community, with corresponding decline of the civil bureaucracy's influence in government. Bunbongkarn, pp. 18, 66-69.

⁴¹ Surpin Pitsuwan, Thai Foreign Minister, in *Far Eastern Economic Review*, "Cause and Effect, Speakers at the Review's Annual Corporate Conference Look Back on the Asian Crisis and Take Stock of the Region's Recovery," July 1, 1999, pp. 38-42.

⁴² Krause.

⁴³ BOT, Thai Board of Investment (BOI), "Q&A on Thailand's Road to Recovery," found at (continued...)

rapidly during the early-to-mid 1990s, but the Bank of Thailand's support of a pegged exchange rate kept it from raising interest rates to curb the credit surge. Beginning in early 1995, "overheating" of the economy and strengthening of the dollar that pulled up the value of the baht drew in increasing amounts of imports.⁴⁴ Then, export growth slumped in 1996 as overvalued Thai products became less competitive. This change took place in a context of (1) underinvestment in higher value-added production and (2) increased competition from neighboring countries in labor-intensive industries (e.g., apparel, footwear, seafood, and electronics products and components);⁴⁵ and (3) sharp drops in world prices of key exports (e.g., semiconductor devices) that further depressed Thai export revenues.⁴⁶

The sagging export revenues and rising import payments exacerbated current account imbalances, which reached nearly 8 percent of Thailand's GDP during 1995 and 1996 (table 1). Slower growth of domestic economic activity and the underlying weakness of the financial sector became increasingly evident as asset portfolios further deteriorated. Doubts about the creditworthiness of Thai financial institutions led foreign investors to start withdrawing short-term financing, so that Thai property and stock prices plunged.⁴⁷ Share prices tumbled as the Stock Exchange of Thailand (SET) index fell by 35 percent during 1995-96, and continued to fall through 1997 (table 1). The once-booming construction industry collapsed in 1996, being overbuilt and financed by questionable loans.⁴⁸ The economic slowdown and declining property and stock prices tended to reinforce each other, further weakening the shaky state of bank portfolios, leading to self-perpetuating bankruptcies and failures.⁴⁹

During the 18 months leading up to the July 1997 floating of the baht, the International Monetary Fund (IMF) expressed concerns about unsustainable Thai economic policies and pressed for urgent action.⁵⁰ The Bank of Thailand warned against excessive short-term borrowing from abroad and against Thai lending to unproductive sectors (warnings that generally went unheeded). It also introduced measures in an attempt to curtail short-term inflows, strengthen prudential regulations, and reduce the current account deficit.⁵¹ However, the Thai Government's ability to address economic concerns reportedly was

⁴³ (...continued)

Internet address <http://www.thaiembdc/org/economic/qnaecon.html>, retrieved Oct. 28, 1998.

⁴⁴ *Economist*, p. 6.

⁴⁵ David E. Sanger, "The Overfed Tiger Economies," *New York Times*, Aug. 3, 1997, found at Internet address <http://www.nytimes.com/library/financial/080397crisis-tiger-analysis.html>, retrieved Nov. 2, 1998; and U.S. Department of State.

⁴⁶ Hamann, pp. 9-17.

⁴⁷ *Ibid.*, pp. 9 and 14.

⁴⁸ For example, in Bangkok, of the 600,000 square meters of office space built during 1996, only 460,000 square meters were rented. Further, 25,000 additional residential units were anticipated to come onto the market during 1996-98, even though vacancy levels stood at 25-30 percent. Tasker.

⁴⁹ Hamman, p. 15.

⁵⁰ IMF, "The IMF's Response to the Asian Crisis," fact sheet, Jan. 17, 1999, found at Internet address <http://www.imf.org/external/np/exr/facts/asia.htm>, retrieved Sept. 1, 1999.

⁵¹ BOT, BOI, "Q&A on Thailand's Road to Recovery."

hampered by two specific actions of the Bank of Thailand, that dangerously depleted the country's foreign reserves. The two actions were--

- *Defense of the pegged exchange rate*—According to various observers, the Bank of Thailand continued to support the baht at 25 to the dollar asserting that a devaluation was not necessary and possibly even detrimental to the economy by sharply increasing imports and the country's foreign-debt burden.⁵² Speculative attacks mounted in November 1996, February 1997, and May 1997 as financial markets considered the pegged rate unsustainable against looming current account deficits, significant appreciation of the real effective exchange rate, massive foreign (particularly short-term) debt, a deteriorating fiscal balance, and the financial sector difficulties, unless Thailand could improve its productivity, lower labor costs, restrain its financial sector, and control corruption.⁵³ By the end of June 1997, although reported foreign-exchange reserves totaled \$30 billion, the Bank of Thailand's forward commitments to deliver dollars on the Hong Kong and Singapore foreign exchange markets totaled more than \$23 billion and was rising.⁵⁴
- *Efforts to prop-up the financial sector*—As the reported “lender of last resort,”⁵⁵ the Bank of Thailand spent additional billions of dollars propping-up ailing banks and finance companies. The Bank of Thailand's Financial Institutions Development Fund (FIDF) infused \$17.2 billion into the 58 finance companies that would eventually be suspended and closed, in addition to the roughly \$4 billion provided to offset deposit runs on the Bangkok Bank of Commerce.⁵⁶

Inadequate foreign-exchange reserves and the financial sector's difficulty in rolling over its short-term debts,⁵⁷ following months of financial turbulence and political indecision,⁵⁸

⁵² Henry Sender, “Get a Grip, Can Thailand's Central Bank Handle the Bhat Crisis,” *Far Eastern Economic Review*, Mar. 27, 1997, pp. 67-68.

⁵³ Timothy Lane and Marianne Schulze-Gahtas, “Thailand, Crisis and Adjustment,” *IMF-Supported Programs in Indonesia, Korea, and Thailand, a Preliminary Assessment*, IMF Occasional Paper 178, 1999, p. 2; and Sanger.

⁵⁴ Michael Vatikiotis, “Tainted Technocrats, Thailand's Central Bank is Blamed for Financial Crisis,” *Far Eastern Economic Review*, Sept. 4, 1997, p. 60.

⁵⁵ The BOT continued lending to ailing banks ostensibly because the secondary debt market was not fully developed, limiting the channels available for financial institutions to adjust their liquidity. BOT, BOI, “Q&A on Thailand's Road to Recovery.”

⁵⁶ U.S. Department of State.

⁵⁷ Hamann, p. 10.

⁵⁸ Reportedly, within the factious ruling-coalition government, politicians representing manufacturers and farmers opposed any devaluation, whereas those representing exporters favored a cheaper baht. Keith B. Richburg, “Thailand's Go-Go Economy Stopped Cold by Dramatic Downturn,” *Washington Post*, Aug. 10, 1997, p. A19.

reportedly forced the Bank of Thailand and the Finance Ministry to float the baht on July 2, 1997. Although intended as a "managed float," according to the U.S. Department of State—ostensibly to boost exports without unsettling financial markets or rekindling inflation⁵⁹—the baht immediately lost as much as 20 percent of its value against the dollar, declining to just under 30 to the dollar in offshore markets.⁶⁰ According to observers, domestic firms, rather than speculators, were among the heaviest sellers of bhat, needing to repay foreign currency-denominated loans that foreign creditors were no longer willing to roll-over or were desperately trying to hedge their foreign-exchange liabilities against further currency depreciation.⁶¹ By July 28, as reported by the U.S. Department of State, the Thai Government—confronted by a severe banking crisis, capital flight, foreign-investment withdrawals, a plummeting stock market, corporate bankruptcies, and rising unemployment—approached the IMF for assistance, inasmuch as no other lender was prepared to provide funding without IMF endorsement.⁶²

Economic Stabilization Efforts

Once the IMF reached agreement with Thai authorities about suitable recovery measures on August 5, it acted quickly to arrange the support of multilateral and bilateral sources at an August 11 meeting.⁶³ On August 20, the IMF approved the largest multiyear recovery program assembled to date since the \$50 billion package provided to Mexico after the peso crisis of 1994-95.⁶⁴ The IMF provided a 3-year stand-by credit arrangement, authorizing drawings up to \$4.0 billion. Additional financing from the World Bank and Asian Development Bank (both also provided technical assistance), as well as loans from Asian-Pacific countries (especially Japan, Thailand's largest creditor and source of foreign direct investment),⁶⁵ provided a financial aid package totaling \$17.2 billion (table 2). According to various sources, unlike traditional IMF structural-adjustment packages, which concentrated on fiscal and monetary policy, prescriptions for Thailand focused on financial

⁵⁹ U.S. Department of State.

⁶⁰ Seth Mydans, "The Thai Gamble, Devaluing Currency to Revive Economy," *New York Times*, July 3, 1997, found at Internet address <http://www.nytimes.com/library/financial/070397/crisis-tai-devalue.html>, retrieved Nov. 2, 1998.

⁶¹ *Economist*, p. 7.

⁶² U.S. Department of State.

⁶³ IMF, "IMF Calls Tokyo Meeting to Discuss Thai Financial Package," News Brief No. 97/17, Aug. 7, 1997, found at Internet address <http://www.imf.org/external/np/sec/nb/1997/NB9717.HTM>, retrieved Sept. 10, 1999.

⁶⁴ Formulation of this package was expedited by the IMF's new accelerated procedures established under the Emergency Financing Mechanisms, adopted Sept. 1995. IMF, "IMF Approves Stand-by Credit for Thailand," Press Release No. 97/37, Aug. 20, 1997, found at Internet address <http://www.imf.org/external/np/sec/pr/1997/pr9737.htm>, retrieved Sept. 10, 1999.

⁶⁵ Although countries outside of the Asia-Pacific region did not provide direct bilateral contributions, U.S. officials reportedly pointed out that U.S. funds accounted for roughly \$3 billion (three-fourths) of the IMF credits. Michael Vatikiotis, "Backyard Repairs," *Far Eastern Economic Review*, Aug. 28, 1997, p. 16.

Table 2
Sources of credits and loans to Thailand from the August 1997 International Monetary Fund Agreement

Multilateral/bilateral sources	Amount
	—Billion dollars—
International Monetary Fund	4.0
Other multilateral sources:	
World Bank	1.5
Asian Development Bank	1.2
Total	2.7
Bilateral sources:	
Japan	4.0
Australia	1.0
China	1.0
Hong Kong	1.0
Malaysia	1.0
Singapore	1.0
Korea	0.5
Indonesia	0.5
Total	10.5
Total package	17.2

Note.—Figures may not sum to total shown due to rounding.

Sources: International Monetary Fund (IMF), "IMF Approves Stand-by Credit for Thailand," Press Release No. 97/37, Aug. 20, 1997, found at Internet address <http://www.imf.org/external/np/sec/pr/1997/pr9737.htm>, retrieved Sept. 10, 1999; and IMF, "The IMF's Response to the Asian Crisis," fact sheet, Jan. 17, 1999, found at Internet address <http://www.imf.org/external/np/exr/facts/asia.htm>, retrieved Sept. 1, 1999.

sector revamping and structural economic reforms. The IMF structural-adjustment program provided for immediate measures aimed at quickly stabilizing Thailand's economy, which would then allow for implementation of intermediate measures to address the structural problems, and ultimately to put the economy back on the path of stable growth within 2 years.⁶⁶ IMF reforms were initially prescribed to--

- Reduce Thailand's current account deficit from 8 percent of GDP in 1996, to 5 percent in 1997, and to 3 percent in 1998;
- Check inflation at 8-9 percent;
- Raise foreign-exchange reserves to an equivalent of 4.2 months of imports in 1997 and 4.4 months in 1998;

⁶⁶ IMF, "The IMF's Response to the Asian Crisis;" IMF, "IMF Approves Stand-by Credit for Thailand;" Lane and Schulze-Ghattas, "Thailand, Crisis and Adjustment," pp. 2-3; and Royal Thai Embassy, Washington, DC, "Restructuring the Thai Economy Toward a Better Future," Nov. 21, 1997, found at Internet address <http://www.thaiembdc.org/economic/restruct.html>, retrieved Aug. 21, 1999.

- Turn around the public sector deficit to a surplus of 1 percent of GDP in 1997-98 (revised in March 1998 to allow for a deficit of 2 percent of GDP), largely to finance the cost of assuming bad debts of the financial sector; and
- Target contraction of the Thai economy to 2-3 percent for 1997-98.⁶⁷

Despite concerns about the change in Thai administration in mid-November 1997, observers noted that the new government appeared genuinely committed to strictly implementing the IMF measures,⁶⁸ a welcome signal to international markets and donors.⁶⁹ The Thai Government reportedly viewed the August 1997 agreement (despite an appearance of IMF control over the country's economic decision-making) as generally receiving wide-spread approval from both the private and public sectors.⁷⁰ According to observers, Thailand has generally adhered to the overall prescriptions of the restructuring package, despite delays in implementing some corrective policies,⁷¹ modified in consultation with the IMF through a quarterly series of letters of intent.⁷² To restore confidence in the economy and to normalize capital flows,⁷³ the government initiated tightening of fiscal and monetary policies to stem inflation and currency depreciation, imposition of corrective measures on the financial sector (e.g., recapitalization requirements, stricter accountancy standards, enhanced supervision, and closure of insolvent institutions), and restructuring of financial- and corporate-sector debts (text box 2). Likewise, the government initiated plans for privatizing parastatals and eased foreign-investment restrictions, in order to reduce structural impediments to economic

⁶⁷ IMF, "The IMF's Response to the Asian Crisis;" and IMF, "IMF Approves Stand-by Credit for Thailand."

⁶⁸ *Economist*, p. 9.

⁶⁹ U.S. Department of State.

⁷⁰ BOT, BOI, "Q&A on Thailand's Road to Recovery."

⁷¹ For example, passage of new Western-style bankruptcy and foreclosure laws pledged for the end of October 1998, expediting courts' ability to confiscate the assets of failed corporations and for foreigners to acquire Thai assets, reportedly was delayed by senators who ostensibly opposed opening the economy to foreign ownership, but were perhaps among the country's most indebted business owners. *Economist*, "Thailand, the Faltering Front-Runner," Dec. 12, 1998, p. 41; and Michael Vatikiotis, "Falling Grade, IMF Darling Thailand Slacks Off on Promised Reforms," *Far Eastern Economic Review*, Dec. 10, 1998, p. 62.

⁷² For example, fiscal guidelines were loosened at the second quarterly review in March 1998, as the Thai economy proved weaker than anticipated. The initial goal of turning around the public sector deficit to a surplus of 1 percent of GDP in 1997-98 was revised to allow a deficit of 2 percent of GDP for additional spending on essential social services and to ensure adequate availability of credit to foster economic recovery. For further details about economic reform provisions proposed by Thailand to the IMF, see Royal Government of Thailand, "Thai Letters of Intent, Memoranda of Economic and Financial Policies to the IMF," dated Nov. 25, 1997, Feb. 24, 1998, May 26, 1998, Aug. 25, 1998, Dec. 1, 1998, Mar. 23, 1999, and Sept. 21, 1999, found at Internet address <http://www.imf.org/external/np/loi/mempub.htm>.

⁷³ BOT, BOI, "Q&A on Thailand's Road to Recovery;" Royal Government of Thailand, "Letters of Intent," (various dates); Royal Thai Embassy, Washington, DC, "Restructuring the Thai Economy Toward a Better Future;" and Royal Thai Embassy, Washington, DC, "Thailand, the Right Medicine for Recovery," reprinted from *Fortune Magazine*, Dec. 8, 1997, found at Internet address <http://www.thaiembdc.org/economic/threcove.htm>, retrieved Aug. 21, 1999.

Text box 2: Selected reforms undertaken by Thailand**Macroeconomic policies:**

Foreign exchange reserves can no longer be used to support the baht, except in technical "smoothing operations."

Capital controls were lifted in January 1998, eliminating a segmented (domestic versus off-shore) foreign-exchange market. Restrictions were lifted on purchases and sales of baht and baht-denominated securities by nonresidents.

The value-added tax (VAT) was increased from 7 percent to 10 percent, effective August 1998, to slow domestic consumption and dampen inflation. Since most basic goods are VAT-free, the severity of the impact on low-income households would be lessened.

Stimulus measures were announced in April 1998 to promote private investment through tax and tariff reductions on capital goods and raw materials; equity investments; recovery of the real estate sector; and improved financing for small and medium-size enterprises. Foreign debt ceiling raised to permit the Finance Ministry to issue an initial \$1.5 billion in bonds and the Financial Institutions Development Fund to offer up to \$12.5 billion in long-term bonds to reduce their dependence on high-interest, short-term borrowing.

Streamlining of import tariffs begun in January 1999, to help reduce production costs to industries dependent on imported raw materials.

A \$3 billion stimulus package was announced in March 1999 to strengthen domestic demand, stimulate industrial activity, create 500,000 new jobs, provide tax cuts for business and households, and cut energy prices.

Financial, real-estate, and corporate sector restructuring:

Thailand reached an understanding with Japanese creditor banks in August 1997 to roll-over its current debts.

Of the 91 finance companies operating in Thailand, 16 failed companies were suspended in June 1997 and 42 more in August 1997. In December 1997, 56 of 58 suspended companies were closed permanently.

In October 1997, measures were implemented to reform and revitalize the financial sector, including new laws permitting majority foreign equity ownership of Thai banks and finance companies for up to 10 years, and establishment of the independent Asset Management Corporation and Financial Sector Restructuring Authority authorized to manage and dispose of assets of failed financial institutions.

Since the beginning of 1998, measures were implemented to reform and revive the real-estate market, including establishment of the Property Loan Management Organization and the Secondary Mortgage Corporation, issuance of the Securitization Law, and waiving of the capital gains tax.

The Bank of Thailand (BOT) took over four undercapitalized banks in February 1998 after they were unable to attract foreign buyers. Two other banks successfully completed major recapitalization drives in April 1998. Foreign investors also took majority positions in several smaller banks.

In March 1998, the government committed Thai financial institutions to reach international standards on loan-loss provisioning, collateralization, and criteria for nonperforming loans, effective January 1999. To maintain capital adequacy ratios, financial firms must raise new capital, primarily from abroad, or risk being taken over by the BOT.

Corporate Debt Restructuring Advisory Committee established in June 1998 along with a broader framework to monitor, remove tax disincentives and other impediments, and promote market-based corporate debt restructuring.

Draft plan for new deposit insurance scheme completed December 1998.

A new Financial Institutions Law submitted to Parliament in August 1999, included stricter prudential regulations, and auditing, accounting, and disclosure requirements for banks and finance companies.

Text box 2—Continued: Selected reforms undertaken by Thailand

Foreign- and domestic-investment liberalization:

Amended Bankruptcy Law, new Bankruptcy Court Law, and Amendments (Foreclosure Procedure) to the Code of Civil Procedures enacted June 1999 to reform and speed-up judicial foreclosure proceedings, and enhance the legal framework for bankruptcy protection of debtors and foreclosure rights of creditors, as a means of promoting restructuring of corporate debts.

New Condominium Act enacted June 1999, allowing 100-percent foreign ownership of commercial building projects.

Amended Land Code awaiting Royal signature as of June 1999, to allow certain purchases of land by foreigners.

Foreign Investment Law to replace 1972 Alien Business Law expected to be completed by the end of the October 1999 legislative session, to open additional sectors to foreign investment and liberalize restrictions on foreign majority-ownership.

Privatization of parastatals:

Office of State Enterprises and Government Portfolio established in June 1998, under the Ministry of Finance, to plan and oversee privatization of parastatals.

Master Plan for State Enterprise Reform, drafted in consultation with the World Bank and private consulting firms, approved by the Cabinet in September 1998, lays out the comprehensive privatization strategy and timetable.

Draft Corporatization (State Enterprise Capitalization) Act passed by Parliament, but challenged in Constitutional Court, is intended as the basis for privatizing parastatals by first converting them into corporations. However, restrictions on foreign ownership of parastatals are likely to remain in place, at least in the initial stage.

The Thai Government is in various stages of reducing its equity holdings in state banks, telecommunications, airlines, petroleum, electric-power generation, and water supplies.

Long-term planning:

On September 1997, the Cabinet approved a revised Eighth National Economic and Social Development Plan for 1997-2001 that leaves intact the main goals of developing human potential and protecting the environment. Rather, macroeconomic targets, structural economic adjustments, and public investment projects were revised in line with the current economic circumstances and terms of agreements with multilateral lenders.

Sources: Bank of Thailand (BOT), Board of Investment (BOI), "Q&A on Thailand's Road to Recovery," Sept. 1997, found at Internet address <http://www.thaiembdc.org/economic/qnaecon.html>, retrieved Oct. 28, 1998; BOT, BOI, *BOI Thailand Update*, various issues, found at Internet address <http://www.boi.go.th/thailandupdate/index.html>; Royal Government of Thailand, "Letters of Intent of the Government of Thailand, Memorandum on Economic Policies, to the International Monetary Fund," dated Feb. 24, 1998, May 26, 1998, Aug. 25, 1998, Dec. 1, 1998, Mar. 23, 1999, and Sept. 21, 1999, found at Internet address <http://www.imf.org/external/np/loi/mempub.htm>, retrieved Sept. 11 and 28, 1999; Royal Thai Embassy, Washington, DC, "Restructuring the Thai Economy Toward a Better Future," Nov. 21, 1997, found at Internet address <http://www.thaiembdc.org/economic/restruct.html>, retrieved Aug. 21, 1999; Royal Thai Embassy, Washington, DC, "Thailand, the Right Medicine for Recovery," reprinted from *Fortune Magazine*, Dec. 8, 1997, found at Internet address <http://www.thaiembdc.org/economic/threcove.htm>, retrieved Aug. 21, 1999; Royal Thai Embassy, Washington, DC, "Status on Economic Reforms Acts in Thailand," June 15, 1999, found at Internet address <http://www.thaiembdc.org/economic/restruct.html>, retrieved Aug. 21, 1999; U.S. Department of State, "Thailand—Economic Trends and Forecast for 1998," Economics Section, U.S. Embassy, Bangkok, May 1998, found at Internet address <http://usa.or.th/embassy/eco.htm>, retrieved Oct. 15, 1998; and U.S. Department of State telegram No. 008732, "1999 Investment Climate Statement for Thailand," prepared by U.S. Embassy, Bangkok, June 29, 1999.

efficiency and to enhance the competitiveness of Thai industries.⁷⁴ Further, long-term goals of the current NESD Plan were adjusted to reflect the reality of the existing economic environment and IMF policy prescriptions.

The IMF multilateral aid package provided very little discretionary funding to aid the recovery, as the IMF credits and bilateral lending (\$14.5 billion or 84 percent of the total) were designated solely towards financing the balance of payments gap and rebuilding the Bank of Thailand's foreign-exchange reserves.⁷⁵ Much of the remaining \$2.7 billion from multilateral sources was allocated for structural adjustment (privatization, sectoral restructuring, and civil-service reform), with smaller amounts for infrastructure development, education and training programs, and environmental protection projects.⁷⁶ However, Thailand received further development-loan and export-credit assistance from multilateral lending agencies and major trade partners (table 3).

Table 3
Additional multilateral and bilateral assistance provided to Thailand

Multilateral/bilateral sources	Amount	Description
	<i>Million dollars</i>	
World Bank	400	Loans for restructuring Thai financial and corporate sectors.
World Bank	300	Loans for employment-generating projects and provision of essential social services.
Asian Development Bank	1,000	Export credit guarantees to stimulate stalled Thai export sector.
Japan		A share of the \$30 billion offered under the Miyazawa Plan to help stabilize afflicted East/Southeast Asian nations.
United States	1,000	U.S. Export-Import Bank export credits to ease the credit crunch affecting Thailand's export sector.
United States	400	U.S. Overseas Private Investment Corporation (OPIC) support for Thai electric power projects.
United States	45	OPIC guarantee investment funds for equity investments in Thai corporations.

Sources: Bank of Thailand (BOT), Board of Investment (BOI), "U.S. Government Comes to Thailand's Aid," *BOI Thailand Update*, Apr. 1998, p. 1, found at Internet address <http://www.boi.go.th/thailandupdate/98apr01.html>, retrieved Sept. 12, 1999; BOT, BOI, "World Bank Provides Added Funding," *BOI Thailand Update*, Aug. 1998, p. 7, found at Internet address <http://www.boi.go.th/thailandupdate/98aug07.html>, retrieved Sept. 12, 1999; BOT, BOI, "Japan Promises Further Financial Support," *BOI Thailand Update*, Nov. 1998, p. 6, found at Internet address <http://www.boi.go.th/thailandupdate/98nov06.html>, retrieved Sept. 12, 1999; and U.S. Department of State, "Thailand—Economic Trends and Forecast for 1998," Economics Section, U.S. Embassy, Bangkok, May 1998, found at Internet address <http://usa.or.th/embassy/eco.htm>, retrieved Oct. 15, 1998.

⁷⁴ Ibid.

⁷⁵ IMF, "IMF Approves Stand-by Credit for Thailand."

⁷⁶ Royal Thai Embassy, Washington, DC, "Restructuring the Thai Economy Toward a Better Future," and U.S. Department of State.

Progress Towards Economic Recovery

In late 1998-early 1999, Thailand's economic problems began to exhibit signs of bottoming out,⁷⁷ as macroeconomic indicators (e.g., real GDP growth, inflation, interest rates, exchange rates, current account balance, and official reserves) improved significantly (table 1). Whereas the bhat has recovered from its low point of 57 to the dollar in January 1998 to stabilize around 37 to the dollar during January-July 1999, it slipped to 38 to the dollar in August and to 41 to the dollar by the latter part of September.⁷⁸ Although the currency is still trading below pre-crisis levels, some observers noted that the Thai Government appears cautious about letting the bhat strengthen too quickly, lest exports be adversely impacted.⁷⁹ At year-end 1998, Thailand announced that efforts at debt restructuring, recapitalizing ailing banks, and revitalizing domestic demand would be accelerated to boost economic recovery.⁸⁰ Along with increased consumer consumption, manufacturing output, industrial exports, and construction activity noted in fall 1999,⁸¹ the NESD Board revised upward its growth forecast for the economy to 3 to 4 percent for full-year 1999.⁸² The previously announced 0.9-percent growth (on an annual basis) for first quarter 1999 marked the first period of positive growth in 2 years,⁸³ but reportedly, the turnabout largely reflected government spending, which grew 15 percent, on an annual basis, in first quarter 1999. Moreover, in March 1999, the government infused a \$3.5 billion fiscal stimulus package (text box 2) into the economy that spurred growth in numerous sectors, including hotels and restaurants, industry, transportation, and commerce.⁸⁴ A subsequent stimulus package was announced in early August, with much of the \$3 billion in the form of equity funds and business loans.⁸⁵

⁷⁷ See for example, Sandra Sugawara, "Thai Economy Shows Signs of Rebounding," *Washington Post*, Nov. 28, 1998, pp. C1-C3.

⁷⁸ Compiled from official statistics of the Bank of Thailand; and from *Wall Street Journal*, "Currency Trading, Exchange Rates" (various issues).

⁷⁹ Shawn W. Crispin, "Thailand, Fragile Hopes," *Far Eastern Economic Review*, Aug. 12, 1999, p. 51.

⁸⁰ BOT, BOI, "Economy Set for Mid-1999 Revival," *BOI Thailand Update*, Dec. 1998, p. 1, found at Internet address <http://www.boi.go.th/thailandupdate/98dec01.html>, retrieved Sept. 12, 1999.

⁸¹ Shawn W. Crispin, "Here Today, Gone Tomorrow, Thailand's Economy is Growing Again, Driven by Consumer Spending, But Will Growth Last, Not Unless Banks Resume Lending," *Far Eastern Economic Review*, Oct. 14, 1999, pp. 62-66.

⁸² Royal Government of Thailand, "Letters of Intent," Sept. 21, 1999.

⁸³ BOT, BOI, "Signs of Recovery Appear, First Growth Figures Recorded," *BOI Thailand Update*, Aug. 1999, p. 12, found at Internet address <http://www.boi.go.th/thailandupdate/99aug01.html>, retrieved Sept. 12, 1999.

⁸⁴ However, the extra spending will elevate the budget deficit to 6 percent, for the fiscal year, above the previously planned 5 percent. Rodney Tasker, "Thailand, Spending Spree," *Far Eastern Economic Review*, Apr. 22, 1999, p. 81.

⁸⁵ *Economist*, "Business This Week," Aug. 14, 1999, p. 5.

Interest rates have fallen below even pre-crisis levels, easing pressure on debt-ridden corporations.⁸⁶ However, the credit crunch continues, as banks, being short of capital, are less willing to lend, making it difficult for even healthy companies to expand.⁸⁷ New lending declined nearly 8 percent in first half 1999,⁸⁸ as financial institutions focus on recapitalizing themselves and restructuring their ailing clients' bad debts.⁸⁹ Nonperforming loans have continued to rise, to 47.5 percent of all loans at the end of first half 1999,⁹⁰ and the Finance Ministry estimates that banks will need to eventually write-off one-third of their problem loans.⁹¹ Despite some reported successes in eliminating the weakest financial firms and recapitalizing healthier ones (text box 2), progress in restructuring the financial sector has been otherwise noted to be proceeding slowly.⁹² However, some observers note improved prospects for the financial sector as the economy improves, first half 1999 losses of some banks reflect steep loan write-offs, voluntary agreements with foreign and local creditors facilitate rescheduling of bad debts, and new bankruptcy and foreclosure laws (text box 2) enhance debt-collection efforts.⁹³

During first quarter 1999, applications to the Thai Board of Investment were up by 15 percent to 225 projects, which the Board attributes to renewed foreign investor confidence in the country's economic recovery.⁹⁴ Thailand received higher ratings as an investment prospect than either Korea or Malaysia, according to a mid-1998 survey of senior managers of major U.S., Western European, and East Asian corporations.⁹⁵ Further, among those East/Southeast Asian countries affected by the financial crisis, Thailand attracted the most foreign direct investment in 1998, \$5.9 billion according to United Nations estimate, compared to \$4.7 billion for Korea and \$3.6 billion for Malaysia.⁹⁶ The pace of economic recovery has been uneven, with strong output by export-oriented industries, particularly electronic products and motor vehicles, whereas output of other industries, e.g., steel and

⁸⁶ BOT, BOI, "Thailand Joins Korea in Bouncing Back," *BOI Thailand Update*, Nov. 1999, p. 2, found at Internet address <http://www.boi.go.th/thailandupdate/99nov02.html>, retrieved Sept. 12, 1999.

⁸⁷ Sugawara.

⁸⁸ Crispin, "Thailand, Fragile Hopes."

⁸⁹ Rodney Tasker, "Thailand, Still on Shaky Ground, the Government's and IMF Message Looks Too Bright," *Far Eastern Economic Review*, Mar. 4, 1999, p. 48.

⁹⁰ *Economist*, "Thailand's Banks, Non-Performing Lenders," Sept. 4, 1999, p. 71.

⁹¹ Crispin, "Thailand, Fragile Hopes."

⁹² Tasker, "Thailand, Spending Spree."

⁹³ *Economist*, "Thailand's Banks, Non-Performing Lenders."

⁹⁴ BOT, BOI, "Recovery Brings Back Foreign Investors, Applications for BoI Blessings Up 15%," *BOI Thailand Update*, May and June 1999, p. 9, found at Internet address <http://www.boi.go.th/thailandupdate/99jun09.html>, retrieved Sept. 12, 1999; and BOT, BOI, "Investors Show Signs of Return," *BOI Thailand Update*, July 1999, p. 11, found at Internet address <http://www.boi.go.th/thailandupdate/99jul11.html>, retrieved Sept. 12, 1999.

⁹⁵ BOT, BOI, "Thailand Retains Investors Confidence, Emerges as Better Prospect Than Neighbors," *BOI Thailand Update*, July 1998, p. 10, found at Internet address <http://www.boi.go.th/thailandupdate/98jul10.html>, retrieved Sept. 12, 1999.

⁹⁶ BOT, BOI, "U.S. Merchant Bank Plans Big Investment," *BOI Thailand Update*, Dec. 1998, p. 10, found at Internet address <http://www.boi.go.th/thailandupdate/98dec10.html>, retrieved Sept. 12, 1999.

cement, is below pre-crisis levels.⁹⁷ Although unemployment is forecast to decline during 1998-99, extensive overcapacity in many industrial sectors will continue to constrain job and income growth.⁹⁸ Indications of an initial rebound of consumer spending included a June 1999 surge in sales of motor vehicles to nearly 20,000 units, 87 percent above sales volumes of a year ago, but still little more than one-half of volumes 2 years ago.⁹⁹ However, some observers interpreted the 1.2-percent decline in consumer prices in June 1999 compared with a year ago, along with the prospects for continued decline,¹⁰⁰ as signaling potential deflation and reflecting consumers' continued reluctance to spend.¹⁰¹ Although IMF officials, the Thai Government, and outside observers expressed optimism that the worst is over and that the Thai economy is turning around,¹⁰² few, if any, are predicting an early return to the pre-crisis high-growth rates.¹⁰³

U.S. -Thai Bilateral Merchandise Trade

Formal U.S.-Thai trade ties date back to 1833, with the signing of a Treaty of Amity and Commerce, the first for the United States with an Asian nation.¹⁰⁴ Although Thailand is a less prominent U.S. bilateral merchandise trade partner among Asian nations, the United States is traditionally Thailand's most prominent partner. According to the Export-Import Bank of Thailand, during 1994-98, the United States was Thailand's largest single market for merchandise exports and second to Japan as a source of merchandise imports; in 1998, bilateral trade with the United States amounted to 22.3 percent of all Thai merchandise exports and 14.1 percent of all Thai merchandise imports, respectively.¹⁰⁵ Although the

⁹⁷ Crispin, "Here Today, Gone Tomorrow."

⁹⁸ Ben Dolven, "Hey, Big Spender, Consumer Demand Rebounds, But Will It Be Sustained," *Far Eastern Economic Review*, Aug. 5, 1999, p. 41.

⁹⁹ Ibid.

¹⁰⁰ Tasker, "Thailand, Spending Spree."

¹⁰¹ G. Pierre Goad, "Slow and Steady, Thailand Gears Up for Manageable Growth Fueled by Dependable Funds," *Far Eastern Economic Review*, July 29, 1999, p. 55.

¹⁰² Michael Camdessus, Managing Director of the IMF, cited in "IMF Chief, Worst Part of Asian Crisis Over," *Washington Times*, May 18, 1999, p. B9; Goad, "Slow and Steady;" *Economist*, "On Their Feet Again, A String of Recent Setbacks Will Not Stall East Asia's Recovery, But If the Former Tigers Really Want to Come Roaring Back, the Region's Reformers Must Redouble Their Efforts," Aug. 21, 1999, pp. 16-18; and Royal Government of Thailand, "Letters of Intent," Sept. 21, 1999.

¹⁰³ U.S. Department of State.

¹⁰⁴ Another 11 years and 21 years would pass before the United States concluded similar treaties with China (in 1844) and Japan (in 1854), respectively. For an overview of the long-standing political and economic ties between the United States and Thailand, see, Nitya Pibulsonggram, "Thailand, the Hub of Southeast Asia," Ambassador's Statements, at the David M. Kennedy Center for International Studies, Brigham Young University, Provo, UT, Feb. 26, 1997, found at Internet address <http://www.thaiembdc.org/pressctr/statemt/ambstmn/am022697.htm>, Royal Thai Embassy, Washington, DC, retrieved Oct. 28, 1998.

¹⁰⁵ Other top Thai merchandise trade partners in 1998 were Japan (13.7 percent of exports and 23.7 percent of imports), other ASEAN members (together, 17.6 percent of exports and 15.0

(continued...)

United States consistently ran merchandise trade deficits with Thailand during 1993-July 1999, significant widening of the deficit in 1998, precipitated by the financial crisis, continues to be reflected in January-July comparisons for 1998 and 1999 (table 4).

Table 4
U.S.-Thailand merchandise trade, 1993-99

(Million dollars)								
U.S.-Thai bilateral trade	1993	1994	1995	1996	1997	1998	Jan.-July 1998	Jan.-July 1999
U.S. exports	3,555	4,624	6,158	6,935	7,160	5,029	2,837	2,519
U.S. imports	8,539	10,276	11,337	11,324	12,546	13,366	7,435	7,729
Trade balance	-4,984	-5,652	-5,178	-4,389	-5,386	-8,337	-4,599	-5,210
Total trade	12,095	14,900	17,495	18,259	19,705	18,395	10,272	10,249

Note.—Figures may not sum to total shown due to rounding.

Source: Compiled from official statistics of the U.S. Department of Commerce.

After more than doubling during 1993-97, U.S. merchandise exports to Thailand declined by 30 percent during 1997-98 to \$5.0 billion, and fell by 11 percent during the first 7 months of 1999 compared to the same period in the previous year (table 4). Leading U.S. exports to Thailand in 1997-98 were concentrated in semiconductor devices and aircraft (table 5);¹⁰⁶ these products accounted for slightly more than 37 percent of all 1998 U.S. merchandise exports to Thailand. Several factors have contributed to declining U.S. merchandise exports to Thailand since the 1997 peak. Decreased U.S. exports of electronic equipment and components in 1997-98 reflected the sharp contraction of Thai domestic demand and reduced manufacturing demand for imported inputs and production equipment. Currency devaluations increased the bhat-cost of component inputs and production equipment purchased from abroad. Further, Thai manufacturers could not obtain needed financing to purchase production inputs, despite having full order books. Thai banks reportedly were wary of the perceived risks of lending to Thai corporations, and without the backing of domestic banks, foreign banks would not issue or accept Thai letters of credit.¹⁰⁷ Decreased U.S. exports of aircraft in 1998 compared to the previous year largely reflected Boeing's delivery of eight aircrafts to Thai Airways in 1997.¹⁰⁸

¹⁰⁵ (...continued)

percent of imports), and members of the European Union (together, 17.9 percent of exports and 12.5 percent of imports). Compiled from official statistics of the Export-Import Bank of Thailand, found at Internet address http://exim.go.th/index_facts.htm, retrieved Sept. 21, 1999.

¹⁰⁶ 1997-98 were the most recent full years for which U.S.-Thailand bilateral trade data were readily available, aggregated to the desired degree of detail. Compiled from official statistics of the U.S. Department of Commerce.

¹⁰⁷ Despite government export guarantees, Thai banks' unwillingness to lend to exporters is largely due to requirements that they put up 40 percent of their own funds. Rather, most banks preferred lending to the FIDF and money markets, which were less risky and paid higher interest rates than government export loans. U.S. Department of State.

¹⁰⁸ USDOC.

Table 5
 Leading U.S. merchandise exports to and imports from Thailand, 1997-98

(1,000 dollars)

Product	1997	1998	1997-98 Absolute	1997-98 Percentage
U.S. EXPORTS:				
Electronic equipment and components:				
Semiconductor solid-state devices	1,187,405	1,074,416	-112,989	-9.5
Computer hardware, printers, scanners	319,172	207,134	-112,038	-35.1
Unrecorded magnetic tapes and discs	321,665	117,196	-204,469	-63.6
Measuring, testing, controlling, analyzing instruments	132,392	103,821	-28,571	-21.6
Transportation equipment:				
Aircraft	1,162,061	791,511	-370,550	-31.9
Aircraft engines and gas turbines	113,417	115,810	2,393	2.1
All others	3,923,620	2,618,924	-1,304,696	-33.3
Total	7,159,732	5,028,812	-2,130,920	-29.8
U.S. IMPORTS:				
Electronic products and components:				
Computer hardware, printers, scanners	2,475,850	2,835,209	359,359	14.5
Semiconductor solid-state devices	995,161	948,271	-46,890	-4.7
Tape, video, compact disc recorders and players	571,780	366,777	-205,003	-35.9
Telephone and telegraph apparatus	259,792	328,733	68,941	26.5
Television receivers, video monitors	180,883	253,919	73,036	40.4
Primary and processed commodities:				
Shellfish	955,893	1,152,477	196,584	20.6
Natural rubber	265,440	230,123	-35,317	-13.3
Canned fish and other fish	187,000	210,464	23,464	12.5
Apparel and leather products:				
Shirts and blouses	351,066	400,105	49,039	14.0
Footwear and footwear parts	387,669	343,493	-44,176	-11.4
Gloves, including sports gloves	198,808	272,694	73,886	37.2
Luggage, handbags, flat goods	209,940	264,571	54,631	26.0
Other manufactures:				
Precious jewelry	369,655	377,731	8,076	2.2
Furniture and selected furnishings	179,343	211,146	31,803	17.7
All others	4,957,265	5,170,532	213,267	4.3
Total	12,545,545	13,366,245	820,700	6.5

Note.—Figures may not sum to total shown due to rounding.

Source: Compiled from official statistics of the U.S. Department of Commerce.

U.S. merchandise imports from Thailand increased by 57 percent between 1993 and 1998, to \$13.4 billion, and rose by 4 percent during January-July 1999, as compared with the level of the same period in the previous year (table 4). Leading U.S. imports from Thailand in 1997-98 consisted primarily of computer hardware and accessories, shellfish, and semiconductor devices (table 5); these products accounted for nearly 37 percent of all 1998 U.S. merchandise imports from Thailand. Contrary to general expectations of a massive influx of U.S. imports from Thailand, the sharp devaluation of the baht after mid 1997 was a double-edged sword to Thai exporters, as the high percentage of imported components and other inputs built into Thailand's exported products—estimated by one source at about

60 percent¹⁰⁹—reduced their competitiveness in world markets. Spread of the economic crisis to neighboring countries with subsequent devaluations of their currencies reduced prices for labor-intensive products that compete with those of Thailand.¹¹⁰ Likewise, as in the case of Thai importers, exporters were also unable to obtain bank letters of credit.¹¹¹ Further, efforts to increase exports reportedly were hampered by shortages of incoming shipping containers resulting from reductions in the volume of imports.¹¹²

Outlook

The near-term prospects for expanded U.S.-Thai bilateral trade remain clouded, depending on the sustainability of the economic turn-around.¹¹³ However, U.S. importers and U.S.-based manufacturers with export-oriented operations in Thailand should benefit from the devalued baht.¹¹⁴ Likewise, U.S. exporters, U.S. investors in Thai export-oriented industries, and the latter's U.S. suppliers should benefit from access to U.S. export credits and investment guarantees¹¹⁵ and Thailand's recent efforts to streamline and reduce its import tariffs.¹¹⁶

Further bilateral-trade opportunities are being pursued in both merchandise and services, as U.S.-based corporations establish new ventures, expand existing operations, or invest in domestic firms in Thailand. Some recent examples include General Motors and Ford Motor Co. (automobile assembly),¹¹⁷ Merrill Lynch Holding International (investment banking services),¹¹⁸ American International Assurance and Aetna International Inc. (life insurance services),¹¹⁹ Chevron Corp. (natural-gas exploration and production), Procter and Gamble

¹⁰⁹ USDOC.

¹¹⁰ U.S. Department of State.

¹¹¹ *Economist*, "Frozen Miracle," p. 8.

¹¹² Sugawara.

¹¹³ Goad, "Slow and Steady."

¹¹⁴ USDOC.

¹¹⁵ BOT, BOI, "U.S. Government Comes to Thailand's Aid," *BOI Thailand Update*, Apr. 1998, p. 1, found at Internet address <http://www.boi.go.th/thailandupdate/98apr01.html>, retrieved Sept. 12, 1999; and U.S. Department of State.

¹¹⁶ The tariff overhaul would affect some 7,000 import product categories. The maximum tariff rate on the majority of these products is at 30 percent, and some officials indicated favoring a top rate between 15 to 20 percent. BOT, BOI, "Tariff Overhaul to Help Importers," *BOI Thailand Update*, Jan. 1999, p. 3, found at Internet address <http://www.boi.go.th/thailandupdate/99jan03.html>, retrieved Sept. 12, 1999.

¹¹⁷ Rodney Tasker, "Spinning Wheels, U.S. Car Firms Stay Optimistic on Thailand," *Far Eastern Economic Review*, Apr. 16, 1999, pp. 56-57.

¹¹⁸ BOT, BOI, "Finance Firms Attract Healthy Interest," *BOI Thailand Update*, Sept. 1998, p. 11, found at Internet address <http://www.boi.go.th/thailandupdate/98sep11.html>, retrieved Sept. 12, 1999.

¹¹⁹ BOT, BOI, "International Investors Make Their Move," *BOI Thailand Update*, Nov. 1998, p. 11, found at Internet address <http://www.boi.go.th/thailandupdate/98nov11.html>, retrieved Sept. 12, 1999.

(consumer products), GE Plastics (engineering plastics),¹²⁰ Lucent Technologies (micro-electronic circuits), and Sara Lee Corp. (food and consumer products).¹²¹

Despite Thailand's economic downturn, U.S. firms reviewing long-term investment decisions reportedly have not generally changed their plans but are revising their short- and medium-term approaches.¹²² For example, in the automotive sector, lagging Thai consumer demand prompted some scaling back by U.S. automakers of planned motor-vehicle production operations in Thailand.¹²³ A shift towards an export orientation by foreign automakers operating in Thailand does not solely reflect domestic-market contraction and production overcapacity, but also opportunities to meet potential market demand in Southeast Asia and beyond. Reportedly, among the advantages offered by Thailand as a base for potentially increased sales to Southeast Asia are its under-utilized production capacity and low tariffs on exports to neighboring members of the Association of Southeast Asian Nations (ASEAN). Ford and its Japanese partner Mazda increased the ratio of motor vehicles destined for export, from about one-half to three-quarters of those produced at their new assembly plant opened last year in Thailand. Light trucks produced by this facility are being exported to Southeast Asia, Australia, New Zealand, and Europe. General Motors will produce passenger vehicles primarily for export, at a plant in Thailand scheduled to open next year.¹²⁴ Further, the "Big Three" U.S. automakers' assembly operations in Thailand offer significant opportunities for U.S. parts suppliers.¹²⁵

Prospects for renewed growth throughout Southeast Asia depend on more than merely deploying additional capital and labor, as continued economic reforms are crucial to lay the groundwork for more efficient use of these production factors,¹²⁶ with implications for U.S.-Thai bilateral trade. In the electronics sector, as Thailand aspires to enhance its export competitiveness away from labor-intensive production towards higher-skilled, technologically advanced production of higher value-added electronics products, U.S. equipment and parts suppliers could anticipate continued involvement. U.S.-made components currently account for over 20 percent of Thailand's imported electronic components,¹²⁷ with a significant portion used in the assembly of semiconductor devices for re-export to the United States.¹²⁸ However, Thailand's aspirations are hampered by loss of competitive advantage in labor costs to neighboring countries, shortages of skilled labor,

¹²⁰ BOT, BOI, "Recovery Brings Back Foreign Investors."

¹²¹ BOT, BOI, "Investors Show Signs of Return."

¹²² USDOC.

¹²³ Tasker, "Spinning Wheels."

¹²⁴ Rodney Tasker, "Car Export Boom Fills Gap," *Far Eastern Economic Review*, Oct. 14, 1999, p. 64.

¹²⁵ USDOC.

¹²⁶ *Economist*, "On Their Feet Again."

¹²⁷ USDOC.

¹²⁸ U.S. International Trade Commission (USITC), "Thailand," *Production Sharing, Use of U.S. Components and Materials in Foreign Assembly Operations, 1991-1994, U.S. Imports Under Production Sharing Provisions of Harmonized Tariff Schedule Heading 9802*, Investigation No. 332-237, prepared by J. Gail Burns, USITC Publication 2966, May 1996, p. 3-10.

lack of a well-developed industry-support infrastructure, reluctance to automate manufacturing, and lack of indigenous research and development.¹²⁹

Longer-term prospects for expanded U.S.-Thai bilateral trade will depend largely on Thailand's progress in implementing reforms, overcoming numerous remaining structural problems, and sustaining the current economic upturn. Given the progress achieved so far, the Thai Government announced on September 21 its decision not to access the remaining \$3.7 billion available from the IMF structural-adjustment package. It further indicated that collaboration with the IMF will be maintained and ongoing economic and financial reform efforts will be continued.¹³⁰ However, particularly crucial to sustaining recovery, according to numerous analysts, will be the restructuring of financial- and corporate-sector debts,¹³¹ estimated to exceed \$28 billion, under the new restructuring procedures.¹³² Some analysts emphasize that a recovery led largely by consumption demand cannot be sustained beyond a year or so, and banks need to be solvent enough to start lending again to help revive the private investment necessary to fuel continued economic growth.¹³³ Further, in the words of one observer, initial economic recovery should not be grounds for reducing the urgency for reform, allowing for complacency, or prompting a return to "business as usual."¹³⁴ ■

¹²⁹ As a specific example, Thailand's hard-disk drive industry was the top exporter in the electronics sector during the first 5 months of 1999. However, in this industry, production wages rose 10 percent annually through the 1990s to the point where, despite the currency devaluations, Thai labor costs twice as much as that in China. More than half the workforce has 9 years or less of formal education. Further, unlike Singapore and Malaysia, Thailand lacks sufficient volumes of local suppliers of metalworking, repair, and other support services required by the industry. Shawn W. Crispin, "Resting on Its Laurels, Thailand May Lose Its Biggest Hi-Tech Export," *Far Eastern Economic Review*, Aug. 12, 1999, p. 45; and Tony Santiago, "Exports Rising, Especially in Hard-Disk Drives—Thailand Looks to Electronics as Way Out of Slump," *Electronic Engineering Times (EETimes)*, Aug. 16, 1999, found at Internet address <http://www.techweb.com/se/directlink.cgi?EET19990816S0032>, retrieved Oct. 20, 1999.

¹³⁰ IMF, "Camdessus Welcomes Thai Decision to Sustain Reform Efforts Without Further IMF Financing," News Brief No. 99/59, Sept. 22, 1999, found at Internet address <http://www.imf.org/external/np/sec/nb/1999/NB9959.HTM>, retrieved Sept. 28, 1999.

¹³¹ Crispin, "Here Today, Gone Tomorrow."

¹³² Progress in debt restructuring has been limited under the new bankruptcy procedures. As of fall 1999, the new bankruptcy courts placed four debtors' assets into receivership and ordered the restructuring of six others' debts. Both debtors and creditors have been hesitant to settle disputes in the newly established bankruptcy courts, reportedly due to extensive personal connections among debtors and creditors, exposure of creditors' lending practices to public scrutiny, and a certain social stigma associated with bankruptcy court. Hence, the Thai Government is also promoting voluntary debt restructuring, with the courts available as a last resort. G. Pierre Goad, Shawn W. Crispin, Murray Hiebert, S. Jayasankaran, and Shim Jae Hoon, "Debts to Society, New Laws Aren't Enough to Stimulate Financial Restructuring, Changing a Culture is Necessary," *Far Eastern Economic Review*, Oct. 7, 1999, pp. 87-88.

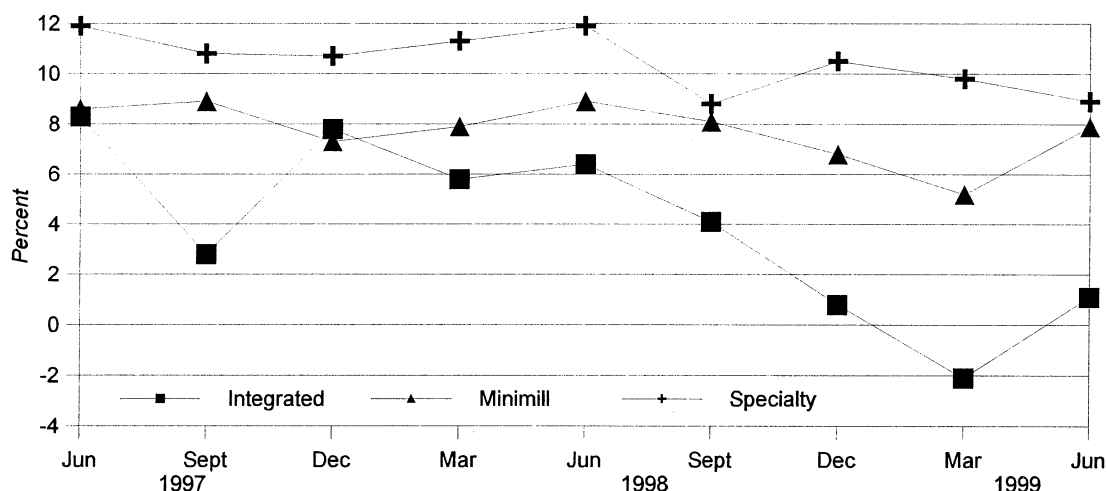
¹³³ Crispin, "Here Today, Gone Tomorrow."

¹³⁴ Stanley Fischer, First Deputy Managing Director of the IMF, emphasized that economic recoveries in Southeast Asia remain fragile, being highly dependent on continuance of structural reform policies. Stanley Fischer, "The Asian Crisis, The Return to Growth," found at Internet address <http://www.imf.org/external/np/speeches/1999/061799.HTM>, retrieved Sept. 28, 1999.

APPENDIX A
KEY PERFORMANCE INDICATORS OF SELECTED
INDUSTRIES

- ☐ **STEEL** (Tracy Quilter, 202-205-3437/tquilter@usitc.gov)
- ☐ **AUTOMOBILES** (Laura A. Polly, 202-205-3408/polly@usitc.gov)
- ☐ **ALUMINUM** (Karl Tsuji, 202-205-3434/tsuji@usitc.gov)
- ☐ **FLAT GLASS** (James Lukes, 202-205-3426/lukes@usitc.gov)
- ☐ **SERVICES** (Tsedale Assefa, 202-205-2374/assefa@usitc.gov)

STEEL

Figure A-1
Steel industry: Profitability by strategic group¹

¹ Operating profit as a percent of sales. Integrated group contains 9 firms. Minimill group contains 8 firms; however the quarter ending June 1999 is based on 7 firms. Specialty group contains 4 firms.

Source: Individual company financial statements.

- Integrated and minimill producers improved profitability in the second quarter of 1999 compared with the first quarter of 1999. These steelmakers report that raw material costs remain relatively low, helping to trim operating expenses. However, they cite continued pressure from imports and lower average selling prices as contributing to decreased shipments and lower net sales, when compared to the same period last year. Other factors affecting production activity levels include a blast furnace reline at Bethlehem Steel's Sparrow's Point facility and unscheduled equipment outages at LTV's Cleveland works and Indiana Harbor works.
- Armco and AK Steel plan to complete the merger of their operations on or soon after September 30, 1999. Such a merger would make AK Steel the fourth largest steelmaker in the United States. Gulf States Steel of Alabama filed for chapter 11 bankruptcy protection in July 1999, joining other small integrated producers Geneva Steel and Acme Metals.

Table A-1
Steel mill products, all grades

Item	Q2 1999	Percentage change, Q2 1999 from Q2 1998 ¹	YTD 1999	Percentage change, YTD 1999 from YTD 1998 ¹
Producers' shipments (1,000 short tons)	25,623	-5.8	49,669	-8.9
Imports (1,000 short tons)	8,967	-15.3	16,815	-7.8
Exports (1,000 short tons)	1,238	-13.4	2,399	-21.3
Apparent supply (1,000 short tons)	33,352	-8.3	64,085	-8.1
Ratio of imports to apparent supply (percent)	26.9	² -2.2	26.2	(³)

¹ Based on unrounded numbers.

² Percentage point change.

³ No change.

Note.—Because of rounding, figures may not add to the totals shown.

Source: American Iron and Steel Institute.

STEEL

Table A-2
Steel service centers

Item	Mar. 1999	June 1999	Percentage change, June 1999 from Mar. 1999 ¹	Q2 1999	Q2 1998
Shipments (1,000 net tons)	2,692	2,529	-6.0	7,354	7,594
Ending inventories (1,000 net tons)	8,109	7,854	-3.1	7,854	8,051
Inventories on hand (months)	3.3	3.3	(²)	3.3	3.3

¹ Based on unrounded numbers.

² Not applicable.

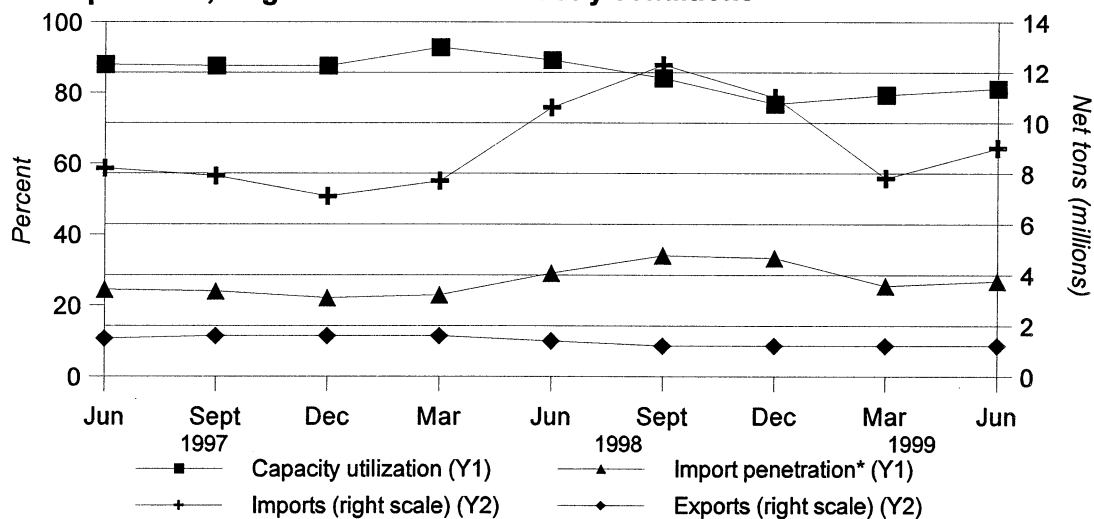
Note.—Because of rounding, figures may not add to the totals shown.

Source: Steel Service Center Institute.

- The Steel Service Center Institute (SSCI) reported a decrease in shipments for Q2 1999 compared with Q2 1998. However, while there was an overall decrease, carbon structural products and stainless products recorded shipment increases of 4.1 percent and 5.9 percent, respectively. Inventories fell below the 8-million ton mark for the first time since May 1998, as service centers acknowledge that current inventory levels have been above traditional inventory levels.¹
- While Q2 1999 imports fell 15 percent compared to Q2 1998, Q2 1999 levels were 14 percent above Q1 1999. Imports for the first six months of 1999 were 8 percent below those levels recorded for the comparable 1998 period. The import share of semifinished steel products rose to 33 percent for the quarter from 25 percent a year earlier.
- Capacity utilization averaged 81.1 percent for Q2 1999, which is an improvement from the average of 79.3 percent reported for Q1 1999. However, capacity utilization is still well below the average level reported for Q2 1998 of 89.2 percent.

¹ SSCI, news release, "Ending Inventories Dip Below 800,000 Tons for First Time Since May 1998," July 22, 1999.

Figure A-2
Steel mill products, all grades: Selected industry conditions



* Import share of apparent open market supply.

Source: American Iron and Steel Institute.

AUTOMOBILES

Table A-3

U.S. sales of new automobiles, domestic and imported, and share of U.S. market accounted for by sales of total imports and Japanese imports, by specified periods, January 1998-June 1999

Item	Apr.- Jun. 1999	Jan.-Jun. 1999	Percentage change	
			Apr.-Jun. 1999 from Jan.-Mar. 1999	Jan.-Jun. 1999 from Jan.-Jun. 1998
U.S. sales of domestic autos (1,000 units) ¹	1,953	3,598	18.7	2.2
U.S. sales of imported autos (1,000 units) ²	459	830	23.7	19.4
Total U.S. sales (1,000 units) ^{1,2}	2,412	4,428	19.6	5.3
Ratio of U.S. sales of imported autos to total U.S. sales (percent) ^{1,2}	19.0	18.7	3.4	13.4
U.S. sales of Japanese imports as a share of the total U.S. market (percent) ^{1,2}	8.6	8.9	-0.1	5.3

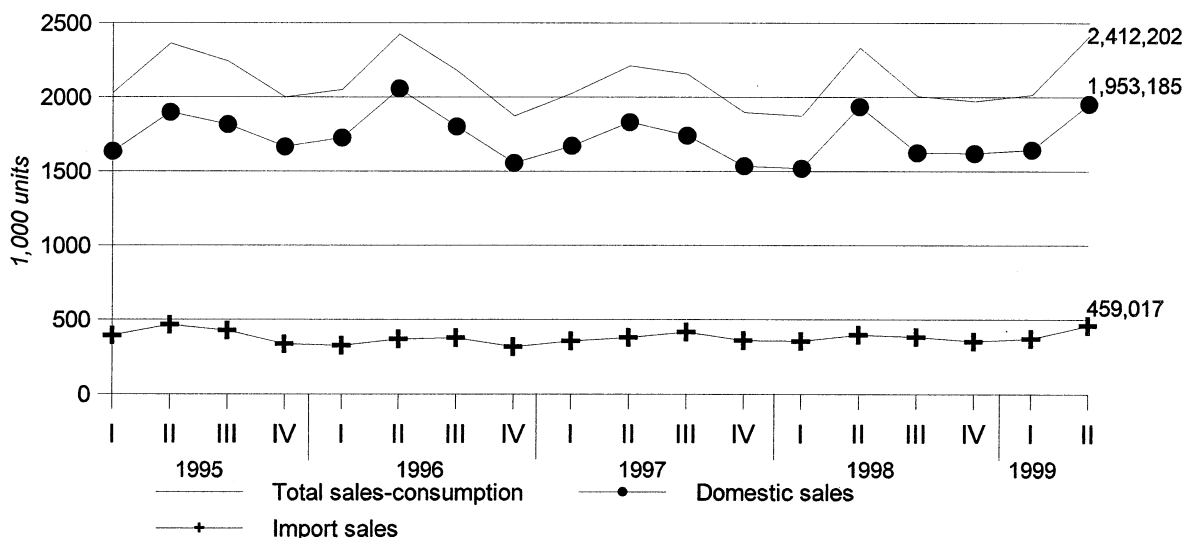
¹ Domestic automobile sales include U.S.-, Canadian-, and Mexican-built automobiles sold in the United States.

² Imports do not include automobiles imported from Canada and Mexico.

Source: Compiled from data obtained from *Automotive News*.

Figure A-3

U.S. sales of new passenger automobiles, by quarter

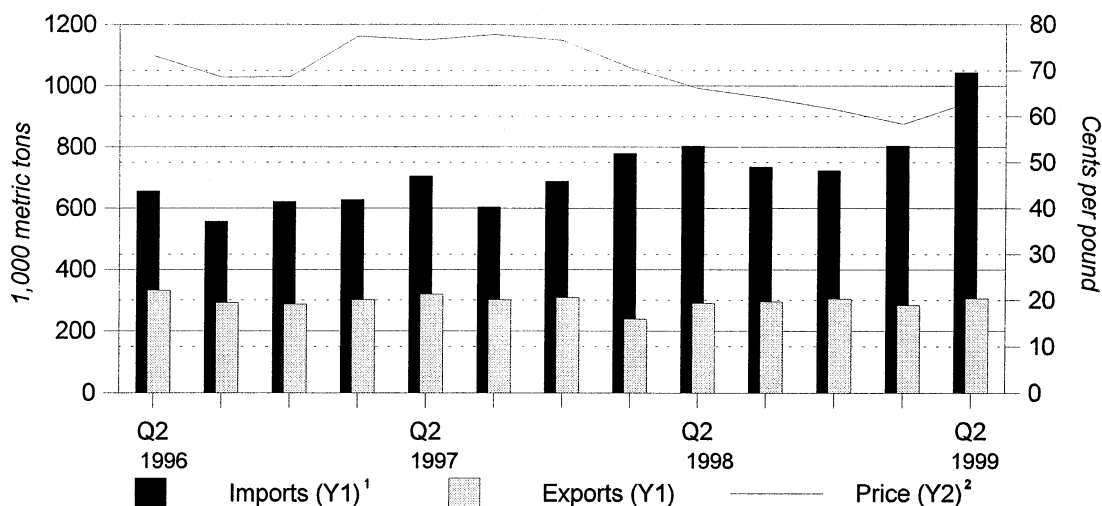


Note.—Domestic automobile sales include U.S.-, Canadian-, and Mexican-built automobiles sold in the United States; these same units are not included in import sales.

Source: *Automotive News*; prepared by the Office of Industries.

ALUMINUM

Figure A-4
Aluminum: U.S. imports, exports, and price



¹ Crude forms (metals and alloys) and mill products (e.g., plates, sheets, and bars) for consumption.

² Quarterly average of the monthly U.S. market price of primary aluminum ingots.

Source: U.S. Geological Survey.

- During the second quarter 1999, aluminum demand remained strong in the United States, moderate in Western Europe, and started to exhibit signs of recovery in East Asia. This, coupled with lower producer and consumer inventories, and tighter supply-demand balance in East Asia, drew down London Metal Exchange (LME) inventories and boosted the price for primary ingot by 4.9 cents per pound over the previous quarter's level.
- In the United States, growing consumption was recorded by nearly all major aluminum-consuming sectors, reflecting particularly increased activity in the construction, automotive, and packaging industries. However, a significantly larger quarterly net import volume, especially of unwrought aluminum from Russia, contributed to a significant rise in the level of import penetration despite increased domestic production.
- Reflecting efforts to improve global competitiveness, a burst of merger activity among major global-scale producers was initiated in August 1999. Alcan (Canada), Pechiney (France), and Algroup (Switzerland) reached a three-way agreement in September 1999, and a merger agreement was reached between Alcoa (USA) and Reynolds (USA).

Table A-4

U.S. production, secondary recovery, imports, import penetration, exports, average nominal price, and LME inventory level of aluminum, for second quarter 1998, first quarter 1999, and second quarter 1999

Item	Q2 1998	Q1 1999	Q2 1999	Percentage change	
				Q2 1999 from Q2 1998	Q2 1999 from Q1 1999
Primary Production (1,000 metric tons)	928	922	938	1.1	1.7
Secondary Recovery (1,000 metric tons)	833r	846r	886	6.4	4.7
Imports (1,000 metric tons)	804	805	1,043	29.7	29.6
Import Penetration (percent) ¹	35.7r	33.3r	40.9	² 5.2	² 7.6
Exports (1,000 metric tons)	290	284	306	5.5	7.8
Average Nominal Price (\$/lb)	66.1	58.4	63.3	-4.1	8.5
LME Inventory Level (1,000 metric tons)	534	818	756	41.6	-7.5

¹ Calculations based on unrounded data.

² Percentage point change.

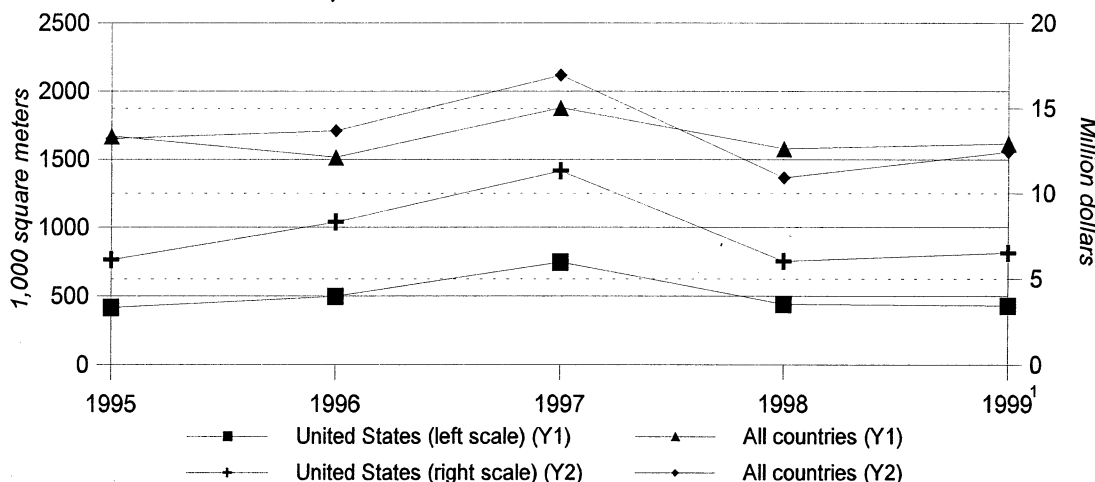
Note.—revised data indicated by "r"

Sources: Compiled from data obtained from U.S. Geological Survey and World Bureau of Metal Statistics.

FLAT GLASS

Figure A-5

Average monthly Japanese imports of flat glass, by quantity and value, from the United States and all countries, 1995-99¹



¹ Data for 1999 include Jan.-May.

Source: Compiled from official statistics of the Ministry of Trade and Industry, Japan.

Background

- The U.S.-Japanese agreement on Japanese market access for imports of flat glass seeks to increase access and sales of foreign flat glass in Japan through such means as increased adoption of nondiscriminatory standards and expanded promotion of safety and insulating glass. The agreement covers the 1995-99 period.
- Japanese demand for imported glass has remained weak since the second half of 1997.

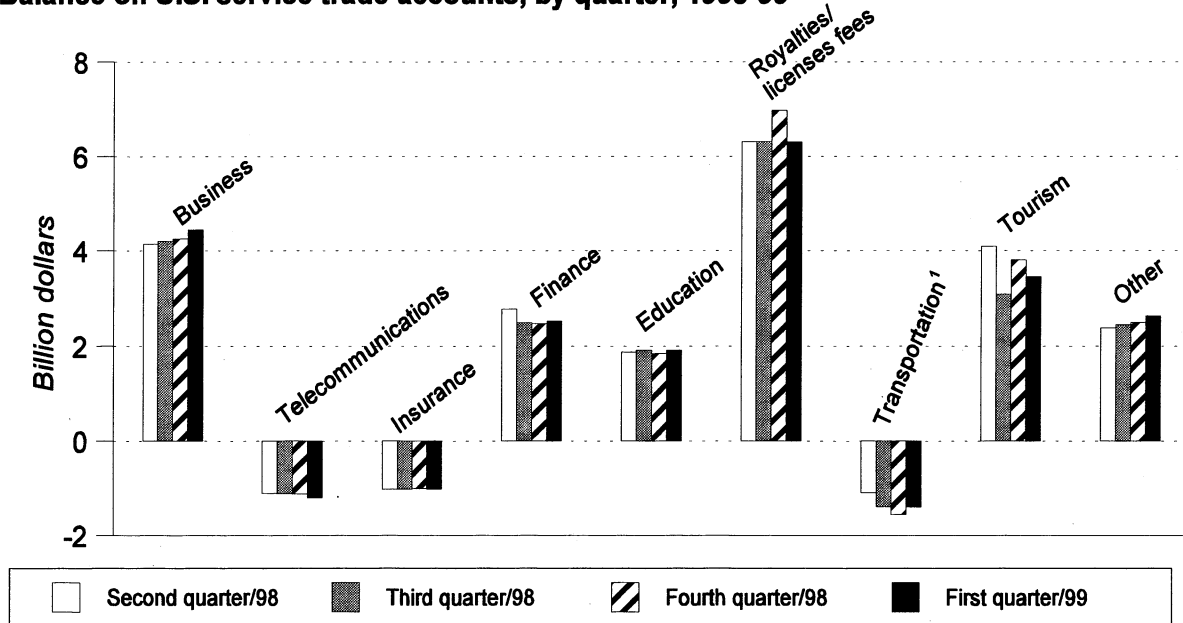
Current

- Japanese demand for imported glass has improved slightly, although the U.S. share of the market has declined. The average monthly quantity of Japanese imports from all countries increased by 2 percent for the first five months of 1999 to 1.6 million square meters, while the average monthly value of such imports increased by 14 percent to \$12.5 million as the average unit value of imports increased by 11 percent. Imports from the United States in Jan.-May 1999 decreased 3 percent to 429,000 square meters, but increased in value by 8 percent to \$6.5 million. Imports from the United States and China recorded the most significant declines for the period, while imports from the Republic of Korea and Indonesia posted the most significant growth.
- Flat-glass talks between the Governments of the United States and Japan held in Tokyo on June 14-15, 1999, failed to yield favorable news for U.S. producers.¹ According to State Department officials, continuation of the downward trend of U.S. flat glass exports to Japan in 1999 is expected to produce the lowest level of exports since the 1995 agreement. The U.S. Government maintains that the flat glass market access problems in Japan stem from a domestic cartel that controls the distribution network to the exclusion of foreign suppliers. The Government of Japan maintains that the declining American market share is due to Japan's prolonged recession, the lack of satisfactory sales efforts by American producers, and the declining price differentials between Japanese and foreign flat glass due to price-cutting efforts by Japanese producers. Both sides agreed to hold a joint government-industry meeting in the future.

¹ U.S. State Department telegram, "June 1999 U.S.-Japan Flat Glass Talks, message reference no. 006013, prepared by U.S. embassy, Tokyo, July 22, 1999, downloaded from Newscast Today on Aug. 18 and 20, 1999.

SERVICES

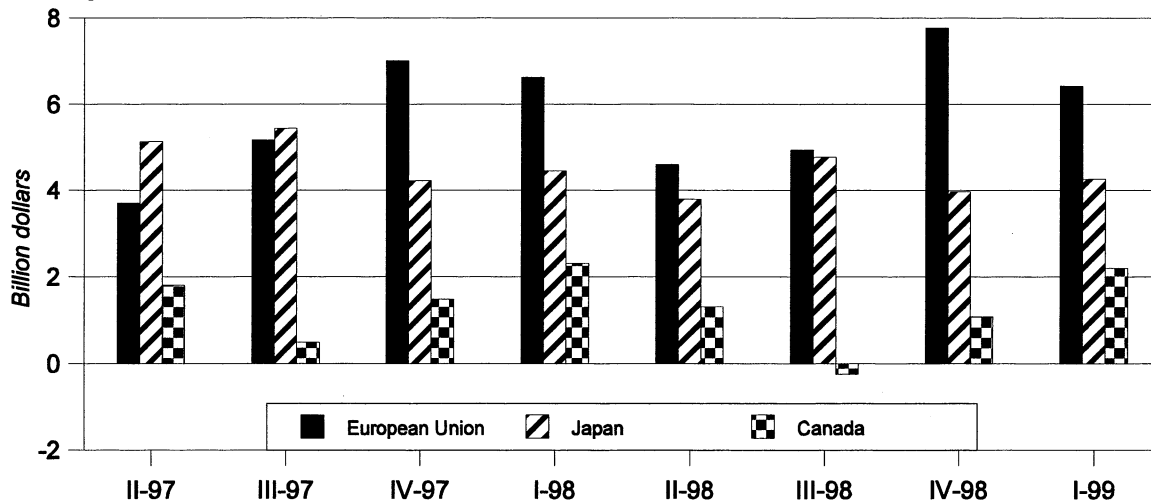
Figure A-6
 Balance on U.S. service trade accounts, by quarter, 1998-99



¹ Includes port fees.

Source: Bureau of Economic Analysis, *Survey of Current Business*, July 1999, pp. 112-115.

Figure A-7
 Surpluses on cross-border U.S. service transactions with selected trading partners, by selected quarters, 1997-99¹



¹ Private-sector transactions only; military shipments and other public-sector transactions have been excluded.

Source: Bureau of Economic Analysis, *Survey of Current Business*, table 10, July 1999, pp. 102-103.

