

United States
International Trade Commission

INDUSTRY TRADE AND TECHNOLOGY REVIEW

OFFICE OF INDUSTRIES



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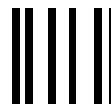
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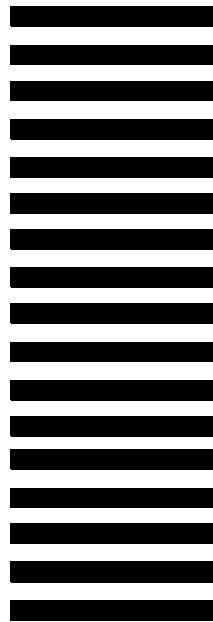
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E-Commerce and Nonferrous Metals: Despite Potential, Adoption Has Been Slow

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The nonferrous metals industry has been evaluating the use of E-commerce in its global market, where annual sales are estimated to range from \$200 to \$300 billion. Optimistic observers have suggested that an electronic marketplace for trading physical metals has the potential to reduce industry costs from a traditional range of 10 to 40 percent of revenues to as little as 2 percent, chiefly by reducing the prices paid for raw material inputs and associated costs.² Other analysis has suggested that from 40 to 60 percent of total metal production could be sold through electronic marketplaces by 2005, and that by 2010, 95 percent of current transaction costs could be eliminated.³ However, industry participants indicate that these forecasts may be too optimistic because many segments of the industry have been slow to adopt E-commerce and not all segments of the nonferrous marketplace are equally suited to benefit from E-commerce. This article examines the obstacles to persuading firms to abandon traditional transaction methods, the potential benefits of E-commerce, and the areas of the nonferrous market in which E-commerce technology appears better suited and where opportunities for application exist.

Inefficiencies⁴ in the market for nonferrous ore, concentrate, primary metal, and scrap reportedly result in an estimated annual cost to the industry of nearly \$600 million, while inefficiencies in the metals futures markets total an additional estimated annual cost of \$260 million.⁵ However, another assessment indicates that once E-commerce marketplaces are fully integrated, cost savings could result in a 10-percent productivity increase for the metals industry.⁶

Despite its potential to reduce costs associated with the physical trading of metals, on-line metals trading has lagged far behind initial expectations. In fact, the number of E-commerce sites serving the nonferrous metals industry has declined from nearly 100 only 2 years ago to

¹ The views expressed in this article are those of the author. They are not the views of the U.S. International Trade Commission (USITC) as a whole or of any individual Commissioner.

² "How are E-Marketplaces Changing the Copper Industry Supply Chain Infrastructure?," International Copper Study Group, Nov. 2000, p. 2.

³ Andersen Consulting (now Accenture) as reported in "How are E-Marketplaces Changing," p. 6.

⁴ Inefficiencies include high transactions/costs, excess shipping costs, and suboptimal prices to users of metal.

⁵ Emetra and McKinsey Co., as reported in "How are E-Marketplaces Changing," p. 6.

⁶ Goldman Sachs, as reported, *ibid.*, p. 6.

just a current handful⁷ (table 1). Many firms have ceased operations entirely. Some other firms have abandoned their physical trading operations for other market niches.⁸

Table 1
Nonferrous and related E-commerce exchanges

Organization	Type of E-commerce trading activity	Metals or metals contracts traded	Year E-commerce trading activity began
Spectron Futures Ltd.	Futures metals contracts	All LME metals	2000
Emetra Ltd.	Physical metal	Copper rod, aluminum rod and all LME metals	2000
London Metal Exchange (LME)— <i>LME Select</i>	Futures metals contracts and small amounts of physical metal	Primary high-grade aluminum, aluminum alloy, copper grade A, special high-grade zinc, standard lead, primary nickel, tin, and silver	2001
New York Mercantile Exchange (NYMEX)	Futures metals contracts and small amounts of physical metal	Gold, silver, copper, platinum group metals, and aluminum	1999

Note.—A number of organizations have ceased operating public nonferrous metal in E-commerce exchanges since 2000. Among the prominent sites to exit the industry are Aluminium.com, ECopper, MetalSpectrum, and CoreMarkets.

Source: Compiled by Commission staff.

Market participants have revealed the following difficulties in replacing the complex current system of trading relations in which mills, brokers, and end-users attempt to match sellers' products with buyers' exact product specifications, principally through a series phone and fax messages.⁹

- The community of nonferrous producers, brokers, and customers is often considered by participants as too small to justify conversion to an E-commerce platform. In the nonferrous metals industry, mills typically buy from a limited number of primary metals suppliers and sell to a limited number of easily identified end-users and brokers. A successful participant in the metals industry has likely already identified his potential supplier and customer base.
- Much of nonferrous metals trade is dominated by specialty, made-to-order items that have typically been handled through personal relationships between the mill and the customer, or between the mill and trading companies. Firms specializing in products that are significantly different in terms of product specification, quality, mode of delivery, and payment terms, reported that such products are generally not easy to trade on a centralized

⁷ Emetra Ltd. is the only known major electronic platform continuing to trade physical nonferrous metal.

⁸ Such firms include MetalOrigins, MetalSmart, and Metal-Pages, which principally provide supply chain management services to the ferroalloys industry.

⁹ Based upon USITC staff conversations with various industry sources, June-July 2001.

exchange. This is particularly true of firms selling lower volume nonferrous metals such as cobalt, nickel, titanium, and magnesium.

- Some market participants contend that a reverse auction¹⁰ model is not appropriate in nonferrous metal markets, characterized by limited numbers of sellers, where trade has been largely standardized by relatively well-defined specifications and prices are already widely reported in trade journals.¹¹
- Sellers reportedly often feel vulnerable in posting a price for metal on a public electronic site out of concern that a buyer could use this public price as a wedge to extract lower prices from suppliers, potentially leading to general suppression of prices. In addition, suppliers often indicate their reluctance to enter into a contract, if their price is met, with an unfamiliar entity whose credit history is unknown, preferring instead to deal with traditional customers.
- Similarly, buyers of metal reportedly have been reluctant to use an electronic exchange because the anonymity of such an exchange often means that a contract to purchase is entered with an unknown entity whose ability to manufacture a quality product and deliver in a timely manner may be questionable. At this point, nonferrous metals firms have stated a preference to deal with firms with which they have established relationships built on experience and trust.
- Inasmuch as most transactions in metals require some customer service, the more extensive or specialized the product, the greater is the need for customer service. This is particularly true of company proprietary products, which often require specialized technical support for proper application. E-commerce platforms reportedly have generally failed to integrate such proprietary customer support requirements into the electronic transaction process.
- Market participants have stated that transaction fees, often as high as \$8 per metric ton, charged by electronic trading sites are a deterrent to their use, adding an additional layer of expense in markets where profit margins are already very thin.

¹⁰ In an auction process, a seller will post an item for sale and buyers compete by making bids for the item. The auction ends when prices bid no longer rise. In a reverse auction, a buyer posts a request for an item and sellers make offers, competing against each other to offer the best price to the buyer. The auction ends when prices offered stop declining. In an auction, competition among buyers tends to bid prices higher while in a reverse auction competition among sellers tends to bid prices lower.

¹¹ Bernard H. Cherry, "E-Commerce Still Offers Benefits to Ferroalloys," *American Metal Market*, July 2, 2001, p. 10.

E-Commerce and Its Potential Benefits¹²

An E-commerce approach to metals transactions is designed to facilitate the exchange of products, services or information, and to cut or eliminate unnecessary expenses involved in buying and selling metals. Technology has been developed to facilitate the requirements of on-line business transactions—from warehousing of material through price negotiations to sales contract, and to final payment and delivery of material. Potential advantages¹³ for metals buyers include efficiencies--

- To improve market transparency by creating an open marketplace where suppliers can publicly compete on the basis of price.
- To streamline procurement processes, reduce paperwork, and reduce operating and sales costs associated with procurement and trading activities.¹⁴
- To allow buyers to attract bids from a larger supplier base than they could handle manually and to allow better supervision of the bidding process.
- To save time by allowing purchasing departments to instantly compare prices, terms and specifications for products from various suppliers.
- To improve financial control as other departments within the buying organization can track purchasing decisions in real time and reduce unnecessary purchases.
- To allow closer synchronization of the supply chain between sale of final product and procurement of raw material inputs, resulting in cost savings from reduced inventory levels.

On-line trading services have incorporated a number of methods to buy and sell metals, including formal *Electronic Requests for Quotes* (ERFQs) and *Electronic Offers to Sell* (EOTS), *on-line product catalogs*, and, in particular, *electronic auction* and *reverse auction*¹⁵ transactions that encompass the following processes:¹⁶

- A seller publicly posts information about an item for sale, including price, quantity, delivery location and date, payment terms, etc., or a buyer posts information about an item needed for purchase.

¹² See also Tracy Quilter, "Steel Sector Explores E-Commerce Although Wary of Quick Transition," *Industry Trade and Technology Review*, Oct. 2000, p. 7.

¹³ "How are E-Marketplaces Changing," p. 1.

¹⁴ Published sources estimate that raw material expenditures are often the largest segment of corporate expenditures, representing approximately 35 percent of an average company's total revenues.

¹⁵ See explanation of auction and reverse auction in footnote 10.

¹⁶ Betty L. Gibbs, "E-Commerce: The Mining Journey Begins," *Mining Engineering*, Jan. 2001, p. 18.

- The service site initiates an auction-type process enabling buyers and sellers to exchange bids and offers.
- Sellers and buyers negotiate over bids and offers until a final decision to accept or reject is made.
- Some electronic sites offer the options of insurance, certification, on-site inspection, sampling, payment and shipping services.

On some sites, the buyer and seller do not know each other's identity until the transaction is completed. On other sites, an invitation list is used to initiate the bidding. Auctions are typically held at a specific time and can cover several days. The existing metals trading sites all require registration as a participating member of the auction and also verify a company's ability or authorization to buy or sell metal, including ability to pay for the metal.¹⁷

Current and Near-Term E-Commerce Applications

Metals Futures Markets

The segment of the nonferrous metals market where E-commerce is clearly seen by industry sources as having a significant potential role is the commodities futures markets. E-commerce platforms are reported to be more ideally suited for this segment of the market for the following reasons:¹⁸

- Standard, undifferentiated market products are sold;
- Contract terms tend to be standard;
- Terms for the physical delivery of metal rarely need to be established;
- Margins per transaction tend to be low; and
- Trades are cleared by well-capitalized member firms through a clearing house, thereby eliminating/reducing credit risk for participants in the trade.

In fact, aggressive efforts are being made by the major global futures exchanges and emerging competitors to introduce E-commerce features into the trading activities of commodities futures exchanges (see highlights that follow). The London Metal Exchange (LME)¹⁹ and the New York Mercantile Exchange (NYMEX) are currently the major exchanges dealing in

¹⁷ Ibid, p. 19.

¹⁸ U.S. staff telephone interviews with officials of London Metal Exchange and Spectron Futures Ltd., July 23 and July 24, 2001.

¹⁹ The LME offers futures contracts in the following nonferrous metals: primary high-grade aluminum, aluminum alloy, copper grade A, special high-grade zinc, standard lead, primary nickel, tin, and silver.

metals futures.²⁰ The LME currently accounts for more than 90 percent of global base metals futures trade, transacting nearly \$10 billion of business daily. These exchanges serve the metals industry in four basic roles.

- *Pricing.* By providing reference prices for the worldwide contract pricing of nonferrous metals. Closing LME prices form the basis for the physical trading of metal.
- *Liquidity.* By matching suppliers of metal with ultimate users of metal, these exchanges assure a ready market for products produced and a certain volume of transactions that assist in supporting price stability, thereby benefitting both producers and consumers.
- *Hedging.* By enabling metals producers and consumers to protect themselves against the potential risks associated with volatile movements in base metals prices and guarantee an acceptable final delivery price, through the buying and selling of financial futures contracts.²¹
- *Delivery.* By providing for appropriately located storage facilities or warehouses to enable producers and consumers to physically exchange metal and to permit physical delivery of metal in fulfillment of the terms of a futures contract.

The established metals commodities futures markets have been adopting electronic trading methods due to the emergence of certain E-commerce sites that have begun to trade metals futures and physical metal.²² In particular, Spectron Futures Ltd. and Emetra Ltd. have emerged to challenge certain trading activities of the LME.

London Metal Exchange²³

The LME has responded to the needs of market users and members by introducing, in February 2001, phase 1 of an electronic screen trading capability to complement its traditional

²⁰ The essential difference between the LME and the NYMEX is that the LME is a cash and short-term futures exchange while the NYME is oriented more toward longer-term contracts. In addition, the NYMEX owns its own central clearing house facility while the LME clears trades through the London Clearing House, an independently owned entity. The NYMEX is also a more regional market with its warehouses concentrated in the United States, while the LME is a more global market with warehouses worldwide.

²¹ A futures contract is a legally binding obligation for the holder of the contract to buy or sell a particular commodity at a specific price and location at a specific date in the future. Contracts are standard in terms of quality, quantity, and delivery terms to assure understanding among all parties to the contract.

²² The NYMEX began using an electronic order entry and matching system with the implementation of its ACCESS system in 1993. The LME is the more active market for nonferrous metals, and is the focus of this article.

²³ According to officials of the LME, the LME differs in one important aspect from unregulated futures exchanges such as Spectron Futures. The LME is a recognized exchange under British financial law and can therefore offer to brokers and their customers certain financial protections and safeguards that are not available to clients of unregulated exchanges.

*open outcry*²⁴ and 24-hour telephone market systems of trading. Under *LME Select*, member firms could trade cash contracts and 3-month contracts on-line, in addition to the usual open outcry ring trading and telephone trading systems. *LME Select* enables users to view price information, best bids, volumes available, and the trader's personal order book for all metals traded on the LME. Phase 2 of *LME Select*, implemented in September 2001, permits members to trade all existing LME futures contracts and options, with automatic matching and clearing of trades, and will enable member firms to find a quote for specific futures contracts.²⁵ Under *LME Select*, orders are placed through an order window. A special trade ticker acts as a continuous market update to information outlets such as the Reuters news service. The system is anonymous and parties only discover each other's identities when the trade is completed and the clearing trades window is displayed. Final clearing of the trade is done through the official LME clearing house.²⁶ According to an LME official, transaction fees for electronic transactions are based on a number of factors, including volume of trading activity and exchange-client relationships. The LME estimates that 10 percent of base metals futures is presently traded on-line.

Spectron Futures Ltd.

In June 2000, London-based Spectron Futures Ltd. (SF), a privately owned commodities brokerage firm,²⁷ inaugurated its on-line trading system to allow LME clearing house members to trade LME metal futures contracts and options on-line through its platform. As with LME trading, the system is anonymous, with the identity of the parties made available to each other only when the trade has been matched. Matched trades are cleared through the London Clearing House, as is now done by LME members. A transaction fee of 0.5 percent, typically \$5 per metric ton, is assessed by charging dealers who accept offers posted on-line. SF competes with LME Select in providing an electronic platform for dealers, reportedly adding to market liquidity and transparency, but is dependent on the LME in that the contracts it trades are LME contracts. SF reportedly competes successfully with the LME only by offering the services of a more complete trading platform to dealers, including lower commissions and greater ease in executing the trading of contracts. From June 2000 through January 2001, the value of all metals futures traded via SF exceeded \$9 billion, with aluminum accounting for nearly 50 percent of total volume traded.²⁸

Emetra Ltd.

In October 2000, London-based Emetra Ltd. launched its platform for the physical trading of nonferrous metals on the LME. The platform allows members to trade nonferrous metals

²⁴ *Open outcry* describes a system to trade metals and determine metals prices through an open and continuous auction process on an exchange floor, or "ring," by exchange members who act on behalf of their customers to buy and sell futures contracts.

²⁵ Frank Haflich, "LME Screen Trading Debut said Imminent," *American Metal Market*, Feb. 7, 2001, p.

²⁶ Clearing houses are essential in the monitoring and controlling of risk in futures trading, including adequate margin procedures and the assurance of adequate financial resources among market participants.

²⁷ Since Spectron is a broker and not an exchange, it operates under somewhat different legal and financial guidelines than does the LME.

²⁸ Roberta C. Yafie, "Online Brokerage Spectron Offers Commission 'Rebate,'" *American Metal Market*, Feb. 6, 2001, p. 6.

through negotiation offers between principals, through tender offers between principals, and through auction or reverse auction of metals. A transaction fee of 0.5 percent, typically \$5 per metric ton, is charged to respondents who accept offers. Emetra's goal is for its trading system to eliminate current market inefficiencies, estimated at \$1 billion annually,²⁹ by allowing buyers and sellers of physical metal to be linked electronically, thereby reducing paperwork. According to Emetra, the biggest obstacles to the physical trading of metals are related to lack of electronic access by all market buyers and sellers worldwide and the resistance of market participants to alter their traditional patterns of trading metals, whether through telephone or fax machine. Emetra allows member firms to offer and bid for all standard LME-traded metals, as well as copper rod and aluminum rod, two non-LME metals. Emetra competes with the LME in the physical trading of LME metals, but contends it has an advantage, at present, by concentrating exclusively on trading of physical metals whereas LME physical metals trading is a small portion of its total metals volume.³⁰ In addition, Emetra's platform reportedly has the capability to trade odd-lot sizes of metals while the LME only allows trading in standard contract sizes of metal.

Supply-Chain Management

A limited number of E-commerce firms³¹ have survived by modifying their original intention of the physical trading of metals and have instead concentrated on creating efficiencies through improvements in "supply-chain management." These firms offer software systems that seek to improve the efficiency of an organization through automating many of the complex day-to-day operations of the business and by integrating these processes with data reporting.³² The reference box illustrates a typical transaction in the metals industry compared with the same transaction using an E-commerce supply-chain management system.

The goal of a supply-chain management system is to substitute electronic communication for the series of fax, phone, and traditional mail communication, thereby achieving significant time and resource savings for the buyer and seller, fewer data entry errors, better inventory control, and better information available for business managers, all reported to contribute to cost savings and productivity improvements.³³

Transactions Management

In addition to supply chain management, another small but growing area of nonferrous E-commerce involvement is in transactions management. A small number of firms has emerged to offer customers software that makes available on-line Requests for Quotes

²⁹ "Online Exchange: Emetra Denies Buying LME Stocks," *Metals Week*, Oct. 16, 2000, p.1.

³⁰ USITC staff telephone interview with James Van Bregt, Emetra Ltd., June 29, 2001.

³¹ For example, MetalOrigins Inc., West Palm Beach, Florida, claims that it is the only firm building websites capable of offering nonferrous metals customers complete supply chain and transactions management services, including the ability to manage contracts, release goods, track deliveries, and create invoices in real time. It has been reported that other firms are building web sites that provide various aspects of supply management services.

³² Bernard H. Cherry, "E-Commerce Still Offers Benefits to Ferroalloys," *American Metal Market*, July 2, 2001, p. 20.

³³ USITC staff telephone interview with Alec Miller, MetalOrigins Inc., July 18, 2001.

A Comparison of Typical versus E-Commerce Transactions

In a *typical metals transaction*, a buyer and a seller of metal agree upon the terms of a contract, including price and payment terms, through a process of negotiation. The seller then waits for the buyer to request, usually by fax or phone, delivery of the goods. The seller then checks inventory and phones or faxes a trucking company and the warehouse to set up a delivery schedule. The warehouse ships the goods, then faxes the bill of lading to the seller. The seller takes the fax of the bill of lading, enters the information into their accounting system, and generates an invoice which is sent by mail to the buyer with the bill of lading. The seller updates their inventory to reflect the delivery.

In an *E-commerce supply-chain management system*, once a sale has been made, the seller records the sale electronically into the system. The buyer logs into the secure website and requests delivery of the goods from a list of contracts logged in the system. The seller is alerted via Email of the request, reviews the request, and can approve the request by issuing an electronic alert to the warehouse. The warehouse receives the alert, reviews the request, ships the goods, and records the bill of lading electronically into the system. Both buyer and seller are alerted that the goods have been shipped and the seller's inventory is automatically deducted with the exact amount shipped in real time.

Source: Cherry, "E-Commerce still offers Benefits to Ferroalloys," p. 20 and USITC staff telephone interview with representative of MetalOrigins Inc., July 18, 2001.

(ERFQs), on-line Offers to Sell (EOTS), and on-line product catalogs.³⁴ The on-line process is reported to be similar to the processes buyers and sellers have traditionally used to request and offer metal, in that all transactions are private and confidential with only the buyer and seller having knowledge of the details of the transaction. After the ERFQ and EOTS have been exchanged, sellers and buyers can use the new systems to communicate back and forth until a transaction is completed. In addition to price, factors such as quality, quantity, delivery terms, payment terms, material size, chemistry requirements, and customer service can be negotiated on-line.³⁵

Private Exchanges

A private exchange is a new type of electronic marketplace that is just now emerging and has not yet found an application in nonferrous metals, although it is being used by certain steel companies. An on-line private exchange differs significantly from a public exchange in that a private exchange is maintained by a single company with a select group of suppliers and customers that are regulated by the owner of the exchange. In addition, private exchanges can be tailored to serve specific projects and customers, unlike public exchanges, which are

³⁴ On-line catalogs enable sellers to post available materials and to maintain and control access to multiple catalogs and allow buyers to view product supply and specifications and to facilitate direct purchasing. MetalOrigins Inc., website at <http://www.metalorigins.com/asp/Home.asp>?

³⁵ USITC staff telephone interview with Alec Miller, MetalOrigins Inc., July 24, 2001.

generic in nature in order to accommodate all users.³⁶ As presently constituted, private exchanges permit customers to enter orders, check order status, get chemical analysis information, and acquire information on delivery of the product. The material that is traded is done so through a bidding process. A customer will bid on material listed on the exchange and is notified through the exchange if they have been awarded the material. The customer can then submit a purchase order via E-mail or fax.

A principal advantage attributed to a private exchange is that it does not force participants to give up sensitive information to competitors or to suppliers serving those competitors, whereas the initial public exchanges reportedly encountered resistance because they required the public sharing of price information.³⁷ By encouraging suppliers and customers to exchange information on a secure site, one industry observer notes that a private exchange gives suppliers a more accurate picture of customer needs, resulting in reductions in excess inventories and better management of distribution channels. With real-time access to trends in product demand, manufacturers are reported to be able to tailor production cycles to better match demand requirements. Another advantage attributed to a private electronic exchange is that it permits aggregation of transactions when a customer orders a variety of products from a company with multiple product lines or when a supplier sells to different divisions of a company, resulting in cost and time savings.³⁸ Presently, these situations typically require separate purchase orders.

Conclusion

Although the use of E-commerce platforms in the public trading of nonferrous metals is unlikely to meet the original highly optimistic projections for their application and achievable cost savings, the industry is slowly beginning to use on-line-trading systems in various market segments. Conversations with market participants indicate that the pace of adoption will greatly depend on the market segment and the ability of these software systems to provide sustained value for customers. It now appears that the use of on-line trading systems that focus on the public trading of physical metal will continue to lag behind their use in other markets because of the unique nature of the nonferrous metals industry. However, opportunities clearly exist for the spread of electronic technology in futures markets, for example, where it is quickly expanding; in facilitating the sale and delivery of goods; and in providing important management information on shipments, inventories, and billing to better aid managers in their decision-making.#

³⁶ Pimm Fox, "Private Exchanges Drive B2B Success," *Computerworld*, May 7, 2001, at <http://www.itworld.com/Tech/3478/CWD010507ST>.

³⁷ Jennifer Caplan, "Private Exchanges Reinvent B2B: Private E-Marketplaces May Improve upon the Model Created by Public B2B Sites," *CFO.com*, Apr. 2, 2001, at <http://www.cfo.com/pr...1,4580,87%7C88%7CAD%7C2484,00.html>.

³⁸ *Ibid.*

Foreign Direct Investment in Infrastructure Services in OECD Countries

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In recent years, the service sector has accounted for an increasingly larger share of GDP in most countries. Prominent among service-sector industries are the infrastructure services, such as finance, telecommunications, and utilities, which provide most other businesses with efficient and low-cost services that they need in order to compete in global markets. Regulatory and technological changes in the 1990s have all encouraged foreign direct investment (FDI) to play a more significant role in the provision of such services in many countries. This article examines the extent of inbound FDI in the service sectors of the member countries of the Organization for Economic Co-operation and Development (OECD),² with special attention to investment trends in infrastructure industries.

FDI in OECD infrastructure industries has increased for several reasons. First, in an effort to attract capital and increase efficiency, many countries have unilaterally removed burdensome investment regulations, especially those pertaining to foreign firms. Second, some countries have also undergone the large-scale privatization of state-owned enterprises in these industries, many of which have been purchased by foreign investors.³ Third, technological advances in telecommunication services and electricity and gas services have encouraged profound changes in the market structures that characterize these industries. And fourth, upgrading existing infrastructure to take advantage of these new technologies requires substantial capital, much of which has also had to come from FDI. These combined developments have generated new private-sector competition in many countries. Much of this liberalization has been formalized through the General Agreement on Trade in Services (GATS).⁴ For instance, special protocols to the GATS have been concluded for the financial services and telecommunication services industries. Energy-related services may well be on the agenda for the impending World Trade Organization (WTO) negotiations.

¹ The views expressed in this article are those of the author. They are not the views of the U.S. International Trade Commission (USITC) as a whole or of any individual Commissioner.

² Data on services investment outside of the OECD member countries are not available. Belgium, Ireland, Japan, Korea, Luxembourg, New Zealand, Spain, and Turkey do not report inbound direct investment by industry (see box) to the OECD, and are therefore not included in this report.

³ See Rudolf Adlung, "Services Trade Liberalization from Developed and Developing Country Perspectives," in Pierre Sauvé and Robert M. Stern, eds., *GATS 2000: New Directions in Services Trade Liberalization* (Washington, DC: The Brookings Institution, 2000), pp. 112-131.

⁴ The GATS is a multilateral treaty signed in 1994, under the auspices of the World Trade Organization's Uruguay Round.

Direct Investment in OECD Service Sectors

Among the member countries of the OECD, the service sector accounted for 56 percent of total inbound direct investment stock, on average, in 1998. This reflected average annual growth of 22 percent in service sector investment stock during 1990-98, compared to 19-percent average annual growth in all industries.⁵ The United States held the greatest amount of service-sector investment in 1998, with \$401.7 billion in direct investment stock. Germany and the United Kingdom followed with \$188.1 billion and \$179.4 billion, respectively (table 1). The investment levels reflect both the importance of the service sector in each country, and the relative size of each economy. The share of service-sector investment was highest in Switzerland, Germany, and Denmark, where 80 percent of inbound direct investment stock resided in service industries (figure 1).⁶

Direct Investment

Direct investment is a significant investment by a parent company in a foreign-based affiliate, such that the parent has substantial influence in the management of the affiliate company. For statistical purposes, the International Monetary Fund (IMF) recognizes direct investment to be ownership of 10 percent or more of the voting securities of a foreign business enterprise. This is the same standard applied by U.S. statistical agencies and most other OECD member countries. The data presented in this paper are derived from direct investment position, or stock data, which is a cumulative statistic. Direct investment position measures the sum of parents' equity holdings in their foreign affiliates, plus the net value of loans from parents to their affiliates. Direct investment can take place in two ways: through foreign investment in new firms or production facilities (greenfield investment), or through cross-border mergers with and acquisitions of existing facilities (brownfield investment).

The Czech Republic, Poland, and Hungary appeared to experience the most rapid growth in inbound service-sector investment stock during 1990-98, with average annual growth rates of 88 percent, 63 percent, and 43 percent, respectively.⁷ These rapid growth rates principally reflect a wave of privatization in the infrastructure service industries during the 1990s, along with the liberalization of foreign investment rules designed to meet standards for entry into the European Union.⁸

⁵ Nineteen OECD member countries reported data on their inbound direct investment position for 1998. Belgium, Denmark, Greece, Ireland, Japan, Korea, Luxembourg, New Zealand, Spain, and Turkey did not report such data.

⁶ Calculations by the Commission, from OECD data. OECD, *International Direct Investment Statistics Yearbook 2000* (Paris: OECD, 2001).

⁷ Average annual growth rates calculated by USITC staff from available OECD data. The Czech Republic reported service sector investment data from 1991-98, Poland reported data from 1994-98, and Hungary reported data from 1992-98.

⁸ See Swiss Re, *Sigma*, No. 1/2001, pp. 19-22, for details on preparation for EU membership specific to the insurance industry.

Table 1
Inbound direct investment position in services, 1990-98

Country	Inbound direct investment, 1998	Share of total inbound direct investment, 1998	Average annual growth of direct investment, 1990-98
		Million U.S. dollars	Percent
Australia	52,324.9	53.8	6.7
Austria	14,719.3	72.8	15.3
Canada	93,092.0	63.0	18.9
Czech Republic	7,072.1	53.2	88.4
Denmark	23,207.9	79.6	13.7
Finland	7,089.2	45.2	20.7
France	94,215.0	58.3	10.7
Germany	188,085.1	80.7	14.3
Greece ¹	8,708.0	50.5	(²)
Hungary	6,640.5	60.2	42.8
Italy	58,778.5	59.9	13.1
Mexico ³	19,641.0	35.2	14.4
Netherlands	88,683.6	55.2	15.9
Norway	9,694.2	36.9	12.1
Poland	7,221.0	32.1	63.4
Portugal	13,799.3	66.9	13.2
Sweden	20,259.2	38.7	21.5
Switzerland	54,946.9	83.1	9.2
United Kingdom	179,367.1	59.0	12.3
United States	401,652.0	50.6	10.1

¹ Data are for 1999.

² Not available.

³ Data are for 1997.

Note.—Data are not available for Belgium, Ireland, Japan, Korea, Luxembourg, New Zealand, Spain, and Turkey.

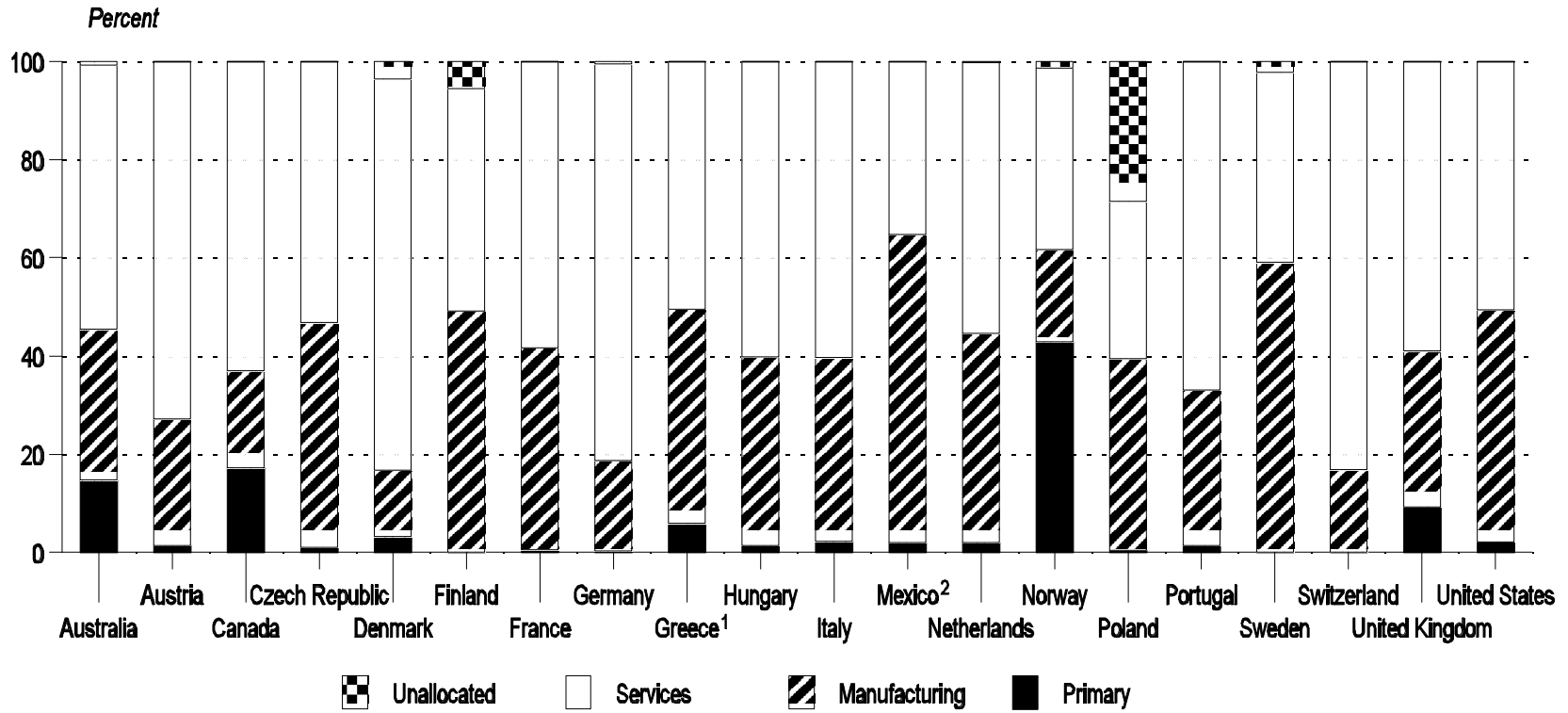
Source: Calculations by Commission staff, based on OECD data.

In the Czech Republic, the largest shares of inbound direct investment in service industries went to financial services, along with wholesale/retail trade and repair services, followed by the communications and utilities industries. During 1991-96, more than 4,700 state-owned firms with \$32 billion in assets were sold to the private sector. New FDI accounted for \$6 billion of this total.⁹ Investment in the communications industry during 1990-98 primarily targeted the mobile telephone industry.¹⁰ FDI in Czech infrastructure services is likely to show continued strong growth in subsequent years. In 1998, the country launched a privatization program for its four largest banks, which finished on schedule in June 2001, with the sale of a 48-percent stake in Komerční Banka to Société Générale (France) for

⁹ U.S. Department of State telegram No. 06302, "Czech Privatization Revisited," prepared by U.S. Embassy, Prague, Oct. 4, 1996.

¹⁰ U.S. Department of State telegram No. 00306, "Czech Telecoms: Mobile Phones and 3G Licenses," U.S. Embassy, Prague, Feb. 1, 2001.

Figure 1
Inbound direct investment position, by country and sector, 1998



¹ Data are for 1999.

² Data are for 1997.

Source: OECD, *International Direct Investment Statistics Yearbook 2000*, (Paris: OECD, 2001).

\$1.01 billion.¹¹ The banks have been sold primarily to foreign investors.¹² Four new mobile telecommunication licenses were also scheduled for auction in 2001. Cesky Telecom, the state-owned landline telephone company, is scheduled to be privatized during the second half of 2001, but as of July 2001, the Czech Government had not announced final details of the privatization process.¹³

In Poland, the financial services industry attracted the largest share of infrastructure services investment. The majority of Poland's banks have been privatized, and approximately 70 percent of the country's commercial banking sector is now controlled by foreign investors, most prominently from Germany, Italy, and the United States.¹⁴ In the insurance industry, foreign-controlled firms accounted for 99 percent of the nonlife market and 78 percent of the life insurance market in 1999.¹⁵ More recently, foreigners have invested in Poland's telecommunications and utilities industries as well. France Telecom invested \$3.2 billion and Sweden's Telia invested \$300 million in the telecommunications industry during 2000.¹⁶ Several French and German firms have acquired stakes in Polish electric and gas utilities since 2000. The Polish Government is planning to find strategic investors, most likely large global companies, for more than 60 electric power generation and distribution firms by the end of 2002.¹⁷

In Hungary, the largest share of service-sector direct investment (23 percent) has been concentrated in the electric, gas, and water industries. Much of this investment went to finance the privatization of Hungary's electric power sector during the 1990s.¹⁸ Electricité de France holds substantial shares in several Hungarian electricity distribution companies.¹⁹ Other industries receiving significant direct investment include financial services and

¹¹ "The End of the Beginning," *The Daily Deal*, June 11, 2001, p. 4; and "Czech Republic: Focus on Privatization Deals," *Acquisitions Monthly*, July 31, 2001, found at Internet address <http://www.acquisitions-monthly.com/>, retrieved Aug. 1, 2001.

¹² U.S. Department of State telegram No. 00277, "Czech Banking Sector on Road to Recovery," U.S. Embassy, Prague, Jan. 31, 2001.

¹³ U.S. Department of State telegrams, No. 00248, "Czech Telecoms: Privatization and Interconnectivity," prepared by U.S. Embassy, Prague, Jan. 29, 2001; and No. 00306 "Czech Telecoms: Mobile Phones and 3G Licenses," prepared by U.S. Embassy, Prague, Feb. 1, 2001; and "Vivendi and Telefonica Interested in Cesky Telecom," Kagan World Media, June 4, 2001, found at Internet Address <http://www.kagan.com/archive/>, retrieved July 18, 2001.

¹⁴ "Foreigners Buy Up Poland's Banks," *Euromoney*, Sept. 2000, found at Internet address <http://www.euromoney.com/>, retrieved Mar. 1, 2001.

¹⁵ Swiss Re, *Sigma*, No. 1/2001, table A3, p. 34.

¹⁶ Polish Agency for Foreign Investment, found at Internet address <http://www.paiz.gov.pl/>, retrieved July 19, 2001.

¹⁷ "Polish Treasury Selects Power Partner," *Acquisitions Monthly*, May 24, 2001; "Europe Looks Ahead to the US," *Acquisitions Monthly*, Jan. 1, 2000; and "EdF and EnBW Acquire Rybnik Power Plant," *Acquisitions Monthly*, July 30, 2001, all found at Internet address <http://www.acquisitions-monthly.com/>, retrieved Aug. 1, 2001.

¹⁸ U.S. Department of State, Energy Information Administration, Hungary: Country Analysis Brief, found at Internet address <http://www.eia.doe.gov/emew/international/hungary.html>, retrieved Feb. 28, 2001.

¹⁹ Individual company websites: <http://www.dedasz.hu/angol.htm>; <http://www.demasz.hu/>; http://www.edasz.hu/eng/index_e.html, all retrieved Mar. 1, 2001.

communications. For example, foreign insurance firms accounted for approximately 90 percent of market share in both the Hungarian life and nonlife insurance markets in 1999.²⁰

Since cross-border mergers and acquisitions are one of the primary sources of FDI, the service industries that register the highest proportions of inbound direct investment stock are also the industries which registered the highest number of cross-border mergers and acquisitions in recent years. In 1999, a total of 5,232 cross-border mergers took place worldwide, valued at \$804 billion. Service sector firms were involved in 2,999, or 57 percent, of these mergers, and accounted for \$452 billion (56 percent) of the total value (table 2). The infrastructure services addressed herein jointly accounted for 71 percent of cross-border mergers and acquisitions in the service sector by value, but only 29 percent of the number of such mergers.²¹ The remainder of the article addresses three infrastructure service industries in greater detail: financial services; telecommunication services; and electric, gas, and water utilities.

Table 2
Worldwide cross-border mergers and acquisitions in the service sector, 1999

Industry	Number of mergers	Value of mergers <i>Billion U.S. dollars</i>
Communications	220	167.1
Financial services	481	95.9
Electric, gas & water	174	56.9
Real estate and business services	1,199	45.6
Trade and repairs	320	29.7
Transport	180	15.1
Hotel and restaurant services	73	6.5
Construction	78	3.6
Other services	274	31.2
Total service sector	2,999	451.5
Total all industries	5,232	804.0

Source: Calculations by Commission staff, based on data provided by KPMG Corporate Finance.

Telecommunication Services

Technological and regulatory changes in the telecommunication service industry in recent years have encouraged a significant increase in FDI. Traditionally, telephone services have been provided by monopoly telephone companies, either government-owned, or privately owned and highly regulated. The high infrastructure costs required to provide universal telephone coverage resulted in natural monopolies in most countries. More recently, however, new technologies have lowered infrastructure costs and permitted increased competition, including foreign competition. In wireless telecommunications, the infrastructure costs are so much lower than for landline systems, that it is economically feasible for competing telephone companies to invest in competing networks. Governments have embraced this newly

²⁰ Swiss Re, *Sigma*, No. 1/2001, Table A3, p. 34.

²¹ Compiled by KPMG from press reports. It is possible that some mergers are not included, or that the value of the transactions changed between the press announcement and the concluded transaction. When no value for a merger is reported in the press, KPMG records the value as zero, so total values for broad industry categories are most likely understated. KPMG Corporate Finance, Cross-Border Mergers and Acquisitions database, received Nov. 2000.

competitive system as a way to increase efficiency in the market, thus lowering prices for consumers. To this end, many governments have reformed their telecommunications regulations, issuing new licenses and permitting foreign investment. The result has been very rapid growth in FDI in the telecommunications industry.

During 1990-98, inbound direct investment in telecommunications increased at an average annual rate of 75 percent in OECD member countries.²² The United States was the largest recipient of such investment, with \$32.5 billion, followed by the United Kingdom, with \$19.1 billion (table 3 and figure 2).²³ The United Kingdom began the process of privatizing its telecommunications industry with the sale of a 50-percent stake in British Telecom, for \$6.4 billion, in 1984.

Table 3
Inbound direct investment position in telecommunications in OECD countries, 1998

Country	Inbound position	Telecommunications/total inbound services position
	<i>Million U.S. dollars</i>	<i>Percent</i>
Australia	(¹)	(¹)
Austria	1,534.8	10.4
Canada	(¹)	(¹)
Czech Republic	1,131.0	16.0
Denmark	6,496.0	28.0
Finland	(¹)	(¹)
France	2,342.3	2.5
Germany	372.9	0.2
Greece	(¹)	(¹)
Hungary	677.2	10.2
Italy ²	2,228.7	4.4
Mexico ²	1,191.0	6.1
Netherlands	2,653.4	3.0
Norway ²	59.4	0.5
Poland	162.0	2.2
Portugal	135.6	1.0
Sweden	(¹)	(¹)
Switzerland	(¹)	(¹)
United Kingdom	19,112.0	10.7
United States	32,468.0	8.1

¹ Not available.

² Data are for 1997.

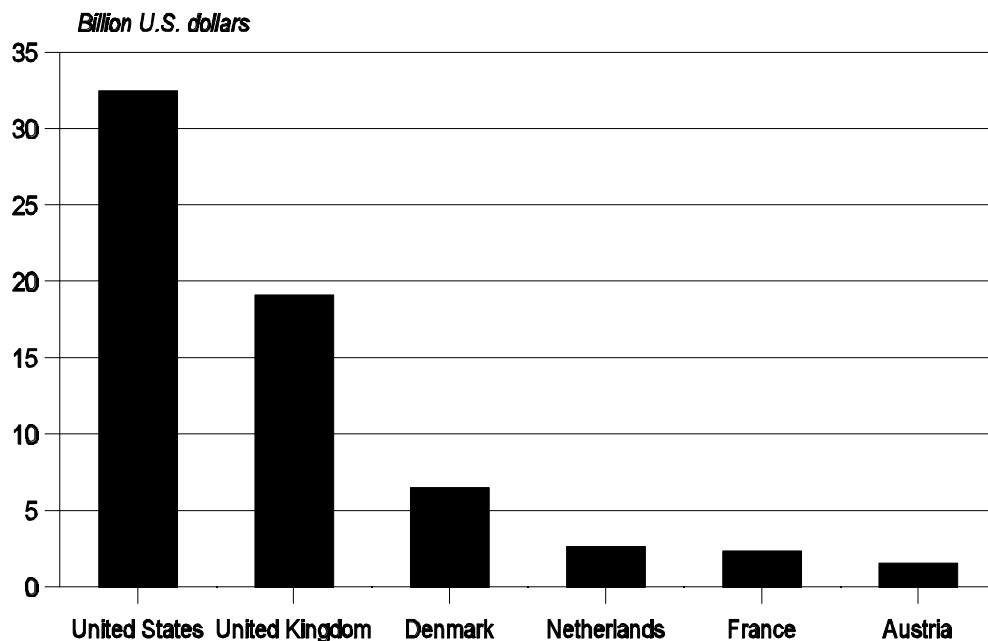
Note.—Data are not available for Belgium, Ireland, Japan, Korea, Luxembourg, New Zealand, Spain, and Turkey.

Source: Calculations by Commission staff, based on OECD data.

²² Includes data for Australia, France, Germany, Hungary, Italy, Mexico, the Netherlands, Norway, Poland, Portugal, the United Kingdom, and the United States. No data are available for other OECD members.

²³ The remainder of British Telecom was sold off in two sales in 1991 and 1993, with the three sales raising a total of \$22.9 billion. See International Telecommunication Union (ITU), World Telecommunication Development Report 1996/97 (Geneva: International Telecommunication Union, 1997), p. 52.

Figure 2
Inbound direct investment position: Telecommunications investment, by country, 1998



Source: OECD, *International Direct Investment Statistics Yearbook 2000* (Paris: OECD, 2001).

In five OECD countries, telecommunication services accounted for large shares of all inbound direct investment in the service sector: Denmark, the Czech Republic, the United Kingdom, Austria, and Hungary. In 1998, telecommunications accounted for 28 percent of inbound direct investment in services in Denmark; 16 percent in the Czech Republic; 11 percent in the United Kingdom; and 10 percent in both Austria and Hungary (see table 3). In Denmark, U.S.-based Ameritech purchased 42 percent of former monopoly provider Tele Danmark for \$3.1 billion in 1998, and in Austria, Telecom Italia paid \$2.3 billion for a 25-percent stake in former monopoly Post und Telekom Austria in 1998.²⁴ In 1994 and 1995, the Czech Republic sold a total of 49 percent of SPT Telecom for \$1.3 billion, with Swiss Telecom and Netherlands PTT purchasing the largest shares.²⁵ Deutsche Telekom and Ameritech purchased two-thirds of Hungary's Matav for \$1.7 billion, in two separate transactions in 1993 and 1996.²⁶

Privatization, often accompanying regulatory reform, has opened many new markets to foreign investment. By the end of 1998, at least 69 state-owned telephone and postal

²⁴ Ameritech was purchased by U.S.-based SBC Communications Corporation in 1999. "Europe's Incumbents Learn the American Way," *Communications Week International*, May 4, 1998; "SBC Bid May Boost Ameritech in Europe," *Bloomberg News*, May 11, 1998; and "Telecom Italia Outbids Ameritech to Win Telekom Austria Stake," *Bloomberg News*, Oct. 20, 1998, all found at Internet address <http://www.totaltele.com/>, retrieved July 31, 2001.

²⁵ ITU, p. 51.

²⁶ Privatisation International, database of completed mergers and acquisitions, found at Internet address <http://www.privatisationintl.com/>, retrieved Feb. 28, 2001; and ITU, p. 51.

companies had been privatized worldwide, in deals valued at over \$240.5 billion, with foreign investors playing an active role in the process.²⁷ Firms in Japan, the United Kingdom, Germany, Brazil, and Mexico accounted for over \$123 billion of this total, with Japan's NTT alone raising \$70.5 billion.²⁸ Foreign interests have also invested large sums in many countries to acquire mobile telephone licenses, and to set up the infrastructure necessary to offer mobile telephone services. Extensive cross-border investment in the industry has continued through 2001. For example, Telecom Italia paid \$700 million for 25 percent of the Austrian telecommunications firm Mobilkom in 1997, Sweden's Telia raised \$8.6 billion from foreign investors for a 29-percent stake in the company, and Deutsche Telekom (Germany) paid \$939 million for 51 percent of the Slovak Republic's telephone company in 2000.²⁹

Considerable amounts of FDI in the industry also stem from cross-border mergers and acquisitions between private companies in the United States and Europe. In 1998, for example, there were 232 cross-border mergers or acquisitions in the telecommunication services industry, valued at \$40.4 billion. This was followed in 1999 by 227 cross-border mergers, with a sharply increased value of at least \$167 billion.³⁰ The higher 1999 value was largely driven by British-based Vodafone AirTouch's purchase of Mannesmann, a German telecommunications company, for \$136 billion.³¹ Vodafone AirTouch is itself a product of a \$65.9 billion merger of a British and a U.S. firm in 1999.³² Among many other recent cross-border mergers in the industry were Deutsche Telekom's \$53.9-billion acquisition of U.S.-based Voicestream Wireless Corporation and its \$7.2-billion takeover of U.S. mobile operator PowerTel, both during 2000. Deutsche Telekom also acquired British-based One 2 One for \$13 billion during 1999. In a separate merger, British Telecommunications acquired Viag Interkom of Germany for \$13 billion during 2000.³³

Electric, Gas, and Water Utilities

Direct investment trends in the electric, gas, and water utilities industry once again illustrate the impact that technological developments and regulatory reforms can have on investment growth. As in the case of the telecommunications industry, the utilities industries have traditionally operated as highly regulated natural monopolies, whether government-owned or privately owned. Electric power, gas, and water utilities were characterized by high

²⁷ Calculations by Commission staff, based on data from ITU, pp. 45-54; and USITC, Global Privatization Initiatives database.

²⁸ ITU, pp. 45-54

²⁹ USITC, Global Privatization Initiatives database.

³⁰ KPMG Corporate Finance.

³¹ When the merger was first proposed in late 1999, it was valued at approximately \$136 billion. Due to changes in the share prices of both Mannesmann and Vodafone after the bid was announced, the merger was valued at over \$180 billion by the time it was completed. See Michael Murphy, "Much done, more to come," *Acquisitions Monthly*, Jan. 1, 2000, found at Internet address <http://www.acquisitions-monthly.com/>, retrieved Mar. 2, 2001; and "Mannesmann Board OKs Vodafone Merger Bid," *Reuters*, Feb. 4, 2000, found at Internet address <http://www.totaltele.com/>, retrieved Feb. 26, 2001.

³² UNCTAD, *World Investment Report 1999* (Geneva: United Nations, 1999), p. 96.

³³ "The Waiting Game," Jan. 2001, and "Much Done, More to Come," Jan. 2000, *Acquisitions Monthly*, found at Internet address <http://www.acquisitions-monthly.com/>, retrieved Mar. 2, 2001.

infrastructure costs, making it too expensive to replicate the infrastructure in order to introduce competition. Beginning in the early 1990s, new technologies offered increased efficiencies, particularly in the electric power industry. The two most important technological innovations in electric power were Combined Cycle Gas Turbine technology (CCGT), and improved communication and control methods for electric power network systems. CCGT is a highly efficient gas turbine system used in electricity generation. The new technology has greatly reduced the fixed costs of generating electricity, permitting additional generators to enter the market, thus creating increased competition in the electric power industry. At the same time, the innovations in network communication have allowed effective coordination between an increased number of electric power generation and distribution firms in a single electricity network, again increasing the overall efficiency of the system.³⁴

In the natural gas and water industries, reforms have introduced greater efficiency into the systems by separating the production, transmission and distribution functions of vertically integrated utility companies, and facilitating market competition where possible. For example, many countries have introduced competition in both the production and distribution segments of the natural gas industry. In the water industry, privatization of water companies has reportedly increased operational efficiency through the introduction of a profit motive, without launching a system of market competition.³⁵ In response to these changing conditions, a number of countries have opened their electric power, natural gas, and water industries to FDI as a means to pay for necessary infrastructure development. Inbound direct investment stock in the utilities industry increased at an average annual rate of 37 percent during 1990-98,³⁶ compared with 19 percent for all industries, and 22 percent for the service sector as a whole.

The United Kingdom was the largest destination for inbound investment in the utilities industries during the 1990s, with total inbound direct investment stock of \$19.5 billion in 1998 (figure 3). Australia ranks second, with \$5.1 billion. In the United Kingdom and Australia, electric, gas, and water services account for 6 percent and 5 percent, respectively, of total inbound direct investment in the service sector. Both of these countries have recently completed significant privatization programs involving their electricity and gas industries, which attracted large foreign investments during the 1990s. In Australia, for example, the State of Victoria privatized its six major generating companies between 1996 and 1999. The sales yielded \$23.5 billion, primarily from U.S. and British investors.³⁷ In the

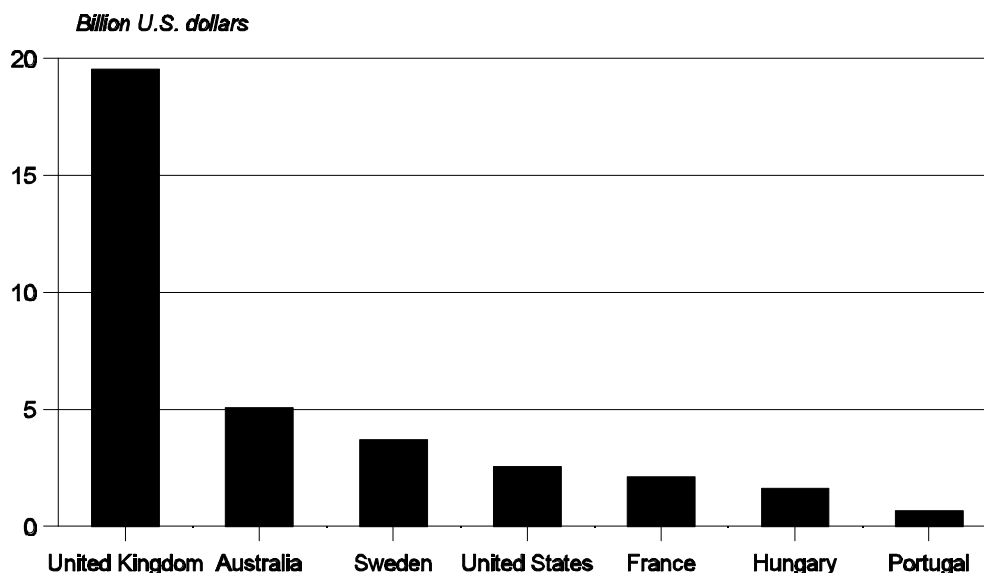
³⁴ USITC, *Electric Power Services: Recent Reforms in Selected Foreign Markets*, publication No. 3370, Nov. 2000, pp. 2-6 - 2-7.

³⁵ See International Energy Agency, *Natural Gas Pricing in Competitive Markets* (OECD: Paris, 1998), pp. 13-52; and World Bank, "Private Participation in the Water and Sewerage Sector - Recent Trends," Note No. 147, Aug. 1998.

³⁶ Includes data for Australia, Austria, the Czech Republic, France, Germany, Hungary, Mexico, the Netherlands, Poland, Portugal, Sweden, the United Kingdom, and the United States. No data available for other OECD members.

³⁷ Electricity Supply Association of Australia, *Electricity Australia 1999* (Sydney: ESAA, 1999), pp. 21 and 24; and U.S. Department of Energy, Energy Information Administration, *Country Analysis Brief: Australia*, June 1999, found at Internet address <http://www.eia.doc.gov/emew/cabs/>, retrieved Feb. 2, 2000.

Figure 3
Inbound direct investment position: Utilities investment, by country, 1998



Source: OECD, *International Direct Investment Statistics Yearbook 2000* (Paris: OECD, 2001).

In the United Kingdom, U.S.-based power companies owned seven electric power firms, and state-owned Electricité de France owned another as of April 2001.³⁸

In Hungary and Sweden, the utilities industries accounted for 25 percent (\$1.6 billion) and 18 percent (\$3.6 billion), respectively, of total inbound service sector investment stock (table 4). Hungary privatized its public utility companies during the 1990s. As part of the process, foreign investors acquired shares in gas and electricity distribution firms and two electric power plants.³⁹ Since 1992, market reforms in Sweden's electricity industry have opened up the electricity generation segment of the industry to foreign investment, and firms from Germany, Norway, France, Finland, and the United States have subsequently invested in the Swedish electric power market.⁴⁰

The United States has also benefitted from significant foreign investment in its electricity and water industries. Most notably, Scottish Power purchased Pacificorp for \$7.9 billion in 1998; Vivendi (France) purchased U.S. Filter for \$5.5 billion in 1999; and Suez Lyonnaise des Eaux (France) purchased United Water Resources for \$1.02 billion in 2000.⁴¹

³⁸ "Summary of Who Owns Whom," Business Information Center, Electricity Association, Apr. 9, 2001, found at Internet address <http://www.electricity.org.uk/>, retrieved July 18, 2001.

³⁹ Hungarian Investment and Trade Development Agency, "Doing Business in Hungary," at Internet address <http://www.itd.hu/guide/aaguide.htm#Countryprofile>, retrieved Jan. 4, 2001.

⁴⁰ USITC, "Electric Power Services," pp. 14-18.

⁴¹ Pacificorp, 8-K report filed with the Securities and Exchange Commission (SEC), Dec. 8, 1998; United States Filter, 8-K report filed with the SEC, May 10, 1999; United Water Resources, 8-K report filed with the SEC, July 31, 2000; all found at Internet address <http://www.sec.gov/Archives/edgar/data>, retrieved July 18, 2001.

Table 4
Inbound direct investment position in electricity, gas, and water services in OECD countries, 1998

Country	Inbound position	Utilities/total inbound services position
	<i>Million U.S. dollars</i>	<i>Percent</i>
Australia	5,065.0	9.7
Austria	34.0	0.2
Canada	(¹)	(¹)
Czech Republic	594.7	8.4
Denmark	283.8	1.2
Finland	(¹)	(¹)
France	2,124.1	2.3
Germany	640.0	0.3
Greece	(¹)	(¹)
Hungary	1,629.8	24.5
Italy	(¹)	(¹)
Mexico	69.0	0.4
Netherlands	588.4	0.7
Norway	(¹)	(¹)
Poland	31.0	0.4
Portugal	661.3	4.8
Sweden	3,649.2	18.0
Switzerland	(¹)	(¹)
United Kingdom	19,539.4	10.9
United States	2,558.0	0.6

¹ Not available.

Note.—Data are not available for Belgium, Ireland, Japan, Korea, Luxembourg, New Zealand, Spain, and Turkey.

Source: Calculations by Commission staff, based on OECD data.

Financial Services

Recent regulatory reforms and technological innovations have created incentives for financial services firms to consolidate both domestically and across borders, leading to increased FDI in the industry. Two key regulatory changes have eliminated rules which prevented financial services firms from operating across state and country borders, and which maintained legal barriers between the banking, insurance, and securities industries. In the United States, the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 eliminated most restrictions on interstate banking, and the Gramm-Leach-Bliley Act of 1999 removed most restrictions separating the financial services industries. In the European Union, the First and Second Banking Co-ordination Directives (1977 and 1989) created a single European financial services market, and likewise permitted European firms to engage in all aspects of financial services.⁴²

⁴² Allen N. Berger, et. al., "Globalization of Financial Institutions: Evidence from Cross-Border Banking Performance," in *Papers on Financial Services* (Washington, DC: Brookings Institution Press, 2000), pp. 30-31.

Technological innovations have changed the industry in a number of important ways. For example, improved global telecommunications systems have helped to reshape the financial services industry by permitting multinational firms to closely coordinate their widespread operations, greatly improving efficiency. Heavy investment in computer technology has greatly improved the back-office processing capabilities of banks, insurance companies, and securities firms, adding to revenue generation and increasing economies of scale. The Internet has given retail and wholesale consumers unprecedented access to information, creating new competitive pressures on financial intermediaries as varied as stock brokers, insurance agents, and bank loan officers, and promising to reshape those industries.⁴³

Innovations such as automatic teller machines, debit cards, and telephone banking have permitted customers to access their funds more easily, and have made it possible for banks to compete in overseas markets with smaller initial investments.⁴⁴ By permitting financial services firms to grow both in terms of function and geographic reach, these changes have encouraged the finance industry to consolidate into more efficient, multinational, and multi-functional financial services firms. The consolidation process has increased FDI financial services, both through greenfield investment and through cross-border mergers and acquisitions.

For all reporting countries, the financial services industry accounted for the largest share of inbound direct investment stock in OECD services markets, 31 percent, on average, in 1998.⁴⁵ The United States and the United Kingdom are the largest recipients of inbound direct investment in financial services, with direct investment stock in the industry totaling \$167.5 billion and \$80.5 billion, respectively (table 5), reflecting the fact that these countries possess the world's largest financial markets, and that many financial firms consider a presence in one or both markets to be essential. In Switzerland, financial services accounted for 74 percent of total inbound service sector investment stock, the highest of any country. Financial services investment in Italy was also high, compared to investment in other industries, having accounted for 67 percent of 1998 inbound service sector stock. By contrast, direct investment stock in Germany's financial services sector represented only 11 percent of total service sector investment, well below the average for all reporting countries.

⁴³ Charles W. Calomiris and Robert E. Litan, "Financial Regulation in a Global Marketplace," in *Papers on Financial Services*, pp. 283-285.

⁴⁴ See James Essinger, *The High-Tech Retail Financial Services Revolution* (Datamonitor PLC: London, 1999), pp. 40-41.

⁴⁵ Investment statistics for the finance industry include holding companies, set up primarily for tax reasons, which are designed to channel funds to operating companies in a wide variety of industries. Unlike direct investment in other financial service areas such as commercial banks or insurance companies, it is unlikely that funds invested in holding companies will remain in the financial services industry. Consequently, these statistics may overstate the proportion of total direct investment in financial services.

Table 5
Inbound direct investment position in financial services in OECD countries, 1998

Country	Inbound position	Financial services/ total inbound services position
	<i>Million U.S. dollars</i>	<i>Percent</i>
Australia	15,837.5	30.3
Austria	2,726.6	18.5
Canada	31,902.9	34.3
Czech Republic	1,962.0	27.7
Denmark	2,374.6	10.2
Finland	3,948.0	55.7
France	37,355.1	39.6
Germany	20,493.4	10.9
Greece ¹	233.0	2.7
Hungary	1,205.1	18.1
Italy	39,230.0	66.7
Mexico ²	4,425.0	22.5
Netherlands	34,589.9	39.0
Norway	1,304.3	13.5
Poland	3,053.0	42.3
Portugal	3,843.1	27.8
Sweden	2,768.3	13.7
Switzerland	40,711.0	74.1
United Kingdom	80,507.0	44.9
United States	167,484.0	41.7

¹ Data are for 1999.² Data are for 1997.

Source: Calculations by Commission staff, based on OECD data.

Countries within the OECD show different patterns of investment within the financial services industry (table 6). In France, Germany, Mexico, and the United Kingdom, the largest share of direct investment stock in the industry was invested in monetary institutions (banks). The Lloyd's market, which remains an important player in the British nonlife insurance market, has traditionally been organized as a cooperative venture between individual investors, leaving a smaller investment arena for large, multinational insurance companies in the United Kingdom as compared with some other markets.⁴⁶ In the United States, by contrast, a much larger percentage of total financial services stock is invested in the insurance industry (46 percent) than in commercial banks (26 percent). In Switzerland, almost one-third of total inbound investment in financial services was directed to monetary institutions, reflecting the positive global reputation of Switzerland's banking industry, with 6 percent of inbound financial services investment in Swiss insurance firms (figure 4).

⁴⁶ Beginning in 1994, corporate members have been permitted in the Lloyd's market. See, for example, D.S. Hansell, *Introduction to Insurance*, 2^d ed. (London: LLP Reference Publishing, 1999), ch. 12.

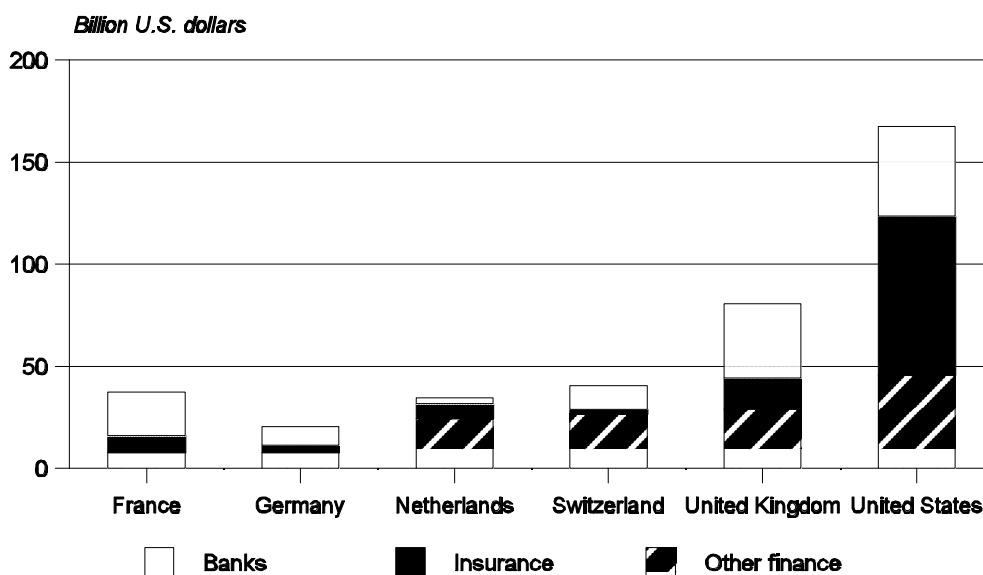
Table 6
 Inbound direct investment position in financial services, industry breakdown for selected countries, 1998

Country	Total finance sector	Banks	Insurance	Other finance ¹
	<i>Million U.S. dollars</i>	<i>Percent</i>		
France	37,355.1	57.0	22.2	20.8
Germany	20,493.4	45.1	15.9	39.0
Mexico	4,425.0	69.2	18.8	12.0
Netherlands	34,589.9	8.7	20.7	70.7
Switzerland	40,711.0	28.4	6.2	65.4
United Kingdom	80,507.0	45.1	18.7	25.2
United States	167,484.0	26.2	46.4	27.4

¹ Includes securities and commodities brokerage and holding companies.

Source: Calculations by Commission staff, based on OECD data.

Figure 4
 Inbound direct investment position: Financial services, by country, 1998



Source: OECD, *International Direct Investment Statistics Yearbook 2000* (Paris: OECD, 2001).

Outlook

Due to record flows of direct investment in the 1990s, infrastructure services are among the most globalized of industries. Although future investment trends in individual countries may not keep pace with recent levels, there is no reason to anticipate that the overall pace of investment in these industries will slow significantly. In the emerging economies of Poland, Hungary, and the Czech Republic, for example, much of the inbound direct investment during the 1990s was driven by the privatization of state-owned power, telecommunications, and financial firms, a process which has largely run its course. However, the introduction of competition into infrastructure service industries in these and many other countries, and the removal of numerous restrictions on foreign investment, have increased incentives and opportunities for private-sector firms to invest overseas, through both greenfield investment and acquisitions. Additionally, bringing these infrastructure industries under the WTO General Agreement on Trade in Services (GATS) has served to assure foreign investors of transparent national regulations and nondiscriminatory treatment by regulators, thus promoting additional investment.

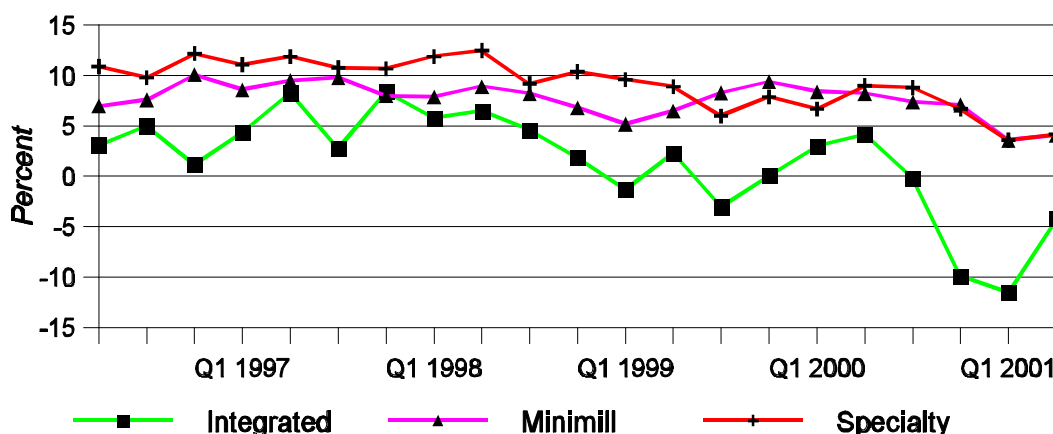
The continued globalization of infrastructure service industries has implications for the entire global economy. First, global competition among intensive users of these services is expected to increase, as factor costs decline and the reliability of telecommunications and energy services improve, and the availability of financing increases. Second, to the extent that globalization brings about the harmonization of regulatory principles, industries which intensively consume infrastructure services will be better able to focus on their core businesses, thereby improving economic efficiency and consumer welfare.#

APPENDIX A
KEY PERFORMANCE INDICATORS OF SELECTED
INDUSTRIES AND REGIONS¹

- STEEL** (Harry Lenchitz,¹ 202-205-2737/lenchitz@usitc.gov)
- AUTOMOBILES** (Laura A. Polly,¹ 202-205-3408/polly@usitc.gov)
- ALUMINUM** (Judith-Ann Webster,¹ 202-205-3489/webster@usitc.gov)
- FLAT GLASS** (James Lukes,¹ 202-205-3426/lukes@usitc.gov)
- SERVICES** (Tsedale Assefa,¹ 202-205-2374/assefa@usitc.gov)
- NORTH AMERICAN TRADE** (Ruben Mata,¹ 202-205-3403/mata@usitc.gov)

¹ The data and views presented for the following indicators are those of the industry sources noted and of the authors. They are not the views of the United States International Trade Commission as a whole or of any individual Commissioner. Nothing contained in this information based on published sources should be construed to indicate how the Commission would find in an investigation conducted under any statutory authority.

STEEL

Figure A-1
Steel industry's profitability¹ improves during second quarter 2001

¹Operating income as a percent of sales. Integrated group contains 9 firms. Minimill group contains 8 firms. Specialty group contains 4 firms.

Source: Individual company financial statements.

- According to steel company financial statements, U.S. steel industry profitability improved somewhat during the second quarter 2001 from its first quarter low. Integrated producers' losses were reduced while minimill and specialty producers experienced a slight increase in profits, although profitability remained below levels of recent periods.
- Officials of the United States Trade Representative and the U.S. Department of Commerce, steel industry executives, and union leaders joined representatives from more than 30 other countries in a September meeting at the Organization for Economic Co-operation and Development in Paris, to address immediate and longer-term issues in steel, including measures that could be taken to reduce global steelmaking capacity (for added details, see <http://www.oecd.org/high-levelsteelmeeting>).
- The U.S. Customs Service issued rules in September for domestic steel producers seeking financial compensation from the U.S. government for expenses incurred after a dumping or subsidy order on foreign imports (<http://www.customs.gov/news/fed-reg/notices/9146701.pdf>). Customs has decided that the amount requested and the amount paid out will be made available to the public in the Continued Dumping and Offset Annual Report.

Table A-1
Significant reductions in finished and semifinished steel imports compared with Q2 2000 and YTD 2000

Item	Q2 2001	Percentage change, Q2 2001 from		YTD 2001	Percentage change, YTD 2001 from	
		Q2 2000 ¹	YTD 2000		YTD 2000 ¹	YTD 2000 ¹
Producers' shipments (1,000 short tons)	26,360	-13.7	51,038	-11.8		
Finished imports (1,000 short tons)	6,177	-24.2	11,580	-25.1		
Ingots, blooms, billets, and slabs (1,000 short tons)	1,285	-45.9	2,741	-43.1		
Exports (1,000 short tons)	1,475	-7.8	3,125	-5.4		
Apparent supply, finished (1,000 short tons)	31,062	-13.1	59,493	-15.1		
Ratio of finished imports to apparent supply (percent)	19.9	² -2.9	19.5	² -1.6		

¹ Based on unrounded numbers.

² Percentage point change.

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

Source: American Iron and Steel Institute.

STEEL

Table A-2
 Increase in shipments, decrease in inventories for steel service centers during second quarter 2001

Item	Mar. 2001	Jun. 2001	Percentage change, Jun. 2001 from Mar. 2000 ¹	Q2 2000	Q2 2001	Percentage change, Q2 2001 from Q2 2000 ¹
Shipments (1,000 short tons)	2,368	2,175	-8.2	7,696	6,636	-13.8
Ending inventories (1,000 short tons)	8,032	8,163	1.6	8,898	8,163	-8.3
Inventories on hand (months)	3.6	3.8	(²)	3.6	3.8	(²)

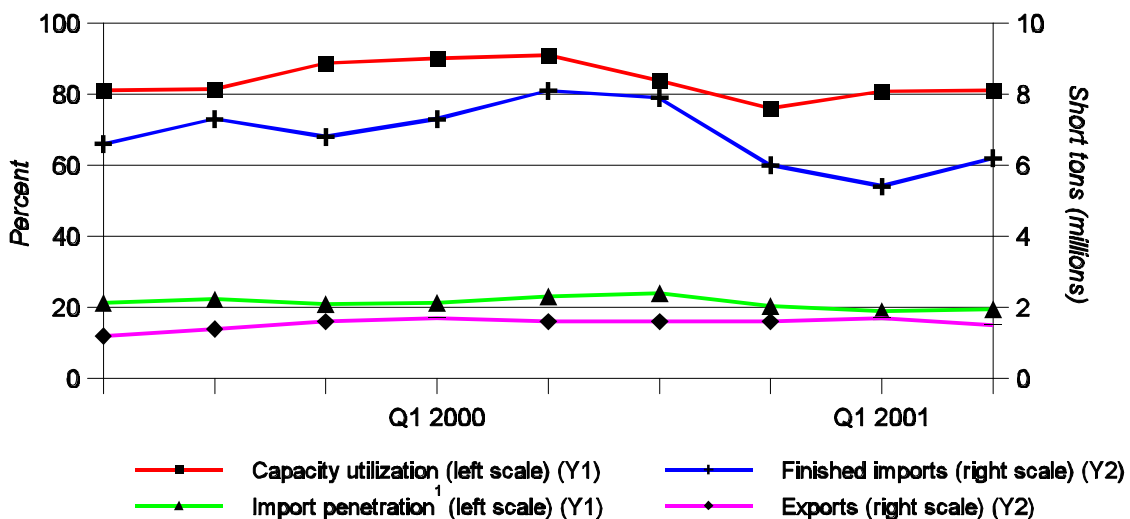
¹ Based on unrounded numbers.

² Not applicable.

Source: Steel Service Center Institute.

- According to the Steel Service Center Institute, U.S. service centers shipped 6.6 million tons of finished steel products during the second quarter 2001, a decline of 14 percent from second quarter 2000. Service center inventories were slightly higher at the end of the second quarter (Jun. 2001) compared with the end of first quarter, but were 8.3 percent lower for the entire second quarter 2001 than the comparable quarter one year ago.
- During the second quarter 2001, according to American Iron & Steel Institute data, imports of finished products increased slightly compared with the previous quarter, but were down 24 percent compared with second quarter 2000. Semifinished imports (table A-1) declined from the previous quarter level of 1,456 million tons, and were down 46 percent compared with second quarter 2000.
- The most recent survey (August 2001) by the Steel Buyers Forum of the National Association of Purchasing Management (<http://www.napmsbf.org>) projected either no change or a decrease in orders, receipts and inventories for the period September to November 2001.

Figure A-2
 Steel mill products, all grades: Capacity utilization and import penetration rise slightly as imports increase during second quarter 2001



¹ Finished import share of apparent open market supply.

Source: American Iron and Steel Institute.

AUTOMOBILES

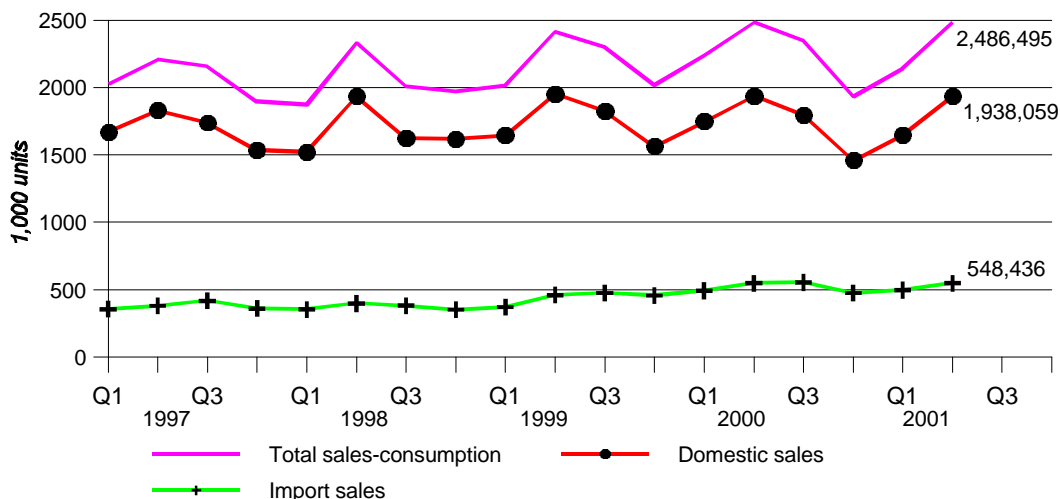
Table A-3
U.S. sales of new automobiles, domestic and imported, and share of U.S. market accounted for by sales of total imports and Japanese imports, by specified periods, January 2000-June 2001

Item	Apr.-Jun. 2001	Jan-Jun. 2001	Percentage change	
			Apr.-Jun. 2001 from Jan.-Mar. 2001	Jan.-Jun. 2001 from Jan.-Jun. 2000
U.S. sales of domestic autos (1,000 units) ¹	1,938	3,445	10.9	-6.5
U.S. sales of imported autos (1,000 units) ²	548	1,067	11.4	2.6
Total U.S. sales (1,000 units) ^{1,2}	2,486	4,513	11.0	-4.5
Ratio of U.S. sales of imported autos to total U.S. sales (percent) ^{1,2}	22.1	23.7	0.4	7.5
U.S. sales of Japanese imports as a share of the total U.S. market (percent) ^{1,2}	9.1	9.8	-11.3	-1.7

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 increased in second quarter 2001; 2nd quarter sales of imports registered a slightly larger percentage increase over 1st quarter sales as compared with sales of domestically produced autos

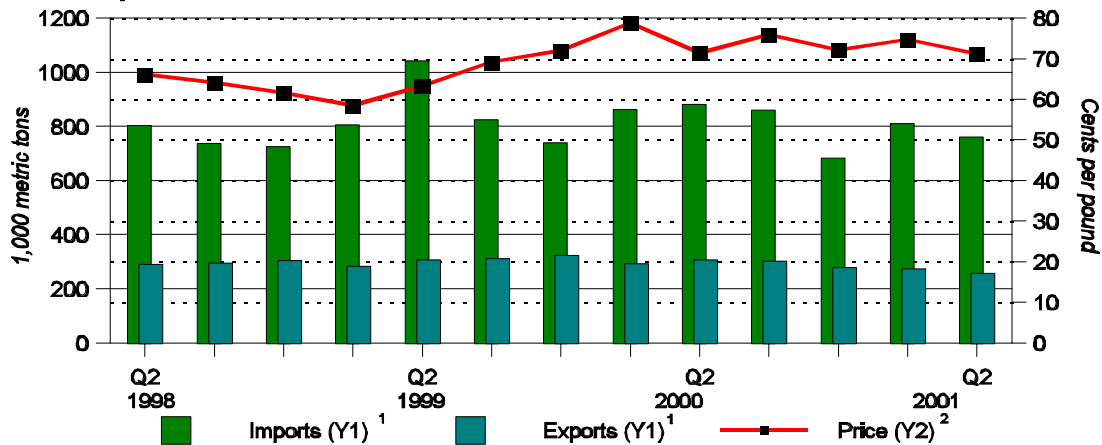


Note.—Domestic automobile sales include U.S.-, Canadian-, and Mexican-built automobiles sold in the United States; these same units are not included in import sales.

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

ALUMINUM

Figure A-4
Despite aluminum prices at a 54 week low, U.S. aluminum imports and exports declined in the second quarter as demand weakened



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.

- The aluminum industry continues to feel the effects of high energy prices worldwide in the second quarter, as companies idle smelter capacity in Brazil and Russia. This follows numerous smelter shutdowns in the United States and a significant decrease in U.S. production (year-to-year-quarterly comparison), leading to the lowest U.S. production levels in 33 years. According to industry sources, Alcoa has estimated its idled capacity at the end of the second quarter to be about 700,000 annual tons, or 17 percent of its global capacity.
- Despite recent production cuts, prices fell and primary aluminum stocks accumulated in commodity-exchange warehouses. This was attributable to weakened demand due to the slowing economy.
- The aluminum industry is expected to come under increased pressure in an already difficult year due to the impact of recent terrorist attacks affecting the airline industry. Airlines have cut expenditures to counter dwindling profits (Boeing recently announced a cut of 30,000 jobs), and jet deliveries are expected to decline. The aerospace market is one of the most profitable for the aluminum industry due to the prevalent use of high-value-added products such as plate and sheet.

Table A-4

Import penetration fell slightly in the second quarter, reflecting lower import levels and aluminum surpluses in LME warehouses at 14 month highs

Item	Q2 2000	Q1 2000	Q2 2001	Percentage change	
				Q2 2001 from Q2 2000	Q2 2001 from Q1 2000
Primary production (1,000 metric tons)	941	708	669	-29.0	-5.5
Secondary recovery (1,000 metric tons)	916r	761	770	-15.0	1.2
Imports (1,000 metric tons)	880	811	760	-13.6	-6.3
Import penetration (percent) ¹	34.8r	40	38.4	² 3.6	² -1.8
Exports (1,000 metric tons)	307	273	256	-16.6	-6.2
Average nominal price (\$/lb)	71.4	74.6	71.2	-0.3	-4.6
LME inventory level (1,000 metric tons)	515	474	629	22.1	32.1

¹ Calculations based on unrounded data

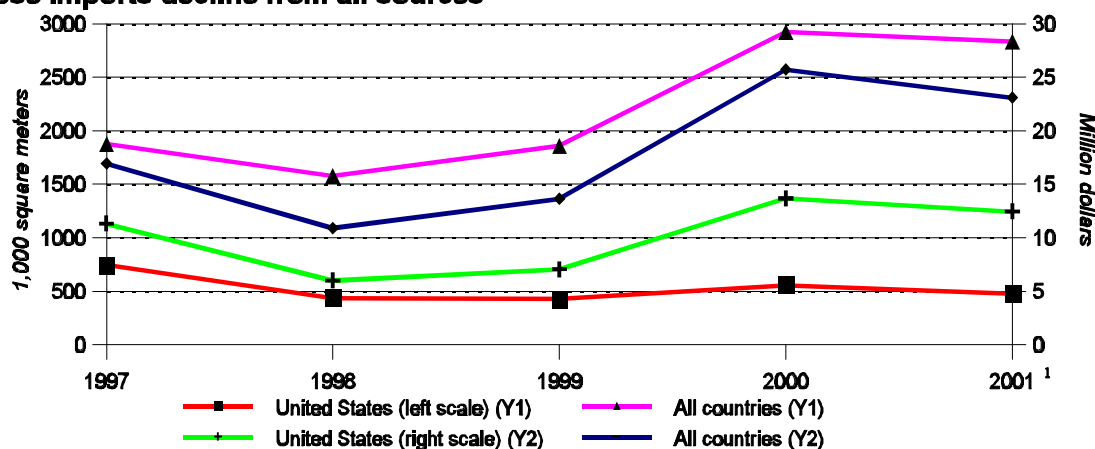
² Percentage point change

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
Japanese imports decline from all sources



¹ Data for 2001 include Jan.-July (latest available data).

Source: Average monthly Japanese imports of flat glass compiled from "World Trade Atlas: Japan" at <http://www.globaltradeatlas.com> on September 24, 2001, which uses official statistics provided by the Government of Japan.

Background

- The U.S.-Japanese agreement on Japanese market access for imports of flat glass sought 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 covered the 1995-99 period and expired on December 31, 1999.¹
- Japanese demand for imported glass improved in 2000. The average monthly quantity of Japanese imports from all countries increased by 57 percent during 2000 to 2.9 million square meters, while the average monthly value of such imports increased by 89 percent to \$25.7 million. Imports from the United States increased by 30 percent to 561,000 square meters and by 93 percent to \$13.7 million, respectively, but the U.S. share of the market declined.

Current

- The Japanese economy has slowed in 2001, as has demand for imported flat glass. The average monthly quantity of Japanese imports from all countries decreased by 3 percent during the first seven months of 2001 to 2.8 million square meters, while the average monthly value of such imports decreased by 10 percent to \$23.1 million. However, imports from the United States decreased by 15 percent to 479,000 square meters and by 3 percent to \$12.5 million, respectively, and the U.S. share of the market has further declined in terms of quantity; imports from the United States lost market share to less expensive imports from Thailand and Korea during this period.
- The U.S. Government remains concerned about the closed distribution channels in the flat glass sector in Japan and has proposed, under the bilateral Enhanced Initiative on Deregulation and Competition Policy, that the Japanese Government take further steps to promote competition in wholesale and retail distribution channels for flat glass.² The Government of Japan (GOJ) recognizes the economic benefits of increasing competition in the distribution sector and confirms that making agreements among distributors or groups of distributors for the purpose of excluding imported or other competitors' products is detrimental to competition.³ The GOJ suggests that enterprises or foreign governments notify the Japan Fair Trade Commission with specific information on any anticompetitive practices in any highly oligopolistic markets, including the flat glass sector.⁴

¹ Office of the U.S. Trade Representative (USTR), *The President's 1999 Annual Report on the Trade Agreements Program*, p. 227, downloaded from <http://www.ustr.gov/reports/tpa/2000/index.html> on Mar. 3, 2000.

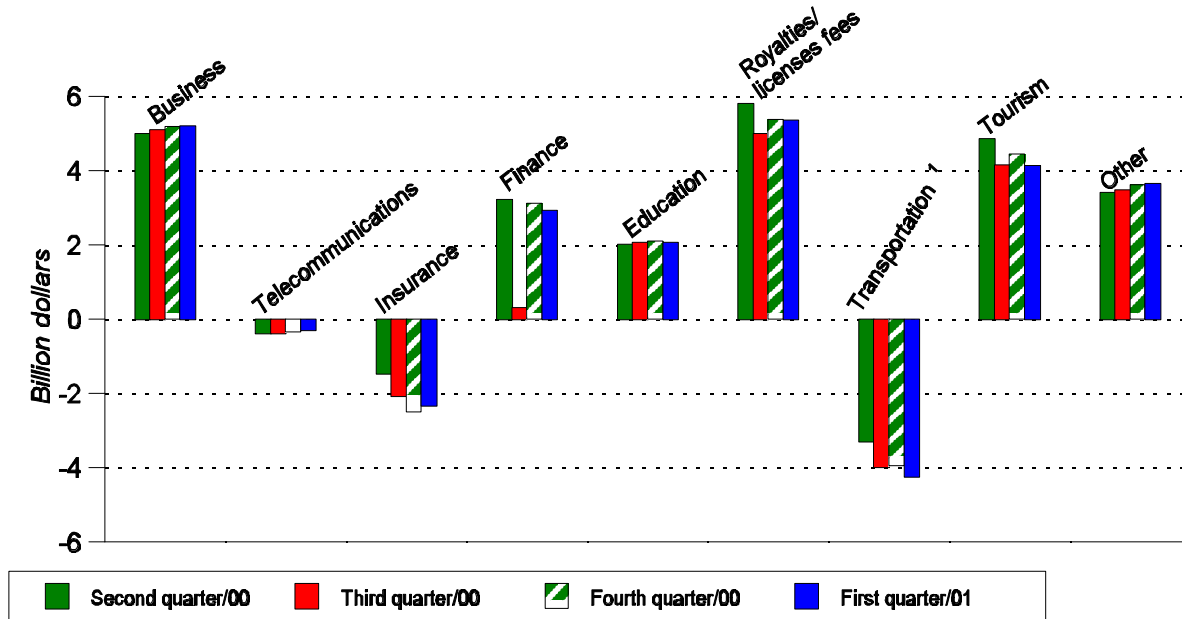
² USTR, *Identification of Trade Expansion Priorities Pursuant to Executive Order 13116 April 30, 2001*, p. 26, downloaded from <http://www.ustr.gov/enforcement/super301.pdf> on May 18, 2001.

³ United States Trade Representative, *Fourth Joint Status Report on the U.S.-Japan Enhanced Initiative on Deregulation and Competition Policy*, downloaded from http://192.239.92.165/regions/japan/2001-07-02_joint_status.pdf, Sept. 19, 2001, p. 36.

⁴ *Ibid.*

SERVICES

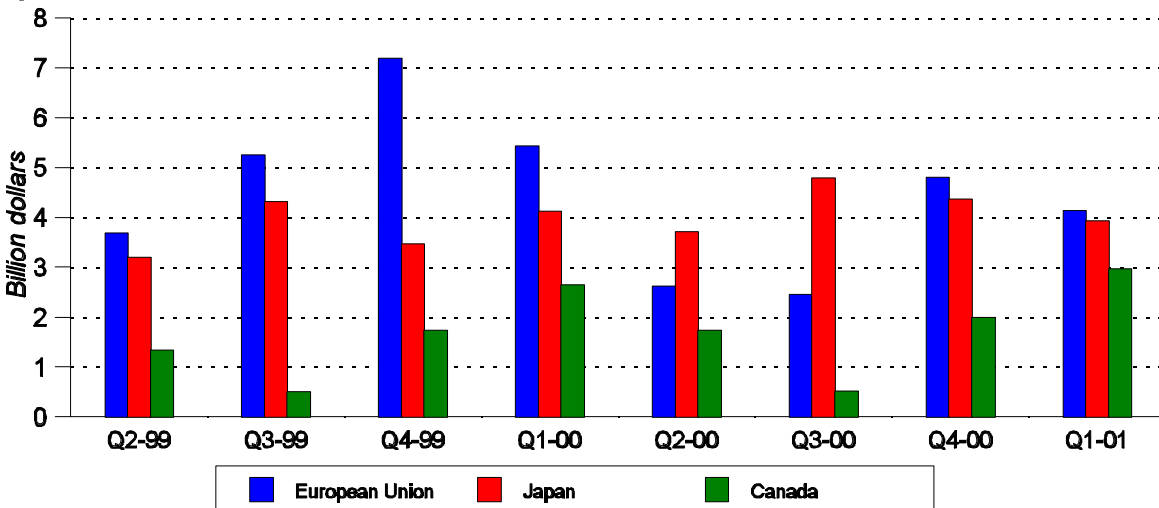
Figure A-6
 Balance on U.S. service trade accounts, by selected quarters, 2000-01



¹ Includes port fees.

Source: Bureau of Economic Analysis, *Survey of Current Business*, July 2001, pp. 64-65.

Figure A-7
 Surpluses on cross-border U.S. services transactions with selected trading partners, by quarter, 1999-2001¹



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

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July 2001, pp. 74-77; Apr. 2001, pp. 62-67; Jan. 2000, pp. 112-115; Apr. 2000, pp. 186-189; and July 2000, pp. 116-119.

North American Trade

U.S. trade with its North American partners is highlighted in table A-5. The following is a summary of key developments during the first half of 2001.

- During January-June 2001, total U.S. trade with its NAFTA partners (\$305 billion) decreased by 1.1 percent (\$3.4 billion) over the comparable period of 2000. The U.S. merchandise trade deficits with Canada (\$-39 billion) and Mexico (\$-19 billion) in the first half of the year continued an upward trend which began in 1998, increasing by 15 percent and 16 percent, respectively. This upward trend could moderate by year end with deceleration of the U.S. economy, reflected by GDP that grew by just 0.3 percent during the second quarter 2001.
- Two-way trade with Canada decreased 1.4 percent (\$2.7 billion) to \$193 billion during January-June 2001, as exports to Canada fell by 5 percent (\$2.7 billion). The principal reason for the decline was a Canadian economy that fell by 0.1 percent during the second quarter of 2001. Canada's manufacturing sector slowed as producers of electronic, transportation, and forestry products were reported to have aggressively scaled back production. However, Canada's exports to the United States totaled \$116 billion in the first half of 2001, a marginal increase of 1 percent (\$1.2 billion) over the corresponding period in 2000. U.S. demand for certain Canadian manufactured products such as home furniture and motor-vehicle parts increased as robust U.S. consumer demand for motor-vehicles and housing rose by 2.5 percent during the second-quarter, largely as a result of lower interest rates in the United States.
- Mexico's second quarter GDP remained flat compared with April-June 2000, ending a streak of 21 consecutive quarters of economic growth that began in 1995—an abrupt slowdown after a buoyant year of 6.9 percent growth in GDP in 2000. The slowdown is generally attributed to the downturn in the U.S. economy and more specifically to lower demand for Mexican products in the U.S. market. Shipments to the United States accounted for 88 percent of Mexico's total exports and for 25 percent of Mexico's GDP.
- During January-June 2001, U.S. imports from Mexico increased by 2 percent (\$991 million) over the corresponding 2000 period. Finished vehicles, auto parts, electrical machinery, and crude petroleum were the leading imports from Mexico. During the same period, U.S. exports to Mexico decreased by 3 percent (\$1.7 billion). Capital goods and intermediate goods accounted for 89 percent of Mexico's imports from the United States. The majority of these products are destined for assembly plants operating under Mexico's two temporary import programs: the Maquiladora Program and PITEX.
- Employment under Mexico's Maquiladora Program decreased by 5.8 percent between June 2000 and June 2001.¹ During the same period, manufacturing employment fell by 4.1 percent in the United States and by 0.2 percent in Canada.² Maquiladora employment losses were concentrated in the electronics sector, especially computer and telecommunications equipment. Reduced automobile prices and lower financing costs sustained auto sales in the U.S. as well as employment levels in motor-vehicle assembly plants in Mexico.

¹Maquiladora employment amounted to 1.2 million in June 2001. Although official employment data is not available for companies operating under PITEX, USITC staff estimates that PITEX companies employed nearly 800,000 workers in December 2000, based on the ratio of PITEX exports to Maquiladora exports in 2000 and applying that ratio to Maquiladora employment in December 2000.

²Manufacturing employment data in the United States and Canada is seasonally adjusted.

NORTH AMERICAN TRADE

Table A-5
North American trade, 1996-2000, January-June 2000, and January-June 2001

Item	1996	1997	1998	1999	2000	January-June		Percent change 2000/01
						2000	2001	
-----Value (million dollars)-----								
U.S.-Mexico trade:								
Total imports from Mexico	74,179	85,005	93,017	109,018	134,734	64,868	65,859	2
U.S. imports under NAFTA								
Total value	55,076	62,837	68,326	71,317	83,995	41,232	40,763	-1
Percent of total imports	74	74	73	65	62	64	62	-
Total exports to Mexico	54,686	68,393	75,369	81,381	100,442	48,118	46,455	-3
U.S. merchandise trade balance with Mexico ¹								
	-19,493	-16,612	-17,648	-27,637	-34,292	-16,750	-19,403	-16
U.S. -Canada trade:								
Total imports from Canada	156,299	167,881	174,685	198,242	229,060	114,503	115,706	1
U.S. imports under NAFTA								
Total value	84,245	88,949	111,675	115,715	123,052	63,931	59,438	-7
Percent of total imports	54	53	64	58	54	56	51	-
Total exports to Canada	119,123	134,794	137,768	145,731	155,601	80,912	76,978	-5
U.S. merchandise trade balance with Canada ²								
	-37,176	-33,087	-36,918	-52,511	-73,459	-33,591	-38,728	-15

¹ The hyphen (-) symbol indicates a loss or trade deficit, or not applicable. The \$34.2 billion deficit in U.S. merchandise trade with Mexico in 2000 was partially offset by a \$2.9 billion U.S. surplus in bilateral services trade.

² The \$73.5 billion deficit in U.S. merchandise trade with Canada in 2000 was partially offset by a \$6.0 billion U.S. surplus in bilateral services trade.

Source: Compiled by U.S. International Trade Commission staff from official statistics of the U.S. Department of Commerce. Statistics in footnote 2 on U.S. services trade with Mexico are based on preliminary data provided in U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July 2000, Vol. 80, No.7.

