Industry & Trade Summary

Computer Software and Other Recorded Media

USITC Publication 2850
January 1995

OFFICE OF INDUSTRIES
U.S. International Trade Commission
Washington, DC 20436

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PREFACE

In 1991 the United States International Trade Commission initiated its current *Industry and Trade Summary* series of informational reports on the thousands of products imported into and exported from the United States. Each summary addresses a different commodity/industry area and contains information on product uses, U.S. and foreign producers, and customs treatment. Also included is an analysis of the basic factors affecting trends in consumption, production, and trade of the commodity, as well as those bearing on the competitiveness of U.S. industries in domestic and foreign markets.[1]

This report on computer software and other recorded media (audio and video recordings) covers the period 1989 through 1993 and represents one of approximately 250 to 300 individual reports to be produced in this series during the first half of the 1990s. Listed below are the individual summary reports published to date on the electronic equipment and technology sector.

USITC publication number	*Publication date*	*Title*
2445	January 1992	Television receivers and video monitors
2708	December 1993	Semiconductors
2728	February 1994	Capacitors
2820	October 1994	Telecommunications equipment
2821	October 1994	Computers, components, and peripherals
2822	October 1994	Audio and video recording and reproducing equipment
2850	January 1995	Computer software and other recorded media

[1] The information and analysis provided in this report are for the purpose of this report only. Nothing in this report should be construed to indicate how the Commission would find in an investigation conducted under statutory authority covering the same or similar subject matter.

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INTRODUCTION

This report addresses the principal recorded media industries: original producers of packaged computer software, audio cassettes and compact discs (CDs), and video recordings.[1] Firms in these three segments of the recorded media industries are among the most competitive U.S. firms active in global markets. Revenues of U.S.-owned foreign affiliates in these industries stood at an estimated $22.0 billion in 1993, compared with $24.8 billion in U.S. producers' shipments.[2] Between 1989 and 1993, the U.S. recorded media industries achieved high annual growth rates, as worldwide demand for recordings and software grew steadily. During that 5-year period, the average annual growth rate of U.S. producers' shipments in the recorded media industries was 11 percent.[3]

Products specifically covered in this report, which focuses primarily on the years 1989-93, are (1) packaged software stored on magnetic media (e.g., floppy discs) and read-only compact discs (CD-ROMs), (2) audio recordings on cassette tapes, compact discs (CDs), and vinyl records, and (3) video recordings on cassettes and laserdiscs. Domestic shipments of these products in 1993 represented 0.38 percent of the U.S. gross domestic product. Imports of recorded media products totaled $616 million in 1993, while exports stood at $3.3 billion.[4] Growth rates for both industry shipments and trade volume have exceeded corresponding rates for virtually all manufacturing industries over the past 5 years.[5] Figure 1 illustrates the relative size of each of the three recorded media industries, based on the estimated share of U.S. producers' shipments in 1993. Packaged software accounted for approximately 60 percent of 1993 U.S. producers' recorded media shipments and 55 percent of imports.[6] Audio recordings comprised an estimated 25 percent of recorded media shipments and 35 percent of imports, while video recordings accounted for 15 percent of shipments and 10 percent of imports in 1993.

Firms discussed in this report are united in their dependence on copyright protection, both in the United States and in key foreign markets, to sustain growth in revenues and profits. Firms in the recorded media industries are engaged primarily in the generation of creative works, which they seek to protect as new copyrighted material. Despite differences in the characteristics of their products, all three industries equate international competitiveness with a strong and enforceable copyright regime, both in the United States and abroad. Most of the public policy concerns of these firms are therefore focused on the establishment of credible intellectual property protection through the creation of obligations in international agreements, such as the Uruguay Round Agreement and the North American Free-Trade Agreement (NAFTA), and through the enactment of strong copyright laws worldwide. Firms in all of the recorded media industries lose substantial revenues annually as a result of unauthorized use of copyrighted works.

Recorded media products—primarily tapes, CDs, and floppy discs—are unique in that the market value of the product resides principally in the content of the recording, rather than in the physical object itself. Production processes for recorded media products are straightforward, as seen in figure 2. In the case of music and video, master recordings of original performances are made through the use of high-cost recording equipment typically housed in a large recording studio. Duplication of these recordings is then performed at a second facility (frequently in the target market), and shipped to retail outlets for distribution to consumers. Little or no diminution of product quality results from the duplication process. In the case of software, bits of digitized computer instructions, or code, are stored in a computer program on digital masters, which are subsequently copied for mass distribution. Manufacturing and recording costs for these three industries are typically quite low in relation to other costs, such as those for product

[1] This report covers neither developers of custom software nor other providers of data processing services. For the purposes of this report, packaged software includes "off the shelf" applications, operating systems, and software development tools.

[2] Estimates based on industry data compiled by International Data Corp., the Recording Industry Association of America, and the Motion Picture Association of America. Figures reflect receipts of manufacturers and their foreign subsidiaries in the form of direct sales, licensing fees, and royalty payments from U.S. and foreign sources.

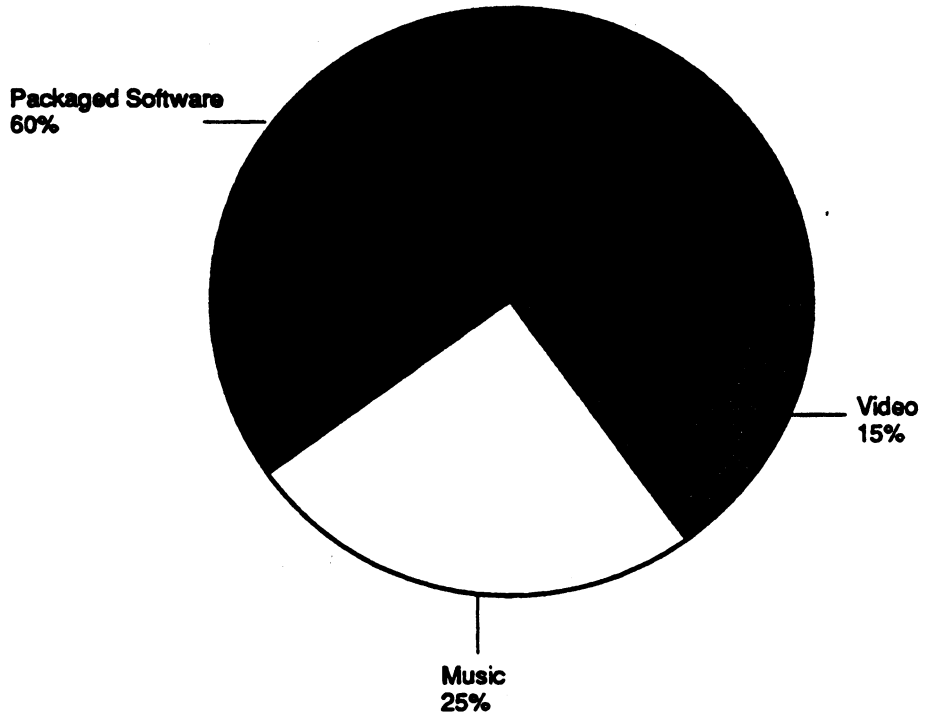
[3] Based on data compiled from industry sources and from Stephen E. Siwek and Harold Furchtgott-Roth, *Copyright Industries in the U.S. Economy: 1993 Perspective*, (Washington, International Intellectual Property Alliance, Oct. 1993).

[4] Domestic shipments of recorded media products reflect the wholesale price paid by retailers and distributors to original producers of packaged, ready-to-use audio recordings, video recordings, and computer software. The value of imports and exports, however, represents only the estimated value of the media upon which the recordings are made. The value of the recording content is not considered in calculating the product's customs value. As a result, the value of imported and exported recorded media is understated in comparison with domestic shipments.

[5] Siwek and Furchtgott-Roth, *Copyright Industries in the U.S. Economy*, p. iv.

[6] Estimates based on data compiled by the U.S. Department of Commerce.

Figure 1
Relative size of recorded media industries: Estimated share of U.S. producers' shipments, 1993



Source: USITC estimates.

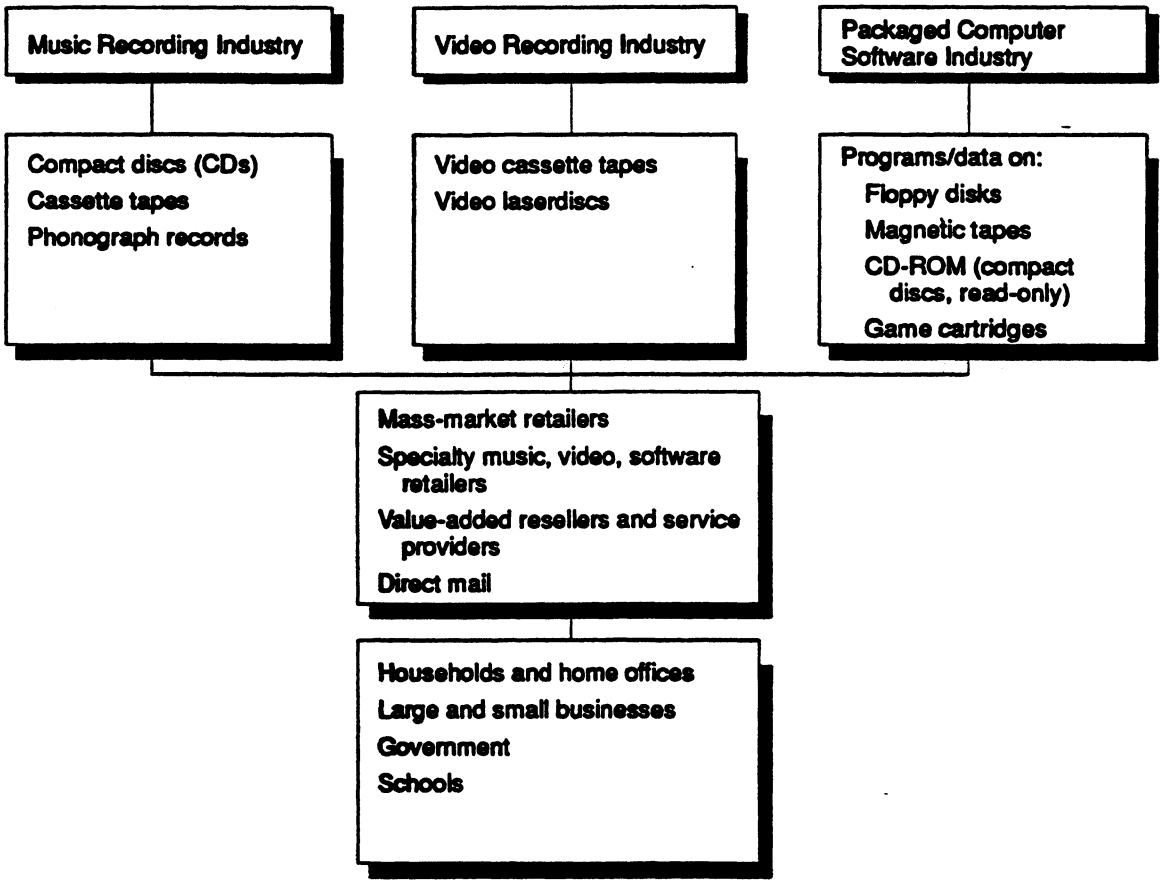
development and marketing. As a result, recorded media production facilities can be established near major markets worldwide. Cross-border shipments are often limited to the movement of master recordings, which are duplicated and distributed in major markets.

The competitive positions of firms in all of the recorded media industries are influenced strongly by direct sales from wholly owned foreign facilities and by the flow of cross-border licensing payments—transactions that are not wholly reflected by export and import data. Unlike traditional manufacturing industries, in which the value and volume of foreign trade is closely tracked by official sources, trade statistics for recorded media industries are believed to underestimate dramatically the level of foreign economic activity in these industries. In order to compensate for shortcomings in many official statistical sources, data included in this report are supplemented by reliable industry figures that reflect global market trends in these industries.

This report consists of seven major sections: (1) a detailed profile of the U.S. recorded media industries and the characteristics of U.S. consumers, (2) a profile of the foreign industry, (3) a review of U.S. trade measures that influence the relative competitiveness of U.S. recorded media firms, (4) a review of relevant foreign trade measures, (5) an analysis of the U.S. market for recorded media products, (6) an analysis of key foreign markets, and (7) a discussion of the U.S. trade balance for the recorded media industries.

Two broad trends are currently influencing the global competitive position of U.S. recorded media producers. First, heightened international efforts to improve legal protection for intellectual property promise to limit losses suffered by copyright holders as a result of intellectual property piracy. These efforts should generally benefit U.S. software developers and producers of audio and video recordings, firms that derive a substantial part of their total revenues from foreign markets. Second, expanded use of personal computers, CD players, and video cassette recorders (VCRs) worldwide continues to fuel strong demand for recording "content" in the form of packaged software, as well as audio and video recordings. As global leaders in the recorded media industries, U.S. firms stand to boost global sales significantly over the next 5 to 10 years in response to sustained growth in international demand for recorded media products.

Figure 2
Recorded media: Structure of the U.S. Industry



Source: USITC staff.

U.S. INDUSTRY PROFILE

Industry Structure

Data Classification

Recorded media production firms covered in this report are included in three 4-digit Standard Industrial Classification (SIC) categories. Establishments primarily involved in the production of recorded music are covered under SIC category 3652, "Phonograph Records and Prerecorded Audio Tapes and Disks." Video tape production facilities are included in SIC category 7812, "Motion Picture and Video Tape Production." Packaged software developers are covered entirely by SIC category 7372, "Prepackaged Software." Despite similarities in production processes, musical recordings are treated as manufactured goods by the U.S. Bureau of the Census, whereas video tape and software development facilities are regarded as service industries for the purpose of data collection and analysis.[7]

Industry Size, Concentration, and Integration

In 1993 there were an estimated 11,000[8] establishments in the United States involved primarily in the production of recorded media. The majority of these firms were software developers, which benefit from low business start-up costs and capital investment requirements. These factors have helped lower barriers to market entry, contributing to rapid growth in the number of U.S. software firms since the early 1980s. By contrast, the total number of music recording

[7] Activities of recorded music production facilities are covered in the *Census of Manufacturers*, while video tape and software production data are presented in the *Census of Service Industries*. Both are publications of the U.S. Department of Commerce. For the purposes of this report, video tape production excludes the production of an original motion picture.

[8] Estimates based on data compiled by the U.S. Department of Labor, Bureau of Labor Statistics.

establishments has declined in recent years, while the number of video production facilities has risen slowly. The smaller number of firms active in the music and video segments of the recorded media industry reflects the large investments required to construct high-volume production facilities with expensive recording and production equipment.

Small firms employing fewer than 10 people make up a large portion of the U.S. software industry, whereas large studios, sometimes employing thousands of people, dominate U.S. production of recorded music and videos. In 1987, the largest 50 packaged software firms accounted for only 55.3 percent of total industry shipments.[9] In the music and video recording industries, on the other hand, the degree of concentration is quite high. The largest six U.S. film studios, which repackage feature films in the form of video cassettes, together accounted for more than 80 percent of the estimated $5.8 billion in U.S. video tape shipments in 1993.[10] A similar pattern of concentration is apparent in the music business, where six globally diversified firms dominate sales of CDs, audio cassettes, and vinyl records. These six firms are Sony (Japan), Matsushita Electric (Japan), Time Warner (United States), Philips (Netherlands), Bertelsmann (Germany), and Thorn/EMI (United Kingdom). Concentration in the music industry has been facilitated by a number of mergers and acquisitions in recent years. The most visible of these were Sony's acquisition of CBS Records in 1988 and Matsushita's purchase of MCA, Inc. in 1991.

The level of vertical integration in these three industries is limited. Software firms and recording studios invest heavily in programming content and production facilities, but generally source unrecorded media (e.g., tape and magnetic discs) from outside suppliers. Retail distribution is handled almost entirely by specialty retail outlets (music and video stores) and by value-added resellers, which are not affiliated with original producers of recorded media. For many smaller firms specializing in software, audio, or video content, production and duplication operations can be contracted to larger firms.

[9] U.S. Department of Commerce, *Census of Service Industries*, 1987. Software industry concentration data reported in Stephen Siwek and Harold Furchtgott-Roth, *International Trade in Computer Software* (Westport, CT: Quorum Books, 1993), pp. 19-20.

[10] Disney was the largest single player in the video tape sales market in 1993. Other leaders in sales were Columbia, Universal, Warner Home Video, Fox, and Paramount. Standard and Poor's Industry Survey, "Leisure Time," Mar. 1994.

Geographic Distribution

U.S. software firms are geographically dispersed. According to official statistics of the U.S. Department of Labor, at least one establishment engaged primarily in packaged software development was located in every U.S. state and in the District of Columbia in 1992.[11] Two states, California and Massachusetts, are home to the largest number of software firms. In 1993, 29 of the top 100 U.S. software firms were headquartered in California, and 13 resided in Massachusetts (figure 3).[12] Large numbers of software firms are located in Virginia, Illinois, New York, and Washington State. Most major music and video recording firms are in California and New York, reflecting the traditionally important role played by entertainers and entertainment industries in both states. An estimated 55 percent of all video production establishments were located in California or New York in 1992, and 51 percent of music recording facilities were located in these two states.[13]

Employment, Wages, and Productivity

Total employment in the U.S. recorded media industries reached an estimated 175,000 workers in 1993, a 19-percent increase over the 1989 employment level of 147,000. Most of the recent growth in employment has occurred in the packaged software industry, where new hiring by start-up firms and other relative newcomers to the market has taken place in response to strong consumer demand for new applications software products. Although employment growth rates for some large firms have declined as a result of maturing software markets, new hiring has continued even among some of the largest U.S. software developers. Microsoft, for example, boosted its overall employment figure to 14,430 in 1993, over three times the 1989 level of 4,037 employees.[14] Employment growth rates at large firms such as Novell and Oracle Systems also have exceeded the industry average.

Whereas rapid expansion in output and product development programs has fueled big increases in U.S. packaged software industry employment, job expansion in the video recording segment has been

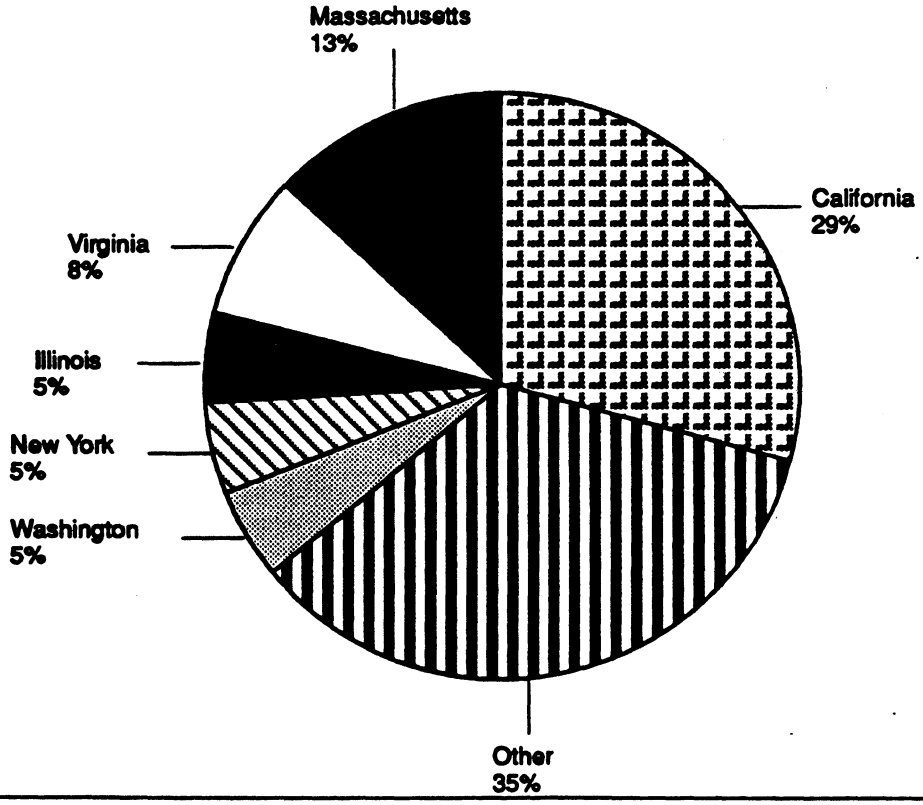
[11] U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Wages: Annual Averages*, table 5, Nov. 1993.

[12] "Special Report: Top 100," *Software*, July 1993, p. 81.

[13] Estimates based on data compiled by the U.S. Department of Labor, *Employment and Wages: Annual Averages*, Nov. 1993.

[14] Microsoft Corp., *1993 Annual Report*. Employment figures for fiscal years ending June 30.

Figure 3
Geographic distribution of U.S. software industry's top 100 firms, by state, 1993



Source: *Software Magazine*, July 1993.

slower, and total employment in the music recording industry has remained virtually unchanged in recent years. In both the video and music industries, unit output can be increased easily without significant increases in the required amount of labor. At the larger production studios for both music and video tapes, increases in unit sales do not necessarily translate quickly into employment gains because the production process is highly capital intensive. This pattern is also evident in the software industry, where little labor is required to record discs or tape. However, employment growth among new firms has offset some of the labor-saving effects brought about by large-scale production at larger firms. In all three segments of the industry, the most notable increases in employment have occurred in product development and marketing, rather than in manufacturing.

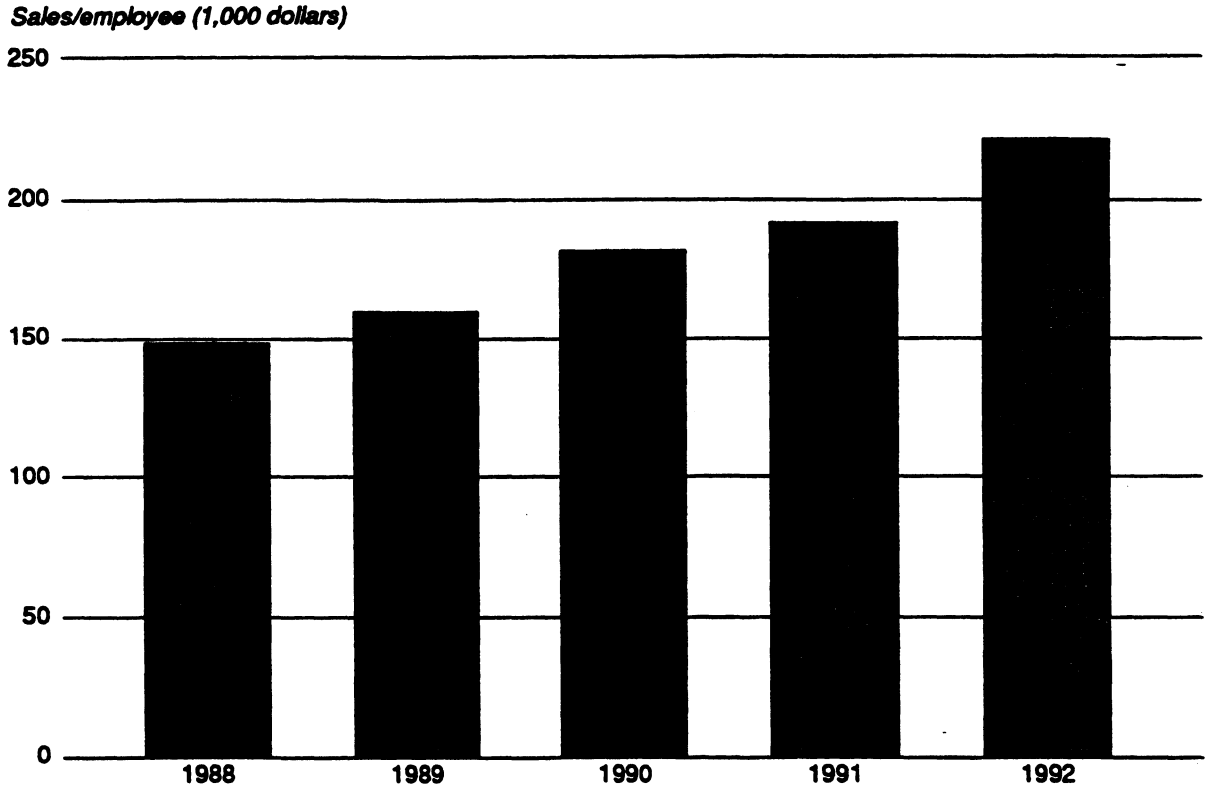
Average wage levels in all of the recorded media industries are quite high. The average annual wage earned by a worker in the packaged software industry was $56,493 in 1992, substantially higher than the average for the U.S. economy overall.[15] Annual wage figures for 1992 in the music recording and motion picture/video recording industries were $41,103 and $49,904, respectively.[16] Steady increases in wages for all three industries over the past 5 years have reflected an effort to draw and maintain highly skilled and productive workers. Skill requirements for software programmers, video and audio production specialists, recording artists, and marketing professionals are high, and salaries for these positions have increased steadily since 1989.

Higher wages also reflect the impact of steady gains in labor productivity for all of the recorded media industries (figure 4). In the packaged software industry, sales per employee increased sharply from $159,000 per worker in 1989 to an estimated $240,000 in 1993, representing an average annual increase of

[15] U.S. Department of Labor, *Employment and Wages: Annual Averages*, Nov. 1993. This compares with an average 1992 annual earnings figure of $18,800 for workers in all nonagricultural industries.

[16] Ibid.

Figure 4
Labor productivity in the U.S. software industry: Average sales per employee, 1988-92



Source: *Information Technology Association of America.*

11 percent.[17] Recent consolidation of both the music and video industries has also been translated into large labor productivity gains. Increases in the scale of audio and video production facilities have generally lowered the degree of labor intensity in these industries. Nevertheless, the competitive position of studios still depends heavily on the content of recordings, which in turn is related directly to the consumer appeal of recording artists and actors. Similarly, in the packaged software industry, improvements in productivity have not reduced the importance of labor (especially programmers) in the software development process. Although new technologies such as computer-aided software engineering (CASE) and "object-oriented" programming techniques may ultimately introduce a higher level of automation into software development projects, the skills of individual programmers are still an essential part of the production process.

[17] *The U.S. Information Technology Industry Profile: 1992* (Washington, DC: Information Technology Association of America, 1993), p. II-108.

Technology and Innovation

Technological change continues to be a decisive force in shaping the structure of all of the recorded media industries. In the case of packaged software, a dramatic increase in the power and popularity of personal computers has led directly to an expansion in the market for PC-based applications of all kinds. Significant improvements in the processing power of key PC components, such as microprocessors and disk drives, have enabled software developers to write increasingly complex programs that meet the needs of consumers more effectively. Leading software firms continue to devote a large share of their revenues to research and development (R&D) spending. In 1992, U.S. packaged software vendors devoted an average of 9.7 percent of total revenues to R&D.[18]

[18] *The U.S. Information Technology Industry Profile: 1992*, p. II-111.

According to figures published by the National Science Foundation, U.S. firms involved principally in computer programming, data processing, and other computer-related services spent 7.3 percent of net sales in 1991 on R&D.[19] At the same time, government funding for R&D activities in the U.S. software industry represented an estimated 3.5 percent of net sales. R&D expenditures as a percentage of total revenues are generally much lower for audio and video production firms than for software developers. On average, R&D spending levels are equivalent to less than 3 percent of total firm revenues.[20]

In the audio and video recording industries, improvements in the performance and price of CD players and VCRs have broadened the appeal of CDs and video tapes, opening up new market opportunities for producers of recorded media. Two emerging media for audio recordings, digital compact cassettes and so-called "mini-discs" (2.5-inch CDs), can be expected to grow in importance in the global market for audio recordings over the next 5 years. In the video industry, meanwhile, the growing popularity of interactive pay-per-view video, made possible by improvements in data compression and communications technology, is beginning to challenge the market position of video tape. Consumers are likely to shift purchases away from video tapes to interactive media as the number of titles available through direct digital transmission increases over the next 5 years.[21]

Marketing and Distribution

Firms operating in any of the leading recorded media industries typically devote a large share of total revenues to sales and marketing expenses. This reflects the need to highlight product differentiation in highly competitive consumer markets. The large number of competitors in the packaged software industry, for example, necessitates the establishment of an aggressive marketing program built around reliable distribution channels, including mass market retail outlets, specialty retailers, and so-called "value-added resellers" catering to large corporate customers. Likewise, in the audio and video recording industries, extensive advertising and promotional campaigns are usually considered vital in drawing the attention of consumers. Audio and video producers must vie for shelf space in leading entertainment retail chains. As a result, the marketing efforts of distributors and retailers are a critical part of the producer's overall sales and marketing strategy.

U.S. packaged software firms in 1993 generally devoted 40 to 50 percent of total revenues to sales, general, and administrative expenses.[22] For many of the largest U.S. software firms, sales and marketing expenses as a percentage of total sales have increased since 1989, as intense price competition has forced firms to exploit new product distribution channels, particularly computer superstores and mail order outlets. Many of the largest firms—including Microsoft, Lotus, and WordPerfect—have boosted advertising spending to appeal directly to individual computer users in homes and small businesses.[23] The market for home computer software has grown more rapidly in recent years than the corporate market, which has traditionally been the primary source of revenue for U.S. software developers.

Specialty music retail chains, such as Musicland Stores, still account for the largest share of CD and audio cassette sales. In the video market, however, distribution channels have been expanded widely beyond specialty video stores. Although video stores still account for an estimated 80 percent of U.S. video rentals, they control only about one-third of video tape sales.[24] Increasingly, mass merchandising retail outlets and mail order channels have attracted consumers. Sales of videos in the rapidly growing "special interest" category—including instructional, health, and exercise recordings—are often made through direct mail channels.

Pricing

The impact of changes in recorded media pricing has been felt most acutely in the packaged software industry.[25] Since 1992, as the market for home and small office-based personal computers has expanded, developers of PC-based applications software have reduced prices dramatically. Price reductions for personal computers and workstations have spilled over into the applications software market, as consumers demand greater value. Many of the largest software vendors, including Microsoft, Lotus, and Borland, have reduced prices aggressively since 1992 in an effort to capture rapidly growing market segments.[26] In the intensely competitive market for Windows-based PC software, leading developers have sought to undercut

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[19] *Selected Data on Research and Development in Industry: 1991* (Washington, DC: National Science Foundation, 1993), publication no. 93-322.

[20] Estimates based on data supplied by the National Science Foundation. It is important to bear in mind that costs associated with production and the creative efforts of artists are the real "research and development" for music and video firms. These costs are not necessarily reflected in R&D data reported by firms.

[21] Standard and Poor's Industry Surveys, "Leisure Time," Mar. 1994.

[22] Estimates based on firm-level data reported by the Gartner Group, Inc., Stamford, CT.

[23] Various company annual 10-K reports, 1992-93.

[24] U.S. Department of Commerce, *U.S. Industrial Outlook* (Washington: USDOC, 1994), pp. 31-5.

[25] Standard and Poor's Industry Survey, "Computers," Oct. 1993, p. C-111.

[26] Ibid.

the prices of competing products in an effort to boost market share. According to industry sources, many firms believe that future revenues linked to product upgrades can be bolstered as customers become committed to a particular application.[27] Software vendors have sought to boost unit sales by bundling several applications together, selling the entire "suite" for the price of a single product. Pricing policies of this kind are designed to safeguard market share, even though unit profit margins are eroded.

Pricing strategies pursued by audio and video recording producers have been less aggressive. In the recorded music industry, the growing popularity of higher priced CDs has given producers more freedom to offer discounts; however, unit prices paid by U.S. consumers for recorded music have not fallen dramatically over the past few years. In the case of home video, the growing importance of tape sales in relation to rentals has led to some price cutting. Many popular titles are now available at prices under $20 per copy, and video rental firms are providing more shelf space for sales (as opposed to rentals).[28] Video producers still pursue a "two-tier" pricing strategy, offering one price to video stores for tapes that will be rented to customers, and a second lower price for "sell-through" tapes sold directly to viewers.

Globalization

Heavy and increasing reliance on international markets is apparent in all three of the recorded media industries. In large part, the high degree of globalization in these industries is influenced by the ease with which recorded media products can be manufactured and distributed in numerous countries around the world. Large software developers rely extensively on foreign subsidiaries and joint-venture partners to monitor changing local market conditions. Software firms increasingly recognize the importance of so-called "localization," the process by which U.S.-developed products are modified to meet the unique needs and tastes of a foreign country's consumers.[29] As consumers abroad have become more sensitive to software localization, most software firms have bolstered their direct market presence overseas. Sales by foreign affiliates of U.S. computer software and services firms totaled $9.0 billion in 1991, a substantial increase over the corresponding 1990 figure of $7.7 billion.[30] European affiliates of U.S. software and services firms accounted for the majority of 1991 foreign sales, capturing $6.9 billion in total receipts.[31]

The international activities of the music industry are well integrated, with six multinational firms dominating worldwide sales of recorded music on major labels.[32] Cross-border investment flows have been critical in shaping the music industry of the 1990s. Three of the world's largest consumer electronics manufacturers—Sony, Matsushita, and Philips—have become major players in the global music industry through direct investment in recording studios outside their respective home countries. Leading music producers rely heavily on foreign subsidiaries for direct marketing and distribution in the largest markets around the world. A large component of music studio revenues is realized through remittances from international subsidiaries, rather than through direct exports. Likewise, the video cassette recording industry has adopted a global approach to sales and investment, as foreign popularity of U.S.-produced films and videos continues to grow. Sales of both feature films and videos by U.S.-owned affiliates abroad totaled $4.8 billion in 1991, with $3.8 billion of the total sales derived from European operations.[33]

Consumer Characteristics and Factors Affecting Demand

U.S. consumers of packaged software can be divided into two broad categories: (1) business customers that primarily purchase so-called "business productivity" applications, such as databases, spreadsheets, word processors, graphics, and computer-aided design products and (2) home computer users who in recent years have boosted their purchases of home entertainment and education software titles. As the number of personal computers in use has expanded over the past decade, the packaged software consumer profile has changed somewhat to reflect the growing importance of home PC applications.

An estimated 5 million PCs destined for home use were shipped in 1993, and approximately 35 percent of U.S. households now have at least one personal computer.[34] The total number of home PC users in the United States is approaching 40 million. An example of the growing impact that home consumers are having on software sales can be seen in the number of

[27] USITC staff interviews with software industry representatives, San Francisco, CA, Mar. 1994.
[28] Standard and Poor's Industry Survey, "Leisure Time," Mar. 1994, p. L-33.
[29] USITC staff interviews with software industry representatives, San Francisco, CA, Mar. 1994.
[30] U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (Washington: USDOC, 1992), table 12.1.
[31] Ibid.
[32] These firms are Sony (Japan), Matsushita Electric (Japan), Time Warner (U.S.), Philips (Netherlands), Bertelsmann (Germany), and Thorn/EMI (United Kingdom).
[33] U.S. Department of Commerce, *Survey of Current Business*, 1992, table 12.2.
[34] Estimates by Link Resources Corp., New York, Aug. 1993.

multimedia titles now available on CD-ROM. The number of CD-ROM releases has grown from fewer than 300 in 1990 to an estimated 1,200 in 1994.[35]

Households account for virtually all U.S. sales of prerecorded music, while video rental firms and households are the principal consumers of recorded video. As the number of CD players and VCRs has increased rapidly, corresponding demand for CDs and video tapes has surged. CD players are now installed in an estimated 42 percent of U.S. households, which helps explain the rapid increase in CD sales relative to other recorded media.[36] This trend is illustrated in figure 5. According to the Recording Industry Association of America, CDs accounted for 65 percent of total U.S. music shipments in 1993, a dramatic increase over the 1989 level of 39 percent.[37] VCRs are now installed in an estimated 71.7 million U.S. households, about 77 percent of all households with televisions.[38] U.S. consumers spend more than twice as much on video cassette purchases than they do at the movie theater. Recent growth in spending on home video, and in the number of VCR-owning households, is shown in figure 6.

Price and performance are the critical factors influencing demand for packaged software applications. Although a small number of U.S. vendors dominate sales of the leading productivity applications, intense price competition since 1992 has driven down the prices of leading software products. Popular applications now frequently sell for less than $100 per copy. Price reductions have contributed to rapid growth in demand for software applications.

In the recorded music and video industries, demand is shaped primarily by the popularity of the artist whose work is distributed on the recorded medium. Price cutting has not played a central role in determining consumer demand for recorded music. Demand has generally increased for recorded music over the past 5 years, even as the average unit price of recordings has moved higher. As stated earlier, consumer preferences have shifted away from records and tapes to CDs, making it easier for manufacturers to avoid widespread price reductions for CDs. U.S. consumers still perceive a significant quality difference between CDs and cassettes, and they appear willing to pay the associated price premium. By contrast, price is playing a larger role in boosting consumer demand for video recordings. Consumers are responding quickly to video price declines, as demonstrated by the large increases in unit sales during 1992 and 1993.

[35] Estimates by InfoTech, Woodstock, VT.

[36] CD player market estimates provided by the Electronic Industries Association, Washington, DC, as reported in U.S. Department of Commerce, *U.S. Industrial Outlook*, 1994, pp. 31-3.

[37] Data compiled by the Recording Industry Association of America, Washington, DC.

[38] Data reported by the Electronic Industries Association, Washington, DC.

FOREIGN INDUSTRY PROFILE

The recorded media industries are dominated by multinational firms that typically produce and distribute recordings through wholly owned subsidiaries and distributors in major foreign markets. In the packaged software industry, U.S.-based firms hold a commanding global market share position. In the home video and music industries, on the other hand, foreign-owned firms play a much larger role, reflecting both the historical importance of non-U.S. markets for artistic recordings and the impact of foreign acquisitions of major U.S. studios. Even with the foreign ownership of these studios, however, the United States is still the world's leading recorded media production location.

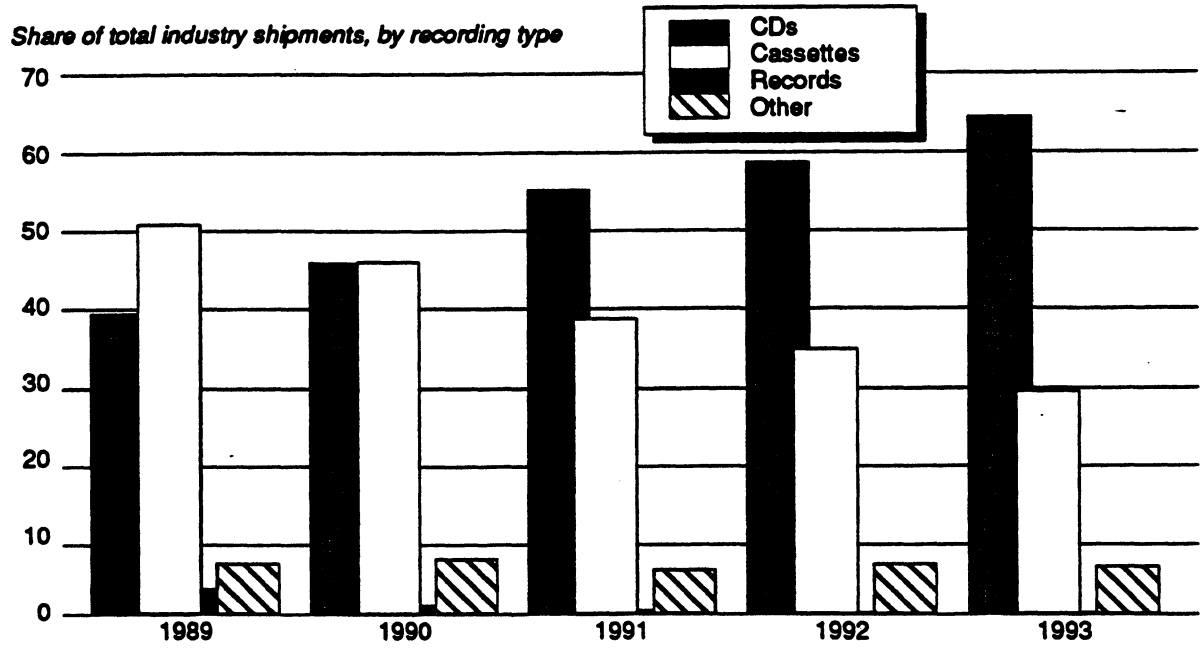
Outside the United States, major product development and production activities for all three of these industries are concentrated in Western Europe and Japan. Although other countries, such as India and Brazil, have developed recorded media and entertainment industries designed primarily to serve the domestic market, non-U.S. activities by multinationals have been established above all to serve the largest industrial economies, where per capita consumption of music, video, and software is high.

Europe

On an aggregated basis, Europe's packaged software firms hold an estimated 15 percent share of the global market. A small number of competitive European software vendors, including Germany's SAP and Software AG, have expanded operations beyond Europe into the larger North American market. Much of the European-based software industry, however, is dominated by local subsidiaries of U.S. firms. Total shipments and imports of packaged PC-based business applications in the European Union and Scandinavian countries reached an estimated $2.5 billion in 1993.[39] European firms, however, captured less than $1 billion of this total. Leading U.S. PC applications developers—Microsoft, Lotus, WordPerfect, and Borland—have increased their European market share through well-developed distribution channels and widespread advertising. Much of the software supplied by U.S. vendors in the European market is actually manufactured and distributed by local subsidiaries and joint-venture partners.

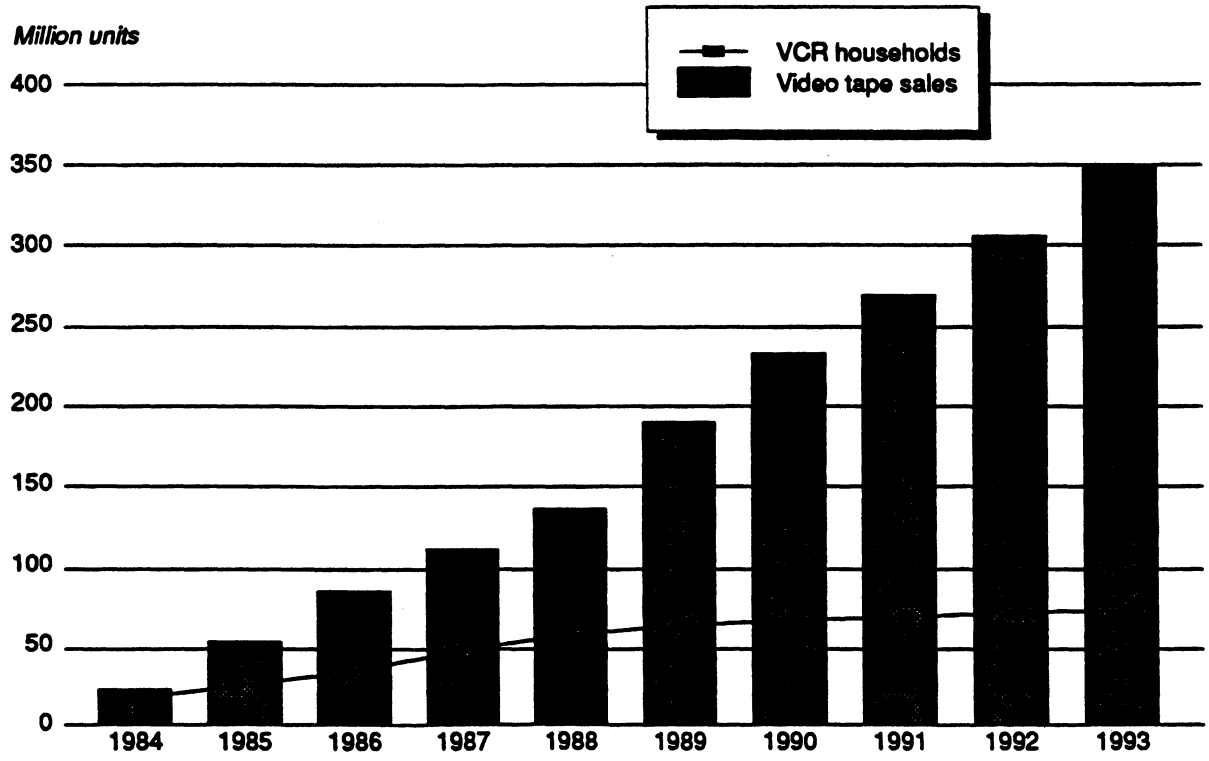
[39] Based on wholesale prices in the EU, and in Finland, Norway, Sweden, and Switzerland. Estimates based on data provided by the Software Publishers Association-Europe, Mar. 1994.

Figure 5
Recorded music: Changes in format, 1989-93



Source: Recording Industry Association of America.

Figure 6
U.S. home video market: Number of VCR households and home video unit sales, 1984-93



Source: *Motion Picture Association of America, Electronic Industries Association.*

European sound recording studios are much more competitive than their counterparts in the software industry. Three large European-owned firms—Philips N.V. of the Netherlands, Thorn/EMI of the United Kingdom, and Bertelsmann A.G. of Germany—have gained a strong global market position. Philips owns a 75-percent equity stake in PolyGram, which controls the A&M, Island, Mercury, Motown, and Polydor labels. Thorn/EMI owns the popular Capitol, Liberty, and Virgin music labels. Bertelsmann controls the Arista and RCA labels. The entire European music market reached approximately $12 billion in 1993 annual sales.[40] U.S. studios, such as Time Warner, also receive sizable revenues from sales of recordings produced at licensed European sites. In the case of European home video, subsidiaries and partners of the major U.S.-based production studios hold an estimated 70 percent share of the local market. European studios have had little success in exporting European-produced films and videos to markets outside the country of origin.

Asia

Although Japan's largest computer firms—NEC, Fujitsu, Hitachi, and Toshiba—have all established sizable custom software operations, they have fallen far behind their U.S. counterparts in offering competitive packaged applications and open systems software. As in Europe, the Japanese packaged software industry is dominated by subsidiaries of U.S. firms. Such firms as Microsoft and Lotus have drawn consumer demand away from Japanese suppliers as the DOS/Windows and Apple Macintosh operating systems have gained popularity among Japanese computer users. In 1993, subsidiaries of U.S. software firms sold an estimated $300 million in DOS, Windows, and Macintosh applications for use on personal computers in Japan. Annual sales growth rates for Windows and Macintosh applications approached 250 percent in 1993.[41] Rapid expansion in sales of these PC applications, however, is not benefiting Japanese software developers, which still focus on writing programs for such proprietary computer platforms as the NEC PC operating system. These proprietary systems are still running on most Japanese PCs, but their share of the market is declining rapidly.

New centers of competitiveness are emerging in the Asian software industry outside of Japan. Particularly in India, Singapore, and the Philippines, U.S. firms have recruited local programmers to work in the area of custom software development.[42] Because wages paid to skilled programmers are much lower in South and Southeast Asia than in the industrialized countries of North America and Europe, packaged software developers may soon increase investment in these less developed countries. Currently, program development and distribution facilities in Asia outside of Japan account for less than 1 percent of global sales. However, high labor productivity rates and a large pool of skilled labor should allow Asian software industries—particularly in India—to grow quickly.

Two of Japan's largest electronics firms—Sony Inc. and Matsushita Electric Industrial, Inc.—are also major players in the global music industry. Since 1988, Sony has been the parent company of two leading record labels, Columbia and Epic. Matsushita's 1991 acquisition of MCA, Inc. gave the firm control of several popular recording artists. Both companies entered the music business as part of a broader strategy to combine competitive strengths in consumer electronics—including CD and digital compact cassette players—with new strengths in entertainment. This strategy has carried over into home video and film, where Sony's two major distribution vehicles (Columbia Pictures and TriStar) captured a combined 1993 global market share of approximately 17 percent.[43] Matsushita Electric's Universal Studios, benefiting from strong sales of hits such as *Jurassic Park*, held an estimated 14 percent of global film and video revenues in 1993.[44] Both Sony and Matsushita have used the acquisitions of major Hollywood film studios to boost their worldwide presence in the home video market.

U.S. TRADE MEASURES

Tariff Measures

Recorded media products are classified in chapter 85 of the *Harmonized Tariff Schedule* (HTS).[45] U.S. tariffs on these products are low, as reflected in table 1. In 1993, the trade-weighted average U.S. tariff rate on recorded media imports stood at 0.76 percent.[46] About 80 percent of U.S. imports of recorded media products in 1993 entered under the HTS subheadings for

[40] This figure represents retail music sales in major Western European markets. Annual report of the Recording Industry Association of America, 1994.

[41] Based on figures provided by the Software Publishers Association, Washington, DC.

[42] Software industry representatives, interviews by USITC staff, San Francisco, CA, Mar. 1994.

[43] Based on *Variety* 1993 Box Office and Video Survey, June 1993.

[44] Ibid.

[45] See appendix A for an explanation of tariff and trade agreement terms.

[46] This figure represents an ad valorem equivalent based on the value of duties collected on all recorded media imports in 1993. These products are classified exclusively in heading 8524 of the *Harmonized Tariff Schedule*.

Table 1
Recorded media: Harmonized Tariff Schedule subheading; description; U.S. col. 1 rate of duty as of Jan. 1, 1995; U.S. exports, 1993; and U.S. imports, 1993

HTS subheading	Description	Col. 1 rate of duty As of Jan. 1, 1995 General	Special[1]	U.S. exports, 1993	U.S. imports, 1993
				Million dollars	
8524.10.00	Phonograph records	3.3%	Free (A,E,IL,J,MX) 1.1% (CA)	79	7
8524.21.10	Magnetic tapes, of a width not exceeding 4 mm.: News sound recordings related to current events	Free		156	(2)
8524.21.30	Magnetic tapes, of a width not exceeding 4 mm.: Other recordings	8.7 cents per square meter of recording surface	Free (A,E,IL,J,MX) 2.9 cents per square meter of recording surface (CA)	(2)	34
8524.22.10	Magnetic tapes, of a width exceeding 4 mm., but not exceeding 6.5 mm.: Video tape recordings	0.59 cents per linear meter	Free (A,E,IL,J,MX) 0.1 cents per linear meter (CA)	84	4
8524.22.20	Magnetic tapes, of a width exceeding 4 mm., but not exceeding 6.5 mm.: Other tape recordings	8.7 cents per square meter of recording surface	Free (A,E,IL,J,MX) 2.9 cents per square meter of recording surface (CA)	117	10
8524.23.10	Magnetic tapes, of a width exceeding 6.5 mm.: Video tape recordings	0.53 cents per linear meter	Free (A,E,IL,J,MX) 0.1 cents per linear meter (CA)	162	24
8524.23.20	Magnetic tapes, of a width exceeding 6.5 mm.: Other tape recordings	8.7 cents per square meter of recording surface	Free (A,E,IL,J,MX) 2.9 cents per square meter of recording surface (CA)	116	14
8524.90.20	Other recordings: Master records or metal matrices therefrom for use in the production of sound records for export; recordings on wire	Free		(2)	2
8524.90.30	Video discs	4.8%	Free (A,E,IL,J,MX) 1.5% (CA)	57	23

See footnotes at end of table.

Table 1—Continued
Recorded media: Harmonized Tariff Schedule subheading; description; U.S. col. 1 rate of duty as of Jan. 1, 1995; U.S. exports, 1993; and U.S. imports, 1993

HTS subheading	Description	Col. 1 rate of duty As of Jan. 1, 1995 General	Special[1]	U.S. exports, 1993	U.S. imports, 1993
				Million dollars	
8524.90.40	Other recordings n.e.c., including diskettes and compact discs	7.8 cents/ per square meter of recording surface	Free (A,E,IL,J,MX) 2.9 cents per square meter of recording surface (CA)	2,509	500

[1] Programs under which special tariff treatment may be provided, and the corresponding symbols for such programs as they are indicated in the "Special" subcolumn, are as follows: Generalized System of Preferences (A); Caribbean Basin Economic Recovery Act (E); United States-Israel Free Trade Area (IL); Andean Trade Preference Act (J); and the North American Free-Trade Agreement, goods of Canada (CA) and Mexico (MX).
[2] Less than 500,000.

Source: USITC, Harmonized Tariff Schedule of the United States (1994). U.S. exports and imports compiled from official statistics of the U.S. Department of Commerce.

computer software and CDs, with a most-favored-nation (MFN) tariff rate of 9.7 cents per square meter of recording surface. This represents an effective tariff rate of less than 1 percent ad valorem.[47] Imports of recorded media products from countries eligible for benefits under the Generalized System of Preferences (GSP), the Caribbean Basin Economic Recovery Act (CBERA), the United States-Israel Free Trade Area, and the Andean Trade Preference Act (ATPA) enter the United States free of duty. Under NAFTA, recorded media imports from Mexico also enter duty-free, whereas tariffs on imports from Canada are less than half of the MFN rate. Tariffs on imports from Canada are being reduced to zero under NAFTA.

The Uruguay Round Agreement, negotiated under the auspices of the General Agreement on Tariffs and Trade (GATT), will affect tariffs on recorded media products. When implemented by the United States, the agreement will reduce U.S. tariffs by 50 percent on all recorded media items except video tape recordings, for which duties will be reduced to zero. After these changes have been made, the trade-weighted average U.S. tariff rate on recorded media products will fall to 0.32 percent.[48]

U.S. Government Trade-Related Investigations

The only recent U.S. trade-related investigations involving recorded media products have been undertaken in connection with the so-called Special 301 provision of U.S. trade law. Special 301 authorizes the Office of the U.S. Trade Representative (USTR) to impose trade sanctions against countries that deny adequate and effective protection of intellectual property rights (IPR) or fair and equitable market access to U.S. persons that rely upon intellectual property protection.[49] One of the principal objectives of this provision has been the elimination of unauthorized copying of U.S. computer software, music, and video recordings in foreign markets.

In 1993, USTR instituted investigations addressing IPR protection in three priority countries under Special 301—Brazil, India, and Thailand.[50] USTR subsequently conducted negotiations with each of these countries. While the principal subject of the negotiations with all three priority countries was inadequate patent protection, particularly in connection with pharmaceutical products sold by U.S. firms, inadequate copyright protection for software and other recorded media products also figured prominently in the talks.[51] Brazil, which USTR regards as a "source of concern" as a result of market access barriers to U.S. software products, has also fallen short of U.S. expectations by failing to extend the term of a copyright beyond 25 years.[52] After the Brazilian government agreed to improve protection for patent and copyright holders in its new IPR law, USTR in February 1994 revoked Brazil's status as a priority country under Special 301. Despite extensive statutory protection for copyrighted works in India, USTR sought to improve the level of copyright enforcement, particularly by Indian state government authorities.[53] Negotiations aimed at improving Indian copyright enforcement for software and other recorded media products continued throughout 1994, without resolution.[54] With respect to Thailand, U.S. concerns centered around Thailand's failure to amend its copyright law to comply with international standards on protection of literary works.[55] Following pledges by the Thai government to make changes in its copyright law and to improve patent protection for pharmaceuticals, USTR revoked Thailand's status as a priority country in September 1993.[56]

FOREIGN TRADE MEASURES

Tariff Measures

Foreign tariffs on imports of recorded media products are generally higher than U.S. tariffs; however, duty rates are still quite low in absolute

[47] Imports of computer software and compact disks are classified under subheading 8524.90.40, "Other recorded media."

[48] Trade-weighted average based on duties collected in 1993.

[49] Section 182 of the Trade Act of 1974 (19 U.S.C. 2242), as added by section 1303 of the Omnibus Trade and Competitiveness Act of 1988, requires that the USTR identify, on an annual basis, those countries that "deny adequate and effective protection of intellectual property rights or deny fair and equitable market access to United States persons that rely upon intellectual property protection." Section 302(b) of the Trade Act of 1974 requires the USTR to initiate a section 301 investigation within a period of 30 days after the identification of a priority country that has been found to offer inadequate IPR protection, except when the USTR determines that initiation of such an investigation would be detrimental to U.S. economic interests (19 U.S.C. 2412(b)).

[50] USTR Press Release, "USTR Announces Further Actions under the 'Special 301' Provisions of the 1974 Trade Act," May 28, 1993. For a country-by-country analysis of IPR-related problems and a discussion of the Special 301 process as it applies to problem countries, see Office of the U.S. Trade Representative, *Foreign Trade Barriers*, (Washington: GPO, 1994).

[51] International Intellectual Property Alliance (IIPA), *Special 301 Recommendations and Estimated Trade Losses* (Washington, DC; IIPA, 1994), Appendix A.

[52] The standard copyright protection term established under international law is the life of the author plus 50 years. USTR, *Foreign Trade Barriers*, p. 24.

[53] Ibid., p. 123.

[54] Ibid., p. 123.

[55] Ibid., p. 265.

[56] Ibid., p. 265.

terms. On average, foreign tariffs on recorded media stood at 4.8 percent ad valorem in 1993, but the average rate will fall to an estimated 3.2 percent in 1995, assuming implementation of Uruguay Round tariff reductions. Japan has agreed to reduce tariffs on recorded media products from 1.7 percent to zero on a staged basis after the Uruguay Round Agreement goes into effect. EU member states, which accounted for about 30 percent of U.S. recorded media exports in 1993, have also agreed to reduce tariffs, beginning in 1995, on CDs and cassette tapes, from 4.9 and 5.1 percent ad valorem in 1994 to a range of 2.6 to 3.5 percent in 1995. EU imports of computer software are currently duty-free. Australia, another major market for U.S. recorded media exports, has agreed to reduce tariffs on tape media from 20 percent to 7 percent immediately after the Uruguay Round reductions go into effect. Australia currently permits imports of CDs to enter free of duty.

Nontariff Measures

According to industry sources, the most significant type of nontariff trade barrier affecting U.S. exports of recorded media products is inadequate copyright protection. According to the International Intellectual Property Alliance (IIPA),[57] $8.0 billion in trade-related losses were suffered by U.S. copyright-based industries in 1993.[58] It is estimated that the largest export losses were felt by firms in the software, music, and motion picture/video industries. Most of the countries identified by U.S. firms as offering poor protection for copyright holders are emerging market countries with underdeveloped indigenous recorded media industries. Even among major industrialized countries, however, deficiencies in IPR-related legal structures and enforcement measures are reportedly resulting in trade-related losses for U.S. firms.

Europe

In Europe, protection for copyright holders has improved, but U.S. firms remain concerned about slow implementation of the EU's IPR policies.[59] As of early 1994, only 7 of the 12 EU member states had passed legislation at the national level implementing the EU Software Directive, which went into effect on January 1, 1993.[60] Illegal copying of software, music, and video cassettes remains widespread in major markets for U.S. products—especially in Italy, Spain, Portugal, and Greece.[61] Italy, a Special 301 "watch list" country since 1989, reportedly has made significant progress in enforcing its 1992 copyright law.[62] In Spain, on the other hand, government efforts to significantly reduce piracy reportedly have not succeeded, primarily due to lax enforcement of existing laws.[63] According to U.S. software representatives, 92 percent of all PC-based software used in Spain in 1993 was copied illegally.[64]

According to industry sources, failure to provide national treatment for U.S. copyright holders is another substantial nontariff barrier in Europe. In France, Germany, and Spain a tax is collected on sales of blank tapes and recording equipment to compensate copyright holders losing sales as a result of music and video piracy. However, payments are made only to European copyright holders, denying similar payments to U.S. firms. Representatives of the U.S. video and music industries have argued strenuously that the policy should be changed to extend compensation to U.S. firms.

Asia

Continuing problems with copyright protection also have reduced U.S. sales in Japan, Korea, and Taiwan. U.S. firms' losses related to copyright piracy in these three countries totaled an estimated $1.5 billion in 1993.[65] Some evidence suggests that copyright protection in Asia may be reduced as U.S. firms seek to increase sales in these rapidly growing markets. In late 1993, Japan's Agency for Cultural Affairs, part of the Ministry of Education, announced that it was investigating whether to propose changes in Japanese copyright laws to allow reverse engineering of computer software. According to U.S. industry sources, such action could result in explicit recognition of a right to "decompile" (or reverse engineer) software code. According to the USTR *Foreign Trade Barriers* report, legal recognition of software decompilation could expose U.S. software producers to intense competition from firms offering products that copy elements of U.S. programs.[66] As of late 1994, no such changes had been made to Japanese copyright laws.

[57] The IIPA is an alliance of major industry associations representing firms in the computer software, motion picture/home video, music, and book publishing industries.

[58] International Intellectual Property Alliance, *Special 301 Recommendations and Estimated Trade Losses*, (Washington: IIPA, 1994), p. 3.

[59] Ibid., p. 182.

[60] Office of the U.S. Trade Representative, *Foreign Trade Barriers* (Washington: GPO, 1994), p. 85.

[61] *Special 301 Recommendations*, IIPA, p. 82.

[62] Ibid., p. 82.

[63] Ibid., p. 91.

[64] Estimates provided by the Business Software Alliance, as referenced in *Foreign Trade Barriers*, 1994, p. 89.

[65] Estimates provided in *Special 301 Recommendations*, 1994, Appendix A.

[66] Office of the U.S. Trade Representative, *Foreign Trade Barriers* (Washington: GPO, 1994), pp. 160-61.

Recent efforts to improve copyright enforcement in Korea apparently have reduced the level of software, music, and video theft.[67] In January 1993, the Korean Government began conducting raids on producers of pirated recordings, and intensifying prosecution of copyright infringement cases. In both China and Taiwan, the production and export of pirated videos, CDs, and software remains widespread.[68] Total losses to U.S. copyright holders in China during 1993 were estimated at $827 million, and 1993 losses in Taiwan were estimated at $150 million.[69]

U.S. MARKET

Consumption

U.S. consumption of recorded media products has risen steadily in recent years, reflecting continued strong demand for packaged computer software, video cassettes, and CDs (table 2). Apparent consumption of these products grew from $15.3 billion in 1989 to $22.2 billion in 1993, representing an average annual growth rate of 9.8 percent. The ratio of U.S. imports to consumption for these products remained very low during the 1989-93 period, rising from 1.7 percent in 1989 to 2.8 percent in 1993. For the largest single product segment, packaged software, the imports-to-consumption ratio remained near the industry average during this period, reaching 3.0 percent in 1993.[70] Foreign-produced musical recordings continue to take a somewhat larger share of U.S. consumption, reflecting the international competitiveness of foreign-owned music studios—especially in Western Europe.

Foreign-made recorded media products compete with U.S. products principally in terms of performance and product quality. Imported recordings are generally sold at prices comparable to competing U.S. products. However, in the case of computer software, foreign products typically have competed poorly in terms of performance. Few foreign software programs possess the technical features and user-friendly characteristics that have allowed leading U.S. developers to capture large shares of key market segments like word processing, spreadsheets, and databases.

In the case of music and video recordings, the quality or performance of a product is determined almost entirely by the popular appeal of the artists contributing to the recording. Musical recordings produced under large foreign-owned record labels have competed successfully in the U.S. market, but foreign video recordings have not sold well in the United States.

Production

As consumption of recorded media products has grown since 1989, so has the level of U.S. producers' shipments (table 2). Shipments increased from $16.1 billion in 1989 to $24.8 billion in 1993, reflecting a compound annual growth rate of 11.4 percent. Annual growth rates in shipments during the 1989-93 period differed among the leading recorded media product segments. Annual growth rates of software shipments averaged 14 percent between 1989 and 1993, while corresponding growth rates for music and video recordings were 12 percent and 6 percent, respectively. Strong growth in the dollar value of recorded music shipments reflects in part the growing popularity of CDs and the slowness with which music prices have declined over the past 5 years.

U.S. shipments of recorded media products grew by only 9 percent in 1991 as slow economic growth suppressed consumer demand. Strong growth resumed in 1992 and 1993, however, as sustained consumer interest in new PC software and audio CDs led producers to increase production. The unit volume of recorded media shipments in the United States has grown more rapidly than the value of shipments, due in large part to steep price reductions for computer software and video cassettes. Unit shipments of computer software have grown markedly since 1992, when sharp price reductions for popular PC applications helped boost U.S. consumption. Suppliers responded quickly to fill new orders.

Imports

Approximately 55 percent of U.S. imports of recorded media in 1993 were computer software programs, while audio CDs made up approximately 26 percent of the total. Audio and video cassette tapes together made up most of the remaining 19 percent of total recorded media product imports in 1993. The import product breakdown does not differ significantly from the mix of producer shipments.

The value of U.S. imports of recorded media products rose steadily between 1989 and 1993, from $266 million to $616 million, as seen in table 3, with an annual import growth rate averaging 23 percent. However, imports still constitute a rather small portion of total U.S. consumption. Over the 5-year period, imports of computer software and audio CDs grew fastest in relative terms. Packaged software's share of total imports grew from approximately 37 percent in 1989 to 55 percent in 1993. During the same period, the share of total recorded media imports held by audio CDs grew from 22 percent in 1989 to 26 percent in

[67] Ibid., p. 191.
[68] *Special 301 Recommendations*, IIPA, p. 102.
[69] Ibid., Appendix A.
[70] USITC staff estimates, based on product-level analysis of data compiled by the U.S. Department of Commerce.

Table 2
Recorded media: U.S. producers' shipments, exports of domestic merchandise, imports for consumption, and apparent consumption, 1989-93

Year	Producers' shipments[1]	Exports[2]	Imports[2]	Apparent consumption[3]	Ratio of imports to consumption
	Million dollars				*Percent*
1989	16,129	1,126	266	15,269	1.7
1990	18,246	1,872	316	16,690	1.9
1991	19,792	2,201	379	17,970	2.1
1992	22,232	2,756	522	19,998	2.6
1993	24,838	3,281	616	22,173	2.8

[1] Estimated by the staff of the U.S. International Trade Commission.
[2] The value of U.S. exports and imports may be significantly understated because customs valuation is based primarily on the value of the recording medium only, and not on the transaction value of the product.
[3] To the extent that U.S. exports and imports are overstated, the net value of apparent U.S. consumption may also be overstated.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 3
Recorded media: U.S. imports for consumption, by principal sources, 1989-93

Source	1989	1990	1991	1992	1993
	Value *(1,000 dollars)*				
Canada	57,245	78,258	98,534	157,950	172,927
United Kingdom	42,967	49,734	54,726	62,586	75,275
Japan	24,399	40,780	57,428	61,321	63,696
Germany	31,983	35,265	34,927	48,024	48,158
Netherlands	16,623	16,372	20,692	27,591	38,671
Ireland	4,283	2,611	4,661	17,879	34,997
Singapore	20,636	12,058	13,389	19,237	33,493
France	9,394	11,733	9,725	12,775	21,220
Mexico	13,093	14,993	17,704	17,771	19,832
Taiwan	3,036	7,306	14,421	19,104	19,821
All other	42,803	46,830	52,479	78,016	88,404
Total	266,462	315,940	378,686	522,254	616,494

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

1993. Increases in imports were largest for Canada, Germany, and the United Kingdom in the case of CDs, while increases in software imports were most notable for Canada, Ireland, and the United Kingdom. Canada continued to be the leading supplier of recorded media imports throughout the 1989-93 period.

Most large U.S. importers of computer software, music, and video recordings are wholesale distributors and specialty retailers. A very small percentage of U.S. recorded media imports enter the country duty free in accordance with preferential trade agreements. Under the provisions of the NAFTA, imports of software, music, and video recordings from Mexico enter free of duty. Mexico is the leading supplier of duty-free recorded media imports. U.S. imports of these products from Mexico totaled $19.8 million in 1993, 3 percent of total imports.

FOREIGN MARKETS

Foreign Market Profile

U.S. producers of packaged software, music, and video recordings are among the market share leaders in virtually every major foreign market. As noted earlier, however, the extent of U.S. firm revenues derived from sales in foreign markets is not reflected accurately in U.S. export statistics. In order to measure the relative importance of foreign markets for U.S. recorded media producers, it is therefore necessary to examine not only export data, but also the competitive performance of U.S. firms' products manufactured and distributed by

subsidiaries and partners in key foreign markets. Superior product performance, reflected in the creative content of each type of recorded media product, appears to be the critical factor providing U.S. firms with a distinct competitive advantage in foreign markets.

The global market for packaged software products is dominated by U.S. firms. According to industry sources, U.S. software developers hold an estimated 75 percent of the global market for packaged applications and system software. The largest markets for U.S. software products are Canada, Japan, Germany, the United Kingdom, and France. The relative importance of these five countries is closely related to high levels of disposable income and to a high market penetration rate for personal computers in homes and offices. In many respects, software consumption patterns in these five countries mirror those in the United States. A comparison of per capita consumption of packaged software applications in the largest global markets is provided in figure 7.

In all of the major foreign markets for U.S. software, product performance, interoperability, and price are the principal factors influencing competitive success. In most categories of applications software, including word processing and spreadsheets, U.S. products offer a superior mix of features, run easily on major computer systems such as Windows-based personal computers, and are priced to sell well in direct competition with locally developed products. Another factor that improves the competitive position of U.S. products is the widespread popularity of English, in both Europe and leading markets in Asia. Since many software users in these countries are English speakers, translation of U.S.-developed products is not always required for market success. In most of the top-selling applications categories, serious local competitors have not emerged. Instead, leading U.S. firms—notably Microsoft, Lotus, Borland, and Novell—continue to compete among themselves for market share leadership in the largest foreign markets.

In the case of music and video recordings, competition from local artists and production firms is typically more intense than in the packaged software industry. Strong demand for local products is usually driven by cultural and language factors. However, U.S. performers—both musicians and actors—remain popular in major markets outside of the English-speaking world. With extensive distribution channels established in major European and Asian markets, moreover, U.S. firms do not face substantially higher costs when selling in key foreign markets. Per capita consumption of CDs in major foreign markets is illustrated in figure 8.

U.S. Exports

U.S. exports of recorded media products have grown steadily in recent years, as the number of personal computers and CD players has expanded worldwide. Table 4 lists major U.S. export markets for these products during 1989-93. With regard to the export product mix, the most significant trend has been the rise in the relative importance of packaged software as an export product. The share of packaged software in total U.S. recorded media exports increased from 44 percent in 1989 to 69 percent in 1993. This rapid rise in exports reflects growing demand for popular U.S.-developed software applications and CD-ROM titles. The share of total exports held by recorded music fell from an estimated 37 percent in 1989 to 24 percent in 1993, while the export share of video cassettes and laserdiscs fell from an estimated 19 percent of recorded media exports in 1989 to 7 percent in 1993.

Overall, U.S. exports of recorded media products grew rapidly during the 1989-93 period, from $1.1 billion in 1989 to $3.3 billion in 1993—reflecting an average annual growth rate of 31 percent. Canada remains the largest single U.S. export market, accounting for 24 percent of total U.S. exports in 1993. Canada's share of the export market grew dramatically in recent years, from 15 percent of total U.S. exports in 1989 to 27 percent in 1990, then fell back slightly to 25 percent in 1993. Japan, on the other hand, declined in relative importance as an export market. The share of U.S. recorded media exports shipped to Japan fell from 19 percent of the total in 1989 to 12 percent in 1993. Relatively slow growth in Japanese consumer demand for U.S. software products, especially programs written for PCs, contributed to the decline in Japan's importance as an export market. No other major changes in the share of exports were apparent among the leading export markets in Western Europe. Taken together, Canada, the major industrialized countries of Western Europe, Japan, Australia, and New Zealand accounted for an estimated 75 percent of U.S. recorded media exports in 1993.

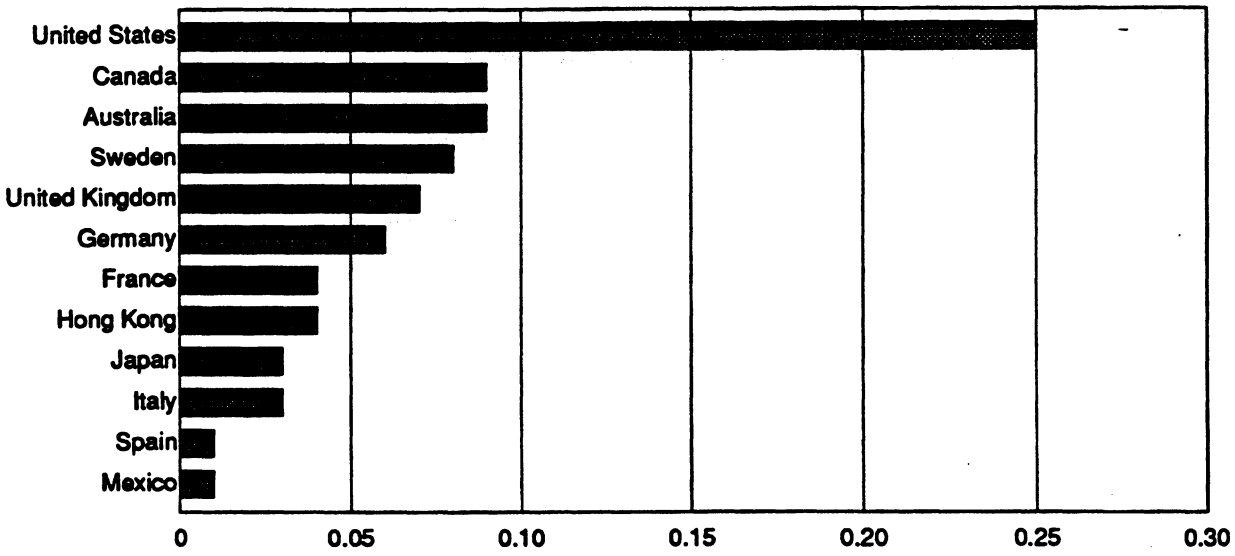
U.S. TRADE BALANCE

The overall U.S. trade balance in recorded media products improved dramatically during the 1989-93 period, as shown in table 5. The U.S. recorded media trade surplus rose from $860 million in 1989 to $2.7 billion in 1993, representing an average annual increase of 33 percent.[71] The improvement in the trade balance reflected the combined impact of strong

[71] Compiled from official statistics of the U.S. Department of Commerce.

Figure 7
Per capita purchases of computer software applications, 1993

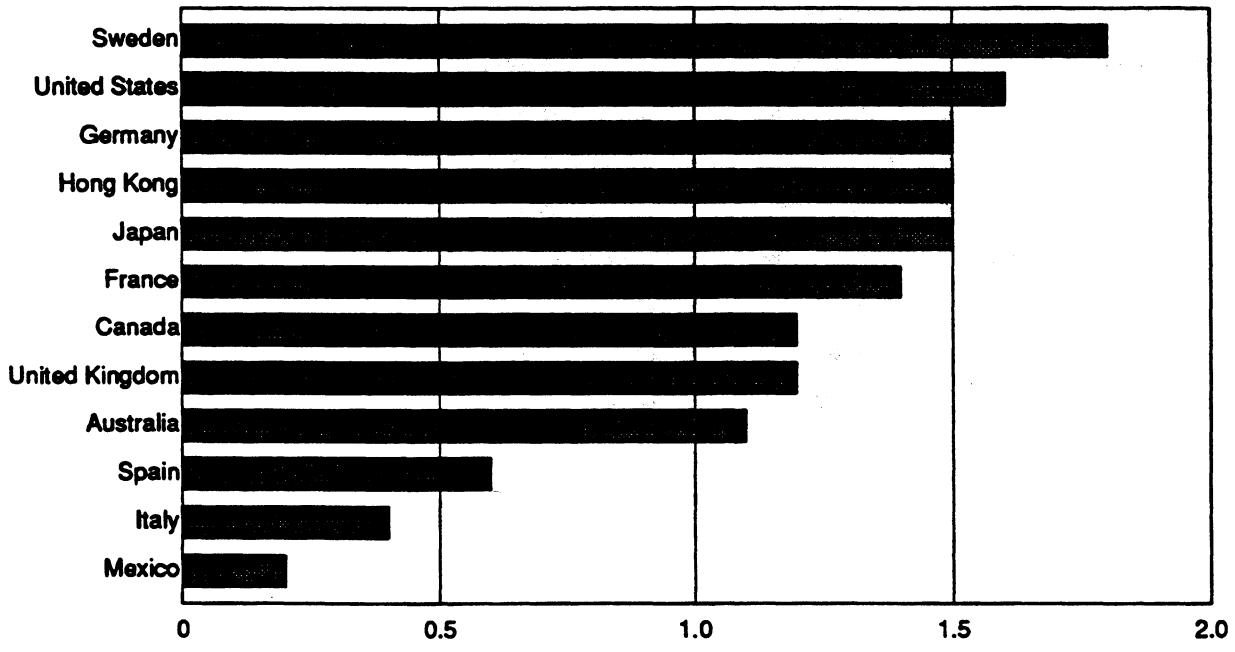
Per capita software purchases (in units)



Source: *Software Publishers Association.*

Figure 8
Per capita purchases of music CDs, 1993

Per capita CD purchases (in units)



Source: *Software Publishers Association.*

Table 4
Recorded media: U.S. exports of domestic merchandise, by principal markets, 1989-93

Market	1989	1990	1991	1992	1993
	Value *(1,000 dollars)*				
Canada	167,235	510,006	590,539	681,436	802,497
Japan	218,136	258,031	298,606	319,361	379,364
Germany	86,341	145,530	171,719	251,759	307,675
United Kingdom	136,978	192,016	201,120	253,138	286,769
Australia	57,760	78,075	88,157	105,839	126,089
France	56,872	83,114	94,637	118,581	122,027
Netherlands	41,592	62,936	75,922	101,259	110,167
Mexico	27,565	36,206	52,437	75,350	102,810
Korea	26,719	34,769	45,935	49,175	82,029
Singapore	22,187	36,855	38,306	54,564	81,879
All other	284,838	434,508	543,555	745,711	879,291
Total	1,126,223	1,872,047	2,200,932	2,756,172	3,280,598

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

growth in U.S. exports and of the more modest increase in the value of imports. Large increases in U.S. exports of software products to Canada, Germany, and Mexico helped boost the U.S. bilateral trade surplus with each of these countries during 1989-93. The trade surplus for packaged software showed the largest increase during the 5-year period, rising from $404 million in 1989 to $1.9 billion in 1993.

The principal factor underlying improvement in the U.S. trade balance was the expanded use of personal computers (and, by extension, personal computer software) in major industrialized and emerging market countries. In addition, the increased popularity of audio CDs as a recorded music medium helped increase global demand for U.S.-produced music.

Table 5
Recorded media: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 1989-93[1]

(Thousand dollars)

Item	1989	1990	1991	1992	1993
U.S. exports of domestic merchandise:					
Canada	167,235	510,006	590,539	681,436	802,497
Japan	218,136	258,031	298,606	319,361	379,364
Germany	86,341	145,530	171,719	251,759	307,675
United Kingdom	136,978	192,016	201,120	253,138	286,769
Australia	57,760	78,075	88,157	105,839	126,089
France	56,872	83,114	94,637	118,581	122,027
Netherlands	41,592	62,936	75,922	101,259	110,167
Mexico	27,565	36,206	52,437	75,350	102,810
Korea	26,719	34,769	45,935	49,175	82,029
Singapore	22,187	36,855	38,306	54,564	81,879
All other	284,838	434,508	543,555	745,711	879,291
Total	1,126,223	1,872,047	2,200,932	2,756,172	3,280,598
European Union	415,294	619,300	718,146	944,953	1,062,609
Eastern Europe	401	4,192	14,198	24,727	25,888
U.S. imports for consumption:					
Canada	57,245	78,258	98,534	157,950	172,927
Japan	24,399	40,780	57,428	61,321	63,696
Germany	31,983	35,265	34,927	48,024	48,158
United Kingdom	42,967	49,734	54,726	62,586	75,275
Australia	3,345	3,374	3,859	3,126	4,947
France	9,394	11,733	9,725	12,775	21,220
Netherlands	16,623	16,372	20,692	27,591	38,671
Mexico	13,093	14,993	17,704	17,771	19,832
Korea	5,301	2,824	3,900	5,238	6,589
Singapore	20,636	12,058	13,389	19,237	33,493
All other	41,475	50,548	63,804	106,635	131,688
Total	266,462	315,940	378,686	522,254	616,494
European Union	112,607	126,465	137,612	181,625	241,495
Eastern Europe	422	862	871	1,020	1,197
U.S. merchandise trade balance:					
Canada	109,989	431,747	492,005	523,487	629,570
Japan	193,737	217,251	241,178	258,039	315,668
Germany	54,359	110,264	136,792	203,734	259,517
United Kingdom	94,011	142,283	146,395	190,552	211,494
Australia	54,415	74,701	84,298	102,713	121,142
France	47,478	71,381	84,912	105,806	100,807
Netherlands	24,968	46,563	55,231	73,668	71,497
Mexico	14,473	21,214	34,734	57,578	82,978
Korea	21,417	31,945	42,035	43,937	75,440
Singapore	1,552	24,797	24,916	35,327	48,386
All other	243,362	383,959	479,751	639,076	747,603
Total	859,761	1,556,107	1,822,245	2,233,918	2,664,104
European Union	302,687	492,835	580,533	763,328	821,114
Eastern Europe	-21	3,330	13,327	23,707	24,691

[1] Import values are based on customs value; export values are based on f.a.s. value, U.S. port of export. U.S. trade with East Germany is included in "Germany" but not "Eastern Europe."

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

APPENDIX A
TARIFF AND TRADE AGREEMENT TERMS

The ***Harmonized Tariff Schedule of the United States*** (HTS) replaced the *Tariff Schedules of the United States* (TSUS) effective January 1, 1989. Chapters 1 through 97 are based upon the internationally adopted Harmonized Commodity Description and Coding System through the 6-digit level of product description, with additional U.S. product subdivisions at the 8-digit level. Chapters 98 and 99 contain special U.S. classification provisions and temporary rate provisions, respectively.

Rates of duty in the ***general*** subcolumn of HTS column 1 are most-favored-nation (MFN) rates; for the most part, they represent the final concession rate from the Tokyo Round of Multilateral Trade Negotiations. Column 1-general duty rates are applicable to imported goods from all nonembargoed countries except those enumerated in general note 3(b) to the HTS—Afghanistan, Azerbaijan, Cuba, Kampuchea, Laos, North Korea, and Vietnam—whose goods are dutiable at the rates set forth in ***column 2***. Goods from Albania, Armenia, Belarus, Bosnia, Bulgaria, the People's Republic of China, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Poland, Romania, Russia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan are now eligible for MFN treatment. Among goods dutiable at column 1-general rates, particular products of enumerated countries may be eligible for reduced rates of duty or for duty-free entry under one or more preferential tariff programs. Such tariff treatment is set forth in the special subcolumn of HTS column 1. Where eligibility for special tariff treatment is not claimed or established, goods are dutiable at column 1-general rates.

The ***Generalized System of Preferences*** (GSP) affords nonreciprocal tariff preferences to developing countries to aid their economic development and to diversify and expand their production and exports. The U.S. GSP, enacted in title V of the Trade Act of 1974 and renewed in the Trade and Tariff Act of 1984, applies to merchandise imported on or after January 1, 1976 and before September 30, 1994. Indicated by the symbol "A" or "A*" in the special subcolumn of column 1, the GSP provides duty-free entry to eligible articles the product of and imported directly from designated beneficiary developing countries, as set forth in general note 4 to the HTS.

The ***Caribbean Basin Economic Recovery Act*** (CBERA) affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area to aid their economic development and to diversify and expand their production and exports. The CBERA, enacted in title II of Public Law 98-67, implemented by Presidential Proclamation 5133 of November 30, 1983, and amended by the Customs and Trade Act of 1990, applies to merchandise entered, or withdrawn from warehouse for consumption, on or after January 1, 1984; this tariff preference program has no expiration date. Indicated by the symbol "E" or "E*" in the special subcolumn of column 1, the CBERA provides duty-free entry to eligible articles, and reduced-duty treatment to certain other articles, which are the product of and imported directly from designated countries, as set forth in general note 7 to the HTS.

Preferential rates of duty in the special subcolumn of column 1 followed by the symbol "IL" are applicable to products of Israel under the ***United States-Israel Free Trade Area Implementation Act*** of 1985 (IFTA), as provided in general note 8 to the HTS. Where no rate of duty is provided for products of Israel in the special subcolumn for a particular provision, the rate of duty in the general subcolumn of column 1 applies.

Preferential nonreciprocal duty-free or reduced-duty treatment in the special subcolumn of column 1 followed by the symbol "J" or "J*" in parentheses is afforded to eligible articles the product of designated beneficiary countries under the ***Andean Trade Preference Act*** (ATPA), enacted in title II of Public Law 102-182 and implemented by Presidential Proclamation 6455 of July 2, 1992 (effective July 22, 1992), as set forth in general note 11 to the HTS.

Preferential rates of duty in the special subcolumn of column 1 followed by the symbol "CA" are applicable to eligible goods of Canada, and those followed by the symbol "MX" are applicable to eligible goods of Mexico, under the North American Free Trade Agreement, as provided in general note 12 to the HTS, effective January 1, 1994.

Other special tariff treatment applies to particular ***products of insular possessions*** (general note 3(a)(iv)), goods covered by the ***Automotive Products Trade Act*** (APTA) (general note 5) and the ***Agreement on Trade in Civil Aircraft*** (ATCA) (general note 6), and ***articles imported from freely associated states*** (general note 10).

The ***General Agreement on Tariffs and Trade*** (GATT) (61 Stat. (pt. 5) A58; 8 UST (pt. 2) 1786) is a multilateral agreement setting forth basic principles governing international trade among its signatories. The GATT's main obligations relate to most-favored-nation treatment, the maintenance of scheduled concession rates of duty, and national (nondiscriminatory) treatment for imported products; the GATT also provides the legal framework for customs valuation standards, "escape clause" (emergency) actions, antidumping and countervailing duties, and other measures. Results of GATT-sponsored multilateral tariff negotiations are set forth by way of separate schedules of concessions for each participating contracting party, with the U.S. schedule designated as Schedule XX.

Officially known as "The Arrangement Regarding International Trade in Textiles," the ***Multifiber Arrangement*** (MFA) provides a framework for the negotiation of bilateral agreements between importing and producing countries, or for unilateral action by importing countries in the absence of an agreement. These bilateral agreements establish quantitative limits on imports of textiles and apparel, of cotton and other vegetable fibers, wool, man-made fibers and silk blends, in order to prevent market disruption in the importing countries—restrictions that would otherwise be a departure from GATT provisions. The United States has bilateral agreements with many supplying countries, including the four largest suppliers: China, Hong Kong, the Republic of Korea, and Taiwan.