

The Global Competitiveness of U.S. Futures Markets Revisited

**Division of Economic Analysis
Commodity Futures Trading Commission
November 1999**

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Executive Summary

This report updates a 1994 study of the competitiveness of organized U.S. futures exchanges relative to their counterparts abroad. In particular, the Commodity Futures Trading Commission (CFTC or Commission) staff assessed the competitiveness of U.S. futures and option markets by analyzing recent domestic and foreign trading volume data and other economic factors. It also compared aspects of U.S. and non-U.S. regulatory systems.

The review of foreign and domestic futures and option trading activity over the period since the 1994 study revealed five salient conclusions:

- Both total U.S. and total foreign futures and option trading volume have increased significantly over the period 1994-1998;
- the U.S. share of total worldwide futures and option trading activity appears to be stabilizing as the larger foreign markets have matured;
- as in 1994, the most actively traded foreign products tend to fill local or regional risk management needs and few products offered by foreign exchanges directly duplicate products offered by U.S. markets;
- the increased competition among mature segments of the global futures industry, particularly in Europe, may reflect industry restructuring and the introduction of new technologies, particularly electronic trading; and
- to date, the distinctions in regulatory regimes between various countries do not appear to have been a significant factor in the competitive position of the world's leading exchanges.

In sum, neither trends in the locus of trading activity nor regulatory developments over the last five years suggest an erosion of U.S. futures markets' global competitive position. However, the continued application of new technologies and the trend toward exchange consolidation are likely to change significantly the competitive structure of global futures markets in the coming years. The Commission is committed to continued regulatory flexibility to meet these challenges. Nevertheless, it is likely that the potential operational cost savings generated by the adoption of new technology and industry restructuring

and the ability of exchanges to provide liquid markets, more than the differences among the regulatory systems of various nations, will be the most important factors in shaping the futures industry's structure in the twenty-first century.

THE GLOBAL COMPETITIVENESS OF U.S. FUTURES MARKETS REVISITED

I. INTRODUCTION

The Futures Trading Practices Act of 1992 (FTPA) required the CFTC to study the competitiveness of boards of trade over which it has jurisdiction compared with the boards of trade over which "foreign futures authorities"^[1] have jurisdiction. The Commission submitted its report on this issue, "A Study of the Global Competitiveness of U. S. Futures Markets" (1994 Study), to the Senate and House agriculture committees in April 1994.

Since the completion of the 1994 Study, domestic futures exchanges have continued to claim that they face a competitive disadvantage *vis a vis* foreign exchanges due, in part, to a costly U.S. regulatory system. In view of this continued concern and the Commission's commitment to not impede domestic futures markets from being competitive internationally, Commission staff has updated the 1994 Study to incorporate data for the period 1994 through 1998 and to review its analysis and conclusions in the context of market developments and innovations that have occurred over this period.^[2]

The central findings of the 1994 report were as follows. First, the decrease in the U.S. exchanges' share of the continually increasing world futures trading volume had been accompanied by steady and vigorous growth in U.S. trading activity and in the number and diversity of instruments traded domestically. Furthermore, the cause of this decline in U.S. "market share" was not direct competition from foreign markets. Rather, it was an inevitable development for the more mature U.S. markets in relation to the emergence of new markets in foreign jurisdictions that successfully satisfied local risk management needs.

The Commission found that over the period of study, foreign regulatory oversight of non-U.S. futures and option markets had been strengthened relative to oversight of U.S. markets. It appeared that many foreign regulatory systems, whether recently strengthened or newly created, have tended to be patterned after the U.S. system, and that further harmonization of regulatory systems would continue.

The report concluded that U.S. markets had not been competitively disadvantaged in any significant way as the result of differential regulation. Nonetheless, the Commission reiterated its commitment to keeping its regulatory program under continuous review to assure that, consistent with its responsibilities for market integrity and customer protection, it:

- A. kept pace with changes in the marketplace, and
- B. did not unnecessarily impede domestic exchanges from evolving to remain competitive, especially with regard to the cost of compliance relative to non-U.S. exchanges.

In order to determine whether new trends would call into question or support the continued validity of the 1994 Study, this report focuses, as did the earlier study, on the competitiveness of organized U.S. exchanges with their counterparts abroad, examining both floor-based (pit) and electronic

trading systems. In particular, it examines the nature and evolution of competing markets and the specific regulatory environments in which they operate. Those competing markets include organized, nondomestic exchanges that are subject to regulation and incorporate substantially equivalent central facilities for the multilateral execution of futures and option transactions and are supported by clearing arrangements.[3] The exchanges discussed in this report, and their acronyms, are listed in the appendix.

CFTC staff assessed the competitiveness of U.S. futures and option markets by analyzing domestic and foreign trading volume data and other economic factors that would bear on the relative success of U.S. and foreign markets.[4] It also examined the salient aspects of non-U.S. regulatory systems and compared these to the U.S.

II. Developments in Worldwide Commodity Futures and Option Activity Since 1994

An examination of foreign and domestic futures and option trading activity over the period since the 1994 Study reveals five points that appear relevant to an updated assessment of the competitiveness of U. S. markets:|

- Both total U.S. and total foreign futures and option trading volume have increased significantly over the period 1994-1998;
- the U.S. share of total worldwide futures and option trading activity appears to be stabilizing as the larger foreign markets have matured;
- as in 1994, the most actively traded foreign products tend to fill local or regional risk management needs and few products offered by foreign exchanges directly duplicate products offered by U.S. markets;
- the increased competition among mature segments of the global futures industry, particularly in Europe, may reflect industry restructuring such as mergers and alliances and the introduction of new technologies, particularly electronic trading; and
- to date, the distinctions in regulatory regimes between various countries do not appear to have been a significant factor in the competitive position of the world's leading exchanges.

Each of these points is discussed below.

The Continued Growth of Worldwide Trading Volume

The dramatic increase in worldwide exchange-traded futures and option activity that took place throughout the 1980s has continued in the 1990s (see chart A). Total worldwide trading volume for futures and options combined reached a record 1,482 million contracts in 1998 (see table I).[5]

By way of comparison, in 1993, the last year covered in the 1994 Study, volume was 890 million contracts. These figures compare to worldwide volume of 272 million contracts in 1986, the first year covered by the 1994 Study. The absolute increase in volume over the last five years (1994-98) of 592 million contracts is nearly equal to the increase experienced over the eight-year period (1986-1993) covered by the 1994 Study (618 million contracts). The significantly lower rate of growth over the latter period, 67 percent, compared to the former period, 227 percent, reflects the fact that the base volume of trading was much lower in 1986 (272 million contracts) than in 1994 (890 million contracts). For the same reason, the mean annual growth rate in worldwide futures and option trading volume over the 1994-1998 period was 13 percent compared to 33 percent for the 1986-1993 period.

Table II further illustrates this growth pattern for the worldwide futures industry and presents

trading volume data for the 10 leading countries in 1993 and in 1998. It is noted that the composition and rankings of this group remained unchanged from 1994 through 1998 (see also chart B). For the first seven months of 1999, however, Germany replaced the U.K. as the country

CHART A

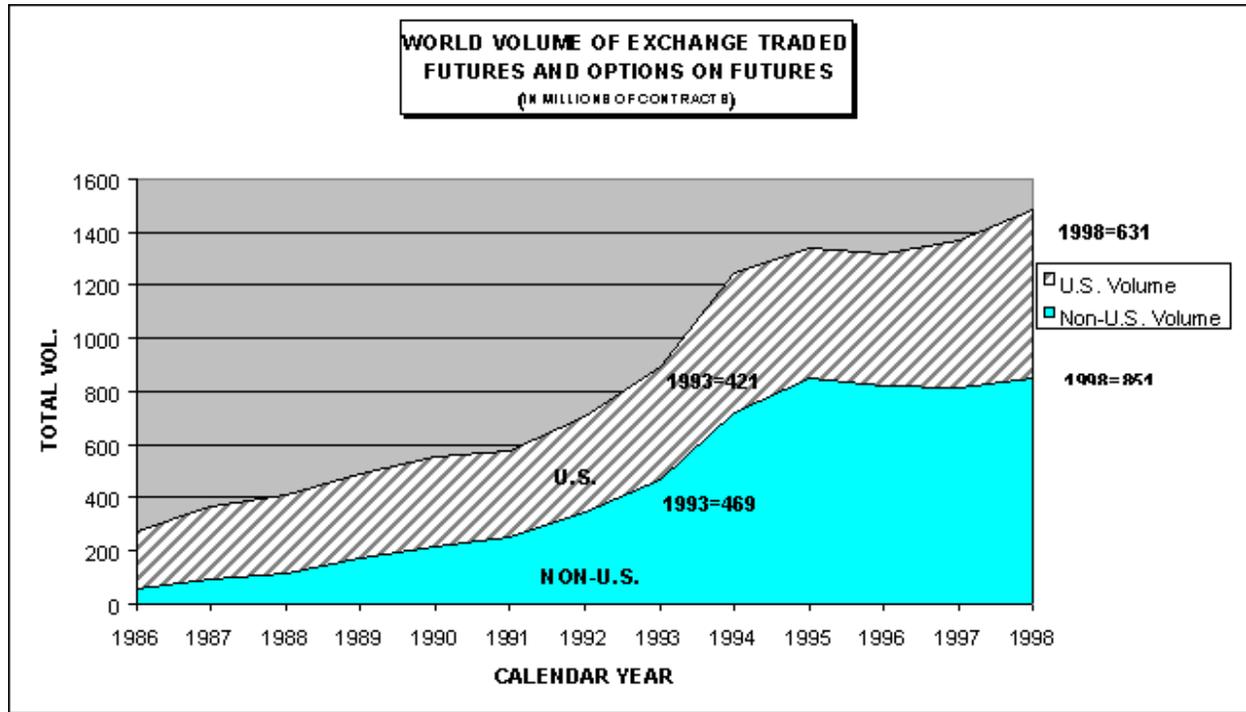
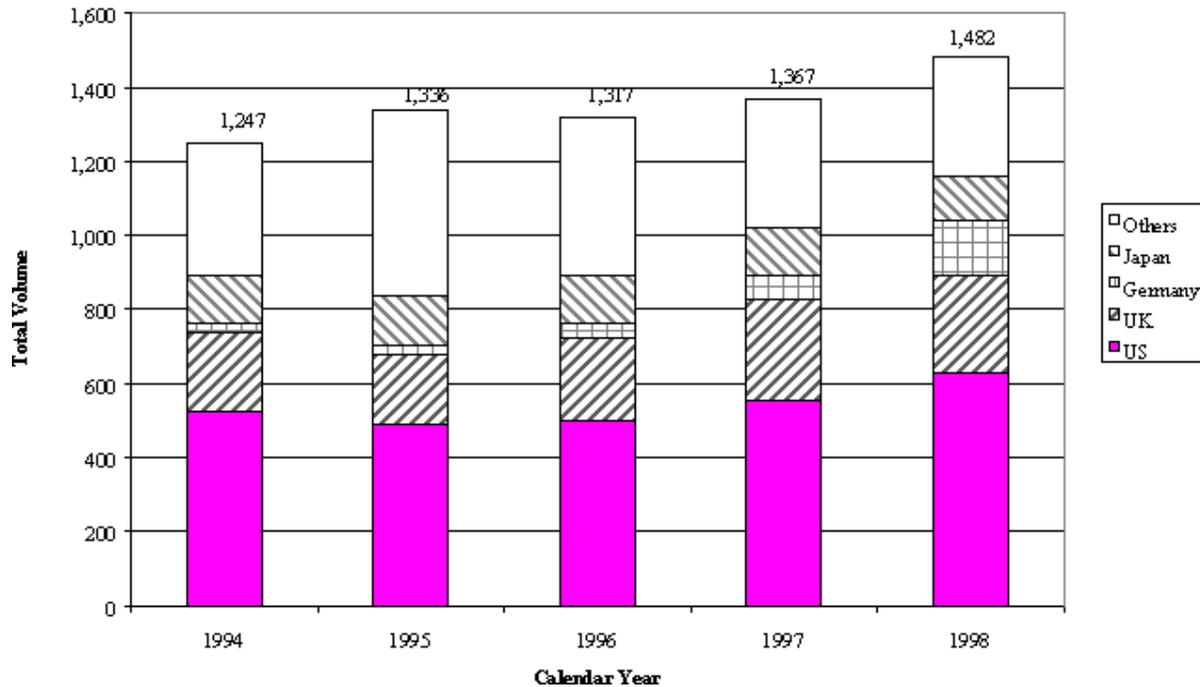


CHART B

**GLOBAL EXCHANGE TRADED COMMODITY VOLUME-TOTAL AND TOP FOUR COUNTRIES
1994-1998
(Millions of Contracts)**



with the second highest level of trading volume (next to the U.S.) with the United Kingdom (U.K.) showing the third highest level. Table III depicts the top ten futures and option exchanges in the world during 1993 as compared to 1998.^[6]

The growth of U.S. trading volume has followed a pattern similar to that of worldwide growth. Over the period 1994-1998, total U.S. futures and option trading volume increased by about 210 million contracts, representing an average annual growth rate of about 8.4 percent. This compares to an increase of 205 million contracts and an average annual growth rate of 14 percent over the period 1986-1993.

For both U.S. and foreign markets, the rate of growth of futures and option volume has slowed in the first seven months of 1999 compared to 1998. Total U.S. futures and option trading volume grew by about one percent and foreign trading volume was about even compared to the same period in 1998.

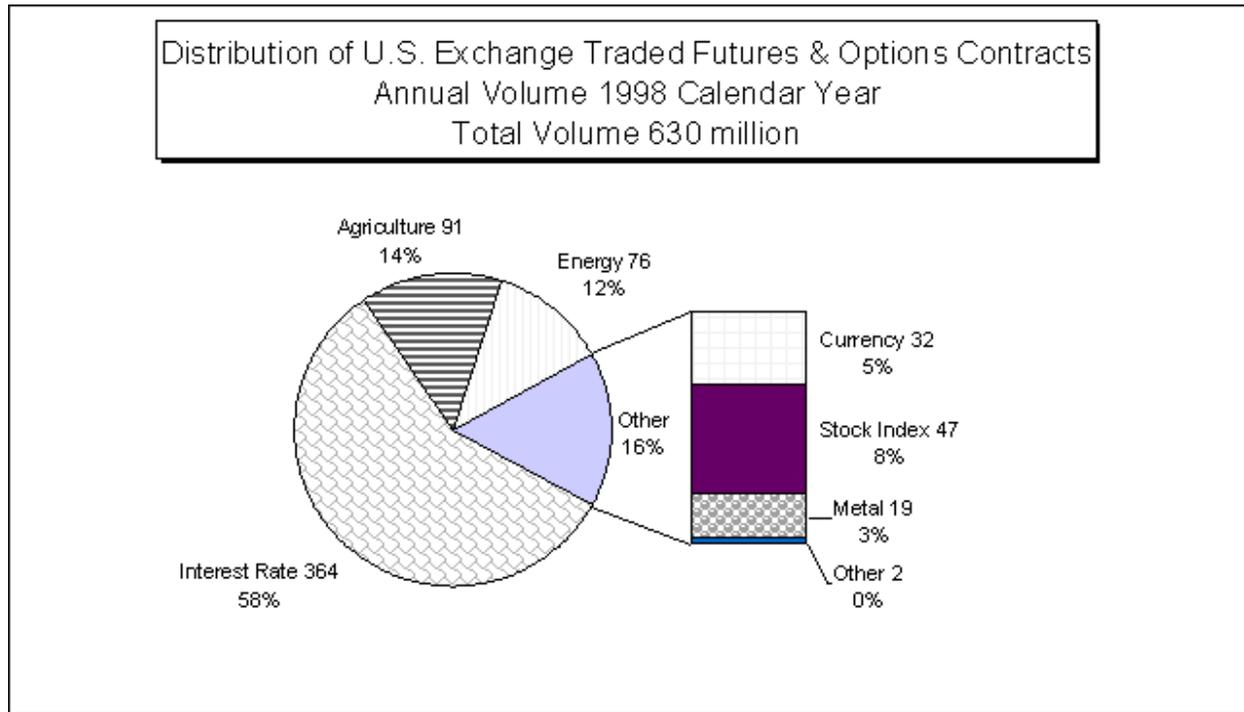
The 1994 Study noted that innovative futures contracts on nontraditional commodities accounted for most of the volume growth prior to year-end 1993. This resulted in a shift in volume from contracts on agricultural commodities to financial commodities. As a result, in 1993 interest rate futures and option contracts accounted for 52 percent of total annual volume, currency products 10 percent, stock indexes four percent and agricultural contracts 16 percent.^[7]

Two of these commodity categories, interest rates and stock indexes, have accounted for the majority of volume growth since 1993 and now account for nearly two-thirds of activity on U.S. exchanges (see chart C). For the period 1993 through 1998, 65 percent of the increase in total annual U.S. trading volume was in interest rate contracts and 15 percent was in stock index contracts. In 1998, the two most active contracts traded on U.S. exchanges were Chicago Board of Trade (CBT) U.S. Treasury bonds followed by Chicago Mercantile Exchange (CME) three-month Eurodollars, together representing about 47 percent of total volume. The next three leading contracts were CBT 10-year U.S. Treasury notes

followed by Crude Oil traded at New York Mercantile Exchange (NYMEX) and the Standard and Poor (S&P) 500 Index futures contract traded at the CME (see table IV). This ranking of the top five domestic contracts was unchanged on the basis of trading volume for the first seven months of 1999.[8]

U.S. market innovations in other product areas have continued, with the Commission approving large numbers of new futures and option contracts during each of the last three years.[9]

CHART C



Many of these new contracts involve new product areas. Among these new product areas are inflation indexed debt instruments, catastrophe insurance, electricity, dairy, coal, and indexes of degree days and bankruptcy. Others involve the refinement of contracts in existing product areas to serve better specific industry groups as market niches. Few of these new contracts face direct product line competition from foreign exchanges; however, for the most part they have garnered little trading interest to date.

The Stabilization of the U.S. Market Share

At the time of the Commission's 1994 Study, the U.S. exchanges' share of total worldwide futures trading volume had been falling steadily since mid-1980s. Specifically, between 1986 and 1993, the U.S. share decreased steadily from 79 percent to 47 percent. The 1994 Study attributed much of this decline to the initial introduction and growth of new markets abroad, rather than to the stagnation or over-regulation of U.S. markets.

Although the U.S. futures trading share continued to decline subsequent to the 1994 Study, falling to 42 percent in 1994 and to 37 percent in 1995, it has *increased* in each of the subsequent three years, to 38, 41, and 43 percent, respectively.[10] And, while three years is insufficient to identify a trend, a stabilization of the U.S. share of world trading volume is consistent with the market maturity hypothesis that in the 1994 Study explained the earlier *fall* in the U.S. trade share. That is, successful new entrants to the global futures trading arena, emulating the success of the first financial futures contracts traded in the U.S. by satisfying local and regional risk management needs, ultimately eroded the global market share

of the U.S. in futures markets generally. This occurred despite continued, vigorous growth in U.S. trading volume. As non-U.S. futures markets developed and grew, it was to be expected that the U.S. share of worldwide trading volume would fall. At the same time, the explosive growth in foreign futures markets and volume that characterized the period examined in the 1994 Study appears to have slowed. This suggests that at some point the U.S. share would stabilize and that point may have arrived within the last three years.

The Composition of Global Futures Markets

An important aspect of the market maturity argument summarized above is the notion that successful foreign futures markets were satisfying local or regional risk management needs rather than competing directly with U.S. markets. This feature of the global futures trading landscape was documented in some detail in the 1994 Study and continues to prevail.

Tables V and VI set out the 25 most active foreign futures contracts in 1998 and the foreign futures contracts that have grown the most in terms of trading volume since the 1994 Study, respectively. As these data show, the leading commodity futures and option contracts traded overseas are based on non-U.S. financial instruments, predominantly interest rate and equity index contracts. Fourteen of the top 20 foreign contracts, including the top nine, are financial products. Interest rates represent the most important commodity group, accounting for 58 percent of total foreign volume in 1998 compared to 52 percent in 1993. Within this category, home-country or regional government bond and short-term interest rate contracts account for the vast majority of exchange trading activity overseas.

Over the period 1994 and 1998, 55 percent of the volume growth on foreign exchanges occurred in interest rate products, mostly government debt contracts. Other commodity groups accounting for substantial growth in foreign trading volume over this period are equity indexes and metals, representing 23 and seven percent, respectively, of total growth in foreign volume during this period. Trading data for 1999 show equity indexes growing most rapidly from the previous year.

The most significant change in the composition of foreign futures markets since the 1994 Study has been the formation and success of EUREX, an all-electronic futures and securities exchange. EUREX, which was formerly known as the Deutsche Terminbörse (DTB), was formed in 1998 by the merger of the German DTB and the Swiss exchange SOFFEX. Over the 1993-98 period, the combined exchanges generated over a 700 percent increase in trading volume. Between 1997-98 EUREX increased its proportion of world volume from five percent to 10 percent, and during early 1999 it recorded the largest volume of any exchange in the world. EUREX's growth is largely attributable to record volume in its interest rate derivatives, particularly its German government debt products. In 1998, the long-term German government bond, known as the Bund, was the leading non-U.S. exchange-traded derivatives contract. Other high volume futures and option contracts on EUREX include the BOBL-medium term government debt, the SCHATZ, the two-year government note derivatives contract, and the DAX, German stock index contract.

EUREX's success may be associated not only with the presence of an active domestic cash market for its exchange-traded derivatives, but also with its method of trading. Indeed, trading in Bund futures, which previously traded actively by open outcry on the London International Financial Futures and Options Exchange (LIFFE) in the U.K., has shifted almost exclusively to the electronic EUREX market.^[11]

Further, the adoption of the euro as a common currency for 11 countries in Europe is a development that is already having important competitive implications for domestic as well as foreign exchanges. This has virtually eliminated currency and interest rate differentials in these 11 countries and

has altered the competitive landscape in Europe. It was widely anticipated that, after the introduction of the euro, business would no longer be able to support all of Europe's 22 futures exchanges. Many of these had been established and survived mainly on futures contracts based on their own nation's interest rates -- and those national rates have vanished in countries that have adopted the euro.

A final development that underscores the importance of local or regional hedging needs is the introduction and immediate success of the Korea Stock Exchange's (KSE) KOSPI-200 futures contract in 1998. The KOSPI-200 is an index of 200 Korean stocks. The KSE's contract traded nearly 18 million contracts in its first year and continues to have large volume in 1999.

Structural and Technological Change in the Global Futures Industry

In addition to the growth in the volume of futures and option trading in foreign jurisdictions, a recent increase in exchange merger activity and the formation of alliances among various exchanges, as well as the introduction of new technologies, will have a significant impact on the global competitiveness of U.S. exchanges. The effects of these changes have been to concentrate trading activity among fewer distinct entities, thereby altering the organization of the industry. Such changes ultimately alter the way in which exchanges compete to attract volume to their markets. This section reviews some of the recent mergers and alliances that have taken place and the implications they have with respect to the industrial organization of the industry. In addition, the role that new technologies, in particular electronic communications and trading, are playing in the restructuring of the industry is examined.

Mergers and Alliances

Since the completion of the 1994 report, the structure of the futures markets throughout the world has changed dramatically as exchanges in the U.S. and worldwide have merged and formed alliances with one another. By merging and forming alliances, exchanges hope to capture scale efficiencies by combining similar functions from separate exchanges, such as administration tasks and clearing. They also hope to create a larger customer base by providing better access to a greater variety of contracts than previously available at either of the exchanges. The greater assortment of available contracts at a particular exchange may reduce costs due to scale efficiencies derived from trading on a single exchange. Exchange users are then better off to the extent that such benefits are passed on to them.

In 1994, the two largest futures exchanges in New York, NYMEX and Commodity Exchange, Inc. (COMEX), consolidated their operations to create the fourth largest exchange in the world. At the time of the merger, the exchanges indicated that the merger would result in greater efficiencies in clearing, floor operations, order execution, staffing and training.^[12] Exchange representatives also expressed the view that the merger will allow the exchange to increase its emphasis on market research and development.^[13] Under the terms of the merger, members of NYMEX and COMEX gain trading access to certain contracts on each other's exchanges thereby potentially boosting liquidity in those contracts.

A second consolidation that has taken place in New York City's futures markets has been undertaken by the New York Cotton Exchange and its affiliates (NYCE) and the Coffee, Sugar and Cocoa Exchange (CSCE) to create the New York Board of Trade (NYBOT). The NYCE was established in 1870 and has primarily traded cotton throughout its history. The CSCE, created in a previous merger of the Coffee and Sugar Exchange and the New York Cocoa Exchange, has primarily traded coffee, sugar, and cocoa over its lifetime, but has recently added cheese, milk products, and butter to its mix. Other divisions and subsidiaries of NYCE trade orange juice, stock indexes, and currencies. In addition, FINEX, the financial division of NYCE, in 1994 created FINEX Europe in Dublin, Ireland, as a complementary trading facility located in Europe.

A more novel endeavor of the NYBOT is a joint venture between NYBOT and Cantor Fitzgerald, L.P., a large primary dealer and interdealer brokerage firm in U.S. Treasury securities. In 1998, the CFTC approved the creation of the Cantor Financial Futures Exchange (CFFE). The CFFE is a computer-based trading system for futures contracts on U.S. Treasury securities. Trading is conducted on the Cantor System, a trading system also used by Cantor's subsidiary, Cantor Fitzgerald Securities, LLC, which operates in the U.S Treasury security cash market as an interdealer-broker. NYCE is responsible for CFFE's self-regulatory responsibilities and clearing functions. Under the system, authorized users of the system enter orders for their own or for their customers' accounts via a terminal keyboard into the Cantor System for matching by a computerized algorithm. An advantage that the partnership between the CFFE and NYBOT brings to the marketplace is that customers of the NYBOT have ready access to a variety of futures and option contracts in addition to the cash market for government securities.

In Europe, in 1998 the German DTB and the Swiss SOFFEX merged to form EUREX. The emergence of EUREX has been notable for its "capture" of a significant volume of trading in Bund futures from LIFFE. Generally, once an exchange has established a significant level of trading in a contract, it is very rare for another exchange to establish significant trading levels on like contracts. Within a very short time period, however, EUREX has become the dominant market for Bund futures. In 1993, LIFFE traded more than three times as many Bund contracts as were traded on the DTB. By 1998 the Bund contract on EUREX was the leading non-U.S. exchange-traded futures contract, trading nearly five times as many Bund contracts as that traded on LIFFE. Differences in regulatory structures between the British, Swiss, and German systems have not been suggested as playing a role in the shift. The regulatory jurisdiction applicable to trading on LIFFE and EUREX has remained the same throughout the shift in Bund trading volume to EUREX.

While some exchanges have sought to increase the size of their networks through mergers, others have sought out alliances and linkages with other exchanges, particularly overseas. In 1984, the CME and SIMEX created a trading link between exchanges that established the Mutual Offset System, allowing market participants to establish or offset positions on either exchange. Use of the system covers currencies, interest rates, and equity indexes. On February 8, 1999, the two exchanges agreed to extend the Mutual Offset System to the year 2004. In early 1999, the CME, Société des Bourses Françaises (SBF) and SIMEX established an alliance giving members of the exchanges trading privileges and the ability to cross margin positions with respect to each other's contracts traded through the CME's GLOBEX₂ trading system. In September 1999, it was announced that Brazil's BM&F would join the alliance. Even more recently, the CBT has entered into discussions with EUREX to create a link between the two exchanges. While the details of a linkage have yet to be determined, the linkage would be designed to create a common electronic global trading platform, giving members and customers of each exchange access to each other's product.

New Technologies

The emergence of new computer and communication technologies is also playing a critical role in the restructuring and redefinition of the trading environment of the futures industry. The dramatic increase in computing capacity and concomitant fall in computer prices have given the exchanges an inexpensive means to list new contracts and to link operations. As discussed above, several exchanges have established computerized trading links enabling members and customers of exchanges to trade each other's contracts. The availability of cheap computer capacity has also meant that exchanges have the ability to replace relatively expensive populated trading floors with less costly computerized trading systems.

The most dramatic shifts from trading floors to computerized trade matching systems have taken place in Europe. In 1998, Marché à Terme International de France (MATIF) adopted electronic trading

alongside the trading of its contracts on the floor of the exchange. Within weeks the majority of volume had shifted to the electronic platform. As mentioned above, EUREX, which uses an electronic trading platform, has become the primary market for trading Bund futures, displacing LIFFE, at the time a pit-based exchange, as the dominant market.

The impact that technology, in particular electronic communications, will have on the futures industry and trading platforms is currently a subject of great debate. While many in the futures industry express the view that electronic trading will eventually take the place of the trading pit, advocates of the trading pit are just as adamant in their position that trading pits offer superior quality trade executions. While electronic trading systems may require lower trading fees than traditional exchanges, when the market impact cost of executing a large trade is considered, it is not clear that electronic exchanges always offer a lower total cost of trading. The relative success of the two platforms ultimately will be determined by the marketplace. Nevertheless, it is interesting to examine the impact that electronic technology is having on the traditional trading pit, not only as a potential replacement but also as a potential complement.

The popular debate over electronic technology is centered on if or when electronic trading systems will replace the pit. However, it should be noted that this technology is also being accessed in support of pit trading. Sophisticated electronic communications and computer systems are at the core of certain alliances between exchanges. A proposed linkage between the CBOT and EUREX, and the alliance between the CME, SBF and SIMEX are made possible by high-speed communications networks and sophisticated computers. These partnerships allow the exchanges to increase the size of their networks and offer a greater variety of contracts to each other's members and customers, thus enhancing the value of their offerings to their customers.

Technology is also changing the way in which pit-based exchanges are able to deliver orders to the floor of the exchanges and in turn route them back out for clearing. By tradition, or necessity, pit-based exchanges largely were a paper-based operation. Orders were delivered to the pit on slips of paper, transaction fills were recorded on paper and sent back out through runners to be confirmed and cleared through runners. As communication technologies have advanced, much of the order routing system is being replaced by the telephone and computer. For example, the major U.S. exchanges are increasing their use of automated systems to route orders from brokerage firms to the correct floor booth, broker, clerk, or electronic trading systems.^[14] Other electronic systems allow brokers and clerks to handle customer orders more efficiently.

The significance of these automated order routing systems is that they help pit-based exchanges to compete with electronic exchanges in areas where electronic systems are believed to have an advantage—reduced transaction costs, more rapid trade matching and clearing, and enhanced audit capability. In essence, the trading pit is becoming a hybrid system in which the only nonelectronic feature of the traditional pit that remains—the actual matching of a trade and the liquidity supplied by floor traders willing to take the other side of a trade—is that feature which is often identified as the pit's greatest advantage.

In assessing the current debate on pit trading versus electronic trading, proponents of pit trading focus on the ability of a large population of floor traders to provide liquidity and match trades better than electronic systems. They argue that electronic systems lack the ability to convey information found in the pit setting to participants in an electronic system. This failing, they argue, gives a distinct advantage to the pit-based system. Others, however, question exactly what information found on the trading floor is useful or point out that, where it is useful, such information could be introduced to the electronic marketplace. Kollock (1997)^[15] asks the question, “[b]ut what is it in particular about open outcry that makes it such a useful ‘interface’?” He indicates that research has not been able to identify the crucial

elements of open outcry nor how they work. Kapustiak (1988)[16] notes that open outcry works because locals are willing to stand in the pit and make a market. They do this, however, because they make money by virtue of having the advantage of seeing and hearing things that traders away from the pit do not. He goes on, though, to argue that much of this information could be incorporated into an electronic trading system. Some information that he identifies as being potentially useful are participation levels, trader identification, action and activity indicators, order distributions, and technical indicators.

As stated above, the ultimate platform or platforms on which futures trading is based will depend on demand from the market and the ability of exchanges to adapt themselves to those demands and offer customers the greatest value. To the extent that pit trading efficiently offers value to customers, that system will endure. To the extent, however, that electronic systems can replicate the advantages of the pit and offer them at a lower cost to customers, then that trading system will prosper and grow.

III. U.S AND FOREIGN REGULATORY SYSTEMS

On the basis of trends in market data alone, U.S. futures markets have remained competitive with foreign futures markets in spite of the rapid growth of the latter since the late 1980s. As discussed above, the growth of foreign futures trading has been based almost exclusively upon localized commodities and financial instruments as opposed to products or instruments underlying U.S. futures markets. Furthermore, the U.S. share of world futures trading volume has stabilized and even risen slightly in recent years. Nevertheless, this chapter examines the domestic and foreign futures regulatory systems in order to determine (1) the extent of international regulatory parity, and (2) whether there are competitive problems caused by the U.S regulatory system.

CFTC Regulatory Program

The CFTC is an independent agency created by Congress in 1974 to regulate commodity futures and option markets in the United States.^[17] The bases identified by Congress in the CEA for regulating the futures markets in the public interest are the markets' price discovery and risk-shifting functions.^[18] In implementing the CEA, the CFTC is responsible for fostering the economic utility of futures markets by encouraging their efficiency, monitoring their integrity, and protecting market participants from abusive trade practices and fraud.

As discussed in detail above, since the CFTC was created, futures trading has expanded rapidly, beyond the domain of traditional agricultural and other physical commodities. U.S. futures and option exchanges now trade futures and option contracts based on a vast array of nontraditional commodities, including foreign currencies, U.S. and foreign government securities, U.S. and foreign stock indexes, macroeconomic indexes, electricity, and weather data. These products are traded on 11 futures exchanges designated as contract markets under section 5 of the CEA by the CFTC.^[19] Along with these exchanges and the National Futures Association (NFA),^[20] as of September 1998, the CFTC regulated the activities of 214 commodity brokerage firms, 43,400 salespeople, 9,448 floor brokers, 1,375 commodity pool operators, 2,531 commodity trading advisors, 1,348 floor traders, and 1,163 introducing brokers.^[21]

The CFTC's regulatory and self-regulatory regimes provide three basic types of protection for futures exchanges and their customers. First, the *financial integrity of the marketplace* is protected by requirements applicable both to intermediaries acting for customers in regulated transactions and to the exchanges on which such transactions are executed. These include minimum capital requirements, financial reporting requirements, and customer funds protections on the one hand and exchange clearing and settlement systems and procedures on the other.

Second, *market integrity and efficiency* are protected by statutory and regulatory requirements designed to assure the competitiveness and transparency of exchange markets. The CEA prohibits manipulation and fraud, mandates open and competitive execution of trades, and proscribes certain trading abuses. In addition, the CFTC requires markets subject to its regulation to disseminate publicly information on prices, trading volume, and open interest and to maintain records sufficient to permit reconstruction of trading and to detect and punish abuses. Market integrity is also supported by CFTC review of new products and exchange rules and by long-standing exchange and Commission market surveillance systems and procedures.

Finally, the futures regulatory framework incorporates a number of important *customer protections* that include fitness screening and registration of futures professionals and various disclosure and sales practice requirements.

In its 1994 Study, the Commission committed itself to maintaining a flexible, cost-efficient

regulatory program. Since then it has adopted a number of initiatives to reduce the regulatory burden on U.S. exchanges. These regulatory reform measures are listed in table VII.

Important Regulatory Similarities and Differences

Although countries may employ different means of establishing an effective regulatory structure, most countries with internationally active futures exchanges appear to share certain common regulatory concerns for customer and market protection (including financial integrity). Indeed, such markets, as well as the regulatory frameworks within which they operate, appear to have more similarities than differences. As discussed more fully below, the international harmonization of regulatory schemes has been facilitated by the work of the International Organization of Securities Commissions (IOSCO).[\[22\]](#)

For example, there is a general recognition that organized markets require prudent standards to function properly. The content and complexity of regulatory systems may differ from jurisdiction to jurisdiction, often based on the particular regulator's experiences. However, most regulators worldwide recognize that to serve as commercially viable risk management and price discovery vehicles, their markets must meet -- and must be perceived as meeting -- international standards of integrity in business conduct, as well as financial and market supervision. Accordingly, despite differences in infrastructure, efforts are being made by various international jurisdictions to assure that their standards of market supervision and customer protection meet commonly accepted thresholds.

In the context of discussions of international competition, the following specific distinctions between the U.S. and foreign regulatory systems have received significant attention recently.

Product Approval

Most jurisdictions, recognizing the benefits of a "government stamp of approval," require regulatory approval of futures and option products that are traded. However, the scope of this review and its implementation in practice appear to vary from jurisdiction to jurisdiction.[\[23\]](#)

In this regard, CFTC staff recently surveyed the statutes and regulations of 10 jurisdictions in nine countries with substantial futures and option trading volume.[\[24\]](#) All 10 jurisdictions require that futures exchanges be formally authorized or recognized by a regulatory authority. Moreover, 7 of the ten jurisdictions (Australia, France, Italy, Ontario, Quebec, Singapore, and Spain) require prior regulatory review (resulting in approval or the absence of an objection after notice) of the conditions, terms, and specifications of proposed new futures and option contracts: three jurisdictions (Ontario, Singapore, and Spain) require specific approval, two (Australia and France) have an "objection only" procedure, and two others (Italy and Quebec) have a combined approval/objection procedure. One country (U.K.) has an informal review procedure and two countries (Germany and Switzerland) delegate the review function to the exchange management. Those jurisdictions with formal review procedures stipulate time frames for approval or objection that range from five to 30 days.

In the U.S., Part 5 of the CFTC regulations establishes policies and procedures under which the CFTC reviews proposed futures and option contracts to assure that they meet the requirements of sections 5 and 5a of the CEA. In April 1997, the Commission by rule expedited its review and approval of new contracts.[\[25\]](#) Under that "fast-track" procedure, applications for designation of certain cash-settled futures and option contracts are deemed to be approved 10 days after receipt, and others 45 days after receipt. The Commission is also considering permitting exchanges to list contracts for trading without prior Commission approval.[\[26\]](#)

Large Trader Reporting Requirements

Under Part 17 of CFTC rules, brokers are required to report the daily futures and option positions of any trader that owns or controls a position in any delivery month of a commodity that equals or exceeds the reporting levels specified in CFTC rule 15.03. The firm also must identify the persons who own or control those reportable positions by name and address. The CFTC also may make special calls for information on futures commission merchants and foreign brokers carrying accounts for traders with large positions and on large traders themselves.[\[27\]](#)

Most foreign regulatory authorities have the ability to request information from markets and traders subject to their jurisdiction. However, the majority of such markets (including all of the major markets) do not require the routine reporting of large positions, either by traders or by brokers, to relevant regulatory authorities. Although the lack of a reporting system may appeal to some traders, particularly foreign entities not accustomed to providing business information to regulators on a routine basis, the CFTC nevertheless believes that its reporting requirement is necessary to permit it to surveil the markets and to respond promptly to questions about market participation and events. The relative burden of the CFTC's large trader reporting system is ameliorated, however, by the electronic filing of most data and by upward adjustments to reporting levels as markets become more active.[\[28\]](#) [\[28\]](#)

Regulation and International Competition

Concerns over the effect of U.S. regulation of futures markets on their international competitiveness had been expressed even prior to the establishment of the CFTC. During the hearings that preceded the passage of the Commodity Futures Trading Commission Act in 1974, for example, a witness representing the NYCSE, the NYCE, and the COMEX stated that the regulation of U.S. futures markets in world commodities (*e.g.*, coffee, sugar, cocoa, and silver) could mean that "futures business in the world commodities would shift...entirely to competing foreign exchanges."[\[29\]](#) In fact, however, the U.S. share of world futures trading volume in each of these world commodities remains significant. Over the 1994-1998 period, U.S. trading volume in each of these commodities increased and the U.S. share of total world futures and option volume averaged close to 65 percent for sugar, about 50 percent each for coffee and cocoa, and about 85 percent for silver. By comparison, in 1973, just prior to the establishment of the CFTC, the U.S. market shares were 55 percent for sugar, 54 percent for coffee, 31 percent for cocoa, and 81 percent for silver.[\[30\]](#)

Among contracts traded in both the U.S. and overseas, competition between the U.S. and U.K. copper futures markets has been marked. Trading in copper futures started on the LME in 1877 and on COMEX in 1933 and volume in the LME contract is five to six times greater than that on the COMEX. Although the LME's futures contract permits delivery at various locations around the world, while the COMEX contract specifies U.S. delivery only, both exchanges view the contracts as direct competitors.

In April 1995, the LME established delivery points for its copper futures contract in the U.S. in a direct challenge to COMEX's dominance of the North American market. COMEX officials at that time expressed concern that the LME copper contract would adversely affect its market share due to less comprehensive regulation. They characterized the LME as a market with no price transparency, no audit trail, and a margin system based solely on credit. Later, in 1997, the COMEX lengthened the trading hours for its copper contract by one hour and fifteen minutes to broaden the trading overlap with the LME. In addition, in 1998 the COMEX made a number of technical rule changes to its existing copper futures contract which may improve the competitive posture of the existing futures contract in comparison to that offered on the LME.

In response to the emergence of pricing anomalies in the U.S. and London markets, the CFTC launched a formal investigation of activity in the copper market. This investigation, conducted in collaboration with regulators in the U.K., uncovered evidence of an alleged manipulation of the LME

copper market involving, among others, Sumitomo Corporation. This manipulation is alleged to have caused copper prices in the U.S. futures and cash markets to become artificially high. In May 1998 Sumitomo agreed to pay a record civil monetary penalty of \$125 million in a settlement with the CFTC for its involvement in the manipulation.[31] In June 1999 subsidiaries of Merrill Lynch paid a civil monetary penalty of \$15 million in settlement of the CFTC's complaint charging them with aiding and abetting a manipulation.[32]

In the aftermath of the Sumitomo affair, the British regulators, after a six-month review, concluded that the LME needed to improve its self-regulatory standards and practices.[33] The LME accepted all of the recommendations without reservation and by the end of 1997 action had been taken on all of them, implementing the majority. Accordingly, many of the regulatory disparities between the markets have been narrowed and they will be narrowed further if the proposed changes in the draft Financial Services & Markets Bill are enacted.[34]

COMEX's market share of trading volume of copper futures and options contracts has actually increased a bit since the LME established its U.S. delivery points. In 1995, trading in COMEX copper futures stood at about 12 percent of the global market. This share has increased gradually each year since, to nearly 15 percent for 1998, and 16 percent for the first seven months of 1999.

In general, the U.S. regulatory regime does not appear to have been a significant factor in the loss of U.S. market share relative to total world trading volume. There exist no examples of a foreign futures exchange developing (or, for that matter, being introduced) while a similar domestic contract was being reviewed by the CFTC. There have been no foreign futures contracts introduced since the 1994 Study that could be construed as being directly competitive with U.S. futures markets. Nor has there been an apparent outflow of U.S. trading volume to foreign markets in those commodities traded both in the U.S. and abroad, despite U.S. reporting or other regulatory requirements. In any event, as discussed in the following section, most international futures regulators cooperate readily to enforce protections common to their regulatory schemes and, over time, have tended to harmonize their regulatory systems thereby reducing any regulatory incentives to the movement of trading volume from one jurisdiction to another.

International Regulatory Harmonization

As the trading statistics reviewed above demonstrate, there is a lack of solid evidence supporting the notion that disparities in regulatory schemes are having significant effects on the U.S. competitive position. World futures regulators are in any event working to harmonize national regulatory regimes so that regulation does not unnecessarily impede market access, investment decisions, and economic innovation. As a corollary result, the opportunities or incentives for regulatory arbitrage are being reduced.

The best practices guidance principles adopted at a meeting of derivatives regulators in Tokyo in 1997 demonstrate an international consensus on how to regulate commodity derivatives markets and a commitment on the part of regulators to enhance their regulatory effectiveness. They also form a framework within which increasing harmonization of regulation may develop.

Specifically, at the end of the Tokyo meeting, the regulators issued a Tokyo Communiqué that, among other things, endorsed two guidance papers, one on best practices for the design and/or review of commodity contracts and another on market surveillance and information sharing. This guidance represents the first occasion on which regulators responsible for overseeing commodity derivatives markets have agreed to international standards for the supervision of these markets. In September 1998, IOSCO's Technical Committee adopted versions of these guidance papers that were expanded to cover financial derivative contracts in addition to physical commodity futures.

IV. CONCLUSIONS

As with the Commission's 1994 Study, this report has attempted to assess the international competitiveness of U.S. futures exchanges by examining domestic and international trends in trading activity, domestic and foreign regulatory developments, and major changes in the *modus operandi* of world exchanges. Moreover, the findings of this report are very similar to the findings of the 1994 Study.

Specifically, the current study found continued steady and vigorous growth in U.S. futures trading activity and in the number and diversity of instruments traded domestically since 1994. Furthermore, while non-U.S. trading volume also has grown vigorously, the U.S. share of world trading volume appears to have stabilized over the past five years -- indeed, that share *increased* in 1998 (from 40.5% to 42.5%) for the first time since the initial development of financial futures abroad in the early 1980s. In 1994, the Commission attributed the falling U.S. share of world trading activity to the proliferation of new, rapidly growing markets abroad combined with the maturity of U.S. markets. The more recent evidence suggests that non-U.S. markets are now maturing themselves and experiencing steady but somewhat slower growth. Also similar to the 1994 Study, the current inquiry has found no examples of head-to-head competition between a U.S. futures contract and a similar foreign contract in which the U.S. contract has "lost out" to the foreign market.

The market evidence, then, appears to clearly describe a vigorous and innovative U.S. futures industry that has remained competitive internationally.

Focusing on regulation *per se*, both the 1994 Study and the current study found that the various regulatory schemes employed around the globe exhibit greater similarities than differences, even in the area of product approval. Indeed, significant market events that occurred over the period studied have had the effect of infusing greater harmony into the international regulatory matrix. Shifts in market activity that have taken place in the global futures industry since the mid 1980s appear to have resulted from the continued market maturation process, nonregulatory cost considerations, and technological change rather than from international regulatory disparities. At the same time, the CFTC's commitment, first made in the 1994 Study, to work toward maintaining a flexible, cost-efficient regulatory program without sacrificing market integrity and customer protections, continues. This commitment remains strong, especially in light of the increasing pace of technological change.

In sum, neither trends in the locus of trading activity nor regulatory developments over the last five years suggest an erosion of U.S. futures markets' global competitive position. However, to the extent that the movements toward electronic trading systems and exchange consolidation that were observed over the period of this study continue into the future, the competitive structure of global futures markets is likely to change significantly. The Commission is committed to continued regulatory flexibility in the face of these trends. However, it is likely that the potential cost savings generated by these trends, and not the nature of the differences among the regulatory systems of various nations, will be most important in shaping the composition and trading interest of the global futures industry in the twenty first century.

Table I				
World Exchange-Traded Futures and Option Trading Volume				
By Calendar Year (in millions of contracts)				
				U.S. Volume as a
	World	U.S.	Non-U.S.	Proportion of
Year	Volume	Volume	Volume*	World Volume
1986	272	216	56	79%
1987	368	275	93	75%
1988	412	295	117	72%
1989	491	323	168	66%
1990	556	341	215	61%
1991	577	325	252	56%
1992	706	365	341	52%
1993	890	421	469	47%
1994	1247	527	720	42%
1995	1336	490	846	37%
1996	1317	499	818	38%
1997	1367	555	812	41%
1998	1482	631	851	43%

*Only products comparable to those regulated by the CFTC are included in the above totals. Futures and options on futures are included; options on individual stocks and stock indexes are not included.

[1] As now defined in section 1a(10) of the Commodity Exchange Act (CEA), 7 U.S.C. 1a(10).

[2] At the time of publication of this report, 1998 was the last full year for which trading data were available, but data for the first seven months of 1999 had also been released. As a consequence, the study period is defined as 1994-1998, but data for January through July 1999 are used to supplement the analysis where relevant.

[3] This would include both traditional, open outcry exchanges and electronic trading systems. This report does not address over-the-counter (OTC) derivative transactions, which was the subject of a separate congressionally-mandated CFTC study (see, The Report of the CFTC: OTC Derivative Markets and Their Regulation (October 1993) (study required by the Conference Committee that considered the FTPA, Pub. L. 102-962, 106 Stat. 3590)). Regulatory issues surrounding OTC derivatives markets also are currently being studied by the President's Working Group on Financial Markets.

Moreover, the information presented on U.S. and foreign markets is restricted to those markets under CFTC jurisdiction and comparable foreign markets. Thus, the data include all regulated exchange-traded commodity futures contracts and all options on such futures contracts (options that can be exercised into an underlying futures contract). However, options on stock indexes and options on individual stocks,

products falling under the jurisdiction of the Securities and Exchange Commission (SEC) pursuant to section 2(A)(1)(B) of the CEA, have been excluded.

[4] Data presented in this report principally are drawn from the Futures Industry Association's (FIA's) U.S. and international volume reports. Other data sources include the FIA's Futures and Option Fact Book and the International Futures and Option Databook as well as information obtained directly from several foreign exchanges. Information for this report was also compiled from material maintained by the CFTC for regulatory and/or informational purposes. Exchange and contract activity are measured in terms of reported trading volume (the number of futures and option contracts traded during a given period of time). For commodities where both a futures contract and an option on that futures contract are traded on the same exchange, data regarding the number of traded contracts and trading volume are reported in terms of the single underlying commodity -- not as two distinct contracts -- in view of the complementary nature of a particular futures contract and the option based on that same contract.

[5] All tables are contained in an appendix at the end of this report.

[6] During the first seven months of 1999, EUREX led all other exchanges in total volume of trading. Prior to this year, the CBT had led all domestic and foreign exchanges in trading volume at least as far back as comparable data have been available.

[7] The remainder was composed of energy products (13 percent) and metals (five percent).

[8] The rankings of some of the domestic contracts below the top five, however, did shift on the basis of January-July 1999 volume. The relatively new CBT Dow Jones Industrial Average and CME S&P 500 E-Mini futures and option contracts moved up in the rankings while European currency futures and options moved down.

[9] The Commission approved 58 new futures and option contracts in 1998, 58 in 1997 and 70 in 1996.

[10] For the period January-July 1999, the U.S. share of total world trading volume was 42 percent.

[11] See pp. 19-22, *infra*. This rapid shift of trading from an open outcry to an electronic exchange has raised significant competitive concerns among the U.S. exchanges about whether they too could lose markets to a rival electronic exchange. The sole exclusively electronic exchange in the U.S., the CFFE, trades U.S. Treasury futures which compete directly with CBT Treasury contracts. To date CFFE has not attracted a significant trading volume.

[12] See, Thompson, R. Patrick, "Merger of Two Largest New York Exchanges Will Result in Operating Efficiencies, Largest Physical Commodity Exchange Worldwide," *Swiss Futures and Options Association Review*, June 1995.

[13] See, Rappaport, Daniel, "New York Mercantile Exchange Launches Effort to Enhance, Build COMEX Division Copper Markets," *Swiss Futures and Options Association Review*, January 1995.

[14] Electronic order routing systems include the Computer Order Management, Entry and Timing (COMET) system and Electronic Clerk (EC) system at the CBT and the CME Universal Broker Station (CUBS) system at the CME. These systems facilitate the filling of brokers' order decks, reducing the paper flow and chances for transcription errors and outrades.

[15] See, Kollock, Peter, "Market Morphing," *Futures Industry*, October/November 1997, pp. 15-17.

[16] See, Kapustiak, Wendell, "The Electronic Local," *Futures Industry*, December/January 1998, p. 16.

[17] Section 2(a)(1)(A)(i), 7 U.S.C. 2 of the CEA provides that:

The Commission shall have exclusive jurisdiction, except to the extent otherwise provided in paragraph (B) of this paragraph, with respect to accounts, agreements (including any transaction which is of the character of, or is commonly known to the trade as, an "option," "privilege," "indemnity," "bid," "offer," "put," "call," "advance guaranty," or "decline guaranty"), and transactions involving contracts of sale of a commodity for future delivery, traded or executed on a contract market designated pursuant to section 5 of this Act or any other board of trade, exchange, or market, and transactions subject to regulation by the Commission pursuant to section 19 of this Act

[18] See section 3 of the CEA, 7 U.S.C. 5.

[19] Before an exchange may trade a specific commodity future or commodity option, the exchange must be designated under section 5 of the CEA as a "contract market" for that future or option by the CFTC. Section 5 of the CEA sets out the criteria which an exchange must satisfy before it may be designated as a contract market for a particular contract. Among other things, section 5 requires that the trading of the contract will fairly reflect the general value of the commodity, that measures exist for the prevention of manipulation of prices and that trading will not be contrary to the public interest.

[20] The NFA is a registered futures association under section 17 the CEA, 7 U.S.C. 21, and part 170 of the CFTC's regulations.

[21] See 1998 edition of CFTC Annual Report.

[22] In this regard, the IOSCO Technical Committee agreed in 1990 that the core goals of regulation should be: (1) financial safety, including the integrity of clearinghouses and market participants; (2) fairness, including fiduciary and related customer (investor) protection concerns; and (3) market efficiency and integrity. The differences in regulatory structures by which these goals are achieved may be explained by a number of factors, including different cultural and national customs and practices and legal or juridical distinctions among jurisdictions. In addition, differences in the nature and structure of markets, for example, pit trading as compared to screen-based trading or other electronic trading mechanisms, and differences in the nature and design of products may have important influence on the structure of regulation.

[23] An October 1992 IOSCO paper, "Contract Design of Derivative Products on Stock Indices," illustrates common concerns related to approval. It reflects an international consensus that exchanges and regulators should take account of certain specified criteria relevant to the underlying index in designing or reviewing a derivative product based on a stock index. More recently, as discussed in the following section, commodity futures regulators representing 16 jurisdictions issued a communiqué at the end of a conference held in Tokyo in October 1997 that endorses a set of best practices for the design and review of commodity contracts.

[24] See "Futures Exchange and Contract Authorization Standards and Procedures in Selected Countries," Office of International Affairs, Commodity Futures Trading Commission, August 3, 1999. The jurisdictions included in the review are Australia, France, Germany, Italy, Canada (Ontario and Quebec), Singapore, Spain, Switzerland, and the United Kingdom.

[25] 62 FR 10434 (March 7, 1997).

[26] 64 FR 40528 (July 27, 1999).

[27] 17 C.F.R. Part 21, and C.F.R. Part 18. These requirements form the basis of the CFTC's market surveillance program. Information from the CFTC's large trader data base has been found to be invaluable for monitoring market conditions and the financial and operational viability of relevant firms and, later, to reconstruct market activities. See Report of the Presidential Task Force on Market Mechanisms (Brady Report) (January 1988).

[28] It is noted that both the CBT and the CME objected to a recent Commission proposal to raise reporting levels for a significant number of contract markets (64 FR 5400, February 3, 1999). The CBT claimed that the higher proposed levels would "have an adverse affect on financial surveillance activities" even though they would not likely "hinder....market surveillance activities." The CME objected to the proposal on the grounds that "it [the CME] is best suited to determine appropriate levels for its contracts."

[29] S. Rep. No. 93-1131, 93d. Cong., 2d. Sess., 26 (1974).

[30] Not all of these contracts may be directly competitive because of the quality distinctions that pertain to the underlying commodities. For example, the active NYBOT coffee contract requires delivery of arabica coffee, while the most active foreign coffee futures contracts require delivery of robusta coffee. In contrast, the NYBOT cocoa and world sugar contracts are based on commodities that are also the basis of foreign futures contracts. Other U.S.-traded commodity futures contracts that are directly competitive with foreign contracts include gold, silver, and heating oil. The U.S. markets generally have held their market share for both types of contracts.

[31] Sumitomo simultaneously agreed to pay £5 million to the U.K. regulator, the Securities and Investment Board (SIB), to cover the cost of its investigation. Under its authorizing legislation SIB was unable to seek a civil sanction.

[32] Merrill Lynch, Pierce, Fenner & Smith (Brokers and Dealers) Ltd. (MLBD) simultaneously settled a disciplinary action brought by the LME for breaches of its rules including its rule against assisting clients in manipulating or attempting to manipulate the market. MLBD agreed to pay a fine of £6.5 million. Charges remain pending against other respondents.

[33] Among its recommendations for change were: enhanced market monitoring, with strengthened large position reporting, more and suitably experienced staff and more extensive use of technology; changes to the LME's rules and to the monitoring and enforcement of them, to reflect fully the regulatory obligations owed by its members to its customers and to the market as a whole; more systematic information sharing with British regulators, the London Clearing House and internationally; and improvements in market transparency.

[34] The U.K. Government has published a draft Financial Services & Markets Bill which will reform the regulation of financial services in the U.K. The proposed bill will enable the Financial Services Authority (FSA), the successor to the SIB as the U.K. financial regulatory authority, to impose civil sanctions in relation to conduct by any person which breaches basic precepts set out in the legislation with regard to market manipulation and information misuse. The bill will confer power on the FSA to promulgate a code of conduct that will indicate in broad terms the types of conduct which are likely to fall afoul of the statutory precepts. When these changes are made, the FSA will have similar powers to investigate and discipline individuals for market manipulation as the CFTC has under the CEA. These

changes were undertaken in response to the Sumitomo affair.