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ABSTRACT

E-commerce will have a profound effect on agricultural markets. Due to lower transactions costs, more firms throughout the agricultural value chain will be able to engage in business-to-business e-commerce. Products and services will be increasingly unbundled throughout the marketing channel. Firms will be able to specialize in narrow niches and will face competition from other similarly specialized firms. Many more products and services will be traded as "commodities," and price discovery throughout the value chain will become more transparent and observable. Differentiated or value-added agricultural products, such as high oil corn, or "Roundup Ready" soybeans could be traded on organized, perhaps virtual, exchanges. To increase the probability of success of new contracts, exchanges should use information technologies, demutualize, design contracts to meet industry needs, encourage inter- and intra-market spreading, and develop new means to certify product quality. Producers will benefit from e-commerce if they can gain competitive access to the virtual value chain.

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Introduction

E-commerce will have a profound effect on agricultural markets. Due to lower transactions costs, more firms throughout the agricultural value chain will be able to "plug and play," that is, engage in business-to-business e-commerce. Products and services will be increasingly unbundled throughout the marketing channel resulting in reduced vertical integration. Firms will be able to specialize in narrow niches throughout the channel and will face competition from other similarly specialized firms. Many more products and services will be traded as "commodities," and price discovery throughout the value chain will become more transparent and observable. In short, e-commerce will result in "competitive coordination" of products and services throughout the agricultural value chain.

Greater specialization or intermediation along the value chain is possible because e-commerce and the associated standardization of products and trading instruments lowers the cost of identifying and coordinating specialized participants. Firms producing general purpose technologies (GPTs), which may be very narrow in function and purpose, can also participate in value chains for multiple products (Bresnahan and Gambardella). The adage "the division of labor is limited by the extent of the market" (Smith and Stigler) captures the essence of the impact that e-commerce will have on value chains by increasing the market and promoting greater intermediation.

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Software to manage business-to-business supply chain coordination is commercially available, as are web-based exchanges, such as www.novopoint.com, on which agribusiness can conduct business-to-business (B2B) commerce more efficiently. These online marketplaces will make transactions easier for companies across the food supply chain, from those who supply basic ingredients, to those who convert the ingredients into food products, make packaging for those products, or supply factory parts to the manufacturer. The sites will be secure and confidential with access restricted to authorized parties. For those with access to the system, important information on customers or sellers will be transparent and easily accessible. The trading systems on which these exchanges are built will soon provide the ability to create, manage and control product definitions throughout the supply chain with "general recipes." Companies participating in B2B commerce may interactively exchange information about products and intermediates over the Internet. This will reduce the amount of product information that must be managed along the supply chain.

But, in agriculture, geography and physical processes still matter very much. Because most agricultural products are bulky relative to value, regional specialization is still likely due to efficiencies in logistics and handling, and physical "plug and play" may be limited in both agricultural input and output markets. Thus, e-commerce probably will not eliminate local monopolies in processing and distribution, nor vertical integration along the supply channel. However, because local physical infrastructure, including processing, distribution and service, may be unbundled from other activities in the value chain and supplied locally, e-commerce may nonetheless result in the broadening of

competition in those aspects of the value chain that are not tied to logistics, such as research and development, customer service, financing, pricing and risk management.

Commodity trading and e-commerce

Many people have a clear, intuitive conception of a commodity: a homogeneous, undifferentiated product, often produced in agriculture, that is interchangeable or fully and completely substitutable across consumers and producers. Another key feature of commodities is that they are tradable. Numerous organized commodity exchanges facilitate commerce in commodities throughout the world (see Appendix A for a list of commodity exchanges). Trade on those exchanges relies on clearly defined and well-understood specifications of what is traded or deliverable in fulfillment of contracts established on those exchanges. When the specifications for products traded on an exchange are not sufficiently precise, or do not meet industry standards, trading activity generally diminishes rapidly (Working).

In addition to these conventional conceptions of a commodity, further connotations have lately been added to the term commodity. Commodity is now often used in the sense of a low quality product, with little value-added, and the grade that determines the lowest price for a particular product. Indeed, "commodity" has been become a pejorative word in some corners of agricultural marketing and agribusiness management insofar as it is typically associated with relatively unaggressive, price-taking, marketing strategies that do not yield a premium for value-added or quality. Commodity marketing is also perceived as relatively simple; among the 4 Ps of marketing (product, place, price and promotion), commodity marketing largely depends on price since product is given, promotion is useless, and place should be relatively

irrelevant given the prevalence of arbitrage. Moreover, firms can affect the price received for a commodity primarily through hedging and timing of sales.

Despite these latter conceptions, commodities are not inherently low quality, "lowest common denominator" products, or products of uncertain quality. Rather, commodities can be of any *specified* quality, as long as they are tradable. Moreover, many of the enhanced, or value-added agricultural products currently gaining favor among producers and consumers can be traded as commodities through organized exchanges under the right conditions. The fact that existing commodity futures contracts are ineffective for pricing or risk management for certain products may primarily reflect that these products are *different* commodities than those specified in existing futures contracts. These products, such as high oil corn or "Roundup Ready" soybeans, or agricultural inputs such as glyphosate, may require new, different or modified contracts and exchange trading mechanisms for effective pricing and risk management. Furthermore, this type of trading may be welfare enhancing for all participants in the marketing channel. The simplicity and other benefits of commodity marketing and competitive trading can still hold or be captured for these products.

The market performance and welfare enhancing benefits of organized exchanges are well known. Trading standardized contracts on organized exchanges promotes pricing flexibility, risk transference and price discovery. One of the major drivers of these effects is the reduction in transactions costs of trading made possible by organized exchanges, the clearinghouse guarantee (when available) associated with organized exchanges, and the fungibility of contracts. Producers and consumers may use other trading arrangements, such as forward contracting, or other vertical arrangements, to

price and manage risk, but trading standardized contracts on organized exchanges is often preferred to alternative trading arrangements, *ceteris parabis,* due to lower transactions costs, including the flexibility of entering and exiting contracts. What often induces economic agents to use non-exchange traded instruments for pricing and risk management is the ability to tailor a transaction to meet their needs, which are typically related to quality. In doing so, agents essentially reduce or eliminate the basis risk associated with trading a standardized contract that may deviate in quality or location from the physical product they are trying to price. Exchanges may recapture the pricing and risk management role for products with substantial basis risk by offering contracts that allow for differential prices, or bases, depending on quality or location. Moreover, recent innovations in electronic markets will further reduce the costs of trading products of differing qualities on organized exchanges and will therefore promote trading, even of products produced and consumed in low volumes, on organized exchanges, virtual or otherwise.

Quality, commodities, and a location model

For any given crop or agricultural product, there may be multiple "classes" reflecting different quality and end-use characteristics. These classes may all be variations of a single commodity, or they may represent multiple commodities. For instance, several different classes of wheat, reflecting differences in milling characteristics, are traded in different futures contracts on different organized commodity exchanges. Each different class of wheat is essentially a different commodity. In other cases, there may be multiple quality attributes for a *single* commodity, particularly with respect to location as a distinguishable "quality" attribute. In these cases, it is possible

for a single standardized contract to serve as a pricing and risk management instrument for many locations or qualities for a given commodity. For instance, while futures contracts typically have just one or few delivery locations, the same futures contract may be used as a pricing and risk management for numerous locations other than the delivery point. But, as in the case of wheat, sufficient differences in class or end-use characteristics may imply different commodities. In these cases, trading in a single commodity, or a simple standardized contract, cannot effectively price or manage the risk associated with the different end-uses.

We can specify a simple Bressler and King type linear programming model to analyze commodity price relationships across space and form. In this model, alternative forms represent differences in quality, with a fixed per unit cost, analogous to a processing cost, associated with differences in quality at each supply location. So, just as fixed per unit transportation costs are specified between different origins and destinations in such a model, fixed per unit quality costs are specified between different qualities of a given crop or agricultural product. Under cost minimization or arbitrage, the solution to the linear program will yield market price differentials for location and quality representing the least cost flows of product that satisfy supply and demand constraints. It will also yield price differentials for supply locations representing their optimal market destinations and qualities. If transportation and quality cost differentials remain basically constant over time, and if supply and demand conditions also remain stable, then the price differentials implied by the solution to the linear programming problem represent the amount that could be specified for fixed premiums or discounts for delivery of alternative locations or qualities (rather than the par location or quality) in standardized

contracts. Under these conditions, one contract with fixed premiums or discounts for different delivery locations or qualities will provide effective pricing or risk management over the range of locations and qualities with stable price differentials. Moreover, the locations and qualities spanned under these conditions also represent fundamentally the same commodity.

Alternatively, the premiums and discounts for quality and location may be established outside trading in the standardized contract—for instance in the cash market. One example of quality differentials being determined in the cash market is the premium for protein content of hard red winter wheat. The protein differentials presented in table 1 are based off the May 2000 Hard Red Winter Wheat futures contract traded at the Kansas City Board of Trade.

Table 1

Hard Red Winter Wheat Protein Premium

Date: 3/22/00

Protein Content	March	April//May
0rd's	-16k	-6k
11.0 Pro	-3k	7k
11.4 Pro	12k	22k
11.6 Pro	14k	24k
11.8 Pro	16k	26k
12.0 pro	18k	28k
12.2 Pro	20k	30k
12.4 Pro	22k	32k
12.6 Pro	24k	34k
12.8 Pro	26k	36k
13.0 Pro	29k	39k
13.2 Pro	34k	44k
13.4 Pro	36k	46k
13.6 Pro	42k	52k
13.8 Pro	44k	54k
14.0 Pro	46k	56k

Source: www.advance-trading.com/Public/WheatBidStatic.asp

In another example, the New York Board of Trade (NYBOT) uses the daily report of the United States Department of Agriculture Cotton Division to set premiums on, and discounts off, Strict Low Middling, Leaf Grade 4, 1 1/16" for Grade, Leaf and Staple at five designated Spot Cotton Markets (http://www.nybot.com/reports/premiums.cfm). (See Appendices B and C for NYBOT Cotton Futures specifications and USDA Cotton Report.)

Different standardized contracts for different commodities

Obviously, many locations or quality attributes cannot be effectively priced with a single contract with fixed premiums or discounts. When spatial or quality price differentials are not stable, fixed premiums or discounts will be ineffective for pricing and risk management via standardized contracts such as futures. Spatial and quality price differentials may vary over time as transportation and quality costs vary, or if supply or demand conditions vary. Under these conditions, different contracts reflecting alternative locations and qualities, and fundamentally different commodities, may be needed for pricing and risk management. Offering multiple delivery months in futures allows for differences in either storage or carrying costs, or differences in supply or demand over time. The same reasoning may be applied to location and quality, and is evident in the existence of multiple futures contracts for different classes of wheat, as well as in the proliferation of similar, but intrinsically different, financial futures contracts related to interest rates or stock indices for different equity sectors. While there are five wheat contracts traded in the U.S. representing Soft Red Winter, Hard Red Winter, Soft Red Spring, Soft White, and Durum, only three are currently active.

In addition to offering separate standardized contracts for different locations or qualities that cannot be priced with a single contract, exchanges may offer "differential" contracts that price the difference in price between an underlying standardized contract and the cash price for alternative locations or qualities. The NYBOT has offered differential futures contracts in coffee, sugar, and orange juice. The latest began trading on October 1, 1999. (See Appendices D and E for the NYBOT Frozen Concentrated Orange Juice futures contract and differential futures contracts.) The FCOJ-2 contract reverts to a flat price contract in the week before expiration.

A different means of settlement could be applied to the New Orleans, Louisiana (NOLA) c.i.f. markets for corn, soybeans, and wheat. These cash markets currently trade as a basis to the futures contracts. Settlement could instead entail an exchange for futures along with the barge of grain at expiration. Other approaches may be taken to settle differential futures contracts such as cash settlement or options on the delivery specifications.

Many traders currently use existing futures contracts for pricing and risk management even when the product that they are attempting to price is not the same as that specified in the futures contract, and the price differential is not perfectly stable or predictable. This is known as "cross-hedging." Why is it that cross-hedging prevails rather than a proliferation of futures contracts for alternative locations or qualities? In general, most traders prefer a liquid market, that is, a market in which individual transactions have minimal effect on price. While an almost infinite number of futures contracts representing various combinations of delivery location and quality could be offered on futures exchanges, experience has shown that very few contracts attract

sufficient liquidity to survive. When multiple futures contracts exist representing different delivery qualities and locations, traders chose among them by comparing the closeness of their hedges to the liquidity costs of trading in alternative contracts (Thompson et al., 1993).

Using the example of wheat, there are currently twenty futures contracts listed throughout the world. Various classes of feed and food wheat as well as numerous delivery locations are available. However, as shown in table 2, the daily volume of CBOT Soft Red Winter Wheat contract alone, representing the smallest of the major classes of wheat, is greater than the sum total of the following nineteen.

Table 2

Wheat Futures Contracts

Contracts	Exchange	Country	Average Daily Volume	Last 5-Year Total Trading Volume*
Wheat	Chicago Board of Trade	US	16,188	25,914,815
Wheat	Kansas City Board of Trade	US	6,161	9,106,577
Wheat	Minneapolis Grain Exchange	US	2,973	4,848,000
Wheat	Zhengzhou Commodity Exchange	China	2,894	3,294,298
Wheat	MidAmerican Commodity Exchange	US	779	653,562
Wheat	Winnipeg Commodity Exchange	Canada	721	765,980
Wheat	London Inter. Financial Futures Exchange	England	384	501,191
Wheat	Budapest Commodity Exchange	Hungary	250	64,188
Milling Wheat	Budapest Commodity Exchange	Hungary	196	219,302
Wheat	Marche a Terme International de France	France	195	77,193
Wheat (Trigo)	Mercado a Termino de Buenos S.A.	Argentina	95	110,144
Durum Wheat	Minneapolis Grain Exchange	US	58	24,891
Wheat	Hanover Commodity Exchange	Germany	38	7,581
Euro Wheat	Budapest Commodity Exchange	Hungary	36	19,198
White Wheat	Minneapolis Grain Exchange	US	35	65,308
Wheat	Sydney Futures Exchange	Australia	34	26,807
Feed Wheat	Budapest Commodity Exchange	Hungary	17	19,324
Wheat	South African Futures Exchange	South Africa	12	5,766
Wheat	Mercado a Termino de Rosario, Argentina	Argentina	7	8,617
Cape Wheat	South African Futures Exchange	South Africa	0	92

* 1995 through November 1999

Information technology will promote commodity trading

To attract liquidity and promote trading in more standardized contracts, exchanges can lower the transactions costs of trading through greater implementation of information technology in trading systems. Exchanges throughout the world have been gradually making the transition to electronic trading, with progress in general occurring faster overseas, than in the U.S. Only 4.4 percent of domestic trading volume for the first nine months of 1999 was executed electronically, while foreign exchanges executed 62.7 percent of volume electronically. Electronic trading should reduce the transactions costs associated with physical trading environments such as order routing and other execution costs. More important, electronic trading may survive in an organized market sense with smaller trading volumes than trading in physical environments since lower volumes are necessary to recover the overhead costs associated with the trading system. Hence, smaller markets may be able to survive if conducted virtually.

The proliferation of auction sites on the Internet such as Ebay suggests that electronic markets promote organized trading in very small volumes. Web sites have even developed to support the development of Internet auctions and auction-related tools—see for instance http://www.internetauctionlist.com/. It appears that almost anything can be sold in a virtual auction—from the most exotic, differentiated products, such as fine art, to the most common or mundane, such as cheese. Other agricultural electronic auction sites include:

- www.e-markets.com/
- www.icecorp.com/ Internet Commodity Exchange
- www.agex.com/ Agricultural Exchanges Online
- www.xsag.com/
- www.Farms.com
- www.Foodtrader.com
- www.gofish.com

- http://www.rooster.com/ Cenex/Cargill/Dupont venture for both inputs and outputs
- www.poultryconnection.com/
- www.cyberstockyard.com/ video auctions

Thus, information technology should increase liquidity and allow markets to exist where they would not otherwise, in addition to reducing the transactions costs of trading in new and existing markets.

The demutualization of futures exchanges, whereby exchanges evolve from a membership not-for-profit cooperative to a shareholder for-profit corporation, will likely speed the adoption of electronic trading and promote the development of trading of a greater number and variety of futures contracts. The current ownership structure of most U.S. futures exchanges inhibits the adoption of electronic trading insofar as it is the objective of most members to maximize the value of their "seats" on the exchange. The value of the seats is tied somewhat to the physical trading environment as long as trading is conducted on a trading floor with participation limited to exchange members holding seats. A more open trading environment, with no limits on those who have the ability to trade—and no value to exchange membership—should increase trading volume and lower the transactions costs of trading. Exchanges could charge small trading fees under these conditions, perhaps as does Ebay (http://pages.ebay.com/help/sellerguide/selling-fees.html).

Importance of contract design, spreading and quality certification

It has been well documented that contract design is critical to attracting liquidity (Working; Gray, 1960 and 1978; Thompson et al., 1996). Particularly in the case of contracts for commodities of differing qualities than those already covered in existing contracts, the specification of quality must closely meet industry needs, represent quality that was previously ineffectively hedged with existing contracts, and represent sufficient

volume to support futures trading (which might be quite small as previously discussed in an electronic trading environment).

However, experience shows that substantial and sustainable futures trading volume is difficult to achieve. During the last twenty years over 500 commodity contracts have been listed for trading at over 60 exchanges worldwide. This past year, less than one-half of the contracts experienced any trading and the median average daily trading volume was less than 200 contracts. (See Appendix F for the list of commodity futures listed for trading since 1980.)

The ability to spread between related commodity contracts will promote trading because it will provide traders the ability to manage risks associated with trading newer, more thinly traded contracts, as well as provide the opportunity to profit by trading, or arbitraging, the spread between related contracts. Spreading also ensures that price differences across related contracts conform to efficient, competitive differentials. Spreading is vital to the viability of several wheat futures contracts (Kansas City, Minneapolis), as well as to contracts in the soybean complex (meal and oil).

Intra-market spreading, basically a time-based arbitrage, is also important in providing a means for non-commercial traders to exchange price risk for spread risk and for commercial traders to hedge carrying costs. Intra-market spreading typically promotes trading in distant maturities with lower liquidity. The CFTC reports intra-market spreading by non-commercials as a percent of open interest. The evidence shows that commodity indices, secondary contract markets, and processed commodities have higher intra-market spreading. (See Appendix G for the table of intra-market spreading percentages.)

For organized trading in differentiated commodities to succeed, it will be necessary to establish a set of meaningful standards of quality or end-use value, as well as some type of certification that the products traded on the exchange meet those standards. The commodity exchange need not develop the standards, but they probably need to develop a certification method to insure a level of trust or confidence that the product traded on the exchange meets the established standards. This may be a very tricky issue, particularly when the relevant quality or end-use characteristic is not visibly apparent. One way to for the exchange to establish confidence is to guarantee performance, perhaps by building a performance guarantee into the contracts. Another way would be to establish a "Feedback Forum" as has Ebay (http://pages.ebay.com/services/forum/feedback.html) where traders acquire a profile comprised of comments from other traders. This method credentializes buyers and sellers by reputation. A third way would be to either adopt or establish a "brand" of product to trade. The brand would either be already well-known, or would need to be promoted by the exchange or industry as representing certain qualities or end-use values. For instance, "Roundup Ready" soybeans might be traded. In this case, buyers would understand that the soybeans were genetically modified with a given biotechnology to resist the Roundup herbicide. Or, a contract might be developed to trade Starbucks coffee beans. Assuming the exchange can eliminate the delivery of counterfeits, trading branded products would obviate many quality certification concerns. However, whether or not these products are exchange tradable due to intellectual property constraints, or due to other controls in the supply chain, is another matter.

Intellectual property rights would influence the marketing and tradability of futures contracts in several ways. A brand, patent, or copyright would necessitate the licensing of the contract. A market maker or prominent supporter of the contract involved in the underlying cash market would be necessary to provide liquidity.

Implications for producers

E-commerce will result in increased competition for inputs and outputs for those with access to virtual value chain. The question remains, however, whether or not all firms will have equal access to the virtual value chain. What will be the barriers to entry in e-commerce? Which agricultural value chains will be open systems, and which will be closed? What will determine access to the virtual value chain?

Access, opportunities, and price discovery along the agricultural value chain may be affected by size. Most e-commerce systems require some degree of registration, which may vary from simple identification of the user and assignment of a username and password, to hefty registration fees, credentialization of users, and minimum restrictions on volume of commerce. Most e-commerce systems would easily allow price discrimination based on volume or other trader characteristics. To gain competitive access to the virtual value chain, agricultural producers may need to be large in scale, or participate in some collective organization, such as a input supply or output marketing cooperative. Cooperatives, insofar as they have a culture of coordination, may even have an advantage in the early adoption and use of the coordination technologies in the virtual value chain. Certainly producers will need to be computer literate and have access to the Internet at a reasonable bandwidth of connection.

Implications for Research

There are several yet unanswered questions regarding the impact of e-commerce on agriculture. First, will agriculture be different from other sectors in the adoption of e-commerce? Because geography and specialized physical processes matter so much in agriculture, spatial monopolies and the trend towards vertical integration may be relatively unabated.

Second, will e-commerce result in open or closed agricultural marketing channels? What will be the barriers to entry in e-commerce, and will they be high enough to exclude small and medium-sized farmers and agribusinesses?

Third, will output markets adopt e-commerce as much as input markets? It appears as though rapid strides have been made in procuring agricultural inputs through e-commerce, but at this point e-commerce in agricultural outputs is still nascent. What factors are inhibiting the development of e-commerce in agricultural outputs?

Finally, how can producers best take advantage of opportunities offered by e-commerce? Would producers be better off to develop their own e-commerce initiatives? What should be the structure of those initiatives? What contract specifications and e-commerce pricing mechanisms most benefit producers?

Conclusions

This paper has addressed the impact of e-commerce on agricultural markets with particular attention to how differentiated or value-added agricultural products, such as high oil corn, or "Roundup Ready" soybeans could be traded on organized, perhaps virtual, exchanges. As a result of lower transactions costs associated with e-commerce, markets for agricultural products will become more competitive and commodity-like,

with greater opportunities for "plug and play" along the virtual agricultural value chain. Producers will benefit from e-commerce if they can gain competitive access to the virtual value chain.

Differentiated or value-added products may be considered and traded as commodities if their contract specifications match their quality attributes and the products are tradable. If the price differentials between products specified on existing futures contracts and other related products are known and stable, then existing futures contracts may be used to price and hedge those other products by specifying premiums or discounts for deliveries of alternative qualities. If the price differential is not known or stable, then new or differential contracts may be required.

Exchanges may increase the probability of success of new contracts by using information technologies to reduce the transactions costs of trading. It is likely that many products would be tradable in an auction environment if the threshold for minimum liquidity to sustain trading was low. The Internet holds much promise for this type of trading environment. The demutualization of existing commodity exchanges may be necessary before exchanges place price discovery above returns to membership in their objective function. Exchanges should also design contracts to meet industry needs, encourage inter- and intra-market spreading to reduce risk and increase liquidity, and develop new means to certify product quality.

The arguments made in this paper are rapidly becoming manifestly obvious to agents involved in e-commerce, and those whose interests are leading them in that direction. Expect to see many changes in commodity exchanges in the near future. Existing exchanges must change rapidly and radically to survive. New exchanges on the

Internet are poised to take away business/volume from existing exchanges if they do not respond to the need for transformation, if not complete overhaul. Recently, William J. Rainer, Chairman of the Commodity Futures Trading Commission recognized the manifest destiny of organized exchanges in a speech in which he stated:

Consequently, the CFTC must embark on a process that may result in major deregulation of the financial futures markets, beginning with those contracts that compete directly with OTC derivatives. No rule or regulation will escape scrutiny. While the financial futures markets are most in need of regulatory reform, all of our contract markets would benefit from a lighter regulatory hand. The CFTC intends to withdraw from approving contract designations and will soon issue proposed regulations to permit exchanges to adopt new rules without prior approval. These are key elements in our overall plan to move from being a frontline to an oversight regulator. (October 28, 1999)

Thus, the regulators of these markets understand the need for rapid innovation and transformation of trading on organized exchanges. Either we will see these innovations occur in Chicago, or they will occur elsewhere, virtually.

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Appendix B

Cotton No. 2 Futures Contract Futures and Options Specifications

Cotton No. 2 Futures Contract

Contract specifications are current as of January 1, 1999 and may be subject to change. Verify information with your broker.

Trading Unit
50,000 lbs. net weight (approximately 100 bales).

Trading Hours
10:30 AM to 2:40 PM New York Time.

Price Quotation
Cents and hundredths of a cent per pound

Trading Months
Current month plus one or more of the next twenty-three succeeding months. Active trading months: March, May, July, October, December.

Ticker Symbol CT

First Notice Day:
Five business days from end of preceding month.

Last Trading Day:
Seventeen business days from end of spot month.

Minimum Fluctuation
1/100 of a cent (one "point") per pound below 95 cents per pound. 5/100 of a cent (or five "points") per pound at prices of 95 cents per pound or higher.* N.B.: Spreads may always trade and be quoted in one point increments, regardless of price levels.

Daily Price Limits:
3 cents above or below previous day's settlement price. However, if any contract months settles at or above $1.10 per pound, all contract months will trade with 4 cent price limits. Should no month settle at or above $1.10 per pound, price limits stay (or revert) to 3 cents per lb. Spot month - no limit on or after first notice day.

Position Limits:

Delivery Month	300 contracts
Any other month	2,500 contracts
All months combined	3,500 contracts

Futures and options have a combined limit in futures equivalents. *Contact the Exchange for more information.*

Basis Grade
Quality: Strict Low Middling
Staple Length: 1 2/32nd inch
Contact the Exchange for more information an other specifications.

Point Value:
$5.00

Delivery Points:
Galveston, TX; Houston, TX; New Orleans, LA; Memphis, TN; Greenville/Spartanburg, S.C.

Options Contract on Cotton No. 2 Futures

Contract specifications are current as of January 1, 1999 and may be subject to change. Verify information with your broker.

Confers to buyer the right to buy (in the case of a call) or sell (in the case of a put) one Cotton No. 2 futures contract

Daily Price Limits:
None

Strike Price Increments:
1 cent increments

Minimum Price Fluctuation:
1/100 of a cent.

Point Value:
$5.00

Position Limits:
See Cotton Futures specifications for combined Futures/Options Limits.
Contact the Exchange for more information.

Trading Unit
One New York Cotton Exchange Cotton No. 2 futures contract.

Trading Hours
10:30 a.m. - 2:40 p.m. (New York time).

Price Quotation
Prices quoted in cents and hundredths of a cent.

Trading Months
March, May, July, October and December. The nearest ten delivery months will be available for trading. Example: In August 1999, the October 1999, December 1999,
March 2000, May 2000, July 2000, October 2000, December 2000, March 2001, May 2001 and July 2001 contracts will be
available for trading.

Ticker Symbol
CT

Minimum Fluctuation Prices quoted in cents and hundredths of a
cent.

Appendix C

Premiums & Discounts for Grade, Leaf & Staple on NYBOT Cotton No. 2 Futures

Average premiums on, and discounts off, Strict Low Middling, Leaf Grade 4, 1 1/16" for Grade, Leaf and Staple at the five designated Spot Cotton Markets. Taken from the report of the United States Department of Agriculture Cotton Division, Market News Branch dated **12/22/99**, and covering differences for that date. These differences apply on deliveries on the New York Cotton Exchange Contract No. 2 for **1/03/00**, at Galveston, TX ; Greenville, SC ; Houston, TX ; Memphis, TN; and New Orleans, LA.

WHITE COLOR GRADES		LEAF	(33) 1 1/32" AVERAGE DIFFERENCE (See Note)	1 1/32" (34) 1 1/16"	(35)+ 1 3/32"
GOOD MIDDLING	(11)	1-2	-480	-1075	115	330
	(11)	3	-485	-1085	115	330
	(11)	4	-585	-1218	48	255
	(11)	5	-810	-1330	-290	-105
STRICT MIDDLING	(21)	1-2	-480	-1075	115	330
	(21)	3	-485	-1085	115	330
	(21)	4	-585	-1218	48	255
	(21)	5	-810	-1330	-290	-105
MIDDLING	(31)	1-2	-495	-1090	100	320
	(31)	3	-500	-1100	100	320
	(31)	4	-600	-1233	33	240
	(31)	5	-815	-1330	-300	-115
STRICT LOW	(41)	1-2	-615	-1230	0	220
MIDDLING	(41)	3	-615	-1230	0	220
	(41)	4	-615	-1230	0	215
	(41)	5	-885	-1415	-355	-215
LOW MIDDLING	(51)	1-2	-895	-1350	-440	-290
	(51)	3	-895	-1350	-440	-290
	(51)	4	-965	-1420	-510	-360
	(51)	5	-1015	-1445	-585	-445

LIGHT SPOTTED GRADES		LEAF	1 1/32" (33)	1 1/32" (34) AVERAGE	1 1/16"	(35)+ 1 3/32"
GOOD MIDDLING	(12)	1-2	-650	-1215	-85	115
	(12)	3	-670	-1245	-95	105
STRICT MIDDLING	(22)	1-2	-650	-1215	-85	115
	(22)	3	-670	-1245	-95	105
MIDDLING	(32)	1-2	-705	-1280	-130	70
	(32)	3	-705	-1280	-130	70

* 200% of difference between 1 1/32" and 1 1/16" of like grade.

Appendix D

NYBOT to Add New Frozen Concentrated Orange Juice Contract

Released on 18-Aug-99

For Immediate Release
Contact: Terence Gordon
(212) 742-6106

The New York Board of Trade (NYBOT) is introducing a new Frozen Concentrated Orange Juice (FCOJ) futures contract (FCOJ-2) to provide a direct hedging vehicle for the premium the cash market is willing to pay for delivery of frozen concentrated orange juice from Florida, Brazil or blends thereof. Trading of the new differential contract, on the Citrus Associates subsidiary of NYBOT, is scheduled to begin in early October, pending Commodity Futures Trading Commission (CFTC) approval. Options may be added at a later date.

In the past year, the futures price for the current FCOJ-1 contract (which does not limit the list of countries of origin) experienced a 30 cent range while the premium for cash Florida/Brazilian juice has traded in levels from 4 cents to 20 cents above the futures price. Customers hedging their portfolios of Florida/Brazilian product with FCOJ-1 contracts could have had an inefficient hedging mechanism as the basis price relationship between the futures market and the specific product changed dramatically. NYBOT developed and created the new FCOJ-2 differential contract to provide the opportunity for customers to more precisely hedge price risk for Florida/Brazil-only product.

"The new FCOJ-2 contract represents NYBOT's commitment to the citrus industry to provide appropriate hedging opportunities and ensure that the futures market is in sync with cash market realities," stated James J. Bowe, President and CEO of NYBOT. "It provides customers with an additional risk management tool while not diluting liquidity in the current successful FCOJ-1 contract."

The new FCOJ-2 contract will only be traded in a differential combination with the existing FCOJ-1 contract (until two days prior to first notice day). Two days prior to the first notice day, the differential will be unbundled into separate FCOJ-2 and FCOJ-1 positions. FCOJ-2 will then trade as an outright until noon of the first notice day. The FCOJ differential is a spread between the FCOJ-2 and the FCOJ-1 contracts. Being long a differential is being long a FCOJ-2 contract and short an FCOJ-1 contract. Being short a differential is being short an FCOJ-2 contract and long an FCOJ-1 contract.

Historically, Florida/Brazil FCOJ has commanded a premium price over the less restrictive frozen concentrated orange juice specified for delivery in the FCOJ-1 contract. Under the original contract, the FCOJ tenderable for delivery can come from a variety of sources as long as it meets certain basic standards. The differential trading market for the two contracts is designed to address a delivery concern in the citrus industry involving the use of Florida/Brazil to meet U.S. labeling standards.

Appendix E

NYBOT Frozen Concentrated Orange Juice Futures Contract on FCOJ-2

Trading Unit: 15,000 pounds of orange solids (3% more or less)
Deliverable Origins: Florida and/or Brazil only
Trading Hours: 10:15 A.M. to 2:15 P.M. (New York time)
Price Quotation: Cents and hundredths of a cent per pound solid
Trading Months: January, March, May, July, September, November
Ticker Symbol: OK
Minimum Price Fluctuation: 5/100 cent/lb., equivalent to $7.50 per contract
Point Value: $1.50
Trading Limits:
Spot Month - a movable 10 cents ($1500 per contract) above or below the previous limit.
Delivery Points: Exchange licensed warehouses in Florida, New Jersey, Delaware and California
First Trading Day: One business day prior to first notice day
Last Trading Day: 12:00 P.M. on first notice day
First Notice Day: First business day of contract month
Last Notice Day: Fifth business day prior to the last business day of the contract month
Last Delivery Day: Last business day of the month
Delivery methods: Drums or tanks, at the seller's option

Contract specifications are current as of August 10, 1999 and may be subject to change; verify information with your broker.

Pending Regulatory Approval

Futures Contract on FCOJ Differential

Trading Unit: The FCOJ Diff is a spread between the FCOJ-2 and FCOJ-1 contracts. Being long a Diff is being long an FCOJ-2 contract and short an FCOJ-1 contract. Being short a Diff is being short an FCOJ-2 contract and long an FCOJ-1 contract.

Trading Hours: 10:15 A.M. to 2:15 P.M.
Price Quotation: Cents and hundredths of a cent per pound
Trading Months: January, March, May, July, September, November.
Ticker Symbol: OD
Minimum Price Fluctuation: 5/100 cent/lb., equivalent to $7.50 per contract
Point Value: $1.50
Daily Price Limits: None
Last Trading Day: Two business days prior to the first notice day. At the close of business on the last trading day, FCOJ Diff positions in the expiring contract will be unbundled into FCOJ-1 and FCOJ-2 positions as follows:
Long Diff unbundles into long FCOJ-2, short FCOJ-1
Short Diff unbundles into short FCOJ-2, long FCOJ-1
Contract specifications are current as of August 10, 1999 and may be subject to change; verify information with your broker.

Pending Regulatory Approval

Appendix A

Commodity Exchanges

(see Appendix A.xls)

Appendix F

Commodity Future Contracts

(see Appendix F.xls)

Appendix G

Spreading Open Interest

(see Appendix G.xls)

Appendix A--Commodity Futures Exchanges

Acronym	Exchange	Web site
ADEX	Athens Derivatives Exchange	www.adex.ase.gr/AdexHomeEN/ns/index.html
AEX	Amsterdam Exchanges	www.aex.nl
AFINEX	Almaty Financial Instruments Exchange	
AMEX	American Stock Exchange	www.nasdaq-amex.com
ASX	Australian Stock Exchange	www.asx.com.au
BBF	Bolsa Brasileira de Futuros	
BCE	Bermuda Commodities Exchange	www.bcoe.bm
BCOE	Budapest Commodity Exchange	www.bce-bat.com
BDP	Bolsa do Derivados do Porto	www.bdp.pt
Beijing	Beijing Commodity Exchange	bcewww.cnfm.com.cn:8080
Belfox	Belgium Futures & Options Exchange	www.belfox.be
Blagovna	Ljubljana Commodity Exchange	www.eunet.si/commercial/bbl/bbl-ein.html
BM & F	Bolsa de Mercadorias & Futuros	www.bmf.com.br
BSE	Budapest Stock Exchange	www.fornax.hu/fmon/
CACOFV	Caracas Stock Exchange	www.cacofv.com
CBOE	Chicago Board Options Exchange	www.cboe.com
CBOT	Chicago Board of Trade	www.cbot.com
CCE	Caribbean Commodity Exchange	www.cceltd.com/
CCFE	China Commodity Futures Exchange of Hainan	www.ccfe.org
CCHE	Changchun Commodity Exchange	
Chubu	Chubu Commodity Exchange	
CME	Chicago Mercantile Excange	www.cme.com
Cochin	Cochin	
COMMEX M	COMMEX Malaysia	www.commex.com.my/htm/home.htm
CQCE	Chongqing Commodity Exchange	
CSCE	Coffee, Sugar, Cocoa Exchange	www.csce.com
CUFE	Chengdu United Futures Exchange	
CX	Cantor Exchange	cx.cantor.com
CZCE	Zhengzhou Commodity Exchange	202.102.240.98/english/index.html
DCE	Dalian Commodity Exchange	
EICA	East India Cotton Association	
Eurex D	Eurex Deutschland	www.exchange.de/eurex/
Eurex Z	Eurex Zurich	www.bourse.ch
EX	Environment Exchange	
FC&M	Futuros de Citricos y Mercaderias de Valencia	drac.medusa.es/fcm/index/.html
FIA	Futures Industry Association	www.fiafii.org/
FUTOP	Copenhagen Stock Exchange	www.xcse.dk
FutureCom	FutureCom	www.futurecom.org/
GUFE	Guangdong United Futures Exchange	
HEX	Helsinki Exchanges	www.hex.fi
HGE	HGE	
HKFE	Hong Kong Futures Exchange	www.hkfe.com/
ICE	Izmir Commodity Exchange	http://business.wec-net.com.tr/ITB/english.html
IFE	IFE	
IGE	Istanbul Gold Exchange	www.iabgold.com
IPE	International Petroleum Exchange	www.ipe.uk.com
ISEC	Italian Stock Exchange Council	www.borsaitalia.it/ing/idem/
KANEX	Kansai Agricultural Commodities Exchange	www.kanex.or.jp
KANSAI	Kansai Agricultural Commodities Exchange	www.kanex.or.jp
KCBT	Kansas City Board of Trade	www.kcbt.com
KCE	Kanmon Commodity Exchange	www.kce.or.jp
KGE	KGE	
KOFEX	Korea Futures Exchange	www.kofex.com/html/english.htm
KSE	Korea Stock Exchange	www.kse.or.kr
LIFFE	London International Financial Futures Exchange	www.liffe.com
LME	London Metal Exchange	www.lme.co.uk
LRTMA	LRTMA	
MAT	Mercado a Termino de Buenos S.A.	www.matba.com.ar
MATIF	Marche a Terme International de France	www.matif.fr

Appendix A--Commodity Futures Exchanges

Acronym	Exchange	Web site
ME	Montreal Exchange	www.me.org
Meff-F	Meff Renta Fija	www.meff.es/
Meff-V	Meff Renta Variable	www.meffrv.es/ing/indexi.htm
MERFOX	MERFOX	
MexDer	Mexican Derivatives Exchange	www.bmv.com.mx/html/mexder.html
MGE	Minneapolis Grain Exchange	www.mgex.com
MICEX	Moscow Interbank Currency Exchange	www.micex.com/english/index.html
MIDAM	MidAmerican Commodity Exchange	www.cbot.com
MIF	Mercato Italiano Dei Futures	www.borsaitalia.it/ing/idem/
MIFE	MIFE	
MONEP	Marche des Options Negociables de Paris	www.bourse-de-paris.fr/defaulgb.htm
MSCE	Moscow Central Stock Exchange	www.mcse.ru
Nordpol	Nordpol	
NSE	Nagoya Stock Exchange	www.iijnet.or.jp/nse-jp
NVN	Amsterdam Agricultural Market	
NYBT	Coffee, Sugar, Cocoa Exchange	www.csce.com
NYCE	New York Cotton Exchange	www.nyce.com
NYMEX	New York Mercantile Exchange	www.nymex.com
NZFOE	New Zealand Futures & Options Exchange	www.nzfoe.co.nz
OM	OM Stockholm	www.omgroup.com/
OME	Osaka Mercantile Exchange	
OSE	Osaka Securities Exchange	www.ose.or.jp/index_e.htm
OsloSE	Oslo Stock Exchange	www.ose.no/english/
ParisB	Marche a Terme International de France	www.matif.fr
PBOT	Philadelphia Board of Trade	www.phlx.com
PCX	Pacific Exchange	www.pacificex.com
PHLX	Philadelphia Stock Exchange	www.phlx.com
Pulpex	Pulp Exchange	www.omgroup.com
RCE	Romanian Commodities Exchange	www.starnets.ro/brm/
RDJSE	Rio de Janeiro Stock Exchange	www.bvrj.com.br/
REX	Russian Exchange	www.re.ru/html/news/default_e.htm
ROFEX	Mercado a Termino de Rosario, Argentina	www.rofex.com.ar/index.htm
Rosario	Mercado a Termino de Rosario, Argentina	www.rofex.com.ar/index.htm
SAFEX	South African Futures Exchange	www.safex.co.za/
SCE	Suzhou Commodity Exchange	
SCOE	Shanghai Cereals & Oil Exchange	
SFE	Sydney Futures Exchange	www.sfe.com.au/Presentation/
SHCE	Shanghai Commodity Exchange	
SHFE	Shanghai Futures Exchange	
SHME	Shanghai Metals Exchange	www.shme.com/shme.htm
Sibiu	Sibiu Monetary-Financial and Commodities Exchange	www.bmfms.ro/english.html
SICOM	Singapore Commodity Exchange	www.sicom.com.sg
SIMEX	Singapore International Monetary Exchange	www.simex.com.sg/
SME	Shenzhen Mercantile Exchange	www.sme.com.cn/
SPbFE	St. Petersburg Futures Exchange	www.futures.ru/
SYCE	Shenyang Commodity Exchange	
TAIFEX	Taiwan International Futures Exchange	www.taimex.com.tw/eng/index.html
TASE	Tel-Aviv Stock Exchange	www.tase.org.il/
TFE	Toronto Futures Exchange	www.tse.com/
TGE	Tokyo Grain Exchange	www.tge.or.jp/
TIFFE	Tokyo International Financial Futures Exchange	www.tiffe.or.jp/
TOCOM	Tokyo Commodity Exchange	www.tocom.or.jp/
Toronto SE	Toronto Stock Exchange	www.tse.com/
TSE	Tokyo Stock Exchange	www.tse.or.jp/eindex.html
TUFE	Tianjin United Futures Exchange	
WBAG	Wiener Borse	www.wbag.at/e_index.html
WCE	Winnipeg Commodity Exchange	www.wce.mb.ca/
WGT	Warsaw Commodity Exchange	
WSE	Warsaw Stock Exchange	www.wse.com.pl/gpw/mapa2.htm
WTB	Hanover Commodity Exchange	www.wtb-hannover.de/english/index.html
Yokohama	Yokohama Commodity Exchange	210.133.215.2:80/maekan/english/
	India Pepper & Spice Trade Association	

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Crude Oil	NYMEX	US	Mar-83	Nov-99	1,000 US barrels	Energy	Both	95,069	130,082,512
Mungbean	CZCE	China		Nov-99		Grains and Oils	Electronic	93,477	102,584,963
Corn	CBOT	US	1/2/1877	Nov-99	5000 bushels	Grains and Oils	Both	51,434	77,797,986
Aluminium-99.7%	LME	England	Jun-87	Nov-99	25 metric tons	Metals	Out-cry	45,770	85,541,633
Soybean	CBOT	US	Oct-36	Nov-99	5000 bushels	Grains and Oils	Both	44,846	59,323,433
Copper-Grade A	LME	England	Apr-86	Nov-99	25 metric tons	Metals	Out-cry	44,052	76,901,474
Gold 100 Oz.	NYMEX	US	Dec-74	Nov-99	100 troy oz.	Metals	Both	36,656	42,411,338
Gasoline	TOCOM	Japan	Jul-99	Nov-99	100 kl	Energy	Electronic	33,990	3,398,962
Natural Gas	NYMEX	US	Apr-90	Nov-99	10,000 MMBtu	Energy	Both	32,805	58,279,412
Broilers	KCE	Japan	Nov-99	Nov-99	1,200 kg	Food and Fiber	Out-cry	32,434	648,681
Corn	TGE	Japan	Apr-92	Nov-99	100 metric tons	Grains and Oils	Electronic	30,724	47,861,327
Number Two Heating Oil, N.Y.	NYMEX	US	Nov-78	Nov-99		Energy	Both	29,716	39,073,911
Gold	TOCOM	Japan	Apr-84	Nov-99	1 kg.	Metals	Electronic	29,518	50,926,915
Brent Crude Oil	IPE	England	Nov-85	Nov-99	1,000 barrels	Energy	Out-cry	28,751	56,327,662
Platinum	TOCOM	Japan	Apr-84	Nov-99	500 grams	Metals	Electronic	26,702	49,483,327
Unleaded Regular Gasoline, N.Y.	NYMEX	US	Dec-84	Nov-99	42,000 gallons (1,000 US barrels)	Energy	Both	23,796	34,759,747
Soybean Meal	CBOT	US	Aug-51	Nov-99	100 tons (2000 pds. per ton)	Grains and Oils	Both	20,939	28,266,546
Sugar #11	NYBT	US	Jan-14	Nov-99	50 long tons	Food and Fiber	Out-cry	20,298	24,605,691
Rubber	TOCOM	Japan	Apr-84	Nov-99	5,000 kg.	Food and Fiber	Out-cry	20,237	40,667,410
Soybean Oil	CBOT	US	Jul-50	Nov-99	60000 lbs.	Grains and Oils	Both	19,617	24,732,773
Silver 5,000 Oz.	NYMEX	US	Jul-33	Nov-99	5000 troy oz.	Metals	Both	18,838	22,035,094
US Soybean	TGE	Japan	Mar-84	Nov-99	30 metric tons	Grains and Oils	Electronic	17,381	25,002,287
Live Cattle	CME	US	Nov-64	Nov-99	40,000 pds. choice or better	Livestock	Out-cry	16,876	17,675,251
Wheat	CBOT	US	1/2/1877	Nov-99	5000 bushels	Grains and Oils	Both	16,188	25,914,815
Red Bean	TGE	Japan	Oct-52	Nov-99	80 30 kg bags	Grains and Oils	Electronic	14,628	11,337,474
Special High Grade Zinc	LME	England	Jan-83	Nov-99	25 metric tons	Metals	Out-cry	14,149	27,996,706
Gas Oil	IPE	England	Apr-81	Nov-99	100 metric tons	Energy	Out-cry	13,568	22,158,560
Hen Egg	CHUBU	Japan	Nov-99	Nov-99	¥5000 x index	Food and Fiber	Out-cry	13,138	262,769
Kerosene	TOCOM	Japan	Jul-99	Nov-99		Energy	Electronic	12,049	1,204,930
Soybean	DCE	China		Nov-99		Grains and Oils		11,869	6,026,565
Corn	KCE	Japan	May-92	Nov-99	100,000 kilograms	Grains and Oils	Electronic	11,567	16,637,140
Palladium	TOCOM	Japan	Aug-92	Nov-99	1.5 kg.	Metals	Electronic	10,785	14,756,797
Arabica Coffee	TGE	Japan	Jun-98	Nov-99	3,450 kg	Food and Fiber	Electronic	10,468	3,677,488
Raw Sugar	TGE	Japan	May-52	Nov-99	20,000 kg.	Food and Fiber	Electronic	9,160	5,163,857
Nickel	LME	England	Apr-79	Nov-99	6 metric tons	Metals	Out-cry	9,013	19,294,704
Cotton #2	NYBT	US	9/10/1870	Nov-99	50,000 lbs.	Food and Fiber	Out-cry	8,210	12,643,149
High Grade Copper	NYMEX	US	Jul-88	Nov-99	25,000 lbs.	Metals	Both	8,206	11,730,183
Coffee	NYBT	US	Jan-64	Nov-99	37500 lb	Food and Fiber	Out-cry	7,867	10,326,662
Copper	SHFE	China		Nov-99		Metals	Electronic	7,666	7,647,056
Azuki Bean	KANEX	Japan	Oct-52	Nov-99	N/A	Grains and Oils	Electronic	7,282	3,519,550
Imported Soybean	KANEX	Japan	Dec-52	Nov-99	30,000 kg.	Grains and Oils	Electronic	6,995	10,352,919
Cocoa - 10 m. tons	NYBT	US	Jan-25	Nov-99	10 metric tons	Food and Fiber	Out-cry	6,928	9,539,797
Lean Hog	CME	US	Nov-95	Nov-99	40,000#	Livestock	Out-cry	6,906	6,278,895
Rubber	OME	Japan	Oct-97	Nov-99	5,000 kg.	Food and Fiber	Out-cry	6,874	10,700,296
Aluminum	OME	Japan	Oct-97	Nov-99	10 tonnes	Metals	Out-cry	6,519	3,229,196
Cocoa	LIFFE	England	Aug-72	Nov-99	10 metric tons	Food and Fiber	Out-cry	6,447	8,261,321
Cotton Yarn	TOCOM	Japan	Apr-84	Nov-99	1,814.36 kg.	Food and Fiber	Out-cry	6,205	3,136,946
Wheat	KCBT	US	1876	Nov-99	5,000 bushels	Grains and Oils	Out-cry	6,161	9,106,577
Lead	LME	England	Oct-52	Nov-99	25 metric tons	Metals	Out-cry	5,646	11,022,587
$ Coffee	LIFFE	England	Mar-91	Nov-99		Food and Fiber	Out-cry	4,657	6,057,974

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Canola	WCE	Canada	Jan-63	Nov-99	20/100 metric tonne board lot	Grains and Oils	Out-cry	4,654	6,349,473
Silver	TOCOM	Japan	Apr-84	Nov-99	30 kg.	Metals	Electronic	4.265	5.253.523
Raw Sugar	KANEX	Japan	Apr-52	Nov-99	20,000 kgs.	Food and Fiber	Electronic	4.191	2.745.540
Rubber	SHFE	China		Nov-99		Food and Fiber	Electronic	4.081	2.670.977
Soybean	MIDAM	US	Dec-40	Nov-99	1.000 bushels	Grains and Oils	Out-cry	4.010	3.926.817
Tin	LME	England	Jun-89	Nov-99	5 metric tons	Metals	Out-cry	3.878	6.205.217
Platinum	NYMEX	US	Dec-56	Nov-99	50 troy oz.	Metals	Both	3.770	3.112.772
Frozen Pork Bellies	CME	US	Sep-61	Nov-99	40.000 pds.	Livestock	Out-cry	3.507	2.447.224
Cotton Yarn (20s)	OME	Japan	Apr-83	Nov-99	2.000 lbs.	Food and Fiber	Out-cry	3.430	4.924.168
Dried Cocoon	CHUBU	Japan	Apr-82	Nov-99	300 kg.	Food and Fiber	Out-cry	3.379	2.630.219
Dried Cocoon	Yokohama	Japan	Apr-82	Nov-99	300 kg.	Food and Fiber	Out-cry	3.355	2.395.154
Raw Silk	Yokohama	Japan	Jan-82	Nov-99	300 kg.	Food and Fiber	Out-cry	2.999	3.739.053
Wheat	MGE	US	01/03/1893	Nov-99	5.000 bushels	Grains and Oils	Out-cry	2.973	4.848.000
Cotton Yarn	CHUBU	Japan	Sep-51	Nov-99	4000 lb.	Food and Fiber	Out-cry	2.905	1.318.211
Wheat	CZCE	China		Nov-99		Grains and Oils	Electronic	2.894	3.294.298
Robusta Coffee	TGE	Japan	Jun-98	Nov-99	5.000 kg	Food and Fiber	Electronic	2.551	882.326
Red Beans	CHUBU	Japan	Jan-82	Nov-99	2.400 kg.	Grains and Oils	Out-cry	2.541	1.299.721
Rubber Index	OME	Japan	Oct-97	Nov-99		Food and Fiber	Out-cry	2.492	2.677.399
Aluminum	TOCOM	Japan	Apr-97	Nov-99	10 tonnes	Metals	Electronic	2.427	1.494.823
Feeder Cattle	CME	US	Nov-71	Nov-99	44.000 lbs	Livestock	Out-cry	2.352	3.259.365
Frozen Con, Orange Juice	NYBT	US	Oct-66	Nov-99	15,000 pds. orange solids	Food and Fiber	Out-cry	2,210	3,665,921
White Sugar	LIFFE	England	Jul-83	Nov-99	50 metric tons	Food and Fiber	Out-cry	2.082	3.564.114
Goldman Sachs Index	CME	US	Jul-92	Nov-99	250 x GCI	Indices	Both	1,965	2,986,702
Imported Soybean	KCE	Japan	Jan-82	Nov-99	15.000 kg.	Grains and Oils	Electronic	1.928	2.860.657
Imported Soybeans	CHUBU	Japan	Jan-82	Nov-99	15.000 kg.	Grains and Oils	Out-cry	1.683	2.583.153
Raw Silk	KANEX	Japan	May-51	Nov-99	150 kg	Food and Fiber	Electronic	1.663	1.652.037
Oat	CBOT	US	1/2/1877	Nov-99	5000 bushels	Grains and Oils	Both	1.647	2.067.341
Corn	MIDAM	US	Oct-22	Nov-99	1.000 bushels	Grains and Oils	Out-cry	1.552	1.685.577
Cotton Yarn (40s)	OME	Japan	Apr-83	Nov-99	4.000 lbs.	Food and Fiber	Out-cry	1.496	1.057.767
Crude Palm Oil	COMMEX M	Malaysia	Oct-80	Nov-99	25 metric tons	Grains and Oils	Out-cry	1.396	2.117.516
Aluminum Alloy	LME	England	Oct-92	Nov-99	200 metric tons	Metals	Out-cry	1.361	1.950.286
International Grain Index	KANEX	Japan	Aug-98	Nov-99	¥ 10,000 x index	Grains and Oils	Electronic	1,299	391,060
Red Bean	KCE	Japan	Jan-82	Nov-99	2.400 kg.	Grains and Oils	Electronic	1.144	697.837
White Sugar (45)	ParisB	France	Jan-68	May-99	50 metric tons	Food and Fiber	Electronic	1.101	711.192
Lumber - NEW	CME	US	Jul-95	Nov-99	80,000 bd. ft. of random length 2x4's	Food and Fiber	Out-cry	1,004	1,001,006
Woolen Yarn	OME	Japan	Apr-83	Nov-99	500 kg.	Food and Fiber	Out-cry	982	120.268
Wheat	MIDAM	US	Oct-22	Nov-99	1.000 bushels	Grains and Oils	Out-cry	779	653.562
1.000 Oz. Silver	CBOT	US	Mar-81	Nov-99	1000 troy oz.	Metals	Out-cry	744	197.925
Wheat	WCE	Canada	Jan-74	Nov-99	20/100 metric tons	Grains and Oils	Out-cry	721	765,980
Natural Gas	IPE	England	Jun-98	Nov-99	1.000 Therms	Energy	Electronic	668	240.510
Natural Gas Daily	IPE	England	Jan-97	Nov-99	1.000 Therms	Energy	Electronic	666	403.650
Flaxseed	WCE	Canada	Jan-04	Nov-99	100 metric tonne board lot	Grains and Oils	Out-cry	620	519,023
Staple Fiber Yarn (DULL)	CHUBU	Japan	Feb-51	Mar-99	5,000 lb.	Food and Fiber	Out-cry	599	37,185
Palladium	NYMEX	US	Jan-68	Nov-99	100 troy oz.	Metals	Both	589	770.098
Rice	CBOT	US	Oct-94	Nov-99	200.000 lbs.	Grains and Oils	Both	575	647.244
Western Domestic Feed Barley	WCE	Canada	Feb-83	Nov-99	20 metric tonne board lot	Grains and Oils	Out-cry	537	1,163,892
Rubber SS2	SICOM	Singapore	May-92	Nov-99	5MT	Food and Fiber	Electronic	534	672.170

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Sugar #14	NYBT	US	Jul-85	Nov-99	112,000 lbs.	Food and Fiber	Out-cry	530	698,887
U.S.$-Denominated Arabica Coffee	BM & F	Brazil	Aug-89	Nov-99	100 bags (1bag = 60kg.)	Food and Fiber	Out-cry	506	741,368
Potato	NVN	Netherlands	Jan-80	Nov-99	50 metric tons	Food and Fiber	Out-cry	470	476,897
Aluminum	SHFE	China		Nov-99		Metals	Electronic	449	462,916
Palo Verde Electricity	NYMEX	US	Mar-96	Nov-99		Energy	Both	404	346,364
Commodity Research Bureau Index	NYBT	US	Jun-86	Nov-99	$500 X index	Indices	Out-cry	399	361,295
California Oregon Border Electricity	NYMEX	US	Mar-96	Nov-99		Energy	Both	391	326,328
Rubber SS1	SICOM	Singapore	May-92	Nov-99	5 MT	Food and Fiber	Electronic	390	332,841
Wheat	LIFFE	England	Jul-65	Nov-99	100 metric tons	Grains and Oils	Out-cry	384	501,191
Rapeseed	ParisB	France	Oct-94	Nov-99		Grains and Oils	Electronic	342	396,733
Western Natural Gas	KCBT	US	Aug-95	Nov-99		Energy	Out-cry	336	316,344
Woolen Yarn	CHUBU	Japan	Oct-51	Nov-99	500 kg.	Food and Fiber	Out-cry	265	149,489
U.S.$-Denominated Live Cattle	BM & F	Brazil	Jun-91	Nov-99	4,950 kg	Livestock	Out-cry	251	445,901
Wheat	BCOE	Hungary	Nov-98	Nov-99		Grains and Oils	Out-cry	250	64,188
Baltic Freight Index	LIFFE	England	May-85	Nov-99	10 per BIFFEX point	Indices	Out-cry	245	206,069
Cinergy Hub Electricity	NYMEX	US	Jul-98	Nov-99	736 Mwh	Energy	Both	243	76,673
White Maize	SAFEX	South Africa	Feb-96	Nov-99	100 Ton	Grains and Oils	Electronic	239	206,214
Gold	KOFEX	Korea	Apr-99	Nov-99	1 kg	Metals	Electronic	227	36,254
TS Rubber 20	SICOM	Singapore	Nov-96	Nov-99	20 MT	Food and Fiber	Electronic	207	144,708
Brent Crude	SIMEX	Singapore	Jun-95	Nov-99		Energy	Out-cry	203	204,191
Milling Wheat	BCOE	Hungary	Jan-89	Apr-99	20 mt	Grains and Oils	Out-cry	196	219,302
Wheat (New)	ParisB	France	Mar-98	Nov-99		Grains and Oils	Electronic	195	77,193
Aluminum	NYMEX	US	May-99	Nov-99		Metals		195	27,256
Entergy Hub Electricity	NYMEX	US	Jul-98	Nov-99	736 Mwh	Energy	Both	186	54,164
Kilo Gold	CBOT	US	Apr-83	Nov-99	1 gross kg. (32.15 troy oz)	Metals	Out-cry	180	71,826
Corn	BCE	Hungary	Jan-89	Nov-99	20 mt	Grains and Oils	Out-cry	178	197,903
Propane	NYMEX	US	Aug-87	Nov-99	42,000 gallons (1,000 US barrels)	Energy	Both	173	200,306
Live Hog	NVN	Netherlands	Jan-85	Nov-99		Livestock	Out-cry	165	215,299
Long Grain Rice	SHFE	China	Jun-93	Mar-99		Grains and Oils	Electronic	164	95,952
Corn	ParisB	France	Oct-99	Nov-99	50 metric tons	Grains and Oils	Electronic	152	6,073
Oat	WCE	Canada	Jan-04	Nov-99	20/100 metric tonne board lot	Grains and Oils	Out-cry	140	42,650
Wool Yarn	TOCOM	Japan	Apr-84	Feb-99	500 kg.	Food and Fiber	Out-cry	110	26,288
Potato (in bulk)	LIFFE	England	Jun-80	Nov-99		Food and Fiber	Out-cry	107	106,005
Live Cattle	MIDAM	US	Sep-78	Nov-99	20,000 lbs.	Livestock	Out-cry	105	84,255
ISR Soybean	Rosario	Argentina	Nov-93	Apr-99	25 Metric Tons	Grains and Oils	Out-cry	99	116,844
Wheat (Trigo)	MAT	Argentina		Nov-99		Grains and Oils	Out-cry	95	110,144
Lean Hog	MIDAM	US	Sep-97	Nov-99	20,000 lbs.	Livestock	Out-cry	94	46,891
Soybean Oil	MIDAM	US	Jan-95	Nov-99	30000lb	Grains and Oils	Out-cry	94	102,291
Soybeans (Soja)	MAT	Argentina		Nov-99		Grains and Oils	Out-cry	87	111,310
Fluid & BFP Milk	CME	US	Jan-96	Nov-99	200,000 lbs.	Food and Fiber	Out-cry	85	74,558
Corn (Maiz)	MAT	Argentina		Nov-99		Grains and Oils	Out-cry	81	101,293
Sugar Crystal	BM & F	Brazil	Sep-95	Nov-99	270 bags	Food and Fiber	Out-cry	76	70,913
Sunflower Seed (Girasol)	MAT	Argentina		Nov-99		Grains and Oils	Out-cry	74	93,777
Yellow Maize	SAFEX	South Africa	Feb-96	Nov-99	100 Ton	Grains and Oils	Electronic	72	60,921

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
100 Oz. Gold	CBOT	US	Sep-87	Apr-99	100 troy oz	Metals	Out-cry	68	1,164
NY Gold	MIDAM	US	Jun-84	Nov-99	33.2 fine troy oz.	Metals	Out-cry	67	82,661
Soybean	BM & F	Brazil	Oct-95	Nov-99	27 metric tons related to 470 units	Grains and Oils	Out-cry	66	61,183
Corn	BM & F	Brazil	Nov-96	Nov-99	60 kg	Grains and Oils	Out-cry	65	41,639
Natural Gas	IPE	England		Nov-99	1,000 Therms	Energy	Electronic	62	6,245
Barley	LIFFE	England	Jun-64	Nov-99	100 metric tons	Grains and Oils	Out-cry	60	63,088
Durum Wheat	MGE	US	Feb-98	Nov-99		Grains and Oils	Out-cry	58	24,891
Tobacco	CCE	Bahamas	1996	Nov-99		Food and Fiber	Electronic	55	30,242
Hog	WTB	Germany	Apr-98	Nov-99		Livestock	Electronic	54	21,013
NY Silver	MIDAM	US	Nov-82	Nov-99	1000 troy oz.	Metals	Out-cry	52	65,370
Banana	CCE	Bahamas	1996	Nov-99		Food and Fiber	Electronic	52	28,748
NBSK Pulp	PULPEX	England	May-97	Nov-99	£ 24	Food and Fiber	Electronic	52	29,520
Cotton	BM & F	Brazil	Nov-96	Nov-99	28,108.65 pounds	Food and Fiber	Out-cry	51	34,373
Feed Peas	WCE	Canada	Nov-95	Apr-99		Grains and Oils	Out-cry	44	39,260
Greasy Wool (deliverable)	SFE	Australia	Mar-95	Nov-99	2,500 kg.	Food and Fiber	Electronic	43	46,414
Wheat	WTB	Germany	Feb-99	Nov-99	50 metric tonnes	Grains and Oils	Electronic	38	7,581
Euro Wheat	BCOE	Hungary	Aug-97	Apr-99	20 mt	Grains and Oils	Out-cry	36	19,198
White Wheat	MGE	US	Sep-84	Nov-99	5,000 bushels	Grains and Oils	Out-cry	35	65,308
Black Seed	BCE	Hungary	Jan-92	Nov-99	20 mt	Grains and Oils	Out-cry	34	39,721
Wheat	SFE	Australia	Mar-96	Nov-99		Grains and Oils	Electronic	34	26,807
Soybean Meal (New)	MIDAM	US	Jan-86	Nov-99	20 tons	Grains and Oils	Out-cry	34	68,885
Fuel Oil	IPE	England	Sep-99	Nov-99		Energy	Electronic	32	1,892
Oat	MIDAM	US	Oct-22	Nov-99	1000 bushels	Grains and Oils	Out-cry	30	26,703
BFP Milk	NYBT	US	Apr-97	Nov-99	1.000 X BFP	Food and Fiber	Out-cry	29	17,393
Field Peas	WCE	Canada	Apr-99	Nov-99		Grains and Oils	Out-cry	28	4,445
Potato	WTB	Germany	Apr-98	Nov-99		Food and Fiber	Electronic	25	8,806
NSW Electricity	SFE	Australia	Sep-97	Nov-99	500 Megawatt hours (Mwh)	Energy	Electronic	23	11,204
Rapeseed	WTB	Germany	Oct-99	Nov-99	50 metric tonnes	Grains and Oils	Electronic	22	863
Frozen Con, Orange Juice Differential	NYBT	US	Oct-99	Nov-99	Spread between FCOJ2/FCOJ	Food and Fiber	Out-cry	20	786
Refined Sugar	KANEX	Japan	Jan-82	Nov-99	20,000 kgs.	Food and Fiber	Electronic	20	13,206
Feed Barley	BCE	Hungary	Jan-91	Nov-99	20 mt	Grains and Oils	Out-cry	19	20,804
Large BFP Milk	NYBT	US	Apr-99	Nov-99	2.000 x BFP	Food and Fiber	Out-cry	19	3,085
PJM Electricity	NYMEX	US	Mar-99	Nov-99	736 Mwh	Energy	Both	18	3,181
Feed Wheat	BCOE	Hungary	Jan-89	Nov-99	20 mt	Grains and Oils	Out-cry	17	19,324
Staple Fiber (Dull)	OME	Japan	Apr-83	Mar-99	5000 lbs.	Food and Fiber	Out-cry	15	14,877
VIC Electricity	SFE	Australia	Sep-97	Nov-99	500 Megawatt hours (Mwh)	Energy	Electronic	15	7,446
5,000 Oz. Silver	CBOT	US	Sep-87	Oct-99	5000 troy oz.	Metals	Out-cry	14	8,913
90% Boneless Beef	CME	US	Jun-97	Apr-99	20,000 lbs	Livestock	Out-cry	14	8,024
Fresh Pork Bellies	CME	US	May-98	Nov-99	40,000 pds.	Livestock	Out-cry	13	5,079
19-Micron Fine Wool	SFE	Australia	Jan-98	Nov-99		Food and Fiber	Electronic	13	5,708
Refined Sugar	TGE	Japan	May-52	Nov-99	9,000 kg.	Food and Fiber	Electronic	13	13,218
Silver	LME	England	May-99	Nov-99		Metals	Out-cry	13	1,753
Wheat	SAFEX	South Africa	Nov-97	Nov-99	100 metric tons	Grains and Oils	Electronic	12	5,766
NZ Electricity NI	NZFOE	New Zealand	Nov-96	Nov-99		Energy	Electronic	12	8,193
Refined White Sugar	CHUBU	Japan	Jan-82	Nov-99	9,000 kg.	Food and Fiber	Out-cry	12	6,609
High-Tech Index	OSE	Japan	Jun-98	Nov-99	High-Tech Index x 1,000 yen	Indices	Electronic	12	4,179
Platinum	MIDAM	US	Aug-84	Nov-99	25 fine troy oz.	Metals	Out-cry	12	13,673

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Financial Index	OSE	Japan	Jun-98	Nov-99	Financial Index x 1,000 yen	Indices	Electronic	11	3,972
Piglet	NVN	Netherlands	Apr-91	Nov-99		Livestock	Out-cry	11	10.579
Corn	DCE	China		Mar-99		Grains and Oils		11	3,916
Consumer Index	OSE	Japan	Jun-98	Nov-99	Consumer Index x 1,000 yen	Indices	Electronic	8	3,005
Butter	CME	US	Sep-96	Nov-99		Food and Fiber	Out-cry	8	6.354
Wheat	Rosario	Argentina	Apr-91	Apr-99	100 Metric Tons	Grains and Oils	Out-cry	7	8.617
Refined White Soft Sugar	KCE	Japan	Jan-82	Nov-99	9,000 kg.	Food and Fiber	Electronic	7	6,609
Corn	Rosario	Argentina	Apr-91	Apr-99	100 Metric Tons	Grains and Oils	Out-cry	7	7.827
Stocker Cattle	CME	US	Nov-98	Nov-99	25,000 pds. of medium frame feeder steers	Livestock	Out-cry	5	946
Soybean	Rosario	Argentina	Apr-91	Mar-99	50 Metric Tons	Grains and Oils	Out-cry	5	200
NSW Peak-Period Electricity	SFE	Australia	Mar-99	Nov-99	500 Megawatt hours (Mwh)	Energy	Both	4	803
Iowa Corn Yield	CBOT	US	Jun-95	Nov-99	Corn yield estimate x $100	Grains and Oils	Out-cry	4	4,477
Pork Cutout	CME	US	Jan-99	Sep-99	40,000 pds.	Livestock	Out-cry	4	927
Cheddar Cheese	CME	US	Oct-97	Sep-99	40,000 lbs in 40-lb blocks	Food and Fiber	Out-cry	4	1,907
Sunflower Seed	SAFEX	South Africa	Jan-99	Nov-99	50 Metric tons	Grains and Oils	Electronic	3	697
Orient Strand Board	CME	US	Nov-96	Nov-99		Food and Fiber	Out-cry	3	2,149
VIC Peak-Period Electricity	SFE	Australia	Mar-99	Nov-99	500 Megawatt hours (Mwh)	Energy	Both	3	551
White Shrimp	MGE	US	Jul-93	Nov-99	5,000 pds.	Food and Fiber	Out-cry	3	1,917
Atlanta HDD	CME	US	Sep-99	Nov-99	$100 x Index	Indices	Electronic	3	157
23-Micron Broad Wool	SFE	Australia	Jan-98	Nov-99		Food and Fiber	Electronic	3	1,068
European Rapeseed	ParisB	France	Oct-99	Nov-99	50 metric tons	Grains and Oils	Electronic	2	92
Sunflower	Rosario	Argentina	Apr-91	Feb-99	50 Metric Tons	Grains and Oils	Out-cry	2	1.567
Rubber SS3	SICOM	Singapore	Sep-93	Nov-99	500 X Index	Food and Fiber	Electronic	2	2.186
Rapeseed	BCE	Hungary	Oct-99	Nov-99		Grains and Oils	Out-cry	2	69
Black Tiger Shrimp	MGE	US	Nov-94	Nov-99	5,000 pds.	Food and Fiber	Out-cry	2	1,793
U.S. Corn Yield	CBOT	US	Jan-96	Oct-99	Corn yield estimate x $100	Grains and Oils	Out-cry	1	1,245
Frozen Con, Orange Juice 2	NYBT	US	Oct-99	Nov-99	15,000 pds. orange solids	Food and Fiber	Out-cry	1	52
Rapemeal	WTB	Germany	Oct-99	Nov-99	50 metric tonnes	Grains and Oils	Electronic	1	47
Cincinnati HDD	CME	US	Sep-99	Nov-99	$100 x Index	Indices	Electronic	1	70
Live Hog II.	BCE	Hungary	Jan-91	Nov-99	5,000 kg	Livestock	Out-cry	1	984
TC Electricity On Peak	MGE	US	Sep-98	Nov-99	736 Mwh	Energy	Out-cry	1	251
Live Hog I.	BCE	Hungary	Jan-91	Nov-99	5,000 kg	Livestock	Out-cry	1	782
TVA Hub Electricity	CBOT	US	Sep-98	Jan-99	1,680 MWh	Energy	Electronic	1	181
Cape Wheat	SAFEX	South Africa	Feb-99	Nov-99	100 Metric tons	Grains and Oils	Electronic	0	92
Chicago HDD	CME	US	Sep-99	Nov-99	$100 x Index	Indices	Electronic	0	20
Soybean Meal	BCE	Hungary	Oct-99	Nov-99		Grains and Oils	Out-cry	0	11
Illinois Corn Yield	CBOT	US	Jan-96	Aug-99	Corn yield estimate x $100	Grains and Oils	Out-cry	0	251
Rapeoil	WTB	Germany	Oct-99	Nov-99	50 metric tonnes	Grains and Oils	Electronic	0	9
Ohio Corn Yield	CBOT	US	Jan-96	Jul-99	Corn yield estimate x $100	Grains and Oils	Out-cry	0	125
Western Natural Gas Index	KCBT	US	Jun-99	Jun-99		Energy	Out-cry	0	3

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Coal	NYMEX	US		Nov-99	37,200 British Thermal Units of	Energy		0	0
Cocoa (30,000#)	NYBT	US		Nov-99		Food and Fiber	Out-cry	0	0
Cotton	ICE	Turkey		Nov-99		Food and Fiber		0	0
Domestic Soybean	KGE	Japan	N/A	Nov-99	2.400 kg.	Grains and Oils	Electronic	0	0
Electricity Block	Nordpol	Sweden		Nov-99	168 Mwh	Energy	Electronic	0	0
Electricity Season	Nordpol	Sweden		Nov-99	168 Mwh	Energy	Electronic	0	0
Electricity Weekly	Nordpol	Sweden		Nov-99	168 Mwh	Energy	Electronic	0	0
Gold (New: 33.2 oz.)	MIDAM	US		Nov-99		Metals	Out-cry	0	0
Gold (Old: 1 Kg)	MIDAM	US		Nov-99		Metals	Out-cry	0	0
Live Cattle	FutureCom	US		Nov-99		Livestock	Electronic	0	0
MAPP Electricity	MGE	US		Nov-99		Energy	Out-cry	0	0
Metals Index	LME	England		Nov-99		Metals	Out-cry	0	0
PJM Electricity	CBOT	US		Nov-99	1,680 MWh	Energy		0	0
Potato Starch	CHUBU	Japan	N/A	Nov-99	2.500 kg.	Food and Fiber	Out-cry	0	0
Potato Starch	KCE	Japan		Nov-99	2.500 kg.	Food and Fiber	Out-cry	0	0
Recyclable Paper	WTB	Germany		Nov-99	100 metric tonnes	Food and Fiber	Electronic	0	0
Wheat	WGT	Poland		Nov-99		Grains and Oils		0	0
Peanut	CZCE	China	Apr-98	Dec-98	10 tonnes	Food and Fiber	Electronic	60	21.562
Dry Whey	CME	US	Nov-98	Nov-98	44.000 pds.	Food and Fiber	Out-cry	0	0
Non-Fat Dry Milk	CME	US	Nov-98	Nov-98	44.000 pds.	Food and Fiber	Out-cry	0	0
Cotton	EICA	India	Nov-98	Nov-98		Food and Fiber		0	0
Soybean Meal	CZCE	China	May-97	Nov-98		Grains and Oils	Electronic	536	331.020
Navel Orange	FC&M	Spain	Sep-95	Nov-98	5 mt.	Food and Fiber	Electronic	124	96.389
50% Beef Trimming	CME	US	Jun-97	Nov-98	20.000 lbs	Livestock	Out-cry	11	5.831
Cheddar Cheese	NYBT	US	Jun-93	Nov-98	40.000 pds.	Food and Fiber	Out-cry	3	2.155
Sweet Potato Starch	CHUBU	Japan	Jan-82	Nov-98	2,500 kg.	Food and Fiber	Out-cry	0	167
Com Ed Hub Electricity	CBOT	US	Sep-98	Nov-98	1,680 MWh	Energy	Electronic	0	88
TC Electricity Off Peak	MGE	US	Sep-98	Sep-98	736 Mwh	Energy	Out-cry	0	0
Plywood	SHFE	China		Sep-98		Food and Fiber	Electronic	134.764	124.630.888
Copper	COCE	China		Sep-98		Metals		1.580	1.106.799
Soybean	SHFE	China		Sep-98		Grains and Oils	Electronic	671	383.440
Sour Crude Oil	NYMEX	US	Feb-92	Sep-98	1,000 US barrels (42.000 gal.)	Energy	Out-cry	13	1
Milk	NYBT	US	Dec-95	Sep-98	1 Non-fat Dry Milk futures contract	Food and Fiber	Out-cry	7	5,760
Potato	NYBT	US	Sep-96	Sep-98		Food and Fiber	Out-cry	2	1.296
Aluminum	TUFE	China		Aug-98		Metals		3.022	1.055.136
Copper	TUFE	China		Aug-98		Metals		30	16.746
Greenbean	Beijing	China	Apr-94	Aug-98	10 tonnes	Food and Fiber	Electronic	163.987	143.903.102
Coffee	CCFE	China		Aug-98		Food and Fiber	Electronic	85.138	61.291.900
Rubber	CCFE	China		Aug-98		Food and Fiber	Electronic	48.617	39.100.415
Red Bean	TUFE	China		Aug-98		Grains and Oils		28.526	16.364.994
Soybean Meal	GUFE	China		Aug-98		Grains and Oils	Electronic	6.189	3.897.432
Malty Barley	SYCE	China		Aug-98		Grains and Oils		4.585	3.322.849
Palm Oil	CCFE	China		Aug-98		Grains and Oils	Electronic	4.563	3.955.364
Copper	SME	China		Aug-98		Metals	Out-cry	3.459	2.215.145
Aluminum	SME	China		Aug-98		Metals	Out-cry	3.082	2.000.613
Sorghum	SYCE	China		Aug-98		Grains and Oils		2.787	745.708
Sorghum	CUFE	China		Aug-98		Grains and Oils		1.512	289.994
Soybean Meal	SCE	China		Aug-98		Grains and Oils	Electronic	1.429	400.157

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Gold 1 Kg. U.S. Dollar Denominated	BM & F	Brazil	Aug-93	Aug-98	1 kg.	Metals	Out-cry	875	1,023,515
Copper	SYCE	China		Aug-98		Metals		392	300.348
Malty Barley	CCFE	China		Aug-98		Grains and Oils	Electronic	280	218.220
Wheat (Old)	ParisB	France	Jul-96	Aug-98		Grains and Oils	Out-cry	36	20.360
Peanut	Beijing	China	Dec-95	Aug-98	4 tonnes	Food and Fiber	Electronic	14	7.588
Cocoa	CCFE	China		Aug-98		Food and Fiber	Electronic	8	5.568
Non-Fat Dry Milk	NYBT	US	Jun-93	Aug-98	44.000 pds.	Food and Fiber	Out-cry	2	875
Nebraska Corn Yield	CBOT	US	Jan-96	Aug-98	Corn yield estimate x $100	Grains and Oils	Out-cry	0	56
Indiana Corn Yield	CBOT	US	Jan-96	Aug-98	Corn yield estimate x $100	Grains and Oils	Out-cry	0	47
Corn	Beijing	China	Dec-93	Aug-98	10 tonnes	Grains and Oils	Electronic	0	0
Red Bean	Beijing	China		Aug-98		Grains and Oils	Electronic	0	0
Soybean	Beijing	China		Aug-98		Grains and Oils	Electronic	0	0
Grain	CCHE	China		Aug-98		Grains and Oils	Electronic	0	0
Soybean	CCHE	China		Aug-98		Grains and Oils	Electronic	0	0
Corn	CUFE	China		Aug-98		Grains and Oils		0	0
Long Grain Rice	CUFE	China		Aug-98		Grains and Oils		0	0
Red Wheat	CUFE	China		Aug-98		Grains and Oils		0	0
Corn	CZCE	China		Aug-98		Grains and Oils	Electronic	0	0
Red Bean	SCE	China		Aug-98		Grains and Oils	Electronic	0	0
Corn	SHFE	China		Aug-98		Grains and Oils	Electronic	0	0
Greenbean	SHFE	China		Aug-98		Grains and Oils	Electronic	0	0
Malting Barley	SHFE	China		Aug-98		Grains and Oils	Electronic	0	0
Redbean	SHFE	China		Aug-98		Grains and Oils	Electronic	0	0
White Wheat	SHFE	China		Aug-98		Grains and Oils	Electronic	0	0
Soybean	TUFE	China		Aug-98		Grains and Oils		0	0
Plywood	Beijing	China	Mar-94	Aug-98	400 pieces	Food and Fiber	Electronic	0	0
Forestry Product	CCHE	China		Aug-98		Food and Fiber	Electronic	0	0
Plywood	CZCE	China		Aug-98		Food and Fiber	Electronic	0	0
Tianjin Plywood	TUFE	China		Aug-98		Food and Fiber		0	0
Polypropylene	Beijing	China	Dec-93	Aug-98	10 tonnes	Other	Electronic	0	0
Sodium Carbonate	Beijing	China	Mar-94	Aug-98	10 tonnes	Other	Electronic	0	0
Aluminum	Beijing	China		Aug-98	25 tonnes	Metals	Electronic	0	0
Copper	Beijing	China	Feb-93	Aug-98	25 tonnes	Metals	Electronic	0	0
Cast Iron	TUFE	China		Aug-98		Metals		0	0
Crude Iron	TUFE	China		Aug-98		Metals		0	0
Valencia Orange	FC&M	Spain	Feb-96	Jul-98	5 mt.	Food and Fiber	Electronic	106	86.960
White Sugar (100)	ParisB	France	Jun-97	Jul-98	50 metric tons	Food and Fiber	Out-cry	23	8.451
Plywood	SCE	China		Jun-98		Food and Fiber	Electronic	115.048	97.531.341
Feed Barley	MGE	US	Jul-96	May-98	180.000 lbs	Grains and Oils	Out-cry	2	1.052
Robusta	SICOM	Singapore	Jan-95	May-98	10mt	Food and Fiber	Electronic	32	29.681
Nickle	SHFE	China		Mar-98		Metals	Electronic	3	1.554
Sorghum	Rosario	Argentina	Nov-95	Mar-98	50 Metric Tons	Grains and Oils	Out-cry	1	432
Gold (all currencies)	IGE	Turkey	Aug-97	Feb-98	3 kg.	Metals	Electronic	1	211
Maize	BLAGOVNA	Slovenija	Apr-95	Dec-97	25 tons	Grains and Oils	Both	0	14
Barley	BLAGOVNA	Slovenija	Mar-95	Dec-97	25 tons	Grains and Oils	Both	0	0
Live Hog 15,000#	MIDAM	US	Jun-74	Dec-97	20.000 lbs.	Livestock	Out-cry	468	46.896
Aluminum Ingot	COCE	China		Dec-97		Metals		17	12.861
Butter	NYBT	US	Oct-96	Dec-97		Food and Fiber	Out-cry	2	1.469
Pepper	Cochin	India	Nov-97	Nov-97		Food and Fiber		0	0
Lean Cattle	MIDAM	US	Sep-97	Sep-97	20.000 lbs.	Livestock	Out-cry	0	0
TSR20	SICOM	Singapore	May-92	Aug-97	20 MT	Food and Fiber	Electronic	81	70.749
Diammonium Phosphate	CBOT	US	Oct-91	Jul-97	100 tons	Food and Fiber	Both	84	10,675

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Anhydrous Ammonia	CBOT	US	Sep-92	Jul-97	100 tons, contract grade	Food and Fiber	Both	17	1,402
Fuel Oil	SIMEX	Singapore	Feb-89	Jul-97	100 metric tons	Energy	Out-cry	967	21.322
Alberta Natural Gas	NYMEX	US	Sep-96	Jul-97		Energy		4	2.900
Potato (50mm)	ParisB	France	Nov-87	May-97	20 metric tons	Food and Fiber	Out-cry	95	41.850
Staple Fiber (Bright)	OME	Japan	Apr-83	Mar-97	5,000 lbs.	Food and Fiber	Out-cry	57	6.876
U.S.$ Denominated Arabica Coffee	BM & F	Brazil	Apr-95	Feb-97	100 bags of 60 Kg.	Food and Fiber	Out-cry	29	14,001
NABI	SAFEX	South Africa	Aug-96	Feb-97		Grains and Oils	Electronic	0	20
Clementine Orange	FC&M	Spain	Sep-96	Jan-97	5 mt.	Food and Fiber	Electronic	46	23.218
Permian Basin Natural Gas	NYMEX	US	May-96	Jan-97	10,000 MMBtu	Energy	Out-cry	10	8,818
White Sugar	NYBT	US	Oct-87	Jan-97	50 metric tons	Food and Fiber	Out-cry	1	333
Live Hog	CME	US	Feb-66	Dec-96	40,000 pds hogs (barrow & gilts)	Livestock	Out-cry	10,175	3,312,770
Wheat	NVN	Netherlands	May-96	Dec-96		Grains and Oils	Out-cry	4	531
Long Grain Rice	GUFE	China		Nov-96		Grains and Oils	Electronic	2.606	573.259
Spud	SAFEX	South Africa	Oct-95	Nov-96	1 Ton	Food and Fiber	Electronic	2	1.245
Polyvinyl Chloride	SHFE	China		Nov-96		Other	Electronic	0	0
Zinc	SHFE	China		Sep-96		Metals	Electronic	2	808
Crude Palm Kernel Oil	COMMEX M	Malaysia	Oct-92	Jul-96	15 Metric Tons	Grains and Oils	Out-cry	21	0
Beef	SAFEX	South Africa	Jul-95	Jul-96	2 Ton	Livestock	Electronic	2	1.120
Gold	REX	Russia	Jan-92	Jul-96	100 grams of pure gold	Metals	Both	0	198
Dry Cocoon	MIFE	Philippines	Jul-92	Jun-96	300 kgs.	Food and Fiber	Out-cry	1.136	138.603
Copra	MIFE	Philippines	Feb-88	Jun-96	20 metric tons	Food and Fiber	Out-cry	956	110.812
Soybean	MIFE	Philippines	Oct-86	Jun-96	30,000 kg.	Grains and Oils	Out-cry	735	116.864
Sugar	MIFE	Philippines	Oct-86	Jun-96	112.000 lbs.	Food and Fiber	Out-cry	707	143.260
Coffee	MIFE	Philippines	Feb-88	Jun-96	5 metric tons	Food and Fiber	Out-cry	665	158.142
Lead	SHFE	China		Jun-96		Metals	Electronic	0	56
BL-55 Flour	BCE	Hungary	Jan-89	Jun-96	5 mt	Grains and Oils	Out-cry	0	49
Aluminum	GUFE	China		Apr-96		Metals	Electronic	1	116
Tin	SHFE	China		Apr-96		Metals	Electronic	0	2
Lumber	CME	US	Oct-69	Mar-96	160,000 bd. ft. of random length 2x4's	Food and Fiber	Out-cry	2,818	192,793
Gold	SIMEX	Singapore	May-90	Mar-96	100 troy oz.	Metals	Out-cry	11	40
Canadian Barley	WCE	Canada	Nov-93	Dec-95	100 metric tonne board lot	Grains and Oils	Out-cry	104	18,473
Structural Panel Index	CBOT	US	Jan-94	Oct-95	100,000 sq. ft pf structural panels	Food and Fiber	Out-cry	16	885
Rye	WCE	Canada	Jan-17	Sep-95	20/100 metric tonne board lot	Grains and Oils	Out-cry	752	104
Wool	SFE	Australia	Jul-86	Sep-95	2.500 kg.	Grains and Oils	Out-cry	5	1.245
Edible Oil Index	CBOT	US	Sep-94	Aug-95	100 metric tons x Int'l Edible Oil Index	Grains and Oils	Out-cry	1	21
Raw Sugar	LIFFE	England	Nov-93	Jun-95		Food and Fiber	Out-cry	96	25.968
Unleaded Gasoline	IPE	England	Jan-92	Jun-95	100 metric tons	Energy	Out-cry	89	3.030
Live Hog III.	BCE	Hungary	Apr-95	Apr-95	5.000 kg	Livestock	Out-cry	0	2
Imported Soybean	HGE	Japan	Jan-82	Mar-95	15.000 kg.	Grains and Oils	Out-cry	1.603	24.912
Red Bean	HGE	Japan	Jan-82	Mar-95	2.400 kg.	Grains and Oils	Out-cry	849	75.501
Gulf Coast Unleaded Gas	NYMEX	US	Sep-92	Mar-95	42,000 gallons (1,000 US barrels)	Energy	Out-cry	8	252
Rough Rice	MIDAM	US	Sep-83	Sep-94	2000 cwt. (200,000 lbs.)	Grains and Oils	Out-cry	216	0

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Domestic Soybean	HGE	Japan	Jan-82	Sep-94	2,400 kg.	Grains and Oils	Out-cry	35	0
Dollar/Gold Index	SAFEX	South Africa	Aug-90	Sep-94	R100 X the US$ price of gold	Metals	Electronic	27	0
White Bean	HGE	Japan	Jan-82	Sep-94	2,400 kg.	Grains and Oils	Out-cry	6	0
Potato Starch	HGE	Japan	Jan-82	Sep-94	2,500 kg.	Food and Fiber	Out-cry	0	0
Gold	HKFE	Hong Kong	Aug-80	Jul-94	100 troy oz.	Metals	Out-cry	66	0
Barge Freight Index	CBOT	US	Oct-92	Jun-94	1 Hopper Barge w/capacity 1500 tons	Indices	Out-cry	0	0
Coffee	ParisB	France	Feb-72	Jun-94	5 metric tons	Food and Fiber	Out-cry	22	0
Live Cattle (cash settled)	SFE	Australia	May-86	May-94	10,000 kg.	Livestock	Both	5	0
Domestic Feed Barley	WCE	Canada	Jan-82	May-94	20/100 metric tons	Grains and Oils	Out-cry	1,720	0
Live Cattle	MERFOX	Argentina	Jul-91	Mar-94	5,000 kg. choice & select steers	Livestock	Out-cry	54	0
Cotlook World Cotton	NYBT	US	Oct-92	Feb-94	50,000 lbs. x futures price	Food and Fiber	Out-cry	43	0
High Protein Soybean Meal	LIFFE	England	Oct-90	Dec-93	20 metric tons	Grains and Oils	Out-cry	67	0
Oat	MGE	US	Oct-88	Dec-93	5.000 bushels	Grains and Oils	Out-cry	5	0
Gasoil	SIMEX	Singapore	Jun-91	Nov-93	1.000 US Barrels	Energy	Out-cry	50	0
Soybean	BM & F	Brazil	Jul-93	Nov-93	30 metric tons	Grains and Oils	Out-cry	1	0
Imported/Chinese Soybean	TGE	Japan	Oct-72	Sep-93	15,000 kg.	Grains and Oils	Electronic	10,028	0
Imported Soybean	KGE	Japan	Jan-82	Sep-93	15.000 kg.	Grains and Oils	Electronic	3.388	0
Red Bean	KGE	Japan	Jan-82	Sep-93	2.400 kg.	Grains and Oils	Electronic	883	0
Imported Soybean	KGE	Japan	Jun-93	Sep-93	30.000 kg.	Grains and Oils	Electronic	819	0
White Bean	KANEX	Japan	May-09	Sep-93	2,400 kg.	Grains and Oils	Electronic	53	0
Potato Starch	KANEX	Japan	Jan-80	Sep-93	2,500 kg.	Food and Fiber	Electronic	5	0
U.S.$-Denominated Robusta Coffee New	BM & F	Brazil	Apr-93	Sep-93	100 Bags (1 bag=60 kilograms)	Food and Fiber	Out-cry	0	0
Aluminum	NYMEX	US	Feb-83	Jul-93	40,000 lbs.	Metals	Out-cry	343	0
Cocoa	COMMEX M	Malaysia	Aug-88	Jul-93	10 metric tons	Food and Fiber	Out-cry	22	0
RBD Palm Olein	COMMEX M	Malaysia	Feb-90	Jun-93	25 metric tons	Grains and Oils	Out-cry	4	0
Platinum	NYMEX	US	Sep-92	Jun-93	50 troy oz.	Metals	Out-cry	27	0
Paladium	NYMEX	US	Sep-92	Jun-93	100 troy oz.	Metals	Out-cry	1	0
Lamb	LIFFE	England	Sep-91	Jun-93	1000 kgs.	Livestock	Out-cry	2	0
Raw Sugar	LIFFE	England	Aug-85	Apr-93	50 metric tons	Food and Fiber	Both	2,922	0
Broilers - OLD	CME	US	Nov-79	Jan-93		Food and Fiber	Out-cry	94	0
U.S.$-Denominated Robusta Coffee	BM & F	Brazil	Mar-92	Jan-93	100 bags (1bag = 60kg.)	Food and Fiber	Out-cry	5	0
Stud Lumber	CME	US	Nov-77	Jan-93		Food and Fiber	Out-cry	5	0
Potatos	CME	US	Jan-31	Jan-93		Food and Fiber	Out-cry	5	0
Fresh Eggs	CME	US	Dec-19	Jan-93		Food and Fiber	Out-cry	4	0
Oat (5.000 Bu)	MIDAM	US		Dec-92		Grains and Oils	Out-cry	10	0
U.S.$-Denominated Calf	BM & F	Brazil	Jun-92	Dec-92	33 X140 kg calves	Livestock	Out-cry	7	0
U.S.$-Denominated Cotton	BM & F	Brazil	Sep-91	Dec-92	28, 108.65 pounds	Food and Fiber	Out-cry	0	0
Gold - 1kg.	NYMEX	US	Dec-74	Dec-92		Metals	Out-cry	0	0
Potato	NYMEX	US		Nov-92		Food and Fiber	Out-cry	745	0
Imported Lean Beef	NYMEX	US		Nov-92		Livestock	Out-cry	57	0
Sugar	HKFE	Hong Kong	Apr-80	Oct-92	112.000 lbs.	Food and Fiber	Out-cry	866	0
Tin	COMMEX M	Malaysia	Oct-87	Oct-92	5 metric tons	Metals	Out-cry	36	0
Brazil Diff Coffee	NYBT	US	Jun-92	Sep-92	37,500 pds.	Food and Fiber	Out-cry	1	0

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
NZ Crossbred Wool (New) (WFC)	NZFOE	New Zealand	May-91	Sep-92	(2,500 kg.x NZWool Bd. Strong Segmt. Ind.)NZ$	Food and Fiber	Electronic	2	0
Broilers - NEW	CME	US	Feb-91	Jul-92	40,000 pds. broiler chicken	Livestock	Out-cry	10	0
Naphtha	IPE	England	Apr-91	May-92	101 metric tons	Energy	Out-cry	96	0
Coffee (Robusta)	LIFFE	England	Jan-82	Mar-92	5 metric tons	Food and Fiber	Out-cry	4,521	0
MGMI	LIFFE	England	Jun-90	Mar-92	$100 x MGMI Index	Livestock	Both	313	0
Soybean	HKFE	Hong Kong	Nov-79	Mar-92	500 60 kg. bags	Grains and Oils	Out-cry	1,902	0
Cocoa	ParisB	France	Jan-62	Mar-92	10 metric tons	Food and Fiber	Out-cry	27	0
Arabica Coffee	LIFFE	England	Mar-91	Feb-92	37,500 lb.	Food and Fiber	Both	14	0
Dubai Crude Oil	SIMEX	Singapore	Jun-90	Jan-92	1,000 barrels	Energy	Out-cry	25	0
Rough Rice (New)	MIDAM	US	Aug-86	Dec-91		Food and Fiber	Out-cry	174	0
Grain Sorghum	KCBT	US	May-89	Nov-91	N/A	Grains and Oils	Out-cry	18	0
International Rice	LIFFE	England	Nov-90	Nov-91	50 metric tons	Food and Fiber	Both	5	0
Rice	LIFFE	England	Nov-90	Nov-91	50 metric tons	Food and Fiber	Out-cry	0	0
Commercial Property	LIFFE	England	May-91	Oct-91	£500 x index	Other	Both	52	0
Residential Property	LIFFE	England	May-91	Oct-91	£500 x index	Other	Both	27	0
Commercial Rent	LIFFE	England	May-91	Oct-91	£500 x index	Other	Both	5	0
U.S.$- Denominated Soybean	BM & F	Brazil	Jun-90	Sep-91	500 bags	Grains and Oils	Out-cry	0	0
Coffee	BM & F	Brazil	Mar-86	Sep-91	100 bags	Food and Fiber	Out-cry	6	0
Cotton	BM & F	Brazil	May-91	Aug-91	850 net arrobas	Food and Fiber	Out-cry	2	0
Euro-Diff Coffee	NYBT	US	Apr-91	Jun-91	37,500 lbs.	Food and Fiber	Out-cry	0	0
Zinc (hg)	LME	England	Jan-83	Jun-91	25 metric tons	Metals	Out-cry	4,487	0
Gold	BM & F	Brazil	Jan-85	May-91	250 grams	Metals	Out-cry	1,308	0
Live Cattle	BM & F	Brazil	Jan-85	May-91	330 arrobas	Livestock	Out-cry	959	0
Potatoe	LIFFE	England	Jan-82	May-91	20 metric tons	Food and Fiber	Out-cry	802	0
Arabic Coffee	BM & F	Brazil	Jan-85	May-91	100 60-kg. bags	Food and Fiber	Out-cry	603	0
Robusta Coffee	BM & F	Brazil	Jan-93	May-91	100 60-kg. bags	Food and Fiber	Out-cry	29	0
Soybean	BM & F	Brazil	Mar-86	May-91	30 metric tons	Grains and Oils	Out-cry	16	0
Dubai Sour Crude Oil	IPE	England	Jul-90	May-91	1,000 barrels	Energy	Out-cry	12	0
Feeder Cattle	BM & F	Brazil	Jan-91	May-91	27 heads	Livestock	Out-cry	0	0
Corn	BM & F	Brazil	N/A	May-91	60 metric tons	Grains and Oils	Out-cry	0	0
Soybean Meal	BM & F	Brazil	N/A	May-91	25 metric tons	Grains and Oils	Out-cry	0	0
Soybean Oil	BM & F	Brazil	N/A	May-91	12.5 metric tons	Grains and Oils	Out-cry	0	0
Potato (40mm)	ParisB	France	Nov-87	Feb-91	20 metric tons	Food and Fiber	Out-cry	1	0
Gold (250g)	BM & F	Brazil	Mar-86	Feb-91	250 grams	Metals	Out-cry	205	0
Soybean Meal	LIFFE	England	Jan-82	Nov-90		Grains and Oils	Out-cry	244	0
International Rubber	LIFFE	England	May-90	Nov-90	10.08 metric tons	Food and Fiber	Both	16	0
Heavy Fuel Oil	IPE	England	Oct-86	Sep-90	100 metric tons	Energy	Out-cry	14	0
Brazilian Coffee	BM & F	Brazil	Aug-88	Jul-90	100 bags	Food and Fiber	Out-cry	5	0
Rubber	LIFFE	England	May-90	Jun-90		Food and Fiber	Out-cry	35	0
Malaysian Rubber (std 20MT 10MT)	COMMEX M	Malaysia	Mar-86	Jan-90	10 metric tons	Food and Fiber	Out-cry	6	0
Copper	NYMEX	US	Jul-33	Dec-89	25,000 pds.	Metals	Out-cry	9,719	0
Residual Fuel Oil	NYMEX	US	Oct-89	Dec-89	1,000 bbl (42,000 gallons)	Energy	Out-cry	9	0
Glass	EX	England		Nov-89		Food and Fiber	Electronic	0	0
Paper	EX	England		Nov-89		Food and Fiber	Electronic	0	0
Plastic	EX	England		Nov-89		Food and Fiber	Electronic	0	0
Recovery	EX	England		Nov-89		Food and Fiber	Electronic	0	0
Aluminum	EX	England		Nov-89		Metals	Electronic	0	0

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Steel	EX	England		Nov-89		Metals	Electronic	0	0
Live Cattle	BM & F	Brazil	May-87	Oct-89	4950 kgs.	Livestock	Out-cry	20	0
Gold (COMEX linked)	SFE	Australia	Nov-86	Oct-89		Metals	Out-cry	12	0
Propane	NYBT	US		Sep-89		Energy	Out-cry	57	0
Live Cattle	LIFFE	England	Jun-86	Sep-89	5,000 kg.	Livestock	Out-cry	1	0
Potatoe (cash-settled)	LIFFE	England	Feb-86	Jul-89	40 metric tons	Food and Fiber	Out-cry	9	0
Silver (10,000 oz.)	LME	England	Jan-83	May-89	10,000 oz.	Metals	Out-cry	467	0
Silver (2,000 oz.)	LME	England	Nov-83	May-89	2,000 oz.	Metals	Out-cry	2	0
Aluminium (99.5%)	LME	England	Jan-83	Dec-88	25 metric tons	Metals	Out-cry	5,787	0
Copper (std)	LME	England	Apr-86	Dec-88	25 metric tons	Metals	Out-cry	37	0
High Fructose Corn Syrup	MGE	US	Apr-87	Nov-88		Food and Fiber	Out-cry	14	0
NZ Crossbred Wool (NZW)	NZFOE	New Zealand	Oct-85	Aug-88		Food and Fiber	Electronic	102	0
Freight Rate Index	IFE	Bermuda	May-85	Jul-88	unavailable	Indices	Out-cry	225	0
100 Oz. Gold	CME	US		Jun-88		Metals	Out-cry	5,277	0
Gold - London Delivery	CME	US	Jun-87	Jun-88		Metals	Out-cry	0	0
Gold - N.Y. Delivery	CME	US	Sep-87	Jun-88		Metals	Out-cry	0	0
Silver	WCE	Canada	Jan-82	Jan-88	200 oz.	Metals	Out-cry	9	0
Cotton	BM & F	Brazil	Jan-86	Jan-88	500 arrobas	Food and Fiber	Out-cry	2	0
Gold	WCE	Canada	Jan-82	Jan-88	20 oz.	Metals	Out-cry	2	0
Live Hog	BM & F	Brazil	Sep-87	Dec-87	8,000 net kg.	Livestock	Out-cry	10	0
Premium Leaded Gasoline	IPE	England	Oct-86	Dec-87	100 metric tons	Energy	Out-cry	6	0
Cocoa	BM & F	Brazil	Jan-87	Nov-87	50 60-kg. bags	Food and Fiber	Out-cry	10	0
Broilers	BM & F	Brazil	Mar-87	Sep-87	12 metric tons	Livestock	Out-cry	61	0
Copper	MIDAM	US	Nov-84	Aug-87		Metals	Out-cry	16	0
Greasy Wool (deliverable)	SFE	Australia	May-60	Jul-87	2,500 kg.	Food and Fiber	Out-cry	72	0
Soybean Meal (old)	MIDAM	US	Apr-85	Jun-87	20 tons (40,000 lbs.)	Grains and Oils	Out-cry	61	0
Potato (Cash Settlement)	NYMEX	US	Jun-83	Apr-87		Food and Fiber	Out-cry	97	0
Pig	LIFFE	England	Jun-86	Apr-87	3,250 kg.	Livestock	Out-cry	26	0
New Zealand Wheat (WHT)	NZFOE	New Zealand	Jun-86	Apr-87		Grains and Oils	Electronic	2	0
Pigmeat	LIFFE	England	Mar-84	Mar-87		Food and Fiber	Out-cry	90	0
Palm Kernel	COMMEX M	Malaysia	Dec-86	Jan-87		Food and Fiber	Out-cry	1	0
Copper High Grade	MIDAM	US	Jun-86	Dec-86		Metals	Out-cry	7	0
Cotton Short Staple	MIDAM	US	Jan-85	Dec-86		Food and Fiber	Out-cry	7	0
Rubber (15 tons)	LRTMA	England	Jan-82	Dec-86	15 tons	Food and Fiber	Out-cry	150	0
Rubber (5 tons)	LRTMA	England	Jan-82	Dec-86	5 tons	Food and Fiber	Out-cry	8	0
Leaded Regular Gasoline, N.Y.	NYMEX	US	Oct-81	Oct-86		Energy	Out-cry	4,149	0
Sugar #12	NYBT	US		Oct-86		Food and Fiber	Out-cry	41	0
Live Pig	LIFFE	England	Apr-85	Oct-86		Food and Fiber	Out-cry	1	0
Sugar ($,CIF)	LIFFE	England	Jun-83	Sep-86		Food and Fiber	Out-cry	2,148	0
Raw Sugar	KCE	Japan	Aug-86	Sep-86	10,000 kg.	Food and Fiber	Electronic	7	0
Trade Steers (deliverable)	SFE	Australia	Jul-75	Aug-86	10,000 kg.	Livestock	Out-cry	180	0
Beef	LIFFE	England	Feb-86	Aug-86	N/A	Livestock	Out-cry	7	0
White Beans	CHUBU	Japan	Jan-82	Jul-86	2,400 kg.	Grains and Oils	Out-cry	18	0
Copper (hg)	LME	England	Jan-83	Jun-86	25 metric tons	Metals	Out-cry	5,695	0
Copper Cathodes	LME	England	Jan-83	Jun-86		Metals	Out-cry	94	0

Appendix F--Commodity Futures Contracts

Contracts	Exchange	Country	List Date	Last Date	Trading Unit	Complex	Method of Trade	Average Daily Volume	5 Year Total Volume
Gold	SFE	Australia	Apr-78	Mar-86	100 troy oz.	Metals	Out-cry	95	0
Gold	IFE	Bermuda	Oct-84	Jan-86	unavailable	Metals	Out-cry	159	0
Silver	SFE	Australia	Oct-81	Dec-85		Metals	Out-cry	35	0
Refinded Sugar	MIDAM	US	Oct-82	Oct-85		Food and Fiber	Out-cry	51	0
Silver (1,000 oz.)	MIDAM	US		Jul-85		Metals	Out-cry	3	0
Gold Bullion	CME	US	Dec-74	Jul-85	100 oz. Gold	Metals	Out-cry	1,116	0
Domestic Soybean	TGE	Japan	Jan-82	May-85	2,400 kg	Grains and Oils	Electronic	3	0
Fat Lamb (Revised)	SFE	Australia	Oct-83	Apr-85		Livestock	Out-cry	2	0
White Bean	KGE	Japan	May-09	Dec-84	2.400 kg.	Grains and Oils	Out-cry	36	0
White Bean	KCE	Japan	Jan-82	Oct-84	2.400 kg.	Grains and Oils	Electronic	7	0
Western Plywood	CBOT	US	Apr-81	Sep-84	1- lot of 36 double banded units of 66 pieces	Other	Out-cry	221	0
White Bean	TGE	Japan	Jan-82	Aug-84	2.400 kg.	Grains and Oils	Electronic	12	0
Regular Leaded Gas	CME	US	Mar-84	Jun-84		Energy	Out-cry	51	0
Number #2 Fuel Oil	CME	US	Mar-84	Jun-84		Energy	Out-cry	33	0
Raw Sugar	LIFFE	England	Jan-82	Apr-84		Food and Fiber	Out-cry	3,746	0
Fat Lamb	SFE	Australia	May-81	Mar-84		Livestock	Out-cry	2	0
Potato Starch	TGE	Japan	Jan-82	Feb-84	2,500 kg.	Food and Fiber	Electronic	3	0
Cotton	MIDAM	US	Jul-81	Dec-83		Food and Fiber	Out-cry	31	0
Corn	MIDAM	US	Oct-82	Dec-83		Food and Fiber	Out-cry	4	0
Unleaded Regular Gasoline	CBOT	US	Dec-82	Dec-83	1,000 barrels (42,000 gallons)	Energy	Out-cry	232	0
Heating Oil	CBOT	US	Apr-83	Dec-83	1,000 barrels (42,000 gallons)	Energy	Out-cry	18	0
Soybean Oil	LIFFE	England	Apr-82	Nov-83	1 Soybean Meal futures contract	Grains and Oils	Out-cry	34	0
5,000 Oz. Silver - OLD	CBOT	US	Nov-69	Oct-83		Metals	Out-cry	685	0
Export Bullock	SFE	Australia	May-82	Sep-83		Livestock	Out-cry	1	0
Sugar (TO)	LIFFE	England	Mar-83	Sep-83		Food and Fiber	Out-cry	4	0
Crude Oil	CBOT	US	Mar-83	Aug-83	1,000 barrels (42,000 gallons)	Energy	Out-cry	280	0
100 Troy Oz. Gold - OLD	CBOT	US	Feb-79	Jun-83		Metals	Out-cry	134	0
Number 2 Heating Oil, Gulf	NYMEX	US	Aug-81	Nov-82		Energy	Out-cry	6	0
Leaded Regular Gasoline, Gulf	NYMEX	US	Dec-81	Nov-82		Energy	Out-cry	1	0
Plywood	CME	US	Jul-81	Jun-82		Food and Fiber	Out-cry	1	0
Sunflower Seed	MGE	US	May-80	Mar-82		Food and Fiber	Out-cry	48	0
Plywood	CBOT	US	Dec-69	Jan-82		Food and Fiber	Out-cry	604	0
Soybean	MIDAM	US	Oct-81	Oct-81		Food and Fiber	Out-cry	13	0
Frozen Boneless Beef	SFE	Australia	Apr-79	Sep-81		Food and Fiber	Out-cry	0	0
Cotton	HKFE	Hong Kong	Jan-80	Sep-81		Food and Fiber	Out-cry	73	0
Rough Rice	MIDAM	US	Apr-81	Apr-81		Food and Fiber	Out-cry	33	0
Milled Rice	MIDAM	US	Apr-81	Apr-81		Food and Fiber	Out-cry	24	0
Iced Broiler	CBOT	US	Aug-68	Jan-81		Food and Fiber	Out-cry	15	0
Zinc	NYMEX	US	Feb-78	Dec-80		Metals	Out-cry	0	0
Gold 3 Kg. - OLD	CBOT	US	Dec-74	Jul-80		Metals	Out-cry	0	0

Appendix G--CFTC Commitments of Traders Report: Non-Commercial Spreading as a Percent of Open Interest

Market and Exchange Name	Percent of Open Interest
CRB/BRIDGE INDEX - NEW YORK FUTURES EXCHANGE	45%
HIGH FRUCTOSE CORN SYRUP, 55% - MINNEAPOLIS GRAIN EXCHANGE	19%
WHEAT - MIDAMERICA COMMODITY EXCHANGE	18%
GOLDMAN-SACHS COMMODITY INDEX - INTERNATIONAL MONETARY MARKET	16%
ICED OR FROZEN BROILERS - CHICAGO MERCANTILE EXCHANGE	13%
ANHYDROUS AMMONIA - CHICAGO BOARD OF TRADE	13%
FRESH BROILERS - CHICAGO MERCANTILE EXCHANGE	13%
SOYBEAN OIL - CHICAGO BOARD OF TRADE	9%
GRAIN SORGHUMS - KANSAS CITY BOARD OF TRADE	9%
SOYBEANS - CHICAGO BOARD OF TRADE	8%
FROZEN PORK BELLIES - CHICAGO MERCANTILE EXCHANGE	8%
LIVE HOGS - CHICAGO MERCANTILE EXCHANGE	8%
LEAN HOGS - CHICAGO MERCANTILE EXCHANGE	8%
GOLD - COMMODITY EXCHANGE INC.	8%
SILVER - COMMODITY EXCHANGE INC.	7%
DIAMMONIUM PHOSPHATE - CHICAGO BOARD OF TRADE	7%
ELECTRICITY (CA-OR BORDER) - NEW YORK MERCANTILE EXCHANGE	7%
LIVE CATTLE - CHICAGO MERCANTILE EXCHANGE	7%
SOYBEAN MEAL - CHICAGO BOARD OF TRADE	7%
WHEAT - CHICAGO BOARD OF TRADE	6%
ROUGH RICE - CHICAGO BOARD OF TRADE	6%
FRZN CONCENTRATED ORANGE JUICE - CITRUS ASSOC. OF N Y COTTON EXCH INC	6%
PORK BELLIES - CHICAGO MERCANTILE EXCHANGE	5%
CRUDE OIL, LIGHT 'SWEET' - NEW YORK MERCANTILE EXCHANGE	5%
SILVER - CHICAGO BOARD OF TRADE	5%
UNLEADED GASOLINE, N.Y. HARBOR - NEW YORK MERCANTILE EXCHANGE	5%
ROUGH RICE - CHICAGO RICE AND COTTON EXCHANGE	5%
FEEDER CATTLE - CHICAGO MERCANTILE EXCHANGE	5%
RANDOM LENGTH LUMBER-NEW - CHICAGO MERCANTILE EXCHANGE	5%
CORN - CHICAGO BOARD OF TRADE	5%
ROUGH RICE - MIDAMERICA COMMODITY EXCHANGE	4%
NO. 2 HEATING OIL, N.Y. HARBOR - NEW YORK MERCANTILE EXCHANGE	4%
COFFEE C - COFFEE, SUGAR & COCOA EXCHANGE	4%
CORN - MIDAMERICA COMMODITY EXCHANGE	4%
MILK - CHICAGO MERCANTILE EXCHANGE	4%
COTTON NO. 2 - NEW YORK COTTON EXCHANGE	4%
NATURAL GAS - NEW YORK MERCANTILE EXCHANGE	4%
BUTTER - CHICAGO MERCANTILE EXCHANGE	4%
ELECTRICITY (PALO VERDE) - NEW YORK MERCANTILE EXCHANGE	4%
LEADED GASOLINE, N.Y. HARBOR - NEW YORK MERCANTILE EXCHANGE	4%
1000 TROY OUNCE SILVER - CHICAGO BOARD OF TRADE	3%
OATS - CHICAGO BOARD OF TRADE	3%
ROUND WHITE POTATOES - NEW YORK MERCANTILE EXCHANGE	3%
RANDOM LENGTH LUMBER - CHICAGO MERCANTILE EXCHANGE	3%
BONELESS BEEF (90%) - CHICAGO MERCANTILE EXCHANGE	2%
COPPER - COMMODITY EXCHANGE INC.	2%

Appendix G--CFTC Commitments of Traders Report: Non-Commercial Spreading as a Percent of Open Interest

Market and Exchange Name	Percent of Open Interest
WHEAT - KANSAS CITY BOARD OF TRADE	2%
SOYBEANS - MIDAMERICA COMMODITY EXCHANGE	2%
CRUDE OIL, SOUR - NEW YORK MERCANTILE EXCHANGE	2%
PALLADIUM - NEW YORK MERCANTILE EXCHANGE	2%
COCOA - COFFEE, SUGAR & COCOA EXCHANGE	2%
PLATINUM - NEW YORK MERCANTILE EXCHANGE	2%
STRUCTURAL PLYWOOD PANEL INDEX - CHICAGO BOARD OF TRADE	2%
BFP MILK, LARGE - COFFEE, SUGAR & COCOA EXCHANGE	2%
WHEAT - MINNEAPOLIS GRAIN EXCHANGE	2%
ALUMINUM - COMMODITY EXCHANGE INC.	1%
UNLEADED GASOLINE, GULF COAST - NEW YORK MERCANTILE EXCHANGE	1%
GOLD - INTERNATIONAL MONETARY MARKET	1%
PROPANE GAS - NEW YORK MERCANTILE EXCHANGE	1%
COPPER-GRADE #1 - COMMODITY EXCHANGE INC.	1%
SUGAR NO. 11 - COFFEE, SUGAR & COCOA EXCHANGE	1%
PROPANE GAS - PETROLEUM ASSOC OF N Y COTTON EXCH.	1%
BFP MILK - COFFEE, SUGAR & COCOA EXCHANGE	1%
COTLOOK WORLD COTTON - NEW YORK COTTON EXCHANGE	1%
HARD AMBER DURUM WHEAT - MINNEAPOLIS GRAIN EXCHANGE	1%
WHITE WHEAT - MINNEAPOLIS GRAIN EXCHANGE	1%
SOYBEAN OIL - MIDAMERICA COMMODITY EXCHANGE	1%
LIVE HOGS - MIDAMERICA COMMODITY EXCHANGE	0%
SUGAR NO. 12 - COFFEE, SUGAR & COCOA EXCHANGE	0%
NATURAL GAS - KANSAS CITY BOARD OF TRADE	0%
ELECTRICITY (CINERGY) - NEW YORK MERCANTILE EXCHANGE	0%
SUGAR NO. 14 - COFFEE, SUGAR & COCOA EXCHANGE	0%
ALUMINUM - NEW YORK MERCANTILE EXCHANGE	0%
BONELESS BEEF TRIMMINGS(50%) - CHICAGO MERCANTILE EXCHANGE	0%
CHEDDAR CHEESE - COFFEE, SUGAR & COCOA EXCHANGE	0%
ELECTRICITY (ENTERGY) - NEW YORK MERCANTILE EXCHANGE	0%
ELECTRICITY (PJM) - NEW YORK MERCANTILE EXCHANGE	0%
FRESH PORK BELLIES - CHICAGO MERCANTILE EXCHANGE	0%
GOLD, 100 TROY OZ - CHICAGO BOARD OF TRADE	0%
IOWA CORN YIELD INSURANCE - CHICAGO BOARD OF TRADE	0%
MILK - COFFEE, SUGAR & COCOA EXCHANGE	0%
NON FAT DRY MILK - COFFEE, SUGAR & COCOA EXCHANGE	0%
PLATINUM - COMMODITY EXCHANGE INC.	0%
ROUGH RICE - MID AMERICA COMMODITY EXCHANGE	0%
US CORN YIELD INSURANCE - CHICAGO BOARD OF TRADE	0%
WHITE SUGAR - COFFEE, SUGAR & COCOA EXCHANGE	0%