

COMMODITY EXCHANGES IN A GLOBALIZED ECONOMY

*By the UNCTAD Secretariat **

Modern commodity exchanges date back to the trading of rice futures in the 17th century in Osaka, Japan, although the principles that underpin commodity futures trading and the function of commodity markets are still older. The first recorded account of derivative contracts can be traced to the ancient Greek philosopher

Thales of Miletus in Greece, who, during the winter, negotiated what were essentially called options on oil presses for the spring olive harvest. The Spanish dramatist Lope de Vega reported that in the 17th century options and futures were traded on the Amsterdam Bourse soon after it was opened.



Futures' trading is a natural application to the problems of maintaining a year-round supply of seasonal products like agricultural crops. Exchanging traded futures and options provide several economic benefits, including the ability to shift or otherwise manage the price risk of market or tangible positions. With the liberalization of agricultural trade in many countries, and the withdrawal of Government support to agricultural producers there is a new need for price discovery and even physical trading mechanisms, a need that

Legend



Country has one or more active commodity futures exchanges.



Country has one or more exchanges active in the physical trade of commodities or forward delivery.



There are, or have been, plans for the introduction of a commodity exchange.

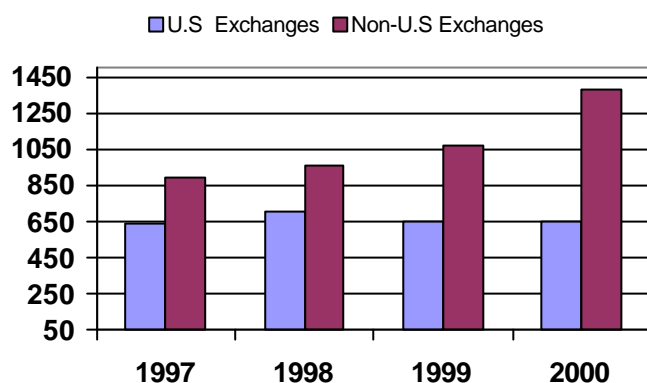
can often be met by commodity exchanges. Hence, the rapid creation of new commodity exchanges, and the expansion of existing ones have increased over the past decade. At present, there are major commodity exchanges in over twenty countries, including the United States, the United Kingdom, Germany, France, Japan, and the Republic of Korea, Brazil, Australia and Singapore. A large number of brand-new exchanges have been created during the past decade in developing countries, but many of them have disappeared.

The shape of exchanges, including those trading commodities, has changed drastically over these last few years. Above all, electronic trading has led to the emergence of a dozen globalized exchanges, accounting for three-quarters of the volume in futures traded. In 2000, nearly 3 billion contracts were traded on futures and options exchanges, representing a 16% increase compared to 1999.

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Established exchanges suddenly and often to their surprise, found themselves coming under attack from cyberspace. The industry first reacted with mergers and reorganizations, but they now seem to understand that the Internet is providing them not just with threats, but also with opportunities. In the **United States**, trading in futures began in the mid-19th century with corn contracts at the Chicago Exchange and the cotton exchange in New York. While all exchanges started dealing in commodities since the early 1980s, trade in financial futures has become increasingly important for most of them. USA hosts thirteen major futures and options exchanges but the biggest three are the Chicago Board of Trade (CBOT), founded in 1851, which used to be the world's largest futures and options exchange.

Chart No 1
Annual Global Futures and Options Volume U.S.
and other exchanges 1997-2000
(millions of contracts)



Yet, by 1998 it had fallen to being the 2nd largest with a volume of 233 million contracts traded in 2000 (11% of total world volume). The Chicago Mercantile Exchange (CME), founded in 1874, was the world's 3rd largest, with 231 million contracts traded in 2000 while the New York Mercantile Exchange (NYMEX), the world's 7th largest, accounted for more than 5% of the world volume. Amongst the large exchanges NYMEX is the only one solely trading commodities.

Until recently the United States accounted for the majority of futures and options trade, but recently the balance has tilted towards Europe. (Chart No. 1)



While the exchanges in **Canada** are old, they are of fairly minor importance. The two largest exchange trading commodities are the Montreal Exchange, founded 1874, which is the world's 24th largest futures and options exchange, accounting for 0.4 % of world market trade, while the Winnipeg Futures Exchange is the world's 35th largest.

Latin America's largest and most important commodity exchange is the Bolsa de Mercadorias & Futuros, (BM&F) in **Brazil**. It has steadily held leading positions in the world's ranking because of its high trading volume. Although this exchange was only created in 1985, it was the 8th largest exchange by 2000, with 82 million contracts traded (in spite of the fact that trading in agricultural contracts can hardly be compared to the main commodity futures markets in New York and Chicago, although Brazil's coffee futures currently accounts for \$5 billion worth of trade a day). However, in 1997, BM& F was the 4th largest exchange world-wide, with a volume traded of 122 million contracts. The Brazilian devaluation hit the trading

volumes hard although BM&F's decision to merge with Globex, the global trading alliance which includes the CME, the Singapore International Monetary Exchange and the Paris Bourse may help to re-ignite interest in the country's currency futures. There are also many other commodity exchanges operating in Brazil, spread throughout the country. They trade largely in commodities for immediate or forward delivery, but through an electronic network (which links most of the country's exchanges) they also make it possible to trade in futures contracts.

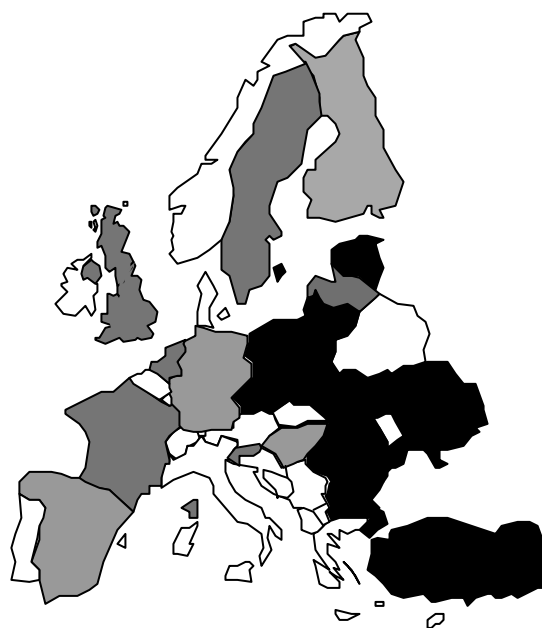
While **Argentina** has a long tradition in futures markets, their activities have from time to time been circumscribed by detailed government regulation, which has limited the use of exchange services. The national exchange network consists of 11 markets, which trade mostly in agricultural commodities including one of the world's oldest commodity futures exchanges, the Bolsa de Cereales dating back to 1854. Its futures market Mercado a Termino de Buenos Aires, founded in 1909, ranks as the world's 53rd largest exchange.

Although **Mexico** is Latin America's second biggest economy, it has only recently introduced a futures exchange to its markets. The Mercado Mexicano de Derivados (Mexder) was launched in 1998 and claims to be the youngest exchange in the world.

The exchanges in **El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, Peru** and **Bolivia** were mostly created in response to the liberalisation of domestic trade as a mechanism for the organisation of domestic commodity trade flows. The oldest of these, in Colombia, dates from 1973, and the Ecuador exchange dates from 1986, while all the others have been established since 1992. Most of the products traded are agricultural (with some processed products traded in a few countries), but the Government of Colombia is examining the possibility of introducing a commodity exchange for emeralds. The trading possibilities offered by the exchanges vary widely. Most provide a forum for trade in physical commodities, but some also enable forward trading. In Colombia, the exchange also trades the "credit" part of warehouse receipts and has arranged livestock securitization to improve rural financing.

A major private sector group in **Chile** proposed the creation of a commodity futures exchange in the late 1980s. The proposed exchange would trade in domestic food-grains and in fishmeal, but plans for it have not yet been finalised. Much progress towards the introduction of an exchange has been attained in the **Dominican Republic**. The introduction of warehouse receipt's trading for beans and coffee has been planned. In Venezuela, the Agricultural Exchange of Venezuela was created in 1998 and deals mostly in grain.

Europe is home to the world's largest exchange, Eurex, which resulted from the merger of the German DTB Deutsche Terminbörse and the Swiss Exchange Soffex in the autumn of 1998. It is the world's largest futures and options exchange and accounted for 18% of the world volume, as it traded 365 million contracts in 2000. That year also bore witness to the creation of Euronext, a pan European "one company, three centres" structure merger between Amsterdam Exchanges (AEX), Brussels Exchanges (BXS) and



Paris Bourse, which created the first totally integrated cross-border single currency derivatives market. Paris Bourse is Europe's 2nd largest exchange by its trading volume and the world's 5th largest. It accounts for 7 % of the world's futures and options market, with a volume of 147 million contracts in 2000. Euronext Belgium clearly benefited from the merger since its traded volume increased by 353%, from 6 million contracts traded in 1999 to 31 million in 2000, thus becoming the world's 13th largest futures exchange, ascending from 25th place in 1999. Portugal's Lisbon and Oporto Stock Exchanges are also set to join the triumvirate in 2001.

The United Kingdom hosts three major futures and options exchanges. The biggest is the London International Futures Exchange or LIFFE (or more correctly, the commodities department of the LIFFE, which was an independent exchange until a merger in 1996). It was the 6th largest exchange world-wide and accounted for 6% of the world-wide volume in 2000 although in 1997 LIFFE was responsible for 13% of all traded world-wide volume, and the amount of traded contracts have dropped by 40% over the last three years. This was caused by Eurex's "capture" of a significant volume of trading in Bund futures from LIFFE. The London Metal Exchange (LME), founded in 1877, which specialises in non-ferrous metals, was the 9th largest worldwide commodity exchange and accounted for 3% of the global turnover. The third largest British exchange, the International Petroleum Exchange (IPE), was formed in response to changes in oil marketing and pricing practices in the late 1970s. It ranked 15th worldwide and traded 25 million contracts in 2000.

There are also commodity exchanges of a more traditional kind, oriented towards physical trade in these countries, notably the French Rungis market for trade in fruits and vegetables, and the Dutch flower auction in Aalsmeer. Above all, the new trend in Europe bends towards electronic trading. Eurex was directly introduced electronically (that is, unlike the traditional exchanges, there was no open-outcry floor; rather, buying and selling orders have been directly executed through a computer system), while Paris Bourse and more recently LIFFE and the LME moved from open-outcry to electronic. In **Sweden**, the financial contracts traded on electronic exchanges were supplemented in 1997 by one for paper pulp (under the OM). The OM Group also provides trading opportunities for recyclable commodities.

In **Slovenia**, another new electronic exchange, the Exchange of Ljubljana started trading in 1995. It offers a range of currency futures contracts and two-grain futures contracts. Trade in all of these emerging futures exchanges and new futures contracts have been quite limited so far. However, in **Hungary**, the Budapest Commodity Exchange, created in 1989, which trades in grains and livestock, has been quite successful and ranked in 2000 as the world's 37th commodity exchange, whereas the Budapest Stock Exchange was the world's largest 42nd. Other commodity exchanges, not trading futures contracts, have been created since 1990 in **Romania, Bulgaria, Ukraine, Lithuania** and **Estonia**. Most of them focus on organising trade for immediate physical delivery. However, in some markets, futures contracts are traded on foreign currencies (Euro, dollars, etc) as in the Sibiu Monetary Financial and Commodities Exchange, founded in 1997, and the Romanian Commodities Exchange, opened in 1992, which also trades in grains and oil by-products.

In the **Czech Republic**, there have been plans since 1994 to create a commodity exchange to trade precious and non-precious metals, fuels, minerals, ores, timber, paper products and construction materials - a range of products quite different from those normally introduced in countries with liberalised economies (where exchanges tend to focus on agricultural commodities). In **Poland**, the Warsaw Commodity Exchange, founded in 1995, deals in futures options in agriculture and currency. It is part of the Polish Commodity Exchange network, composed of 18 exchanges spread throughout the country.

At the beginning of this century, there were over a hundred commodity exchanges in **Russia**. The early 1990s saw an outburst of new exchanges - according to one estimate, more than 270 exchanges were created between 1990 and 1993. The most important one is the Inter-Republican Universal Commodity Exchange in Moscow. Several commodity futures contracts have been developed (the first one, an aluminium contract, was launched by the Moscow Commodity Exchange in late 1992), but trade has not been very active (market users concentrated on stock, currency and interest-rate futures). Several exchanges are reported to have plans to move from physical trading in commodities to futures trading. In **Kazakhstan**, the Kazakhstan Stock Exchange deals in a small number of futures contracts on foreign currencies.

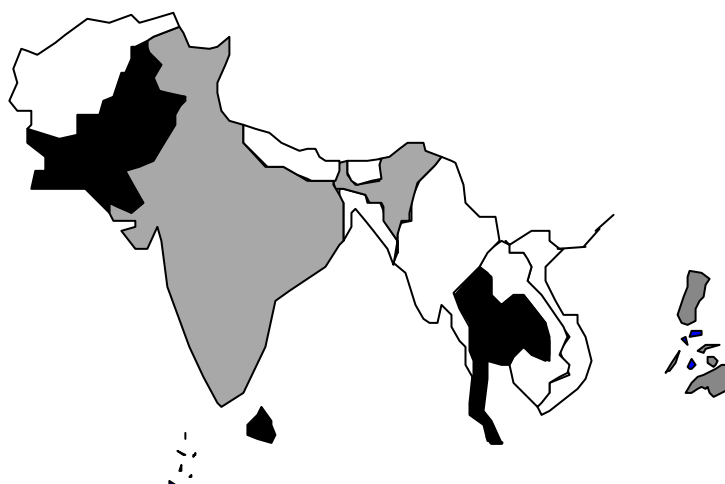
Another country where exchanges have existed for a long time is **Turkey**. Around 20 of them have engaged in active commodity trade (others are called exchanges, but in fact, only act as centres for the registration of commodity trade transactions). The oldest, in Izmir, traces its origin back to 1891. These exchanges act as physical trading centres, to which ranges of commodities are brought for inspection and immediate sale. Some of these exchanges have been appraising the possibility of introducing more sophisticated forms of trade, based on warehouse receipts and even futures contracts (the Izmir Cotton Exchange now has an active futures contract on cotton). In 1997 the Istanbul Gold Futures and Options Exchange was launched to meet the demand for future gold products in Turkey and is the first derivatives market in Turkey.

China's first commodity exchange was established in 1990 and at least forty had appeared by 1993, as China accelerated the transformation from a centrally planned to a market-oriented economy. The main commodities traded are agricultural staples such as wheat, corn and in particular soyabeans, which have long been considered strategically important by the Chinese government, both for economic development and political stability.

In late 1994, a drastic decision was taken: more than half of China's exchanges were closed down or reverted to being wholesale markets, while only 15 restructured exchanges received formal government approval. At the beginning of 1999, the China Securities Regulatory Committee began a nationwide consolidation process which resulted in three commodity exchanges emerging; the Dalian Commodity Exchange (DCE), the Zhengzhou Commodity Exchange and the Shanghai futures Exchange, formed in 1999 after the merger of three exchanges: Shanghai Metal, Commodity, Cereals & Oils Exchanges. It currently trades three contracts: aluminum, copper and natural rubber and was the world's 32nd largest exchange as of 2000.

In **Taiwan**, the Taiwan Futures Exchange was launched in 1998 and traded almost 2 million contracts, thus becoming the world's 40th largest exchange.

In 2000 the **Korea** Stock Exchange became the 4th largest futures and options market, with an overall share of 10% of the global trading volume in 2000 and a 120% increase in volume from 1999. Since 1998, it has achieved a 325% increase in its traded volumes. This is due to the introduction and immediate success of the KOSPI-200 futures contract



launched in 1998. The smaller Korea Futures Exchange (KOFEX), founded in 1999, ranks as the world's 33rd largest exchange in 2000, with an increase of 196% in trading volume since last year. In the **Republic of Korea**, futures exchanges have now been launched. In **Thailand**, a project to start a commodity futures exchange in rice, rubber and a number of other commodities has been the subject of debate as of the early 1980s, but little progress has been made so far.

Futures exchanges in **Japan** have also gone through a process of consolidation since 1993, and only 10 remained in 1999 (down from 17 just five years earlier). Most of the trade takes place in metals and agricultural produce. The biggest is The Tokyo Commodity Exchange (TOCOM), created in November 1984, through the consolidation of three existing exchanges: the Tokyo Textile Commodities Exchange, the Tokyo Rubber Exchange and the Tokyo Gold Exchange. In the 24-hour global trading environment, TOCOM has emerged as an influential exchange on a par with exchanges in New York, Chicago and London, dealing in gold, silver, and platinum futures as well as several other precious metals. TOCOM traded 51 million contracts in 2000, ranked 10th in the world and accounted for 2.5% of the overall world volume.

The second largest futures and options exchange in Japan is the Central Japan Commodity Exchange formed in 1996 by the amalgamation of three other exchanges. It traded 21 million contracts in 2000, and was the world's 18th largest exchange, having increased its trading volume in 2000 by 150 %.

The creation of commodity exchanges has been considered in **the Islamic Republic of Iran** and **Kyrgyzstan**. These would be physical exchanges, to meet the needs of farmers, commodity traders and processors in the context of agricultural liberalisation.

Commodity futures markets have a long history in **India**. The first organised futures market, for various types of cotton, appeared in 1921. In the 1940s, trading in forward and futures contracts as well as options was either outlawed or rendered impossible through price controls. This situation remained until 1952, when the Government passed the Forward Contracts Regulation Act, which to this date controls all transferable forward contracts and futures. During the 1960s, the Indian Government either banned or suspended futures trading in several commodities. The Government policy slackened in the late 1970s and recommendations to revive futures trading in a wide range of commodities were made. With the full convertibility of the rupee, the ongoing process of economic liberalisation and the Indian economy's opening to the world market, the role of futures markets in India is being reconsidered. Most contracts being traded

are unique in the world. Although some are clearly domestic-oriented, others (such as raw jute, pepper, and oilseeds) have the potential to become of regional or even international importance. Two of the better-known commodity exchanges are the Bombay Oilseeds and Oils Exchange, founded in 1950, and the International Peppers Futures Exchange, in 1997.



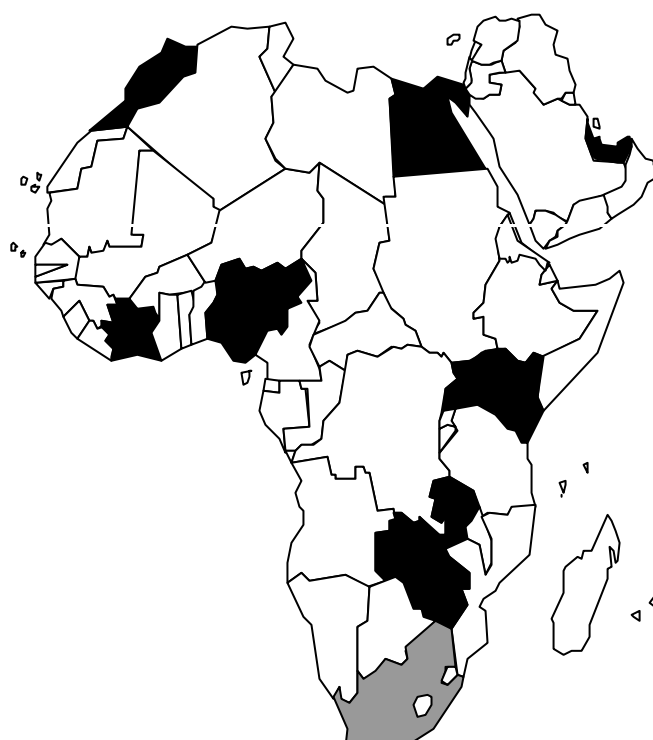
Private-sector groups in **Pakistan** have called for the re-establishment of a cotton exchange. A cotton exchange operated in Karachi until the 1930s. In **Sri Lanka**, the Government has been looking at the possibilities of an exchange for both domestically traded and export commodities, including tea.

Australia, New Zealand, Malaysia and Singapore all have active commodity futures exchanges. The Sydney futures exchange, (SFE), commenced trading in 1960 as the Sydney Greasy Wool Futures Exchange and by 1964 had become one of the world's leading wool futures markets. It is the largest financial futures exchange in the Oceania region, with an annual turnover of 31 million contracts and was the 12th largest commodity exchange in 2000. The New Zealand Futures Exchange, which is a wholly owned subsidiary of the SFE, is comparatively small and ranked 49th world-wide in trade volume. Plans to merge the two bourses were recently dropped in early 2001.

Malaysia hosts two futures and options exchanges, which hold the 50th and 51st place in the 2000 ranking of world futures exchanges by trading volume. **Singapore** is home to the Singapore Exchange (SGX), which was formed in 1999 by the merger of two well-established exchanges, the Stock Exchange of Singapore (SES) and Singapore International Monetary Exchange (SIMEX). SGX accounted for 28 million contracts in 2000 and was the world's 14th largest exchange in 2000).

In **Indonesia**, the introduction of a commodity exchange has been under discussion since the early 1980s, and the institutional framework has been gradually developed in this respect to pave the way for an emerging market. A new project to launch the Jakarta Commodity Exchange has now emerged, in which the different commodities to be traded have been under discussion (cocoa, plywood, paper, rice, and rubber, sugar, soybeans and cotton).

Africa's most active and most important commodity exchange is the South African Futures Exchange (SAFEX). It was informally launched in 1987 and has evolved into one of the leading emerging markets. The South African Futures Exchange only traded financial futures and gold futures for a long time, but the creation of the Agricultural Markets Division led to the introduction of a range of agricultural futures contracts for commodities, in which trade was liberalised, namely, white and yellow maize, bread milling wheat and sunflower seeds. SAFEX traded 22 million futures and option contracts in 2000, making it the world's 17th largest exchange.



Maize contracts are also traded on new exchanges in **Zambia** and **Zimbabwe**. Farmers established the Zimbabwe Agricultural Commodity Exchange (ZIMACE) in 1994, in response to the gradual liberalization of state-controlled agricultural marketing. The Exchange conducts spot and forward transactions and mostly handles agriculture produce, in particularly maize, although the trading volumes of wheat contracts are steadily increasing. The Zambia Agricultural Commodity Exchange (ACE), founded in 1994 conducts spot and forward transactions in wheat, maize and other agricultural products. The success of ACE led to the development of the Kapiri Commodity exchange in Zambia's central province and the Eastern Agricultural Commodity Exchange, in Zambia's eastern province, both launched in

The **Kenya** Commodity Exchange (KACE) was set up in Nairobi in 1997, to provide the basic services of a commodity exchange. The products chiefly traded are agricultural, like cereals, dairy products and cotton. The Nairobi Coffee Exchange was set up in 1998 and equipped with an electronic trading system. The Exchange is intended to become the hub for coffee trading in eastern Africa. A futures trading system will be introduced in the near future. A number of other countries are looking into the possibility of introducing commodity exchanges.

In **the Ivory Coast**, plans for a cocoa exchange have been drafted, but have not yet been put into operation. The introduction of a commodity exchange trading in robusta coffee and cocoa was discussed during the liberalisation process but has not materialised yet. The liberalisation of external marketing of cocoa in **Ghana** might also lead to the emergence of a market, but the form that this exchange would take is not clear and considering the predominance of the LIFFE in futures trade in cocoa, it is likely that contracts for physical delivery and contracts based on warehouse receipts would be traded, rather than futures contracts. In **Egypt**, industry groups wish to revive the Alexandria Cotton Exchange, abolished by the Government in the 1950s.

Exchange initiatives in **Nigeria** and **Uganda** are focusing on both domestically traded and exported commodities, while in **Morocco**, private-sector groups have been looking at how domestic trade liberalisation would affect the introduction of contracts traded on a commodity exchange.

In the Middle East, a proposed exchange in the **United Arab Emirates** would be internationally- oriented. The launch of a futures market on aluminium in Abu Dhabi the Saadiyat Financial Futures and Options Exchange – aluminium f.o.b. Jebel Ali – is now under serious consideration.



Table 1
Top 15 World Futures and Options Exchanges
Volume by Calender Year (Ranked by 2000 Volume*

Rank 2000	Exchange	Country	1997 Volume	1998 Volume	1999 Volume	2000 Volume	1997 Proportion of world Volume	1998 Proportion of world Volume	1999 Proportion of world Volume	2000 Proportion of world Volume
1	EUREX	Germany	109,287,927	187,263,716	313,955,123	364,833,663	7%	11.2%	18%	18.2%
2	CBOT	US	242,698,919	281,189,436	254,561,215	233,528,558	15.7%	16.8%	14.6%	11.5%
3	CME	US	200,714,428	226,618,831	200,737,920	231,114,296	13%	13.5%	11.5%	11.4%
4	KSE	Korea	7,780,484	50,204,404	97,137,007	213,495,588	0.5%	3%	5.6%	10.5%
5	Paris Bourse	France	78,144,177	60,020,284	118,822,825	147,065,643	5%	3.6%	6.8%	7.2%
6	LIFFE	UK	205,129,701	191,086,246	116,438,648	125,569,936	13.3%	11.4%	6.7%	6.2%
7	NYMEX	US	83,851,346	95,018,685	109,358,831	104,075,238	5.4%	5.7%	6.3%	5.1%
8	BM&F	Brazil	122,179,393	87,015,050	55,931,098	82,945,277	7.9%	5.2%	3.2%	4.1%
9	LME	UK	57,372,500	53,075,081	61,597,557	66,445,247	3.7%	3.2%	3.5%	3.3%
10	TOCOM	Japan	30,178,349	43,589,723	48,442,161	50,851,882	1.9%	2.6%	2.8%	2.5%
11	CBOE	US	71,212,245	68,358,848	56,269,918	47,440,139	4.6%	4%	3.2%	2.3%
12	SFE	Australia	28,409,539	29,927,249	29,793,333	31,299,021	1.8%	1.8%	1.7%	1.5%
13	Euronext Brussels	Belgium	2,125,118	1,810,148	6,881,821	31,213,586	0.1%	0.1%	0.4%	1.5%
14	Singapore Exchange	Singapore	24,090,285	27,861,162	25,863,140	27,571,963	1.6%	1.6%	1.5%	1.4%
15	IPE	UK	14,733,342	19,442,867	23,042,833	25,491,139	0.9%	1.2%	1.3%	1.3%
		Sub Total	1,277,907,753	1,422,481,730	1,518,833,430	1,782,941,176	82%	85%	87%	88%
		Total	1,543,064,206	1,670,697,405	1,737,494,607	2,022,138,940	100%	100%	100%	100%
	*Excluding options on individual equities									

Table 2
Global Futures and Options Volume by Region 1997-2000* Excluding options on individual equities

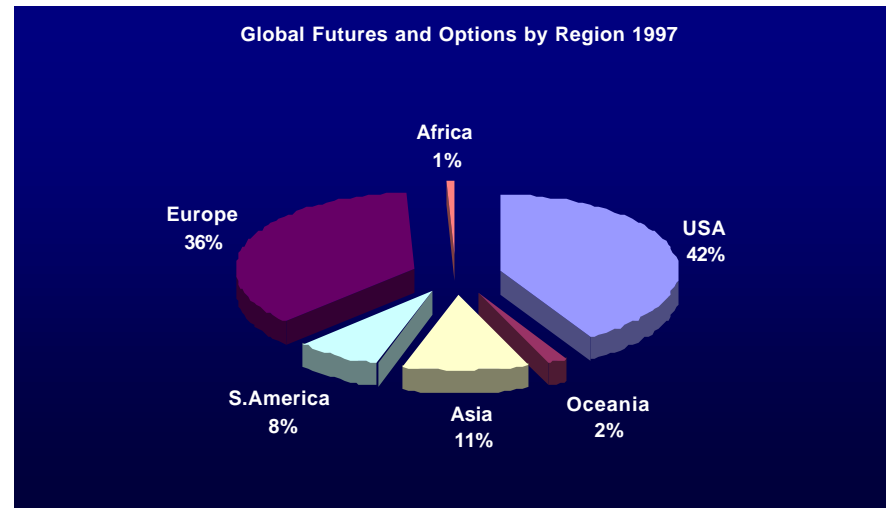
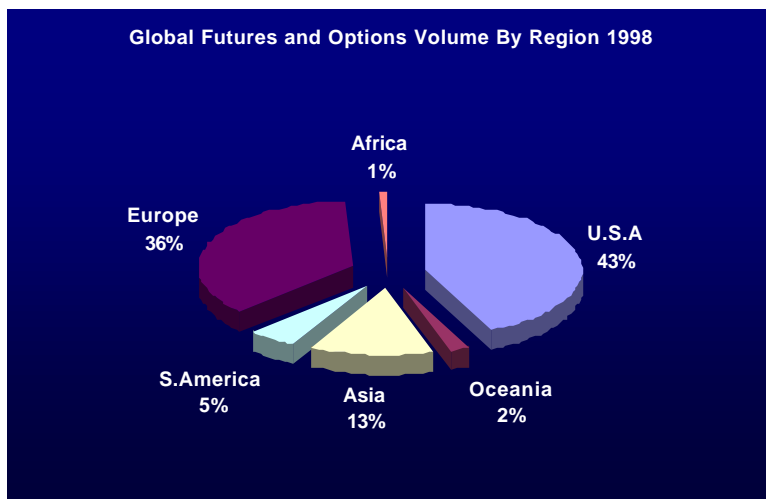
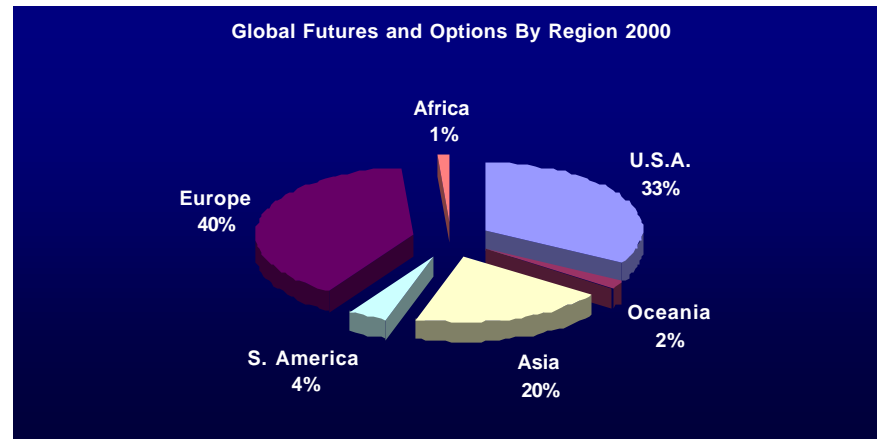
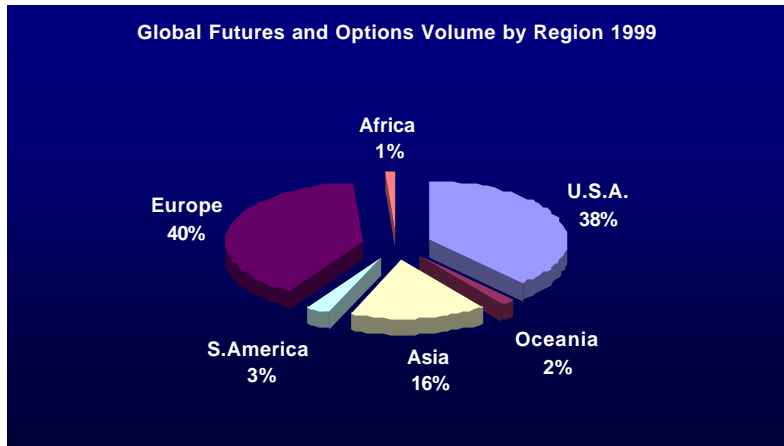


TABLE 4
GLOBAL EXCHANGE TRADED COMMODITY VOLUME-
TOTAL AND TOP FOUR COUNTRIES 1997-2000
 (Millions of contracts)* Excluding options on individual equities

