

2008

A Wild Ride

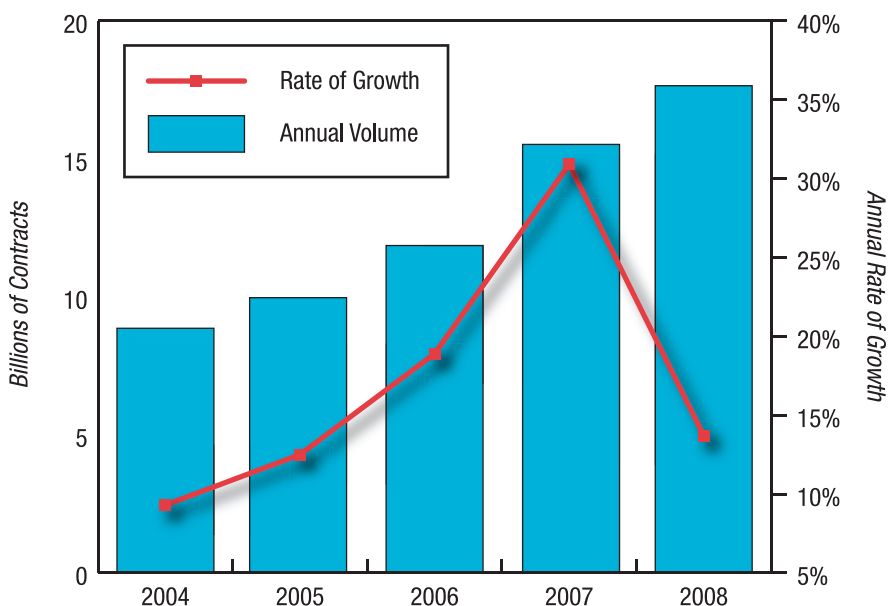
Global Futures and Options Volume Rises 13.7%,
But Credit Crisis Damages Liquidity in the Core Markets

By Galen Burghardt and Will Acworth

For the global futures and options industry, 2008 was a wild year. Several major market participants, including some of the largest players in the markets, vanished from the scene. Counterparty credit risk shot to the top of market user worries. Volatility skyrocketed and liquidity evaporated, especially after Lehman Brothers declared bankruptcy in September, and volume for some of the industry's biggest and best-known contracts took a definite turn for the worse.

The Big Chill

After shooting upward for several years, the growth in global futures and options trading decelerated sharply in 2008.



Despite all the turbulence, the overall growth trend was still positive. The total number of futures and options contracts traded on the 69 exchanges tracked by the Futures Industry Association rose 13.7% over 2007. Volume in the U.S., the epicenter of the credit crisis, rose 14.0% from 2007, and Europe and Asia did even better (see Global Volume by Region table).

But there was no question that the pace of growth, which had been so strong for so long, slowed down considerably. 2008's global growth rate of 13.7% was a far cry from the 30.9% increase recorded in 2007 and the 18.9% increase in 2006.

More importantly, the relatively benign overall numbers mask some sharp divergences among the different categories of products, especially in the U.S. Trading volume on the U.S. futures exchanges rose only 4.4% over 2007. What a contrast to the volume on the U.S. options exchanges, which shot up 25.1% on the back of an explosion in volatility.

Equity products across the board had a tremendous year, as did the commodity products, but the credit crisis put a big dent in the trading of interest rate products. On a global basis, interest rate volumes sank 14.4% relative to 2007, the first time in many years that we have had such a big setback.

Long-term interest rate futures were especially hard hit. Ten-year Treasury futures trading tumbled 26.5% from 2007; Euro bund futures fell 23.8%; and JGB futures slid 21.5%. Short-term interest rate products were mixed, with Euribor futures up slightly, Eurodollar futures down slightly, and Euroyen futures way down by 42.6%.

Part of the reason why the interest rate category was down on a worldwide basis was a staggering drop in the trading of TIEE futures, the Mexican short-term interest rate contract. Total volume in that contract, which last year ranked seventh largest among the world's interest rate contracts, plunged 73.8% to 57.9 million. It appears, however, that this was more related to a market user preference for a larger contract size than to the global financial turmoil that affected interest rate trading in other countries.

In September 2007 Mexder introduced 10-year swap futures as an alternative to using large strips of the TIEE contracts as an interest rate hedge. Volume in the swap futures contract, which is 1,000 times larger in size than the TIEE, reached 171,000 in 2008. Mexder officials estimate that once the different sizes are taken into account, the level of trading activity in 2008 was effectively the same as in 2007, except that market users now have a more efficient size for their interest rate hedges.

Interestingly, Mexder's 10-year government bond contract took off last year, with volume soaring 154% to 3.0 million contracts. And trading in the Cete 91 day contract rose 45.3% to 4.1 million. These are still minnows in global terms, but it is good

Global Listed Derivatives Volume

	Jan-Dec 2008	Jan-Dec 2007	% Change
Futures	8,291,625,474	7,217,729,477	14.9%
Options	9,361,078,147	8,308,902,627	12.7%
Total Volume	17,652,703,621	15,526,632,104	13.7%

Note: Based on the number of futures and options traded and/or cleared by 69 exchanges worldwide.

Global Listed Derivatives Volume by Category

Category	Jan-Dec 2008	Jan-Dec 2007	% Change
Equity Index	6,488,620,434	5,499,833,555	18.0%
Individual Equity	5,511,194,380	4,400,437,854	25.2%
Interest Rates	3,204,838,617	3,745,176,350	-14.4%
Agricultural	888,828,194	640,683,907	38.7%
Energy	580,404,789	496,770,566	16.8%
Currency	577,156,982	459,752,816	25.5%
Precious Metals	180,370,074	150,976,113	19.5%
Non-Precious Metals	175,788,341	106,859,969	64.5%
Other	45,501,810	26,140,974	74.1%
Total	17,652,703,621	15,526,632,104	13.7%

Note: Based on the number of futures and options traded and/or cleared by 69 exchanges worldwide.

Global Listed Derivatives Volume by Region

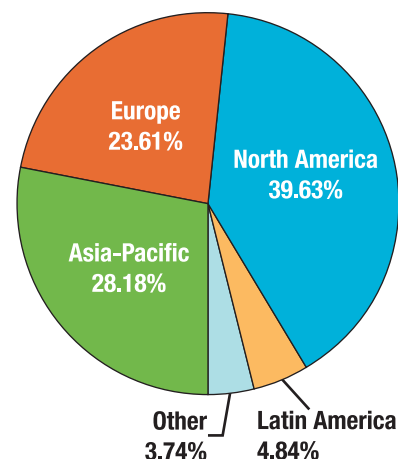
	Jan-Dec 2008	Jan-Dec 2007	% Change
Asia-Pacific	4,974,727,462	4,289,600,329	16.0%
Europe	4,167,116,664	3,592,095,161	16.0%
North America	6,995,493,016	6,137,204,923	14.0%
Latin America	854,405,219	1,048,627,318	-18.5%
Other *	660,961,260	459,104,373	44.0%
Global Total	17,652,703,621	15,526,632,104	13.7%

* Other consists of exchanges in South Africa, Turkey, Israel and Dubai.

Note: Location of exchanges is determined by country of registration.

Breakdown by Region

Jan-Dec 2008



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to see a healthy interest rate complex beginning to take shape outside the traditional financial centers in the developed world.

After Lehman

In our past articles on global volume trends, we have typically looked at volume on an annual basis. This year, however, had two distinct phases, with the major futures and options markets in the U.S. and Europe taking on a very different tone after the Lehman collapse in September. Volatility surged across the entire marketplace and in certain products liquidity in the final part of the year was considerably less than what we have come to expect.

These effects were especially strong at the CME Group. If we take out the New York Mercantile Exchange to get a clearer picture of what happened in the financial arena, we can see that volume in the legacy CME and CBOT products really dropped off in the last part of the year, with fourth quarter volume down 22% from the third quarter. It's not unusual to see a year-end slowdown, but this year there was clearly something else at work.

What is really scary is that the slump seemed to steepen at year-end. Eurodollar futures trading in November and December

combined plunged 45.9% compared to November and December of 2007. Ten-year Treasury volume was down a stunning 65% during the same period. Hopefully this will turn out to be a cyclical downturn, but we probably will not know for sure until well into 2009.

Because of the way the futures industry works, it is difficult to get a clear view on how much volume comes from the various types of trading firms that participate in our markets. Each exchange has its own way of tracking the identity of its customers, and it may not always know who the end-customer is.

Fortunately the CME Group has given us a window into this. In its year-end financial results presentation, the exchange broke out its fourth quarter volume by customer segment (see CME table and pie graph). The data only covers the third and fourth quarters of 2008, so we cannot make any comparisons to 2007. All the same, the data gives us a sense for how the different customer groups were behaving in the last part of the year.

One observation is that hedge funds pulled back the most. The number of contracts traded by the top 25 hedge funds fell by 32% from the third to the fourth quarter, a much larger reduction than the exchange-

wide decline of 22%. Hedge funds, as we all know, faced one of their most difficult years ever in 2008 and many were forced to wind down their trading activities in order to reduce leverage, exit losing strategies and meet redemption calls.

It is also interesting to see that traditional customers such as pension funds pulled back the least. The amount of volume traded by these customers, which is more likely to be driven by a desire to hedge market risk, fell by only 13%. If the CME continues to publish this information, it will be interesting to see if the decline in this segment turns out to be a temporary dip or a more serious long-term decline in hedging activity.

Volatility and Liquidity

As shown in the volatility comparisons table, 2008 was about 83% more volatile than 2007. And in the wake of the credit bombshells dropped in September, the last four months of 2008 were about 85% more volatile than the previous eight months.

One of the astonishing things about these comparisons is the completeness of the sweep. In normal times, one can expect volatility to rise in some markets and fall in others. Not this time. Not one of the markets shown was less volatile in 2008 than it had been the previous year. Interest rate and equity index products were the most volatile, but even the commodity contracts were way above normal. Volatilities for wheat, soy, crude oil and gold were all above 50%.

The rise in market volatility definitely took its toll on liquidity. For several years, the combined effect of increases in trading volume and decreases in volatility was to reduce dramatically the costs of trading futures. As shown in the Index of Implied Bid/Ask Spreads chart, the costs of trading bottomed out in 2005 and took a sharp turn north in 2008. These index values are calculated simply as the ratio of price volatility to the square root of trading volume, a measure that is consistent with our understanding of the determinants of market liquidity.

In the three futures markets that we have chosen here—Eurodollars, 10-year Treasury notes, and the E-mini S&P 500—the cost of filling a typical large order increased dramatically during the last four months of the year. And in both of the interest rate markets, where trading volumes were falling, the depth of book—a key measure of liquidity—fell sharply as well.

One way of measuring this is to estimate the average number of contracts available at the best five bid or ask prices in the limit order

Volatility Comparisons	% Increase in Volatility	
	2008 over 2007	Last 4 months over first 8 months
Eurodollar Futures*	114.2%	44.1%
10 Year Treasury Note Futures	91.0%	46.8%
Euribor Futures*	172.4%	44.3%
Euro-Bund Futures	70.7%	38.0%
E-mini S&P 500 Index Futures	134.1%	214.3%
DJ Euro Stoxx 50 Index Futures	135.8%	145.1%
CBOT Wheat Futures	51.0%	2.5%
CBOT Corn Futures	30.9%	56.5%
CBOT Soybean Futures	91.8%	65.3%
Nymex Natural Gas Futures	0.6%	58.8%
Nymex Crude Oil Futures	80.2%	153.2%
ICE Brent Crude Oil Futures	82.8%	134.9%
Comex Copper Futures	30.1%	112.9%
Comex Gold Futures	77.2%	74.9%
Average	83.05%	85.11%

* Eurodollar and Euribor volatilities were calculated in basis points. All others were calculated as relative price volatilities.

Source: Newedge

book. That is, if one found 4,000 contracts at the best five bid prices, and 3,000 contracts at the best five ask spreads, we would report the average of these two, or 3,500.

If we apply this approach to these three contracts, we see a very steep drop-off in liquidity in the last part of the year in the interest rate contracts. For Eurodollar futures, the depth of book was generally 4,000 to 5,000 contracts during the first eight months of the year, but only 1,000 to 2,000 contracts during the last four months. In Treasuries, the drop was even more pronounced. The depth of book fell from over 6,000 in August to under 2,000 post Lehman and to just 400 at year-end.

Trading volume in the E-mini stock index futures never did fall, however. As a result, while the market impact of filling a stock index futures order went up substantially, the demand for trading these contracts remained high, and the depth of the book appears to have been unaffected by the increase in volatility. There was a brief plunge below 2,000 in September, a couple of dips below 3,000 in October, and from then on the depth of book stayed more or less at the same level as the first part of the year.

While the loss of liquidity and market depth was pronounced in the outright markets for interest rate contracts, it was almost catastrophic in the case of the spread market for Treasury futures. The market for the calendar roll appears briefly for a few days in the month preceding expiration. Once the roll is completed, the roll market packs up its tents and goes home until the next quarter. The accompanying Treasury Calendar Roll chart shows the average number of contracts (spreads) on the bid or offer for the first five bids or first five offers during the three most active days of this market.

Traditionally, this market is one of the most liquid on the planet. The volatility of the spread is low, and a trader usually can find tens of thousands of contracts on both the bid and the offer. For example, in the Jun08/Sep 08, the average number of spreads bid or offered was more than 20,000 during the most active three days. The Sep08/Dec08 spread market was even deeper. One could find more than 50,000 contracts on the bid or offer during the most active day.

Then came the collapse of the credit market, which brought more than price and interest rate volatility. It also caused the term lending market to evaporate. Not only were banks not lending to one another, the term repo market, also one of the most liquid and actively traded financing markets in the world, stopped working as well. As a result,

cash/futures arbitrage, which can usually be counted on to produce fair prices and liquid markets for the futures, dried up.

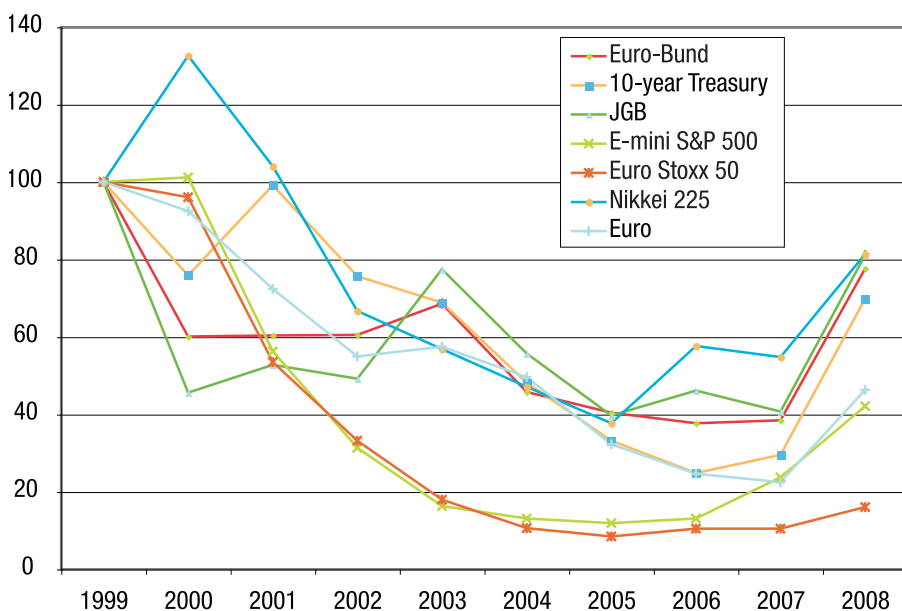
As the cash/futures arbitrage went away, so did the liquidity of the Treasury futures roll market. During the most active three days of the Dec08/Mar09 roll market, one was hard pressed to find as many as 1,000 spreads on either side of the market.

Emerging Markets

The good news is that if we step back from the heart of the crisis and look at the global picture, it looks a lot brighter. It almost seems as if the farther we go from Chicago and London, the less we see the effects of the credit crisis.

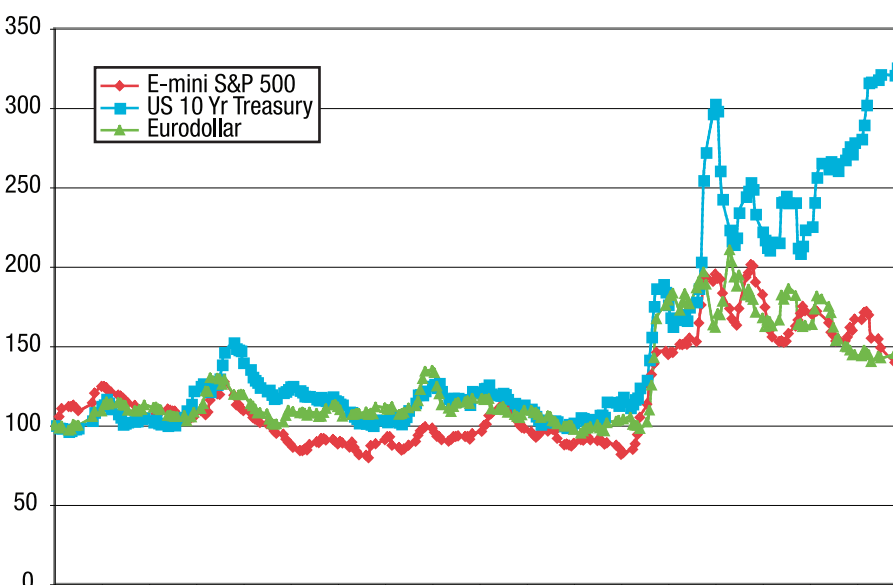
For example, most of the big emerging markets that have been moving up the vol-

Index of Implied Bid/Ask Spreads



Source: Newedge

Average Daily Sweep-to-Fill Cost for a 500-Lot Order



Source: Newedge

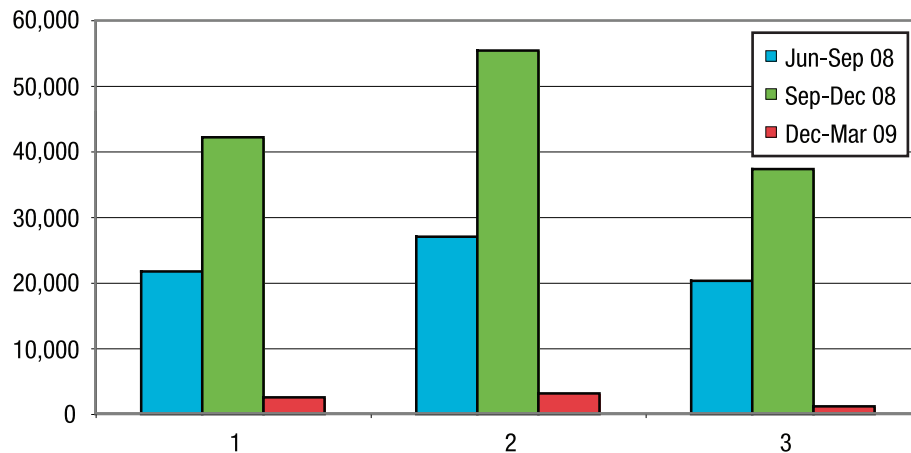
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ume tables in the last several years kept right on growing in 2008. Exchanges in China, India, Russia, South Africa, and even Turkey turned in huge increases in volume. Some of these markets may be difficult to access right now because of regulatory issues or technological complications, but the basic trend is very positive.

We also saw a real surge in interest in trading gold products, especially in Asia. As Bennett Voyles explained in his article in the *Outlook 09* issue, the number of exchanges offering gold futures continues to rise, and two of the newest entrants—Taiwan and Russia—really took off in 2008. (See Top 20 Metals Contracts Table)

Perhaps the best indicator of how much interest there was in gold comes from the old Comex contracts, which migrated to the Globex platform last year when CME took over the New York Mercantile Exchange. Comex gold futures volume soared 53.1% to 38.4 million contracts in 2008, which is

10 Year Treasury Futures Calendar Roll Quote Depth During the Three Most Active Days



Source: Newedge

An Astonishing Piece of Price Discovery

Early in the year, people who traded Eurodollar futures began to express concerns about the true meaning of the British Bankers Association's measure of three-month LIBOR and the integrity of the cash settlement process. What made these concerns especially unsettling is that we have two huge derivatives markets—swaps and Eurodollar futures—whose usefulness to the world depends on this process working.

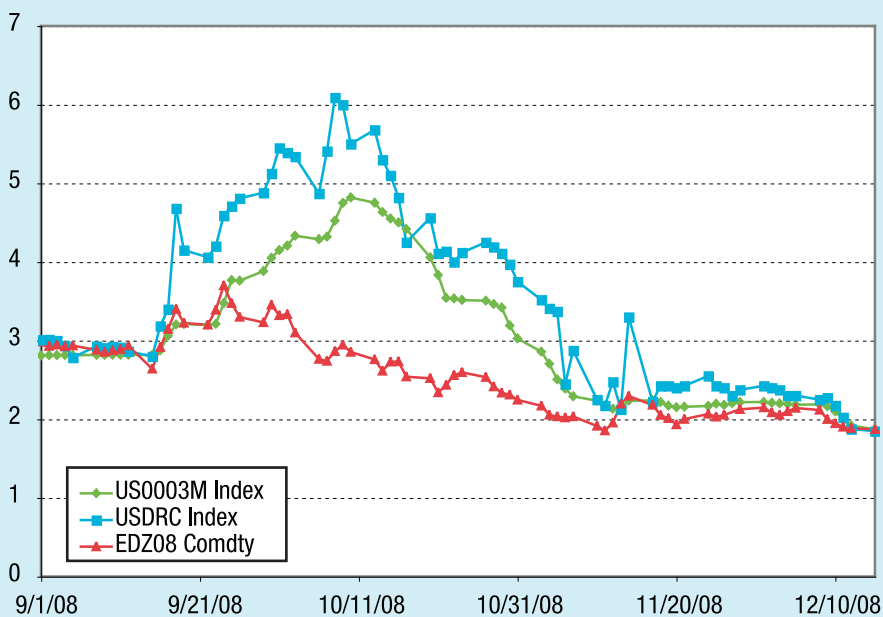
If it had not been such a serious concern, it would have been amusing for those of us who are veterans of conversations about cash settlement versus delivering or settling to traded prices or rates. It's as if the world forgot why the three-month CD contract went out of favor (credit concerns about the banks whose CDs were deliverable) and why the Eurodollar contract gained the upper hand (it settled to an abstract rate that seemed to be free from manipulation or individual banks' credit problems).

In spite of these concerns, the Eurodollar futures contract turned in one of the most astonishing feats of price discovery futures markets have ever seen. When the credit crisis really exploded in September, the term deposit market completely faded. Term deposit markets lost most of their liquidity. Any efforts to calculate term forward rates produced ridiculous answers. And in the midst of this, the Eurodollar futures market had to cope with the question of where the Dec 08 contract would settle.

Consider, then, the paths that three different measures of three-month Libor rates took from the onset of the credit crisis in September through the expiration of the Dec 08 Eurodollar contract. These three rates are the rate implied by the Dec 08 Eurodollar contract, the value of three-month Libor as posted by the BBA, and a traded three-month deposit rate as measured by Bloomberg.

For the first few days following Sept. 15, all three rates tended to rise. Then, around Sept. 25, the Eurodollar futures rate began to drift down on a glide path that would take it to about two percent in very early November. At the same time, both the BBA rate and the traded rate continued to climb and reached their peaks in early October. After this point, they too began to fall until they finally converged with the Eurodollar futures rate at expiration. Even during the last few weeks of the Eurodollar contract's life, its implied rate clearly led the BBA and the traded rate.

— Galen Burghardt



Source: Newedge

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astounding for a contract that has been around as long as that one has.

Another measure of the popular interest in gold is in the explosion in the volume of options traded on the exchange-traded funds that hold physical gold. The leader in that segment of the market is the SPDR Gold Trust ETF, which is listed on the New York Stock Exchange under the symbol GLD. The fund was launched in November 2004 and now ranks as one of the biggest ETFs in the U.S. in terms of assets under management. GLD options, which began trading this past June, proved to be a real hit, with 8.6 million contracts traded in less than six months.

The other side of that story is the long delay in bringing those options to the market. Because of the hybrid nature of the product—options on shares in a fund that holds a physical commodity—the two U.S. agencies

that regulate derivatives could not agree on which agency should have jurisdiction. Along came the Treasury Department's blueprint for financial reform, which recommended a consolidation of regulatory functions, and the two agencies suddenly saw the wisdom in cooperation. In March 2008, the heads of the Securities and Exchange Commission and the Commodity Futures Trading Commission signed an agreement by which they promised to streamline the approval process for hybrid products, and singled out the gold ETF options as the first example of the new era in cooperation.

The other big trend in 2008 was a big uptick in the use of OTC clearing facilities such as CME's Clearport and NYSE Liffe's Bclear. Everyone in the OTC markets learned a painful lesson about counterparty risk in 2008, and the message about the ben-

efits of clearing is getting a more receptive audience. One of the best examples of this is in the energy sector, natural gas in particular, which went through its own credit crisis earlier this decade after the Enron collapse. The OTC natural gas market in the U.S. has come around to a near complete embrace of clearing, and the two main players in this game—IntercontinentalExchange and CME Group—are reporting a booming business.

ICE generally has not been willing to disclose how many contracts it is clearing, but occasionally it lets slip some tantalizing detail. For example, in its year-end financial review the exchange revealed that it cleared an average of 678,000 OTC energy contracts per day in the fourth quarter, roughly equal with the fourth quarter of 2007. In comparison, CME processed 489,000 OTC energy contracts per day through its Clearport service in the fourth quarter of 2008, up 58% on the year-ago quarter.

The other area where OTC clearing has made deep inroads is in the European equity derivatives markets. NYSE Liffe's Bclear service has attracted most of the attention, but Eurex has caught up rapidly. In both cases, the exchanges offer clearing for OTC transactions in futures and options based on indices or single stocks.

Liffe reported a total of 481.6 million in equity products volume in 2008. Of that total, 190.9 million contracts, almost two thirds of which were single stock futures, were transacted off-exchange and brought into the Bclear service for clearing. In other words, only 60% of Liffe's equity futures and options trades are actually taking place on the exchange.

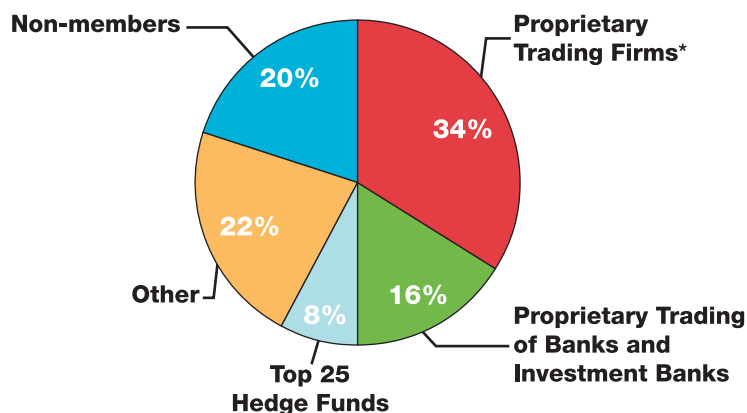
It is also worth noting that this side of the business is growing much more rapidly than classic order-book trading. Bclear volume in 2008 was 55% higher than in 2007, while the comparable on-exchange volume in equity products actually declined by 1.5%.

Eurex does not break out the OTC cleared volume in quite the same way, but there is no question that it has become a big part of the exchange's equity derivatives business. For example, of the 64.3 million equity index futures and options cleared in December, only 53% were traded through the order book. Of the 18.7 million equity options cleared in December, only 47.5% were traded through the order book. And of the 2.5 million single stock futures that were cleared in December, less than 1% were transacted through the exchange's order book.

One of the interesting things about this line of business is that it is effectively pan-European. While the underlying stocks are

CME Volume by Customer Segment

	Average Daily Volume*		
	Q3 08	Q4 08	Q/Q Change
Proprietary trading firms, primarily algorithmic	4.0	3.0	-25%
Proprietary trading of banks and investment banks	1.8	1.4	-21%
Top 25 Hedge Funds	1.0	0.7	-32%
Other (includes small member firms and individual members)	2.5	1.9	-22%
Non-members (includes pension funds, index funds, long-only mutual funds, insurance companies, corporates, active individual traders)	2.0	1.8	-13%
Total	11.4	8.9	-22%



* Legacy CME and CBOT products only. Nymex products not included. Data for prior periods not available.

Source: CME Group

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traded mostly on national exchanges, the Liffe and Eurex OTC clearing services are wide open for business from anywhere in the European Union. Eurex naturally does most of its single stock futures and options business on German and Swiss names, but French, Dutch, Finnish and Spanish names make up a sizeable part of its volume. Likewise, a large part of Liffe's Bclear volume comes from the core Euronext markets of Amsterdam, London and Paris, but it also captures a lot of business related to German and Spanish names.

Exchange Rankings

One of the side-effects of the credit crisis is that the stock prices of the publicly traded exchanges, which have tended to track the ups and downs of volume, have taken a real beating. That in turn has pretty much halted

the mergers and acquisitions frenzy that we had been seeing for much of the past decade.

The focus now is on integration. As the exchange group table shows, there are several exchange holding companies that consist of several large subsidiaries that many of us still view as separate entities. The New York Mercantile Exchange, the world's largest energy futures exchange, is now part of the CME Group, and the Philadelphia Stock Exchange, the third largest U.S. equity options exchange, is now part of the Nasdaq OMX Group.

This has considerably changed the complexion of the exchange rankings. When we did our volume article last year, CME's acquisition of the Chicago Board of Trade boosted it into first place in the global derivatives exchange rankings. This year, however, the decline in interest rate futures trading held

the CME-CBOT combination back just enough for KRX to move ahead.

Of course, now that CME has absorbed Nymex, the group as a whole remains in first place. On a combined basis, CME plus CBOT plus Nymex had 3.28 billion contracts traded in 2008, versus just 2.87 billion at the Korean exchange. Within CME, legacy CBOT trading was down 6.7%, legacy CME was up 6.6%, and legacy Nymex was up 19.8%. In other words, it was the energy products traded and cleared by Nymex that did most of the pulling last year for the CME train. That acquisition is looking smarter all the time.

The same applies to Eurex. On its own, the German-Swiss exchange would have ranked behind KRX with 2.17 billion contracts traded. But Eurex owns the International Securities Exchange, the second largest equity options exchange in the

Top Derivatives Exchanges Worldwide

Ranked by Number of Futures and Options Traded and/or Cleared in 2008*

This year's ranking of the world's top derivatives exchanges takes into account the wave of mergers and acquisitions that has transformed the exchange landscape over the past several years. The ranking is based on the number of futures and options traded and/or cleared at the parent company level. For a breakout of volume by each affiliated exchange, see the exchange groups table elsewhere in this issue of the magazine.

Rank	Exchange	Jan-Dec 2008	Jan-Dec 2007	% Change
1	CME Group (includes CBOT and Nymex) *	3,277,645,351	3,158,383,678	3.8%
2	Eurex (includes ISE) *	3,172,704,773	2,704,209,603	17.3%
3	Korea Exchange	2,865,482,319	2,777,416,098	3.2%
4	NYSE Euronext (includes all EU and US markets) *	1,675,791,242	1,525,247,465	9.9%
5	Chicago Board Options Exchange (includes CFE) *	1,194,516,467	945,608,754	26.3%
6	BM&F Bovespa *	741,889,113	794,053,775	-6.6%
7	Nasdaq OMX Group (includes all EU and US markets) *	722,107,905	551,409,855	31.0%
8	National Stock Exchange of India	590,151,288	379,874,850	55.4%
9	JSE South Africa	513,584,004	329,642,403	55.8%
10	Dalian Commodity Exchange	313,217,957	185,614,913	68.7%
11	Russian Trading Systems Stock Exchange	238,220,708	143,978,211	65.5%
12	IntercontinentalExchange (includes US, UK and Canada markets) *	234,414,538	194,667,719	20.4%
13	Zhengzhou Commodity Exchange	222,557,134	93,052,714	139.2%
14	Boston Options Exchange	178,650,541	129,797,339	37.6%
15	Osaka Securities Exchange	163,689,348	108,916,811	50.3%
16	Shanghai Futures Exchange	140,263,185	85,563,833	63.9%
17	Taiwan Futures Exchange	136,719,777	115,150,624	18.7%
18	Moscow Interbank Currency Exchange	131,905,458	85,386,473	54.5%
19	London Metal Exchange	113,215,299	92,914,728	21.8%
20	Hong Kong Exchanges & Clearing	105,006,736	87,985,686	19.3%
21	Australian Securities Exchange (includes SFE) *	94,775,920	116,090,973	-18.4%
22	Multi Commodity Exchange of India	94,310,610	68,945,925	36.8%
23	Tel-Aviv Stock Exchange	92,574,042	104,371,763	-11.3%
24	Mercado Español de Opciones y Futuros Financieros	83,416,762	51,859,591	60.9%
25	Mexican Derivatives Exchange	70,143,690	228,972,029	-69.4%

U.S. On a combined basis, Eurex plus ISE had total volume of 3.17 billion contracts in 2008, moving it ahead of KRX and just behind CME.

Looking a little bit lower in the exchange rankings, consolidation also affected the competitive balance among the U.S. options exchanges. The Chicago Board Options Exchange and ISE are still battling it out at the top, with 33.3% and 28.1% of the overall market, respectively. At the next tier down, however, the American Stock Exchange and NYSE Arca are now part of the same overall group, as are PHLX and the newly launched Nasdaq Options Market. On a consolidated basis, NYSE Euronext and Nasdaq OMX are almost equally matched, NYSE with a combined market share of 17.4% and Nasdaq OMX with 16.2%. The Boston Options Exchange has only a 5%

market share but it is growing more rapidly than the industry, with volume up 37.6% vs. 25.1% for the sector as a whole.

Moving to Asia, markets in India and China showed little impact from the crisis wracking Western financial markets. The National Stock Exchange of India, the second largest exchange in the region after KRX, reported a 55.4% increase in volume to 590.2 million contracts, driven mainly by a huge jump in index options trading. The Multi Commodity Exchange of India saw volume rise 36.8% to 94.3 million contracts, making it the fourth largest commodity futures exchange in the region.

All three Chinese exchanges continued to grow very rapidly. Dalian Commodity Exchange, the largest of the two agricultural futures exchanges, rose 68.7% to 313.2 million contracts. The increase there was driven

mainly by more active trading in soybean and soy oil futures. The Shanghai Futures Exchange rose 63.9% to 140.3 million, driven by strong growth in several existing products, notably its zinc, aluminum and fuel oil futures.

The Zhengzhou Commodity Exchange, which used to be the third largest exchange, grew 139.2% to 222.6 million contracts, making it the fastest growing derivatives exchange in the world. The jump in volume was driven mainly by a spectacular increase in its white sugar futures contracts, up 264% to 165.5 million contracts. Although ZCE's contract is five times smaller than the benchmark sugar contract traded on ICE Futures U.S., the volume of trading was so great that ZCE's market comes out slightly ahead in size. It's no wonder that commodity traders

Rank	Exchange	Jan-Dec 2008	Jan-Dec 2007	% Change
26	Tokyo Financial Exchange	66,927,067	76,195,817	-12.2%
27	Singapore Exchange	61,841,268	44,206,826	39.9%
28	Turkish Derivatives Exchange	54,472,835	24,867,033	119.1%
29	Mercado a Termino de Rosario	42,216,661	25,423,950	66.1%
30	Tokyo Commodity Exchange	41,026,955	47,070,169	-12.8%
31	Italian Derivatives Exchange	38,928,785	37,124,922	4.9%
32	Bourse de Montreal	38,064,902	42,742,210	-10.9%
33	Tokyo Stock Exchange	32,500,438	33,093,785	-1.8%
34	National Commodity & Derivatives Exchange	24,639,710	34,947,872	-29.5%
35	Oslo Stock Exchange	16,048,430	13,967,847	14.9%
36	Budapest Stock Exchange	13,369,425	18,827,328	-29.0%
37	Warsaw Stock Exchange	12,560,518	9,341,958	34.5%
38	Tokyo Grain Exchange	8,433,346	19,674,883	-57.1%
39	Athens Derivatives Exchange	7,172,120	6,581,544	9.0%
40	Malaysia Derivatives Exchange	6,120,032	6,202,686	-1.3%
41	OneChicago	4,012,281	8,105,963	-50.5%
42	Kansas City Board of Trade	3,965,924	4,670,955	-15.1%
43	Climate Exchange (includes ECX and CCFE) *	3,295,908	1,322,079	149.3%
44	Central Japan Commodity Exchange	3,272,665	6,549,417	-50.0%
45	Thailand Futures Exchange	2,148,620	1,230,666	74.6%
46	New Zealand Futures Exchange	1,459,088	1,651,038	-11.6%
47	Minneapolis Grain Exchange	1,409,002	1,826,807	-22.9%
48	Wiener Boerse	1,129,619	1,316,895	-14.2%
49	Dubai Mercantile Exchange	330,379	223,174	48.0%
50	Kansai Commodities Exchange	183,999	164,743	11.7%
51	Mercado a Termino de Buenos Aires	155,755	177,564	-12.3%
52	US Futures Exchange	22,955	8,110	183.0%

* See the exchange groups table for a breakdown of volume among affiliated exchanges.

Note: Ranking does not include exchanges that do not report their volume to the FIA.

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Exchange Groups

The wave of mergers and acquisitions in recent years has created several companies that own as many as eight subsidiary derivatives exchanges. In addition, several exchanges have formed subsidiaries to enter new market segments. The following table shows a breakdown of group futures and options volume by subsidiary exchange.

	2008	2007	% Change
Sydney Futures Exchange	74,605,556	91,121,162	-18.1%
Australian Stock Exchange	20,170,364	24,969,811	-19.2%
Australian Securities Exchange	94,775,920	116,090,973	-18.4%
Bolsa de Mercadorias & Futuros	391,614,615	426,363,492	-8.2%
Bolsa de Valores de São Paulo	350,274,498	367,690,283	-4.7%
BM&F Bovespa	741,889,113	794,053,775	-6.6%
Chicago Board Options Exchange	1,193,355,070	944,472,459	26.4%
CBOE Futures Exchange	1,161,397	1,136,295	2.2%
CBOE Holdings	1,194,516,467	945,608,754	26.3%
European Climate Exchange	2,811,586	1,038,321	170.8%
Chicago Climate Futures Exchange	484,322	283,758	-41.4%
Climate Exchange	3,295,908	1,322,079	149.3%
Chicago Mercantile Exchange	1,893,402,536	1,775,429,438	6.6%
Chicago Board of Trade	960,777,756	1,029,568,803	-6.7%
New York Mercantile Exchange	423,465,059	353,385,437	19.8%
CME Group	3,277,645,351	3,158,383,678	3.8%
Eurex	2,165,043,183	1,899,861,926	14.0%
International Securities Exchange	1,007,661,590	804,347,677	25.3%
Eurex	3,172,704,773	2,704,209,603	17.3%
ICE Futures Europe	150,138,547	137,432,635	9.2%
ICE Futures U.S.	80,954,781	53,782,919	50.5%
ICE Futures Canada	3,321,210	3,452,165	-3.8%
IntercontinentalExchange*	234,414,538	194,667,719	20.4%
* does not include OTC transactions or ECX products			
Philadelphia Stock Exchange	547,456,114	407,972,525	34.2%
Nasdaq OMX Group (Nordic markets)	143,426,572	143,437,330	0.0%
Nasdaq Options Market (U.S.)	31,225,219	0	NA
Nasdaq OMX Group	722,107,905	551,409,855	31.0%
Liffe U.K.	809,450,611	695,974,929	16.3%
NYSE Arca Options	416,938,764	335,838,547	24.1%
American Stock Exchange	207,285,283	240,383,466	-13.8%
Liffe Amsterdam	142,136,885	159,827,511	-11.1%
Liffe Paris	96,440,021	90,868,890	6.1%
NYSE Liffe	1,837,543	0	NA
Liffe Brussels	1,212,244	1,348,884	-10.1%
Liffe Lisbon	489,891	1,005,238	-51.3%
NYSE Euronext	1,675,791,242	1,525,247,465	9.9%

Note: Volume based on the number of futures and options contracts traded and/or cleared.

worldwide increasingly look to these Chinese markets for price discovery.

That said, China's markets have shown that they can quickly lose their allure. The volume of trading in wheat futures, the Zhengzhou exchange's original mainstay, fell 29.4% to 27.5 million contracts. And aluminum futures trading on the SHFE has ridden a roller coaster, rising to 13.9 million contracts in 2006, plunging to 4.8 million in 2007, then rebounding to 14.8 million in 2008.

Another amazing growth story is in South Africa, where the Johannesburg Stock Exchange, the home of the old Safex exchange, has become one of the top 10 derivatives exchanges in the world. Last year its volume rose 55.8% to 513.6 million contracts. The real story behind the JSE's growth is the success of its single stock futures. Last year the JSE traded 431.2 million single stock futures, up 62.4% on the previous year. The JSE is now the largest single stock futures market on the planet, followed by India's NSE at 225.8 million, Eurex at 130.2 million, NYSE Liffe at 124.1 million, Russia's RTS at 83.7 million at Russia's RTS, Spain's Meff at 46.2 million, and OneChicago bringing up the rear at four million contracts.

Outlook for 2009

Looking back at 2008, it is astonishing just how complex the volume trends were. It seems almost as if the more closely we examine the data, the more confusing it gets.

Are we headed for a severe decline in trading volume this year, as the data from the interest rate futures sector seems to suggest? Or are we instead going to be carried forward by the huge growth in emerging markets such as China and India? Can we sustain the incredible growth of equity index products that we saw in 2008, or will volume in those products decline as volatility gradually normalizes? And how much volume will come into the industry from the over-the-counter markets, now that counterparty credit risk has grabbed everyone's attention?

There is no question that the year-over-year comparisons are not going to look very good. January of 2008 was an incredibly active month, with all sorts of volume records set on the U.S. exchanges. July was even bigger, and then in September we hit an all-time record of 1.9 billion contracts traded. It is going to take a long time before we get back to that level of trading, given all the deleveraging that has taken place and the decline in liquidity.

Top 20 Interest Rate Futures and Options Worldwide

Ranked by Number of Contracts Traded in 2008

Rank	Contract	Jan-Dec 2008	Jan-Dec 2007	% Change
1	Eurodollar Futures, CME	596,974,081	621,470,328	-3.9%
2	Euro-Bund Futures, Eurex	257,827,619	338,319,416	-23.8%
3	10 Year Treasury Note Futures, CME	256,770,689	349,229,371	-26.5%
4	Euribor Futures, Liffe	228,487,462	221,411,485	3.2%
5	Eurodollar Options on Futures, CME	228,224,397	313,032,284	-27.1%
6	Euro-Schatz Futures, Eurex	174,226,719	181,101,310	-3.8%
7	5 Year Treasury Note Futures, CME	168,127,469	166,207,391	1.2%
8	One Day Inter-Bank Deposit Futures, BM&F	166,983,583	221,627,417	-24.7%
9	Euro-Bobl Futures, Eurex	155,090,861	170,909,055	-9.3%
10	Euribor Options on Futures, Liffe	106,730,522	74,276,297	43.7%
11	Short Sterling Futures, Liffe	104,572,875	119,675,947	-12.6%
12	30 Year Treasury Bond Futures, CME	89,464,546	107,630,211	-16.9%
13	2 Year Treasury Note Futures, CME	79,311,002	68,610,392	15.6%
14	Short Sterling Options on Futures, Liffe	59,079,440	50,747,710	16.4%
15	TILE 28 Futures, Mexder	57,881,101	220,608,024	-73.8%
16	10 Year Treasury Note Options on Futures, CME	56,753,688	61,528,219	-7.8%
17	Euro-Bund Options on Futures, Eurex	33,317,879	44,441,961	-25.0%
18	3 Year Treasury Bond Futures, ASX	26,116,381	33,585,015	-22.2%
19	Long Gilt Futures, Liffe	24,717,249	27,367,489	-9.7%
20	Euroyen Futures, TFX	22,372,133	38,952,553	-42.6%

Top 20 Equity Index Futures and Options Worldwide

Ranked by Number of Contracts Traded and/or Cleared in 2008

Rank	Contract	Jan-Dec 2008	Jan-Dec 2007	% Change
1	Kospi 200 Options, KRX	2,766,474,404	2,709,844,077	2.1%
2	E-mini S&P 500 Futures, CME	633,889,466	415,348,228	52.6%
3	DJ Euro Stoxx 50 Futures, Eurex	432,298,342	327,034,149	32.2%
4	DJ Euro Stoxx 50 Options, Eurex	400,931,635	251,438,870	59.5%
5	SPDR S&P 500 ETF Options *	321,454,795	141,614,736	127.0%
6	Powershares QQQ ETF Options *	221,801,005	185,807,535	19.4%
7	S&P CNX Nifty Futures, NSE India	202,390,223	138,794,235	45.8%
8	S&P 500 Options, CBOE	179,019,155	158,019,723	13.3%
9	iShares Russell 2000 ETF Options *	151,900,495	154,059,054	-1.4%
10	S&P CNX Nifty Options, NSE India	150,916,778	52,707,150	186.3%
11	Financial Select Sector SPDR ETF Options *	119,671,026	39,130,620	205.8%
12	E-mini Nasdaq 100 Futures, CME	108,734,456	95,309,053	14.1%
13	Dax Options, Eurex	104,939,881	91,850,835	14.3%
14	Nikkei 225 Mini Futures, OSE	95,446,729	49,107,059	94.4%
15	Taiex Options, Taifex	92,757,254	92,585,637	0.2%
16	RTS Index Futures, RTS	87,469,405	34,228,973	155.5%
17	TA-25 Options, TASE	81,483,701	94,520,236	-13.8%
18	Kospi 200 Futures, KRX	64,835,148	47,758,294	35.8%
19	Mini-sized \$5 DJIA Futures, CME	55,348,312	40,098,882	38.0%
20	CAC 40 Futures, Liffe	49,242,000	44,668,975	10.2%

* Traded on multiple U.S. options exchanges

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Top 20 Agricultural Futures and Options Worldwide

Ranked by Number of Contracts Traded and/or Cleared in 2008

Rank	Contract	Jan-Dec 2008	Jan-Dec 2007	% Change
1	White Sugar Futures, ZCE	165,485,978	45,468,481	264.0%
2	No. 1 Soybeans Futures, DCE	113,681,550	47,432,721	139.7%
3	Soy Meal Futures, DCE	81,265,439	64,719,466	25.6%
4	Corn Futures, CME	59,957,118	54,520,152	10.0%
5	Corn Futures, DCE	54,976,724	59,436,742	-7.5%
6	Rubber Futures, SHFE	46,461,103	42,191,727	10.1%
7	Soy Oil Futures, DCE	43,695,993	13,283,866	228.9%
8	Soybean Futures, CME	36,373,096	31,726,316	14.6%
9	Strong Gluten Wheat Futures, ZCE	27,509,312	38,982,788	-29.4%
10	Sugar #11 Futures, ICE Futures U.S.	27,019,704	21,263,799	27.1%
11	Corn Options on Futures, CME	20,992,582	14,691,277	42.9%
12	Wheat Futures, CME	19,011,928	19,582,706	-2.9%
13	Soybean Oil Futures, CME	16,928,361	13,170,914	28.5%
14	Soybean Meal Futures, CME	13,354,174	12,213,315	9.3%
15	Soybean Options on Futures, CME	9,806,935	8,215,582	19.4%
16	Live Cattle Futures, CME	9,801,360	8,587,973	14.1%
17	Sugar #11 Options on Futures, ICE Futures U.S.	9,179,779	5,548,668	65.4%
18	Lean Hog Futures, CME	8,505,138	7,264,832	17.1%
19	Rapeseed Oil Futures, ZCE	6,429,404	659,612	874.7%
20	Palm Oil Futures, DCE	6,302,478	339,175	1758.2%

Top 20 Energy Futures and Options Worldwide

Ranked by Number of Contracts Traded and/or Cleared in 2008

Rank	Contract	Jan-Dec 2008	Jan-Dec 2007	% Change
1	Light, Sweet Crude Oil Futures, CME	134,674,264	121,525,967	10.8%
2	Brent Crude Oil Futures, ICE Futures Europe	68,368,145	59,728,941	14.5%
3	WTI Crude Oil Futures, ICE Futures Europe	51,091,712	51,388,362	-0.6%
4	Natural Gas Futures, CME	38,730,519	29,786,318	30.0%
5	Light Sweet Crude Oil Options on Futures, CME	35,255,326	28,398,793	24.1%
6	Henry Hub Natural Gas Swap Futures, CME *	31,401,575	16,207,044	93.8%
7	European Style Natural Gas Options, CME *	31,158,326	29,921,068	4.1%
8	Fuel Oil Futures, SHFE	30,810,540	12,005,094	156.6%
9	Gas Oil Futures, ICE Futures Europe	28,805,192	24,509,884	17.5%
10	NY Harbor RBOB Gasoline Futures, CME	20,522,571	19,791,439	3.7%
11	Crude Oil Futures, MCX	20,507,001	13,938,813	47.1%
12	No. 2 Heating Oil Futures, CME	19,583,052	18,078,976	8.3%
13	Henry Hub Penultimate Swap Futures, CME *	12,352,928	10,117,889	22.1%
14	miNY Crude Oil Futures, CME	5,641,145	5,185,214	8.8%
15	Gasoline Futures, Tocom	4,054,761	7,529,706	-46.1%
16	European Style Crude Oil Options, CME *	3,580,861	1,879,999	90.5%
17	Natural Gas Options on Futures, CME	2,336,287	5,051,879	-53.8%
18	Crude Oil Average Price Options, CME *	2,227,738	1,445,930	54.1%
19	Panhandle Basis Natural Gas Swap Futures, CME *	2,017,371	1,497,748	34.7%
20	ECX CFI Futures, European Climate Exchange	1,991,276	980,780	103.0%

* cleared via Clearport

It is important to keep this all in perspective, however. As the implied bid-ask spread chart shows, trading conditions have gotten significantly worse, but only compared to how things were two or three years ago. If we go back to the early part of the decade, the spreads were much wider, which is another way of saying that even now the futures markets are much more efficient than they used to be. Part of that comes from the advances in electronic trading that we have been talking about for so many years. Those advances are not likely to go away. And as the Eurodollar price discovery chart shows, the futures markets are still performing their core function in a very effective way. So there is good reason to expect that sooner or later those market participants who have pulled back from using these markets because of the financial crisis will eventually return for all the reasons they came in the first place. We just don't know when. ■

Galen Burghardt is senior vice president and director of research at Newedge and a member of the editorial advisory board of *Futures Industry*. He thanks **Lauren Lei** in the research department of Newedge for her contribution to the article. **Will Acworth** is editor of *Futures Industry*.

Join Us for an Interactive Discussion of 2008 Derivatives Exchange Volume

**Thursday, March 26
11:00 a.m. EST**

Webinar by Galen Burghardt, senior vice president and director of research at Newedge, and Will Acworth, editor of *Futures Industry*.

Join us for a 30-minute webinar that will take participants through the global futures and options volume trends described in the March issue of *Futures Industry*. The webinar will focus on key themes and analysis based on the FIA's volume data as well as a quantitative analysis of volatility and liquidity trends in the benchmark interest rate and equity index contracts traded on the major U.S. and European exchanges. Participants will be able to submit questions and comments online during the presentation. The webinar is open to the public at no charge. For more information, go to

www.futuresindustry.org/webinars/

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Top 20 Metals Futures and Options Worldwide

Ranked by Number of Contracts Traded and/or Cleared in 2008

Rank	Contract	Jan-Dec 2008	Jan-Dec 2007	% Change
1	High Grade Primary Aluminum Futures, LME	48,307,389	40,229,693	20.1%
2	Gold Futures, Nymex	38,377,367	25,060,440	53.1%
3	Copper Futures, LME	26,507,242	21,420,450	23.7%
4	Zinc Futures, SHFE	22,538,897	10,215,449	130.4%
5	Copper Futures, SHFE	20,773,258	16,328,011	27.2%
6	Special High Grade Zinc Futures, LME	16,120,770	12,556,285	28.4%
7	Gold Futures, Tocom	15,163,975	18,203,194	-16.7%
8	Aluminum Futures, SHFE	14,788,920	4,823,552	206.6%
9	Copper Futures, MCX	14,277,796	15,375,506	-7.1%
10	Gold Futures, MCX	14,024,217	7,604,891	84.4%
11	Silver M Futures, MCX	12,913,443	6,258,376	106.3%
12	Silver Futures, MCX	10,972,676	9,183,273	19.5%
13	Gold M Futures, MCX	10,027,147	2,735,595	266.5%
14	Silver Futures, Nymex	8,917,183	6,817,137	30.8%
15	Platinum Futures, Tocom	6,940,348	9,169,890	-24.3%
16	Standard Lead Futures, LME	6,188,753	4,697,862	31.7%
17	Gold Mini Futures, Tocom	5,736,883	455,212	1160.3%
18	NT Dollar Gold Futures, Taifex *	5,314,069	NA	
19	Primary Nickel Futures, LME	5,202,609	3,792,788	37.2%
20	Gold Futures, RTS	5,199,919	1,632,410	218.5%

* Taifex began trading NT dollar gold futures in December 2007