



The Exchange-Traded Derivatives Market: A Light in the Current Financial Darkness

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The Role of Markets in the Financial Crisis

The public is outraged. People's jobs, retirement accounts, and homes have been caught in a financial and economic maelstrom that took so many of us by surprise. We all want to know how it happened, how we can work our way out of it, and how we can prevent the same thing from happening again in the future. We know that this is the worst economic and financial crisis since the Great Depression of the 1930s; what we hope is that it won't be even worse than that. This is a time that calls for careful analysis and bold thoughtful action. We know that markets have been involved in the unfolding of the crisis and it is critical for us to determine which markets have been a part of the crisis and which markets may be part of the solution. At this point we can say that there are at least four markets that have

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played a significant role in creating our current situation and that none of these markets are exchange based markets.² The markets involved in the current crisis include:

- **The US housing market**, which has been characterized by a bubble that has been inflating since the late-1990s. Up until that time housing prices had on a national level grown at roughly the rate of inflation. Beginning in 1997, housing prices began to rise much more rapidly than the rate of inflation, fueled in part by very low short-term interest rates maintained by the Federal Reserve. A bubble mentality took hold as people scrambled to buy homes either before they got too expensive or because they wanted to take a speculative gamble on their continued rise. And for the first time in our nation's history, the bubble was sufficiently large and national in scope, that the subsequent collapse has also been large and national.
- **The mortgage market**. This second, and related, market was one in which lending standards and documentation standards were deliberately lowered in order to continue to feed the growing worldwide investor demand for mortgage-backed securities. The belief was that housing prices would continue to rise and build home equity even for the shakiest of borrowers. There is no doubt that there was inadequate regulation of, and inadequate risk management in, the channels through which mortgage loans were marketed and made. Mortgage origination was fee-driven with little incentive to reasonably manage the risk of default by the mortgage borrower. Overall mortgage quality fell and when housing prices also fell, more and more people walked away from their mortgages, creating losses for anyone who had invested in them.
- **The mortgage-backed securities market**. The mortgage-backed security (MBS) is a wonderful invention and a way of broadening the investor base supplying capital to the mortgage market. For many years, mortgages have been placed in pools, and securities based on these pooled mortgages have been sold to a large number of investors worldwide. Many MBSs are simple pass-throughs where the principal and interest payments made by the individual mortgage borrowers were simply passed through to the investors in the mortgage-backed securities. However more complicated structures, known as collateralized mortgage obligations (CMOs) were created to construct products that better met various investor needs. CMOs involve dividing the pool of securities into several separate tranches (French for slices) where, for example, all prepayments flow first to the first tranche, then to the second, and so on.

² We can distinguish between markets that are conducted on organized exchanges like stock exchanges and derivatives exchanges, and those that are not conducted on exchanges. We refer to the latter as non-exchange markets or off-exchange markets. The off-exchange markets in which institutions trade are generally referred to as over-the-counter or OTC markets, a term from the days in which securities were sometimes purchased over the counter of a bank or brokerage firm. All four markets mentioned here are off-exchange markets, but only the last two, mortgage-backed securities and credit default swaps would normally be called OTC.

Sometimes, there could be two tranches, one receiving all the interest payments and the other receiving all the principal payments. Or any defaults could all be allocated first to the most junior tranche, until that tranche had lost everything, then to the next tranche and so on. So the senior tranches are considered very safe and have lower returns, and the junior tranches are riskier but carry higher expected returns to compensate. So even a pool of sub-prime mortgages could have senior tranches with an AAA credit rating. Or so it seemed. As we will see in a moment, securities based upon pools of mortgages are only as good as those underlying mortgages and as principal and interest payments ceased, both the mortgages and the securities based upon them fell dramatically in value.

- **The credit default swaps market.** This fourth relevant market was based on another brilliant invention, one designed to allow investors to reduce the risk of bonds, mortgage backed securities and other credit instruments that they held. However the invention is brilliant as long as the risk is properly modeled. The big insurance firm, AIG, was as Fed Chairman Ben Bernanke said, essentially running a hedge fund inside of it. There was a unit of AIG which was initially very profitable due to the selling of a large number of credit default swaps (CDS). While the quants³ who ran the unit calculated there was a very tiny risk of having to pay off on these swaps, as it turned out the risk was huge and the losses were so large, that AIG would have headed for bankruptcy, if it had not been for a government bailout.⁴

Bubbles eventually run out of steam and rapidly deflate, and when housing prices began to fall, mortgage borrowers began to default on their loans. The first to default were the so-called subprime borrowers, because many of them, especially those who took out adjustable rate mortgages with initial low teaser rates, simply did not have the income to make their monthly payments. As housing prices continued to tumble, even prime borrowers began to default. And as mortgage borrowers stopped making their payments, many of the mortgage backed securities that were based on these payments began to drop in value, significantly shrinking net assets of the many banks, hedge funds and other investors who held them. Even AAA rated tranches began to look toxic. And suddenly, those who had sold CDSs to the holders of these mortgage related securities found that they had to pay off a lot more buyers than their models had ever predicted and more than they were financially able to do.

None of these four markets could be described as regulated markets. And there were abuses that took place in all four. The results, of course, have been devastating. Some 5.7 million jobs have disappeared since the start of 2008. The current unemployment rate (April 2009) at 8.9% is the worst in 25 years. The percentage of unemployed that are long term (over six months) is the highest in 61 years.⁵ The

³ Quantitative analysts sometimes called financial engineers.

⁴ What exacerbated AIG's sudden need for cash was that it was not required to post any collateral on its OTC positions as long as it maintained AAA rating. The week it lost this rating the need to post a significant amount of collateral was triggered.

⁵ http://money.cnn.com/2009/05/08/news/economy/jobs_april/index.htm

economy has contracted in each of the past three quarters, and this recession is now the longest since World War II. While the stock market has regained some losses, retirement accounts are still down substantially. Attempts to stimulate the economy and especially the financial sector have resulted in huge budget deficits. The rate of bank failures is on the rise again. There were 25 bank failures last year in 2008, and based upon the failure rates through May 29, 2009, it appears that we could have almost 100 bank failures by the end of the year.⁶ But what is most interesting about the above list is what's missing from it. While OTC derivatives, especially credit default swaps, played a significant role in the crisis, there is another very important group of derivatives, which are cleared and marked to market daily, that performed absolutely beautifully.

The Listed Derivatives⁷ Markets: A Citadel of Prudent Risk Management

Which major market was not involved in the financial crisis? There is one key market that stands out. The listed derivatives markets have not played any role in the financial and economic decline. And in fact they may well play a role in the efforts to move back toward normalcy. During the last several years, there have been huge losses due to defaults in both the mortgage market as well as in the credit default swaps market. However, not one customer has lost one penny in the listed derivatives markets as a result of the default of any individual or firm. Why? US futures markets have been the gold standard for the rest of the world when it comes to managing credit risk. The secret is clearing.

Clearing

The key ingredient in the listed derivatives markets is the clearinghouse. This is the entity that places itself in the middle of all trades, becoming buyer to every seller and seller to every buyer. This means that no individual that trades in these markets has to ever worry about the individual or entity that took the other side of its trade when the trade was made. The clearinghouse, in effect, becomes the counterparty to all traders. But what makes the clearinghouse able to guarantee all of these trades? It is a very carefully designed system that ensures that as market prices change, accounts are settled and debts are removed as quickly as possible. The first piece of this system is what is referred to as the **daily marking to market** system. What this means is that once or twice a day, and more often in volatile markets, gains and losses are realized by both sides of a trade. Debts are not allowed to accumulate. If a feedlot operator, for example, decided to sell June cattle futures for one dollar per pound, and there were a three cent drop in cattle prices, this would result in the crediting of his account by three cents per pound (or \$1200 for each 40,000 pound live cattle contract). It would also result in the debiting of the account of the individual on the other side of the market by an equal amount.

⁶ See the FDIC's bank failure list at <http://www.fdic.gov/bank/individual/failed/banklist.html>

⁷ Listed derivatives is used interchangeably with exchange-traded derivatives.

In order to ensure that these funds are available for transfer each day, every trader must at the time he enters into the contract post an initial margin or **performance bond** which generally covers 95 to 99% of all possible moves expected to occur in a one-day period. And what this means is that both sides to the trade already have on deposit with the exchange money that is equivalent to roughly the maximum one-day loss that would normally occur on 95 to 99 days of any 100 day period. Of course as soon as that money is moved from the losing to the winning side at the end of any given day, the individual who has had his performance bond debited must refresh the amount in his account.

Added to this daily marking to market combined with initial and ongoing performance bonds, the exchange and its clearinghouse don't actually look directly to the customer to perform but rather look to the **clearing firm which guarantees each customer**. It is therefore up to the clearing firm to know their customers and ensure that they have appropriate performance bonds, which may well be set at a higher level than the exchange minimums. It is the clearing firm that insulates the exchange and its clearinghouse from default by any individual customer. Furthermore, to ensure that the assets of customers are protected from any financial distress that may be faced by the clearing firm, all customer funds and positions must be segregated from the funds and positions of the clearing firm itself. So a clearing firm can literally go bankrupt and its customer funds are still protected. In order to minimize the risk of a default by a clearing firm, the exchange requires that the firm maintain a certain amount of capital. The CME Group, for example, requires clearing firms to maintain capital which is equal to the greater of three numbers: \$2.5 million, 8% of customer funds, and the CFTC and SEC regulatory capital requirements. Clearing members must comply with both the minimum capital requirements and the segregation of funds requirements on a daily basis.⁸

Futures style clearing has been so successful that an increasing number of OTC trades have moved into clearing. This began after the late 2001 bankruptcy of Enron, when a number of the OTC merchant energy traders left the market and as new traders entered, they sometimes found it difficult to establish bilateral relationships with other traders. Thus both NYMEX and ICE started OTC clearing for energy products in 2002. Today, both clear a significant amount of OTC trades. Among the existing futures exchanges, NYMEX has been particularly aggressive in this area because a large percentage of energy traders prefer the flexibility of the OTC market.

Clearing and the Current Financial Crisis

The current crisis shows just how solid the clearing system is. Despite the havoc that was visited upon the financial sector, not a single clearing firm defaulted on its obligations to US exchanges. And when the largest bankruptcy in US history occurred at Lehman Brothers Holdings on September 15, 2008,⁹ all

⁸ For a deeper explanation of the role of clearing and settlement in both securities and derivatives, see John McPartland, "Clearing and Settlement Demystified," *Chicago Fed Letter*, January 2005, Number 210.

⁹ Lehman's debt as of May 31, 2008 was \$613 billion - six times the size of the debt held by the previous record holder - WorldCom in its 2002 bankruptcy. Heidi N. Moore, "An Update on the Lehman Bankruptcy, By the

customer positions were moved from Lehman to other clearing firms within a week. That week, the reader may recall, was the same one in which Merrill Lynch was taken over by Bank of America, AIG almost went bankrupt before it was bailed out by the US government and the market was experiencing tremendous volatility. And there is a wide consensus that the Lehman bankruptcy was handled much more smoothly by US exchanges than by European and Asian exchanges.¹⁰ In the US, all positions were transferred from Lehman to stronger firms in five days and margins didn't take too much longer. In Europe and Asia, some customer positions were liquidated instead of transferred (sometimes a disaster for customers who were hedging) and some margin monies have still not been returned to customers almost nine months later. The bottom line is that the financial crisis generally and the Lehman bankruptcy in particular have shown how well the system of exchange-traded derivatives functions in the United States. (See Appendix 3 for more discussion of this topic.)

US Futures Exchanges are Still the Gold Standard

To understand the crucial role played by US futures exchanges requires a little historical perspective. The oldest continuously operating futures exchanges in the world are the Chicago and New York exchanges, which all started in the 19th century, post-Civil War period. And while these early futures exchanges had their share of warts, today's futures exchanges are well oiled risk-management machines. But it was only in the last four decades that these markets began to take on an extremely important role in the US economy.¹¹ As US futures markets grew, other countries sent emissaries to study how we did it and then went and set up their own markets in the image of ours. London, Paris, Singapore, Sao Paulo, and many other cities set up exchanges that were virtual clones of the Chicago Mercantile Exchange (CME) and the Chicago Board of Trade (CBOT). The way the US traded, the way the US regulated, and the way the US self-regulated became the gold standard for the world.

Time along with rapid developments in technology, changed the gold standard. The traditional floor-based, not-for-profit, member owned model adopted by virtually all US exchanges began to be replaced elsewhere in the world by a new model. The new model replaced floors with screens and replaced owner-members with stockholders. And the new model began popping up in places like Bermuda, New

Numbers," *Wall Street Journal*, October 17, 2008. <http://blogs.wsj.com/deals/2008/10/17/an-update-on-the-lehman-bankruptcy-by-the-numbers/>

¹⁰ See Ronald H. Filler, "Are Customer Segregated/Secured Account Funds Properly Protected after Lehman?" *Futures & Derivatives Law Report*, November 2008, Vol 28, Issue 10; and Will Acworth, "The Lessons of Lehman: Reassessing Customer Protections," *Futures Industry*, January/February 2009.

¹¹ Until 1972, virtually all futures contracts were based on agricultural commodities. While the futures industry had long been important for managing agricultural risks, beginning with the creation of currency futures in 1972, interest rate futures in 1975, and stock index futures in 1982, the futures industry has become an increasingly important part of the world financial sector.

Zealand, Europe and Japan. It was much easier to set up a new electronic exchange rather than convert a floor-based exchange to screens, and most of the electronic pioneers were indeed new startup exchanges

The floor traders who owned the CME, CBOT, NYMEX and all the rest were not about to put themselves out of a job by shuttering their floors and sitting behind screens. Of course there were some floor trader visionaries who set up very successful trading operations (referred to as prop shops, short for proprietary trading operations). But the majority of members did not want to swap the job that they knew how to do for one in which they knew that they would have a competitive disadvantage relative to a new generation raised on computer games. In fact the president of one of the most successful prop shops in Chicago told me that he focused his hiring on young fresh college graduates. He did not want to hire middle-aged floor traders who would be slower and would have to spend a lot of time unlearning bad habits.

The first event that created serious discomfort in the minds of the US exchange community actually took place in London in the late 1990s. The London International Financial Futures Exchange (LIFFE) was then the biggest exchange in Europe and its biggest product was a futures contract based on the German government bond. Sure there was a little electronic futures exchange called Deutsche Terminbörse (DTB) that started in Frankfurt in 1992 and had also listed the German government bond, but everyone knew it was extremely difficult if not impossible for a new exchange to succeed with a product that already had an established liquid market elsewhere. So no one paid much attention to this little German experiment. At least not until 1997 and 1998 when the cheaper, easier to trade, more transparent electronic market in Frankfurt began to quickly take market share from LIFFE. By the time the dust had settled in 1998, all trading had shifted from the floor-based LIFFE to the screened-based DTB. The fact that LIFFE was a floor-based, member-owned clone of the Chicago exchanges and had just taken a serious hit from a small electronic upstart made Chicago very uneasy.

But it took a second European event to confirm the fears of the US exchange community. The second largest European exchange had for years been the Paris-based MATIF. In 1994, MATIF decided to offer electronic trading side by side with floor trading. Many people felt that floor trading was superior and that it would take a long time, maybe years, for market participants to shift their trading away from the floor. As it turned out, it took only a few weeks. It didn't help that the French floor brokers decided to go out on strike when the electronic system was first made available. Now the US exchanges took real notice.

One possible ending to this story would be that the electronic European exchanges would begin to eat the American exchanges' lunch. They did try. In 2004, Eurex, which was born from the 1998 merger of the two electronic European exchanges (the previously mentioned German DTB and the Swiss SOFFEX), was the largest derivatives exchange in the world, but it wanted to get larger. So it decided to set up a Chicago subsidiary, Eurex US, to directly attack the products of the CBOT and the CME. The smart money was on Eurex. Everyone had seen what the electronic predator had done to the unprepared LIFFE in 1998. But the smart money was wrong. The attack failed and the Eurex CEO lost his job; most

of the Eurex US was sold for peanuts to Man Financial, and the remnants of Eurex US have now been mothballed.

Why did the attack fail? While the British LIFFE had been unprepared in 1998, the CME and CBOT did everything they could to fend off the attack. The CBOT which had been using a clone of the Eurex system for their side-by-side electronic trading, switched to a new system that some said was better than Eurex's. Most importantly, both exchanges urged their members to switch their trades from the trading floor to their respective electronic systems. And both exchanges lowered their fees to match those of Eurex. The other thing, in my opinion, is that both exchanges, especially the CME, have had a continuity of visionary leadership that enabled them to deploy the necessary resources to win this battle. Of course it takes good strategies to win a battle, and many managers are able to develop good strategies, but it also takes inspired leadership to motivate the troops.

One other point needs to be made relative to the Eurex attack, and that is the role of the CFTC, which was the body whose approval was required for any new exchange, including Eurex US, to be able to set up shop. Congress had designed the CFTC to be country blind. What was important to Congress were the benefits created by both actual and potential competition, regardless of from which country that competition came. It didn't matter where the owners of the new exchange were domiciled. What mattered was that the new exchange complied with all of the core principles, laws, rules and regulations that govern the behavior of exchanges. I happened to be at the CFTC at this time and I was very proud of the fact that we carried out the country-blind policy contained in the CEA and in no way did the staff or commissioners attempt to derail or slow down the application in order to give preference to the hometown exchange. Eurex was launched and failed, but the competition resulted in a lowering of fees and a more rapid shift to electronic trading, so customers benefited, which is the whole point of competition.

Size of the OTC and Exchange-Traded Derivatives Markets

While exchange-traded derivatives are a huge market globally, a very sizeable portion of derivatives trading takes place away from exchanges in the OTC market. In fact, the most recent (2007) global survey of derivatives trading found that 60% of derivatives volume or turnover was on-exchange and 40% was OTC in the two largest asset classes – foreign exchange and interest rates.¹² These triennial

¹² Note that the share of turnover between OTC and exchange traded derivatives varies greatly from one underlying asset to another. While 40% of combined interest rate and FX turnover was traded OTC, almost all of FX trading (97%) was OTC, while a relatively small share (21%) of interest rate turnover was OTC. And in some of the asset classes, like crude oil and petroleum products, which is not included in the BIS turnover data, the OTC share of outstanding positions is as much as five times the exchange traded share, per calculations by Dr. Robert Levin, Managing Director Energy Research and Product Development, CME Group. This growth in OTC derivatives is surely due, in part, to the legal certainty given to this class of products by the Commodity Futures Modernization Act of 2000.

surveys are conducted by the Bank for International Settlements (BIS).¹³ They are the best source of global data for comparing the size of the exchange-traded vs. OTC markets for currency and interest rate derivatives, but their limitation is that they do not include turnover (volume) data for other underlyings like physical commodities, equities and credit risk. The most recent survey was conducted in 2007 and covered 1) turnover in derivatives on currency and interest-rate products in 54 countries worldwide and 2) outstanding positions(also called notional amounts outstanding) in both of those two product areas as well as in OTC commodity, credit and equity derivatives for 47 countries.¹⁴ The next survey will be conducted in 2010. In addition, the BIS conducts a more geographically limited (only the G-10 countries) survey on OTC derivatives twice a year.

Because the most common way of measuring futures activity in the US is volume (as opposed to open interest) data, we will focus on the turnover data in the BIS surveys, with the caveat that the data is limited to FX and interest rates, and excludes commodity, credit and equity derivatives. The most recent survey in April 2007 showed the most rapid rate of growth in daily turnover of foreign exchange and interest rate derivatives than at any point since the survey began in 1995. Total turnover in these derivatives reached \$4.2 trillion per day, which was 73% more than the level in April 2004, or an annual compounded rate of growth of 20%.

¹³ The Survey began in 1989 and the first three surveys focused only on OTC foreign exchange transactions, not on derivatives at all. OTC derivatives on foreign exchange and interest rates were added in 1998. In 2007 credit derivatives were included. The BIS, which is an organization of the world's central banks, obtains its information from these central banks, which in turn obtain it from banks and dealers.

¹⁴ There are two ways to measure activity in derivatives markets. One is by turnover – the amount of trading that takes place during a specific period of time – a day, a month or a year being the typical time periods for measurement. The other is by the open positions outstanding as of a specific point in time, typically the end of a trading day, month or year.

In US futures markets, turnover and open positions are measured by volume and open interest, respectively and refer to the number of standardized contracts traded or still open. OTC markets, on the other hand, cannot be measured by the number of standardized contracts traded (since they don't have them – each contract is customized) and must be measured by the nominal value of trading or open positions. Some countries, like India and China, even report their futures data in value terms. So to be able to compare the amount of trading or open positions in both OTC and exchange-traded derivatives, all transactions must be converted to dollar terms, which is what is done in the BIS data.

OTC vs. Exchange-Traded Derivatives Turnover (FX and Interest Rates)

Daily Average Turnover in \$ Billions (April 2007)

	1998	2001	2004	2007	Growth 9 Years	Growth Annualized
OTC	1,265	1,385	2,420	4,198	332%	14%
Exchange-traded	1,382	2,198	4,547	6,173	447%	18%
Total	2,647	3,583	6,967	10,371	392%	16%
Exchange Share	52%	61%	65%	60%		
OTC Share	48%	39%	35%	40%		

Source: Triennial Central Bank Survey, BIS, 2007

Note from the table that over the nine years ending in 2007, total FX and interest rate derivatives turnover increased by 16% per year, with exchange-traded derivatives in those products growing a bit more rapidly than OTC (18% vs 14%). When the first survey was conducted in 1998, derivatives trading was pretty much equally split between exchange-traded and OTC. During the subsequent six years, the OTC share fell substantially to only 35% of the total. This was due to an explosion of trading in exchange-traded interest rate derivatives. However in the last three years of the period shown, OTC trading has grown more rapidly and its share has moved back up to 40%. Given the financial crisis, it is very likely that the next survey in 2010 will show a drop in derivatives trading overall and a possible shift away from OTC given that it may be viewed as more risky.

While the OTC derivatives market and exchange-traded derivatives market have traditionally been separate, there is some blending taking place as the clearing houses of exchanges have been clearing and guaranteeing transactions conducted in the OTC markets. The focus of much of this activity has been in the energy sector where both ICE and NYMEX (now part of CME Group) have been clearing OTC trades. Between the first quarter of 2006 and the first quarter of 2009, exchange cleared OTC energy

trades have increased 305% at the two exchanges, as measured by exchange revenues ,as can be seen in the table below.¹⁵

Exchange Revenues from OTC Energy Products

	Q1 2006	Q1 2009	3-Year Growth
ICE	24,276,000	69,142,000	285%
CME	20,327,000	66,958,000	329%
Total	44,603,000	136,100,000	305%

Source: ICE's 10-K and 10-Q filings to the SEC and selected CME press releases

While these first steps have been made in energy, exchanges in both Europe and the US have taken steps to expand centrally cleared offerings to OTC participants in a number of areas. CME Group, ICE, Eurex and Liffe all currently have Credit Default Swap (CDS) offerings, and many have plans to expand into OTC foreign exchange and interest rate swaps in 2009. Clearing solutions like CME Group's ClearPort and ICE Trust in the US, and Liffe's and LCH's BClear in Europe, have facilitated the growth in exchange cleared OTC, allowing participants to benefit from central counterparty clearing. And there are two major efforts in the US to clear OTC Credit Default Swaps (CDS). One of these has been developed by the CME Group and Citadel, while the other is a joint project of ICE and The Clearing Corp.

Derivatives Regulation

For a number of years, the CFTC regulated the futures markets in a similar fashion to the way in which the SEC regulated the securities markets, and that was with a set of prescriptions, a list of rules that specified what must be done and what must not be done. The good thing about such an approach is that it is crystal clear to both the regulator and those who are regulated what it is that constitutes appropriate behavior. If a specific form must be filed at the end of every month, there is little ambiguity about whether that happened. The disadvantage of this approach is that it focuses the attention of both the regulator and the regulated on the letter of the law or regulation rather than the true spirit of what Congress was after when it created the legislation in the first place.

In 2000, Congress chose to change the way that derivatives are regulated by the CFTC and move towards a principles based system, similar to that in place in the United Kingdom. Instead of saying that regulated entities must follow a specific set of rules, the law (the Commodity Futures Modernization Act of 2000, or CFMA) now prescribes that regulated entities must comply with a set of basic or core principles and gives them some flexibility to choose the best way to comply with these basic core principles. The brilliance of this approach is that it specifies desired outcomes instead of specifying

¹⁵ Volume or value of trade would be a better measure, but such data is not publically available from ICE, so we must use the revenue data.

intermediate means that may or may not result in those desired outcomes. It also creates an environment in which innovation can flourish. In a rules-based system, if an exchange or firm wanted to do something new they must petition the CFTC to change the rules to allow the new thing to be done. The new thing may be clearly a good thing for society, but if the law and regulations hadn't anticipated it (and they rarely would – innovation tends to be born of private sector players attempting to attract customers), then it can go forward only with a rule change. This means the innovating institution must get the attention of a staff member of the CFTC and get them to devote time and political capital to move the change through the agency. At best, if a staff member decides to champion an innovation, the necessary rule change will get made after a considerable period of time, since rule changes must be vetted both within the bureaucracy as well as posted for public review and comment. At worst, it will never see the light of day, because staff members are often busy, overworked, already have a long priority list, and have little incentive to add to that list.

Contrast this rules-based approach with a principles-based regulatory framework. If the innovation is consistent with all the core principles laid out, the innovator might simply send a notification to the regulator that it is embarking on this innovation and certify that it complies with all core principles, laws and regulations. As will be explained later, new futures contracts, which could take up to 365 days for approval, now under CFMA, can be listed in less than one day after an exchange has certified to the CFTC that they comply with all core principles, laws and regulations.

So under CFMA, exchanges (specifically Designated Contract Markets) are given a list of 18 core principles with which they must comply on an ongoing basis. For example, Congress and the CFTC have always been concerned about market integrity. They've wanted to ensure that markets reflect basic supply and demand fundamentals and are not manipulated away from these appropriate values. Instead of an elaborate set of specific prescriptions, three of the CFMA's 18 core principles attempt to ensure market integrity by significantly reducing the risk that market prices will be manipulated away from fundamental values. They are Core Principles 3, 4, and 5:

- Core Principle 3 requires that exchanges list only those contracts that are not readily susceptible to manipulation,
- Core Principle 4 requires that the exchange monitors trading to prevent manipulation or price distortion, and
- Core Principle 5 requires that exchanges establish maximum limits on the positions that speculators can hold, or for very large and liquid markets, specific position sizes that would trigger much closer surveillance by the exchange.

The idea is that the law establishes general guidelines to ensure market integrity, but assumes the details for how this market integrity will be achieved are best left to the exchanges' choice of appropriate activities under these three core principles. Naturally, the activities chosen by the exchanges are subject to CFTC oversight and the Agency will intervene if it feels an action taken by an exchange doesn't really comply with core principles. For example, I can recall times when an exchange

established a position limit on a new contract under Core Principle 5 and the CFTC staff decided the limit was too large given the relatively small, illiquid cash market underlying the futures contract. The exchange was instructed to reduce the limit to a level that did more to reduce the risk of manipulation.

We will not go through all 18 core principles for exchanges here; they are all listed in Appendix 1 and are largely self explanatory. But it is worth mentioning a few to demonstrate their comprehensiveness.

- Core Principles 2 and 12 require exchanges to ensure compliance with their rules, especially those protecting market participants from abusive practices.
- Core Principles 7, 8, and 10 require that exchanges are transparent and make available information about their contracts, about how to access the exchange, and the market data resulting from each trading session.
- Core Principles 14, 15, and 16 address issues of governance, including fitness to serve on boards and committees, the composition of boards, and the need to minimize conflicts of interest in decision making.

The CFMA also lists 14 Core Principles for clearing organizations, no matter whether they are independent stand-alone entities or simply a division of an exchange. These Core Principles require that the clearing organization maintains adequate financial, managerial, and operational resources, maintains standards for admission as clearing firms, has the ability to manage risk, and has efficient, safe and fair rules and procedures for managing insolvency or default. The full list is available in Appendix 2.¹⁶

Performance of Futures Industry since CFMA

How has the futures industry performed since the passage of the CFMA? We will take a look at three key activities: How exchanges are doing in policing their markets and enforcing their rules, how the CFTC is doing in overseeing the self regulatory activities of exchanges as well as ensuring compliance with the Commodity Exchange Act and Commission regulations via its enforcement activities, and finally how the industry is doing in the area of product innovation.

Self Regulation in Listed Derivatives – the Exchanges and the NFA

All markets worldwide will have individuals attempting to defraud market participants and to manipulate prices to their advantage. In the US futures markets, there are three entities focused on maintaining markets that are free as possible from these abuses: the CFTC, the National Futures Association (NFA), and the exchange. It is best to think of the CFTC as sitting on top as both the direct statutory regulator and as the overseer of the self regulatory activities of the other two: the exchanges

¹⁶ To be fair, the CFMA is really a combination of core principles and rules. Some things like capital requirements are likely best expressed as specific numbers or formulas as opposed to general principles.

and the NFA. Exchanges are self-regulatory organizations overseeing the behavior of their floor brokers, traders and member firms, and are required to have systems in place to ensure that markets are not manipulated and customers are not defrauded. But if such activities do occur, the exchanges are expected to be able to detect and punish them. The NFA, the CFTC-registered, industry-wide self-regulatory organization, which began operations in 1982, oversees industry participants, including those who don't fall under the jurisdiction of the exchanges, thus filling any gap in oversight.

Exchange Self Regulatory Activities

The exchanges focus on three self regulatory activities: market surveillance, market compliance, and auditing of futures brokerage firms, legally referred to as futures commission merchants (FCMs).

- The **market surveillance team** at any exchange is attempting to prevent manipulation and preserve market integrity. Surveillance personnel review on a daily basis the positions of all large traders in the market, along with price movements in a specific market as compared with price movements in related markets. They are looking for cases in which one or a handful of traders may be attempting to push the market price away from its true value.
- **Market compliance** tries to ensure that customers are not abused by floor brokers or other traders. Traditionally, for example, the market compliance staff would look for cases where brokers might trade for themselves just before executing large customer orders that were likely to cause a price move.
- The **audit staff** of an exchange inspects the FCMs to ensure that they have sufficient capital and that their sales staffs are dealing in an honest and fair way with the customers. Since many FCMs are members of multiple exchanges, the exchanges have created a joint-audit committee to coordinate audits so that each FCM is inspected by only one exchange each year and not by all of them.

This is not window dressing. First, the exchanges face both financial and reputational risk if clearing members with inadequate capital were hit with a big price move, or if one of their markets were the target of a successful manipulation or if their customers became the target of fraud or other abuse. Second, a look at the resources devoted to these efforts should make clear how seriously the exchanges take their self-regulatory responsibility.

Using confidential data we have obtained from several exchanges that account for 98% of total trading volume in the US, we can do a reasonable job of quantifying US exchange efforts toward self regulation.¹⁷ Here is what we found.

¹⁷ Because of the confidential nature of the data (these exchanges are on some level all competing with one another, which is a good thing for customers), exchanges have a certain reluctance in sharing this data with third parties. However, the author would like to thank CME Group, the Kansas City Board of Trade and MGEX for graciously sharing their regulatory data, allowing me to quantify regulatory activity for exchanges responsible for

- US futures exchanges spent between \$5 and \$6 million dollars in each of the past two years upgrading the computer systems used to catch abuses and detect attempts to manipulate prices. These systems allow analysts to find patterns of trading suggestive of rule violations, to maintain a detailed trade warehouse to examine the prior activity of traders being investigated, and to not only find suspicious activity from days, weeks or months in the past, but to detect suspicious trading as it is occurring. The systems include position data on all “big” traders, i.e. those with positions above some critical threshold. This allows the analysts to watch for attempts to manipulate prices.
- US futures exchanges have a 2009 operating budget of \$29.9 million devoted to market surveillance, market compliance and audit functions.
- During 2007 and 2008, US futures exchanges opened 3,651 investigations of potential rule violations, including front running, wash trades, trading against a customer order, disclosure of customer orders, prearranged trading, inequitable allocation of trades, improper out-trade resolution, manipulation, position limit violations, rogue trading, and improper block and EFP trades. It should be noted that the overwhelming majority of investigations result from the electronic surveillance systems the exchanges have in place and only a small proportion arise from complaints and tips.
- During 2007 and 2008 US futures exchanges took disciplinary actions in 1,334 cases, levying fines and restitutions of \$10.3 million, suspending traders for a total of 3,414 days and barring 22 traders from trading at the exchange for at least a year and in some cases permanently.
- US futures exchanges have done all of this with a professional regulatory staff of 185 professionals, not including support staff. The level of regulatory staff experience at US exchanges can be seen in the following chart. It is actually a good distribution of experience in that, even though about half the regulatory staff has less than five years of experience due to recent hiring to accommodate large increases in volume, they are working alongside much more experienced staff, almost a quarter of whom have over 15 years regulatory experience.

> 15 Years	5-15 Years	< 5 Years	Total
43	50	92	185
23%	27%	50%	100%

98% of exchange trading volume, which gives us a very comprehensive picture of the magnitude of regulatory activity.

The NFA

The NFA's objective is to safeguard the integrity of the futures industry by overseeing all the individuals and firms who deal with the public. Every individual and firm conducting business with the public on US futures exchanges must become a member of the NFA. The NFA is a self regulatory organization because it regulates all of its members. There are currently about 4,200 firms and 55,000 individuals who are members and as members, they must adhere to the standards of professional conduct as laid out by the NFA. No tax dollars go to support the NFA; they are financed solely by member dues and an assessment paid for each contract traded on US futures exchanges.

If NFA members violate NFA rules, they can face, at the extreme, expulsion from the NFA and fines of up to \$250,000 per violation. Expulsion from the NFA, of course, makes it illegal for the firm or individual to do business with public customers. As a recent example,¹⁸ on December 22, 2008, the NFA permanently barred One World Capital Group LLC and its president from NFA membership. The Winnetka Illinois based firm handles customer accounts in foreign exchange transactions conducted off exchange and word began circulating in fall 2007 that One World customers were having trouble withdrawing their funds. NFA investigated the firm and found that its president failed to maintain current books and records, failed to maintain the required minimum adjusted net capital, failed to uphold high standards of commercial honor and just and equitable principles of trade, and provided false and misleading information to the NFA. This was one of 75 disciplinary decisions made by the NFA in 2008.¹⁹

The NFA will often collaborate with the CFTC as well as the FBI and other law enforcement agencies in their pursuit of ensuring that customers are protected and are safe from abuse. NFA rules cover a range of areas including minimum capital requirements and reporting requirements, advertising and telephone solicitations, and disclosure of both the risks of and the fees involved in trading futures markets. The NFA also plays a strong role in educating investors to ensure that they know what their rights are and what sorts of abuses they should be on the lookout for. As part of this educational and information objective, the NFA has created the nation's first clearing house of disciplinary information about futures firms and the individual sales people involved with those firms. So a customer can look up a specific firm or specific individual to find out if they have any track record of disciplinary actions taken by the NFA or other self-regulatory or government entities. In addition, the NFA offers both mediation and arbitration services to help resolve disputes between customers and the individuals or firms with which they deal. The main difference between the two is that mediation involves a neutral third party helping the disputants come to an agreement, which is nonbinding. In arbitration, a neutral third party listens to the evidence on both sides of the dispute and then reaches a binding resolution to the dispute in a similar manner as would a judge or a jury. All of these services are carried out by roughly 225 staff members of the NFA, with 200 working out of the association's Chicago headquarters and the other 25 working out of offices in New York City. The NFA's budget is \$39.7 million for FY 2009, all of which, as

¹⁸ NFA Case No. 08-BCC-024 at <http://www.nfa.futures.org/basicnet/CaseDocument.aspx?seqnum=1726>

¹⁹ Full list of cases at <http://www.nfa.futures.org/news/newsActionsList.asp>

noted above, is funded by the industry. The biggest source of revenue (54%) comes from a 1 cent per side fee applied to all futures trades. This per side fee, which has fallen 90% as volume has increased over the years, is collected by the FCMs and passed to the NFA on a monthly basis. Another 32% of the revenue comes from membership dues and registration fees, while the remaining 14% comes from miscellaneous sources, including the provision of surveillance support to various small exchanges.

The Cost of Regulation Borne by the Industry

While the CFTC's budget obligation in fiscal 2009 was about \$148 million, it is not often appreciated that the futures industry devotes roughly \$80 million to self regulatory efforts. As can be seen in the table below, that \$80 million is divided pretty equally between the exchanges and the NFA. While the bulk of regulatory efforts and regulatory costs (\$29.9 million) are associated with the regulatory departments of the nation's exchanges (described in detail above), there are a host of other efforts related to complying with the Commodity Exchange Act and CFTC regulations carried out in other exchange departments. For example, the departments called Product Development or Research at various exchanges must focus on ensuring that their futures and options contracts are designed in a way that they "are not readily susceptible to manipulation," as required by Core Principle 3 to which we referred earlier. And while the CFMA brought about a reduction in the documentation involved in launching new contracts, the analysis required to comply with the relevant core principles is estimated to be \$3.8 million at US exchanges.²⁰ Other self regulatory costs are expended in the exchange legal departments on such things as writing comment letters, certifying to the CFTC all amendments to exchange rules, and submitting petitions for various orders and exemptions, which total roughly \$1.7 million across US exchanges. Together, with the other expenditures already mentioned (\$29.9 million for regulatory operating costs, \$5.5 million for regulatory technology upgrades) we estimate that US exchanges spend roughly \$41 million annually on regulatory activities. And the NFA, whose activities were described in some detail above, is spending almost \$40 million in 2009, bringing the industry total to a bit over \$80 million. While it is the NFA and exchanges that spend the \$80 million on regulatory activities, well over half of this is raised directly from traders in the form of NFA assessments or exchange trading fees.

²⁰ All the cost estimates in this section are based on confidential information received from selected exchanges.

2009 Self Regulatory Costs Paid by the US Futures Industry		
(in \$ millions)		
Exchanges (total)		\$ 40.9
Regulatory operating costs	\$ 29.9	
Regulatory technology upgrades*	\$ 5.5	
Product development compliance	\$ 3.8	
Misc regulatory costs	\$ 1.7	
NFA (total)		\$ 39.7
Total NFA & Exchanges		\$ 80.6
Source: CME, KCBT, MGX & NFA		
* Average of 2007-08		

CFTC Oversight

These self regulatory efforts by the exchanges are all done under CFTC oversight. The CFTC maintains systems and databases that allow it to directly observe attempts to manipulate prices and defraud customers. The Division of Market Oversight has the same large trader data as the exchanges, which allows its Market Surveillance team of economists to independently search for signs of manipulation as well as look over the shoulders of the exchanges. Likewise, its Market Compliance team of lawyers is able to independently search for patterns of customer abuse by brokers as well as check to see how well the exchanges are doing their job. The Market Compliance team also conducts periodic formal reviews of exchange self regulatory activities. These Rule Enforcement Reviews (RERs) are conducted every few years, as well as in response to market developments. The idea is to review each exchange routinely, even if there are no particular complaints or developments. Over the past 11 years, the CFTC conducted 35 reviews as can be seen in the chart below. Because these Rule Enforcement Reviews are publically posted on the CFTC website, regulatory shortcomings and recommendations found in these reviews are there for everyone to see, including customers and potential investors, so there is an incentive to minimize the shortcomings in their regulatory systems.

CFTC Rule Enforcement Reviews 1998-2008

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total per Mkt
NYMEX			X			X	X				X	4
CCFE											X	1
HStreet											X	1
USFE											X	1
CBOT			X	X	X			X		X		5
CME		X			X	X			X			4
KCBT	X		X			X			X			4
NYBOT								X				1
OneChi								X				1
MGE		X		X			X					3
CSCE		X					X					2
BTEC						X						1
COMEX	X	X	X		X							4
CANTOR				X								1
NYCE	X			X								2
Total per yr	3	4	4	4	3	4	3	3	2	1	4	35

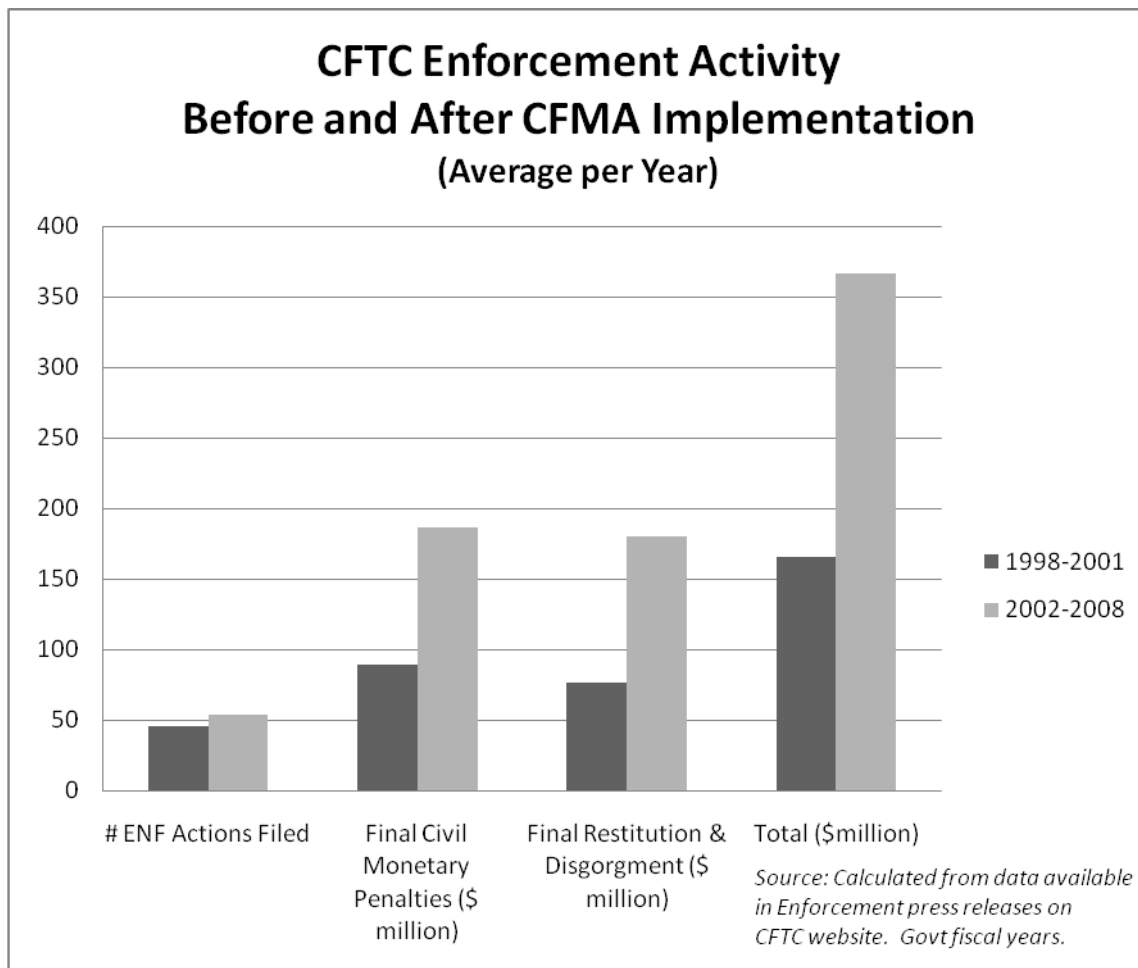
Source: CFTC Website

Enforcement Actions

The largest division of the CFTC is the Division of Enforcement. The mission of enforcement is to enforce the Commodity Exchange Act and the regulations of the CFTC. It employs a large number of lawyers and other professionals who investigate and take action against those who have violated either the Act or the Regulations. As we see in the chart below, enforcement activity increased considerably after the passage and implementation of the CFMA. In order to look at enforcement activity before and after CFMA, we looked at data available in press releases on the CFTC website from 1998 to 2008, calculated the average annual number of enforcement actions filed, the amount of civil monetary penalties, and the amount of monetary restitution and disgorgement on average during the period leading up to the passage and implementation of the CFMA (1998-2001) and the period since (2002-2008). While the Act was passed in the waning days of 2000, it took well over a year to implement the new law.²¹ While the average number of enforcement cases filed was only 17% higher (54 compared with 46 per year) after the CFMA, the cases filed were considerably larger. For example, the civil monetary penalties were up 109% and the amount of restitution and disgorgement was up 135% in the average year since CFMA implementation compared with the average year prior.

²¹ The directors of the major three CFTC divisions, including enforcement, were not put in place until 2002.

There were actually two drivers here. The first was that the new law clarified the CFTC’s jurisdiction. In the process of exempting certain markets from CFTC jurisdiction, Congress made it clear that the CFTC still had jurisdiction over fraud and manipulation in many OTC markets, and that enabled the CFTC to go after a number of such cases. The second driver was the political will shown by the first new chairman after the passage of the CFMA, James Newsome, and his aggressive Director of Enforcement, Gregory Mocek. The first driver is firmly in place. The second driver is subject to the vagaries of administrations, but despite the exit of Newsome in 2004, enforcement activity has remained strong through a series of four chairmen and acting chairmen.



In December 2002, the Division of Enforcement began to focus a significant portion of its resources on complaints arising from activities in the OTC energy sector. Between that time and November 17, 2008, the CFTC has filed 43 enforcement actions, charged 42 companies and 31 individuals, and obtained \$446 million in civil monetary penalties.²² Most of the cases involved false reporting and attempted

²² <http://www.cftc.gov/stellent/groups/public/@newsroom/documents/file/enfenergyenforcementactions.pdf>

manipulation and involved such names as Enron, El Paso Merchant Energy, Duke Energy Trading, Reliant Energy, Entergy Koch Trading, BP, Shell Trading, and Dominion Resources.

It is worth taking a closer look at one of these cases. There is a single pipeline that transports propane from Mont Belvieu, Texas up to the northeast and midwest regions of the United States. In February 2004, employees of BP Products North America Inc. took actions to corner the market in propane at Mont Belvieu in order to obtain a significant trading profit. The CFTC initiated action against BP in 2006 and finally settled the case on October 25, 2007. The settlement was the largest manipulation settlement in CFTC history. BP agreed to pay a total of \$303 million to settle the case, of which \$53 million went into a fund to pay restitution to those parties harmed in the manipulation, \$125 million were civil penalties collected, \$100 million were criminal penalties collected by the Department of Justice which jointly prosecuted the case, and \$25 million went into a consumer fraud fund.²³

In addition to this record breaking settlement, CFTC has also taken action against Dairy Farmers of America²⁴ cooperative for attempting to manipulate the price of Class III milk, against Energy Transfer Partners²⁵ for attempting to manipulate the price of natural gas at the Houston Ship Channel, and against Optiver US LLC²⁶ for manipulating crude oil futures, just to name a few.

Product Innovation

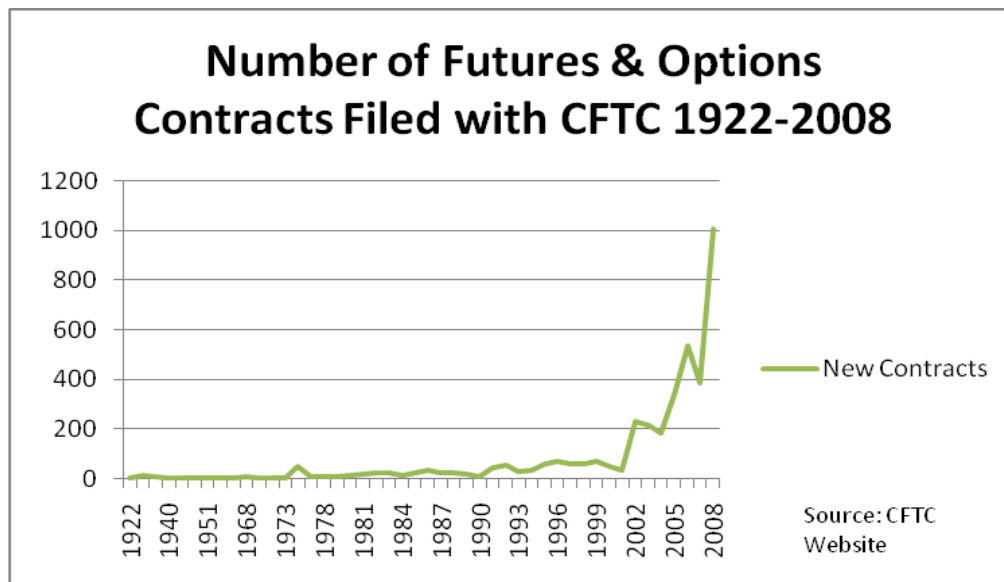
Product innovation was not one of the explicit goals of the CFMA, but innovation is certainly a sign of health and dynamism in an industry and the new law did streamline the process of getting new products to market. Product innovation has literally exploded beginning in 2002 as exchanges have gone about trying to solve the risk management needs in many sectors of the economy. We have a plethora of new contracts, including those based on weather (i.e. the fluctuations in temperatures and on dramatic weather events like hurricanes), on housing prices (now easier with the development of the new Case-Schiller Index), new fuels like ethanol, new concepts like carbon credits, emerging currencies like the Chinese Renminbi, and important crops grown in other countries like South American soybeans.

²³ <http://www.cftc.gov/newsroom/enforcementpressreleases/2007/pr5405-07.html>

²⁴ <http://www.cftc.gov/newsroom/enforcementpressreleases/2008/pr5584-08.html>

²⁵ <http://www.cftc.gov/newsroom/enforcementpressreleases/2008/pr5471-08.html>

²⁶ <http://www.cftc.gov/newsroom/enforcementpressreleases/2008/pr5521-08.html>



What was driving this huge increase in derivative products listed at the nation's futures exchanges? Several things. First there was the law itself. Before CFMA, if an exchange wanted to list a new product it needed to develop a relatively thick document that would explain and justify every single term and condition in the proposed futures contract. For example, why was a particular delivery location chosen, why was a particular grade of the commodity chosen, or why was a particular time of the month for delivery chosen? Beyond that, the exchange had to explain in great detail what the economic justification for the contract was. In other words how could various producers, merchants, and processors of the product make use of this new futures contract to manage price risk? It took the exchange quite a bit of time to develop these applications, and it also took a considerable time for the CFTC to review them. In fact the CFTC had up to 12 months to get back to the exchange with an approval or denial. After the CFMA, exchanges could merely write a one-page letter to the CFTC certifying that the new product was in compliance with the Commodity Exchange Act and all regulations of the CFTC. And the certification along with a copy of the terms and conditions of the new futures contract, and supplemental information explaining why the contract can't be manipulated could be delivered to the CFTC as late as a day prior to product launch. That put the US exchanges on a level playing field with both foreign markets and the OTC market in the US.

To be fair, there certainly were forces aside from the new law that contributed to this blossoming of product innovation. The major factor was the shift from trading floors to electronic trading platforms. In the old floor world, launching a new product required finding space on the floor and finding people to stand in the new pit devoted to the new product. In the new electronic world, all one needed was little space on a server in order to accommodate a new contract. Listing new products became much cheaper and easier. And the rewards for success were greater in that the screen-based world was characterized by huge economies of scale, so that more trading volume either in new or existing contracts cost very little to accommodate and significantly lowered the average cost of a trade.

A second driver of the large number of futures contracts created is the fact that the CFMA also allowed the creation of a new class of products known as single stock futures. Given the large number of actively traded stocks in the United States, it was no surprise that a very large number of futures contracts based upon these actively traded stocks were launched. It's not that single stock futures were hugely successful. They weren't. But there certainly were a lot of these contracts launched.

Conclusion

There is clearly a widespread feeling both in Congress and among the general public that deregulation went too far over the past decade. However, as we begin the inevitable task of re-regulating financial markets, we must be very careful not to discard this very wise principles-based approach to financial regulation that focuses on the outcomes. Specifically, we need to ensure that all players behave in a fashion that ensures a financial system grounded in fairness and market integrity.

Should there have been an Enron loophole? No. Should there have been total exemptions for OTC derivatives? Probably not. But was the basic thrust of the Commodity Futures Modernization Act of 2000 to move to a system of core principles, allowing US exchanges to again become competitive with the rest of the world a good thing? Absolutely. The CFMA was a brilliant piece of legislation, which contained some aspects which need to be repaired. The brilliance of the legislation lay in the fact that it began to treat regulated entities as adults who were responsible for achieving the core regulatory outcomes that both Congress and the CFTC felt were the reason for the agencies very existence. But along with this flexibility, was the ongoing oversight of the CFTC to ensure that the specific paths taken by exchanges did result in the desired regulatory outcomes. And a wonderful by-product of principles-based regulation is that it does not get in the way of innovation as does rules-based regulation. The explosion of new products on US exchanges in recent years is a testament to this, along with the significant reduction in the cost of launching new products on electronic exchanges. And as we can see from our review of both CFTC regulation combined with exchange and NFA self-regulation (both of which have devoted significant resources to the effort), the system has been very effective. So **recommendation # 1 is please preserve principles-based regulation. It works and works well.**

About a year ago, when Treasury Secretary Paulson was pushing his Blueprint for Financial Regulatory Reform, Assistant Secretary Robert Steel, who incidentally was a key architect of the document, came to Chicago to take a regional read on the reaction to the proposal. A meeting between Assistant Secretary Steel and about forty financial leaders from Chicago took place on the downtown campus of the Illinois Institute of Technology. After some brief comments, Assistant Secretary Steel opened the floor for questions and comments. The response was thundering. Person after person said please do not merge the SEC and the CFTC. There was a clear consensus that the CFTC operating under the CFMA was the better regulator. The SEC was viewed as slow, bureaucratic, too rules based and a stifler of innovation.

Regulatory reform is needed and the much discussed creation of an agency responsible for systemic risk appears to be an excellent and needed idea.²⁷ And it may be that neither the SEC nor the CFTC come out the other end of the system redesign intact. We are trying to build a new regulatory system for the world of today and the future. It is not the purpose of this paper to say what that the new structure should look like. But I do feel strongly about making a very modest recommendation. While it might be easy to simply pick up the CFTC and insert in into the SEC, I have great fears about doing that. The cultures of the two agencies could not be more different. The SEC regulates in a prescriptive manner, as it must under its law, and solves most problems by requiring disclosure of more and more information that few have the time or patience to read. The CFTC regulates largely in a principles based fashion, as it must under its law. And it oversees its industry by ensuring that all relevant parties comply with these basic principles. My fear is that if the two agencies were merged, the much larger SEC would shift the personality of the now more nimble and effective CFTC toward a prescriptive mindset. And I can't help but think that the regulation of listed derivatives, which has been carried out in a highly effective fashion would lose something from such a merger. So **recommendation # 2 is please do not merge the CFTC and the SEC.**

We have tried to demonstrate in this paper:

- That poorly regulated markets (the housing market, mortgage market, mortgage-backed securities market, and credit default swaps market), have played a significant role in the current financial and economic crisis,
- That the exchange-traded derivatives markets have performed incredibly well and how their basic design and regulation has facilitated this performance,
- How the exchange-traded markets have already begun extending their risk management and clearing systems into the OTC marketplace to significantly reduce counterparty risk, especially in energy, but increasingly into other areas like credit default swaps. It is a good thing that OTC traders are choosing to have their trades cleared and are thus reducing risk in the system and I believe this growth of cleared OTC trading will continue. However, because some OTC transactions are quite customized I think this evolution to clearing OTC trades should continue to be voluntary and not be made mandatory.

²⁷ Though this may be one of those ideas that makes perfect sense in concept, but will be dreadfully difficult to execute. What you need for the job is a group of super wise people who can see things that others cannot, led by someone with a credible voice who can convince Congress, the Administration and the financial community that this invisible thing really is there and must be dealt with. The problem, of course, is that there is always a set of possible future scenarios and those that become financial crises are often low probability events, things that we refer to as perfect storms or black swans. How do you build the political consensus to take action to deflate a bubble that has only a small probability of being there? David Marshall of the Federal Reserve Bank of Chicago addressed this in a recent unpublished talk and pointed out how easy it is to see and explain past bubbles, but how difficult it is to see ones in which we're currently enveloped.

- How there has been a renaissance of product innovation in exchange-traded derivatives due both to both principles-based regulation and the low product launch costs associated with electronic trading,
- Why the principles-based regulation in the CFMA of 2000 should be preserved, and
- Finally, why the CFTC should not be merged into the SEC.

The financial and economic crisis we are still in has visited both economic and emotional pain on a great many people. Congress must come to an understanding of what happened and why and there are clearly a number of markets which need to be reformed and more closely regulated. If anything, the crisis has demonstrated the incredibly effective design of the exchange-traded derivatives market. The fact that no customer of a US exchange lost a dime as a result of a default by either another customer or clearing firm speaks volumes. It is a very good thing that exchange-traded derivatives clearing is starting to be extended to OTC participants. A continuation of this trend should help to build much better and robust OTC markets, making the whole financial system a safer and sounder one.

Appendix 1 – Core Principles for Contract Markets

(1) In general

To maintain the designation of a board of trade as a contract market, the board of trade shall comply with the core principles specified in this subsection. The board of trade shall have reasonable discretion in establishing the manner in which it complies with the core principles.

(2) Compliance with rules

The board of trade shall monitor and enforce compliance with the rules of the contract market, including the terms and conditions of any contracts to be traded and any limitations on access to the contract market.

(3) Contracts not readily subject to manipulation

The board of trade shall list on the contract market only contracts that are not readily susceptible to manipulation.

(4) Monitoring of trading

The board of trade shall monitor trading to prevent manipulation, price distortion, and disruptions of the delivery or cash-settlement process.

(5) Position limitations or accountability

To reduce the potential threat of market manipulation or congestion, especially during trading in the delivery month, the board of trade shall adopt position limitations or position accountability for speculators, where necessary and appropriate.

(6) Emergency authority

The board of trade shall adopt rules to provide for the exercise of emergency authority, in consultation or cooperation with the Commission, where necessary and appropriate, including the authority to—

- (A) liquidate or transfer open positions in any contract;
- (B) suspend or curtail trading in any contract; and
- (C) require market participants in any contract to meet special margin requirements.

(7) Availability of general information

The board of trade shall make available to market authorities, market participants, and the public information concerning—

- (A) the terms and conditions of the contracts of the contract market; and
- (B) the mechanisms for executing transactions on or through the facilities of the contract market.

(8) Daily publication of trading information

The board of trade shall make public daily information on settlement prices, volume, open interest, and opening and closing ranges for actively traded contracts on the contract market.

(9) Execution of transactions

The board of trade shall provide a competitive, open, and efficient market and mechanism for executing transactions.

(10) Trade information

The board of trade shall maintain rules and procedures to provide for the recording and safe storage of all identifying trade information in a manner that enables the contract market to use the information for purposes of assisting in the prevention of customer and market abuses and providing evidence of any violations of the rules of the contract market.

(11) Financial integrity of contracts

The board of trade shall establish and enforce rules providing for the financial integrity of any contracts traded on the contract market (including the clearance and settlement of the transactions with a derivatives clearing organization), and rules to ensure the financial integrity of any futures commission merchants and introducing brokers and the protection of customer funds.

(12) Protection of market participants

The board of trade shall establish and enforce rules to protect market participants from abusive practices committed by any party acting as an agent for the participants.

(13) Dispute resolution

The board of trade shall establish and enforce rules regarding and provide facilities for alternative dispute resolution as appropriate for market participants and any market intermediaries.

(14) Governance fitness standards

The board of trade shall establish and enforce appropriate fitness standards for directors, members of any disciplinary committee, members of the contract market, and any other persons with direct access to the facility (including any parties affiliated with any of the persons described in this paragraph).

(15) Conflicts of interest

The board of trade shall establish and enforce rules to minimize conflicts of interest in the decision making process of the contract market and establish a process for resolving such conflicts of interest.

(16) Composition of boards of mutually owned contract markets

In the case of a mutually owned contract market, the board of trade shall ensure that the composition of the governing board reflects market participants.

(17) Recordkeeping

The board of trade shall maintain records of all activities related to the business of the contract market in a form and manner acceptable to the Commission for a period of 5 years.

(18) Antitrust considerations

Unless necessary or appropriate to achieve the purposes of this chapter, the board of trade shall endeavor to avoid—

- (A) adopting any rules or taking any actions that result in any unreasonable restraints of trade;
- or
- (B) imposing any material anticompetitive burden on trading on the contract market.

Appendix 2 – Core Principles for Clearing Organizations

(A) In general

To be registered and to maintain registration as a derivatives clearing organization, an applicant shall demonstrate to the Commission that the applicant complies with the core principles specified in this paragraph. The applicant shall have reasonable discretion in establishing the manner in which it complies with the core principles.

(B) Financial resources

The applicant shall demonstrate that the applicant has adequate financial, operational, and managerial resources to discharge the responsibilities of a derivatives clearing organization.

(C) Participant and product eligibility

The applicant shall establish—

- (i) appropriate admission and continuing eligibility standards (including appropriate minimum financial requirements) for members of and participants in the organization; and
- (ii) appropriate standards for determining eligibility of agreements, contracts, or transactions submitted to the applicant.

(D) Risk management

The applicant shall have the ability to manage the risks associated with discharging the responsibilities of a derivatives clearing organization through the use of appropriate tools and procedures.

(E) Settlement procedures

The applicant shall have the ability to—

- (i) complete settlements on a timely basis under varying circumstances;
- (ii) maintain an adequate record of the flow of funds associated with each transaction that the applicant clears; and
- (iii) comply with the terms and conditions of any permitted netting or offset arrangements with other clearing organizations.

(F) Treatment of funds

The applicant shall have standards and procedures designed to protect and ensure the safety of member and participant funds.

(G) Default rules and procedures

The applicant shall have rules and procedures designed to allow for efficient, fair, and safe management of events when members or participants become insolvent or otherwise default on their obligations to the derivatives clearing organization.

(H) Rule enforcement

The applicant shall—

- (i) maintain adequate arrangements and resources for the effective monitoring and enforcement of compliance with rules of the applicant and for resolution of disputes; and
- (ii) have the authority and ability to discipline, limit, suspend, or terminate a member's or participant's activities for violations of rules of the applicant.

(I) System safeguards

The applicant shall demonstrate that the applicant—

- (i) has established and will maintain a program of oversight and risk analysis to ensure that the automated systems of the applicant function properly and have adequate capacity and security; and
- (ii) has established and will maintain emergency procedures and a plan for disaster recovery, and will periodically test backup facilities sufficient to ensure daily processing, clearing, and settlement of transactions.

(J) Reporting

The applicant shall provide to the Commission all information necessary for the Commission to conduct the oversight function of the applicant with respect to the activities of the derivatives clearing organization.

(K) Recordkeeping

The applicant shall maintain records of all activities related to the business of the applicant as a derivatives clearing organization in a form and manner acceptable to the Commission for a period of 5 years.

(L) Public information

The applicant shall make information concerning the rules and operating procedures governing the clearing and settlement systems (including default procedures) available to market participants.

(M) Information-sharing

The applicant shall—

- (i) enter into and abide by the terms of all appropriate and applicable domestic and international information-sharing agreements; and
- (ii) use relevant information obtained from the agreements in carrying out the clearing organization's risk management program.

(N) Antitrust considerations

Unless appropriate to achieve the purposes of this chapter, the derivatives clearing organization shall avoid—

- (i) adopting any rule or taking any action that results in any unreasonable restraint of trade; or
- (ii) imposing any material anticompetitive burden on trading on the contract market.

Appendix 3 – Notes on the Lehman Bankruptcy and Exchange Traded Derivatives in the US and the Rest of the World

Normally, the margin money associated with the futures position is transferred pretty quickly after the positions have moved, and initially this is what happened during that first week. But then disagreements over who could give instructions to the custodial bank to move funds and into which accounts they could be moved slowed the process down considerably and led to an unfortunate round of finger pointing. Eventually, the issue was resolved and the custodial bank began releasing these customer segregated funds as positions continued to move. This was an unfortunate speed bump in an otherwise smooth transfer of positions and funds from Lehman to other firms in the US.

The US system performed much better than that in Europe and Asia, where customer positions at Lehman's European and Asian arms were sometimes liquidated rather than transferred.²⁸ Customer positions at one firm are often hedges of positions at other firms or of cash market dealings, like the holding of inventories of stocks, bonds or commodities. So when a customer's position is liquidated at a firm with no warning, the customer is suddenly exposed to dramatic swings in market prices and thus to dramatic losses. In addition, when a customer's position is moved from an insolvent firm to a healthy one, it is generally appropriate to move the money in the customer's margin money which acts as a performance bond for that position. This did happen in the US, but for a number of reasons, the bankruptcy trustees or administrators in other countries did not allow that to happen and customers had to effectively double margin their positions. This violates the whole US idea of customer funds that are legally segregated from the firm's funds. A number of US institutions that used Lehman to access

²⁸ Ronald H. Filler, "Are Customer Segregated/Secured Account Funds Properly Protected after Lehman?" *Futures & Derivatives Law Report*, November 2008, Vol 28, Issue 10, and discussions with Robert Steigerwald and John McPartland of the Federal Reserve Bank of Chicago

exchanges in other countries were caught in this frozen funds situation and had to come up with new margin money to continue to maintain their positions. The problem is solvable, but it will require both international cooperation as well as a tweaking of bankruptcy laws in other countries to allow customer margin funds to either move with positions or be returned to customers when the positions are liquidated. And we should keep in mind that the bankruptcy laws that have been reasonably harmonized with the Commodity Exchange Act (CEA) in the US, would need to be again harmonized with any significant rewrite of the CEA.

One other thing. Bankruptcies like this do not occur very often, so it is not like exchanges and firms get a lot of practice at moving positions and funds as a firm is liquidated. But it must be noted that there was a bit of luck this time that allowed the positions to be moved quickly, in only five days. There were a full five days between the bankruptcy (Chapter 11) filing of the parent company, Lehman Brothers Holdings, on Monday, September 15, and the bankruptcy (Chapter 7 liquidation) filing of Lehman Brothers Inc, the major subsidiary and the US broker-dealer and FCM the following weekend. This allowed the firms and exchanges to work together to transfer all positions by the close of business on Friday, before the bankruptcy filing and appointment of a trustee who would have had to approve all such transfers, a process that would likely have taken significantly more time.

The bottom line is that the system worked, and even without the luck of the five days between the parent and its subsidiary's bankruptcy, the system would still have worked. It would have just taken longer to do so.