Out of the Frying Pan and Into the Fire: Will the Dodd-Frank Swaps Proposal Reduce Systemic Risk?

By George Oldfield and Julia Litvinova

Introduction

The Credit Crisis and Counterparty Risk

Exchange trading for derivative contracts that were formerly traded over-the-counter (OTC), combined with a clearing house and standard margin requirements, will mitigate a significant risk to the financial system. The risk exists because no institution with OTC derivative positions can know precisely the total positions of its counterparties.

This opaqueness limits accurate counterparty risk assessments by market participants and creates the potential for causing a “run on the bank” if market participants doubt the credit worthiness of any particular counterparty. When one institution has a problem meeting a call for collateral, its subsequent attempts to round up adequate collateral can create a cascade of margin calls that infect its counterparties and its counterparties’ own counterparties, as well as more remote trading institutions. Such a cascade of calls for liquid collateral assets appears to have been a cause for financial market liquidity to evaporate at the end of 2008, resulting in a financial crisis.

In reaction to the perceived systemic risk created by OTC derivatives trading, President Obama signed the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank) on July 21, 2010. The Act brings comprehensive reform to the regulation of OTC derivatives markets. The primary goals of the law are to increase the transparency and efficiency of the OTC derivatives markets and reduce the potential for counterparty and systemic risk.
To achieve these goals, Dodd-Frank requires that derivatives transactions that are not initiated as commercial hedges either move into exchange trading with clearing house trade settlements or into a new type of trading platform called a “swap execution facility”. A swap execution facility (SEF) would work much like an exchange, but may not require a clearing house for maintained positions. Dodd-Frank also mandates that regulatory agencies impose capital and margin requirements on swap dealers and major swap trading participants, as well as public reporting of transactions and pricing on swaps.

Dodd-Frank Legal Mandates for Derivative Exchanges and Clearing Houses

Dodd-Frank covers most types of OTC derivatives that fall within the definition of “swaps” now regulated by the U.S. Commodity Futures Trading Commission (CFTC) and “securities-based swaps” now regulated by the U.S. Securities and Exchange Commission (SEC). Figure 1 shows how OTC and exchange-listed derivatives positions have grown in the recent past. The Dodd-Frank swaps definition excludes, among other categories, options on securities (or groups of securities), which are subject to the Securities Act of 1933 and the Securities and Exchange Act of 1934.

Dodd-Frank requires swaps transactions to occur on trading platforms or exchanges and be cleared in exchange clearing houses, with limited exemptions, in order to provide transparency to the market.1 If one of two parties in an exchange-traded contract defaults, the exchange clearing house functions as a guarantor enhancing credit protection. The exchange determines a settlement price for every contract that defaults and would not enjoy the benefits of increased transparency. Dodd-Frank allows the end user to produce the electricity or to supply gas to retail customers (or groups of retail customers) as an end user that is hedging its own commercial risk. This A swap will be exempt from the exchange trading and clearing house settlement requirements if one of the counterparties is an end user that is hedging its own commercial risk. This exemption is important to traditional producers and suppliers in the U.S. commodity markets, such as electric and gas utilities that purchase commodities (either as a source of fuel to produce the electricity or to supply gas to retail customers) and use swaps to hedge or mitigate commercial risk.

A historical effect of central exchanges is that centralization can engender self-serving behavior among exchange members in their rule making and trading activities. In brief, exchange trading, clearing house guarantees, and regulation do not wholly eliminate systemic risk. Effective regulation of an exchange is necessary to mitigate risk and create an efficient trading venue for both dealers and investors. Moreover, the new swaps trading procedures called for under Dodd-Frank will impose significant trading costs on swap market participants. These themes are expanded in the sections that follow.

Dodd-Frank also requires swap dealers and “major participants” to register with the CFTC or SEC no later than one year after its enactment, and to satisfy capital and margin requirements to be established by the applicable regulatory authority for OTC swaps. Dodd-Frank is ambiguous as to whether new margin requirements may apply retroactively to existing swap transactions.2

The CFTC or SEC will set the margin requirements for OTC swaps only, while clearing houses will establish their own margin requirements, as applicable, for exchange-traded swaps. While the actual capital and margin requirements are unknown, they are likely to be substantial for both cleared and uncleared swaps. Entering into a swap transaction in an exchange-traded and clearing house-settled environment will require swap counterparties to post initial and variation margin.3

Before Dodd-Frank, the CFTC had authority to impose aggregate position limits across futures markets. Dodd-Frank now requires the CFTC to do this for exchange-traded swaps in order to:

(i) diminish, eliminate, or prevent excessive speculation;
(ii) deter and prevent market manipulation, squeezes, and corners;
(iii) ensure sufficient market liquidity for bona fide hedgers; and
(iv) ensure that the price discovery function of the underlying market is not disrupted.4

Swap positions entered into prior to enactment of the legislation will be exempt from the position limits imposed by the CFTC. The SEC may also establish limits on the size of positions for security-based swaps. Aggregate position limits are especially important in the finite commodity markets, such as energy, where the physical market may be manipulated by financial traders.

Figure 1 - Outstanding Notional Amounts of OTC and Exchange-Traded Derivatives

The notional value of swaps (face value of reference security) grew dramatically in the last decade. Most of the growth is due to financial traders.
Will the Dodd-Frank Swaps Proposal Reduce Systemic Risk?

Finance

Most large ticket derivative transactions have been negotiated in OTC markets, while standard types of small denomination contracts have traded on exchanges (see Figure 1). The differences between market organizations are shown in Figures 2 and 3.

Figure 2 shows how an OTC market works. Customers enter contracts directly with dealers. Each dealer is an independent bank and no central recordkeeping or unified margin arrangements exist. In Figure 3, one type of exchange organization is depicted. In this framework, banks act as brokers for customers’ exchange-traded swaps and dealers for exempt swaps. All exchange trades are booked at a clearing house, which is the counterparty for all booked trades.

Futures and options contract transactions now occur on exchanges, where contracts trade among members (floor trading and electronic platforms), while trades are recorded at exchange-associated clearing houses where trades are booked, margined, and settled. An exchange must define its trading protocols for its members: who can trade, how prices are set (dealers or matching), types of orders allowed, order execution priority, contract terms for traded instruments, and clearing house membership terms.

The clearing house sets margin requirements (amounts and against gross positions or net positions), settlement rules (cash settlement or physical delivery), warehouse or depository arrangements, delivery procedures, and default penalties. An exchange member that is not a clearing house member must clear trades through a member clearing firm. Clearing firms are members of the clearing house and maintain margin accounts there. Exchange customers post margin with the clearing firms, which then post margin at the clearing house.

Derivatives clearing houses in the United States operate on a basis of complete reconciliation (accurate accounting for members’ contract obligations) and settlement (termination of members’ obligations in exchange for payment). The clearing house is the counterparty in every trade done on the exchange. Clearing houses require their members to post margin against their own and their customers’ positions. Initial margin provides the clearing house with funds to cover likely price movement during the liquidation process in the event of a default, while variation margin is topped up daily to ensure that losses do not accumulate in the account.

Clearing house margin is segregated into members’ margin and customers’ margin. This segregation is a regulatory mandate. Some clearing houses work on a net margin basis for each counterparty (total margin calculated on long minus short positions) and some work on a gross margin basis (each counterparty position has an individual margin requirement).

Margin accounts must be topped up by members and customers on a daily basis in the event of an adverse price move. Positive price moves free some variation margin against price-favored positions. Meeting margin requirements may impose additional out-of-pocket, opportunity, and liquidity costs for investing parties that traded OTC instruments and formerly had no margin requirements. Moreover, an exchange may require that margins be adjusted intra-day, which would increase the burden of managing intra-day financial operations for many companies. However, there are offsetting benefits due to pricing transparency, marks-to-market, and reduced direct and indirect counterparty risk while the clearing house remains solvent.

Margin accounts are the first line of defense to protect the clearing house and its members against a member’s or customer’s default on a contract position. After margin deposits, the clearing house’s equity capital, which is invested directly and indirectly, is the next line of defense (in the event of a default, the capitalization of the clearing house is an important aspect of whether exchange trading actually reduces systemic risk in the markets for derivative instruments.)
The clearing house would be the counterparty to both trades and guarantee periodic payments. Margin could be on a gross basis so both contracts would require a margin deposit, or net basis so very little margin would be necessary. The clearing houses’ counterparties to its offsetting positions would not necessarily be identical for both legs of the swap. That is, a customer could buy or sell either part of the swap without pausing the two to make a complete swap.

Once the trades clear and settle, in perhaps a day or two, the clearing house would remain the counterparty to each position so all payments on the swaps would go through the clearing house. The clearing house would mark all its positions to market each day and require margin to be adjusted. Margin accounts would be maintained while the positions remain open. A strip position could close by a customer selling a long strip, buying a short strip, or at the end of the strip’s tenor once the last required payment is made. As the counterparty to all swaps, the swap clearing house would maintain and underwrite a substantial book of multi-year strip positions.

Without effective regulation, the clearing house could potentially become a “too big to fail” enterprise and a central point of systemic risk.

A second way to organize a swap execution facility would be with a trade guarantee, rather than a position guarantee system. Using this method, which mimics security markets, complete swaps with standard terms would be bought and sold openly on an exchange and cleared and settled through a clearing house. Once a trade settles, the clearing house would be out of the position except for recordkeeping. Like the current OTC swap market, each counterparty would be the actual trade counterparty and exposed to the other’s credit risk. Also, as listed contracts, swaps could be rebid in secondary market trades on the exchange and cleared through the exchange clearing house.

This would provide mark-to-market and complete recordkeeping of counterparties to swaps. The arrangement would disperse credit risk away from the clearing house.

Exchange-Traded Swaps: Positions Versus Trades

Suppose a speculator wants to buy oil one year from now. She instructs her broker (called a futures commission merchant or FCM) to buy futures contracts on crude oil and the FCM relays these instructions to a trader (a member or member’s representative) at the Chicago Mercantile Exchange (CME). The speculator would typically place a market order with her FCM, which is a request to carry out a trade immediately at the best price available in the market. However, there are many types of orders, such as a limit order (the order can be executed only at a particular price), a stop order or stop-loss order (the order is executed at the best available price after a bid or offer is made at that particular price or a trade moves past the stop-loss price), stop-limit order (which is a combination of the first two types of orders), etc.

Once the order is placed with a trader, the trader at the CME has a choice of trading venue for crude oil, including the traditional open outcry system in New York, where traders physically meet on the floor of the exchange; CME Globex, which is the electronic trading platform; and CME ClearPort, which is a central clearing system for the OTC market.

The CME specifies all standardized features of the futures contract on light sweet crude oil, such as contract size or amount of oil to be delivered under one contract (1,000 U.S. barrels), contract price quotation (U.S. dollar and cents per barrel), minimum price fluctuation or tick size ($0.01 per barrel), delivery point (Cushing, Oklahoma), settlement type (physical), delivery period and delivery arrangements, and position limits or the maximum number of contracts a single participant can hold, etc.

A daily price limit for change in crude oil is $10 per barrel (or $10,000 per contract), meaning that if a contract, bid, or offer sits at the limit for five minutes, trading is halted for five minutes. When the trading is resumed, the limit is expanded by $10 per barrel in the indicated direction.

daily price limits is to prevent large price movements from occurring before margin calls can be made, thereby protecting the clearing house.

The CME specifies the requirement for physical delivery of oil to the specified delivery point during the delivery period. Taking physical delivery usually means accepting a warehouse receipt in return for immediate payment. For instance, for an investor who sold oil futures and has decided to make delivery instructs his FCM to issue a notice of intent to deliver to the exchange clearing house.

The exchange then chooses a party with a long position in oil futures to accept delivery (usually oldest outstanding long contracts first). Because an equal number of long and short contracts exist at all times, every short contract must be matched to an outstanding long contract.

Note that the majority of traders and investors close out their positions prior to delivery period by entering into the opposite type of trade from the original one. Thus, the vast majority of futures contracts are closed out prior to expiration.

The CME, like any other clearing house or exchange, imposes a margining regime (also called performance bond), which seeks to ensure that obligations of both clearing members and their customers are met. For the futures on light sweet crude oil, the CME currently requires:

(i) an initial performance bond of $5,063 per contract with a maintenance bond of $2,021 per contract.

(ii) an initial performance bond of $3,750 with a maintenance bond at the same level for hedges and clearing members.

Assuming that the trader, who is a speculator, holds two crude oil futures contracts, she would have to deposit a $10,126 (2 x $5,063) initial performance bond. If the futures price of the crude oil drops by $2 per barrel, the account balance would drop by $4,000 ($2 per barrel x 2,000 barrels) to $6,126, which is below the required maintenance margin of $7,500 ($3,750 x 2). The trader will have to deposit additional funds of $1,374 ($7,500 - $6,126) to bring the account back up to $10,126. The trader’s potential gains and losses change each time the settlement price of the contract changes. If the price is determined when the trader either offsets the contract by selling it, or when the contract expires. The CME has adopted gross marging, that is, contract with some allowances for ‘spreads’ or offsets.

In case a trader or exchange clearing member defaults, exchanges follow certain emergency procedures designed for risk control (immediate close of the clearing member’s proprietary positions) and risk segregation (transferring a customer’s position and funds from the defaulting member to another clearing member). If a defaulting clearing member’s margin is not sufficient to satisfy its obligations, the clearing house applies the principle of loss-spreading, which may involve withdrawal of membership, a deposit in the form of a guarantee fund, assessments against other clearing members, or insurance arrangements in the case of a major default when losses exceed all other available resources.

Trading Crude Oil Futures Contracts on the Chicago Mercantile Exchange

4 CME ClearPort was launched in 2002 to provide centralized clearing services and mitigate risk in the OTC energy marketplace. Currently CME ClearPort clears OTC transactions across multiple energy and financial products, including bonds, green and weather. CME ClearPort allows customers to continue to conduct business off-exchange and simultaneously take advantage of the opportunity to mitigate the counterparty risk they face.


6 The maintenance bond is included in the initial performance bond. If the price variations of the contract bring the account balance under the level of the maintenance bond, the trader has to deposit additional funds to bring the account back up to the level of the initial performance bond. If the price variations of the contract bring the account below the maintenance level, the trader can withdraw the excess funds from the account up to the level of the initial performance level. If the maintenance bond is set at the same level as the initial performance level, it has always to be met. See the CME Group’s Performance Bond Requirements for crude oil, outright rates. Available at: http://www.cmegroup.com/wrappedpages/trading/physicals/performancebond.htm.


8 Ibid.

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Derivative instruments seem to be especially subject to serious trading mischief. This occurs despite exchange trading, clearing house rules, and reporting. One memorable case in 1976 resulted in a second settlement failure on commodity futures contracts in the United States. J. R. Simplot and his associates shorted April and May Maine potato futures contracts on the New York Mercantile Exchange (NYMEX) in an attempt to depress the delivery price of physical potatoes. An opposing group went long the same contracts and apparently assured the Simplot group’s default by tying up all the freight cars on the Bangor and Aroostock Railroad so potatoes could not be transported from harvest to delivery.

At delivery time, Simplot and his associates, who had failed to enter offsetting long contracts for each settlement position, failed to deliver on their 1,000 outstanding short contracts the 50,000,000 pounds of potatoes due. Moreover, the clearing firms for the Simplot group’s trades failed to cover the outstanding positions. All the trading was monitored by the CFTC.

The litigation in this case, including an antitrust judgment against Simplot et al., lasted until 1985. For legal insight into this market failure, see Judge Friendly’s opinion on the implied private right of action under the Commodity Exchange Act and Judge Cadman’s opinion supporting the antitrust action against Simplot, the New York Mercantile Exchange, and others for price manipulation.

A similar situation arose with the Hunt Brothers silver trading fracas in 1980. In this case, CFTC inertia was the issue not as much as the CFTC’s apparent regulatoryCapt. 1, 000,000 dollars of potatoes due. Moreover, the clearing firms for the Simplot group’s trades failed to cover the outstanding positions. All the trading was monitored by the CFTC.

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A similar situation arose with the Hunt Brothers silver trading fracas in 1980. In this case, CFTC inertia was the issue not as much as the CFTC’s apparent regulatory failure. The exchanges took extraordinary steps to change rules and protect their members’ short positions against the Hunts’ long positions. These steps forced the Hunts to incur huge losses on their silver contracts. In this case, the Federal Reserve determined that a default by the Hunt Brothers would likely force several large brokers into bankruptcy and that the brokers’ failures would endanger a number of basic industries that lent to the brokers. To avoid an immediate default, the Federal Reserve persuaded a group of banks to extend $1.1 billion in credit to the Hunts, which allowed them to avert an immediate default.

Silver market manipulation is back in the litigation news. On December 14, 2010, a consolidated class action lawsuit was filed against JPMorgan Chase & Co. and HSBC Holdings alleging they violated antitrust laws by manipulating the silver market and potentially swamping billions of dollars of profits while keeping the price of silver artificially low.

The collapse of Baring, Britain’s oldest merchant bank, is an example of market failure caused by the lack of internal and external controls and by cross-border coordination issues related to the operations of international markets for exchange traded and cleared products. Nick Leeson, a chief trader in Baring’s Singapore office, ran an arbitrage strategy that profited from the differences in the prices of Nikkei 225 futures contracts listed on the Osaka Securities Exchange (OSE) in Japan and the Singapore International Monetary Exchange (SIMEX).

As loosely supervised traders sometimes do, he began to speculate on the future direction of Nikkei instead of hedging his long positions on one exchange with shorts on the other. Finally, he took a bet that Nikkei would stay within a limited and narrow range and lost over $1.4 billion after the Kobe earthquake struck in January 1995. The massive losses led to Baring’s collapse that year.

While a lack of internal controls and trading supervision was the primary reason for Barings’ failure, lack of cross-border cooperation between market authorities was another important factor. Information sharing between exchanges, for instance, would have revealed that Baring’s exposure on the OSE was eight times higher than its nearest rival’s and its exposure was even bigger on the SIMEX. Baring was purchased by DGB in March 1995 for one pound sterling and DGB covered Baring’s losses on Leeson’s positions.

The following failure of Baring, which involved only exchange-traded contracts, regulatory authorities responsible for supervising the world’s major futures and options markets issued a Windsor Declaration in which they outline proposed steps to take in order to improve cooperation between market authorities.

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CONCLUSION

In summary, the Dodd-Frank mandate for exchange trading and clearing house intermedation of swaps transactions will not wholly eliminate problems with derivatives contract trading. All of the futures market troubles cited in this newsletter occurred with exchange-traded and cleared transactions in markets regulated by federal overseers. In fact, clearing houses can concentrate counterparty risk and lead to centralized markets that were formerly diffuse and competitive.

Clearing houses can operate as information resources so that parties to trades can more accurately evaluate counterparty risk, but clearing houses also place another entity in the transaction chain. This will be a concern for risk managers and nonmember traders who cannot easily evaluate the financial health of clearing houses. Moreover, exchanges, clearing houses, and regulators will create margin rules, capital regulations, and trading protocols that will require trading operations to develop, install, and monitor extensive and expensive in-house compliance procedures.

Increasing the cost of trading may lead to attempts for further vertical integration by companies that formerly relied on market transactions for hedging. In addition, compliance breakdowns will likely lead to expanded future litigation to resolve disputes that arise from new rules and regulations that have not been fully tested in the courts.

ENDNOTES

1 A derivative instrument is one whose payoff depends on another, more basic commodity or financial instrument. They can be originated and traded in a number of different ways: exchange-traded like a futures contract, over-the-counter as a counterparty’s obligation (such as a swap), publicly offered as a trust-issued claim against the trust’s own assets like a collateralized mortgage obligation, or a hybrid instrument such as a synthetic collateralized debt obligation sold as a 144a private placement.

2 The legislation will be effective July 16, 2011.

3 Note that the use of a central clearing house for OTC swaps is not new (see footnote 2 in the sidebar “Trading Crude Oil Futures Contracts on the Chicago Mercantile Exchange”).


5 Note that margin requirements for OTC swaps are not new. For example, collateral requirements have been part of many OTC swap contracts for years.

6 Structured finance vehicles are likely to be adversely affected by the new legislation because they mostly enter into OTC type swaps, which will probably have higher margin requirements and lower market liquidity once the new law is in effect. Special purpose entities (SPE’s) that issue structured claims generally enter into swaps that are tailored to a particular structure. Thus the required swaps may not be standard enough to be centrally traded and cleared. In addition, an SPE needs enough cash to post any margin required by a clearing house because most of its assets are pledged as collateral to the investment that purchased the SPE issued claims.


8 The LIBOR is the London Inter-Bank Offer Rate, a widely used benchmark for minimal risk interest rates, which is quoted for varying periods.

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