

Ready or Not? Here It Comes:

OTC Derivatives in the Post-Dodd-Frank Landscape – Implications for Investment Managers

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Executive Summary

- Investment managers trading OTC derivatives will find that the Dodd-Frank reforms have numerous and significant implications for their business. They should expect significant technology and operational challenges and may need sizeable reengineering of their operations and technology infrastructure to prepare for central clearing, oversight and reporting, and increased reconciliations.
- The increased number of connectivity points (multiple clearing members, clearinghouses, Swap Execution Facilities (“SEF”), Swap Data Repositories (“SDR”) and other market participants) will increase volume and complexity of daily reconciliations.
- Market participants should expect significant impact on margin and collateral management and should preemptively establish cross-product margining with their core bank counterparties. Overall changes in capital requirements will require enhancements to margin and collateral management functions, changing existent netting and cross-product margining, collateral optimization and other arrangements.
- Valuation needs will also change as there will be potential requirements for daily valuations of non-cleared trades, harmonization and validation of marks.
- Trade, position and risk reporting with regulators is expected to broaden and intensify.
- Swap participants may have additional monitoring, compliance and reporting responsibilities, even if they are exempted from central clearing.
- Citi estimates that about 60% of the current OTC derivatives market by volume will be centrally cleared. This is based on the assumption that one quarter of the total volume will be “exempt” because one party to the trade is a corporate or end-user that will opt to not utilize central clearing in order to minimize working capital impact caused by Central Counterparties’ (“CCP”) margin requirements. Of the remaining three quarters of the OTC derivatives market “eligible” to be cleared, we estimate ~80% will be cleared through CCPs over the next few years.
- Prime brokerage relationships and core bank counterparties will continue to exist. Although we expect a significant share of derivatives contracts to be cleared centrally going forward, there will remain derivative contracts that will not be eligible for central clearing. As such, traditional derivatives intermediation will likely continue in the near term and be complementary to CCP clearing.
- We expect rules mandating clearing of certain vanilla Interest Rate Swaps (“IRS”) and Credit Default Swaps (“CDS”) between dealers will likely become mandatory by end of 2011. Other market participants and products will follow as CCPs gear up to clear. SEF requirements are expected to begin in 2012. Reporting requirements are likely to be fully enforced once data repositories have been established and approved by regulators.

Introduction

The passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the DFA) has dramatically altered the shape of the financial services industry, as well as created tremendous uncertainty for asset managers and service providers. One of the aims of the DFA is clear: rein-in the so-called “shadow banking system” through regulation of alternative managers and the forced dissolution of investment banks’ proprietary trading arms. However, exactly how this goal will be accomplished is less certain – the DFA left regulators such as the SEC and CFTC to specify many of the details.

The financial crisis made painfully obvious that the lack of transparency around certain types of transactions led to high levels of systemic risk. The DFA has singled out over-the-counter (OTC) derivatives as one of the key risk areas and has set out to drastically reform this corner of the capital markets world. In this white paper, we focus on the changes we believe will have the greatest effect on investment managers, and we give special attention to areas we believe will affect investment managers the most: margin and collateral management, Swap Execution

Facilities, MSP designation status, end-user exemption and derivatives data reporting. To set the context of these changes, we first give an overview of the proposed changes. While some of the exact parameters are still being hammered out, this much is clear: Clients should expect significant business, technology and operational challenges, and should prepare accordingly.

Basic Outline of Changes

Consistent with its broad objectives for the entire financial services sector, the DFA will attempt to reduce systemic risk and increase transparency by further regulating OTC derivatives trading. While the reforms are quite extensive, key points are as follows:

Largest Players Designated “Swap Dealer” (“SD”) or “Major Swap Participant” (“MSP”)

Those with substantial swap positions, major uncollateralized exposure or who are highly leveraged will be required to register with the CFTC and/or the SEC as either Swap Dealers or Major Swap Participants, subjecting them to a plethora of requirements, including: mandatory capital and

margin, business conduct standards, and extensive reporting and disclosure requirements.

Who Qualifies?

The proposed rule defines “Major Swap Participant” as follows: “A firm is deemed a major swap participant if it has a *substantial position in interest rate, currency exchange, credit default, equity and commodity swaps.*” A “substantial position” as currently proposed is defined in two ways:

- As a daily average of current uncollateralized exposure of at least \$1 billion in credit, equity and commodity swaps and \$3 billion for interest rate swaps.
- As a daily and future uncollateralized exposure of at least \$2 billion for credit, equity and commodity swaps and \$6 billion of interest rate swaps.

A firm may be deemed to be an MSP in some derivative products but not in others. “Swap dealer,” in comparison, is defined as any company that deals swaps with a gross notional amount of \$100 million or more, deals swaps to more than 15 counterparties or enters into more than 20 swap deals over a year.

Mandated Central Clearing of Most OTC Derivatives

All swaps (as broadly defined) that the CFTC or SEC determines should be cleared must be cleared, making most plain-vanilla derivatives “clearing-eligible.” Under the DFA, clearing of swaps for third parties will be subject to initial and variation margin, and must be cleared for nonparticipant members through a registered Futures Commission Merchant (“FCM”). Market participants will likely end up with swap portfolios split between cleared and non-cleared positions, and possibly with positions cleared on multiple clearinghouses (“CCPs”).

Exemptions for Certain End Users

An exemption from the clearing requirement applies for swaps where one party is hedging a commercial risk, is not a “financial entity” and notifies the SEC/CFTC regarding how it generally meets its financial obligations associated with entering into non-cleared swaps. The exemption also stipulates that end-users are subject to proposed disclosure requirements, and their derivatives activity will likely be subject to increased scrutiny to ensure compliance with the exemption from clearing.

Higher Margin for Non-Cleared Swaps

Just as with cleared swaps, it is likely that initial and variation margin will be imposed on non-cleared swaps as well. Regulators are likely to structure capital requirements for swap dealers in a way that imposes higher charges on non-cleared swaps. For example, for non-cleared swaps, the CFTC is currently suggesting doubling the initial margin (“IM”) of the most similar cleared swaps, or 4.4x the margin for the most similar futures contract. Counterparty credit risk is a key element in the calculation of capital under Basel III regulatory framework. Under Basel III, in addition to the default risk capital requirements for counterparty credit risk determined based on the standardized or internal rating-based (IRB) approaches for credit risk, a bank must add a capital charge to cover the risk of mark-to-market losses on the expected counterparty risk to OTC derivatives. Increased costs for banks to carry these instruments on their books will have knock-on effects on asset managers.

Increased Margin and Collateral Complexity

“Clearable” and non-clearable swaps will be subject to margin requirements. Introduction of central clearing and bifurcation of portfolios will result in a significant increase in the number and complexity of marginable relationships. Recognition of true portfolio risk will become more critical for market participants. We expect an increased use of risk-based methodology in margining overall and expect market participants will select primary clearing relationships with core banks that have the ability to offer comprehensive cross-product margining solutions.

Increased Reporting Requirements

Market participants will see an overall increase in regulatory reporting, with additional requirements for those designated as SDs or MSPs. Most transactions are to be reported in real time, with holdings to be reported periodically to the appropriate regulatory bodies. Increased use of trade repositories will encourage standardization of legal and operational terms, as some degree of homogeneity is crucial for effective transaction reporting by counterparties and for

related services offered by the trade repositories.

Swap Execution Facility – Required for Clearing Eligible Swaps

Swaps subject to mandatory clearing are to be executed on an exchange or “swap execution facility” (“SEF”), defined as “a facility, trading system or platform in which multiple participants have the ability to execute or trade swaps by accepting bids and offers made by multiple participants in the facility or system.” By creating SEFs, it is hoped that pre- and post-trade transparency will improve, greater competition will be fostered and documentation of trades will be improved.

The proposed SEF rulemakings by the CFTC and SEC do not mandate the use of a certain SEF model to be used under all circumstances, but instead offer some flexibility to allow participants to use a variety of trading systems and platforms, including order

Which market participants are affected by the changes?

- All market participants that use OTC derivatives may be affected directly or indirectly.
- Large market participants – The greatest impact will be felt by those that fall into the SD or MSP categories, which will tend to be players with the largest number of positions. They will face more onerous reporting and increased margin requirements.
- Speculative traders – Any managers deemed to be trading OTCs speculatively – hedge funds, traditional asset managers, etc. – will be required to centrally clear, and face greater complexity in margin and collateral management.
- Exemptions for corporates and those hedging commercial risk – End-user exemptions will exist for those who qualify as hedging a commercial risk, and not a “financial entity,” such as corporates. However, even those exempt will likely be subject to disclosure requirements and increased scrutiny to ensure conformance with the end-user exemption from clearing
- Exemptions for non-U.S. entities – Swaps entered into outside of the U.S. between two non-U.S. entities would likely be exempt. However, if non-U.S. entities conduct transactions with U.S. counterparties, it is likely that these transactions will be subject to the requirements.

books and request for quote systems.

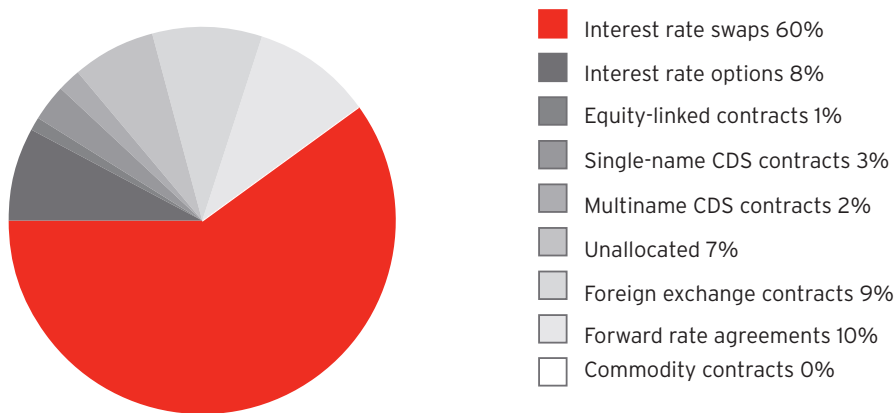
Quote models include:

- Platforms in which a market participant transmits a request for a quote to buy or sell to no less than five market participants (CFTC).
- Platforms in which multiple market participants can view and act upon real-time electronic streaming quotes, both firm and indicative, from multiple potential counterparties and on a centralized electronic screen.

While the original deadline was July 2011, we now expect the rules to be finalized by the end of 2011 with implementation in 2012.

Before further examining the constraints of the DFA, it is helpful to quickly review how the OTC derivatives marketplace currently functions.

Global OTC Derivative Breakdown by Instrument (based on notional outstanding, June 2010)



Source: Bank for International Settlements

Pre-Reform: Analysis of the Current Operating Environment

A key starting point for understanding the OTC derivatives market is to note its massive size: According to the Bank for International Settlements, the

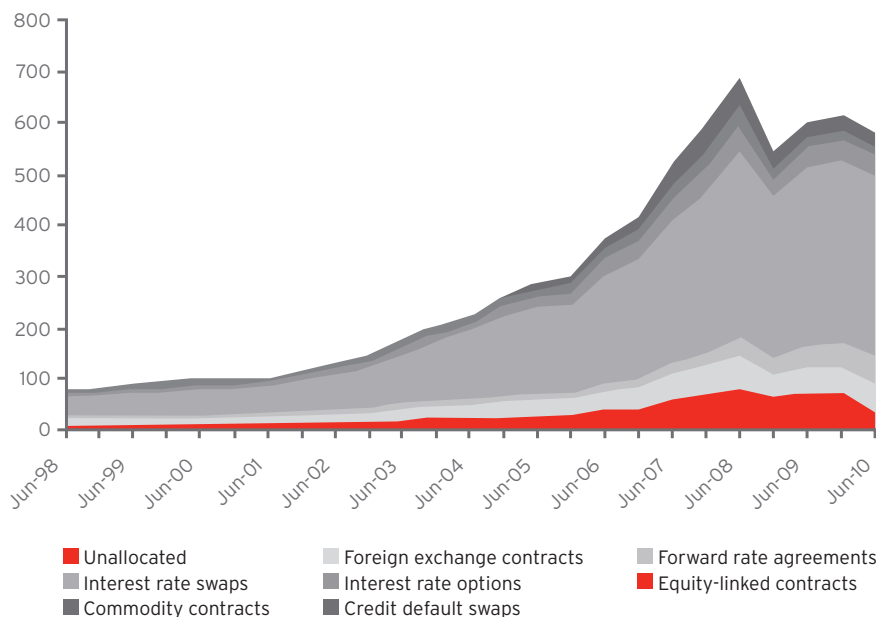
notional amount of OTC derivatives outstanding stood at \$583 trillion as of June 2010. Of these, the vast majority (78% or \$452 trillion) take the form of interest rate contracts (including forward rate agreements,

interest rate swaps and options). Thus a majority use the OTC interest rate market to hedge their exposure or to establish speculative positions.

In terms of the major players, Citi analysis shows that banks account for 38% of the outstanding derivative positions by market value, more than hedge funds (20%) and traditional asset managers (12%) combined. Corporate clients account for the next-largest slice, at 17%, with the balance made up of public sector clients, insurers, pension funds and other institutions. Many nonfinancial entities are likely to be exempted from the new regulations, though a few of the largest institutions could potentially be considered SDs or MSPs.

The DFA is going to make the OTC process flow even more complex. Many of the terms, including margin requirements and valuation methodologies, were negotiated directly with a counterparty on a bilateral basis. A buy-side firm would typically trade derivatives directly with its dealer counterparty (often referred to as Executing Broker “EB”) – with such trading sometimes mediated through its prime broker and core bank counterparties. Terms of the swap agreements are negotiated bilaterally between the two parties involved. Historically, this provided counterparties with flexibility as well as minimizing reporting requirements. Moreover, prime brokers and core

Growth of OTC Derivatives Notional Amount Outstanding (\$trn)



Source: Bank for International Settlements

bank counterparties have the ability to independently assess client creditworthiness and to reward large or strategic clients with low margin requirements.

The disadvantages of this model became clear during the financial crisis. As major prime brokers such as Lehman Brothers failed, counterparties to swaps were unable to access, or in some cases even recover, the collateral they had posted and existing trade positions had to be replaced in dislocated trading conditions. In fact, these very shortcomings led regulators

to promote a centralized clearing solution.

Another feature of the bilateral framework is the “relative” primitiveness of the margin operations. Many firms on the buy-side were running collateral management programs on spreadsheets staffed by part-time teams with limited derivatives experience. During the crisis, many organizations relied on their counterparties for the information required to calculate margin calls.

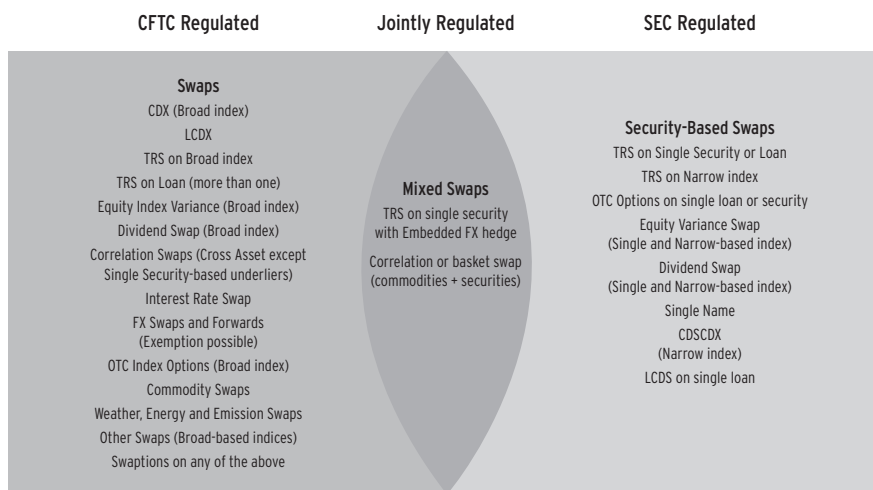
Post-Reform: How Will Market Participants Be Affected?

Post-DFA, the most significant and far-reaching change to OTC swaps trading is the requirement that new swaps be centrally cleared, where possible. Under this arrangement the CCPs, as approved by the SEC and CFTC, will stipulate margin requirements, whereas previously counterparties would negotiate their own terms bilaterally.

Further complicating these changes is the fact that there will be multiple regulators covering the swap market and in some cases two different regulators may have jurisdiction over the same swap. Security-based swaps, such as a credit default swap on debt of an individual company, would fall under the SEC, whereas a total return swap on a broad market index would be regulated by the CFTC. However, as detailed in the diagram below, a total return swap on single security with an embedded foreign currency hedge would be jointly regulated.

Market participants should be mindful of which regulator will regulate each type of transaction, recognizing that both could be involved. As the two regulators may or may not share information with each other, firms

Jurisdiction – Swaps, Security-Based Swaps & Mixed Swaps



Almost all OTC products will be regulated by one or both regulators, possible exemption for FX

Sources: SEC, CFTC, Citi analysis

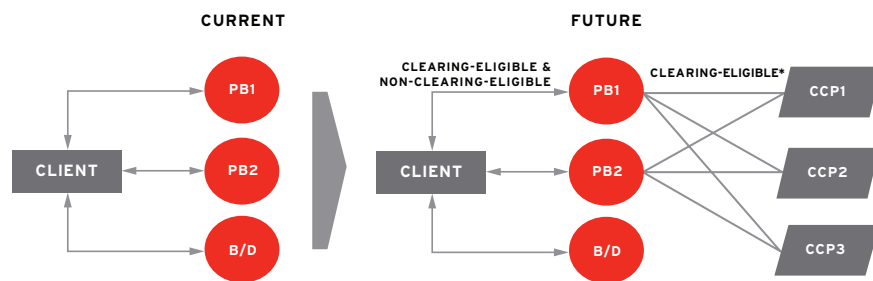
should prepare for an increased reporting burden for jointly regulated products.

Some derivatives have historically traded bilaterally between the buy-side, prime brokers and core bank counterparties. Derivatives eligible for clearing will be routed to

the appropriate CCP via the buy-side client's FCM, most often the prime broker and core bank counterparties.

Expected usage of central clearing varies by underlying product type starting with the majority of interest rates and credit derivatives.

CCP Impact to Buy-Side



*PB and core bank counterparties act as FCM (agent, not principal)

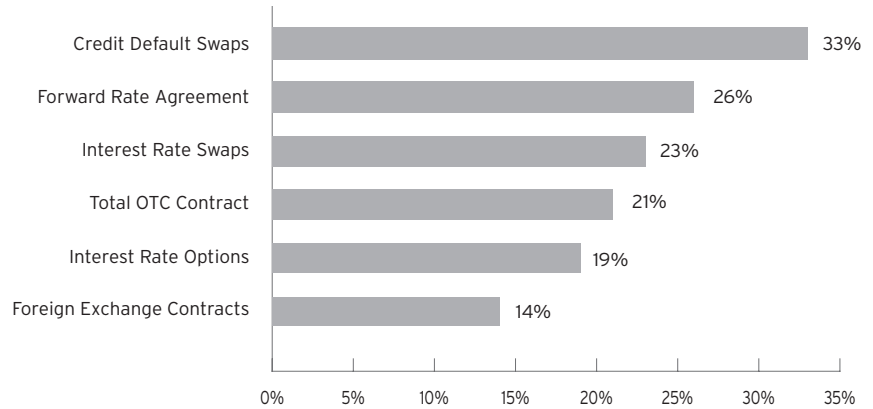
Interest Rate Derivatives

We estimate 90% of the OTC interest rate derivatives market is plain-vanilla swaps, with the rest being customized complex structures including options and exotics. We expect nearly all of the plain-vanilla trades will be centrally cleared, given that most interdealer interest rate swap trades already clear currently, and it will only be a matter of time for client trading to follow.

Credit Derivatives

We estimate 85% of credit-related OTC derivatives will be centrally cleared, including virtually all CDS index trading, and most of the single-name CDS that are part of a liquid index. Another 85% - 90% of remaining single-name CDS will also likely be centrally cleared, with the remaining non-cleared due to low liquidity.

2000 to June 2010 CAGR of Key OTC Derivative Instruments



Foreign Exchange Derivatives

There remains uncertainty regarding the treatment of foreign exchange swaps. The Treasury Secretary currently proposes to exempt FX swaps and forwards. The DFA authorized the U.S. Treasury to grant such an exemption.

According to the chart above, overall, global OTC derivatives outstanding

notional grew at a CAGR of 20% between 2000 and June 2010.

The highest growth rate was achieved by credit default swaps (33%), followed by forward rate agreements (FRAs) (26%) and interest rate swaps (21%). Standardization of more products and central clearing will likely result in higher volumes in the long term.

Estimation of the Centrally Clearable OTC Derivative Market

	Gross Market Values*	Gross Market Value Breakdown	% Exempt**	% Eligible***	% Eligible Trade CCP-Cleared
Interest rate derivatives	17,533	71%	31%	69%	90%
Credit default swaps	1,666	7%	6%	94%	85%
Foreign exchange contracts	2,524	10%	85%	15%	55%
Equity-linked contracts	706	3%	12%	88%	75%
Commodity contracts	457	2%	70%	30%	75%
Other	1,788	7%	5%	95%	55%
Total	24,674	100%	33%	67%	84%

*Gross market values as of June 2010.

**% of exempt transactions based on % of corporate customers by asset class.

***% of eligible transactions minus % of exempt transactions.

Source: BIS, Deutsche Bourse, Citi Research and Analysis

Major OTC Derivative CCPs and Their Characteristics

Asset Class	Clearinghouse	OTC Derivatives Products Cleared (Current and Planned)
Interest Rate	CME ClearPort	Interest rate swaps and forward rate agreements
	Derivatives Clearing Group (IDCG)	IDEX USD interest rate swaps. IDCG uses the Exchange of Futures for Swaps (EFS) function to convert OTC IRS contracts into economically equivalent IRS futures contracts
	LCH Clearnet LTD Swap Clear	Interest rate swaps and forward rate agreements
	Eurex	Interest rate swaps and forward rate agreements
	CME CE	Interest rate swaps and forward rate agreements
Credit	CME Clearing	North American CDS indices, single-name CDS
	Eurex Credit Clear	European CDS indices and some single-name components of the indices
	ICE Clear Europe	European CDS indices and the single-name components of those indices (currently a subset)
	ICE Trust U.S.	North American CDS indices, single-name CDS
	LCH Clearnet SA	European CDS indices and (planned) single-name components of those indices
Equity	Eurex	Eurex and LCH Clearnet LTD offer clearing of OTC-negotiated equity derivatives that are substituted for a listed equity derivative when cleared. It is not clearing under a bilateral ISDA standard master agreement
	LCH Clearnet Ltd	
Commodity	CME's ClearPort/CME Europe	OTC agricultural commodities, OTC energy and OTC metals (gold & other precious)
	LCH Clearnet Ltd	OTC iron ore swaps, fertilizer swaps, freight forwards (dry, bulk, wet), Soft and Agricultures
	ICE Clear Europe	OTC energy (crude and refined products, power, natural gas), emissions (EUA, CER, Futures)
Foreign Exchange	CME Clearing	NDF and FX options
	LCH Clearnet Forex Clear	NDF and FX options
	ICE Clear Europe	NDF and FX options

*The products available on each CCP platform are in a state of rapid evolution. The above list is provided for indicative purposes as of the time of publication and is non-exhaustive. We expect competition to drive swift expansion of offered products on each platform.

Source: Financial Stability Board, Citi Investment Research and Analysis

CCP vs. Bilateral Model

Under this construct, the CCP steps in to act as the legal counterparty to each side of every trade. Through the

process of novation, the CCP intermediates the trade, canceling the original contracts between the buy-side firm and the EB; this trade is then replaced

with two legally binding contracts, one contract between the buy-side firm and the CCP, with the buy-side firm's FCM acting as agent to the transaction

and providing credit enhancement and another contract between the EB and the CCP. In some transactions the same legal entity may act as both the EB and FCM.

In a bilateral framework, buyers and sellers accept each other's credit risk. Pricing (bid-offer spreads) is at the discretion of the EB, and is affected by the credit quality of the counterparty. In a centrally cleared model, the CCP effectively becomes the buyer to the seller and the seller to the buyer, guaranteeing performance and eliminating the buyer's and seller's credit exposure to one another. Another feature of the new environment that reduces credit risk is portability. In the case of an FCM failure (Lehman scenario), portability will allow any trades to be transferred to another stable clearing member. Moreover, CCPs may allow positions of defaulting firms to be auctioned off to the remaining clearing members, in accordance with CCP default management rules and applicable regulations.

The movement to a centrally cleared model will likely impact the buy-side in three primary ways. First, pricing (valuation and bid-offer spreads) should become more transparent,

as clearinghouses, SEFs and reporting data warehouses publicly share pricing information. In the bilateral market, prime brokers and core bank counterparties typically negotiate terms with the buy-side on a private basis. While most hedge funds can and do use multiple prime brokers, shopping around is an iterative and manual task.

Second, managers will incur higher technology and operations costs, as they need to reengineer process and technology to meet new requirements. Everything that is clearing-eligible will also need to be executed at an SEF and reported to SDRs. Buy-side firms will require connectivity to all major CCPs (CME, ICE, LCH, IDCG, EUREX), major affirmation/confirmation platforms (Icelink, Markitwire, DTCC), SEFs (TradeWeb, MarketAxcess, Javelin, Bloomberg, DFI, ICAP, etc., and as they emerge). FCMs are likely to pass along the costs incurred in setting up the systems and technology needed to provide connectivity with multiple CCPs, SEFs and SDRs. The buy-side firms will also have to have a reporting infrastructure that meets all regulatory reporting requirements. In addition to the costs and complexity of increased reporting, there is also a

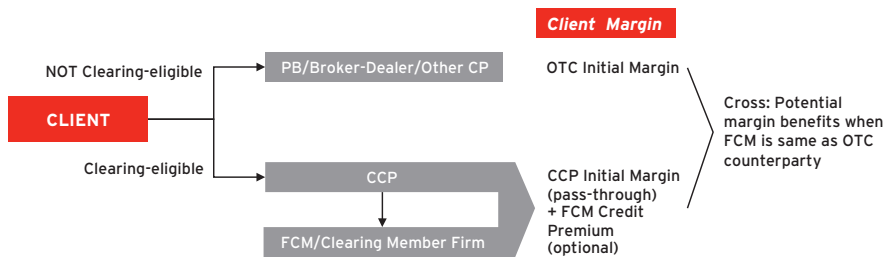
burden of increased reconciliations to ensure all parties are in synch.

A third area of impact is related to the calculation of margin and management of collateral. As changes in these areas will have a significant impact on the industry, we address them in detail in the section that follows.

New Margin Pressures

Post-DFA, asset managers may face higher margin costs, as CCPs tend to take a more conservative view than prime brokers and core bank counterparties. CCPs treat all counterparties equally, not offering concessions to strategic clients. Although proposed regulations are actively being reviewed and commented upon by industry association groups, the regulations as drafted could require portfolios to be split between cleared and non-cleared positions, temporarily exacerbating liquidity impacts of clearing and other regulatory initiatives. Now, as illustrated in the diagram at right, trades will be fragmented into cleared and non-cleared trades, across multiple CCPs, FCMs, broker-dealers, prime brokers and other core bank counterparties, meaning the client might lose the full benefits of

Post-Regulatory Margining Landscape – A Simple Schematic



consolidated margining, and may have to enter into multiple operating and credit agreements (to cover cleared and non-cleared trades). Clients may look to increase or consolidate the number of clearing members they work with, reshuffling their positions so as to best find new margining opportunities.

In addition, CCPs are likely to impose tougher and less flexible margin requirements on the buy-side than required historically by prime brokers. CCPs will require that buy-side firms post conservative initial margin. As CCPs will dictate minimum margin terms on end-clients (e.g., hedge funds), client-facing member firms (i.e., FCMs) will not be able to negotiate lower margin requirements for their clients, regardless of the value of the client. Moreover, FCMs now become an agent in the transaction between the end-client

and the CCP, and under the currently proposed rules may need to charge clients excess margin to compensate for the FCM's credit risk to the client. In short, costs are likely to rise for the buy-side.

Collateral Management

As part of the DFA's derivatives reforms, collateral eligibility and usage is going to expand beyond the current norm, beyond cash and into other asset classes. Though perhaps counterintuitive, allowing CCPs to accept foreign sovereign debt, select mortgage-backed securities and other assets as IM can actually reduce systemic risk. Consider the fact that if cash is the only accepted form of collateral, then in order to post margin in a bear market, the buy-side as a whole may be forced to sell securities to raise cash, which in turn further extends the market decline, creating a snowball effect.

Yet while hedge funds may welcome the ability to post non-cash, it does increase complexity. When cash is the only game in town, a manager's options are fairly limited – post cash or don't make the trade. But when acceptable collateral is expanded to include more complex assets, managers now need to consider which assets to post, given the CCP's eligibility requirements.

Given the risks and opportunities surrounding collateral management, investment managers should consider implementing a formal collateral management program that improves MIS and reduces counterparty exposure. Effective managers of collateral need to be able to capture all ISDA CSA, repo, futures and prime brokerage agreement details to facilitate exposure and collateral management functions. Asset managers should consider comparing provisions in these agreements to industry standards to identify opportunities to improve terms. A margin management program should calculate counterparty exposures, issue necessary margin calls and validate or process received margin calls.

At the same time, a collateral management program needs to keep in mind the primary goal of asset management, generating investment performance for clients. With collateral including a greater percentage of other securities beyond cash, asset management functions and performance of the collateral assets are going to be critical. As such, the collateral management program needs to employ functions designed to manage cash and securities with the goal of maximizing return on collateral assets, including proprietary positions as well as collateral received from counterparties. Key objectives here are to monitor the eligibility of proposed collateral receipts, and to maintain and monitor concentration limits to reduce overall counterparty risk. Buy-side firms also need to manage securities-position needs through active substitution of collateral pledged, and to maximize return on collateral held through active management of securities and cash positions both in custody as well as pledged out.

The DFA mandates that end-clients have the right to segregate initial margin for non-cleared swaps with an independent third-party custodian.

Tri-party custody accounts for such initial margin are expected to increase in popularity especially with higher expected margin levels. Additionally, there is a rationale for hosting these custody accounts in the same organization as the middle-office collateral management function to both maximize operational efficiency and for optimization of collateral within obligation and eligibility constraints.

According to ISDA estimates, there was approximately \$4 trillion of collateral in circulation in the bilateral OTC derivatives market as of 2009. Estimates are that 83% of that figure, or approximately \$3.3 trillion, is posted in cash form. At the same time, it is also estimated that 70% of bilateral OTC trades are currently subject to collateral agreements in some form (cash or otherwise), with this percentage expected to rise to 80% - 90% with regulatory changes. If both the number of trades with margin requirements and the required margin amounts also rise, then a collateral shortage is quite possible, meaning market participants won't have enough cash or eligible securities on hand to meet their requirements.

Although CCPs are accepting collateral beyond cash, such changes may not extend into all securities, such as municipals or convertibles. Managers running portfolios made up of these securities may wish to explore ways to upgrade their collateral by entering into repurchase agreements; for example, a municipals manager might borrow cash to be used as acceptable collateral. In theory, clients could make these decisions themselves, but the increased complexity begs for a formal collateral program managed by an expert.

New Reporting Requirements

New reporting and record-keeping requirements are another key component of the reforms. The DFA mandates reporting of a number of data points relating to cleared and non-cleared swap transactions, including transaction data and holdings information. Key points are as follows:

Transaction Reporting

Certain transaction details such as, for example, price, volume, a description of the underlying asset, time-stamp and an anonymous counterparty identifier will have to be reported "as soon as technologically practicable"

after trade execution. A more expanded data set will subsequently have to be reported to an SDR, or to the CFTC or SEC, as applicable, if an SDR is not available. The burden of trade reporting will largely fall on SDs and MSPs to report on behalf of other participants, but other entities such as SEFs will also play a role in reporting.

Holdings Information

Position reports on OTC derivatives will allow regulators to more easily view the current outstanding market exposure of market participants and will be used to detect and possibly address the concentration of systemic risk in the financial system. While real-time reporting must be submitted on an “as soon as technologically possible” basis, position reports might be prepared far less frequently (quarterly or annually), depending on the actual user of the OTC derivative.

Record Keeping

All OTC derivative transactions will have to be kept on file for a specific number of years after trade termination and/or maturity. While most of the record-keeping requirements surrounding specific trades (electronic mail, instant messages, telephone calls and

complete audit trail) will be the responsibility of the SD or the MSP, some degree of formal record keeping will most likely also be required of other users.

Buy-side firms are only now waking up to the full implications of these changes. Currently, many asset managers process derivatives transactions using spreadsheets or portfolio accounting software designed for traditional equity investments. Indeed, such a simplistic approach was arguably a factor in the most recent crisis. Going forward, a cocktail-napkin approach won't be up to task. The buy-side now needs to build a comprehensive reporting system, able to capture and warehouse all relevant data, and capture some data in real time. Such a solution must offer institutionalized processing and be native to the derivatives market. Another practical consideration is that managers can't simply assume that the SEF, CCP or swap counterparty will shoulder most of the reporting burden. While the original deadline was July 2011, we now expect the rules to be finalized by the end of 2011 with implementation in 2012. Finally, small to mid-size managers planning to rely on size

exemptions should think that stance through: Are they going to be small forever, or could strong performance lead to portfolio appreciation and investor inflows? As part of their operational due diligence, consultants and institutional investors will likely want to see that even exempted buy-side firms have thought these issues through.

Increased Usage of Trade Repositories for All OTC Derivatives

Higher standardization and liquidity may lead to positive growth for OTC derivative volumes in the long run. Regulators both in the U.S. and EU are now pushing for reporting of all OTC derivative transactions, both centrally and non-centrally cleared, into trade repositories. A trade repository (TR) for OTC derivatives is a centralized registry that maintains an electronic database of OTC derivatives transaction records. It collects data on contracts traded in various segments of the OTC derivatives markets, centrally or non-centrally cleared. Trade repositories are not an alternative to CCPs, though some CCPs are striving to become trade depositories.

At the time of writing, DTCC has been selected as the SDR for Interest Rate products after an RFP process conducted by IDSA and the Rates Steering Committee. Credit products currently use DTCC. RFPs have been issued for the other products' trade repositories. For example, the AFME FX Division has issued an RFP for the FX Trade repository.

Increased use of trade repositories will encourage standardization of legal and operational terms, as some degree of homogeneity is crucial for effective transaction reporting by counterparties and for related services offered by the trade repositories.

New Face of Derivatives Trading

What are the key implications of these changes? It is tempting to conclude that additional complexity and higher margin requirements will lead the buy-side to become less dependent on the derivatives market. However, many do not believe this is the case: According to internal Citi analysis, notional volumes in derivatives (especially IRS and CDS) are expected to rise, due to increased transparency and counterparty risk mitigation. By 2013, Citi foresees the notional value of IRS and CDS rising to \$435 trillion, exceeding 2008 levels. Most credit and interest rate swaps are expected to be clearing eligible.

As a practical matter, the endgame for investment managers still remains the same: to seek out all opportunities to generate competitive returns, while hedging out unintended risks. Derivatives clearly continue to play a key role on both sides of the equation.

Yet if the buy-side commitment to derivatives is to be maintained in the face of increased cost and complexity, something's got to give. In this new environment of onerous reporting and clearing requirements, the buy-side must improve their operating efficiency. We expect some managers will respond by bundling all the post-execution functions into a seamless process, potentially even on the same platform or with a single provider.

Action Items

- Determine the regulatory classification of your organization:
 - Seek counsel on issues such as potential registration requirements, categorization of your organization as a Major Swap Participant (MSP) or qualification for an end-user exemption
- Put your clearing relationships in place:
 - Appoint a Clearing Member Firm for clearance of clearing-eligible trades; more than one is suggested
- Establish trade connectivity:
 - Connect to multiple trade affirmation/trade capture platforms, SEFs and trade repositories if you trade in clearing-eligible products
- Ensure that internal operations and technology staff, or an outsourced middle-office provider, can meet the new reporting and reconciliation guidelines, can bifurcate portfolios into clearing-eligible and ineligible buckets, and can track and administer the increased margin relationships
- Assess the impact of central clearing on margin and collateral levels and eligibility and consider the potential impact of margin and collateral increases on portfolio

management. Preemptively establish Cross Product Margining relationships with core bank counterparties to optimize capital efficiencies

- Get involved in trade association groups and voice your opinions re: changes to proposed regulations to maintain sufficient market liquidity

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