LINE OF
SIGHT

CAPITAL REQUIREMENTS
FOR PENSION FUNDS IN THE WAKE OF DODD-FRANK

An in-depth look at margin requirements for cleared and uncleared swaps

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OVERVIEW

The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) was enacted on July 21, 2010, introducing sweeping changes to the U.S. financial regulatory environment. Title XII of the Dodd-Frank Act provides heightened regulation of the $633 trillion over-the-counter (OTC) derivative market.[1] In an effort to reduce risk and increase transparency, the Dodd-Frank Act imposes mandatory clearing and trade execution of certain derivative products. To help ease the migration of swaps to a central clearinghouse, the Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC) have approved a phase-in approach for market participants. For pension plans subject to the Employee Retirement Income Security Act (ERISA), the mandatory clearing of certain interest rate and credit default swaps begins September 9, 2013. By mandating interest rate products first, which account for $489 trillion or 77% of outstanding notional, the CFTC has encompassed a majority of the swap activity in the OTC market.

1. *http://www.bis.org/statistics/derdetailed.htm*

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PENSION FUNDS WORRIED ABOUT NEW CAPITAL REQUIREMENTS

Many pension funds use interest rate swaps to synthetically increase their portfolios' duration while conserving plan capital. These instruments are widely used in liability-driven investment strategies to hedge long-term pension liabilities. Dodd-Frank's central clearing of swap contracts adds new capital requirements: initial margin and variation margin. The initial margin is intended to cover the fluctuation in a contract's value over a fixed period. The variation margin functions as a mitigation to credit exposure arising from daily fluctuations of a contract's market value.

As proposed by the CFTC and the SEC, financial entities are allowed to post limited asset types for initial margin, including cash, U.S. treasuries, U.S. agencies, as well some other high-quality liquid assets. Currently, exchanges accept flexible collateral for initial margin, but apply discounts to less liquid instruments, subtracting from the market value of the instrument pledged as collateral. For cleared swaps, the CFTC and the SEC have mandated a five-day default scenario for initial margin, which is calculated by the central counterparties (CCPs) using either a historical or theoretical stress model to determine worst-case loss scenarios over the contract's holding period.

The new capital requirements – both initial and variation margins – can seem imposing, and have many plan managers concerned about the impact on their strategy. The estimated demand of initial margin required has been quoted as anywhere between $800 billion and $10 trillion dollars. A recent report published by the Bank of International Settlements (BIS) estimated a growth of $4 trillion in initial margin demand.[2] These figures have begun causing concern that there could be a shortfall in available high quality assets to meet the requirements for plans.

Exhibit 1: Swaps Held by Pension Funds

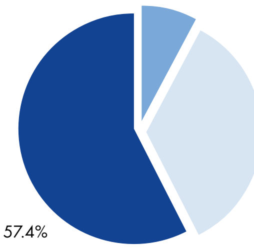


Exhibit 2: Breakdown by Currency (by notional)

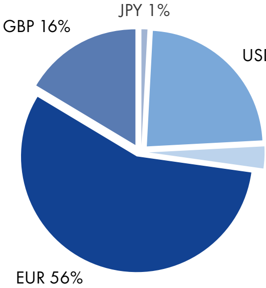
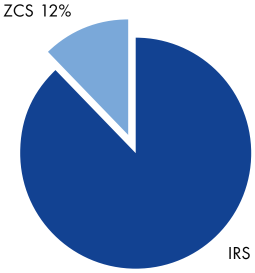


Exhibit 3: Interest Rate Swaps vs Zero Coupon Swaps (by notional)



ANALYSIS SHOWS INITIAL MARGIN REQUIREMENTS GENERALLY MANAGEABLE

To determine the impact of Dodd-Frank's initial margin requirements on pension funds we identified the initial margin requirements across hundreds of pension fund accounts, all of which held eligible interest-rate swap products.

Among the accounts in our sample, the average initial margin requirement was $5.3 million, which is only 1.53% of gross notional. Only 18% had initial margin requirements larger than $10 million. Our analysis shows that most funds in our sample group with margin requirements of more than $1 million have ample eligible collateral, in the form of high-grade government or corporate bonds, to meet their initial margin requirements.

2. *http://www.bis.org/publ/cgfs49.pdf*

While the clients have sufficient collateral to cover the initial margin required for interest rate swaps, pension funds use other OTC products as well. Across the sample set of data, 57.4% of the trades in the pension accounts were interest rate products. The next most prevalent swap type was credit products, which consisted of 34.5% of all trades, leaving 7.9% to be distributed across remaining swap categories. The Dodd-Frank Act imposes initial and variation margin for uncleared swaps as well. Due to the phasing in of product categories under the Dodd-Frank regulations, pension funds may discover they eventually will be required to post collateral to multiple sources for these non-interest-rate products. Distributing collateral to counterparties on noncleared derivatives will require sophisticated collateral management to track and ensure proper collateral is available to cover all margin requirements.

Pension funds using interest rate swaps in long duration portfolios will have to be conscious of cash on hand to cover variation margin requirements.

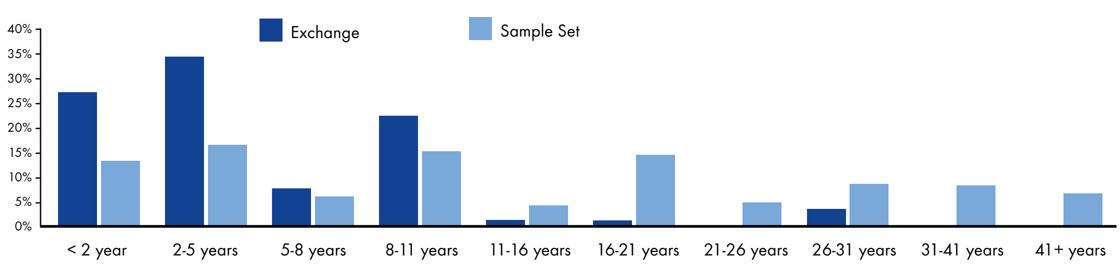
VARIATION MARGIN REQUIREMENTS COULD AFFECT MORE FUNDS

While initial margin requirements may not be an issue for most pension funds, variation margin requirements could pose a problem for those with limited cash on hand. Longer dated deals, specifically interest rate swaps, are sensitive to interest rate movements and can trigger large variation margin calls. Variation margin is the equivalent to a position's market value change. Unlike initial margin, variation margin must be pledged in cash and is posted daily to either the CCP or the clearing member, depending on whether the contract's movement is positive or negative.

Pension funds using interest rate swaps in long duration portfolios will have to be conscious of cash on hand to cover variation margin requirements. The longer an interest rate swap's duration, the more sensitive it will be to swings in interest rates. Our data indicates that interest rate swaps held by pension funds have a much longer time to maturity versus those currently traded on CCPs. The average time to maturity in the sample group was 16.2 years, with many OTC swaps extending to more than 40 years to maturity. In contrast, the current open interest of contracts maturing between 16 and 21 years on central counterparties is less than 2%.

Currently, the variation margin movements for interest rate products on central counterparties is less oppressive because contract volume on exchanges is typically less than five years, with more than 90% of the open interest rate swaps having a time to maturity less than 11 years. If pension funds continue trading long-dated interest rate swaps when they begin trading on exchanges, they will have to keep large pools of cash on hand to cover any interest rate shifts that might trigger a large variation margin.

Exhibit 4: Time to Maturity – Open Interest



ADDRESSING THE COLLATERAL SHORTFALL

Dodd-Frank's margin requirements for swaps will create an increased demand for high quality collateral, which will be residing in segregated or third-party custodial arrangements. Funds that lack eligible collateral may have to turn to collateral transformation or collateral optimization to obtain the necessary collateral to sustain their strategies.

Collateral transformation takes ineligible swap collateral and transforms it to suitable collateral through a process in which some custodians and clearing brokers act as intermediaries between funds with large portfolios of eligible assets and those in need of high quality collateral.

Collateral optimization can mean different things, depending on a fund's goals and sophistication. To some funds, it may strictly involve pledging the collateral that is cheapest to deliver. More sophisticated funds can further leverage collateral optimization to execute trading decisions based on cross product netting, eligible collateral requirements and the reallocation of collateral. These strategies allow funds to manage collateral more efficiently and avoid over-collateralization. Collateral optimization in the industry is still in its infancy and we have yet to see all of its possibilities.

SOME UNCLEARED SWAPS ALSO SUBJECT TO MARGIN REQUIREMENTS

Not all entities will be required to clear swaps through exchanges, but that does not exempt these entities from margin requirements under Dodd-Frank. The Dodd-Frank Act still imposes initial and variation margin requirements on swap dealers and major swap participants. Under proposed rules for uncleared swaps, swap entities will be required to collect, but not pay, initial margin with financial end users, creating unilateral margin requirements. The initial margin requirements are stricter on uncleared products than those traded on exchanges, with the CFTC and the SEC insisting on a 10-day default window. At this time, the regulations for margin on uncleared swaps have not been finalized, but are expected to be fairly invasive for funds trading them.

MARGIN REQUIREMENTS SHOULDN'T UPSET CURRENT STRATEGY

For the accounts sampled in our data set supplying initial margin should prove no immediate challenge. However, pension plans must also be mindful that margin will also be required for uncleared swaps. Having cash on hand to meet variation margin needs may pose a challenge for some plan managers, especially those with longer duration swaps, which can have large market value swings. The real test will be ensuring that plans are engaging in the more efficient use of their collateral. Through the use of a collateral manager, plans can be certain they are taking advantage of margin netting across products, providing a collateral pool across all of the firm's holdings and transforming ineligible collateral to eligible collateral to meet margin requirements. While Dodd-Frank has put additional requirements in place to better protect firms in the case of counterparty insolvency, it need not deter pension clients from their current strategy.

ABOUT OUR APPROACH

To determine the impact of Dodd-Frank's initial margin requirements on pension funds we identified the initial margin requirements for more than 200 pension fund accounts, all of which held eligible interest-rate swap products. Our analysis assumed all eligible positions would be ported to an exchange* to be cleared. This group totaled thousands of interest rate and zero-coupon swaps, which we modeled using CME's CORE tool.[3]

The majority, 62.6%, had between $1 billion and $10 billion in assets under custody (AUC) at Northern Trust; 22.2% had AUC of more than $10 billion; and 15.2% had AUC of less than $1 billion.

Accounts Tested: **217**
Positions Modeled: **5,954**
Max Initial Margin: **$80,133,350**
Average Initial Margin: **$5,364,148**
Max Initial Margin as % of Notional: **8.176%**
Average Initial Margin as % of Notional: **1.531%**

**For this analysis, we assume funds will be clearing all positions through a single clearing member on a single exchange. Funds selecting multiple clearing members or trading on multiple exchanges may see different results.*

3. *www.cmegroup.com/core*

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