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Non-Cleared OTC Derivatives: Their Importance to the Global Economy

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CONTENTS

INTRODUCTION

The traditional world of derivatives, consisting of both listed and over-the-counter (OTC) instruments, is undergoing significant change. Clearing of OTC derivatives through central counterparties has grown rapidly over the last decade. The percentage of cleared interest rate swaps, for example, has doubled in the past four years and over half that market is now cleared.

This transformation is slated to continue given the pace and momentum of regulatory reform until upwards of 70 percent of global OTC derivatives activity is cleared.

The residual non-cleared segment of the OTC derivatives market – while somewhat smaller in size -- will nonetheless be critical to the global economy. Non-cleared OTC derivatives will continue to play an important role in many industries and in many areas of economic activity. They are used extensively by corporations, investment and pension funds, governments and financial institutions to run their operations and to manage risk.

Current regulatory proposals regarding margin requirements for non-cleared derivatives pose significant threats to the continued functioning of this vital market segment. Such proposals also fail to fully consider the lessons learned regarding margin practices during the recent financial crisis.

These are important issues -- not only for the derivatives markets – but also more broadly for financial markets and the global economy. It is within this context that ISDA has developed this paper. It is intended to explain what non-cleared OTC derivatives are, who uses them and why. It outlines the evolution of clearing in the OTC derivatives markets, the types and benefits of non-cleared OTC derivatives and the impact of the regulatory proposals in this area.

EXECUTIVE SUMMARY

The non-cleared segment of the OTC derivatives market includes many important products with significant value to the economy. These products enable industrial companies and governments to effectively finance and manage risk in their operations and activities and help pension funds meet their obligations to retirees. They help support economic growth by enabling banks to lend to corporate and individual customers. They play a vital role in virtually every industry – from financial services to international trade to home mortgages.

As the Financial Stability Board has noted: "…demand for bespoke products comes from a variety of market participants. These include non-financial corporate end-users such as airlines, financial sector end-users such as insurance companies and banks, as well as hedge funds and institutional investors including pension funds, mutual funds, university endowments, and sovereign wealth funds. Derivatives dealers themselves also may have tailored needs that can be met through the use of bespoke products."[1]

As a result of this demand, the non-cleared segment of the OTC derivatives market is expected to remain significant in size. While most of the OTC derivatives market is expected to be cleared, a substantial portion will not be. As stated in the Second Consultative Document on margin requirements that was recently issued by the Basel Committee on Banking Supervision (BCBS) and the Board of Governors of the International Organizations of Securities Commissions (IOSCO)[2], "a substantial fraction" of OTC derivatives will not be able to be cleared. The paper also cites an earlier IMF study[3], according to which 25% of the interest rate derivatives market, 33% of the credit default swaps market, and significant percentages of other types of OTC derivatives will remain non-cleared.

Given its continuing importance and relevance, the non-cleared OTC derivatives market segment needs to be clearly understood. ISDA estimates the non-cleared OTC derivatives market will consist of the following:

- Several large, relatively broad market segments, including the majority of interest rate swaptions and options, cross-currency swaps, single-name credit default swaps and various types of equity and commodity swaps, will likely remain non-cleared, as they do not fit the eligibility requirements of clearinghouses (CCPs).

- A number of individual sectors of many otherwise clearable OTC derivative product classes will likely remain non-cleared due to a lack of liquidity (and associated lack of valuation/pricing depth) in certain transactions. The lack of liquidity in these areas results from the economic terms (currency denominations, maturities, underlying reference rates, etc.) of such transactions, which are traded less than other transactions in those product classes.

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[1] Financial Stability Board; Implementing OTC Derivatives Market Reforms: October 25, 2010
[2] Second Consultative Document, "Margin requirements for non-centrally cleared derivatives" Basel Committee on Banking Supervision (BCBS) and the Board of Governors of the International Organizations of Securities Commissions (IOSCO)
[3] IMF Report, April 2010

- Transactions involving sovereigns, central banks, corporations and other non-financial end-users in jurisdictions around the world where such market participants are exempt from clearing requirements will also remain non-cleared.

Non-cleared OTC derivatives play a vital role in risk management and in business decision-making that cannot be filled by clearable instruments. If users are forced to abandon non-cleared derivatives, and instead have to employ imperfect or unsuitable hedges using only clearable risk-hedging tools, they may be confronted with unwanted basis risk. Users might also find that their transactions do not qualify for hedge accounting treatment, which would introduce significant volatility to their income statements.

In addition, there are certain specific risks for which the appropriate hedge is not yet and may not in the future be available in cleared form.

As a result, users may decide to forego their hedging strategy and remain exposed to the risks they previously wished to manage away. They may also prefer to not take the underlying risks at all, which could have dampening effects on economic growth.

Many standardized OTC derivatives cannot be cleared (such as most single-name credit default swaps (CDS)) and many non-standardized transactions can be cleared. Non-cleared transactions are often viewed as complex bespoke products, while cleared transactions are viewed as standardized and simple. However, contrary to popular belief, OTC derivatives with bespoke economic terms can be and are cleared. Standardization of economic terms is therefore not a direct condition required for clearing.

Standardization of legal and operational terms is, however, required for clearing. Significant effort has been made by market participants to achieve this type of standardization in recent years. This, together with the strong economic incentive that firms have to clear, is one reason why OTC derivatives clearing has substantially increased in recent years, ahead of clearing mandates.

The regulatory treatment of non-cleared OTC derivatives has important implications for risk management, the financial system and the global economy. The proposed regulatory treatment of non-cleared OTC derivatives might adversely affect usage of these products and negatively impact the economy. Regulatory proposals for non-cleared OTC derivatives must take into consideration the uses and value of non-cleared OTC derivatives, and whether any benefits gained from such proposals, such as proposed rules for margin for non-cleared transactions, outweigh the substantial costs that they could impose.

REGULATORY REFORM, CLEARING AND THE EVOLUTION OF THE OTC DERIVATIVES MARKETS

During and after the global financial crisis, policymakers and market participants sought to develop a stronger and more robust framework for financial activity. In September 2009, at their Pittsburgh Summit, the heads of state of the G-20 nations committed to strengthening the financial system and the world economy. With regards to derivatives specifically, the G20 wrote:

> *Improving over-the-counter derivatives markets:* All standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements. We ask the FSB and its relevant members to assess regularly implementation and whether it is sufficient to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse.[4]

Two major strategic initiatives resulted from of this consensus. One is the reporting of derivatives transactions to centralized trade repositories. Trade repositories have been established covering derivatives in all major asset classes —interest rates, credit, equities, commodities and foreign exchange. Through these new repositories, regulators around the world now have much greater insight into activity in the OTC derivatives market. With this development, the amount and completeness of information that will be available to regulators are unprecedented in global markets. To fully leverage the potential of this information, it is important that legal and regulatory barriers that obstruct or impede regulatory transparency be avoided and/or dismantled. It is also important that the proliferation of trade repositories within and across borders be avoided.

The other major initiative is the continued evolution towards clearing of OTC derivatives transactions. Clearing houses spread the risk of any one member's default among all the other members, which lowers the risk of a domino-like series of defaults.

The Migration to Clearing of OTC Derivatives

As Table 1 shows, the amount of cleared interest rate derivatives has increased significantly in size in the past five years. At June 30, 2012, 54% of the notional outstanding of interest rate derivatives were cleared. (Please see the "% Cleared" line item in Table 1 on the next page.)

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[4] The G-20 2009 Pittsburgh Summit Leaders Statement.

The concerted efforts of market participants and clearing houses who actively participate in a process called portfolio or trade compression have also led to large reductions in notional amounts outstanding. Compression of cleared OTC derivatives has the effect of reducing the percentage of outstanding swaps that have been cleared. Adjusted for the effects of portfolio compression, nearly two-thirds of all transactions in the interest rate swap market have been cleared already.

In addition, the notional amount outstanding of non-cleared interest rate derivatives has steadily decreased. The level of non-cleared interest rate swaps is less than 60% of what it was five years ago.

Market participants have also recently begun to clear OTC Forward Rate Agreements (FRAs), and at mid-year 2012, the level of non-cleared FRAs had fallen to half of what it was two years earlier.

Table 1[5]

ADJUSTED INTEREST RATE OTC DERIVATIVES MARKET

(Based on BIS notionals and SwapClear clearing data)

Notional outstanding - US$ trillion	**Dec. 2007**	**Dec. 2008**	**Dec. 2009**	**Dec. 2010**	**June 2011**	**Dec. 2011**	**June 2012**
OTC Interest Rate Derivatives	338.7	356.3	342.2	341.0	405.1	362.4	341.2
OTC Interest Rate Swaps Outstanding ($tn)	*255.2*	*265.3*	*241.6*	*240.1*	*292.4*	*262.3*	*246.0*
% Cleared	21.3	28.6	44.6	51.8	50.9	53.5	54.2
OTC FRAs Outstanding ($tn)				*51.6*	*55.7*	*49.2*	*44.9*
% Cleared				--	--	2.8	43.2

In addition to interest rate derivatives, market participants are also clearing OTC credit derivatives, having made great strides in standardizing CDS contract terms. As a result, a number of CDS indices and single-names are now cleared.[6]

To summarize, the trend toward central clearing predates the financial crisis and has accelerated since the crisis. Large segments of the OTC derivatives markets are cleared, in advance of the mandated clearing requirements. Those requirements are expected to increase the portion of the OTC derivatives market that is cleared to about 70% of global OTC derivatives activity.

[5] ISDA Market Analysis, December 2012.
[6] Intercontinental Exchange, Inc.

CURRENT POLICY CONCERNS REGARDING THE TREATMENT OF NON-CLEARED OTC DERIVATIVES

In 2011, the G-20 supplemented their 2009 communiqué with a call for regulators to devise proposals to improve margin arrangements in the non-cleared OTC derivatives market.[7] Market participants also see robust deployment of margin practices as an essential tool for systemic resiliency.

The new margin framework proposed by regulators consists of two elements: variation margin and initial margin. Many OTC derivatives transactions currently involve the payment, or "posting," of variation margin. Variation margin is a mechanism that is used to avoid the build-up of unsecured risk exposures between counterparties. It is posted as portfolio valuations change —essentially a daily settlement or collateralization of amounts owed — and is widely used by market participants. ISDA research[8] reveals that more than 70% of all OTC derivatives transactions — including 84% of those executed by large dealers — are subject to variation margin arrangements. The major exceptions to the practice of posting collateral are sovereigns, the majority of which do not pay variation margin to their counterparties for historical reasons, dating back to times when sovereigns were viewed as risk-free entities. This practice should be reconsidered in the context of the evolving sovereign credit situation. Collateral is also not posted for trades with special purposes vehicles (SPVs). The latter are typically collateralized by collateral within the SPV, which serves to mitigate exposures.

The case for initial margin, on the other hand, is problematic. Initial margin is a safety cushion designed to cover the replacement costs if a counterparty defaults. It is an extra payment made between parties in excess of amounts owed. Initial margin does improve the situation of the non-defaulting party and reduces the risk of default contagion across the system. However, initial margin comes with some very significant costs. It has the potential to significantly strain the liquidity and financial resources of the posting party. As such, it introduces a potentially large amount of risk into the system. Initial margin alone, however, does create a "defaulter pays" model.

History proves that the practice of frequently settling the unrealized valuation changes between two parties using variation margin is beneficial in reducing counterparty risk. It avoids the build-up of large, unrealized exposures that could become destabilizing in periods of market stress.

The AIG and Lehman Brothers situations illustrate the role of variation margin. From inception, AIG did not post full daily variation margin with all counterparties. When its ratings declined, this triggered post-facto variation margin calls on a systemic scale. The liquidity drain caused by the sudden collateral requirements led to AIG's collapse, to widespread fears about systemic contagion and, ultimately, to the government bailout. In contrast, Lehman Brothers posted variation margin daily (and did not post initial margin). It faced no large or sudden increases in collateral requirements. When it collapsed, there were shocks to markets, but there was no contagion in OTC markets and no government bailout. The disruptions arising out of the Lehman Brothers situation had

[7] The G20 2011 Cannes Summit Final Declaration – Building Our Common Future.
[8] ISDA Margin Survey 2012.

to do with the long process of resolving its positions in markets other than OTC derivatives and not market disorder as such. OTC derivatives positions were closed out immediately under ISDA protocols, and OTC derivatives margin was liquidated immediately (notably, OTC margin was not held up at custodians as in other asset classes). Some counterparties did incur losses over and above variation margin held (losses that would have been mitigated by initial margin), but those losses were minor, considering that Lehman was a major global financial institution, compared to the costs of the proposed remedy of mandated initial margin.

As stated above, initial margin has benefits, but they come at a cost. The benefits must be considered in relation to the costs involved. The estimated cost of the purported "remedy," mandatory initial margin, could as noted above run to multiple trillions of US dollars. ISDA has addressed these issues separately in other documents.[9]

[9] ISDA Papers: Initial Margin for Non-Centrally Cleared Swaps: Understanding the Systemic Implications, November 27, 2012 and Letter to BCBS-IOSCO on BCBS-IOSCO Proposal on Margin Requirement for Non-Cleared Derivatives, December 12, 2012

TYPES OF NON-CLEARED OTC DERIVATIVES

Non-cleared derivatives are and will be in demand by a variety of corporations, energy companies, investment managers, pension funds, governments and financial institutions to hedge their risks. Their usage and value was discussed and affirmed in a report by the Financial Stability Board (FSB):[10] "Market participants looking to hedge a specific risk may not find a standardised product that would effectively match their exposure and instead may prefer to use a bespoke product…An implication of this analysis is that non-standardised bespoke products will continue to represent a portion of the OTC derivatives markets."

Estimates of the size of that portion of the OTC derivatives market vary, but it seems clear that it will be significant. As stated in the Second Consultative Document on margin requirements that was recently issued by the Basel Committee on Banking Supervision (BCBS) and the Board of Governors of the International Organizations of Securities Commissions (IOSCO)[11], "a substantial fraction" of OTC derivatives will not be able to be cleared. The paper also cites an earlier IMF study[12], according to which 25% of the interest rate derivatives market, 33% of the credit default swaps market, and significant percentages of other types of OTC derivatives will remain non-cleared.

In ISDA's view, the non-cleared OTC derivatives market will consist of the following:

- The largest portion is likely to include several larger, relatively broad segments, such as cross-currency swaps, interest rate swaptions and options (caps, collars, floors), single-name credit default swaps and various types of equity and commodity swaps that do not fit any CCP's eligibility requirements.

- Another segment will consist of relatively smaller subsets of transactions that lack liquidity because of their unique economic terms (currency denominations, maturities, underlying reference rates, etc.). For example, interest rate swaps in the most popular maturities can be cleared in many different currencies. However, for some currencies, only transactions with shorter maturities can be cleared. The same is true for different swap transaction types. Many different types of interest rate derivatives products denominated in liquid currencies like USD can be cleared. But outside of the major currencies, it is only possible to clear fewer transaction types. An inappropriate restriction on the use of non-cleared derivatives may raise issues of economic sovereignty and economic development for countries outside of the small group of highly liquid currencies.

- It is also possible that some normally clearable OTC derivatives might be non-cleared because their legal and operational terms are not standardized. However, despite what some skeptics say, customization of legal or operational aspects of OTC derivatives contracts is one — but only one — of the reasons that will determine whether a product can be cleared. As we shall see, it is not likely to be a major driver of non-cleared swaps.

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[10] Financial Stability Board; Implementing OTC Derivatives Market Reforms: October 25, 2010
[11] Second Consultative Document, "Margin requirements for non-centrally cleared derivatives" Basel Committee on Banking Supervision (BCBS) and the Board of Governors of the International Organizations of Securities Commissions (IOSCO)
[12] IMF Report, April 2010

- Another segment of the non-cleared market includes many different types of instruments that are not cleared because jurisdictions have exempted certain OTC derivatives users from their clearing requirements. In the US, for example, non-financial end-users that are hedging risks and central banks are not required to clear their transactions. In Europe, nonfinancial counterparties are exempt from the clearing requirement as long as their OTC derivatives positions do not exceed a certain threshold. Pension funds are also exempt for a three-year period.

  The reasons underlying these exemptions are twofold. First, exempted end-users do not pose systemic risks. Second, the operational and economic aspects of clearing would adversely affect their ability to hedge.

In sum, non-cleared OTC derivatives will include a range of instruments, product suites and product categories in all asset classes. There will be segments within each asset class where activity will virtually all be cleared, segments that are mixed and segments that will be largely or totally non-cleared. The following section explores different types of non-cleared transactions within different asset classes.

Key Segments of the Non-Cleared OTC Interest Rate Derivatives Market

Data from the DTCC's Global Trade Repository for Interest Rate Swaps[13] and from SwapClear[14] (one of several CCPs clearing OTC derivatives) illustrate this point regarding the composition of the non-cleared OTC derivatives segment.

DTCC publishes the level of notional amounts and the number of transactions outstanding for OTC derivatives on a weekly basis. As of the week of January 18, 2013, the notional amount outstanding of the global interest rate derivatives (IRD) market at the DTCC was $530.4 trillion and the number of transactions totaled 4.6 million. The DTCC includes OTC interest rate derivatives transactions that are voluntarily[15] reported by the major global derivatives dealers and accounts for the vast majority of the overall market.

Several large segments within this market are not currently eligible for clearing.

This includes **swaptions** — an option to enter into a swap. According to DTCC, there were 194,600 swaption contracts outstanding, totaling $28.4 trillion in notional principal amount. Swaptions have been written in more than 20 currencies with maturities extending past 30 years. They are non-cleared largely due to a lack of liquidity and the associated pricing challenges of such products in periods of distress.

Swaptions play an important role in helping firms — large corporations, banks and financial institutions and asset managers — manage their interest rate, financing and other risks. For example:

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[13] DTCC; Global Trade Repository Reports
[14] SwapClear: What We Clear
[15] With the advent of legislation implementing the G20 commitments, this reporting will progressively become universal and mandatory.

- An industrial company with floating rate debt might want the ability to lock in a fixed interest rate if it thought interest rates would increase. It could purchase an option that would give it the right but not the obligation to enter into a swap in which it would pay fixed and receive floating. In this way, if the swaption were exercised, the floating rate interest payments it would receive for the swap would rise in line with the floating rate interest payments it is required to make.

One of the most common and important uses of swaptions is by financial institutions who want and need to hedge against the risk of falling interest rates. Falling rates generally increase mortgage prepayments, as borrowers refinance their loans. Such prepayments adversely affect the interest income of financial institutions. Swaptions are an essential tool in enabling lenders to manage this risk and they play a critical role in making fixed-rate home financing available for borrowers. This is of particular importance in countries whose mortgage markets feature fixed rates and optional prepayment, such as is common in the United States.

Another very large segment of the non-cleared OTC derivatives market is the **cross-currency swap market**. DTCC data reveals that there were approximately 207,500 transactions outstanding with a notional amount of $16.9 trillion.

Cross-currency swaps are used by companies to achieve more favorable interest rates by issuing debt in alternative currencies. For example, if a US company needs Australian dollars to fund its Australian operations, it could issue USD debt (which it can access more cheaply) and then enter into a cross-currency swap to convert the USD proceeds and ongoing liabilities into Australian dollars. The alternative would be to issue the debt in Australia (where it is less well known) at an all-in higher rate in Australian dollars.

Cross-currency swaps are also used by investors and pension funds. Investors use them to manage or eliminate foreign currency exposure from foreign assets that they purchase. Pension funds, insurers and other liability-driven investment managers also use them to manage the currency risk in their asset portfolios.

Other interest rate options also comprise a broad segment of the non-cleared OTC interest rate derivatives markets. Interest rate options total $12.3 trillion, or 78,400 transactions, at the DTCC repository.

Interest rate options come in all shapes and sizes. They can be designed to cap, put a floor under or put parameters over and under floating rate payments.

Some simple examples include:

- **An interest rate cap,** in which a buyer seeking to protect against rising rates can cap his exposure above an agreed rate.

- A **bond option**, in which a buyer has the right but not the obligation to purchase or sell a bond within a certain time period. Bond options are used to hedge against changes in bond prices.

- A **Bermudan option** is used by callable bond investors to hedge against the call risk of their bonds.

Another important segment of the non-cleared market is **inflation swaps.** Inflation swaps are a type of interest rate swap in which a counterparty receives a floating rate payment based on an inflation-related reference rate. There were 82,900 inflation swaps contracts outstanding at DTCC totaling $2.8 trillion in notional. Inflation swaps currently are not accepted for clearing and might not be accepted in the near future.

Inflation swaps are used by pension funds, as well as companies in regulated and other industries (such as utilities and insurance) where assets or liabilities are tied to price indices. In such situations, a fund or company may use an inflation swap to help ensure that its assets and liabilities are matched and that inflation does not adversely affect its ability to meet its obligations. As an example, the typical pension fund has liabilities (the benefits it will eventually pay out) whose values vary with inflation. By hedging against the impact of inflation, the pension fund can help ensure it will have the funding required to meet its obligations.

Non-Cleared Segments of Largely Clearable Interest Rate Derivatives Markets

Another part of the non-cleared OTC derivatives markets will consist of segments of largely clearable product areas that lack liquidity because of their unique economic terms (currency denominations, maturities, underlying reference rates, etc.).

For example, the largest segment of the IRD market is interest rate swaps (IRS), which measures $301 trillion in notional at DTCC, representing 3.5 million transactions. The vast majority of — but not all — activity in this segment will likely be cleared going forward.

For example, consider one IRS category: interest rate swaps with a maturity ranging from 15 to 19 years. There were 143,717 transactions of this type outstanding (written in more than 14 currencies) representing $7.8 trillion in notional principal amount. But of the total, there were approximately $42.5 billion or 3,350 transactions in currencies that were not currently eligible for clearing. In other words, slightly more than 99% of this category of interest rate swaps is denominated in currencies that are eligible for clearing. The remainder, slightly more than one-half of one percent of the 15-to-19 year swaps bucket, is in currencies not currently eligible for clearing.

Similar situations — in which there are small, non-cleared sectors of otherwise largely clearable market segments — exist in other IRD categories. Individually, these non-cleared sectors might seem inconsequential in size, and thus if activity in them were curtailed, it might appear that costs of doing so would be minimal. This view, however, obscures an important point: the users of such transactions are hedging specific risks in their businesses and often have no other alternative to managing that risk. Users of an IRS that is denominated in a currency (or that has a maturity) that cannot be cleared do so because it meets their business and financial needs.

Another example of this type is **FRAs**, which are widely used by banks in asset/liability management. FRAs in the DTCC repository totaled $82.6 trillion in notional, representing 249,500 transactions. They were written in 20 or more currencies for maturities up to 10 years. It is possible to clear two-year FRAs in 12 currencies and three-year FRAs in four currencies. These buckets totaled approximately $79–80 trillion, which is upwards of 97% of the entire FRA segment. The remainder represents FRAs written in currencies or maturities that were non-cleared.

Overnight Index Swaps (OIS) are another case in point. In an OIS, the floating rate leg is based on a reference index such as the Fed Funds Rate. OIS enable users to manage their interest rate risks better by matching the maturity of their assets and liabilities. This is particularly important for firms with short-term funding, who can face sudden mismatches between their costs of funds and the interest income received on their assets.

There were nearly 110,000 OIS transactions outstanding, totaling $53.3 trillion in notional principal amount. This included OIS in more than 17 currencies in maturities ranging from one to more than 30 years. According to SwapClear, the CCP currently clears OIS in five different currencies in up to two years in maturity.

Comparing DTCC data to SwapClear information, the clearable segment of the OIS market represents approximately $47 trillion in notional and 55,000 transactions. Conversely, the non-cleared segment of the OIS market measures about $6 trillion in notional and 55,000 transactions. Most of the non-cleared segment consists of transactions in currencies that can be cleared (such as USD, EUR and GBP) but in maturities that can't be cleared because they lack liquidity. So once clearing becomes available for longer-dated OIS transactions in the most liquid currencies, virtually all of this product segment will become clearable.

As can be seen, small portions of specific types of IRD products that are otherwise clearable — be they IRS, OIS or FRAs — may not be clearable due to their tenor, currency or reference rate and other economic features. These transactions are, however, important to their users in helping to manage their business and financial risk.

Other Segments of the Non-Cleared OTC Derivatives Market

For the past several years, many types of **credit derivatives** (CDS) have been cleared. CDS transactions enable credit protection purchasers to hedge the credit risk of, or, alternatively create a credit risk position on a particular entity. CDS are very important risk management tools. They are often used to hedge the risk of default that may arise in holding debt (either bonds or loans). A company may hedge its exposure to a borrower to protect it should the borrower default.

Today, most activity in the liquid CDS indices and single-names is eligible for clearing. And much of this activity has been cleared. However, non-cleared CDS will remain important in this market — many reference entities are lightly traded and liquidity is therefore low. Most CDS trading occurs in a small percentage of reference entities. Sixty percent of all CDS index trades, for example, is in five indices.[16] Further, clearing single-name CDS would create significant "wrong-way risk" and these names may remain outside clearing.

Many OTC commodity and energy derivatives will also remain non-cleared. In these smaller OTC derivatives asset classes, there are relatively fewer transactions. They are generally tailored to meet the specific needs of an end-user. One example: a school district in Chicago wants to hedge its heating oil costs for the upcoming winter. The available exchange-traded futures and options are based on European and Texas benchmark prices. Neither of those regions will experience the same weather as Chicago, meaning those derivatives will leave the school district with an inappropriate hedge. By using a tailored OTC derivative solution, the district can obtain a more precise hedge for its local fuel oil prices. That derivative will be too bespoke for it to be cleared by a CCP. The lack of liquidity and the great degree of customization possible make clearing more difficult.

Certain types of equity derivatives are also non-cleared. OTC equity derivatives are a relatively small segment of the total OTC derivatives market, as the more significant portion of the equity derivatives space consists of highly standardized listed and cleared products (listed options and futures). As an illustration, the quarterly turnover of OTC equity derivatives is approximately US$7 trillion by notional value, roughly four times smaller than the quarterly notional turnover in equity exchange-traded derivatives of US$30 trillion. Accordingly, the residual OTC segment of this market represents transactions for which central clearing may be harder to achieve, either due to the bespoke nature of the contracts or to the geographically fragmented nature of the underlying equity market, both of which result in a lack of sufficient scale to attract investment from a clearinghouse.

Some examples of equity derivatives unlikely to achieve central clearing include:

- **Certain equity and equity index options**: Non-cleared options typically represent non-standard underlying assets (emerging markets equities, bespoke equity baskets and bespoke indices) or non-standard option characteristics (barrier options, dividend-reinvestment options, or options incorporating cross-currency features), which respond to specific investor requirements but may not represent a sufficiently large market potential to attract investment from a clearing house. The guidelines to the recent BIS/IOSCO quantitative impact study incorrectly assumed that all these options would be clearable.

[16] DTCC Credit Default Swap (CDS) trade repository for January/February 2012

- **Total return swaps**: Although widely used by institutional investors, these are primarily financing instruments. Accordingly, and despite the simple risk profile of these products, the specific nature of the financing terms available to each customer, and the wide range of underlying assets (shares, equity indices and tailor-made baskets of shares) will make implementation of clearing challenging. The guidelines to the recent BIS/IOSCO quantitative impact study incorrectly assumed that all these equity swaps would be clearable.

- **ESOPs**: In order to facilitate employee share ownership, banks typically structure facilities for companies to allow their employees to invest in their employer's share capital with capital protection. These investment plans are necessarily tailor-made to adapt to each company's investment plans and to allow employees the flexibility to manage their investment.

- **Correlation swaps**: Banks often acquire equity correlation risk as a by-product of their structured equity-linked notes distribution to investors. Correlation swaps were developed to allow banks to effectively reduce their risk exposure. While important for banks' risk management, the bespoke nature of these swaps means that they unlikely to attract investment from a clearinghouse.

Some of these products will prove too challenging to clear due to their bespoke nature, while others are potentially clearable but might not represent a sufficient commercial opportunity to attract the necessary investment from a CCP. Because of this, initial margin calibration rules, which are intended to incentivize central clearing, will not achieve the objective of promoting central clearing, but will simply dissuade derivatives users from engaging in otherwise economically useful investment or risk-hedging activity. Where clearing solutions are not available, margin rules should be risk-sensitive only and not attempt to create a behavioral bias.

On the other hand, there are many examples of derivatives developed in the bilateral OTC environment that have ultimately found their way into clearing: Dividend swaps, which enable institutional investors to hedge dividend risk on companies in an individual security or a basket or index of securities, are an example. The dividend swaps market is viewed by many as a gauge of the financial health of companies. It is also a good example of how the non-cleared OTC markets complement the exchange-traded markets, creating new products that eventually become standardized and listed.

In this case, banks' retail structured products businesses in the 2000–2005 time frame left them exposed to the risk of reduced dividends. Since dividends are generally correlated with economic cycles, banks were eager to offload this risk during an economic downturn. Dealers devised swaps on dividend indices and individual stocks, which allowed banks to hedge their dividend exposures. The exchanges took notice of this new product and started adapting it for clearing and exchange trading. Eventually they listed dividend futures on indices and individual stocks, and then options on those futures. Ultimately, a significant proportion of the standardized volume has progressively migrated from the bilateral OTC environment to the exchange-traded and centrally cleared futures and options markets.

THE BENEFITS OF NON-CLEARED OTC DERIVATIVES

All OTC derivative transactions provide their users with the ability to isolate, manage and efficiently match or offset a particular risk or set of risks. Firms that know how to manage risk must be able to take or transfer risks appropriately. Firms that do not want risk must be able to shed or transfer it so they can focus on their fundamental business. This, ultimately, is what OTC derivatives are all about, regardless of whether they are cleared or non-cleared.

If users are forced to shift away from using non-cleared derivatives and instead employ imperfect hedges, they will be faced with residual unwanted risk. This is the risk (commonly called basis risk) of market price changes between the underlying position and the hedging derivative instrument due to differences in underlying economic factors.

Basis risk is a major issue for all types of firms — corporates, energy producers, sovereigns, governments, asset managers and financial institutions — that want and need to hedge their exposures. It drives two important rationales for using OTC derivatives (whether cleared or non-cleared).

First, as noted above, derivatives end-users want to avoid taking on basis risk in their hedging strategies. In addition, the basis risk of certain hedging transactions may be so significant that the users do not qualify for hedge accounting treatment. This means that the derivatives user could not offset in the same accounting period for accounting purposes the changes in value of the derivative with the changes in value of the underlying asset. This can add volatility to reported earnings.

The absence of hedge accounting treatment introduces the potential for significant volatility in a derivatives user's income statement. Many companies — particularly those that are publicly traded — wish to avoid this type of accounting impact on their financial results. As a result, they may decide to forego their hedging strategy and choose to remain exposed to the risk they previously wished to manage.

Even more importantly, if appropriate hedges and hedge accounting treatment were not available, it is possible that firms may decide not to engage in previously productive activities that gave rise to the underlying risk in the first place. This could have a dampening effect on economic growth, capital investment and job creation.

The second way in which basis risk drives derivatives usage has to do with the role and functioning of derivatives dealers in risk management. Such firms may end up taking on basis risk as part of their role in providing instruments that enable users to perfectly hedge their risk. Because they are active in the market, dealers will be able to largely or entirely offset this risk as they meet the needs of other users. Any residual risk can also be managed by such firms via other transactions, including OTC derivatives transactions that are non-cleared. Firms engaged in such activity provide an important benefit: They take on risk they are more qualified to manage from firms that are less qualified to do so.

WHY WILL SOME — BUT NOT ALL — OTC DERIVATIVES BE CLEARED?

In ***The Economics of Central Clearing: Theory and Practice,***[17] Professor Craig Pirrong outlines the attributes of OTC derivatives products that affect their suitability for clearing. These include:

- Standardization;
- Complexity, in terms of the difficulty of valuing a product economically;
- Liquidity, which facilitates accurate pricing and risk modeling; and
- Risk characteristics, including the product's volatility, tail/gap risk and dependencies/correlations.

The Financial Stability Board, in their October 2010 report, also discusses the factors governing the suitability of clearing and comes to a similar conclusion. As the FSB states:

> "When determining whether an OTC derivative contract is to be regarded as standardised and suitable for central clearing, authorities should take into account:
>
> - the degree of standardization of a product's contractual terms and operational processes;
> - the depth and liquidity of the market for the product in question; and
> - the availability of fair, reliable and generally accepted pricing sources."

All of these factors will determine whether a product is suitable for clearing. There may also be instances in which a clearinghouse decides, for commercial reasons, not to clear a certain product. Activity in that product may be insufficient to interest the clearinghouse in the viability of offering clearing for it.

It is fair to say that there is a broad consensus on the general principles that underlie whether a product can be safely cleared. There may, however, be less clarity on certain aspects of these attributes, and their implications, as we outline in the next section.

Standardization

Standardization, as noted above, can be an important prerequisite for clearing. But when it comes to OTC derivatives, what exactly does standardization mean? There are, for example, a plethora of choices counterparties need to make when they transact an interest rate swap. Is it governed under English law or New York law? Can counterparties net their exposures in the event of an early termination? What is its tenor (5 years, 10 years or another time frame)? What is the notional amount? Is it a fixed-floating swap, and if so, what reference rates are involved? Must all of these choices be standardized?

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[17] The Economics of Central Clearing: Theory and Practice

From this example, it's clear that there are different aspects to standardization. Some have important implications for clearing and others do not.

Legal standardization, for example, is required for an OTC derivative to be cleared. The CCP needs assurance that all the trades it clears will have the same legal terms so that they can be netted and risk managed effectively. The widespread adoption of standardized master agreements, like the ISDA Master Agreement and schedules, facilitates this process.

Operational standardization is another important consideration. To be cleared, the initial trade terms, ongoing pricing levels and other data points need to be easily obtained by the CCP for it to set initial and variation margin and to risk manage the product. The confirmation and other post-trade processes must also be well established and effective.

Economic standardization, however, is another matter. Many interest rate derivatives with bespoke economic terms can be cleared. For example, USD interest rate swaps of varying maturities and notional amounts can be cleared, even though their economic terms vary.

Conversely, "standardized" derivatives can sometimes not be cleared. For example, an interest rate swap in a currency such as the Mexican peso cannot be currently cleared, even if all the other terms mirrored a USD swap and all contract terms were standardized. Similarly, many single-name credit default swaps can not be cleared even though its terms are identical to the terms of a single-name CDS that is clearable.

Complexity

The complexity of an instrument is another key factor in determining whether an instrument — even a standardized instrument — can be cleared. As Professor Pirrong notes: "It is necessary to distinguish between standardization of contractual terms, and the complexity of an instrument. An instrument can have standardized terms but be economically complex. For instance, it is possible to standardize the terms of exotic options, but that does not eliminate the complexity of these instruments."

Liquidity

The connection between the liquidity of a product and its suitability for clearing is easy to see. Small segments of the OTC derivatives markets may involve few transactions and may not be liquid, meaning they can't be cleared.

In addition, it is also important to understand that for many OTC derivatives products liquidity tends to decline over time. As Professor Pirrong notes:

> In futures and exchange-traded options, liquidity tends to increase as a contract approaches expiration, peaking a few weeks before contract maturity. In contrast, in many OTC products, liquidity tends to decline over time, and these positions are often retained for extended periods. For instance, a 5-year credit default swap has the greatest liquidity when it is first traded, with about 5 years to maturity. As time passes, liquidity in the product declines: A CDS with 4 years to maturity is far less liquid than current 5-year CDS. This decline in liquidity can be pronounced, and such illiquid positions can remain open for years.

The liquidity of a product is also affected by market stresses, as market participants generally engage in a “flight to quality” during such times. This needs to be taken into account in determining whether a particular product can and should be cleared.

CONCLUSION

ISDA, the OTC derivatives industry and global regulators share a common goal: safer, more efficient markets. The significant progress made in key areas of financial regulatory reform — in terms of clearing and transparency — evidence this commitment.

While most of the OTC derivatives markets is expected to be cleared in the future, the non-cleared OTC derivatives markets will remain in demand as corporations, asset managers, sovereigns, governments and financial institutions want and need customized risk management tools.

Non-cleared OTC derivatives play a vital role in many industries and geographic regions. They are used to manage the risk of changing commodity and energy prices and interest rates. They are used in asset/liability management and to risk manage cash flows and capital raising activities.

In short, any impairment to the liquidity of these tools will affect economic growth, capital investment and job creation.

So it is important to appropriately understand the structure and the composition of the non-cleared OTC derivatives market. As this paper illustrates, it consists of several different segments or categories. Some broad market segments — including interest rate swaptions and options (caps, collars, floors), cross-currency swaps, and various types of equity and commodity swaps — will likely remain non-cleared because they do not fit the eligibility requirements of CCPs.

Individual sectors (both small and large) of many otherwise clearable OTC derivative product segments will likely remain non-cleared due to a lack of liquidity in certain transactions because of their unique economic terms. Some normally clearable OTC derivatives will likely be non-cleared because of their specific legal and operational terms. Many end-users in jurisdictions around the world are exempt from clearing requirements, and their transactions will remain non-cleared.

The inability to use non-cleared OTC derivatives has consequences for market participants, including the inability to eliminate basis risk and the inability to qualify for hedge accounting. Such consequences could deter users from risk-hedging activities and ultimately from engaging in the underlying economic activity for which the hedges were considered.

One of the major reasons why certain product and transaction types cannot be cleared is their liquidity. Standardization is another factor, though it is important to understand that transactions with bespoke economic terms can be and are cleared. It is also important to understand that firms have strong economic incentives to clear.

The regulatory treatment of non-cleared OTC derivatives should reflect and be based on their underlying risk characteristics as well as on their significant uses and value. Proposals that significantly alter their regulatory treatment or that would increase their costs could have significant unintended consequences on economic and financial market activity.

APPENDIX 1: AN OVERVIEW OF THE DERIVATIVES MARKETS

There are two basic types of derivatives transactions: those that are exchange-traded and those that are traded over-the counter (OTC). Their basic features and differences are shown below in Table A.

Table A[18]

OTC SWAPS MARKET vs. LISTED FUTURES MARKETS

	OTC Swaps	Listed Futures
Tradeable Instruments	>> 100,000	< 1,000
Trading Counterparties	< 1,000	>> 100,000
Retail Participation	None	Significant
Daily Trades	< 20,000	> 1,000,000
Trade Size	Very Large	Small
Market Structure	Bilateral (OTC)	Exchange
Clearable	70% to 80%	All

Exchange-Traded Derivatives

As can be seen, exchange-traded derivatives are relatively few in number but are widely traded in terms of number of contracts and number of counterparties. They are standardized in all aspects (i.e., their legal, operational and economic terms). As a result, exchange-traded derivatives can be, and are, cleared through CCPs. Indeed, trading algorithms used by exchanges typically do not allow market participants to choose their counterparties, so they cannot manage their credit risks bilaterally and interposition of a CCP is essential.

According to the Bank for International Settlements (BIS), the notional principal amount of exchange-traded futures and options contracts was approximately $59 trillion at June 30, 2012.[19] This figure is the open interest of these contracts, which the BIS defines as "equivalent to the sum of positive net positions in each contract across traders."[20]

Over-the-Counter Derivatives

Over-the-counter (OTC) derivatives are bilaterally traded derivatives contracts, and market participants are relatively few and institutional in nature. The contracts come in almost limitless shapes and sizes, reflecting the ability of users to customize their terms.

[18] ISDA/SIFMA Paper: Block trade reporting for OTC derivatives markets, January 2011
[19] BIS: Derivative financial instruments traded on organized exchanges, BIS quarterly data table 23A; available on the BIS web site;
[20] BIS: A user's guide to the Triennial Central Bank Survey of foreign exchange market activity; December 2010

Trading in OTC derivatives contracts is much lower than in exchange-traded instruments; roughly 20,000 contracts are executed each day by users around the world.[21]

The most recent BIS data (as of June 30, 2012) puts the notional amount of OTC derivatives outstanding at $638.9 trillion. Some market participants and policymakers often use the OTC derivatives notional amount outstanding and compare it to the open interest of exchange-traded derivatives to compare the relative sizes of these markets. Unlike open interest, however, notional amount is not considered to be an accurate measure of risk. Gross market-to-market value, a BIS measure of credit exposure that reflects the market value of all outstanding contracts before netting, is a better measure. It totaled $25.4 trillion at June 30, 2012.[22]

Netting and collateral are important risk reduction tools. Most derivatives are negotiated under master agreements between two counterparties. The most widely used of these is the ISDA Master Agreement, which accounts for 85%of them. According to the ISDA Margin Survey 2012, there were 137,869 active master agreements in place.[23] The agreements allow the parties to use bilateral netting to reduce the gross payments they owe one another.

In addition to netting, collateralization also enables counterparties to mitigate risk exposures. Collateral is exchanged between the counterparties over the life of OTC derivatives contracts as their market value changes. This collateral is akin to variation margin in the exchange/clearinghouse model. In 2011, there was $3.6 trillion of collateral in circulation, according to the ISDA Margin Survey 2012.[24]

Netting and collateral reduce the credit exposure on outstanding OTC derivatives to $1.1 trillion, which is 0.2% of notional outstanding and 4.3% of gross mark-to-market value.[25]

Another way in which market participants manage their credit risk is by clearing their OTC derivatives transactions. Clearing of OTC interest rate swaps has occurred for over a decade. Today, nearly two-thirds of the interest rate swap markets is cleared (adjusting for the impact of portfolio compression), largely due to voluntary actions by banks.[26]

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[21] ISDA/SIFMA Paper: Block trade reporting for OTC derivatives markets, January 2011.
[22] Statistical release; OTC derivatives statistics end- June 2012: Monetary and Economic Department, November 2012.
[23] ISDA; ISDA Margin Survey 2012, May 2012.
[24] ISDA; ISDA Margin Survey 2012, May 2012.
[25] ISDA; ISDA Market Analysis, December 2012
[26] ISDA; ISDA Market Analysis, December 2012.

APPENDIX 2: Excerpt from the Financial Stability Board Paper
Implementing OTC Derivatives Market Reforms, October 25, 2010

2.3 Bespoke OTC Derivatives

… Despite the benefits that standardisation and central clearing of OTC derivatives products provide, legal and operational standardisation imposes structures and limitations on the economic function of a derivatives product. Market participants looking to hedge a specific risk may not find a standardised product that would effectively match their exposure and instead may prefer to use a bespoke product. Because they are customised to meet particular user needs, bespoke OTC derivatives products often will not have the level of standardization required for central clearing or trading on organised platforms.

… An implication of this analysis is that non-standardised bespoke products will continue to represent a portion of the OTC derivatives markets. However, as non-standardised products are not suitable for central clearing, bilateral risk management of these products should be improved.

2.3.1 *Characteristics of bespoke products*

Bespoke products range from tailored but very simple to products that are highly complex. Customised features of bespoke products may include, among others: (i) underlying assets; (ii) strike prices; (iii) payouts; (iv) currency; (v) caps and floors; and (vi) exercise dates. Examples of bespoke products and typical users are set out in Annex 5.

Some products may be so complex or customised they may require a day or more to price (and weeks to negotiate the governing documents). There may not be secondary marketpricing sources for many bespoke derivative products. These factors can make central clearing of bespoke products difficult. Although they are customised, if bespoke products use some sufficiently standardised terms such as exercise dates, they may lend themselves to some level of operational standardisation. Bespoke products that reach a sufficient level of standardisation may be clearable and appropriate for trading on organised platforms.

2.3.2 *The demand for bespoke products*

Demand for bespoke products comes from a variety of market participants. These include non-financial corporate end-users such as airlines, financial sector end-users such as insurance companies and banks, as well as hedge funds and institutional investors including pension funds, mutual funds, university endowments, and sovereign wealth funds. Derivatives dealers themselves also may have tailored needs that can be met through the use of bespoke products.

The primary reasons why some market participants currently prefer bespoke products to standardised products, and may continue to do so in the future, are: (i) to achieve more precise hedging; (ii) to meet the stringent criteria required for hedge accounting treatment; and (iii) to create tailored investment strategies. In addition, with the implementation of mandatory clearing requirements and their associated additional costs, market participants may have increased incentives to use bespoke products. Another factor that may drive the demand for bespoke products is that they may be tailored to exploit loopholes in regulations. [24]

Market participants may choose bespoke products when they are better able to meet their specific, non-standard, hedging needs. In some cases, an OTC derivatives product that is precisely tailored to a user's specific needs may allow the user to hedge at lower cost than if the user relied on more standardised products. [25]

In addition to more precise hedging, many market participants use bespoke products because the hedges that they provide are more likely to meet the stringent criteria for hedge accounting under the standards of either the International Accounting Standards Board (IASB) or the U.S. Financial Accounting Standards Board (FASB). One of the criteria requires a demonstration of a high degree of correlation between the hedging derivative and the hedged risk both at the outset of the hedge and on an ongoing basis, which is referred to as being "highly effective." [26] If this criterion is not met, and the derivative used to hedge a position and the position itself receive different accounting treatments, these differences can create volatility in the firm's accounting profit and loss (P&L) statement and can increase the firm's cost of capital. [27]

Market participants also may invest in bespoke products as a method to more efficiently take on risk exposures for position-taking purposes. For example, an investment manager may have view on how a particular set of firms will perform over time and use a derivative to obtain equity exposure to that particular basket of firms. [28]

[24] For example, an institutional investor that is bound by rules that prevent it from investing in equities may be able to invest in OTC derivatives such as equity-linked notes, a fixed-income instrument whose performance is linked to equity markets. Additionally, if regulatory capital charges differ for illiquid loans in the banking book, and for tradable products whose performance is tied to those loans, then an OTC derivative product that is tied to those loans may permit the end-user to obtain exposure to some of the risk of those loans while avoiding the regulatory capital charges associated with directly investing in the loans themselves. Hedge accounting requirements and rules that require derivatives exposures to be marked at their fair value were put in place to address this particular issue.

[25]For example, a firm located in Country X that makes periodic purchases from Country Y on specific dates faces unique firm-specific risk related to the average Country X/Country Y currency rate that the firm pays on the days that it exchanges Country X's currency for Country Y's currency to effect purchases from Country Y during the month. A firm may choose to use an OTC derivatives product that is based on the average of the exchange rates on the firm's purchase dates if such bespoke products provide the firm with a more effective and less costly hedge than is available by using only standardised products.

[26]Among the requirements for a hedge to be highly effective is a requirement that the hedging instrument (derivative) be expected to achieve high offset, generally interpreted in practice as a change of 80 – 125% of the change in the value of the hedged item.

[27]In some cases, movements toward fair value accounting can result in volatility from derivatives being automatically offset against hedged risks, reducing the need for hedge accounting treatment. However, many firms may still desire hedge accounting treatment even if all financial instruments are measured at fair value on the balance sheet. Moreover, fair value rules and hedge accounting rules are currently being modified. This is expected to take time for both the international financial reporting standards and US GAAP, and the final shape of these rules is uncertain. See Annex 6 for additional detail on hedge accounting, the fair value option and FASB/IASB consideration of fair value accounting.

[28]It may be less expensive to invest in a bespoke derivative product whose value is linked to how that basket of stocks performs than to invest in the underlying stocks, especially if some of them are illiquid. Because the firms that are included in a basket are customized for the investor, such positions, although individually simple, are highly bespoke.

Annex 5:
Examples of bespoke products and typical end-users

Bespoke product	Typical end-users
Interest rate swap whose floating rate is reset on a customised set of dates	Those seeking to hedge their future exposures to interest rate risk.
Put options on a basket of stocks	Investors with downside exposure to the stocks in a basket seeking downside hedging protection. Purchasing protection on the basket is less expensive than purchasing protection on each stock separately. Alternatively, one could purchase protection on a standardised index, but this involves basis risk.
Natural gas swaps or options with a customer- chosen underlying spot natural gas price	Chemical companies, electricity producers, users of refrigeration services and other large-scale corporate users of natural gas.
Option to purchase a synthetic bond at one of a set of specific future dates (a Bermudan option)	Investors in callable bonds, such as pension funds and insurance companies. Investors in callable bonds run the risk that the bond will be called early by the bond issuer on one of a set of pre-specified call dates. A Bermudan option gives the option holder the right to purchase a bond with the same characteristics on the callable bond's potential call dates. This helps the buyer of the option hedge against the call risk.
Option whose payoff is based on the yield spread between 1-year and 6-month bonds one year from the date of inception of the option contract	Investors seeking to speculate on spread widening or narrowing or hedge against that risk. It may be less expensive to invest in the option than hedge or speculate by trading in the underlying bonds.

[1] One example is a put option that insurance companies may purchase from derivatives dealers in order to protect against principal shortfalls for variable annuity products. The protection that is provided needs to be tailored to the characteristics of the different pools of variable annuity investors, and the asset portfolios that the investors chose. We are aware of trades with greater than 100 pools of investors protected, and the period of protection lasting for more than 30 years.