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The OTC Derivatives Reform: Central Clearing And Implications On Banks' Hedging Policies

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Topics

- **Structure and Size of the OTC Market**
- **Transparency Requirements: Mandatory Reporting to Trade Repositories**
- **Central Clearing of “Standardized” OTC Derivatives**
  - Who will be affected and when will it be implemented?
  - OTC Products subject to Clearing
  - Margin Requirements for Centrally Cleared products
- **“Electronification”: Trading on Electronic Platforms**
- **Margin Requirements for Non-Centrally Cleared OTCs**
- **The New Basel 3 Framework on Counterparty Credit Risk**
- **What Next? The “Futures” of the OTC Derivative Market**

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In A Market Of $693 Trillion Dollars* Of OTC Not. Outstanding

Reform Covers Types That Are More almost 87% Of Current Market

	Notional Amount Outstanding USD Trillions	Percentage
Interest Rates	**$577.27**	**83.3%**
FX	**$81.02**	**11.7%**
Credit Derivatives	**$24.84**	**3.6%**
Equity	**$6.96**	**1.0%**
Commodities	**$2.73**	**0.4%**
Unallocated	**$0.08**	**0.01%**
TOTAL	**$692.91**	

- **Subject to Clearing:**
  - Interest Rates
  - Credit Derivatives
- **Reforms kick in for new Trades**

*As of end-June 2013. Source: BIS, “OTC Derivatives Statistics at end-June 2013” (November 2013).

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Reform Brings A Big Up-Tick In Buy-Side Involvement

- **Based on current data, the OTC interest rate and credit derivatives market is approximately**
  - 70% Dealer-to-Dealer
  - 30% Dealer-to-Buy-Side
- **Dealer-to-Dealer already almost 90% Centrally Cleared**
- **Dealer-to-Buy-Side is largely Uncleared**
  - Change will be driven in the U.S. by the Dodd-Frank implementation, and in Europe by Emir
  - In the US the Clearing Mandate has already been carried out in 3 phases

Source: S&P Capital IQ analysis based on TriOptima (2012) for Rates and BIS data (2012) for Credit.

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The OTC Derivatives Landscape

- **Primary regulatory bodies**
  - U.S., Dodd-Frank: CFTC (Commodity Futures Trading Commission) and SEC (Securities Exchange Commission)
  - Europe, EMIR: ESMA (European Securities and Markets Authority) and EBA (European Banking Authority)
  - Asia, Local Legislations: Domestic regulators

- **Key requirements of the reform**
  - Transparency – Trade repository enables participants with trading activity discovery
  - Central Clearing – Central Counterparties (CCPs) for standardized OTCs
  - "Electronification" – Standardized OTC products to be traded on Exchanges or Electronic Platforms
  - Margins and Capital requirements for Uncleared trades – Bespoke OTC products subject to minimum Margining and higher Capital Requirements (per Basel 3)

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Transparency: Trade Repository Requirements

- **In the past two years, Regulators finalized a series of rules related to the reporting of Derivatives transactions in an effort to increase Transparency in the market.**
- **This requirement went live in the U.S. (December 31, 2013) and Europe (February 12, 2014)**
  - In Other Regions the final rules are still to be finalized
- **Although the Regulatory frameworks in the US and Europe show broad similarities, there are significant differences not only on the asset class coverage, but also on the reporting counterparty and the time of reporting:**

	US	EUROPE
Requirements	**Swap Repositories Data (SDR)**	**Trade Repositories (TR)**
Asset Class Coverage	OTC	OTC + Exchange-Traded Derivatives*
Mandatory Reporting Date	December 31, 2012	February 12, 2014
Reporting Counterparty	One Counterparty required	Both Counterparties required (delegation of the Reporting allowed)
Timing of the Reporting	Real-Time	End-of-Day

Source: Our elaborations on CFTC (2012) and EMIR (2012).

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Central Clearing: Mandatory OTC Clearing Roll-Out

- **Rules apply to all <u>new</u> OTC Trades**
- **Mandatory clearing introduced in the U.S. for Interest Rate Swaps (IRS) and certain Credit Default Swaps (CDS) indices, as follows:**
  - March 11, 2013: swap dealers, major swap participants, and private client funds
  - June 10, 2013: asset managers
  - September 9, 2013: pension funds
- **Expected in Europe in the first half of 2015**
- **Implemented in Japan**
  - Rest of Asia… to be determined
- **Now… Buy-Side institutions are the new Counterparties of Clearing Members in the new OTC clearing market**
  - Previously, OTC clearing was almost exclusively a Dealer-to-Dealer market

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Types Of Entities Impacted

- **In the U.S., OTC derivatives dealers and other financial institutions are fully obliged**
  - However, non-financial counterparties qualify for some exemptions
- **Europe, OTC derivatives dealers and the majority of other financial institutions are fully obliged**
  - Pension funds will be exempt for the first three years (implementation date to be defined)
  - And non-financial counterparties are covered if positions are above specified thresholds
- **In Japan clearing is obligatory**
  - Rest of Asia… still to be determined

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Bulk Of Cleared OTC Products Are The Most Standardized

Drill-Down On The 81% Clearable (Interest Rate And Credit Derivatives)

- **On the Interest Rate (IR) derivatives side***
  - 53%: Vanilla IRS (Interest Rate Swaps)
  - 29%: Forward Rate Agreements (FRA), Overnight Indexed Swaps (OIS), and Basis Swaps
- **The remaining approximately 18% – Cross-Currency Swaps, Caps/Floors, Inflation Swaps, Swaptions, and other products – will be uncleared and subject to different treatment**
- **On the Credit derivatives side *, only CDS Indices (CDXs) representing 45% of total will be cleared**
- **Uncleared include:**
  - 50%: Single-name CDS
  - 5%: Includes Multi-Name "Tranched" CDS

* As of March 2014. Source: SIFMA, "Derivatives Statistics" (updated on April 1, 2014).

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Characteristics That Require A Product To Be Cleared (US)

- **IR Determinants**
  - Fixed-to-floating swap
  - Forward rate agreement
  - Basis swap class
  - Overnight index swap
- **No optionality, no dual-currency, no conditional notional amounts**

- **Credit Determinants**
  - Reference entities
  - Region
  - Indices
  - Tenor
- **Specified index series, e.g.,**
  - CDX.NA.IG 3Y
  - iTraxx Europe 5Y
- **No tranched Indices**

Source: CFTC, "Clearing Requirement Determination under Section 2(h) of the CEA" (2012).

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What Is Centrally Cleared And potentially “Clearable”?

- Based on recent evidence from the **Financial Stability Board**, almost 80% of Interest Rate Derivatives and 50% of Credit Derivatives (mainly Credit Default Swaps Indices) products could be potentially Centrally Cleared, with obvious implications in terms of transparency and liquidity for the entire OTC Derivatives Market.

*Centrally Cleared and potentially “Clearable” OTC Transactions**
(as of end-February 2014; Notional Amounts Outstanding in $ Trillion)

OTC Products	Centrally Cleared	"Clearable"	**Total Outstanding** (adjusted for multiple counting)
Interest Rate Derivatives	$191 (46%)	$325 (78%)	$415 (100%)
Credit Derivatives	$3.3 (19%)	$8.2 (47%)	$17.4 (100%)

* Source: Financial Stability Board, “OTC Derivatives Market Reforms”. Seventh Progress Report on Implementation (April 8, 2014).

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Margin Calculation And The New Collateral Demand

- **Central counterparties calculate initial margins based on Value-at-Risk portfolio models, with add-ons for liquidity, concentration, and counterparty risk (downgrades)**
  - For example, on OTC interest rates derivatives, the largest CCPs in the market apply the following methodologies:
    - LCH (LSE): Historical VaR methodology, Lookup period of 1250 days, 7-day horizon, 100% confidence level, historical returns weighted by EWMA (0.97 decay factor)
    - CME: Historical VaR methodology, lookup period of 1260 days, 5-day horizon, 99% confidence level, historical returns weighted by EWMA (0.97 decay factor)
    - EUREX (Deutsche Borse): Historical VaR methodology, lookup period of 1250 days, 5-day horizon, 99.7% confidence level
- **On credit derivatives, VaR models are also applied (e.g., ICE and CME: 99% confidence level, 5-day horizon)**
- **Eligible collateral differs by clearing house, although sovereign bonds, U.S. agency debt and MBS, corporate securities, and gold are accepted by the major CCPs for initial margin purposes**
  - Margin needs to be segregated for clearing purposes, that is it can't be recycled for other purposes
  - A mitigating factor for the new collateral demand: the OTC clearing only applies to new swap trades
- **Variation margin, that is the daily mark-to-market of the position, can only be settled in cash**

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The “Electronification” Of Standardized OTC Derivatives

- Under the new rules, OTC Standardized Derivatives must be traded on (Multi-Dealer) Electronic Platforms. The goal is to increase price transparency and liquidity of OTC Derivatives Products

- In fact, up to now most of the OTC Derivatives Trading has been conducted by Broker Dealers on a bilateral basis via voice execution (phone, email and other forms of messaging), with a very infrequent use of electronic platforms:

*Methods of Execution for OTC Derivatives**

(estimated monthly Turnover, as of June 2010)

OTC Products	Voice Execution	Electronic Execution
Interest Rate Derivatives	87.70%	12.30%
Credit Derivatives	83.30%	16.70%
Equity Derivatives	85.70%	14.30%

* Source: IOSCO, Report on Trading OTC Derivatives (February 2011)

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Electronification: US vs. Europe

- In the US, these rules came into effect on February 15, 2014 for Interest Rate Derivatives, and on February 26, 2014 for Credit Default Swaps. Therefore, all Standardized OTC Derivatives (that is, that are going to be cleared) are now required to trade on Swap Execution Facilities (SEFs) as mandated by the CFTC
- In Europe, there are comparable SEFs rules for "Organized Trading Facilities" (OTFs), as part of the MIFID II/MIFIR legislation that has been approved on January 14, 2014 (albeit actual implementation will not occur till 2017)
  - *While the framework for MIFID2/MIFIR has now been set by European legislators, technical details are still to be defined.*
- Although similar, there are differences between the US and European legislations on the Asset Class coverage:

	US	EUROPE
ASSET CLASS	SEF	OTF
OTC DERIVATIVES	YES (Mandatory for Cleared products)	YES (Mandatory for Cleared products)
NON-EQUITY: Bonds, Commodities, Structured Products, etc.	NO	YES
EQUITY	NO	YES (Trading on "Multilateral Trade Facilities")

Source: Our elaborations on CFTC (2011), SEC (2011), and European Commission (2014) legislations.

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The Uncleared OTC Derivatives Market

- **Market practice is that Dealers do not typically post Initial Margin to each other**
  - Dealers also do not typically ask for collateral from some types of customers, namely sovereign and quasi-sovereign entities and some corporate clients

- **Regulators are proposing Initial and Variation Margin against non-cleared Derivatives**
  - This could create a potential incremental system-wide collateral demand

- **On September 2, 2013, the Basel Committee and the IOSCO* issued their final rules on Margin Requirements for Non-Centrally Cleared trades**

- **These rules will be incorporated into the Dodd-Frank (US) and EMIR (Europe) legislations, and implemented starting from end-2015**

*International Organization of Securities Commissions.

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Key Points From The BIS/IOSCO Uncleared Margin Report

- **Phase-in Period:** Incremental implementation over four years from 2015. Begins with most active and systematically risky participants; size of derivative activity determines timing of compliance
- **Margin Threshold:** Exemption from the initial margin obligation if the initial portfolio margin is less than EUR 50mn
- **Collateral Eligibility:** Wide range of collateral allowed, such as cash, high-quality government bonds and central bank securities, high-quality corporate bonds, high-quality covered bonds, stocks contained in major stock indexes, and gold
- **Initial Margin:** 10-day VaR with 99% confidence level, where
  - Quantitative Portfolio Margin Model (subject to Regulatory approval); Vendor Models allowed
  - Standardized schedule (more conservative than Internal Model)
- **Variation Margin:** Must be exchanged daily (suggested but not required) to back 100% of the market exposure
- **Margin Posting and Rehypothecation:** Two-way Gross Initial Margin posting required, collateral must be segregated and not rehypothecated
- **Cross-Asset-Class Netting:** Only intra-asset class Initial Margin netting allowed; no netting between cleared and uncleared derivatives. However, cross asset class netting allowed for Variation Margin

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Initial Margin Calculation:

Risk Models Vs. Standardized Approach

"Initial margin should be exchanged by both parties, without netting of amounts collected by each part (i.e., on a gross basis)"

Key principle No. 5 of the BCBS-IOSCO (September 2013)

- **Under the current proposals, Initial Margin can be calculated in the following ways:**
  - A preset "look-up" table as a percentage of the notional amount of the trade

Proposed Standardised Initial Margin Schedule

Asset Class	Initial Margin Requirement (% of notional exposure)
Credit: 0-2 year duration	2
Credit: 2-5 year duration	5
Credit 5+ year duration	10
Commodity	15
Equity	15
Foreign Exchange\Currency	6
Interest Rate: 0-2 year duration	1
Interest Rate: 2-5 year duration	2
Interest Rate: 5+ year duration	4
Other	15

- **An approved Internal Risk Model (VaR-based), or sourced from third-party vendors**
  - In these cases these models must be approved by the appropriate Supervisory Authority

Source: BCBS-IOSCO (2013), "Margin requirements for non-centrally cleared derivatives", Appendix A, September.

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Cleared Vs. Uncleared Trades:

Potential Impact On The Initial Margin

- **Currently, Initial Margin requirements for collateral are not always consistent**
  - e.g., Existing OTC derivatives agreements between dealers and their asset management and end-user counterparties do not always require clients to post initial margin
  - While clients viewed to pose greater counterparty risk, often are subject to initial margin based on bi-lateral agreements
- **Post regulation, uncleared trades will probably require significantly higher Initial Margins**
  - In general, the longer time horizon will require more initial margin than a similar trade executed over an exchange: at least 40% more comparing the risk horizons of 10-day (Uncleared) and 5-day (Cleared), and between 58% and 123% vs Exchange-Traded Futures*

*Impact of different Margin Rules of OTCs vs Exchange-Traded Derivatives**

(as of end-February 2014; Notional Amounts Outstanding in $ Trillion)

	Futures	OTC Cleared	OTC Uncleared
Risk Horizon	**2-day**	**5-day**	**10-day**
Initial Margin** vs. 2-day Futures	-	+58%	+123%
Initital Margin** vs. 5-day OTC Cleared	-	-	+41%

* Source: our elaborations on BIS-IOSCO (September 2013).

** Assuming an underlying VaR model at the 99% confidence level.

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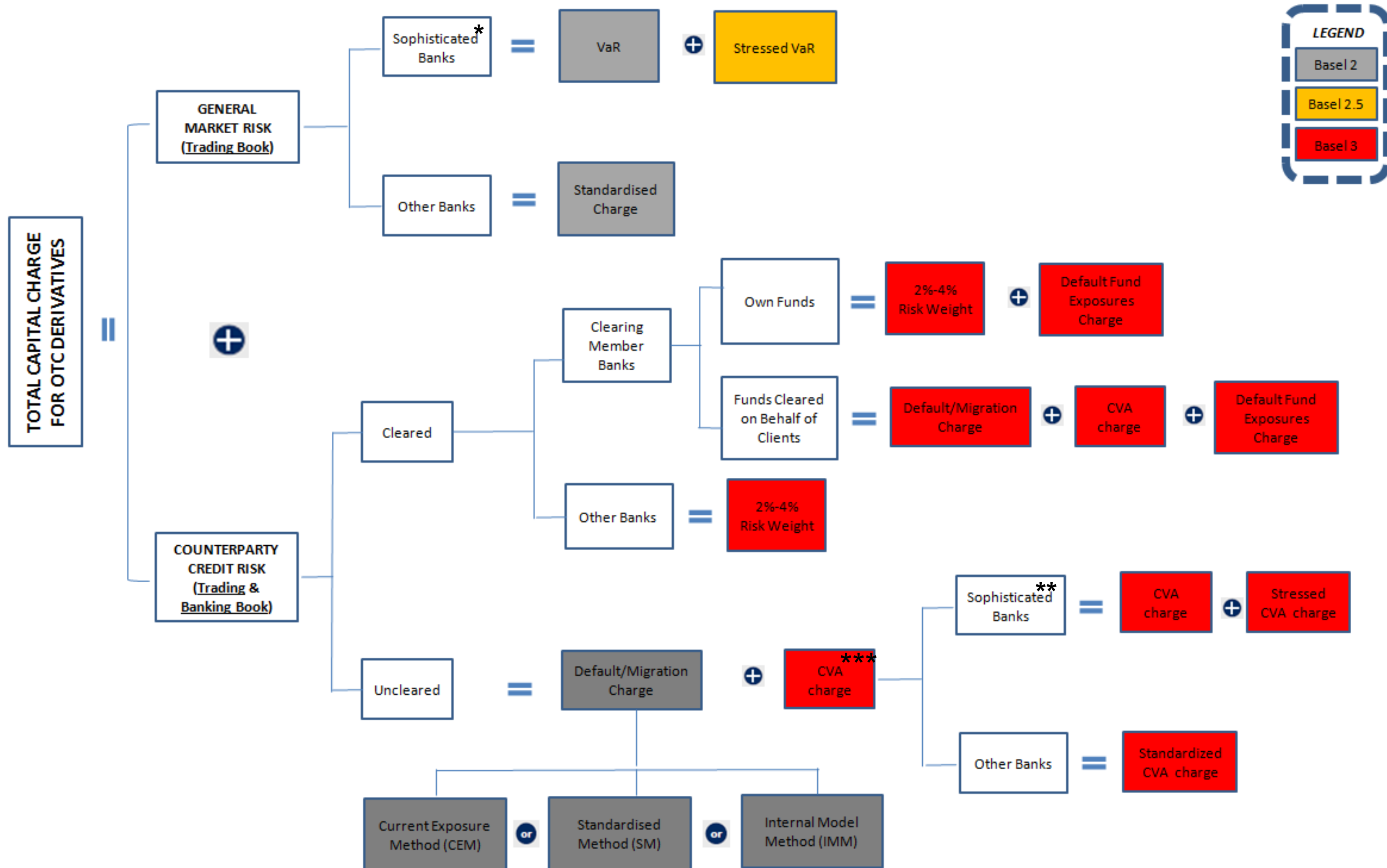
The Basel's Regulatory Capital "Labyrinth"



Source: Our elaborations Basel Committee on Banking Supervision (2006, 2011).

* Banks with an Internal VaR Model approved for General Market Risk.

** Banks with Specific Risk VaR approval for bonds and IMM approval for Counterparty Credit Risk.

***Credit derivatives recognised to reduce risk-weighted exposure amounts for credit risk in the Banking Book do not enter the CVA Capital Charge [*European Commission: Art. 372, Capital Requirement Regulatio*

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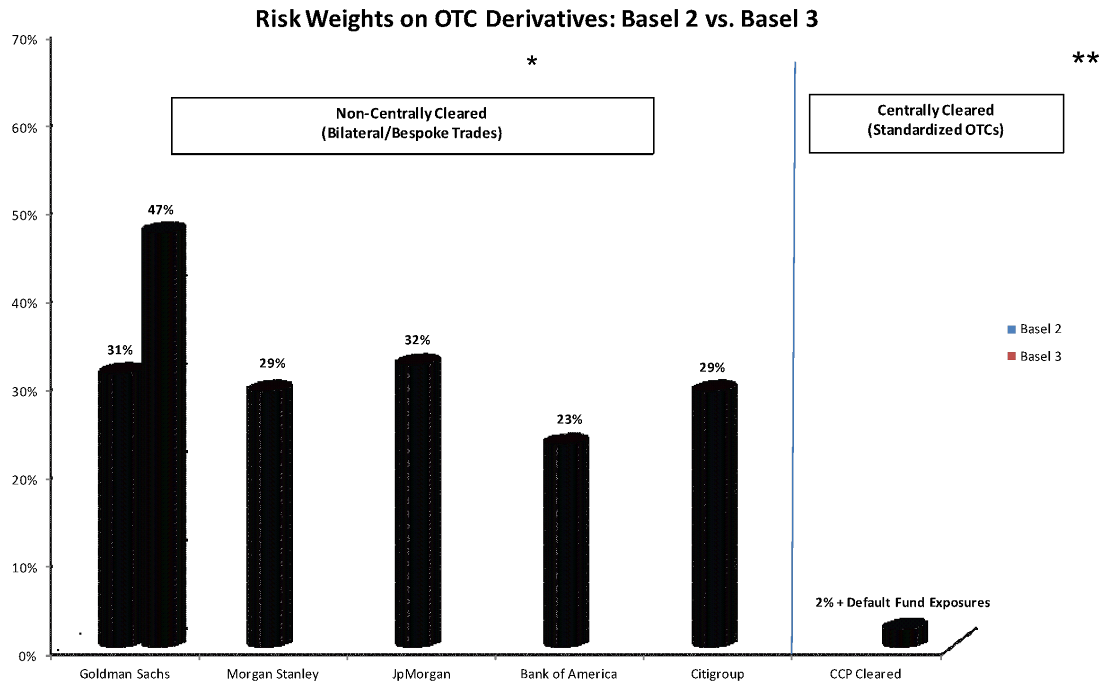
Basel 3 Will Incentivize Banks To Shift OTC Derivatives To CCPs

- **<u>Significant Capital Savings for Banks under the new Basel 3 rules</u>**
  Although the graph below refers to the Largest US Banks, it gives an idea of the impact on Capital Requirements on OTC Derivatives when Clearing is coming into effect



*<u>Non-Centrally Cleared</u>: in the case of Goldman Sachs, the increase will be due to Stressed VaR + CVA VaR + Stressed CVA VaR.

**<u>Centrally Cleared</u>: 2% + Capitalization of the Default Fund Exposures for clearing own OTC Derivatives; addition of CVA Capital Charge for Clearing on behalf of Clients (when acting as a Dealer/Clearing Member); 2% Risk Weight only for Banks Clearing OTCs via a Clearing Member.

- **<u>Smaller Banks will also be affected, boosting the D2C OTC Clearing Market</u>**
  Commercial Banks around the world use OTCs for hedging purposes, mainly Interest Rate Swaps to mitigate interest rate volatility in the Banking Book

Source: our elaborations on company's data as of December 31, 2012.

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Potential Impacts On Banks' Hedging Policies

- The OTC Derivatives Market will eventually become a sort of an Exchange Traded Market for Standardized/Liquid products
- All Banks across the globe will "Clear-the-Clearable" given the capital benefit associated to the new Basel 3 capital treatment for OTCs
- Most Counterparty Credit Risk will migrate from Institutions to Central Counterparties, reducing the need to put in place sophisticated analytics (such as, CVA pricing formulas and alike), at least for vanilla OTC Derivatives Products
- Margin (Initial and Variation) and Collateral will also be new requirements for "Uncleared" OTC derivatives (bespoke and less liquid)
- Though Bilateral OTC Derivatives can be more costly in terms of margins and collateral, still Banks will continue to use them because of the flexibility they offer to hedge exposures

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What Next? The "Futures" Of OTC Derivatives

- Some Financial Institutions could look for alternatives to OTC Derivatives, such as Futures or new products like Swap Futures on Interest Rates or Credit Index Futures ("Futurization"). Exchanges in the US and Europe are very active on this "Product Innovation" front
- In fact, Exchange-Traded Derivatives products benefit from lower margins and Capital requirements under Basel 3
- However:
  - Cost of rolling and exposure to basis risk are the main obstacles for Futures-like products to replace OTC Derivatives. Therefore, rolling a futures hedge is not necessarily more economical than an OTC derivatives hedge, despite the higher margin requirements and difficulty in execution associated to it
  - Another important disincentive for futures-like products is the lack of OTC substitutes in the market (only few contracts for standardized tenors and currencies) . So it's up to the Exchanges to come up with more products that mimic OTC-like conventions
- Other factors that limit participation in Futures markets today include accounting rules (hedge accounting), and difficulty to change internal processes

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Further Reading

- **Bank for International Settlements**, "*OTC Derivatives Statistics at end-June 2012*", November 2013
- **Basel Committee on Banking Supervision, "***Basel III: A Global Regulatory Framework for more resilient Banks and Banking Systems"*, June 2011.
- **Basel Committee on Banking Supervision and IOSCO**, "*Margin Requirements for Non-Centrally Cleared Derivatives"*, September 2013
- **Commodity Futures Trading Commission**, "*Clearing Requirement Determination under Section 2(h) of the CEA*", 2012
- **Dodd-Frank Wall Street Reform and Consumer Protection Act**, June 2010
- **European Commission,** *"European Market Structure Infrastructure Regulation (EMIR)"*, September 2010
- **European Commission,** "*Markets in Financial Instruments (MiFID): Statement by Commissioner Michel Barnier",* January 2014
- **Financial Stability Board**, "*OTC Derivatives Market Reforms*", Seventh Progress Report on Implementation, April 2014

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