



Impacts of Regulations on Derivatives Markets

Dealer and investor perspectives

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Impacts of Regulations on Derivatives Markets

Dealer's perspective

Executive Summary

Part 1. Market organization for Cleared derivatives

- The US experience and implications on the EUR market
 - Execution
 - Reporting
 - Clearing
- Risks of market fragmentation

Part 2. Capital Charges for non-cleared derivatives

- Multi-layer charges
- Discrepancies according to legal docs, entities, products

Part 3. Points for discussion

- Insiders/ outsiders
- Pro-cyclicality
- Impacts on collateral management

Derivative Reform

US Experience

Swap Dealer Registration

CFTC from 2013, SEC in 2016

- CFTC registration based on swap activity with US counterparties
- Registration required nomination of principals with personal accountability plus compliance with other (subsequent) DFA rules
- SEC registration expected in 2016

Reporting, EBC, IBC, Clearing, Execution

- Subsequent to registration rules were published on trade reporting, business conduct, clearing and trade execution
- Rules on margin for uncleared derivatives are expected shortly
- Rules broadly followed G20 commitments on derivative reform

Implementation Challenges

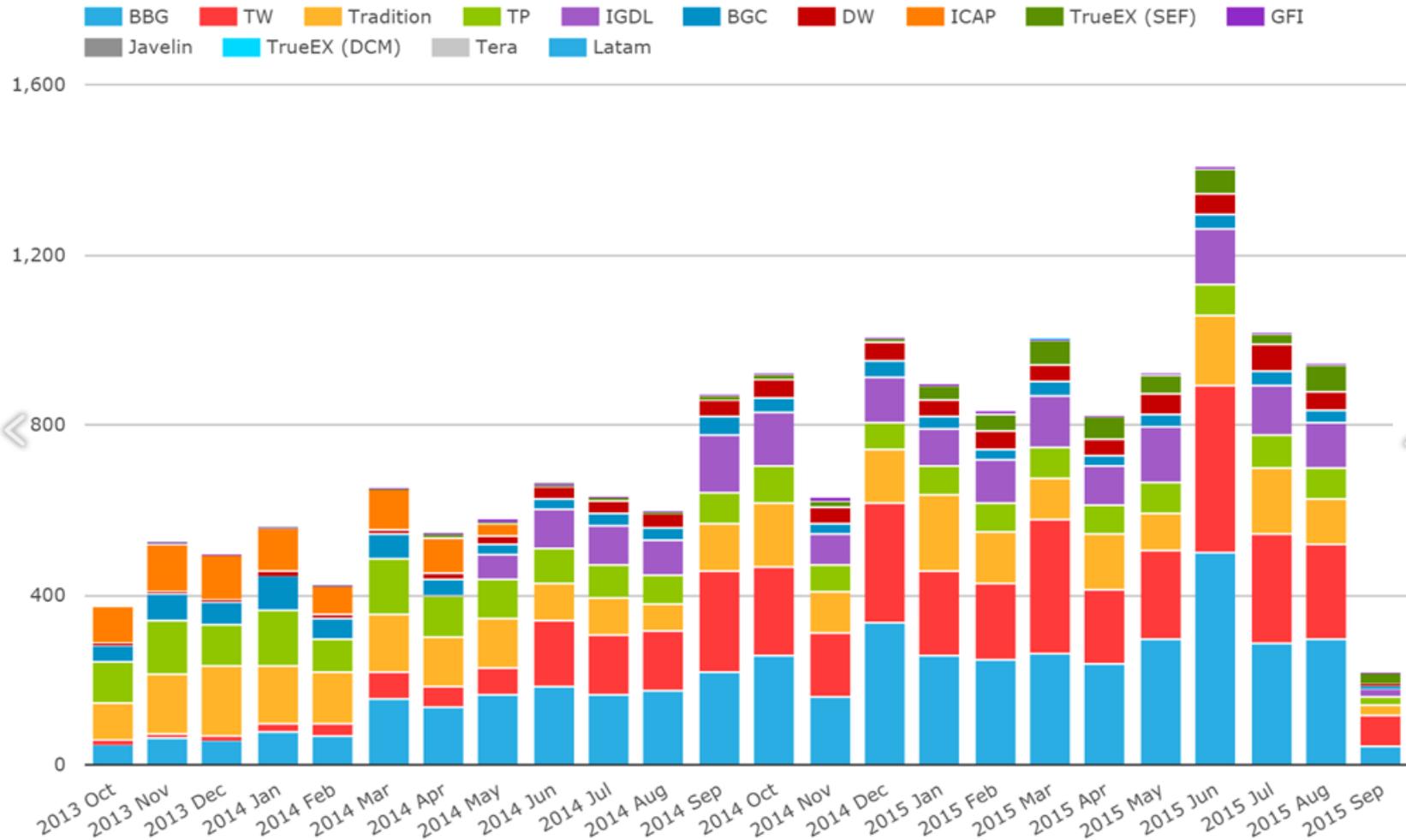
Timing TBA

- Non US banks becoming subject to US law, including conflicts between DFA and local law
 - Lack of international harmonisation and recognition
 - Regulatory deadlines did not give sufficient time for controlled implementation
 - Fragmentation of liquidity due to SEF rules
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Market organisation

US example

- SEFs market shares in the USD market on a DV01 basis: since SEF-time began (Oct 13)



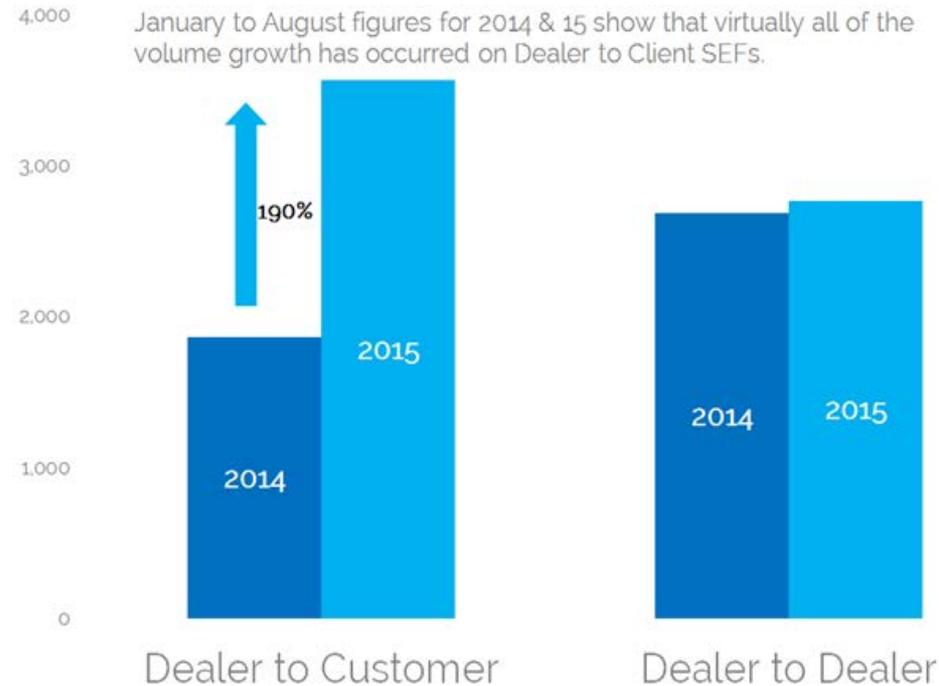
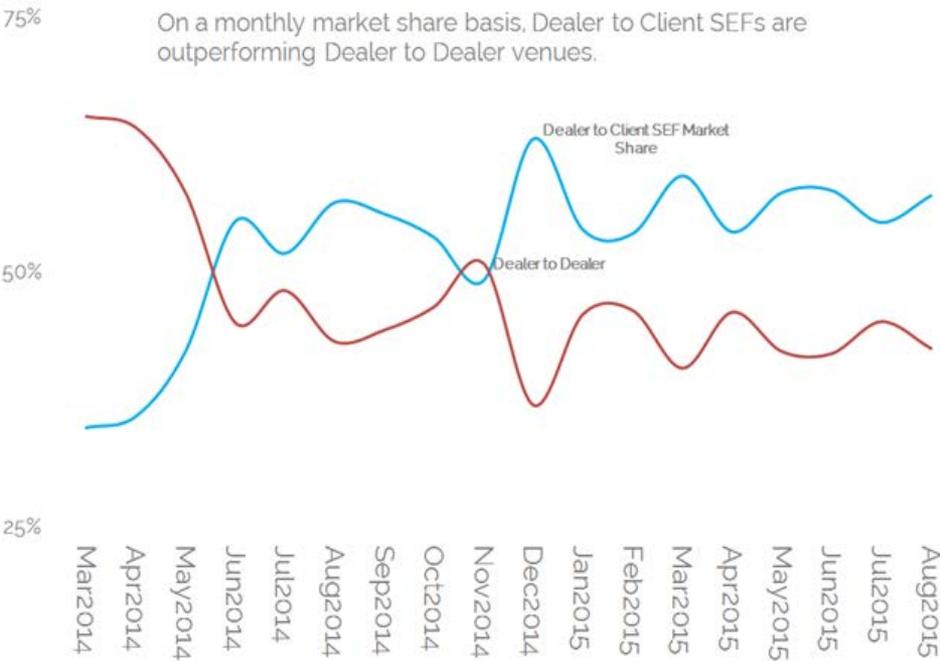
Source: Clarus Financial Technology

Market organisation in the US

SEFs: Dealers-to-Dealers vs Dealers-to-Customers

- **Venues used both by dealers and customers:**

- Ex-compression, D2C venues have been bigger than D2D venues since May 2014
- While D2D flows remained stable over the last year, volume growth has been massive on D2C SEFs (+190%)



Trades reporting

- **Extreme transparency**

All trades are reported within 15 minutes.

This can become an issue for large executions that require discretion in order to provide tight prices to clients.

- **Example of major daily USD trades displayed on Bloomberg (SDR)**

MARKIT CDX.NA.IG.22 06/19	TR	06/20/19	69.7500	USD	200+	U DTCC	OFF	22:16:03
MARKIT CDX.NA.IG.25 12/25	TR	12/20/25	127.1750	USD	130+	C BSDR	ON	19:23:55
MARKIT CDX.NA.IG.24 06/25	TR	06/20/25	125.2500	USD	130+	C DTCC	ON	18:56:00
MARKIT CDX.NA.IG.25 12/25	TR	12/20/25	126.0000	USD	130+	C DTCC	ON	18:56:00
MARKIT CDX.NA.IG.20 06/18	TR	06/20/18	50.0000	USD	130	U DTCC	OFF	22:07:43
MARKIT MCDX.NA.24 06/20	N	06/20/20	96.7500	USD	110+	U DTCC	OFF	23:11:25
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	87.7500	USD	110+	C BSDR	ON	22:23:34
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	87.5000	USD	110+	C BSDR	ON	22:08:58
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	87.1000	USD	110+	C DTCC	ON	21:52:20
MARKIT CDX.NA.IG.24 06/20	TR	06/20/20	83.0350	USD	110+	C DTCC	ON	21:03:32
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	87.5000	USD	110+	C DTCC	ON	21:03:32
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	87.6250	USD	110+	C DTCC	ON	21:01:01
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	88.0000	USD	110+	C DTCC	ON	20:56:17
MARKIT CDX.NA.IG.24 06/20	TR	06/20/20	83.7900	USD	110+	C BSDR	ON	20:54:02
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	88.3000	USD	110+	C BSDR	ON	20:54:02
MARKIT CDX.NA.IG.24 06/20	TR	06/20/20	83.2600	USD	110+	C DTCC	ON	20:49:58
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	87.8000	USD	110+	C DTCC	ON	20:49:58
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	87.4000	USD	110+	C BSDR	ON	20:48:05
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	87.7250	USD	110+	C BSDR	ON	20:30:59
MARKIT CDX.NA.IG.24 06/20	TR	06/20/20	83.4050	USD	110+	C BSDR	ON	20:13:31
MARKIT CDX.NA.IG.25 12/20	TR	12/20/20	87.8750	USD	110+	C BSDR	ON	20:13:31

CCP functioning

- **Access:**

Only Clearing Members of CCP's can clear derivatives.
Clients cannot be (or choose not to be) Clearing members

- **Risk mitigation:**

Default fund : to maintain protection to the clearing house if one member defaults

Variation margin : paid/received daily by CCP.

Banks clearing members cannot consider VM as stable funding

Initial margin : paid by Client and Executing broker.

Client IM is held in an Individual Segregated Account at CCP and based on CCP methodology

- **IM methodology differs according to CCPs:**

- CME: 99.7% VaR with a 5 days horizon on a 7yrs period (1850 scenarios)

- LCH: Expected shortfall method, using the average of the 5 worst scenarios on a 10yrs period (2500 scenarios)

- **Examples of IM requirements for a stand alone portfolio:**

Swap Currency	CCP	Direction	IM expressed in % of Notional
USD 10yrs IRS	CME	Pay	3.01%
		Rec	3.61%
	LCH	Pay	4.43%
		Rec	4.00%
EUR 10yrs IRS	CME	Pay	3.22%
		Rec	4.15%
	LCH	Pay	3.87%
		Rec	4.05%

Source: HSBC

A fragmented market

- **Fragmentation of :**
 - participants,
 - CCPs ,
 - geographies,
 - products
- **Structural unbalanced positions towards CCPs**
- **Structural imbalance in the existing universe of market participants on the various market places**
- **Spreads between CCPs' mid prices**

USD INDICATIVE IRS SEMI BOND LCH / CME BASIS				
SB	Term	LCH MID	CME(bps)	CME MID
	1Y	0.56780	+0.2500	0.57030
	2Y	0.98745	+0.3500	0.99095
	3Y	1.34712	+0.6000	1.35312
	4Y	1.63128	+0.9500	1.64078
	5Y	1.86111	+1.2500	1.87361
	6Y	2.04204	+1.4500	2.05654
	7Y	2.18374	+1.5500	2.19924
	8Y	2.29618	+1.6500	2.31268
	9Y	2.38897	+1.7300	2.40627
	10Y	2.46487	+1.8500	2.48337
	12Y	2.58388	+1.9000	2.60288
	15Y	2.70127	+2.0500	2.72177
	20Y	2.81167	+2.2000	2.83367
	25Y	2.86407	+2.3000	2.88707
	30Y	2.89247	+2.4000	2.91647

	Euro	
	LCH/CME Mid	LCH/Eurex Mid
2Y	0.10	0.00
3Y	0.10	0.00
4Y	0.10	0.00
5Y	0.10	-0.10
6Y	0.10	-0.10
7Y	0.10	-0.10
8Y	0.10	-0.10
9Y	0.10	-0.10
10Y	0.05	-0.20
12Y	0.10	-0.20
15Y	0.10	-0.20
20Y	0.10	-0.20
25Y	0.05	-0.20
30Y	0.05	-0.20

Risks of fragmentation

Before



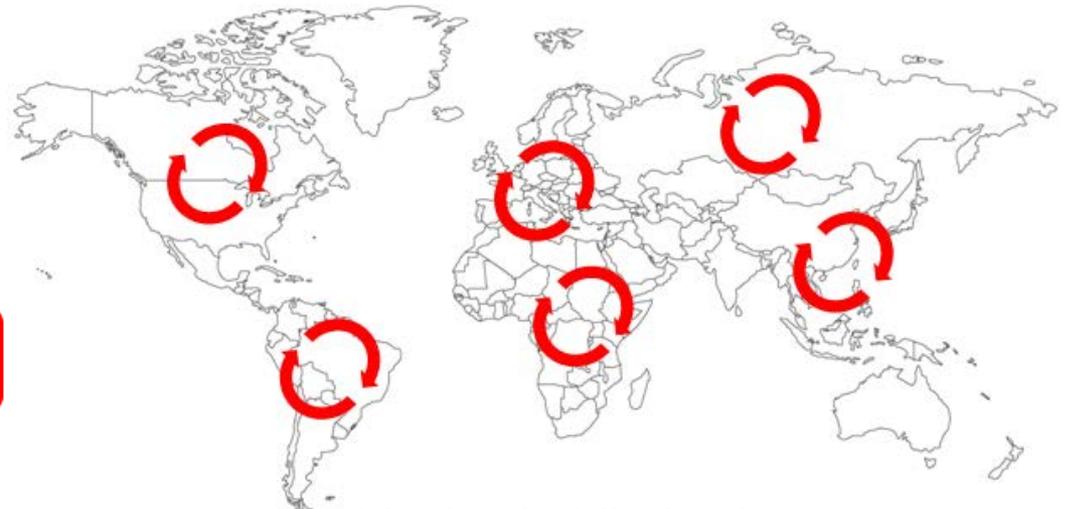
US Persons

All
Platforms

Non-US Persons
Non Swap
Dealers

Non-US Persons
Swap
Dealers

Today



US Persons
+ Non-US swap dealers

SEF
Platforms

Non-US
Persons
Swap Dealers

Non-US Persons
Non Swap
Dealers

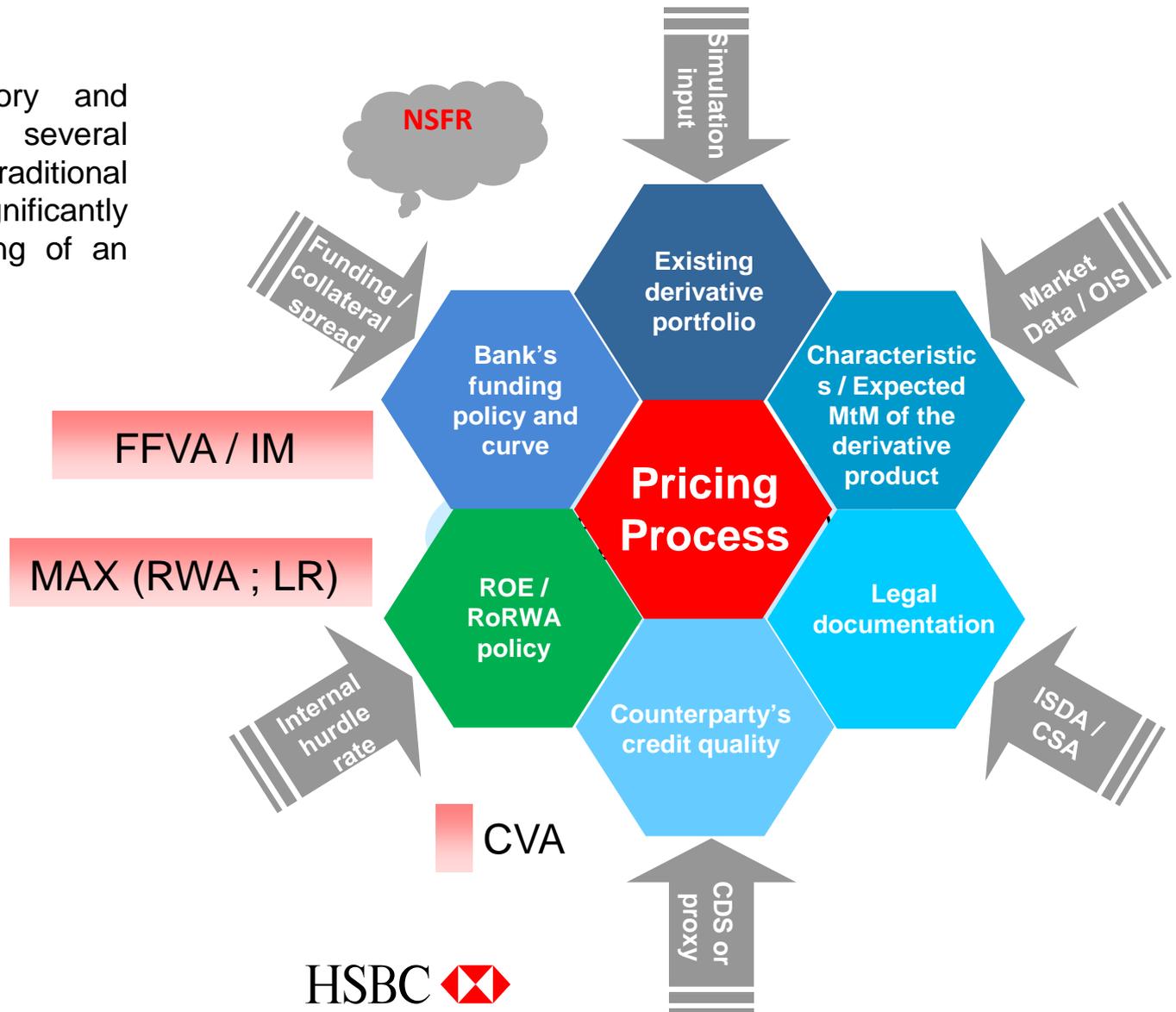
Non-SEF
Platforms

Leading to greater geographical subsidiarisation

Derivative Valuation Framework

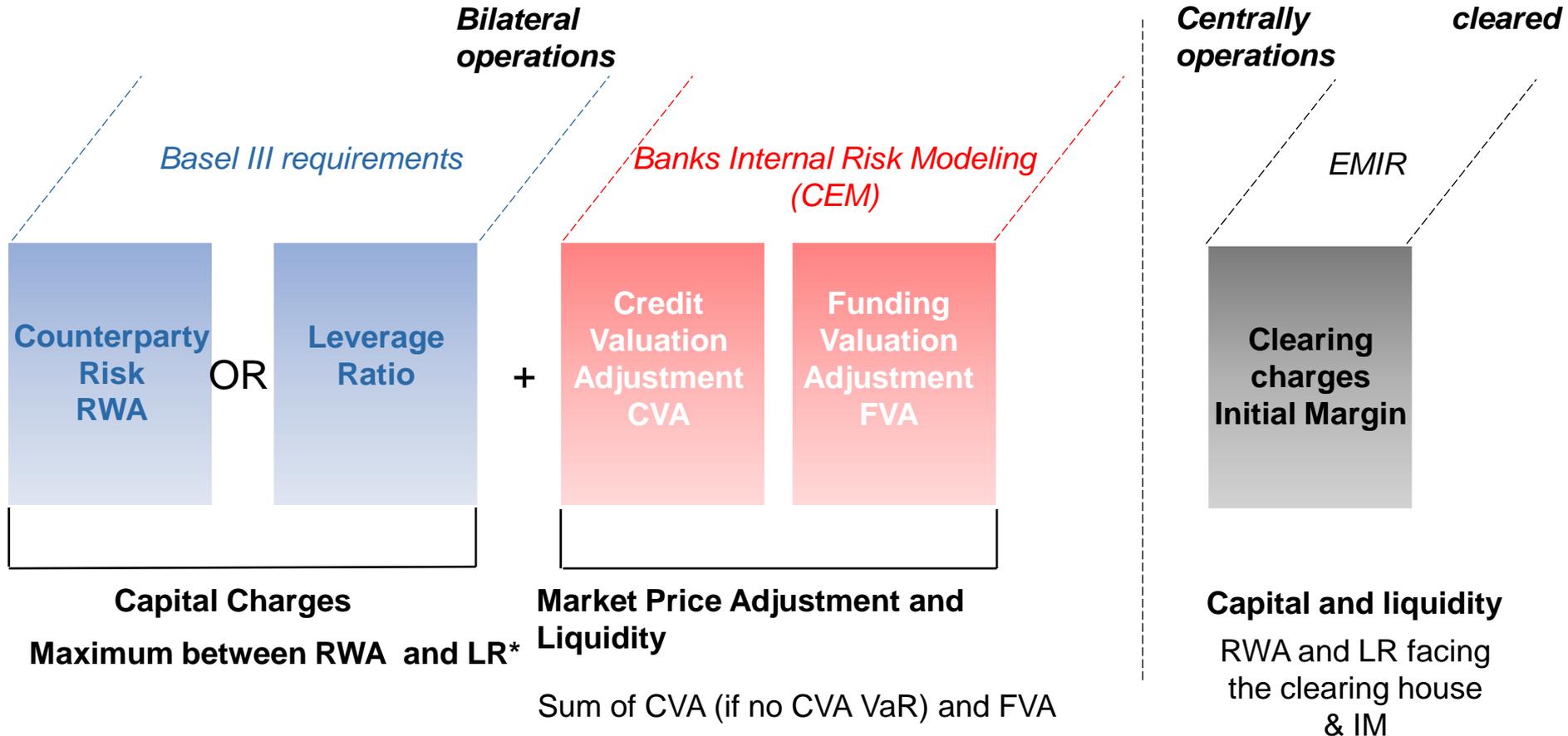
Main factors driving the pricing of an OTC derivative

In the new regulatory and market environment, several elements, outside the traditional market data, significantly contribute to the pricing of an OTC derivative



Impacts of Regulations on Derivatives pricing

For a derivative operation, we need to take into account the following parameters for pricing:



* For the sake of clarification we use a deal by deal approach

Legal framework impact

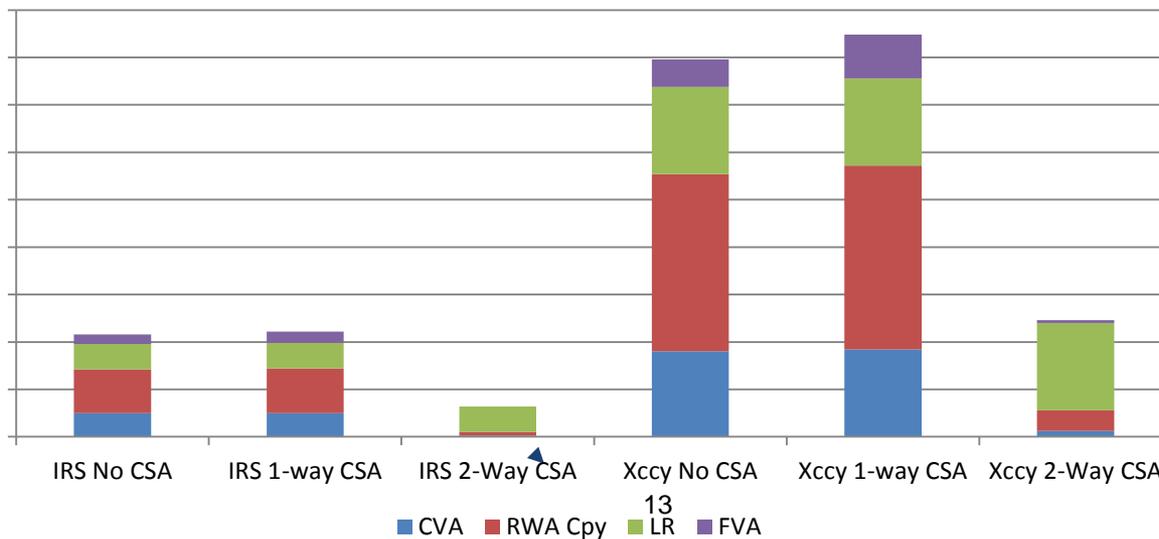
We compare the respective cost of regulations for an IRS and a cross-currency swap given different legal documentation:

- No CSA
- 1-way CSA: ie. only the dealer posts collateral, according to portfolio's MtM
- 2-way CSA daily: collateral is exchanged by both parties on a daily basis (closer to CCP's functioning)

Trades are expressed from the client's perspective

Calculations are run on an entity rated A

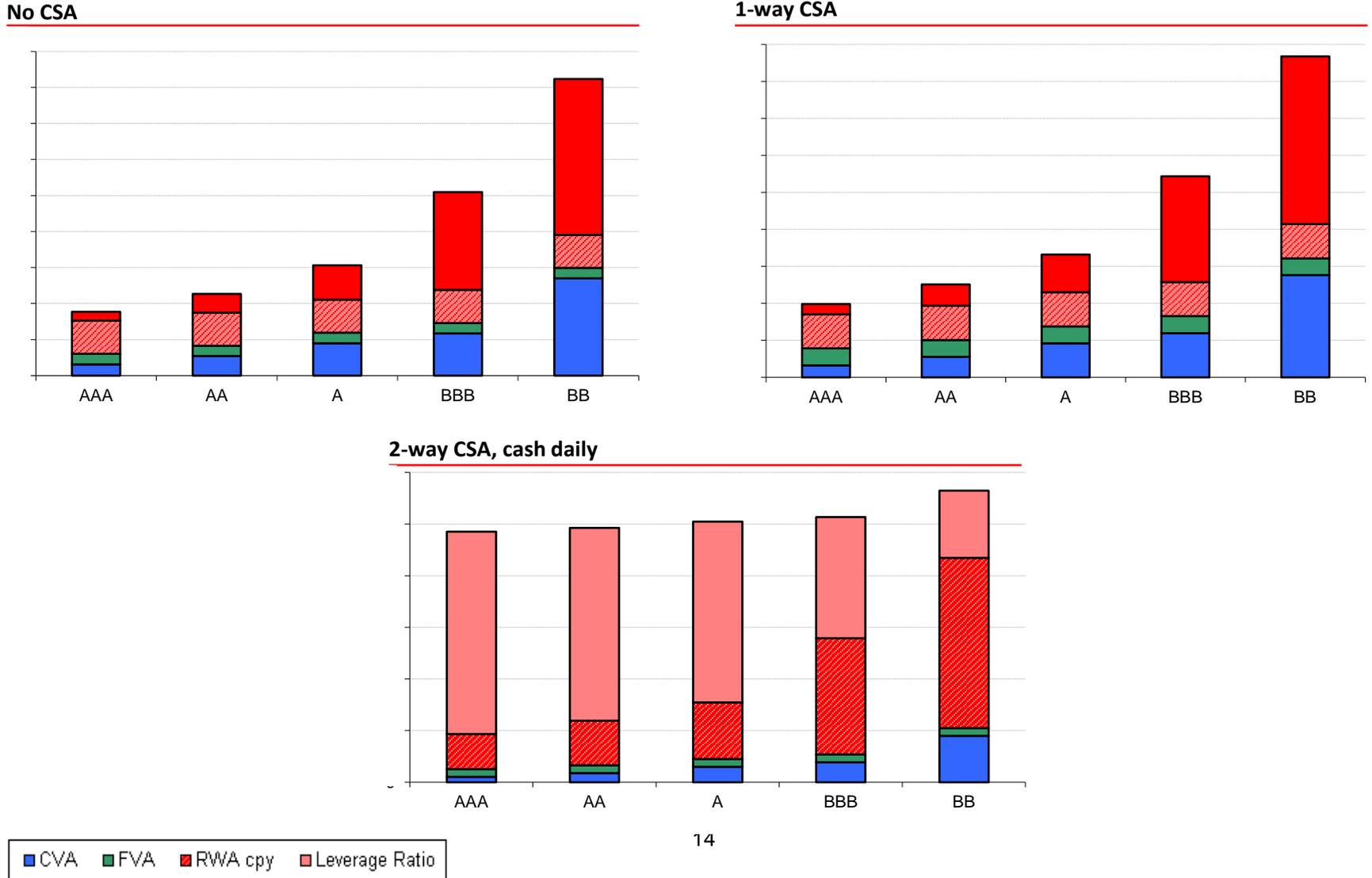
- Respective additional costs for a **EUR 10y Receiver Swap** and a **EUR/USD CrossCurrency Swap**:



Impact of CSA on a standalone transaction

Impact depending on the Rating – 10y Xccy Swap

- Charges depend according to the client's rating, examples on a 10y Xccy:





IMPACT OF NEW REGULATION RELATED TO DERIVATIVES PRODUCTS

Investor's perspective

Key Takeaway

- ➔ Regulations have been developed for banks
- ➔ Cash is seen as the core assets while investors have mainly bonds in their balance sheet
- ➔ Standardization of product has been made for banks and not for client risk management purpose
- ➔ Client impact is starting to appear
- ➔ Regulations can have contradictory impacts

Insurance company: a financial overview

- ➔ Insurance company objective is to make **investment performance while protecting invested capital.**

- ➔ An insurance company Balance Sheet is composed
 - ➔ **Mainly of bonds** that will provide the core of the return (80% for European Insurers*)
 - ➔ Other assets for diversification (Real Estate, Equity, Hedge Funds, ...)
 - ➔ **Derivatives** for ALM hedging and tactical purposes because investment products have embedded options

- ➔ Why using derivatives, because ALM is key beyond investment performance
 - ➔ Interest Rate Swaps to extend the duration of the investment portfolio (5y average duration for bond credit portfolio)
 - ➔ FX swaps to hedge non euro assets (US credit, Emerging Market, ..)
 - ➔ Derivatives to control capital charge
 - ➔ Options to hedge guarantees and reinvestment risks
 - ⇒ ***Solvency II penalizes strongly un-hedged risks with large capital requirement***

- ➔ Why using Repo?
 - ➔ Manage redemption & liquidity needs
 - ➔ Additional tool to manage duration

Bonds are the key elements of an insurance company balance sheet
Derivatives are the key complementary instruments to manage BS risks.

Main regulations

- ➔ EMIR and Dodd Frank Act impact all derivatives users through clearing obligation and margin requirements for non cleared derivatives

- ➔ Basel III impact the capital required for repo and derivatives transactions
 - ➔ **Basel III Regulatory Capital dimension:**
 - > Risk Based Capital (**RBC**) => increase of the capital to be held in front of Risk Weighted Assets (RWA)
 - > Leverage Ratio & Supplementary Leverage Ratio (**LR/SLR**) => require banks to mobilize capital against on and off balance sheet usage (incl. REPO and derivatives) with additional capital requirement for US G-SIBS**
 - > Total Loss Absorbency Capacity (**TLAC**) for G-SIBS => senior unsecured debt can be converted in capital to absorb losses

 - ➔ **Basel III Liquidity Management dimension**
 - > Liquidity Coverage Ratio (**LCR**) => requirement to hold high quality liquid assets to withstand a 30-day funding stress
 - > Net Stable Funding Ratio (**NSFR**) => longer term ratio addressing liquidity mismatch over 1 year

Costs and constraints are passed to insurance companies as any investors

➔ Higher cost for hedging & lower liquidity

- ➔ Derivatives & REPO bid-offers will increase by taking into account bank capital consumption
 - > *Risk magazine's recent survey revealed huge differences between banks when calculating the impact of new regulatory ratios on a 5-year, non-collateralised interest rate swap*
 - For an A-rated counterparty, the impact of new regulations could reach up to 10 bp of notional
 - For a BB-rated counterparty the impact could reach up to 40 bp of notional
 - > *According to Credit Suisse, Bank regulation changes could add up to 60bp to the cost of a repo transaction & the lion's share would probably be passed on to end-users*
- ➔ REPO capital charge will create distortion in the bond and collateralized loan market
- ➔ Cleared positions are counted in the LR of the BS of the clearer

➔ More collateral requirement essentially in cash

- ➔ Incentivize clearing vs. bilateral
- ➔ More cash collateral requirement
 - > *Clearing requires more cash as collateral (VM)*
 - > *Margining for non-cleared OTC will increase the need for collateral;*
- ➔ ...while real investors hold assets & fund regulation prevents from using REPO

➔ Local transposition creates uncertainty and may strengthen market fragmentation.

➔ Products are evolving for banks capital need, less for client hedging & accounting objective

Regulation changes will penalize hedging activity & liquidity management

- ➔ **Capital requirement on client cleared transactions limit the clearing capacity of banks**
 - ➔ Some banks are leaving the clearing market locally or globally (RBS, BNY Mellon, Nomura, SSB plan to exit)
 - ➔ Others have already started pricing in regulatory capital requirement on cleared transactions

- ➔ **European Principal-to-Principal Model defined in favor of banks with mixing roles**
 - ➔ CM is an OTC derivatives service provider as well as a counterparty.
 - ➔ No pass through of CCP collateral terms:
 - > *Restrictions on eligible collateral for IMs (mainly US, UK, DE and FR)*
 - > *Modification of eligible collateral without notice (or limited) and use of rating triggers*
 - > *Additional collateral amounts required of specific haircuts on bonds applied by clearing members*
 - ➔ Clearing limits granted to clients can be reduced without notice (or limited)
 - ➔ Unilateral right to terminate contract upon notice by CM
 - ➔ CM may require indemnity for losses in relation to clearing activity which may include default fund contribution

- ➔ **Unclear end-user risk on CCP**
 - ➔ Rules are not standardized (different requirement & pricing across CCPs lead to a trading spread basis on IRS between LCH and CME)
 - ➔ CCP counterparty risk (limited CCP disclosures, No waterfall standardization, very limited regulatory capital requirement)
 - ➔ Uncertain & moving CCP resolution regime rules & effective exposures upon default of CCPs which avoid to manage properly risk in case of default

Difficult access to clearing
Unregulated framework may increase pro-cyclicality risk

➔ Cash Collateral

Issue: Repo liquidity is reduced while needs will increase

- ➔ Regulations force derivatives users to go into cash collateral
 - > *LR and NSFR apply penalties to non cash collateral on derivatives*
- ➔ To post cash insurance companies need to do repo
 - > *Negative views for regulator in repo by insurance companies*
 - > *Ucits funds cant not use repo for collateral posting => Credit diversification is penalized.*
- ➔ **Insurers are forced to do repo and are penalized for it**

➔ Bilateral trades

Issue: IM treatment is more favorable for cash while cash can never be segregated from the banking system

- ➔ Regulation (EMIR and Dodd Frank) impose IM
- ➔ Yet LR rejects the benefit of bonds.
 - > *IM must be in cash to net exposure when computing LR*
 - > *Increase use of Repo to raise cash for IM*
- ➔ Cash can never be segregated from the banking system
- ➔ **Cash IM for bilateral trades will increase risks on banks**

Insurers will have to hold more cash in their balance sheet at the profit of existing high quality assets while increasing liquidity & banking risks.

→ ISDA Rules

Issue: ISDA rules & Protocol are defined by banks and not for derivatives end users

- ISDA Bail-in Protocol suspend Early Termination provision and reduced drastically liquidity on derivatives contracts in case of market stress.
- Under ISDA FOA Amemdmum for clearing, CM have no contractual commitment to accept trades & apply their own collateral requirements
- **Final Investors are reluctant to implement standard Clearing Agreement**
- **Moving contractual framework on bilateral & cleared trades may increase both procyclicality and banking risk**

→ Bank & CCP Resolution regime

Issue: Banking resolution authorities shall exercise write-down and conversion powers in relation to liabilities arising from derivatives

- Local transposition creates uncertainty and may strengthen market fragmentation
- Uncertain & moving CCP resolution regime rules
- **Effective exposures upon default of banks and CCPs are unknown to the end user which may be left unhedged with the incapacity to manage properly this risk**

Regulations have been developed for banks and not for final investors
Some regulation changes increase systemic risk

Common points for discussion

- **Liquidity:**
 - SEFs and CCPs have concentrated liquidity but this market organisation has not increased it
 - Being left out of those market venues, less liquid products will require more capital and therefore become less liquid, creating a vicious circle
 - Reporting has become a factor impacting liquidity
- **Insiders vs Outsiders:**
 - Entry cost might be difficult to bear for Tier II clients
 - Markets are more liquid but also more fragmented and not available for all products nor open to all participants
- **Impacts on collateral management**
 - Collateral standardisation can be an issue for some market participants
 - Distortions on repo markets
- **Is there a future for non cash collateral ?**
 - Are end users ready to pay for non cash collateral ?
 - Are banks ready to allocate BS to derivatives business for non cash CSA ?
 - Are CCPs ready to adapt their business model to non cash collateral ?
- **At what speed which pricing move?**
 - Which binding constraints (CVA, LR, NSFR or CCAR)?
 - Analysts, investors or regulators pressure
 - Standalone impact or at global business level
- **How to get an efficient market?**
 - Harmonize IM calculation
 - Develop Repo Central Clearing
- **Systemic risk reduction at which cost?**
 - Cash IM increase => increase in banking risk
 - Lower BS => lower liquidity
 - Concentration around few CCPs/CMs => higher pro-cyclicality