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Derivatives Trading and Limited Resources – Capital and Balance Sheet Optimisation

Derivatives Funding and Valuation
3rd Annual Marcus Evans Conference

Agenda

Derivatives Trading and Limited Resources – Capital and Balance Sheet Optimisation

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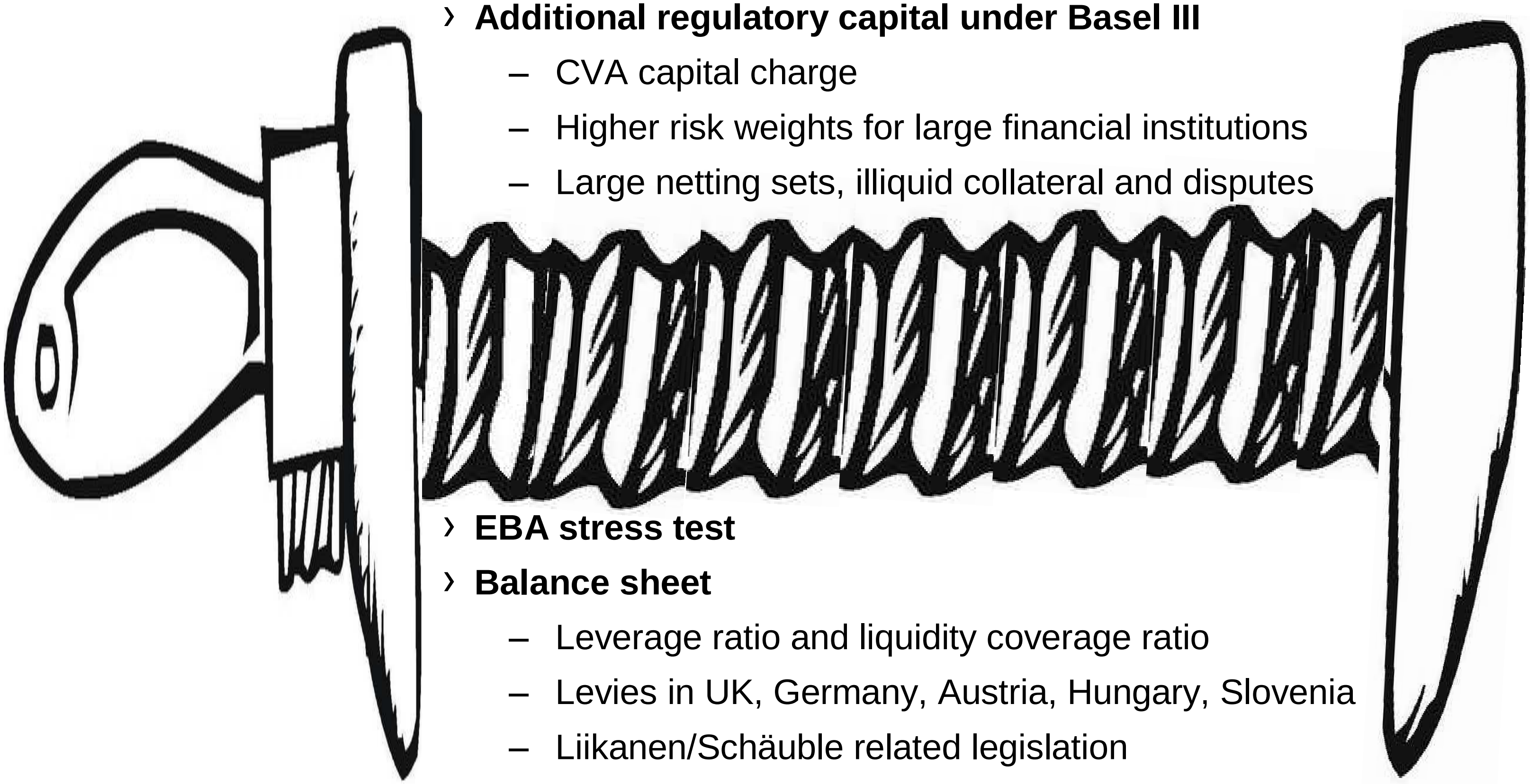
1. Limited Resources Used by OTC Derivatives – Why and What to Manage

› New requirements put banks under additional pressure to rightsize their OTC derivatives business.



› **Additional regulatory capital under Basel III**
  - CVA capital charge
  - Higher risk weights for large financial institutions
  - Large netting sets, illiquid collateral and disputes

› **EBA stress test**

› **Balance sheet**
  - Leverage ratio and liquidity coverage ratio
  - Levies in UK, Germany, Austria, Hungary, Slovenia
  - Liikanen/Schäuble related legislation

Derivatives’ usage of capital, balance sheet and funding needs to be managed as limited resources.

1. Limited Resources Used by OTC Derivatives – Why and What to Manage

- A good starting point of identifying necessary actions is a top list of counterparties with high usage of limited resources.
- Cpty portfolio PV and collateral status typically drive limited resource issues and potential approaches for mitigation, see right table.

	Uncollateralized Trading (p.4) Corporates SSA	**Collateralized Trading** (p.5) Market counterparties Advanced corporates
Cpty Portfolio Positive PV	**Limited resource issues** - OTC CR RWA high from uncoll ITM trades - CVA - Funding costs from hedge trade	**Limited resource issues** Inflated CR RWA - unbalanced portfolios (p. 6-8) - unfavourable CSA terms - MtM/collateral mismatch - large netting sets, illiquid collateral and disputes (BIII) BS reduction issues - Trades can not be cleared when used for hedge accounting - Trades not yet electronically confirmed - initial margin
Cpty Portfolio Negative PV	**Limited resource issues** - Bank levy on derivative liabilities - DVA Minor issues - OTC CR RWA relatively low - CVA	
Legal	No positive legal netting opinion for master agreement	No positive legal netting opinion for MA or CSA - collateral even increases exposure

- Legacy derivatives' usage of limited resources needs to be managed down.
- New business' usage needs to be priced in, specifically for non-clearable client business.

2. RWA Reduction Measures and Challenges – Checklist for Uncollateralised Counterparties

- High positive PVs with uncollateralized counterparties pose a heavy burden on capital requirement, CVA and funding costs from hedge trades.
- Aiming for balanced amounts of positive and negative PVs in market scenarios helps stabilizing funding costs arising from hedging uncollateralized trades.

	Limited Resource Issue	OTC CR RWA Reduction Measure	Challenges
Uncollateralized trading	No CSA	☐ Agree on **CSA**	Difficulties to implement collateral processes at client
		☐ **Client clearing**	Mandatory clearing under EMIR postponed to mid 2014
		☐ **Restructure** ITM trade into OTM trade plus clearable trade	- Pay released CVA, FVA and cost of capital reductions - Cpty may benefit from tax reduction
		☐ Use **break clause to** - restructure the exposure - get compensated via cross-selling - terminate the trade	- Discuss upcoming break clauses with all stakeholders - Get compensation for not breaking from departments who do not want to put client relationship at risk
		☐ **Novate/Assign trade** to 3rd party with CSA	- Pay released CVA to 3rd party - Funding cost/benefit differs if own spreads differ from cpty's - Difficulty of upfront paying of PV of discounted benefits/costs
		☐ Securitisation of trades with SPV to transfer RWA and CVA to investors	Difficult to find investors for bonds/securitisations issued out of SPV. RWA replaced with RWA on securitisation
Legal, Methodology	No netting	☐ Get **legal opinion** on netting of MtM under master agreeement and CSA	- ISDA netting opinion not available for some countries. - Avoid signing CSA in case positive netting opinion for CSA is not available as exposure would increase.
	Modelling	☐ implement advanced models	Review cost and benefits
		☐ Mandatory break clauses	Regulatory recognition of break clause

2. RWA Reduction Measures and Challenges – Checklist for Collateralised Counterparties

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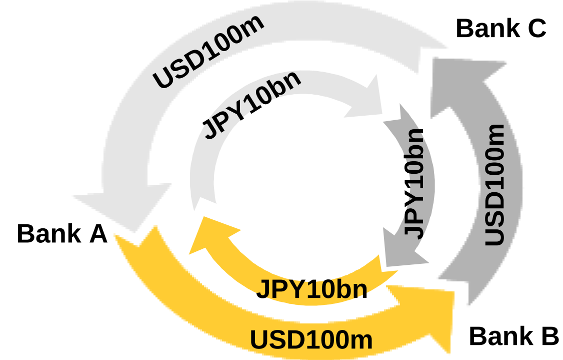
- Inflated exposure profiles can be reduced in bilateral initiatives.
- Multilateral services tpCEMFX and triBalance are currently in testing phase with major market counterparties.

	Limited Resource Issue	OTC CR RWA Reduction Measure	Challenges
Collateralized trading	Margining process, multiple netting sets per cpty	☐ Optimize **CSA terms**: - Reduce independent amount and minimum transfer amount - Consolidate multiple CSAs, e.g. after take-over	Agree on costs/benefit of change of CSA terms, e.g. funding costs, collateral switch options
	Unbalanced portfolios	☐ **Rebalance trading portfolios** with market counterparties aiming for sensi and exposure profile reduction - steer flow - restructuring	– Amend **sensi reports** with **exposure profile optimisation** recommendation, all on netting set level – Design **exposure profile optimisation trades** and trade restructurings to reduce the portfolio volatility, e.g. with **in-and-out trades** clearing one trade only and keeping the risk-offsetting trade
		☐ **TriBalance** ☐ **tpCEM FX**	Multilateral runs are tested so far Resulting RWA optimization trades increase balance sheet
	Extended close out period under Basel III	☐ Reduce - large netting sets, - illiquid collateral and - collateral disputes	- Identify CSA where illiquid collateral is held or posted - Resolve collateral disputes in time - Reduce number of trades in netting sets with more than 5000 trades
	MtM/collateral mismatch in exposure simulation	☐ - Resolve collateral disputes - Align valuation of collateral and derivatives, e.g. implement OIS discounting	Align FO and Risk systems

2. RWA Reduction Measures and Challenges – Tullett Prebon's Counterparty Exposure Management (tpCEM FX)

- tpCEM FX is a multilateral matching service – currently tested
  - producing offsetting buy/sell FX forwards
  - having zero P&L and market risk per ccy
  - reducing bilateral FX exposures.
- Reduced risks and costs
  - Pre-settlement risk, trade replacement costs and gap risk given a default
  - CVA, Basel II OTC CR RWA and Basel III CVA RWA

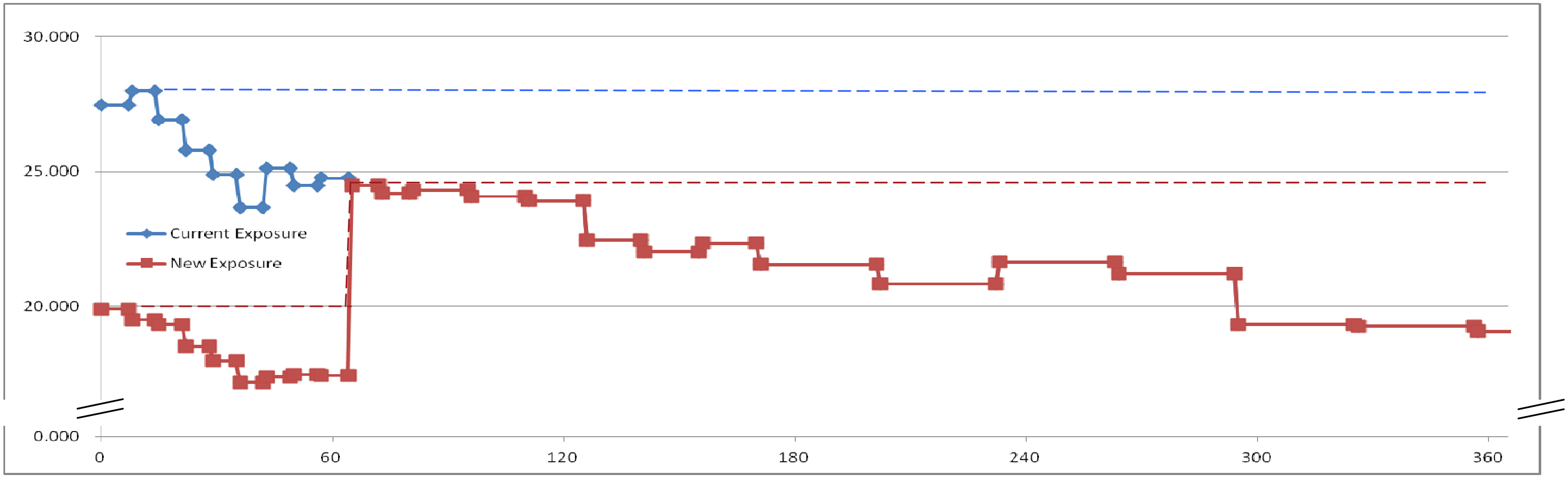
FX deltas before run



- **tpCEM matching algorithm**
  - Participants input max buy/sell orders per cpty & ccy and ccy priority weightings
  - Algo finds loops of sell orders and loops of buy orders for each currency
  - From top to bottom currency pair (= sum of 2 ccy weights averaged over participants)
    - match buy loops on one currency with sell loops of other ccy
    - such that FX crosses set off for both currencies and for each participant.

2. RWA Reduction Measures and Challenges – Tullett Prebon's Counterparty Exposure Management (tpCEM FX)

- How to set max buy/sell orders such that OTC CR RWA is minimized given
  - that only some of the orders will be executed, but not knowing which and by which amount
  - weekly/monthly runs and multiple maturities?
- As purely FX delta based orders may cancel only one side of offsetting exposures, focus on exposure reduction.



Due to maximum function applied in EAD, focus on trades reducing peaks at the short end of the exposure.

Adding orders to the lesser of sum of buy and sell orders per ccy allows for more execution.

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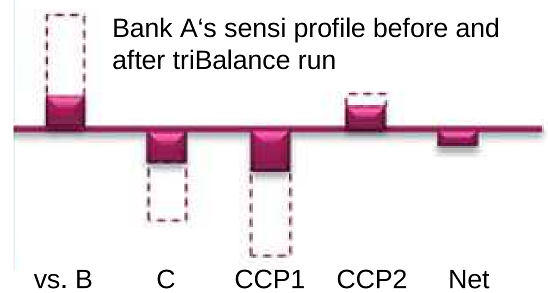
2. RWA Reduction Measures and Challenges – TriOptima's TriBalance is a Counterparty Exposure Reduction Service

- Facilitates rebalancing drivers of counterparty risk exposure
- multilateral between CCPs and bilateral relationships
- advanced tests in rates and credit – FX and commodities in preparation

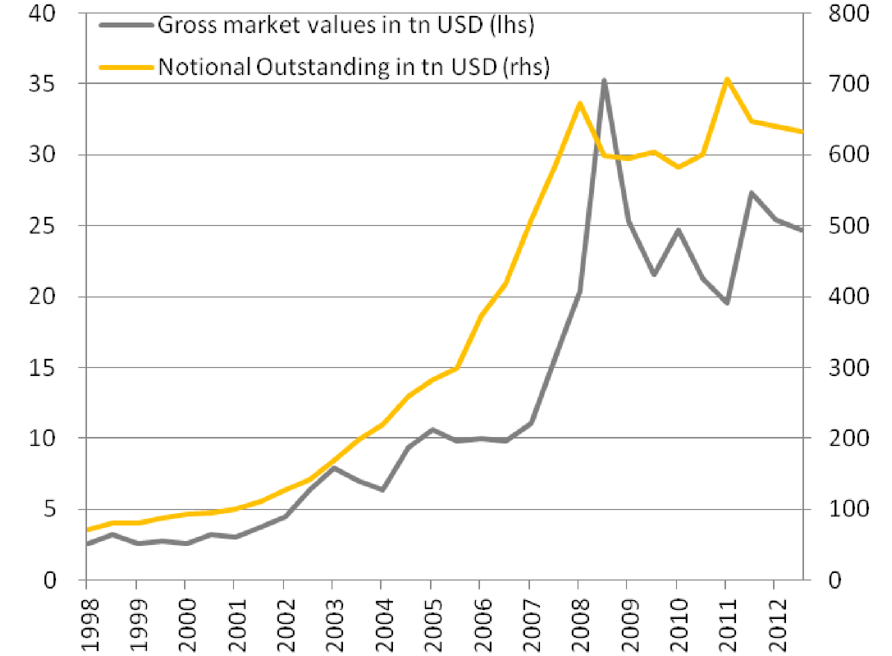


- **triBalance Rates algorithm with IR swaps** (to be cleared with CCPs and not cleared with others)
  - Participants input
    - template IR swaps' MtM and sensis (IR deltas, discount deltas, funding deltas,…)
    - tolerances of exposure, risk and MtM changes per CCP and counterparty
  - Maximize exposure reduction
    - by rescaling of template trades
    - such that changes are within counterparties' tolerances

When defining tolerances, take into account IM and regulatory exposure profile changes.

3. Balance Sheet Reduction Measures and Challenges

- In the wake of the financial crisis, total balance sheet has been increasingly used as a high level indicator for the size and complexity of banks
- Different aspects cause high visibility of the topic in the market
  - Size aspects:
    - Leverage ratio and liquidity coverage ratio
    - Liikanen related legislation
  - Cost aspect:
    - Levies in UK, Germany, Hungary, Slovenia



Source: BIS Quarterly Review June 2013, Amounts outstanding of OTC derivatives, all instruments

Reduction measures are already visible

3. Balance Sheet Reduction Measures and Challenges – A Note About Netting: IFRS versus US GAAP

With respect to balance sheet reduction, US GAAP and IFRS counterparties have different priorities

- US GAAP counterparties are generally allowed to net assets and liabilities
- In addition, US names are not subject to bank levies on balance sheet usage
- US GAAP names are thus less motivated to pursue bilateral or trilateral balance sheet reduction in general

Reported Gross Assets: Effect of Offsetting Derivative Contracts in 2009

in US$ billion	Potential Impact of Grossing Up	Reported Derivatives	Other Assets	Total Assets
BNP Paribas (IFRS)		527	2,415	2,942
RBS (IFRS)		711	2,021	2,732
HSBC (IFRS)		251	2,114	2,365
Barclays (IFRS)		671	1,549	2,220
DB (IFRS)		863	1,283	2,146
JP Morgan (US GAAP)	1,485	80	1,952	2,032
Citi (US GAAP)	600	67	1,789	1,856
BoA (US GAAP)	1,414	81	2,143	2,224

Source: ISDA, "Netting and Offsetting: Reporting derivatives under U.S. GAAP and under IFRS", May 2012.

3. Balance Sheet Reduction Measures and Challenges – Major drivers of reduction

Active measures have highest impact on balance sheet

Three main effects drive BS reductions

- Portfolio net-run off
  - Balance sheet reduces “naturally” from deal expiries and amortisation of MtM from periodic payments in current portfolio
- Market environment driven changes
  - PVs of derivatives are affected by changes in market prices
  - Most important drivers are level of rates, FX rates and implied volatility
- Active reduction measures
  - Bilateral and multilateral initiatives and measures established in the market

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3. Balance Sheet Reduction Measures and Challenges – Backloading and Late Clearing

- Facilitates downsizing of balance sheet and rebalancing of bilateral counterparty risk
- Includes all products covered by LCH / Eurex
- Only two parties involved
- Industry wide acceptance to do this process at no extra operational cost
- Direct membership in Central Counterpart or via Client Clearing

- Best practice
  - All eligible bilateral trades are backloaded into MarkitWire to get electronic confirmation and agreement on trade details
  - Initiator of late clearing identifies PV and risk neutral portfolio of trades
  - Both parties agree on composition of portfolio and potential compensation for loss on one side

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3. Balance Sheet Reduction Measures and Challenges – Backloading and Late Clearing

- Benefits…
  - Currently no RWA and CVA
  - Balance sheet netting of CC position allowed under IFRS

- … and challenges
  - Disagreement over MtM valuation of the clearing portfolio (OIS discounting or switch of discounting curve)
  - Unwillingness to compensate for additional funding costs due to switch of collateral currency
  - Dispute within one entity, as portfolio might be PV neutral overall, but not on desk level
  - Loss of collateral switch option – dispute over valuation
  - Initial Margin

- Client Clearing
  - Non-members of Central Counterpart can use client clearing offering of CCP members
  - Enables even small companies to participate in the benefits of central counterparties
  - Client Clearing is regulatory requirement for new business from Jan 2014 (EMIR)

3. Balance Sheet Reduction Measures and Challenges – Other Measures

- Many measures available in the market
- Highly successful transactions have been executed
- Larger banks have already taken action, most of the smaller market participants are still due to react

› TriReduce compression cycles
  - Easy to use and well established process
  - EMIR requirement to participate in compression exercises

› Bilateral compression
  - Manual workload, potentially long agreement process

› Restructuring / Recouponing
  - Specific high MtM trades can be targeted
  - Difficult to achieve, valuation disputes likely

› Option unwinds
  - Conversion of ITM swaptions into clearable IRS and OTM swaption

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3. Balance Sheet Reduction Measures and Challenges – Conflicting objectives

- Most B/S initiatives have CVA / RWA impact
- Cost / benefit on CVA / RWA and liquidity needs to be weighted against cost of balance sheet

	Non-standard CSAs or uncollateralised portfolios	Standard-CSA portfolios
Reduction of negative PV	**Conflict** - potential P&L Impact due to CVA increase - potential impact on capital usage (RWA) - Funding impact	**Benefit** - less collateral needs to be funded **Negligible impact on CVA / RWA**
Reduction of positive PV	**Benefit** - potentially additional P&L from CVA - positive impact on capital usage -> reduced opportunity cost - P&L might be used to subsidise exercise if negotiations are stuck	**Conflict** - overall portfolio PV decreases, collateral has to be paid back or even posted **Negligible impact on CVA / RWA**

4. Summary

- Increased regulatory requirements have turned capital, balance sheet and funding into limited resources that front offices seek to optimise actively.
- An assessment of limited resources and opportunity cost typically suggests a reduction of legacy trades and a redefinition of favourable new business.
- This presentation provides a comprehensive review of measures optimising the OTC CR RWA and balance sheet usage of derivatives trading.
- Banks' effort to reduce BS and RWA usage of derivatives trading will also help to reduce the potential for contagion of the derivatives market and the economy.
- Most initiatives and exercises have taken place between larger market participants, now due to EMIR requirements also smaller financial institutions and corporates will have to participate

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