

The Actuarial Profession
making financial sense of the future

Life conference and exhibition 2011
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A risk management own goal?

Central Clearing



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Central clearing - A risk management own goal?

Overview

- Clear derivatives through central exchange
- Reduce counterparty risk and default risk
- Initial margin: Cash or Gilts
- Variation margin: ONLY Cash

Key Benefits

- Insolvency protection
- Trade portability
- Expansion of liquidity
- Simplified portfolio management
- Consistent trade valuation

Central clearing - A risk management own goal?

Issues and Implications

- Use of derivatives for hedging
 - Need to assess worst collateral position ?
 - Ability to borrow or repo assets ?
 - Other issues
 - e.g compensation between sub-funds?
- Use of derivatives to enhance policyholder returns
 - Less certain yield enhancement
- Potentially discourages use of derivatives

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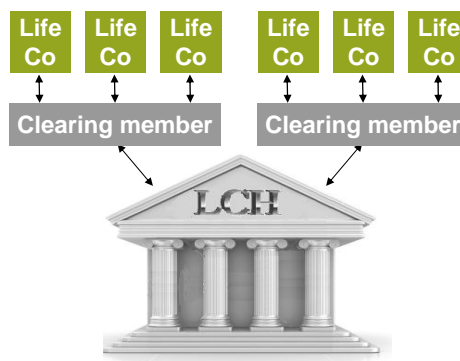
Central clearing - A risk management own goal?

- In summary
 - meant to fix derivative counter-party risk problems
 - introduces liquidity risk
 - counterparty risk may still remain
 - Uncertain costs introduced
- Do you understand the problems and potential costs?
 - Yes? Please share your issues.
 - No? Your chance to learn more.

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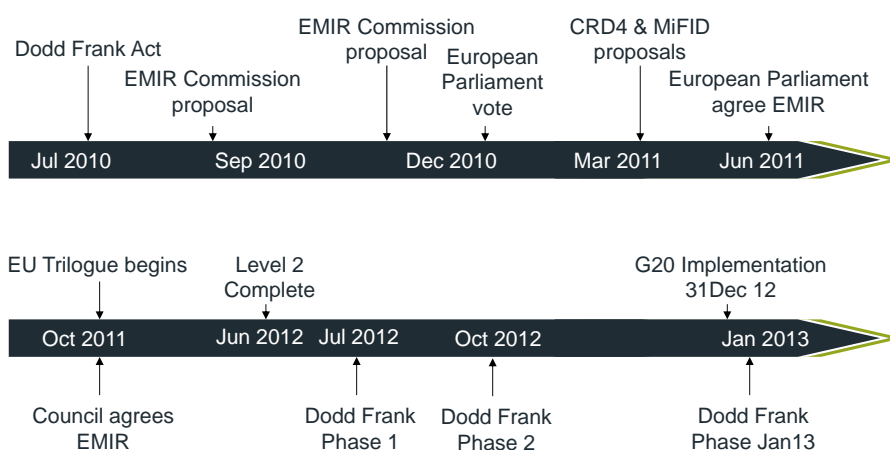
OTC Client Clearing – What is it?

- Clearing is not about execution
- Clearing is about post trade credit risk management
- Margin is collected on behalf of the Central Counterparty (CCP)



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Regulatory timetable

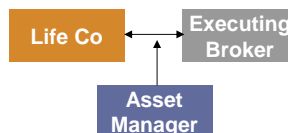


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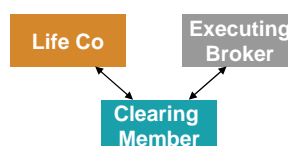
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Clearing Process

1. Trade Execution



2. Clearing broker accepts trade for clearing



3. Trades registered at CCP



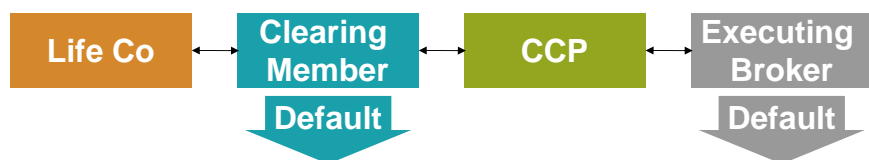
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Posting of Collateral

- Initial Margin
 - Portfolio Approach (allows netting)
 - VAR based calculation: rolling 5 years of historic data to estimate the 7 day worst case loss
- Variation Margin
 - Daily process
 - Paid and received in the respective trade currency

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What happens on default



- Trades and collateral can be transferred to alternative CM
- Alternative CM must be appointed prior to default
- Alternative CM is not obliged to accept trade portfolio

- Life Co. is not affected

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GBP Products Covered

- Rates
 - Libor indices
 - Interest rate swaps (up to 50yrs)
 - Overnight index swaps
 - Compounding swaps
 - Zero coupon swaps
 - Basis swaps
- Credit
 - CDS
- Equity
 - Forwards and Options (Short dated)

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GBP Products yet to be confirmed / not covered

- NOT supported
 - Interest rate swaps (over 50yrs)
 - Interest rate swaptions
 - Cross currency swaps
 - Inflation
 - Long dated options on FTSE

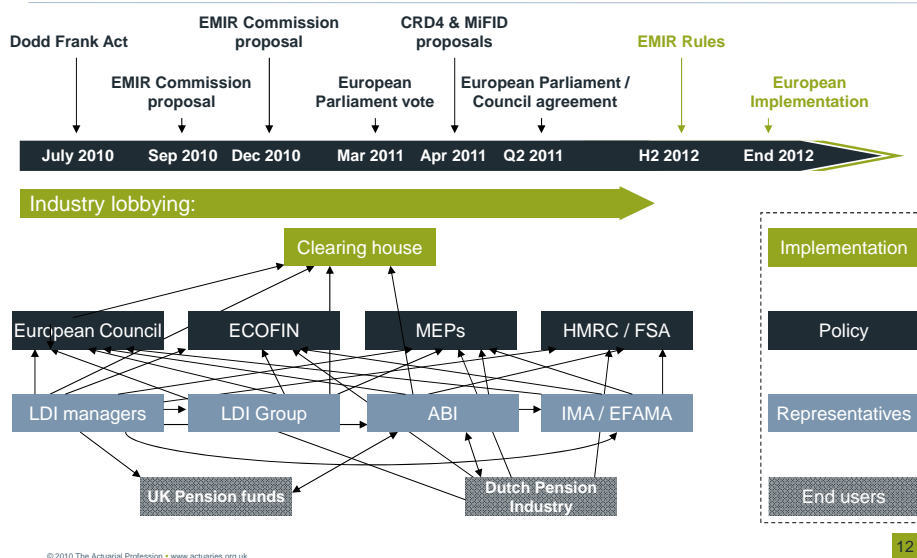
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What May Need to Change? New Service Requirements?

- Operational process & control
 - Electronic confirmation
 - Settlement process
 - Trade reconciliations
- Financing Services
 - Cash financing
 - Secured financing
 - Collateral transformation
 - Repo
 - Single currency margining

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What has the Pension Industry been doing?



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Key impacts on Pension funds:

Financial impacts:

- Initial margin 10-15%, depending on nature of derivatives
- Variation margin 20%-25% (cash) for plausible market moves

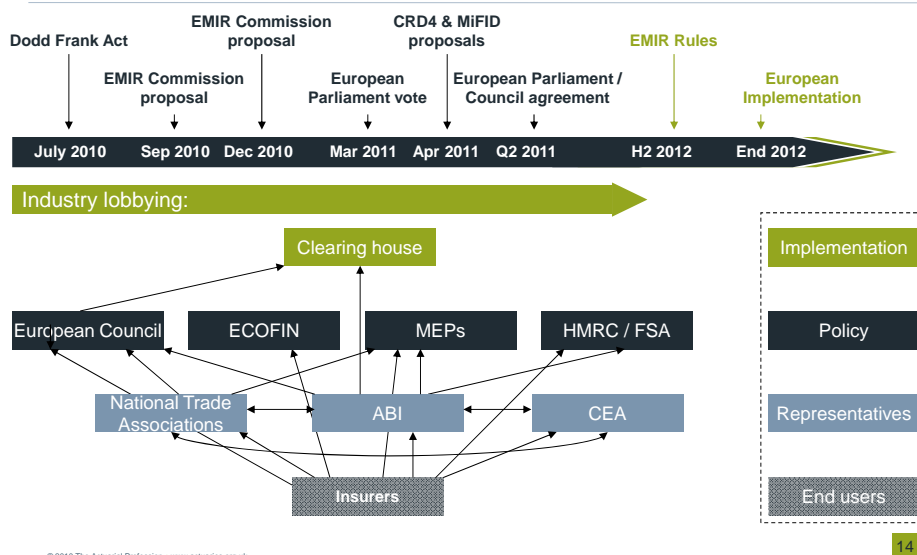
Practical impacts:

- Separate collateral pool required if inflation swaps not included
- Holding cash rather than Gilts to fund variation margin could drag performance (increase hedging costs) by around 0.8% p.a.
 - Using repo instead creates significant counterparty exposure, roll-risk and complexity risk

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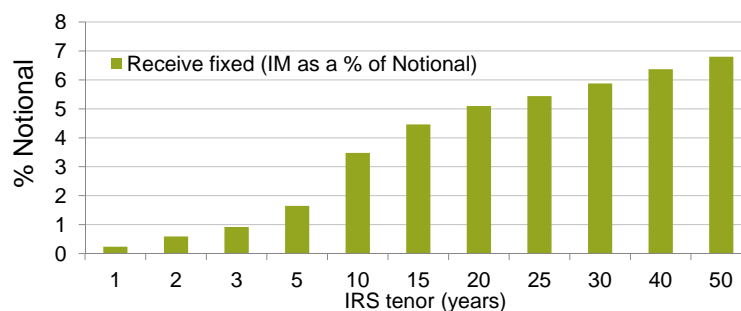
What has the Insurance Industry been doing?



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Example Initial Margins : LCH (SwapClear)

- Receive fixed GBP Interest Rate Swaps

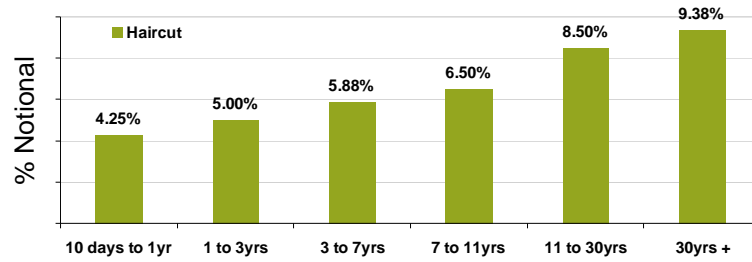


- IM is different for pay fixed swaps
- IM varies by currency (GBP lower than EUR and USD)
- IM varies by CCP

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LCH (SwapClear) Eligible Collateral

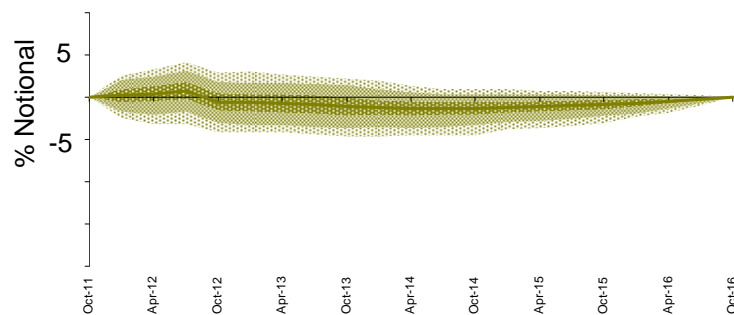
- Initial Margin Collateral Haircut (UKT and UKTB)



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Hedging Example of Variation Margin requirements

- Simulated MtM of 5 -Year Interest Rate Swap

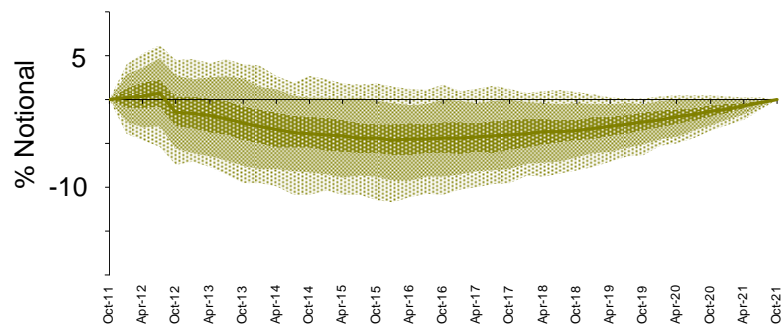


Distribution shown: 1st, 5th, 25th, 50th, 75th, 95th and 99th Percentile

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Hedging Example of Variation Margin requirements

— Simulated MtM of 10 -Year Interest Rate Swap

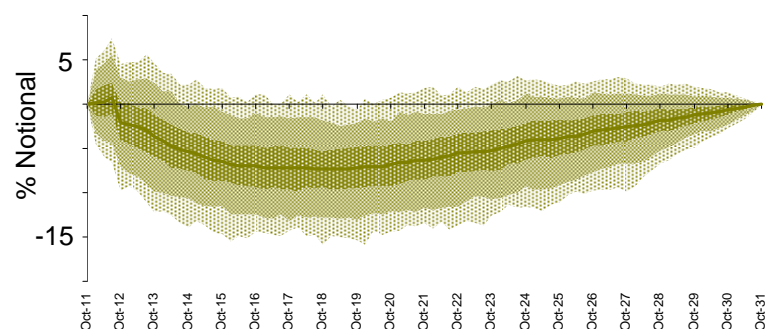


Distribution shown: 1st, 5th, 25th, 50th, 75th, 95th and 99th Percentile

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Hedging Example of Variation Margin requirements

— Simulated MtM of 20 -Year Interest Rate Swap



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Issues and Implications

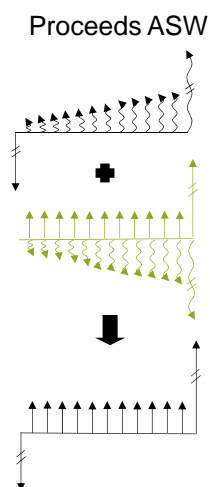
- Need to assess worst collateral position:
 - Over what time period?
 - To what confidence level?
- Need to:
 - Have liquidity measures in place
 - Ability to borrow or repo assets
 - Awareness of counterparty exposure
 - Identify sources of assets for repo
 - Any compensation issues e.g. to WP fund?

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Doing things differently Example: Asset Swapped Linkers

Illustrative Cash Flow of a Swapped Linker

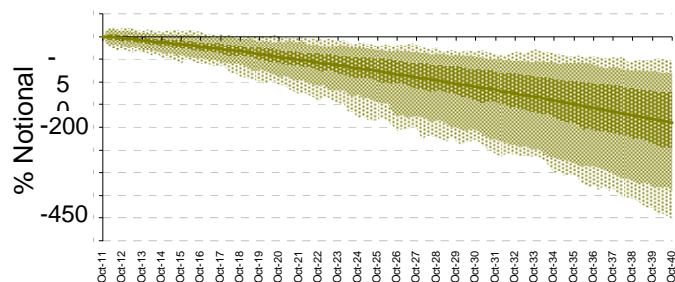
- Transacted for yield pick-up
 - Nominal gilts sold
 - Inflation linked gilts bought
 - Inflation swapped out
 - Cash flows swapped to look like sold gilt



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Simulated MtM of Proceeds Inflation Asset Swap

- 0.625% 2042 UKTI



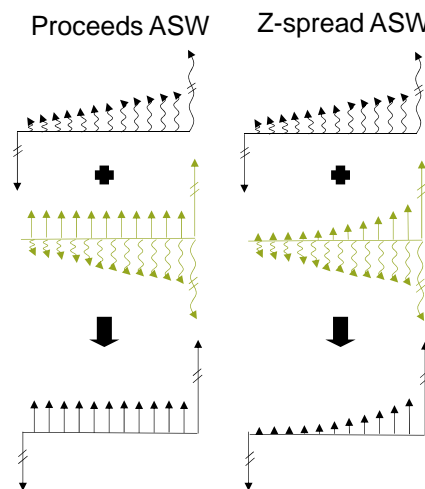
Distribution shown: 1st, 5th, 25th, 50th, 75th, 95th and 99th Percentile

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Doing things differently Example: Asset Swapped Linkers

- Purchase of the inflation linkers and swap into fixed cash flows
- Proceeds asset swap: flat, fixed coupons
- Z-spread asset swap: series of coupons that exponentially increase.

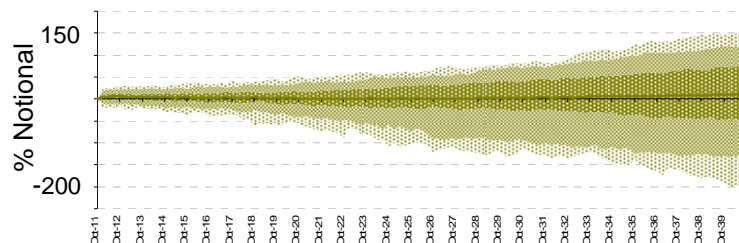
Illustrative Cash Flow of a Swapped Linker



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Simulated MtM of Z-Spread Inflation Asset Swap

- 0.625% 2042 UKTI



- Potential margin requirements reduced considerably
- Economic rational could still be eliminated if the UKTI cannot be posted as collateral

Distribution shown: 1st, 5th, 25th, 50th, 75th, 95th and 99th Percentile

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Update : Current Directive Text

- <http://register.consilium.europa.eu/pdf/en/11/st15/st15148.en11.pdf>
 - Of interest are the exemptions:
 - Art 2(23)
 - Art 68 (00)
 - Art 71(0) and 71(00)
- Note
 - Text is not final
 - OTC derivatives will attract 30x capital under Basel III

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Issues

- How will final text turn out ?
- Different treatment Life & Pensions
- OTC become more expensive than centrally cleared
- New admin requirements where centrally clear
- Liquidity financing requirements needed
- Uncertain costs
- Risk that financing not available to you
- Others?

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Questions and comments sought from you

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenters.



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