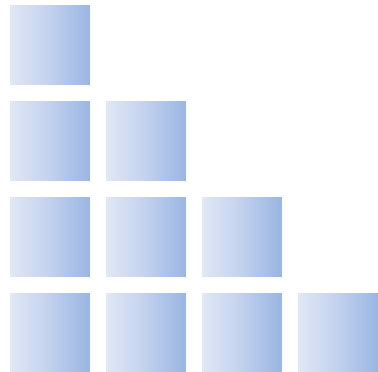


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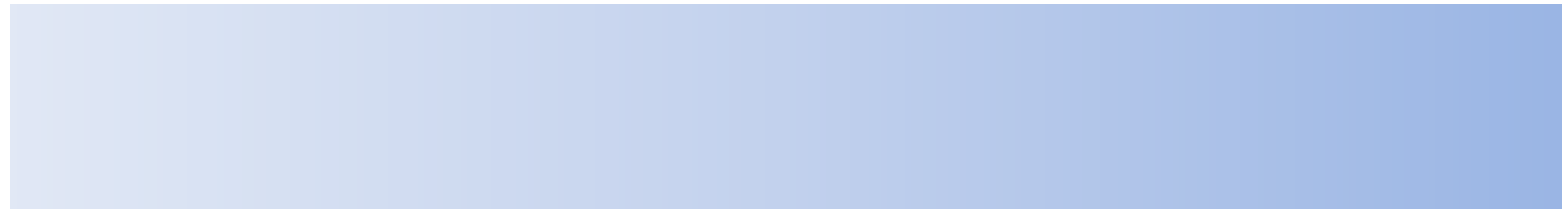
# Updating Counterparty Risk Systems to SA-CCR

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Arthur Rabatin



SA-CCR and IMM: Counterparty Risk and Capital Floors  
Nov 28<sup>th</sup>/29<sup>th</sup> 2016



## Disclaimer

The document author is Arthur Rabatin and all views expressed in this document are his own and not those of his employer, past or present.

All errors and omissions are those of the author

Arthur Rabatin, London, November 2016

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# Quick Introduction - SA-CCR

# What is SA-CCR?

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- Introduces Risk Sensitive Treatment of Collateral and recognition of initial margin. Margining (Variation and Excess Margin through Initial Margin) impacts both Replacement cost and PFE Add-on
- Defines “Hedging Sets” that categorise asset classes within which risk netting is allowable (with no diversification allowance across asset classes)
- Prescribes workflow to calculate PFE Add-ons, reducing the discretion of local regulators.
- Recognises negative MTM and introduces new supervisory factors reflecting post crisis volatility

# Key SA-CCR Definitions

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Exposure at Default =  $1.4 * (\text{Replacement Cost}(RC) + \text{Potential Future Exposure} (PFE))$

$RC = \max (V-C; TH + MTA - NCIA; 0 )$

$PFE = \text{Multiplier} * \text{AddOn}^{\text{aggregate}}$

V *Mark to Market Value*

C *Haircut value of Collateral (i.e. Cash Equivalent)*

TH *Threshold Amount (For Collateralisation)*

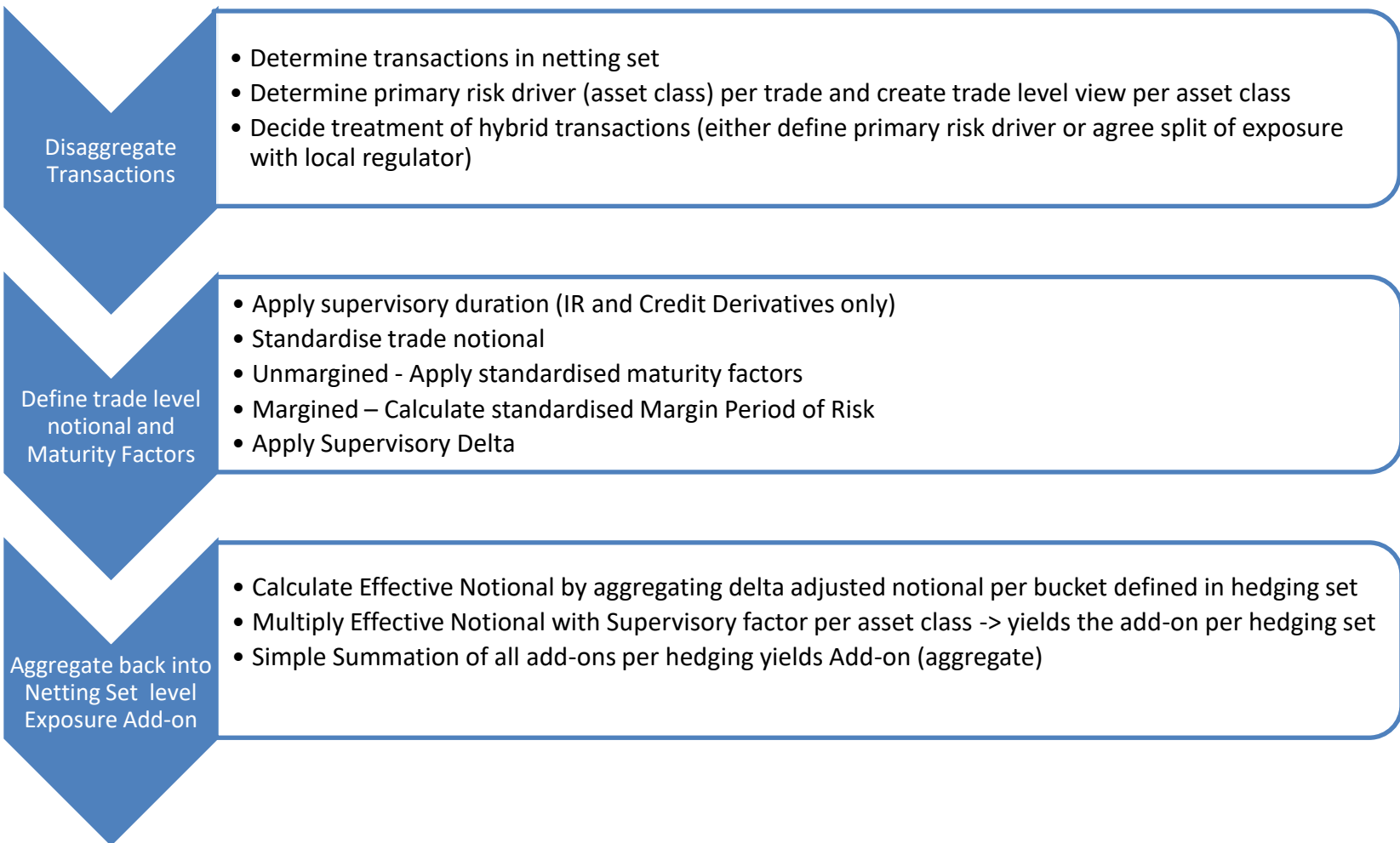
MTA *Minimum Transfer Amount of Collateral*

NICA *Net Independent Collateral Amount - defined as {Collateral Received minus unsegregated Collateral Posted}*

*Multiplier* ( $\leq 1$ ) allows for reduction of exposure due to overcollateralization (initial margin), with a floor of 5% of V.

*AddOn<sup>aggregate</sup>* : sum of all add-ons per asset class. No netting across asset classes allowed.

# PFE 'Add On' Calculation Workflow



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# Implementation Principles

# Principle #1

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Many risk problems go away when we  
book our trades correctly



# SA-CCR highly depends on Trade Representation

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- Basic Trade Economics (Notional, Coupon, Maturity) – not always obvious
- Common Challenges
  - Trades booked as several tickets
  - Trades represented differently than confirmed/executed as long as economically equivalent
  - Trade lifecycle events resulting in trade modifications
  - “Off-sys” trades – trades risk managed outside the trade processing platform
- Correctly identify external vs internal and “wash book” trades

## Principle #2

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# Static Data are Exciting



# Instrument Data Requirements

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- Instrument Data are key to correct calculation:
  - Identification of Asset Classes and Sub Asset Classes via Primary Risk Drivers
  - Identification of Hedging Sets
  - Maturity dates of Option Underlies
  - Index Composition
- Instrument Reference Data often exist in multiple Systems
- Lack of true “Golden Sources” across Front Office and Control Functions cause operational risk and costs
- Multiple “Translation” and “Mapping” Layers to convert between different reference data repositories – creating operational risk

# Client Data Requirements

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- Many CSA Agreements were signed before CSAs became relevant for pricing (CSA Discounting, xVA Pricing)
- Details of CSA matter
  - Threshold Amounts
  - MTA
  - Initial Margin
  - Collateral Segregation
- Data Quality around CSA generally seen as issue when automating processes (Many legal agreements exist as PDF docs with manual corrections)
- Interpretation of Legal Agreement data in the organisation has evolved as use of CSAs and Legal Agreements has become more relevant to Pricing and Risk Management

## Principle #3

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Have a detailed understanding of your  
Greeks

**DELTA**  
**GAMMA**  
**THETA**  
**VEGA**



INVESTOPEDIA

# We both call it Delta - do we mean the same thing ?

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- Greeks:
  - What are the shifts ?
  - Up/Down or only Up ?
- Are the underlying market data the same?
- Are methodologies the same across different books or desks
- Where do we perform any standardisation (Answer: not in the SA-CCR system)

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# Bringing it all together

# Correctly identify ownership

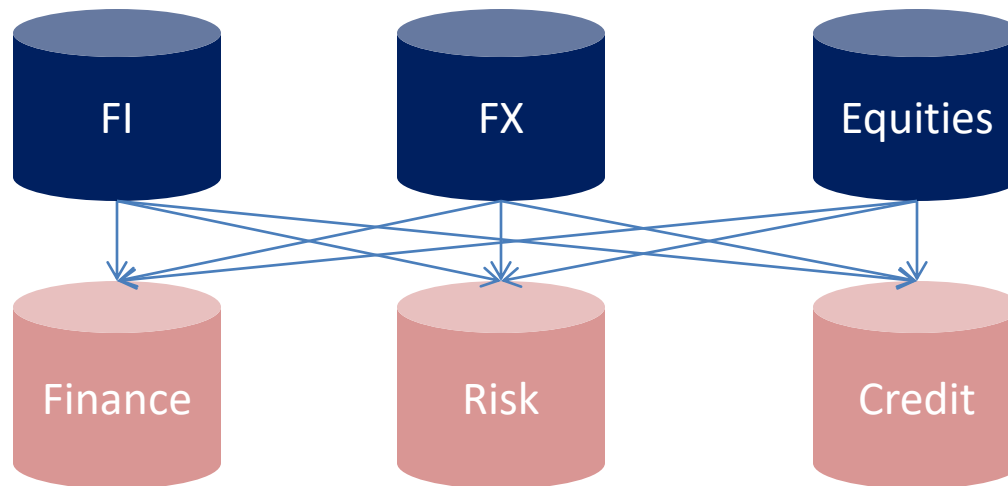
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- SA-CCR is a data challenge, not a calculation challenge
- Solve problems upstream
  - Do not solve risk problems at the SA-CCR implementation level
  - Push data cleanup, data standardisation upstream to source systems
- Agree Responsibility between Finance, Risk and Front Office
  - Finance Responsibilities move to Risk
  - Front Office responsibility for standardisation

# Breaking Down Silos

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- Organisations maintain many different silos
- Front Office / Control Function
- Front Office - Business Lines

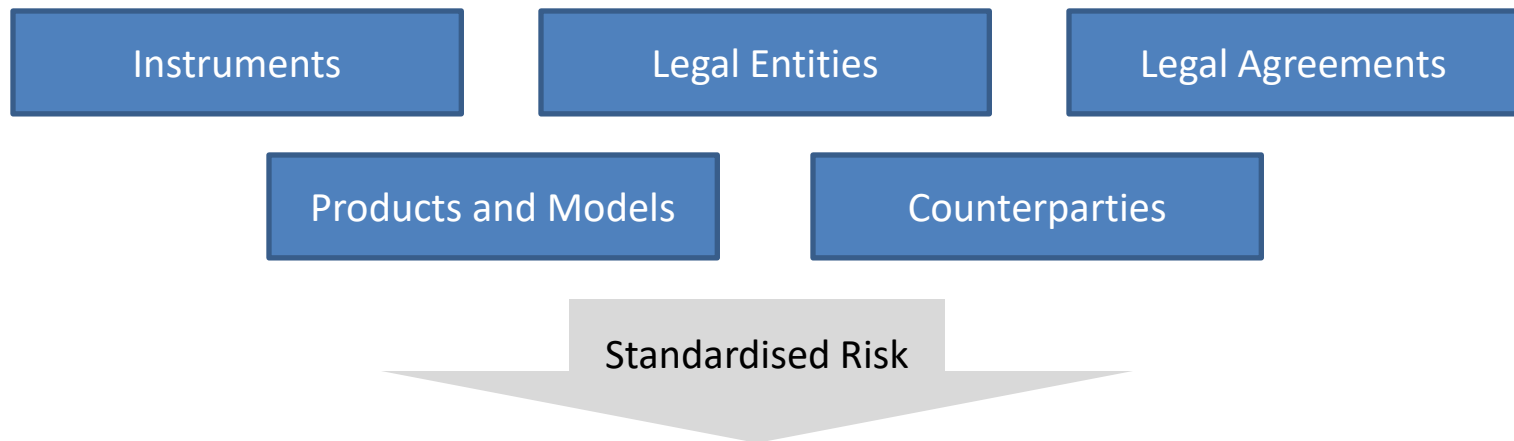


- SA-CCR and other regulatory projects work better when silos break down and data are shared in a consistent way

# Strong Reference Data Hygiene

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- Creates the framework for consistent, enterprise level risk



- Risk Aggregation without *prior* standardisation on common and coherent reference data is possible but very, very expensive

# Adoption Strategy

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- Early Business Engagement and early collaboration between Credit Risk, Collateral, Trading, Operations, Technology, and Chief Data Office
- Explicitly look for synergies across different programs (for example, ISDA SIMM implementation)
- Expect Iterative Development and Testing Process - and expect testing time to be significant longer than development time.
- Separate rule definition from calculation implementation (helped by prescriptive nature of SA-CCR) – allows prototyping of calculations on smaller subset of data and testing of marginal calculations

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# Q & A