

**Deloitte.**

## Deloitte Valuation Conference

Valuation challenges  
in credit institutions  
and investment firms

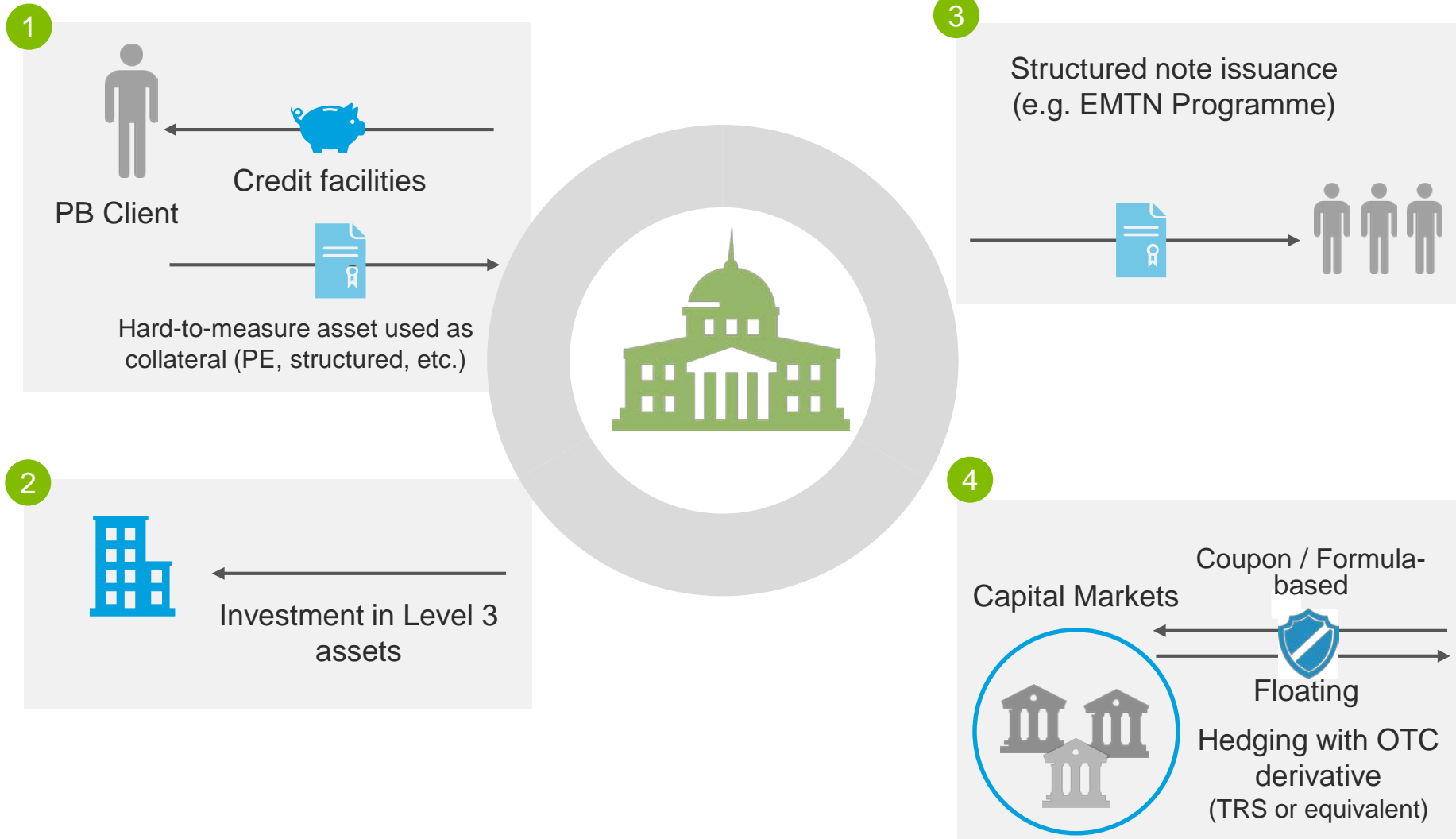
June 2015



# Agenda

1. Introduction – Valuation challenges in credit institutions and investment firms
2. Case study 1: Interest Rate Swap
3. Case study 2: Structured Product
4. Panel discussion – Zoom on structured products

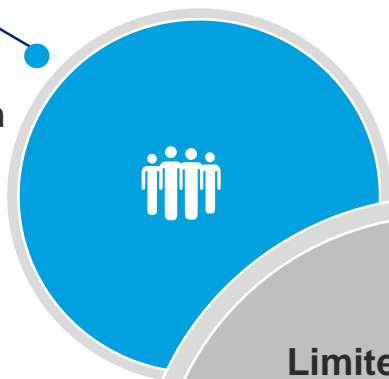
# Valuation challenges can arise in various businesses of credit institutions and under various forms...



... which not only imply complying with different set of regulations but also with other stakeholders' expectations

### Customers

- Fair and transparent pricing of assets held in portfolios
- Potential performance enhancer



### Governing bodies

- Accountable for sound business (and risk) oversight
- Adequate valuation processes provide extra assurance and serve as evidence of sound governance practice



**Limited capacity to challenge prices provided by counterparts and blind reliance on those values for hard-to-measure assets is no longer a viable option.**

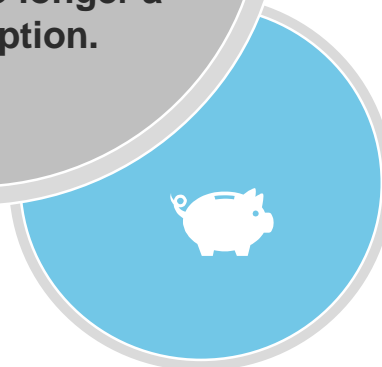
### Regulators

- Daily valuation of items in the trading book (CRD)
- Counterparty credit risk and CVA (CRD, IFRS)
- Collateral management (EMIR, CRD)
- Prudent valuation (CRD, IFRS)
- Pricing transparency (MIFID)



### Shareholders

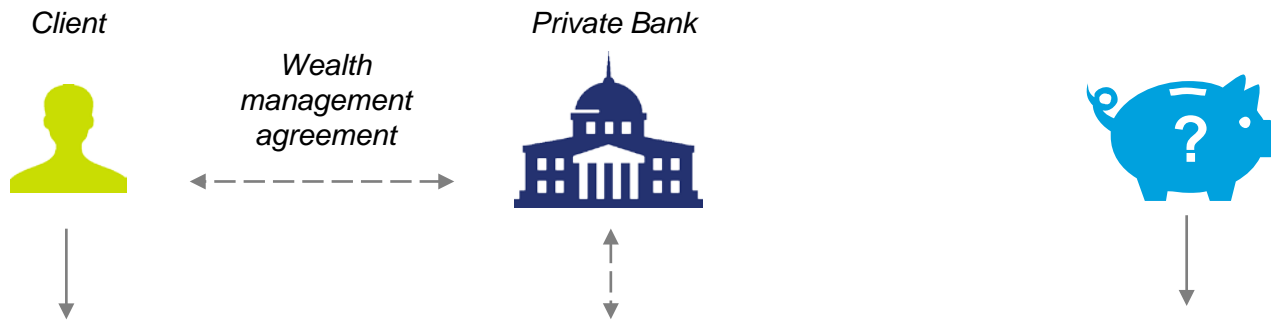
- Overpriced products can negatively impact P&L and harm the performance of the institution



# Example for wealth management

## Valuation issues related to illiquid investments

### Illiquid Investments



#### Investment Structuring

Option 1

SOPARFI

Option 2

Insurance Policy

Option 3

Dedicated Fund

#### Client Portfolio

Listed Securities

Company A

#### Valuation Issues

- Portfolio management-related concerns:
  - Asset allocation (portfolio weights?)
  - Liquidity of investment? Related cash-flows?
  - Level of risk of the investment? (maturity, industry, etc.)
  - Collateral / pledge agreement
  - Tax Structuring
- Regulatory and accounting issues:
  - Regulated fund (AIF, SIF, SICAR, etc.)
  - Unregulated vehicle (SOPARFI)
  - Insurance policy
  - IFRS, LUX GAAP, other?

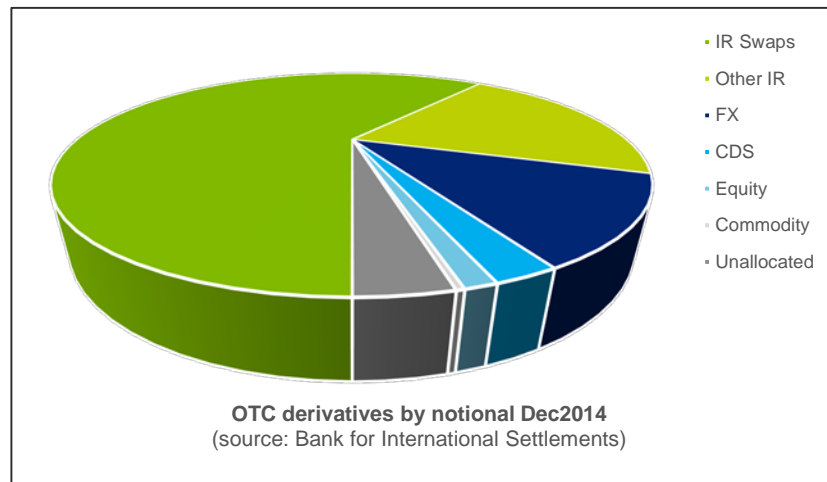
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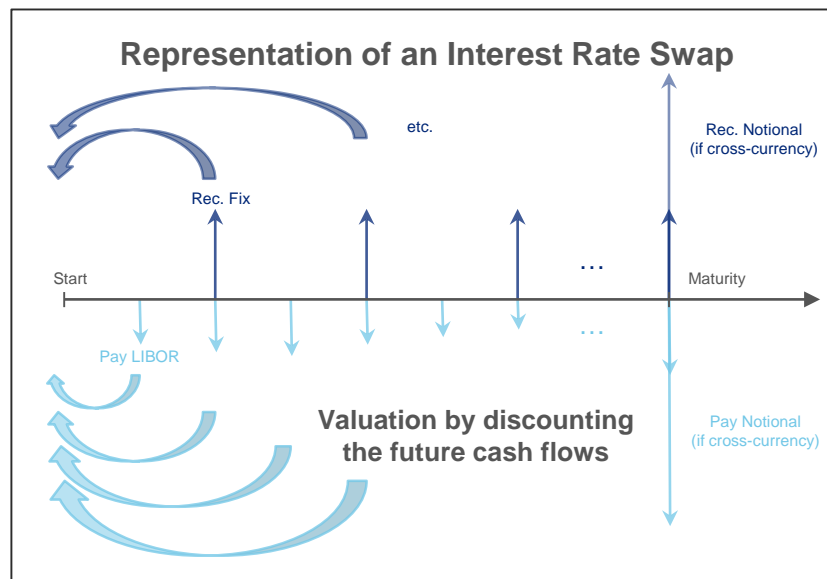
# Valuation challenges in credit institutions and investment firms

## Case study 1 – Interest rate swaps

The most frequent type of OTC by far...



... that looks apparently straightforward to value



# Valuation challenges in credit institutions and investment firms

## Case study 1 – The changing environment of IRS valuation

Since the crisis, rate of collateralized Overnight-Indexed Swap is seen as the true risk-free rate instead of Libor. The yield curve built upon OIS is the new standard for discounting.

### DERIVATIVES (SWAPS) VALUATION

Incorporation of new market realities into pricing

**Multi-curve framework (depending on collateralization)**

**Inclusion of proper valuation adjustments**

Valuation of derivatives as part of a whole portfolio



3M EUR Libor-OIS spread  
Close to 0 until credit crisis

### VALUATION ADJUSTMENTS

CVA (Credit) accounts for the counterparty credit risk if no collateral

DVA (Debit) accounts for own counterparty credit risk if no collateral

FVA (Funding) accounts for P&L of cash management in derivatives business

### TRANSPARENCY

Essential to know precisely the exposures of the bank with respect to each individual counterparty

High standards of transparency to guarantee investors protection and best execution within MiFID

### COUNTERPARTY CREDIT RISK

**Importance of proper collateral management**

Inclusion of Credit Support Annexes (CSA) in swap contracts

**Inclusion of proper valuation adjustments**

Challenges of collateral include the operational costs, the complex management of threshold and netting agreements, the determination of cheapest-to-deliver assets, etc.



# Valuation challenges in credit institutions and investment firms

## Case study 1 – Valuation of a cross-currency swap

Before the 2007 crisis...



### Classical valuation framework

Two yield curves are required:

- 1 single "standard" curve for forward and discount in ccy1
- 1 single "standard" curve for forward and discount in ccy2

... and after the crisis

### Multi-curve valuation framework

Four yield curves are required:

- 1 forward curve in ccy1 corresponding to the right Libor tenor
- 1 discount curve in ccy1:
  - OIS if collateralized
  - Standard Libor curve otherwise
- 1 forward curve in ccy2 corresponding to the right Libor tenor
- 1 discount curve in ccy1:
  - OIS if collateralized
  - Standard Libor curve otherwise
  - Cross-currency and maybe tenor basis adjustments

Ccy1 is the collateral currency, ccy2 is the other one!

Recall small effects on large notional amounts lead to big impacts!

Example:

Libor → OIS = 20 bps

20 bps × 10 mio EUR = 200,000 EUR!!

### Regulatory and practical obligations

- Report to a trade repository (EMIR)
- Ensure there is a **Credit Support Annex** for collateral definition and practical details
- Fulfil MiFID transparency obligations
- **Collateral management:** operations, netting agreement, thresholds, etc.
- If not collateralized trade:
  - Compute CVA/DVA/FVA
  - Take netting into account
  - Consider other trades in portfolio



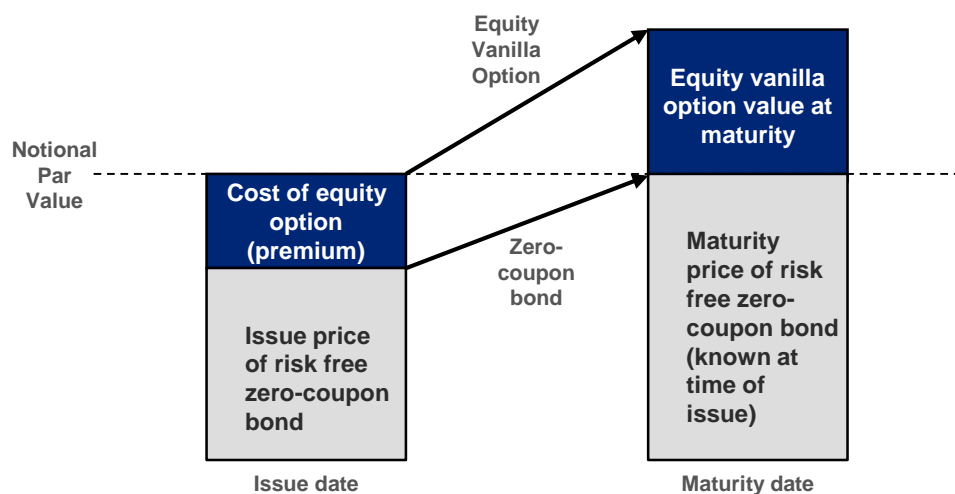
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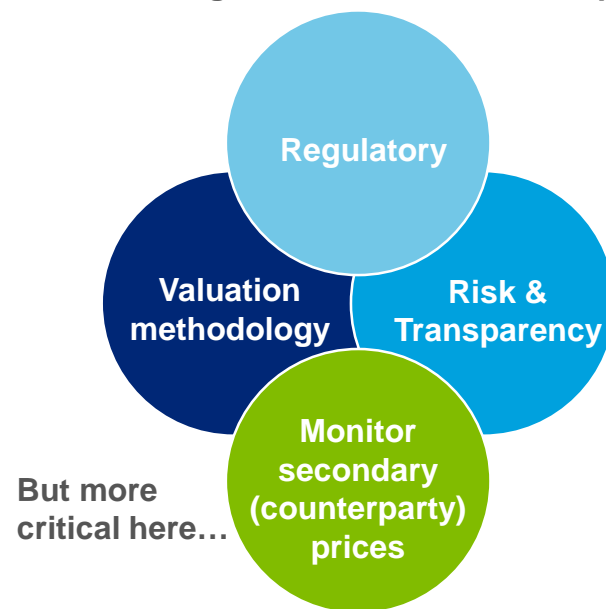
# Valuation challenges in credit institutions and investment firms

## Case study 2 – Bank issuing a structured product for its customers

**Structured product =  
combination of a bond and (vanilla/exotic) options**

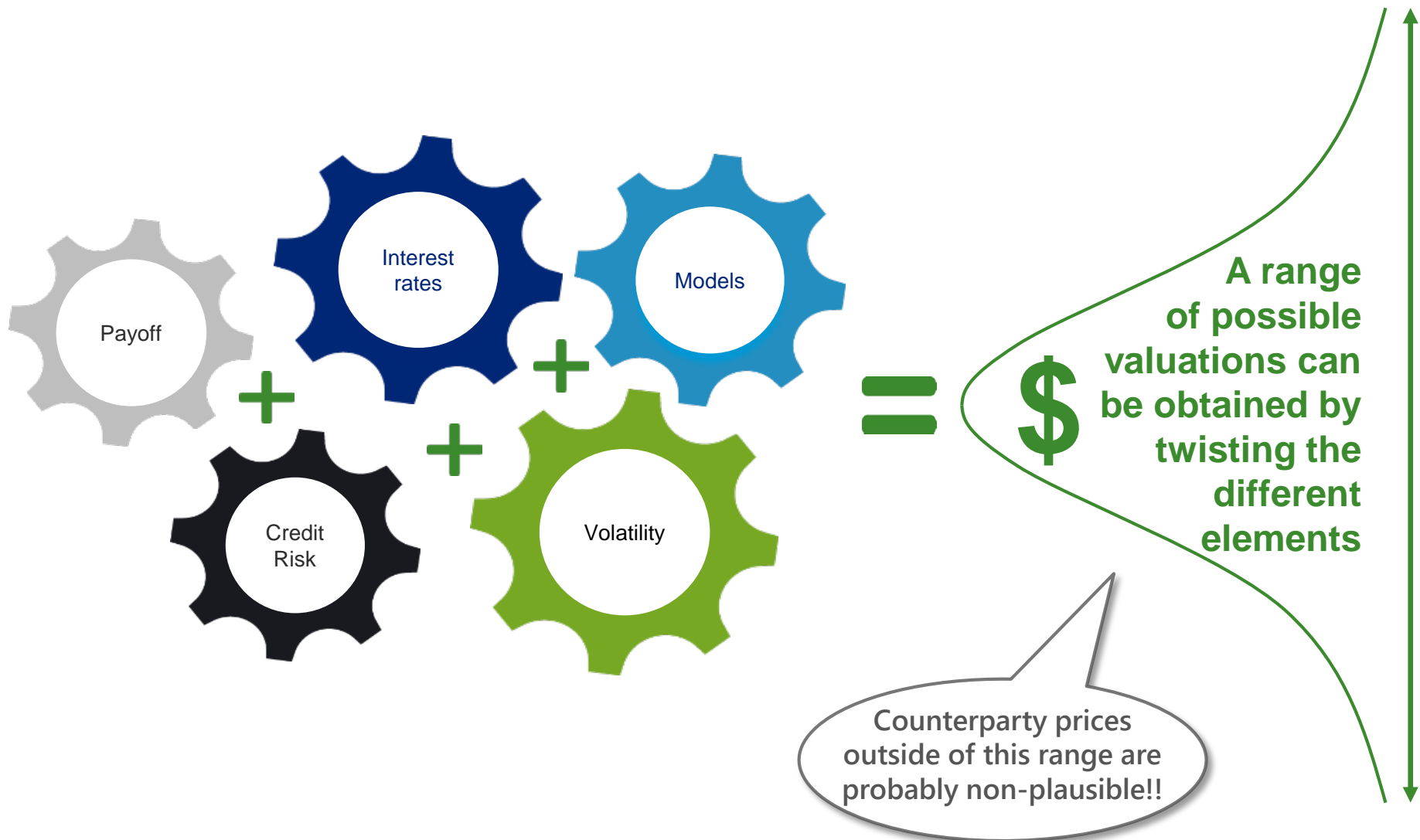


Challenges are similar as for swaps



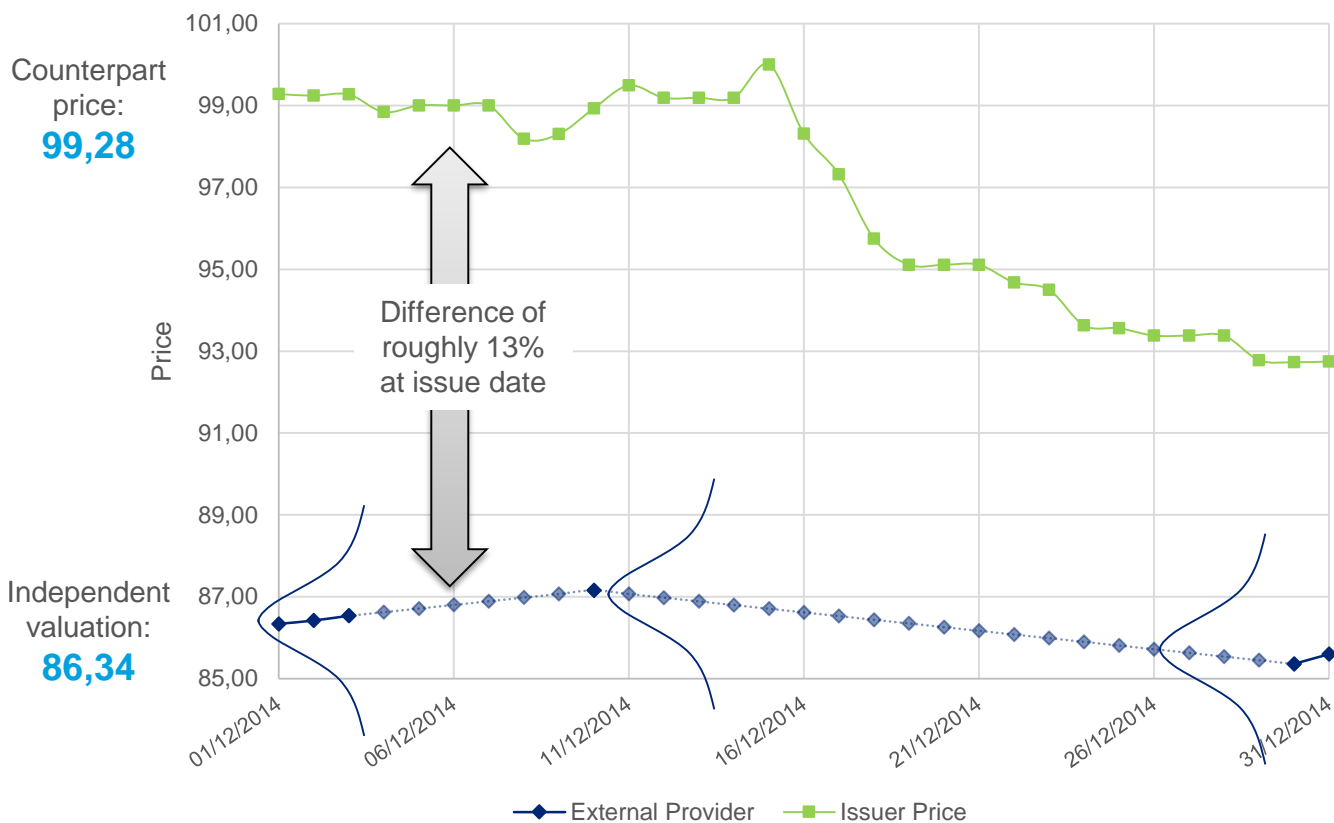
# Valuation challenges in credit institutions and investment firms

## Case study 2 – Valuation reconciliation



# Valuation challenges in credit institutions and investment firms

## Case study 2 – Real-world example of valuation reconciliation

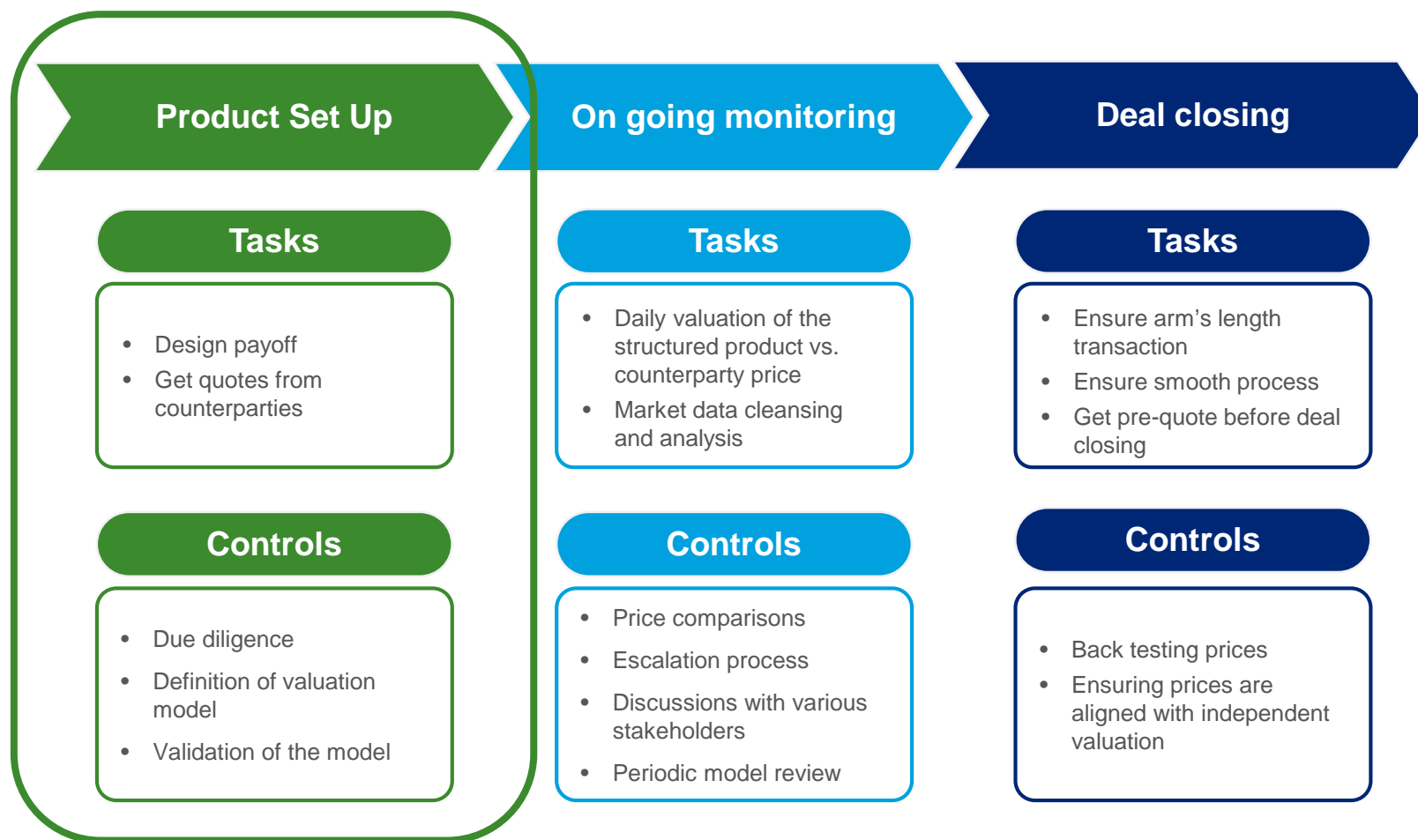


### Observations and facts

- As from product issue date, the counterpart price was outside a reasonable valuation range
- Investigation lasted a month, during which the valuation difference gradually decreases but remains larger than accepted thresholds (indicative of original overprice)
- **CONTROL FRAMEWORK** throughout the product's life is crucial

# Valuation challenges in credit institutions and investment firms

## Case study 2 – Valuation control framework for structured products



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# Panel discussion

## Today's panelists

### Georges ELIAS

Senior Wealth Management Advisor,  
MENA & Emerging Markets  
Fuchs & Associés

### Patrick FELTEN

Chief Risk Officer  
Banque de Luxembourg

### Karim MARRAKCHI

Head of Equity & Multi Assets Structuring  
ING Belgium

### Patrick PALZER

Chief Risk Officer  
Nomura Bank Luxembourg





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