Actuaries Bringing Value to Banks by Implementing IFRS 9

International Actuarial Association
Banking Working Group
Webinar, 19 September 2017
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<th>Speaker</th>
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<tr>
<td>Ania Botha</td>
<td>Ania Botha has been working in banking for the last 11 years, where she qualified as an actuary. She is an Associate Director at KPMG working in the financial services space focusing on credit risk. Her experience has involved all components of the credit risk cycle of which impairments is one element. She will be sharing about her IFRS 9 experience, where she has been involved since the launch of the Exposure draft on ECL. Her experience has ranged from thought leadership, model development and validation under both an audit and advisory function.</td>
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<td>Christian Marini</td>
<td>Christian is the head of the Prometeia IFRS 9 development team, concerning activities related to models methodologies, implementation and IT software business requirements development. He has multi-years’ experience as international consultant in quantitative credit risk models projects within worldwide financial and non-financial institutions, mainly in accord to the Basel 2 requirements. His teams have executed and delivered various projects across retail, non-retail and Low Defaults Portfolios, across different worldwide regions, such as West-Europe, East-Europe, Russia, Turkey and MENA region.</td>
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<td>Matthew Walker</td>
<td>Matthew is an Associate Director in the FS Advisory division of Deloitte South Africa. He has over 11 years’ experience in the financial services industry, having worked both at a bank and in consulting. He has gained significant experience in IFRS 9 having assisted many banks and other institutions with the development and validation of IFRS 9 models. He has been a Fellow of the Institute and Faculty of Actuaries since 2010.</td>
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## Agenda

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<th>Topic</th>
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<td><strong>Background on IFRS 9</strong></td>
<td>The history of how IFRS 9 came about</td>
<td>Ania Botha</td>
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<td>The purpose of IFRS 9 and what it is intended to achieve, from a regulatory and broader risk management perspective</td>
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<td>The relationship of IFRS 9 with other regulations</td>
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<td>Institutions which are affected by IFRS 9</td>
<td>Ania Botha and Matthew Walker</td>
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<td>The expected impact of IFRS 9 on capital and provisions</td>
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<td><strong>How IFRS 9 works</strong></td>
<td>Full scope of IFRS 9: classification and measurement, hedge accounting, impairments, etc.</td>
<td>Christian Marini</td>
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<td>Impairments: data requirements, model components (PD, LGD, EAD, SICR and FLI), disclosures, etc.</td>
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<td><strong>Skills required and what’s next</strong></td>
<td>The skills required and the current shortage of those skills.</td>
<td>Matthew Walker</td>
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<td>How the actuarial skill set is well-suited to implement IFRS 9</td>
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<td>How will the skills developed in implementing IFRS 9 be transferable to other industries and other parts of banking?</td>
<td>Ania Botha and Matthew Walker</td>
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The need for the development of the IFRS 9 – whose effective date is currently set to 1st January, 2018 – is due to the weakness of the IAS 39 with reference to:

- Level of provisioning ("too little")
- Timing of provisioning ("too late")
- Need for comparability
The Purpose of IFRS 9

The IFRS 9 is divided into 3 phases:

• Phase 1 – Classification & Measurement: new methodologies to classify and measure financial instruments
• Phase 2 – Impairment methodology: a new model to calculate impairment provisioning for financial assets
• Phase 3 – Hedge Accounting: new accounting practices to be adopted for hedging purposes (Not discussed within these slides)

The purpose of the standard is to combat the weaknesses of IAS 39, where

• IAS 39 is an incurred loss model and not an expected loss model;
• IAS 39 does not consider future credit risk events such as further limit increases or drawdowns.
• IAS 39 does not consider leading indicators of risk while under IFRS 9 losses would be allowed for quicker
• Forward Looking information was not considered within IAS 39 which could assist with including potentially adverse future scenarios
• Under IAS 39 Advantage was taken in assessments under FV

IFRS 9 aims to have institutions align their business as usual (BAU) process to their accounting treatment.

The Standard attempts to guide institutions to have a holistic risk management process which encourages collaboration and understanding of all key areas.

Great opportunity for actuaries to get involved by being the link between business, risk and finance, where actuaries are skilled in breaking down complex problems, and understanding the risks at each point of a process – Actuarial control cycle.
Impact on Impairments Range from 15% to 50% - EBA released results for European Banks that have seen an average increase in impairment of 13%.

Increase in provisions will decrease Common Equity Tier 1. The CET1 ratio has decreased on average by 45bps, where the minimum requirement for CET1 is 4.5%, and target level requirements (EBA) is 7-9.5%.

Non-Financial Impacts will also need to be allowed for in terms of Disclosures, Governance, Systems, and Data, Processes, Pricing and Product offerings, People and Change management.
The level of an entity’s impairments affect both the demand (i.e. capital requirements) and supply (i.e. capital resources) of capital.

**Capital Requirements**

- **Standardised** Capital requirements are calculated as a percentage of exposure net of specific impairments raised. Specific impairments may increase under the new standard.

- **Internal ratings based** Capital requirements rely on calculated expected loss, which is a function of regulatory parameters (PD, LGD, EAD). Defaulted book capital calculated net of specific impairments may increase under the new standard.

**Capital Resources**

- **Standardised** Impairments have a 1:1 impact on Tier 1 capital as retained earnings are reduced. General impairments can be eligible to count as Tier 2 capital resources up to a ceiling of 1.25% of RWA.

- **Internal ratings based** The Basel EL replaces accounting provision (provided exceeded). In scenarios where accounting provisions exceed Basel EL, surplus allowed to count up to a ceiling of 0.6% of RWA.

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**Illustration of existing prudential treatment of provisions (Basel III)**

- **IAS 39**
  - **Tier 1 deduction**
    - One-year Expected Loss
    - Stock of relevant impairments
    - Deduction from Core Tier 1 Capital

- **IFRS 9**
  - **Tier 1 deduction**
    - One-year Expected Loss
    - Stock of relevant impairments
    - Count as Tier 2 Capital (up to a point)

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**Expected position under IFRS 9 if no change to Basel Rules**
From IAS 39 to IFRS 9

The new standard includes revised guidance on the classification and measurement, impairment and hedge accounting. The most significant innovation are related to the impairment and Loss Loan Provisions (LLP) estimation.
# Stage Attribution

The Staging Process Steers the Expected Loss estimation

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<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
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<td>As soon as a financial instrument is originated or purchased, <strong>12-month expected credit losses are recognized</strong> in profit or loss and a loss allowance is established.</td>
<td>If the credit risk increases significantly and the resulting credit quality is not considered to be low credit risk, <strong>full lifetime expected credit losses</strong> are recognized.</td>
<td>If the credit risk of a financial asset increases to the point that it is considered credit-impaired, interest revenue is calculated based on the amortized cost (i.e., the gross carrying amount adjusted for the loss allowance).</td>
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### Attribution criteria

*Source: IFRS 9 Financial Instruments (June 2014)*

### Impairment recognition

- 12-month expected credit losses
- Lifetime expected credit losses

### Possible staging criteria

- Downgrade of the forward looking cumulative PD from origination to reference date.
- Rating thresholds.
- Watchlist of credit monitoring (Early Warning System).
- Contract criteria changes (restructuring, forbearance, …).
- Pricing…

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*Illustrative*
Lifetime Expected Loss
Practical Example

The 12 month expected loss will correspond to a portion of the LEL:

\[ EL_i = EAD_0 \times PD_0 \times LGD_0 \]

\[ EL_1 = \delta_1 \{ [(EAD_0 - CF_1) \times (PD_1^t \times PD_0^c) \times LGD_1] \} \]

\[ EL_2 = \delta_2 \{ [(EAD_1 - CF_2) \times (PD_2^t \times PD_1^c) \times LGD_2] \} \]

\[ EL_3 = \delta_3 \{ [(EAD_2 - CF_3) \times (PD_3^t \times PD_2^c) \times LGD_3] \} \]

\[ EL_4 = \delta_4 \{ [(EAD_3 - CF_4) \times (PD_4^t \times PD_3^c) \times LGD_4] \} \]

The Exposure will be defined in accord to the accounting definition of the **Gross Carrying Amount**, the PD and LGD are the risk drivers estimated in line with the IFRS 9 requirements and the discounting factor coherent with the GCA, meaning the **EIR**.
## Overview of the Risk Parameters

### Banks with mature credit risk systems

The IFRS 9 risk parameters can leverage the regulatory or managerial Basel 2 risk parameters, with proper calibrations (or re-development).

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<th>Risk Parameter</th>
<th>IFRS 9</th>
<th>Basel 2</th>
<th>Synergies</th>
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| PD             | • Point-in-Time estimation.  
                • Cumulative forward looking PD estimation.  
                • Point-in-Time (without any prudential buffers and downturn).  
                • Without indirect costs.  
                • EIR discounting factor.  
                • Exposure estimated for any t up to maturity (discounted for the EIR).  
                • Integration of Prepayment.  
| LGD            | • Through-the-Cycle  
                • Inclusive of prudential components.  
                • Downturn and indirect costs add-on.  
| EAD            | • CCF/EAD component for off-balance exposure.  
| Satellite Models | Models capable of projecting risk parameters until the maturity of the facility (20/30 years).  
|                | Stress Test model relevant for short term period: 1-3 years of horizon (cfr. EBA SREP guidelines – economic cycle).  

- **Recalibration of the Basel 2 parameters** (if available) in order to obtain estimations in line with IFRS 9 requirements.
- **Opportunity to develop risk parameters models suitable for Basel 2 requirements in case of unavailability.**
- **Opportunity to develop Basel 2 compliant risk parameters models (in case of standard banks and/or missing the risk models).**
Alternatives for EL/LEL Estimation

Different complexity levels bring to alternative analytical solutions

- Banks with A-IRB Basel 2 models (even validated), properly calibrated (PIT), with advanced satellite models (customized for long run forecasts), estimated with internal data.
- Small mid-size Banks with limited awareness on risk parameters, partially used for managerial purpose (e.g. application rating models). Proper calibration of the model available together with simplified measurement (e.g. loss rate for LGD, …) can be required.
- Small Banks or not mature banking systems can suffer a complete lack of statistical risk parameters, together with a limited availability of data and inconsistent information in the time (default definition, accounting procedures, …). Judgmental approaches are required.
Implementation Phase

Project's challenges

**Activities**

- Adequate estimation of lifetime Expected Loss (based on the maturity) floored on proper risk parameters.
- Buckets definition (based on the subjective/objective criteria).
- Integration of a forward looking components in the EL/LEL estimations, in order to produce multi-years forecasts.
- Integration of credit risk data together with other financial risk, market and accounting data.
- Integration of data in a unique solution able to perform IFRS 9 calculations (EL/LEL, Fair Value, …) in accord to the instruments classification and the conditions defined (staging, risk parameters, interest rates, …). The solution has to be “validable” and auditable.
- Definition of a long-run macro-economic scenario in order to use all reasonably available forward-looking information and macroeconomic factors on its estimates of ECL.

**Actions**

- Collective provision dynamic monitoring
- Impacts simulation for bucketing changes
- Risk parameters calibration/estimation
- Implementation and normalization of all data into the IT architecture.
- Integration, parameterization and implementation of the systems and engines to effectively perform the IFRS9 calculation and reporting.
- Define the data source (OECD, FMI, EDDS)
IFRS 9 Architecture
Interaction of accounting, finance and risk management

- Core Banking system
- Client/Loan base information
- Finance
- Treasury
- Credit Risk Data/Models
- CRM & Other
- ...

Input Data Sources

- Assets classification
- Accounting
  - Business model of Loans
  - SPPI test

Risk Management

- PD Lifetime Models
- LGD Models
- EAD
- Loss Rate/ Coverage Ratio
- ...

Information Technology (IT)

- Core Banking system
- Client/Loan base information
- Finance
- Treasury
- Credit Risk Data/Models
- CRM & Other
- ...

Accounting

- Simplified Approach
- POCI

Amortized Cost

FVOCI

FVPL

Staging

LLP calculation

Simplified Approach

FVOCI

FVPL

...
What’s Next?
From implementation to production

Project set-up and IFRS 9 implementation:
After years of work the majority of Tier 1 Banks have fulfilled the first parallel run and are about to be ready for the 1\textsuperscript{st} January 2018. Small Banks or small regional banking systems are still working on it.

Impacts on preliminary runs:
The initial fears of the potential consequences after the IFRS 9 implementation are faded. Several Banking Groups did not realized a significant increase of LLP and in same case even a release.

Fine-tune of the IFRS 9 system:
Approximations executed for the first application have to be solved.

Validation and auditing of the IFRS 9 process:
The acceptance of the IFRS 9 system by regulators is still a question mark.
Skills Required

Quantitative
• Modelling: Scorecards, Run-off triangles, Markov chains, Statistical methods
• Coding: SAS, SQL, R
• Econometric modelling

Data and technology
• Data analysis
• Data management
• Data warehousing

Risk management
• Validation
• Documentation and communication
• Governance and controls

Strategy and project management
• Implementation programme management
• Target operating model design

Almost half of banks think they do not have enough technical resources to deliver their IFRS 9 project and almost a quarter of these do not think that there will be sufficient skills available in the market to cover shortfalls.
Optimisation of IFRS 9 will require:

- **Modelling**
  Leverage IFRS 9 models to optimise Basel models in order to reduce RWA and achieving capital efficiency

- **Process and Governance**
  Pursue opportunities to streamline existing capital and impairment processes

- **Technology**
  Deploy an enterprise-wide credit risk application, covering both the Basel and IFRS 9 aspects of credit risk

Other areas where skills are applicable:

- Stress Testing
- Capital Planning
- Loan Approvals and Pricing
- Business Decisions
Questions?