EY LIC Solution®

Powerful tool to support quick IFRS 9 implementation
Contents

Executive summary ................................................................. 1
How EY LIC Solution® helps .................................................. 2
Functionalities and applied methods .................................... 3
Parameters of collective assessment ....................................... 5
How it works ........................................................................ 6
User management and audit track ....................................... 8
Contacts ............................................................................ 9
# Executive summary

## 1 Background

IFRS 9 is mandatory as of 1 January 2018. This tight timeline poses a significant challenge for many banks. Particularly smaller subsidiaries of large banking groups are struggling to deploy their own IFRS 9 impairment calculations for group reporting purposes.

Common key challenges result from:
- Insufficient resources provided for banking subsidiaries
- Missing data to calculate IFRS expected credit losses (ECL)
- Lack of resources to deploy their own IFRS 9 impairment solution
- Insufficient data processing capabilities and tools
- Inability to align with comprehensive group reporting requirements
- Lack of sufficiently skilled and experienced staff
- Inconsistent data for accounting and regulatory reporting
- Missing data to satisfy IFRS 7 notes disclosures

With the EY LIC Solution®, we have built a powerful tool that supports effective IFRS 9 implementation within a short period of time (one month for smaller banks).

## 2 Why EY LIC Solution®

The EY LIC Solution® is a powerful IFRS 9 calculation engine that supports our clients in generating and processing credit risk parameters for IFRS 9. The tool is already being used by many clients and is therefore practice proven.

Some highly valued functionalities include:
- ECL modeling based on available credit risk parameters
- Scaling of 12 month PDs to lifetime PDs
- Stage allocation based on lifetime PDs
- Additional impairment triggers for stage 3
- ECL calculations for stages 1 and 2 based on probability of default (PD), loss given default (LGD), exposure at default (EAD)
- ECL calculations based on cash flow-projections
- IFRS 9 scenario modeling and many more

Our EY LIC Solution® has been successfully deployed for banks of with various business models, such as retail, corporate, asset financing, credit cards, specialized lending or project financing.

EY LIC Solution® is a powerful tool that supports particularly small-and medium-sized clients to implement IFRS 9 impairment quickly and reliably.

## 3 How it can help you

The EY LIC Solution® is a powerful technical platform that helps you to navigate key challenges around IFRS 9 impairment.

**What does it need?**
- Basic loan file inputs based on clear data requirements
- Credit risk parameters, such as probability of default (PD) and loss given default (LGD), if available

## 4 How does it work?

- The EY LIC Solution® is a flexible IFRS 9 solution that can be seamlessly integrated in your IT system architecture
- On the basis of your input data, the EY LIC Solution® provides you with granular ECL data for each stage according to IFRS 9
- The EY LIC Solution® covers various functionalities, such as a data interface layer, flexible parametrizations, IFRS 9 stage allocation (see page 3), ECL calculations (12-month or lifetime), collective or individual assessments, and many more
How EY LIC Solution® helps

EY LIC Solution® is a tool that supports the transition to IFRS 9 by calculating IFRS 9 expected credit losses based on your available credit risk data and accounting policies, so you meet the regulatory deadline for the implementation of IFRS 9.

The LIC Solution® is a highly flexible product. Functions can be plugged in and flexibly configured upon your exact demands on a step-by-step basis. The EY LIC Solution® has a separate layer for input and output data, which represents the interface to the bank’s system landscape. We support you during the whole implementation process, provide initial training to the users and offer ongoing support services after implementation LIC Solution®.

EY LIC Solution® key concepts

<table>
<thead>
<tr>
<th>IFRS 9-compliant</th>
<th>User-friendly</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is an easy-to-use solution that is capable of handling all of the upcoming challenges of the IFRS 9 standard, including:</td>
<td>EY LIC Solution® provides a user-friendly environment with the ability to control and track changes made by authorized users:</td>
</tr>
<tr>
<td>► IFRS 9 staging</td>
<td>► Easy-to-use web-based interface</td>
</tr>
<tr>
<td>► Modeling of lifetime PD, LGD and EAD</td>
<td>► User role definition and audit trail</td>
</tr>
<tr>
<td>► Lifetime and 12-month ECL calculation</td>
<td>► Functional accessibility based on user rights</td>
</tr>
<tr>
<td>► Scenario modeling</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flexible</th>
<th>Proven track record</th>
</tr>
</thead>
<tbody>
<tr>
<td>EY LIC Solution® is flexible both in the institution’s possible inputs and during calculation phase:</td>
<td>► The tool is already being used by several financial institutions and has proven its capabilities in practice.</td>
</tr>
<tr>
<td>► Alternative structure of data inputs</td>
<td>► Our IFRS 9 EY LIC Solution® can be efficiently integrated into your current IT architecture.</td>
</tr>
<tr>
<td>► Calculation configuration</td>
<td>► Our IFRS EY LIC Solution® has already been tested successfully at many financial institutions.</td>
</tr>
<tr>
<td>► Variety of operational simplifications</td>
<td></td>
</tr>
</tbody>
</table>
Functionalities and applied methods

Stage 1
Performing
Allowance: 12-month ECLs

Stage 2
Underperforming
Criterion:
Interest revenue based on: Gross carrying amount

Stage 3
Nonperforming
The credit risk has increased significantly since the initial recognition.
Objective evidence of impairment
Interest revenue based on: Gross carrying amount

Improvement
Changes in credit quality
Deterioration

EY LIC Solution® provides the following options for determination of significant increase in credit risk compared with origination (stage 2):
► Days past due (DPD) threshold
► Rating deterioration
► Lifetime or 12-month PD deterioration
► Flags defined by the institution

When determining assets in stage 3, EY LIC Solution® provides the following options:
► DPD threshold
► Rating threshold
► Flags defined by the institution

These rules can be configured and combined in the user interface separately for each portfolio.
Alternatively, stages provided by the institution and loaded as an input.
Overview of the applied methods

The applied method for ECL calculation depends on the assessment method and the IFRS 9 stage. Additionally, exceptions are defined for special classes of assets.

<table>
<thead>
<tr>
<th>Significant increase in credit risk</th>
<th>Impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1</strong></td>
<td><strong>Stage 2</strong></td>
</tr>
<tr>
<td>Individual approach</td>
<td>Evaluation of a range of possible outcomes based on possible scenarios for future cash flows (discounted by Effective Interest Rate (EIR)) and their probability</td>
</tr>
<tr>
<td>Collective approach</td>
<td>12-month ECL*</td>
</tr>
<tr>
<td>Exceptions</td>
<td>Lifetime ECL based on Exposure and LGD</td>
</tr>
<tr>
<td>Renewable Credit Facilities (collective)</td>
<td>12-month ECL regardless of contractual maturity</td>
</tr>
<tr>
<td>Purchased or Originated Credit Impaired (POCI)</td>
<td>Lifetime ECL based on Exposure and LGD</td>
</tr>
<tr>
<td>Simplified approach</td>
<td>ECL calculated based on exposure and the loss rate</td>
</tr>
<tr>
<td></td>
<td>Either individual approach is applied or future cash flows are projected on the basis of the portfolio recovery curve. Future cash flows are discounted by credit adjusted EIR.</td>
</tr>
</tbody>
</table>

*For assets with contractual maturity below 12 months, contractual maturity ECL can be used.*
Parameters of collective assessment

Risk parameter options in EY LIC Solution®

- **PD**
  - Input on account level
  - Migration matrices and Markov chain approach from history of DPDs or ratings

- **LGD**
  - Input on portfolio level (steering tables)
  - Based on collateral, recovery history and months after default

- **EAD**
  - Based on credit conversion factor for off-balance and expected prepayments
  - Temporarily adjusted collateral haircuts
  - Temporary marginal PD shift or Bayesian formula

Built-in calculations

Forward-looking adjustments

EY LIC Solution®: Powerful tool to support quick IFRS 9 implementation
How it works

EY LIC Solution® operates on a modern three-tiered architecture which facilitates separation of data management functions, application processing, and end-user presentation. Users access all functionalities via a web browser interface so that no additional installation effort is required on end-user devices.

The tool has scalable hardware and software requirements. Integration to the bank’s IT environment is on the basis of pre-defined data input and data output MS SQL interfaces.

Calculation process flow

Data input
Loading calculation inputs from source systems in a standardized structure. These inputs are then validated using data quality checks.

Configuration and process control
Selecting the version of input data and configuration of calculation parameters (e.g., staging criteria and risk parameters) and link to previous calculation run.

ECL calculation
EAD, LGD, and PD modelling. Performing impairment calculation using cash flow scenarios or portfolio risk parameters.

Segmentation and staging
Performing automatic selection for individual assessment and segmentation into IFRS 9 stages.

Output
Preparing standardized data extracts, built-in reports, and comparison to previous runs.
Integration to the institution’s environment

Data flow, from source systems to EY LIC Solution® and from solution to the institution’s systems, is described in the scheme below. Input data is extracted by the institution from source systems, transformed to a standardized input form and stored in an input data area. Data export, transformation and storage in target systems are carried out by the institution.
User management and audit trail

User management

EY LIC Solution® supports Active Directory authentication of users. It supports a seamless single-sign-on user experience.

EY LIC Solution® roles can be defined directly through user interface. The tool roles are granted to Active Directory Groups using the same user interface.

Users’ membership in Active Directory Groups can be managed centrally via the institution’s identity and Access Management tools.

Permissions for the particular role are set by selecting them from the list of granular permissions (e.g., view permission for a page and data modification permission).

Audit trail

► General auditing functionality – tracking all user and administrator actions in the solution, logging calculation steps, entries/exits
► Audit reports – visualize/look up the data
Contact list
For further information, please contact:

Lubos Prchal
Partner
EY EMEIA Financial Services
Email: lubos.prchal@cz.ey.com

Thimo C. Worthmann
Partner
EY EMEIA Financial Services
Email: thimo.worthmann@de.ey.com

Tara Kengla
Partner
EY EMEIA Financial Services
Email: tkengla@uk.ey.com

Radek Lastovicka
Senior Manager
EY EMEIA Financial Services
Email: radek.lastovicka@cz.ey.com
About EY
EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit ey.com.

© 2017 EYGM Limited.
All Rights Reserved.

EYG no. 06056-174Gbl
EY-000043731.indd (UK) 10/17.
Artwork by Creative Services Group London.
ED None

In line with EY's commitment to minimize its impact on the environment, this document has been printed on paper with a high recycled content.

This material has been prepared for general informational purposes only and is not intended to be relied upon as accounting, tax or other professional advice. Please refer to your advisors for specific advice.

ey.com