AESTIMATIO 9
(for IFRS 9)
OUR PROFILE

Aestimatio Analytics is a BVI based boutique advisory firm which provides quantitative consulting, predictive analytics and risk estimation solutions to its global clients.

International Presence
- Active in 4 continents
- 6 global offices
- Operations in 18 countries

Specialized Team
- 40% PhD qualified quants
- 30% trained econometricians
- 30% accountants & others

Strong Credentials
- 200+ proprietary algorithms
- 3000+ predictive models delivered
- Member of BCBS’s BORG

Global Clientele
- 60% banking institutions
- 30% NBFCs & funds
- Over 300 clients served by team
Introduction

The International Accounting Standards Board (IASB) issued the final version of the IFRS 9 standard - Financial instruments, in July 2014 which supersedes the regulations of IAS 39 and any previous versions of IFRS 9 effective 1st of January 2018.

This modification is a remedial measure to the issue that arose as a result of the financial crisis. The IASB realized that the IAS 39 Incurred Loss Model has delayed recognition of credit losses. Thus, resulting in the introduction of the forward-looking Expected Credit Loss approach.

IFRS 9 Financial Instruments

The impairment requirements in the current standard of IFRS 9 replaces the Incurred Loss approach required by the standard IAS 39 Financial Instruments - Recognition and Measurement with a futuristic Expected Credit Loss approach which also considers the Time Value of Money.

The new approach requires entities to recognize a provision for either - 12months or lifetime Expected Credit Losses (ECL's), depending on the change in Credit Risk since the initial recognition of the Financial Instrument and assigning the Financial Instruments in stages based on their Days Past Due (DPD's).

About Software

Aestimation 9 provides end to end solution for the estimation of ECL provisions under IFRS 9 requirements. Aestimatio 9 is a fully automated solutions to your IFRS 9 needs. Aestimatio 9 Supports all major platforms - Windows Servers and different flavours of Linux Servers Supports all major browsers (Chrome, Firefox and IE).

Has extensive Technical support service,

Has simplified Installation - Remote assistance will be provided if necessary.

First time data preparation and model calibration services available separately.
Abacus Consulting Technology is a leader in Transformation Services in the region, offering a diverse mix of Technology, Consulting and Outsourcing services.

**Corporate Profile:**
- Founded in 1987
- 12 lines of transformation services
- 2 tech ventures
- Strategic partnerships/alliances with global industry leaders (SAP, Mercer, Google/Apigee, AWS/Amazon, Tableau, Aestimatio, Microsoft, UiPath and others)

**Clientele**
- 500 enterprise clients
- 40 industries served across 8 universal sectors
- USD 250+ Million of transformation services delivered

**Human Capital**
- 2,900+ global employees
- 400 subject matter specialist consultants

**Global Footprint**
- Active in 4 continents
- Service footprint in 24 countries
AESTIMATIO 9
PRODUCT FEATURES

- Fully Automated: User friendly, requires only data inputs and recalibrates automatically.
- Totally Risk Free: Extensively tested, free from errors and cannot be manipulated.
- Independant: No dependence on vendor with 24/7 technical support service.
- Low Cost: Annual license fee comparable to Excel models pricing.

- Provides a comprehensive end to end solution for the estimation of ECL provisions under current IFRS 9 requirements.
- Supports all major IT platforms and browsers.
- Easy to use & requires minimum data input from its users.
- Equally capable of estimating ECL for large input data stream; as well as for a minimum of single quarter’s input data.
- Comes with free on-site users training and very strong 4 tier technical support point forward which is available on 24/7 basis.
- Provides free software updates as and when IFRS amends or refines its methodology.
- Available in 3 versions to cater to varying needs of corporate clients.
AESTIMATIO 9
STRUCTURAL ARCHITECTURE

- In compliance with modeling methodologies agreed in GPPC document jointly published by 6 largest accounting firms.
- Extensively tested by the Chartered Accountants worldwide.
- Validated by globally renowned quants and verified by clients’ external auditors.
- Excel versions of software already in use in over 56 companies across 17 countries.

AESTIMATIO 9
4 TIER 24/7 SUPPORT SYSTEM

User Training
- Data Entry
- Parametric Settings
- Output Generation
- Database Management

Estimation Support
- Data Verification
- Parametric Validation
- Output Interpretation
- Disclosure Assistance

Query Support
- Management Queries
- Board Queries
- Auditors Queries
- Regulatory Queries

Technical Support
- Trouble Shooting
- Anomaly Management
- Report Customization
- Software Updates
### IFRS 9 Impairment Model

<table>
<thead>
<tr>
<th>Input</th>
<th>MEV Model</th>
<th>MEV Projections Model</th>
<th>MES Model</th>
<th>PD Model</th>
<th>Master Impairment</th>
<th>Master Impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Rate Data</td>
<td>MEV Historic Data</td>
<td>Annual Projection of MEV's</td>
<td>MEV's quarterly data</td>
<td>(1) Collated DPD data</td>
<td>For PD: Segment-wise Weighted PIT PD</td>
<td>For EAD: (1) DPD data - Current provisions</td>
</tr>
<tr>
<td>MEV Historic Data</td>
<td></td>
<td></td>
<td></td>
<td>(2) Weights assigned to each scenario</td>
<td>For LGD: (1) Avg. LTV Ratio</td>
<td>(2) Weight Avg. interest rates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(3) Predicted change in DR under each scenario</td>
<td>(2) Avg. Recovery rates</td>
<td>(3) YOY Cashflow &amp; Outstanding exposure</td>
</tr>
</tbody>
</table>

#### Analytics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarterly data through interpolation</td>
<td>Principal Component (PC)</td>
<td>slopes &amp; intercepts</td>
<td>Run Regression on PC</td>
<td>based on historic data for each DPD bucket</td>
<td></td>
<td>Segment-wise PV EAD</td>
<td>Segment-wise ECL</td>
</tr>
</tbody>
</table>

#### Output

| Selects MEV's based on R-Squares & P-Values | MEV's quarterly projections | Assign weights to scenarios | Predict change in DR under each scenario | Estimates the segment-wise Weighted point in time PD | Estimates segment-wise PIT LGD | Estimates the final impact on SOFP |

---

### Why is IFRS 9 Challenging?

**The Missing Information**

If there are 2 material challenges in this methodology. First is how to measure the credit risk, second is **how to define significant increase in credit risk?**

IFRS 9 methodology does not address these issues in detail. The concept of default is not defined in the proposal and the approaches to estimate expected credit losses are not prescribed.

According to IFRS 9 proposal, banks should develop their own approaches to track and measure credit risk. Similarly, banks should develop their own specific criteria and thresholds to identify significant deterioration in credit risk.
IFRS 9 Impairment Model

1. Measurement of credit risk can be based on an individual account or collective pool approach. The latter requires shared risk characteristics to be identified (e.g., instrument type, date of origination, remaining term to maturity, correlation with the unemployment rate, etc.).

2. Specific criteria & threshold required for identifying significant deterioration in credit risk could be different depending on the underlying financial assets, for e.g., consumer and corporate loans or debt securities.

3. Whilst the IFRS 9 allows for significant flexibility, it imposes the "lifetime criterion" when contractual payments are more than 30 days past-due.

4. Expected credit losses should reflect a probability-weighted outcome. It means an unbiased and probability-weighted amount in a range of possible outcomes with at least two scenarios considered: the probability that a credit loss results and the probability that no credit loss results. Expected losses must be discounted back to the reporting date.

5. Best possible available information should be embedded in the estimate, including expert judgement for the future, internal historical credit loss experience, internal and external ratings, credit loss experience of other entities, external reports, etc.

6. The lifetime expected credit losses should be estimated based on the present value of all cash shortfalls over the remaining life of the financial instrument.

7. The 12 month expected credit losses should be a portion of the lifetime expected credit losses that are associated with the probability of default occurring over the 12 months period following the reporting date.

8. The probability weighted approach would also require the incorporation of scenarios and expert judgements on how the future may unfold and data may have to be adjusted to reflect forecast conditions.
Addresses

HEAD OFFICE
105 Olive Road Road Town,
Tortola British Virgin Islands,
VG1110

GCC REGIONAL OFFICE
2519 Way
Building Number 1197
Muscat 112, Oman

NORTH AMERICAN REGIONAL OFFICE
7075 Edward’s Blvd
Mississauga L5L 1Z2
Canada

ASIA PACIFIC REGIONAL OFFICE
19/1 Moo 7 A
Laem Sing, T. Bang Ka
Chai Chanthaburi 22120
Thailand

PAKISTAN OFFICE
Executive Tower 7th Floor,
Dolmen Mall Clifton,
Karachi, Pakistan

LONDON OFFICE
64 Knights Bridge, London,
SW1X7JF,
United Kingdom

www.Aestimatioanalytics.com   Info@Aestimatioanalytics.com

Our Exclusive Partner & Representative in Pakistan

ABACUS
YOUR TRANSFORMATION PARTNER

Lahore - Karachi - Islamabad

www.abacus-global.com
Tel: +92 42 3588 4981
UAN: (042) 111 ABACUS
info@abacus-global.com

Contact:
alliya.haidar@abacus-global.com