



ECL Calculator User Manual

December 2020



1. About the manual

The user manual covers the steps one need to follow to use the ECL calculator to generate ECL estimate under various scenarios

- The user manual will provide details on the functionality on the tool and assist user in accessing it seamlessly
- The manual covers the specifications of the user inputs required to estimate the expected credit losses
- The manual covers the execution steps required to estimate the expected credit losses
- It outlines the key information that are captured in the output generated by the tool and guide the user to understand the graphical representation of the estimated ECL



2. Step 1 - Input (1/4)

The table below listed the input required for ECL estimation and the necessary guidance on how to provide the correct inputs

| Input | Instruction |
|---------------------------|--|
| Currency of the Exposure | Select the currency of the exposure from the drop down. The tool doesn't perform any currency conversion. Hence in case if the required currency not found in the list please use any standard currency of choice. The currency selected will be use to label the calculated ECL |
| Contractual Term in Years | Select the term of the investment. Please select the desired value from the drop down. The values in the dropdown represent years |
| Reporting Position | Reporting position gives the user flexibility to get a directional sense of ECL at different position throughout the lifetime of the investment. For example, if selected value is 1, then the calculator will provide an ECL estimate at the end of 1 st year investment. Similarly if the selected value is 5 (say), then the tool will estimate ECL at the end of 5 th years of investment by accordingly reducing the balance based on the repayment schedule. |
| Watchlist Indicator | This is a secondary indicator for stage2. If the investment is watch listed for any performing issue then select "Y", else select "N". The secondary indicators will enable use to generate scenario under which an investment can potentially be flagged as Stage2 |
| Covenant Breach Indicator | This is a secondary indicator for stage2. If the investment has breached or expected to breach any covenant then select "Y", else select "N". The secondary indicators will enable use to generate scenario under which an investment can potentially be flagged as Stage2 |

| Input Validation | Model Parameters | Input |
|-----------------------------------|---|-------------|
| | Currency of the Exposure | GBP |
| | Contractual Term in Years | 5 |
| | Reporting Position | 2 |
| Qualitative SICR Conditions | Watchlist Indicator | N |
| | Covenant Breach Indicator | N |
| | Default Indicator | N |
| | Days Past Due | 0 |
| | Rating at Origination | B1 |
| | Rating at Reporting Position | B1 |
| | LGD < █ > | 0.45 |
| | EIR < █ > | 10% |
| | On Balance Sheet Exposure at Origination | 500,000,000 |
| | Off Balance Sheet Exposure at Origination | - |
| | CCF | 100% |

3. Step 1 - Input (2/4)

The table below listed the input required for ECL estimation and the necessary guidance on how to provide the correct inputs

| Input | Instruction |
|--------------------------|--|
| Default Indicator | This is a secondary indicator for stage3. Select "Y" if the Bond has defaulted, otherwise select "N" |
| Days Past Due | This requires user to provide the Days Past Due (DPD). The desired values integer >=0. If 30<= DPD <= 89 then the investment will be triggered as Stage 2 If 90<= DPD then the investment will be triggered as Stage 3 |
| Rating at Origination | Select the desired rating. The ratings used for ECL estimation as based on Moody's rating scale . Please refer to the Rating table provided in the tool for description pf the rating grades. |
| Rating at Reporting Date | Select the desired rating. Similar to the ratings at origination this is also per the same Scale. |
| LGD | The LGD represents the Loss Given Default. Please provide the desired LGD by using the slider provided in the tool (highlighted in the snapshot on the right). To reduce the complexity of the calculator LGD of the instruments are calculated; rather it expected to provided by the user. We recommend to keep the LGD as 45%. The 45% LGD makes instruments equivalent of unsecured; However the movement of ECL with LGD is shown in Chart 3 of the output section of the tool. |
| EIR | EIR represents the Effective Interest Rate. It is used to discount the ECL to the bring it back to the reporting date. Please provide the desired EIR by using the slider provided in the tool (highlighted in the snapshot on the right). |

| Input Validation | Model Parameters | Input |
|-----------------------------|---|-------------|
| | Currency of the Exposure | GBP |
| | Contractual Term in Years | 5 |
| | Reporting Position | 2 |
| Qualitative SICR Conditions | Watchlist Indicator | N |
| | Covenant Breach Indicator | N |
| | Default Indicator | N |
| | Days Past Due | 0 |
| | Rating at Origination | B1 |
| | Rating at Reporting Position | B1 |
| | LGD < [slider] > | 0.45 |
| | EIR < [slider] > | 10% |
| | On Balance Sheet Exposure at Origination | 500,000,000 |
| | Off Balance Sheet Exposure at Origination | - |
| | CCF | 100% |

4. Step 1 - Input (3/4)

The table below listed the input required for ECL estimation and the necessary guidance on how to provide the correct inputs

| Input | Instruction |
|---|---|
| On Balance Sheet Exposure at origination | Please provide the On balance sheet exposure at the origination of the investment. Please note, the value of the On Balance sheet Exposure can't be left blank. |
| Off Balance Sheet Exposure at origination | Please provide the Off balance sheet exposure at the origination of the investment. Please note, the value of the On Balance sheet Exposure can't be left blank. |
| CCF | If there is off balance sheet exposure then please provide the Credit Conversion Factor (CCF). Expected value to range between 0% - 100%. The CCF will be used to calculate the Exposure at default (EAD) EAD = [On Balance Sheet Exposure at origination + CCF*Off Balance Sheet Exposure at origination] |

Input Data Validation

- The tool will validate the user input and provide highlight the cells in Red if any of the input is not provided correctly
- The input validation column will turn green if the corresponding input is validated and processed correctly
- Please refer to the description of the input provided in the table above to understand the requirement
- In cases where inputs are not correctly processed the ECL calculation button will be deactivated. With all green input validation status the ECL calculation button will be reactivated.

For example, here is a case where incorrect input will be flagged as red; Here the Input validation column is highlighted in red because the on balance sheet exposure is left missing.

| Input Validation | Model Parameters | Input |
|-----------------------------|---|-------------|
| | Currency of the Exposure | GBP |
| | Contractual Term in Years | 5 |
| | Reporting Position | 2 |
| Qualitative SICR Conditions | Watchlist Indicator | N |
| | Covenant Breach Indicator | N |
| | Default Indicator | N |
| | Days Past Due | 0 |
| | Rating at Origination | B1 |
| | Rating at Reporting Position | B1 |
| | LGD < > | 0.45 |
| | EIR < > | 10% |
| | On Balance Sheet Exposure at Origination | 500,000,000 |
| | Off Balance Sheet Exposure at Origination | - |
| | CCF | 100% |

| Input Validation | Model Parameters | Input |
|-----------------------------|---|-------|
| | Currency of the Exposure | GBP |
| | Contractual Term in Years | 20 |
| | Reporting Position | 1 |
| Qualitative SICR Conditions | Watchlist Indicator | N |
| | Covenant Breach Indicator | N |
| | Default Indicator | N |
| | Days Past Due | 31 |
| | Rating at Origination | B2 |
| | Rating at Reporting Position | B3 |
| | LGD < > | 0.25 |
| | EIR < > | 10% |
| | On Balance Sheet Exposure at Origination | |
| | Off Balance Sheet Exposure at Origination | - |
| | CCF | 100% |

5. Step 1 - Input (4/4)

The table below listed the input required for ECL estimation and the necessary guidance on how to provide the correct inputs

| Input | Instruction |
|--|---|
| Annual Repayment Schedule (User Input) | Please provide the annual principal payment data from origination till maturity to estimate ECL as shown in the snapshot. Principal and Interest payment data should not be negative value. |

Input Data Validation

- The tool will validate the user input provided and highlight the cells in Red if any of the input is not provided correctly
- Please refer to the description of the input provided in the table above to understand the requirement

For example, here is a case where incorrect input will be flagged as red

| Annual Repayment Schedule (User Input) | | | |
|--|----------|----------------------|----------------------|
| Term | Interest | Principal | Payment (Calculated) |
| 1 | | 20,578,359.1 | 20,578,359.1 |
| 2 | | 20,989,926.2 | 20,989,926.2 |
| 3 | | 21,409,724.8 | 21,409,724.8 |
| 4 | | 21,837,919.3 | 21,837,919.3 |
| 5 | | 22,274,677.6 | 22,274,677.6 |
| 6 | | 22,720,171.2 | 22,720,171.2 |
| 7 | | 23,174,574.6 | 23,174,574.6 |
| 8 | | 23,638,066.1 | 23,638,066.1 |
| 9 | | 24,110,827.4 | 24,110,827.4 |
| 10 | | 24,593,044.0 | 24,593,044.0 |
| 11 | | 25,084,904.9 | 25,084,904.9 |
| 12 | | 25,586,603.0 | 25,586,603.0 |
| 13 | | 26,098,335.0 | 26,098,335.0 |
| 14 | | 26,620,301.7 | 26,620,301.7 |
| 15 | | 27,152,707.8 | 27,152,707.8 |
| 16 | | 27,695,761.9 | 27,695,761.9 |
| 17 | | 28,249,677.2 | 28,249,677.2 |
| 18 | | 28,814,670.7 | 28,814,670.7 |
| 19 | | 29,390,964.1 | 29,390,964.1 |
| 20 | | 29,978,783.4 | 29,978,783.4 |
| Total | - | 500,000,000.0 | 500,000,000.0 |

| Annual Repayment Schedule (User Input) | | | |
|--|----------|----------------------|----------------------|
| Term | Interest | Principal | Payment (Calculated) |
| 1 | | 20,578,359.1 | 20,578,359.1 |
| 2 | | 20,989,926.2 | 20,989,926.2 |
| 3 | | 21,409,724.8 | 21,409,724.8 |
| 4 | | 21,837,919.3 | 21,837,919.3 |
| 5 | | 22,274,677.6 | 22,274,677.6 |
| 6 | | 22,720,171.2 | 22,720,171.2 |
| 7 | | 23,174,574.6 | 23,174,574.6 |
| 8 | | -23,638,066.1 | -23,638,066.1 |
| 9 | | 24,110,827.4 | 24,110,827.4 |
| 10 | | 24,593,044.0 | 24,593,044.0 |
| 11 | | 25,084,904.9 | 25,084,904.9 |
| 12 | | 25,586,603.0 | 25,586,603.0 |
| 13 | | 26,098,335.0 | 26,098,335.0 |
| 14 | | 26,620,301.7 | 26,620,301.7 |
| 15 | | 27,152,707.8 | 27,152,707.8 |
| 16 | | 27,695,761.9 | 27,695,761.9 |
| 17 | | 28,249,677.2 | 28,249,677.2 |
| 18 | | 28,814,670.7 | 28,814,670.7 |
| 19 | | 29,390,964.1 | 29,390,964.1 |
| 20 | | 29,978,783.4 | 29,978,783.4 |
| Total | - | 452,723,867.8 | 452,723,867.8 |

6. Step 2 - Execution and Interpretation (1/3)

- Click the ECL Calculator once the inputs are validated and all green status is shown.
- ECL Calculator button should be clicked every time any change made to the inputs
- In cases where data validation issues are identified the "ECL calculator" button will be deactivated to ensure inputs are revised/corrected per the requirement of the tool

| ECL Overview | |
|---|--|
| IFRS 9 Stage | IFRS 9 Stage of the investment as at the reporting position selected |
| Actual Maturity | Actual (or contractual) term of the investment |
| Residual Maturity | Remaining term of the investment Residual Maturity = Contractual Term – Reporting Position |
| Lifetime probability of default at origination | The probability of default when assessed over the lifetime of the investment calculated at the point of origination For example, if an investment is booked on Jan 15 th , 2020 for a 10 years term then, "Lifetime probability of default at origination" will be the probability of event that the investment/Bond will default in within 10 years of its lifetime stating from Jan 15 th , 2020. |
| Lifetime probability of default at Reporting Date | The probability of default when assessed over the lifetime of the investment calculated at the point of reporting. For example, if an investment is booked on Jan 15 th , 2020 for a 10 years term and ECL is being estimated on 15 th Jan 2026 , then the "Reporting Position" will be 6 (2026-2020=6) and "Lifetime probability of default at Reporting Date" will be the probability of event that the investment/Bond will default in within next 4 (10 – 6=4) years of its remaining (or residual) lifetime stating from Jan 15 th 2026 |
| Staging Reason | Highlights the reason for which the investment is classified as stage 2 or Stage 3 in accordance with IFRS 9 standard. |
| IFRS9 ECL | Final ECL based on the classified stage in accordance with IFRS 9 standard |
| Coverage Ratio | Ration of quantified ECL and EAD (i.e., ECL/EAD) as at the reporting position |

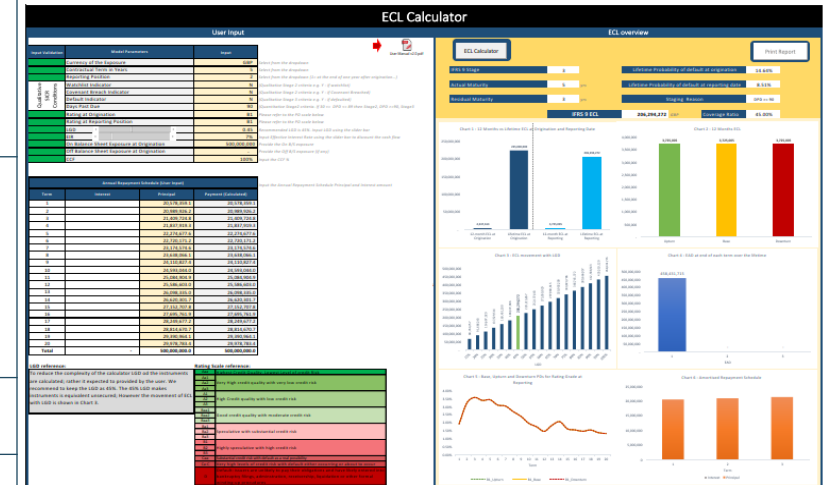
IFRS 9 Stage: 3 | Lifetime Probability of default at origination: 14.64%

Actual Maturity: 5 yrs | Lifetime Probability of default at reporting date: 8.51%

Residual Maturity: 3 yrs | Staging Reason: DPD >= 90

IFRS 9 ECL: 206,294,272 GBP | Coverage Ratio: 45.00%

The "Print Report" can be used to save the quantification along with the inputs provided in .pdf format as shown below



7. Step 2 - Execution and Interpretation (2/3)

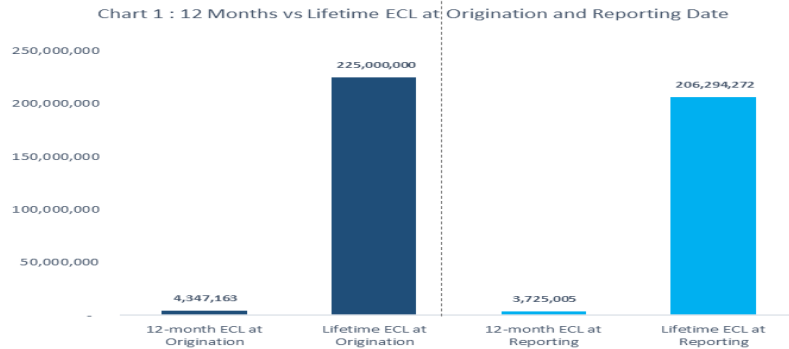


Chart 1: 12 Months vs Lifetime ECL at Origination and Reporting Date

- 12 months ECL and Lifetime ECL is estimated for the same investment irrespective of the their current stage at reporting date [Highlighted in light blue] and at origination date [Highlighted in Dark Blue]
- The graphical representations of 12months ECL vs Lifetime ECL at reporting and origination date provides a comparative view of the two positions

Chart 2: 12 Months ECL (only for Stage 1 Investments)

- Break down of the 12 Months ECL by scenarios at reporting date for each investment is presented to assimilate the impact of current macro economic scenarios over the expected credit loss.
- The final ECL is estimated as weighted average of ECL estimated under each the three scenarios

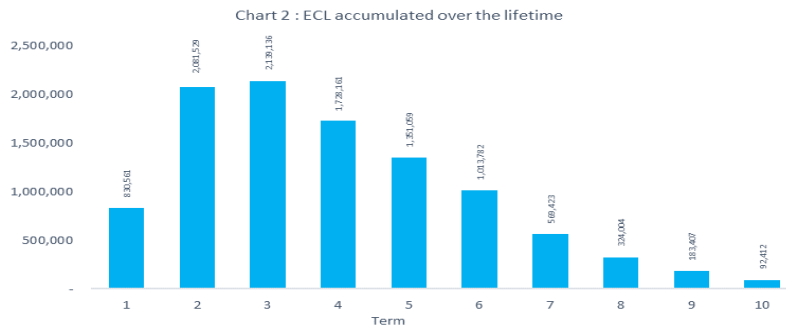
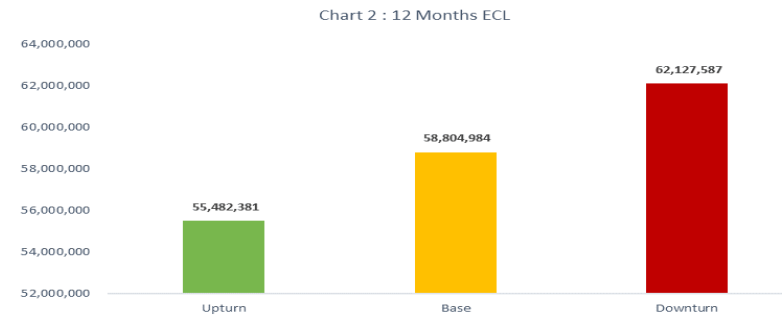


Chart 2: ECL accumulated over the lifetime (Only for Stage 2 or 3 investments)

- ECL accumulated over the lifetime for each investment is presented to assimilate the distribution of expected credit loss over the remaining contractual term
- ECL accumulated over the lifetime chart will be displayed only when the facility's IFRS 9 Stages is 2 or 3

8. Step 2 - Execution and Interpretation (3/3)

3.

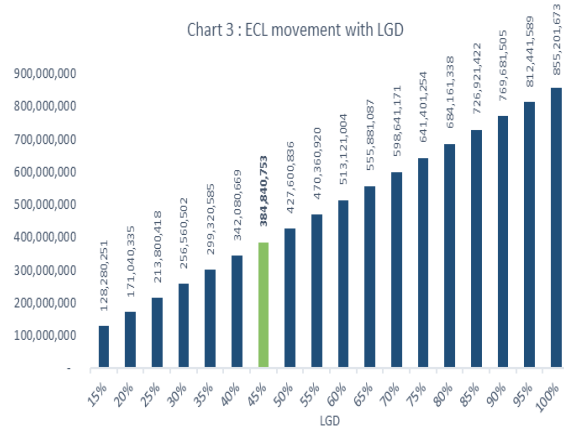


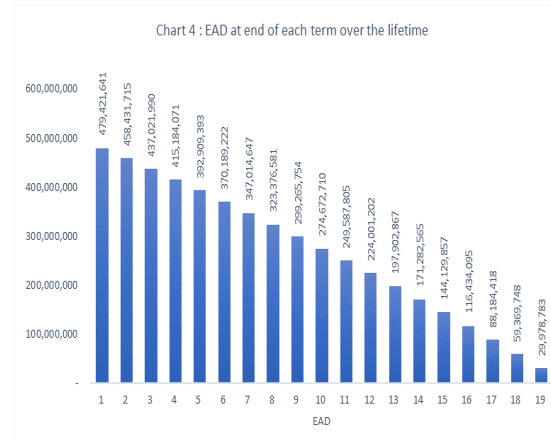
Chart 5: Base, Upturn and Downturn PDs for Rating grade at Reporting Date

- Represents Upturn, Base and Downturn PDs applied over the contractual term of investment to estimate ECL. The PD curves will vary depending of the rating grade assigned at Reporting position

Chart 6: Repayment Schedule

- Yearly Principal and Interest repayment is presented to assimilate the facility's amortisation schedule and interest payments over the residual term of the investment

4.



5.

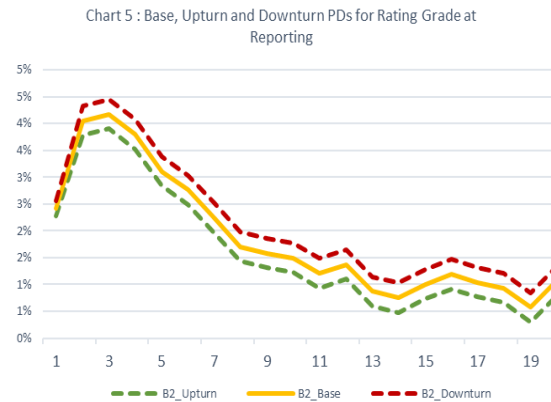


Chart 3: ECL movement with LGD

- Represents how the final ECL will change with the movement of LGD

Chart 4: EAD at end of each term over the lifetime

- Yearly EAD at the end of each term over the remaining lifetime of the instrument

6.

