# EALB ECL

March 25, 2025

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```
Hello, World!
```

## 1 Create pandas DataFrames From portfolio

| | Position Id | Counterparty Id | \ |
|---|---|---|---|
| 0 | 2102028735262023 | 102028735 | |
| 1 | 2102041322202023 | 102041322 | |
| 2 | 2102041322182023 | 102041322 | |
| 3 | 2102041322192023 | 102041322 | |
| 4 | 910900480012024 | 109004800 | |
| … | … | … | |
| 5282 | 112401832024 | 111003298 | |
| 5283 | 112402332024 | 111003298 | |
| 5284 | 112401932024 | 111003298 | |
| 5285 | 112402532024 | 111003298 | |
| 5286 | 112402132024 | 111003298 | |

| | Customer Name | Rating Class | Stage | Currency | \ |
|---|---|---|---|---|---|
| 0 | | ORR 6 | STAGE_2 | EGP | |
| 1 | | ORR 1 | STAGE_1 | USD | |
| 2 | | ORR 1 | STAGE_1 | USD | |
| 3 | | ORR 1 | STAGE_1 | USD | |
| 4 | | ORR 1 | STAGE_1 | EGP | |
| … | | … | … | … | … |
| 5282 | | ORR 5 | STAGE_1 | EUR | |
| 5283 | | ORR 5 | STAGE_1 | EUR | |
| 5284 | | ORR 5 | STAGE_1 | EUR | |
| 5285 | | ORR 5 | STAGE_1 | EUR | |
| 5286 | | ORR 5 | STAGE_1 | EUR | |

| | Days Past Due | PD Segment | One Year PD | Lifetime PD | Initial LGD | \ |
|---|---|---|---|---|---|---|
| 0 | 0 | SME | 0.08 | 0.54 | 0.00 | |
| 1 | 29 | Corporate | 0.00 | 0.00 | 0.00 | |
| 2 | 29 | Corporate | 0.00 | 0.00 | 0.00 | |
| 3 | 29 | Corporate | 0.00 | 0.00 | 0.00 | |

```
4                 0  Corporate         0.00         0.00         0.00
…               …        …           …            …            …
5282              0  Corporate         0.03         0.00         0.00
5283              0  Corporate         0.03         0.00         0.00
5284              0  Corporate         0.03         0.00         0.00
5285              0  Corporate         0.03         0.00         0.00
5286              0  Corporate         0.03         0.00         0.00

      Accrued Interest  Current Exposure  Suspended interest       Overlay   \
0                 0.00    161,020,318.01                 NaN 23,185,978.37
1                 0.00 52,672,242,439.92                 NaN          0.00
2                 0.00 52,672,242,439.41                 NaN          0.00
3                 0.00 52,672,242,439.41                 NaN          0.00
4                 0.00 40,000,000,000.00                 NaN          0.00
…                 …                …                   …           …
5282              0.00             0.00                 NaN          0.00
5283              0.00             0.00                 NaN          0.00
5284              0.00             0.00                 NaN          0.00
5285              0.00             0.00                 NaN          0.00
5286              0.00             0.00                 NaN          0.00

      ECL final after all edit  ECL Coverage Ratio
0                40,411,238.55                0.25
1                         0.00                0.00
2                         0.00                0.00
3                         0.00                0.00
4                         0.00                0.00
…                         …                   …
5282                      0.00                 NaN
5283                      0.00                 NaN
5284                      0.00                 NaN
5285                      0.00                 NaN
5286                      0.00                 NaN

[5287 rows x 17 columns]

Position Id                 object
Counterparty Id              int64
Customer Name               object
Rating Class                object
Stage                       object
Currency                    object
Days Past Due                int64
PD Segment                  object
One Year PD                float64
Lifetime PD                float64
Initial LGD                float64
```

```
Accrued Interest            float64
Current Exposure            float64
Suspended interest          float64
Overlay                     float64
ECL final after all edit    float64
ECL Coverage Ratio          float64
dtype: object
```

| | Counterparty Id | Days Past Due | One Year PD | Lifetime PD | Initial LGD | \ |
|---|---|---|---|---|---|---|
| count | 5,287.00 | 5,287.00 | 5,287.00 | 5,287.00 | 5,287.00 | |
| mean | 107,625,002.76 | 60.04 | 0.11 | 0.13 | 0.60 | |
| std | 9,431,454.04 | 238.04 | 0.26 | 0.26 | 0.24 | |
| min | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 25% | 102,006,696.00 | 0.00 | 0.03 | 0.01 | 0.65 | |
| 50% | 104,002,279.00 | 0.00 | 0.03 | 0.03 | 0.65 | |
| 75% | 111,002,921.00 | 0.00 | 0.05 | 0.08 | 0.65 | |
| max | 133,000,095.00 | 3,136.00 | 1.00 | 1.00 | 1.00 | |

| | Accrued Interest | Current Exposure | Suspended interest | Overlay | \ |
|---|---|---|---|---|---|
| count | 5,287.00 | 5,287.00 | 5.00 | 5,287.00 | |
| mean | 0.00 | 44,519,506.28 | 85,618,591.28 | 72,268.50 | |
| std | 0.30 | 1,373,937,386.33 | 55,723,241.77 | 531,637.70 | |
| min | 0.00 | 0.00 | 12,706,815.88 | 0.00 | |
| 25% | 0.00 | 69,246.12 | 57,462,795.01 | 0.00 | |
| 50% | 0.00 | 426,038.19 | 79,302,991.72 | 1,422.42 | |
| 75% | 0.00 | 2,150,000.00 | 123,404,465.51 | 15,867.65 | |
| max | 21.70 | 52,672,242,439.92 | 155,215,888.28 | 23,185,978.37 | |

| | ECL final after all edit | ECL Coverage Ratio |
|---|---|---|
| count | 5,287.00 | 5,194.00 |
| mean | 682,215.04 | 0.11 |
| std | 13,522,508.11 | 0.26 |
| min | 0.00 | 0.00 |
| 25% | 928.11 | 0.01 |
| 50% | 6,445.32 | 0.03 |
| 75% | 56,631.33 | 0.05 |
| max | 907,586,864.62 | 1.00 |

```
Position Id                   0
Counterparty Id               0
Customer Name                 0
Rating Class                  0
Stage                         0
Currency                      0
Days Past Due                 0
PD Segment                    0
One Year PD                   0
```

```
Lifetime PD                    0
Initial LGD                    0
Accrued Interest               0
Current Exposure               0
Suspended interest          5282
Overlay                        0
ECL final after all edit       0
ECL Coverage Ratio            93
dtype: int64

np.int64(0)
```

## 2 Loop through each column with missing values

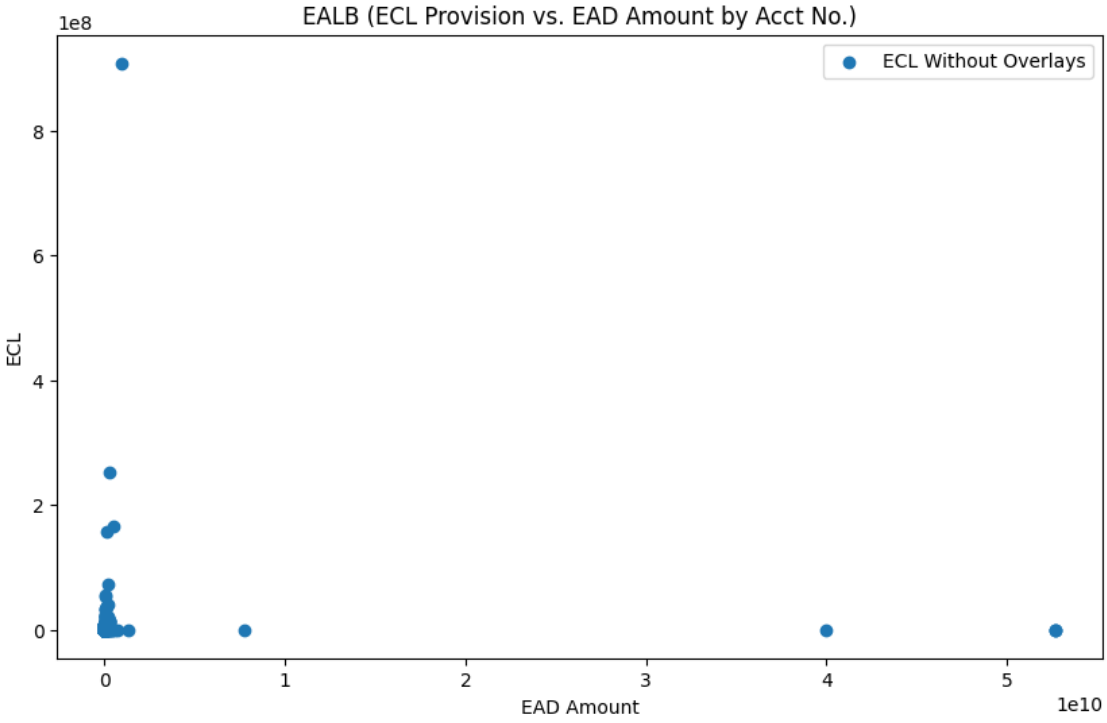
```
'\n# Create a new Excel writer\nwith pd.ExcelWriter(\'missing_values.xlsx\') as
writer:\n    # Loop through each column with missing values\n    for col in
df.columns[df.isnull().any()]:\n        # Clean the column name by replacing
invalid characters\n        cleaned_col = col.replace("/", "_").replace("\\",
"_").replace("?", "_").replace("*", "_").replace("[", "_").replace("]", "_")
\n\n        # Filter the DataFrame to get rows with missing values in the
current column\n        missing_rows = df[df[col].isnull()]\n\n        # Write
the filtered DataFrame to a new sheet in the Excel file\n
missing_rows.to_excel(writer, sheet_name=f"Missing_{cleaned_col}",
index=False)\n'
```

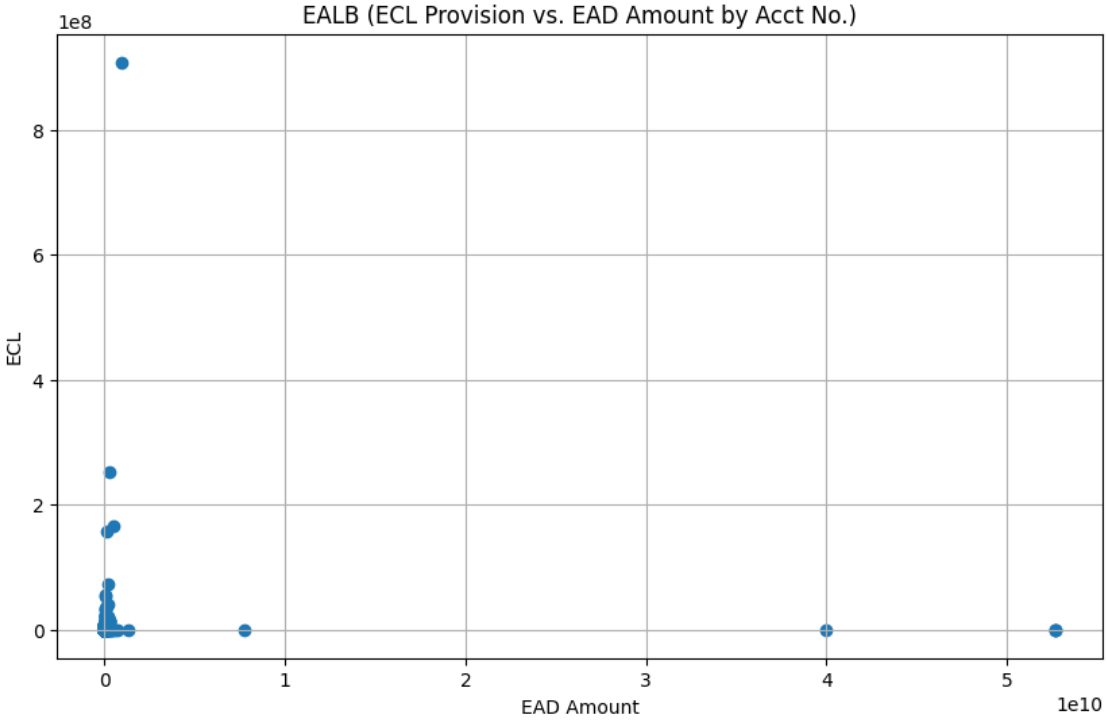
| | Position Id | Counterparty Id | \ |
|---|---|---|---|
| 0 | 2102028735262023 | 102028735 | |
| 1 | 2102041322202023 | 102041322 | |
| 2 | 2102041322182023 | 102041322 | |
| 3 | 2102041322192023 | 102041322 | |
| 4 | 910900480012024 | 109004800 | |
| … | … | … | |
| 5282 | 112401832024 | 111003298 | |
| 5283 | 112402332024 | 111003298 | |
| 5284 | 112401932024 | 111003298 | |
| 5285 | 112402532024 | 111003298 | |
| 5286 | 112402132024 | 111003298 | |

| | Customer Name | Rating Class | Stage | Currency | \ |
|---|---|---|---|---|---|
| 0 | | ORR 6 | STAGE_2 | EGP | |
| 1 | | ORR 1 | STAGE_1 | USD | |
| 2 | | ORR 1 | STAGE_1 | USD | |
| 3 | | ORR 1 | STAGE_1 | USD | |
| 4 | | ORR 1 | STAGE_1 | EGP | |
| … | | … | … | … | … |
| 5282 | | ORR 5 | STAGE_1 | EUR | |

```
5283                                        ORR 5  STAGE_1      EUR
5284                                        ORR 5  STAGE_1      EUR
5285                                        ORR 5  STAGE_1      EUR
5286                                        ORR 5  STAGE_1      EUR

      Days Past Due PD Segment  One Year PD  Lifetime PD  Initial LGD  \
0                 0        SME         0.08         0.54         0.00
1                29  Corporate         0.00         0.00         0.00
2                29  Corporate         0.00         0.00         0.00
3                29  Corporate         0.00         0.00         0.00
4                 0  Corporate         0.00         0.00         0.00
…               …        …           …            …            …
5282              0  Corporate         0.03         0.00         0.00
5283              0  Corporate         0.03         0.00         0.00
5284              0  Corporate         0.03         0.00         0.00
5285              0  Corporate         0.03         0.00         0.00
5286              0  Corporate         0.03         0.00         0.00

      Accrued Interest  Current Exposure  Suspended interest       Overlay   \
0                 0.00    161,020,318.01                 NaN 23,185,978.37
1                 0.00 52,672,242,439.92                 NaN          0.00
2                 0.00 52,672,242,439.41                 NaN          0.00
3                 0.00 52,672,242,439.41                 NaN          0.00
4                 0.00 40,000,000,000.00                 NaN          0.00
…                 …                 …                    …            …
5282              0.00              0.00                 NaN          0.00
5283              0.00              0.00                 NaN          0.00
5284              0.00              0.00                 NaN          0.00
5285              0.00              0.00                 NaN          0.00
5286              0.00              0.00                 NaN          0.00

      ECL final after all edit  ECL Coverage Ratio
0                40,411,238.55                0.25
1                         0.00                0.00
2                         0.00                0.00
3                         0.00                0.00
4                         0.00                0.00
…                         …                   …
5282                      0.00                 NaN
5283                      0.00                 NaN
5284                      0.00                 NaN
5285                      0.00                 NaN
5286                      0.00                 NaN

[5287 rows x 17 columns]
```

## 3 EALB (ECL Provision vs. EAD) by ACC ID (( Static Scatter Chart ))



# 4 EALB (ECL Provision vs. EAD) by ACC ID (( Interactive Scatter Chart ))

```
['STAGE_1', 'STAGE_2', 'STAGE_3']
3,606,870,913, 235,374,629,682
504,936,902, 229,466,037,175
1,467,011,618, 3,656,670,662
1,634,922,393, 2,251,921,845

1,467,011,618, 3,656,670,662

1,634,922,393, 2,251,921,845

['STAGE_1', 'STAGE_2', 'STAGE_3']
```

# 5 PivotTable By Customer

```
EAD S1: 229,466,037,175
EAD S2: 3,656,670,662
EAD S3: 2,251,921,845
ECL S1: 504,936,902
ECL S2: 1,467,011,618
ECL S3: 1,634,922,393
ECL S3: 1,634,922,393

/tmp/ipykernel_271/1722204559.py:1: FutureWarning:

The provided callable <function sum at 0x7b69b018b560> is currently using
SeriesGroupBy.sum. In a future version of pandas, the provided callable will be
used directly. To keep current behavior pass the string "sum" instead.
```

| Counterparty Id | Current Exposure |
|---|---|
| 0 | 6,983,874.12 |
| 102000102 | 9,501,154.04 |
| 102000153 | 244,332,310.58 |
| 102000434 | 300,243,750.00 |
| 102000534 | 22,972,498.47 |
| … | … |
| 131000641 | 300,074,291.09 |
| 131000681 | 50,000.00 |
| 132000496 | 2,700,000.00 |
| 132000861 | 2.33 |
| 133000095 | 22,500.00 |

| Counterparty Id | Customer Name | ECL final after all edit | Stage | ECL Coverage Ratio |
|---|---|---|---|---|
| 0 | ] ) … | 6,983,874.12 | STAGE_3 | 1.00 |
| 102000102 | ] [ | 9,501,154.04 | STAGE_3 | 1.00 |
| 102000153 | ] . .[ | 697,207.23 | STAGE_1 | 0.00 |
| 102000434 | ] ) … | 8,710,860.01 | STAGE_1 | 0.03 |
| 102000534 | ] [ | 712,854.61 | STAGE_1 | 0.03 |
| … | … | … | … | … |
| 131000641 | ] [ | 586,391.30 | STAGE_1 | 0.00 |
| 131000681 | ] [ | 0.00 | STAGE_1 | 0.00 |
| 132000496 | ] … | 0.00 | STAGE_1 | 0.00 |
| 132000861 | ] [ | 1.29 | STAGE_2 | 0.55 |
| 133000095 | ] [ | 0.00 | STAGE_1 | 0.00 |

[311 rows x 5 columns]

# 6 EALB (ECL Provision vs. EAD) by Customer (( Interactive Scatter Chart ))

['STAGE_1', 'STAGE_2', 'STAGE_3']

['STAGE_1', 'STAGE_2', 'STAGE_3']

['STAGE_1', 'STAGE_2', 'STAGE_3']

['STAGE_1', 'STAGE_2', 'STAGE_3']