

# CREDIT LIFE CYCLE FORECASTING MODEL

## Proposal Presentation

Research practice III

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Bancolombia counts with a strategy for an integral administration of risks, that points towards the identification, measurement, monitoring and mitigation of the inherited risks of the organization.

- **Credit risk:** it is the possibility of incurring in losses when a third party fails to fulfill its obligations partial or totally. This translates in deterioration of the credit quality.

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## Granting

Evaluation of several factors that accounts for the debtor's ability to pay based on the bank policies already established.

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## Tracing

The purpose is to supervise the fulfilling of the latent responsibilities of the client with the bank

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## Recovery

When the client fulfills the totality of the obligations. This what the bank expects, but sometimes clients are not able to pay the credit

According to the glossary of terms defined by Superintendencia Financiera de Colombia.

- **Performing Loans:** total amount of loans whose principal and interest are up to date.
- **Overdue portfolio:** capital, shares or interests of the total amount of credits that have not been paid in a period of time longer than 30 days
  - 30 days past due
  - 60 days past due
  - 90 days past due

- **Allowance:** collection of money that tries to lighten the impact in case of default by the third party
- **Write off:** countable operation that gives treatment to the losses of an amount before considered as an asset.
- **Allowance expense:**

$$E_t = A_t - A_{t-1} + W_t,$$

$E_t$ : Actual allowance expense

$A_t$ : Actual allowance

$A_{t-1}$ : Past allowance

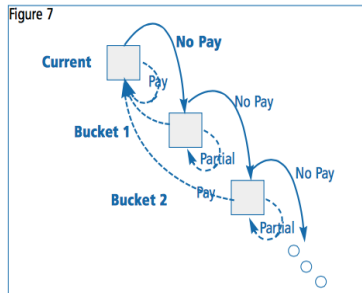
$W_t$ : Actual written offs

# FORECASTING MODEL

The model considers tendency and seasonality of the events occurred in the past to forecast the future using **Markov Chains**, its important to precise that the model has quarterly forecasts.

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If we have a credit that has 30 days past due today what are the chances, based on the observed transition and seasonality rates that in three months it stays there.



Discrepancies were noticed and external parameter was included, this parameter is moved in a very empirical way.

figure source: <http://www.strategicanalytics.com/pdf/RMAJ200310ForecastTools.pdf>

The forecasting model is crucial for the bank since it is the sustain for the decisions taken in the management of the portfolio. To be able to forecast the dynamic of the credit life cycle allows not only the management and coverage of the credit risk but to obtain greater profitability



# OBJECTIVES

**General:** Develop an intervened a forecasting model for the credit life cycle concept(s).

**Specific:**

- Measure the quality of the actual.
- Study different models capable of forecasting in accurate ways.
- Study external variables.
- Extract all the information needed.
- Implement an improved model.
- Measure the accuracy of the model.





The initial understand and diagnosis of the model is considered vital to guide the research; the diagnosis will be made in terms of the error existing between the forecast and the reality. Based on this error the model would be intervened for the most/more critical concept(s), using the most significant external variables. The intervened model must be preferably easy to replicate for other products, lastly the intervened model would be tested in terms of error expecting to overcome the actual model.

The research would be restricted to *free investment* portfolio.

- Diagnosis of the actual model, real and projected data should be extracted and compare during a significant period of time.
- Constant review of the state of art of the most accurate forecasting models and techniques used in similar scenarios.
- Collection of the information needed and the implementation of the model or different models in software preferably used in the Bank.
- Testing of accuracy of the model or models implemented.

To achieve significant results every 15 days meetings are proposed to evaluate the results obtained, solve concerns and guide the research.

# REFERENCES

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QUESTIONS?