# BRISMO

# Brismo Analytics Methodology Guide

# Contents

# Introduction

At Brismo we believe that both investors and originators benefit from metrics that capture the entire track record of an originator rather than a sub set. For originators to effectively demonstrate alignment they want to prove that they can be held accountable for the quality of every loan originated, rather than just a sample. And for investors to gain a thorough understanding of the assets available they need to appraise the entire track record.
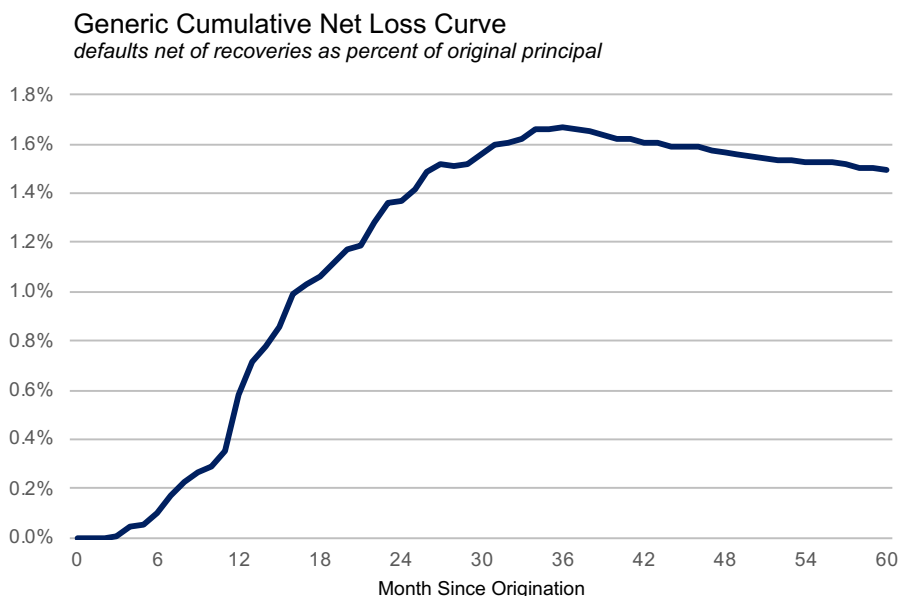
While Brismo can also provide granular analysis, our starting point is the entire track record of a particular originator, which can then be sub-divided by risk grade or borrower type etc. To achieve this in a manner that allows comparison between a range of originators, with distinct business models, and different underlying loan types, we need to be mindful of a number of challenges involved in appraising a track record made up of many thousands of loans, originated at different times.

### Challenge 1 - Sampling

Performance varies considerably between loans. Even pools and cohorts of apparently homogenous loans may not behave consistently. Whilst it is important to analyse the anticipated future behaviour of a specific pool, a complete understanding can only be achieved through analysis of the historic track record of the originator or loan type in question. This analysis should not be based on a sample, rather it should be based on the entire historic track record.

### Challenge 2 - Seasoning

The age of an individual loan, or a pool based on a particular time cohort, is a material factor in the performance of that loan or cohort.

Generic Cumulative Net Loss Curve
*defaults net of recoveries as percent of original principal*



The chart above represents a generic net loss curve for a marketplace originated cohort of loans showing cumulative net loss measured in months since origination. Looking at this curve we can observe that:

- There are little to no defaults early in the life of the cohort
- Defaults then pick up rapidly - in this case between month 5 and 26
- The increase in defaults then moderates between month 26 and an eventual peak at around month 36
- New defaults are then more than offset by recoveries meaning that in month 36 to 60 cumulative net loss gradually falls

This profile can create distortions when analysing the asset performance of loans, even more so when analysing many loans and cohorts at different points on the seasoning journey. This demonstrates why cohort based analysis can prove misleading and also illustrates the challenge that must be overcome to create a meaningful analysis of track record.
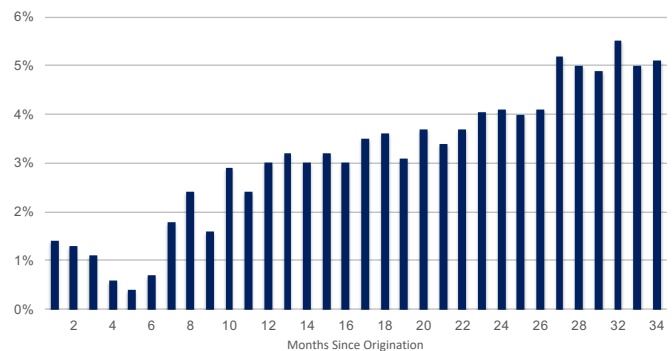
## Challenge 3 - Variable Origination Growth Rates

The effect of seasoning can create further distortions when combined with variations in origination growth rates.

Seasoning Distribution of 'Young' Portfolio
*% of total outstanding loan amount*
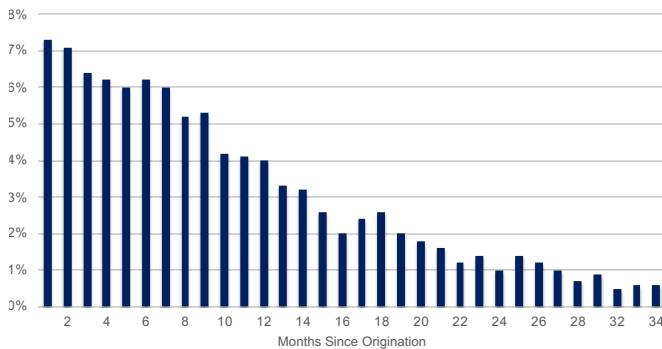
Seasoning Distribution of 'Aged' Portfolio
*% of total outstanding loan amount*



The charts above demonstrate the 'age' distribution of two portfolios of loans of otherwise identical characteristics. The chart on the left represents a 'young' fast growing portfolio. The chart on the right represents an 'aged' slowing growth portfolio. A fast growing portfolio will be characterised by a high proportion of young loans and will therefore exhibit a lower default rate. A slowing growth portfolio will be characterised by a high proportion of aged loans and will therefore exhibit a higher default rate. Whilst a comparison between the two would exhibit stark differences in performance the underlying quality of the portfolios may be identical. The differences can be attributed to the impact that origination growth has when combined with the effects of the age profile of a loan or loan cohort.

**BRISMO**

# Uniform Vintage Portfolio Analysis

Brismo's Uniform Vintage Portfolio [UVP] Analysis solves all of these challenges. This approach allows us to:

- Represent a portfolio that is perfectly diversified across all loan production
- Capture equal proportions of loans and cohorts of all ages and seasoning profiles
- Create metrics that are free from distortions resulting from variations in origination growth rate

This allows us to establish metrics that:

- Are genuinely comparable
- Are free from 'ageing' distortions
- Capture the impact of all historic activity
- Are comparable with other asset classes
- Can be viewed as a time series

## Construction of a 'Uniform Vintage Portfolio'

*"Imagine that an investor made an equally sized investment into each monthly cohort of origination, and that this investment was perfectly diversified across all loans originated in that period. This is the portfolio that our methodology represents."*

To capture the entire track record being analysed, rather than a subset, our metrics measure the return of an *equal time weighted constant portfolio*. This means we represent the return achieved from an equal time-weighted exposure, to every loan made by a particular originator or industry segment. This portfolio is 'constantly' evolving as new loans are added, and amortised/re-paid/defaulted cohorts fall out of the series. All resultant metrics are expressed as an annualised rate i.e. the trailing 12 month rate.

To construct this portfolio we equally weight each monthly time cohort and capture the performance of all loans in that cohort. Imagine that an investor made an equally sized investment into each monthly cohort of origination, and that this investment was perfectly diversified across all loans originated in that period - this is the portfolio that our methodology represents.

The weighting of each cohort declines in line with amortisation, but at the outset, each cohort is given an equal weight. An illustration of the seasoning distribution of such a portfolio is shown in the following graphic.

Equal Vintage Seasoning Distribution
*% of total outstanding loan amounts*
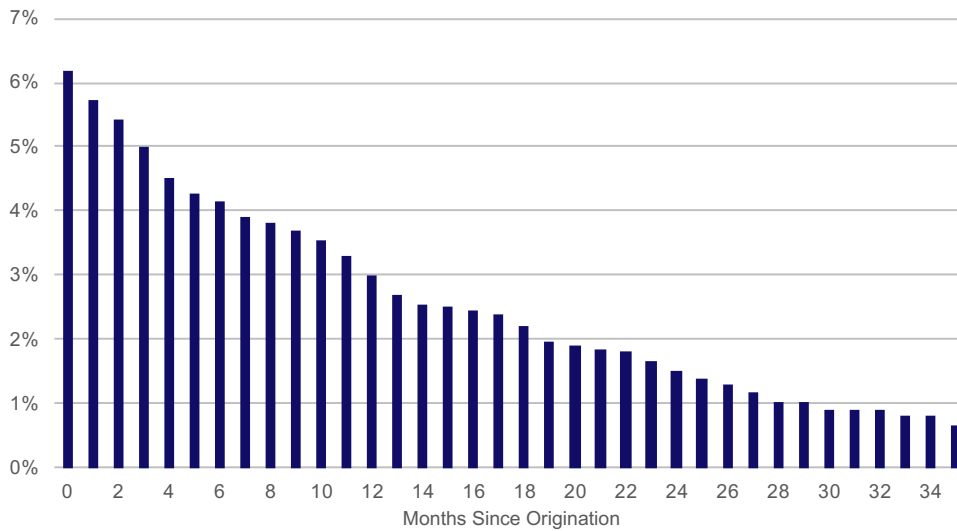


This methodology captures the entire track record of the source of origination being analysed, be it geography, originator, or risk grade, whilst avoiding any distortions due to seasoning and variable origination growth rates.

## Standardised Analysis of Net Return

Brismo's UVP metrics allow like for like comparison of industry, platform, and risk grade based on verified data. The same methodology drives our return benchmark, and also enables like for like comparison of both return, and risk adjusted return, at the originator or risk grade level.

**Net Return**
Net return is expressed net of all fees, adjusted both for losses and recoveries, and reported as an annualised rate.

**Return Calculation**

The monthly return is calculated as follows:

$$R_t = \frac{\sum (I_{i,t} + S_{i,t} - L_{i,t} - F_{i,t}) v_i}{\sum P_{i,t}\, v_i}$$

Where:   $R$ = monthly return on day $t$

$I_i$ = interest cash flow for loan $i$

$S_i$ = surplus recovery cash flow for loan $i$

$L_i$ = loss impairment for loan $i$

$F_i$ = platform fees for loan $i$

$P_i$ = outstanding principal of loan $i$ at the beginning of the day

$v_i$ = vintage factor for loan $i$

The vintage factor is the factor that renders the size of all monthly cohorts equal. This is simply the inverse of the total principal originated in a given cohort.

An index value, $I$, is then calculated using the portfolio return:

$$I_t = I_{t-1} \times (1 + R_t)$$

This Index value is used to calculate the trailing 12-month return, $R_T$:

$$I_t = I_{t-1} \times (1 + R_t)$$

**Accrual Methodology**

In cases where the payment period is greater than one month we use an interest accrual methodology in order to smooth out the net returns profile. Accrued interested is calculated monthly and used in the net returns calculation. Any realized interest payments offsets accrued interest. At maturity, any remaining accrued interest is written off. If a loan defaults interest accrual stops and any recoveries are first used to offset the outstanding accrued interest. Any outstanding accrued interest remaining at the write-off horizon following default is then written off and counted against net returns as a loss.

**Credit Events**

The treatment of credit events, and the related cashflows, are explained below and are also depicted in the following graphic.
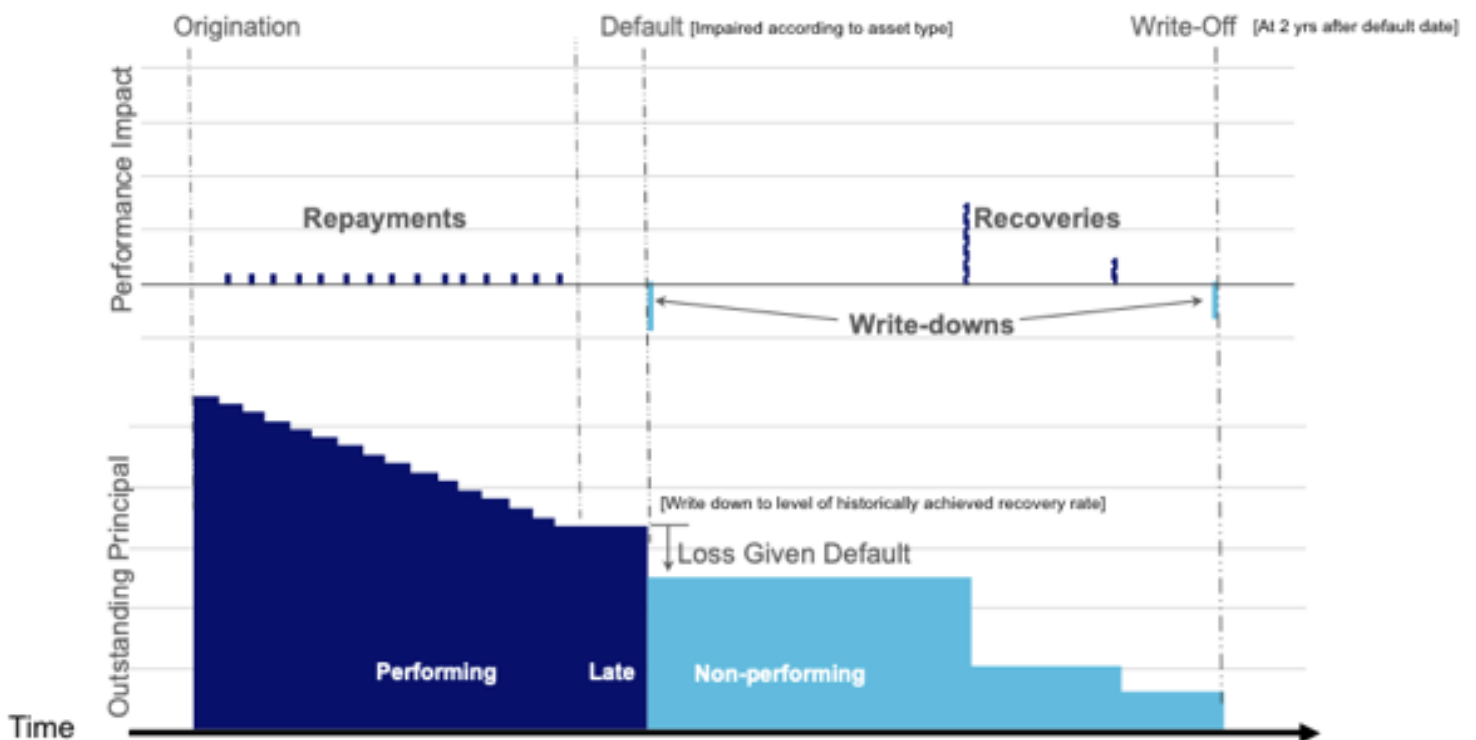
## Default

Loans are deemed to be in default at the earlier of:

- The loan reaches the point of impairment, appropriate to the underlying asset type, measured in the number of days by which a loan is late in making a scheduled payment
- An originator marks a loan as being in default

Brismo observe monthly loan cash flows to determine if a loan needs to be marked as defaulted. At the point of default remaining outstanding principal is 'impaired' and written down to the value of the expected recovery amount based on historic recovery rates - see explanation of loss given default (LGD) below.

## Asset type

All loans are categorized by asset type and impairment treatment is always consistent within each particular asset type.

## Impairment Date

Within a particular asset type the following impairment timings are used:

- Property secured loans = 180 days (including buy to let, residential development and residential bridging loans)
- All other loans* = 90 days

* i.e. Consumer, SME and receivables

**Treatment of Impaired loans**

When a default occurs, the loan is impaired to the appropriate LGD statistic for the given platform. This means that the impaired portion is written off and counted as a loss, while the remainder is marked as 'non-performing' and applied to the non-performing ledger (NP ledger).

**Treatment of Recoveries**

Recovery cash flows reduce the non-performing balance outstanding of individual impaired loans. As such, they reduce the amount of any final write off at the end of the write off horizon.

So long as there is an outstanding amount on the NP ledger any recoveries are offset by amounts on the NP Ledger and have no immediate impact on net return. i.e. they do not have an immediate positive impact on monthly return but instead reduce the size of any eventual write-off. However, If the NP Ledger is reduced to 0, any subsequent recoveries are counted as surplus recoveries and are immediately reflected as positive cash flows and applied to net returns.

**Write Off**

A write-off of outstanding 'non-performing' balance is applied at 2 years. This means that, on a loan-by-loan basis, any outstanding non-performing principal, which has not been recovered, is written off on the second anniversary of default.

Any recovery cash flows that occur beyond the write off horizon will still be captured. If there is a positive balance on the NP Ledger they will reduce this balance, and if the NP ledger is at zero they will immediately positively impact the monthly return.

**Loss Given Default**

This impairment methodology incorporates an appropriate estimate for loss given default (LGD). This estimate consists of two components: the 'industry baseline LGD' and the platform historic LGD.

Early in a platform's life there is insufficient data to establish an LGD statistic. Thus, the 'industry baseline LGD' provides a proxy LGD until the platform LGD is established, typically 3 years after launch. This 'industry baseline LGD' is stratified by asset class across 6 categories:

- Business unsecured
- Business secured
- Business property secured
- Consumer unsecured
- Consumer secured
- Consumer property secured

This industry baseline LGD is established using publicly available statistics. The primary source of these statistics is bank Pillar 3 disclosures as well as rating agency reports and central bank statistics.

The platform historic LGD is based on actual recovery data extracted from Brismo's historic cash flow information. It is calculated using the aggregate average rate of losses net of recoveries weighted by defaulted principal. Defaulted loans are only

included in the aggregate average once they have reached their write-off horizon in order to allow recoveries to accumulate.

The platform historic LGD metric is updated quarterly and the industry baseline LGD is updated annually. The LGD is only allowed to move in 5% increments, to ensure that excessive volatility is avoided.

**Contingency Funds and Platform Incentives**
Where loans are covered by a 'contingency fund', that will be reflected. Any loss on default will be marked as zero. However, if the contingency fund fails to provide adequate cover, the default will be fully reflected. Any cost of the contingency fund to the lender is factored into the net yield.

The calculation does not reflect any incentive fees and schemes that platforms offer investors from time to time.

# Disclaimer

AltFi Data Limited keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of AltFi Data Limited may have information that is not available to other business units. AltFi Data Limited has established policies and procedures to maintain the confidentiality of any non-public information received in connection with each analytical process.

In addition, AltFi Data Limited may provide services to, or relating to, many organisations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organisations, including organisations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.

**For additional information, reach out to Brismo at:**

Telephone: +44 207 153 1218

Email: team@brismo.com