EthiFinance Ratings

Structured Finance Rating Methodology - General

1. Introduction

This methodology is substituting the previous methodology "Structured Finance Rating Methodology – Generic" which encompasses the main criteria for all the other methodologies that apply to specific assets.

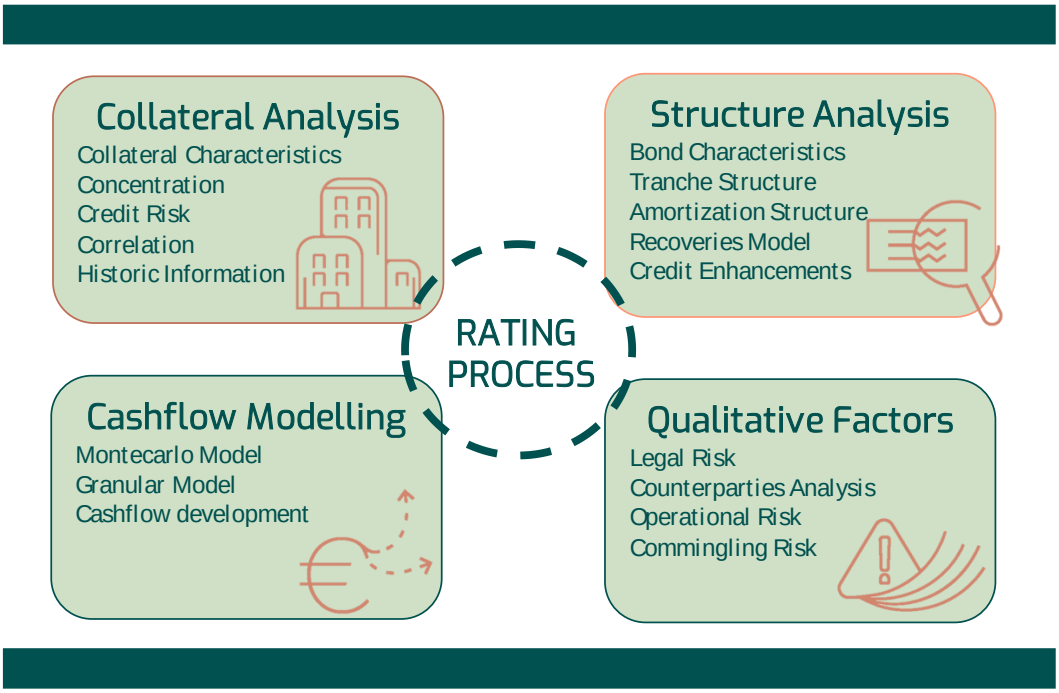
The structured finance instrument's rating, as it happens with other financial products or entities, refers to creditworthiness or solvency of instrument. The rating must be considered as a dynamic element in continuous review and predictive character because it is based on future default probabilities.

The structured finance instrument payments will depend mainly on the underlying portfolio asset's payments as well as those structural improvements designed to protect the instrument bonds payments. Therefore, the bonds' credit risk will be linked not only to the counterparty risk of the Securitization Fund's financial agents, also and especially to the collateral assets' quality and their structure.

Structured finance product's Credit rating scale: EthiFinance Ratings has a set of scales designed to determine the credit rating of an entity, using an alphanumeric system with different levels. The issued ratings range from top solvency levels to more degraded levels with the possibility of insolvency. The long-term credit rating scale and the definition of each of the rating categories can be found in the *"Credit Rating Scale & Definitions"* document that appears on the EthiFinance Ratings website.

The rating of a structured finance instrument depends on 4 items:

1. The credit quality of the underlying portfolio.
2. The securitization fund's structure, based on credit enhancements that have been incorporated into the Fund like subordinated bonds, reserve fund, swap, etc.
3. Other qualitative risks on the Securitization Fund: risks associated with the quality of the agents involved in the securitization, sovereign risk, operational risk, etc.
4. The sensitivity of the above factors to variations in market variables.



This document must be analysed as a whole with the asset specific credit rating methodology to fully incorporate every aspect of the analysis. EthiFinance has five methodologies that are shown in the following diagram. Each of these methodologies applies to different asset classes, which have different risk horizons, granularity, and homogeneity; also depending on the asset class, EthiFinance Ratings will do an individual rating assessment or not.

Methodology	Underlying Assets	Risk horizon	Collateral granularity	Homogeneity	Asset analysis
Consumer ABS	Consumer Loans	Medium term	Granular	Homogeneous	Securitised portfolio
SME / CLOs	Loans to small and medium sized enterprises, and Corporate Loan Obligations	Medium term	SME: Granular, CLO: Non-granular	Mixed	Loan by loan
Trade Receivables	Commercial Credit	Short term	Granular if we have historical performance information, if not Non-granular	Homogeneous	Originator loan book
Utilities Cost Recovery Receivables	Utilities Invoices	Short term	Granular	Homogeneous	Originator loan book
Reverse Mortgages	Equity Release	Long term	Non granular	Mixed	Loan by loan

Source: EthiFinance Ratings.

2. Qualitative Assessment

Qualitative factors should be considered within the analysis due to their potential impact on asset. The performance of a securitization structure also depends on other factors, such as the operational performance and time effectiveness of the different parties involved.

2.1 Legal Analysis

2.1.1 Legal Opinion

To analyse a new Structure Finance Transaction, the transaction in most cases considers the establishment of an "Special Purpose Vehicle" or "SPV", therefore EthiFinance most analyse the Deed where the specifications of the transaction are settled, and the legal structured of the Fund or Vehicle are determined. Also, through the Legal Opinion we analyse 2 main principles of the transaction nature:

1) Bankruptcy Remoteness and

2) True Sale of the Underlying assets

The Legal Opinion should mention if the assets sale to the Fund/SPV was a true sale, if the assets were effectively sold to the Fund and if those assets cannot be demanded by any other debtor/party in case of commercial bankruptcy Annex I.

2.1.2 Assignment Notification

The final debtor in some cases should be notified that a securitization of their underlying obligation has been realized, to minimize the commercial dispute risk and interruption in inflow of cash to the SPV. Also, it will be communicated to the debtor the number of the account in which he would need to deposit the payments, being a credit enhancement if the payment is made directly to the Fund account.

2.1.3 Waterfall Structure

In the SPV´s Deed it is stated the payments waterfall. This section should be revised diligently because here the sources and outflows of cash is stated, as well as the priority of operational expenses, reserves generations, interest payments and seniority of principal and/or interest payments.

2.1.4 Definition of Default

A bond associated to a structured finance instrument is considered defaulted if it has breached a payment of interest or principal as defined in the Deed on each payment date or by its legal maturity. This definition needs to be very clear in the Deed and EthiFinance should revise it.

2.2 Operational Risk

The operational review of EthiFinance Ratings is designed to understand the policies, processes, and practices of the originator and the administrator, to form an opinion on their qualities and capabilities. If the structure is very dependent on the continuity of services done by the servicer, thus a complete revise

should be done to the servicer in order to assess the capability to reduce operational risk through, Management, IT Systems, contingency plan, Non-Performing Assets recovery plan and Risk Policies. To further understand how EthiFinance perform Operational Due Diligence you can review the Annex II.

The key phases of the evaluation are:

1. Overview of the company (structure, financial stability, and strategy).
2. Management team and staff.
3. Origination and sanction policies.
4. Management, monitoring, and recovery process.
5. Experience.
6. Quality controls and compliance procedures.
7. Reporting and technology.

Operational risk, as a result of disruption in asset management, may generate liquidity risk and origination/sanction processes that may affect the future behaviour of assets. Weaknesses regarding the process of origination, sanction, follow-up, and recovery are considered in the quantitative analysis.

If the quality and capabilities of the originator or administrator are considered insufficient, issuers may be required to incorporate additional credit enhancements like reserves, backup servicing commitments, specific guarantees, or triggers, among others. The transaction also takes into consideration the proper performance of the parties involved, such as payment agents, management companies, etc.

2.3 Counterparty Risk

The different counterparties participating in the transaction will be evaluated to estimate their risk, their materiality, and the remedial actions in case of certain events.

EthiFinance Ratings believes that counterparty risk may result in a potential loss for the transaction. The agency expects remedial actions or structural mechanisms to be included in the legal documentation of the transaction (Prospectus and Deed) to mitigate or reduce the potential exposure.

In case of a downgrade in the counterparty rating, there will be some triggers stated in the Deed to solve that fact. The rating required to be eligible applies to the financial counterparties involved in the transaction, such as the swap provider, the liquidity line provider, the management company, and the treasury account provider.

Rating of the Issuance						Elegible Counterparty
AAA	AA+	AA	$AAA_{(sf)}$	$AA+_{(sf)}$	$AA_{(sf)}$	BBB-
AA-	A+	A	A-	$AA-_{(sf)}$	$A+_{(sf)}$	$A_{(sf)}$ $A-_{(sf)}$
BBB+	BBB	BBB-	$BBB+_{(sf)}$	$BBB_{(sf)}$	$BBB-_{(sf)}$	BB+

*Source: Ethifinance Ratings.

Some examples of triggers are remedial actions that would have to be carried out within 30 working days, like to:

1. Obtain a guarantee at first request, unconditional and irrevocable from a third party whose qualification is at least BBB-.
2. Replacement by another entity that at least has a BBB- rating.

If the deadline for any of the remedial actions expires without the remediation having been carried out, the bonds may experience a negative impact on their rating.

2.3.1 Bank Accounts

The Bank of Accounts is the custodian in which the accounts of the Fund will be opened and where all the resources of the Fund are deposited. This entity should be preferably independent of the servicer and originator, to avoid conflicts of interest and have a rating equal or superior to Investment Grade. This Bank Account should be pledged in favour of the Fund and there should be mechanisms in place to transfer all the funds collected by the servicer as soon as possible to avoid further operational and commingling risk (more details below).

2.4 Compensation Risk

The risk of set-off or set-off occurs when the originator or the debtor can declare bankruptcy. Debtors, in addition to loans contracted with the originator, have other contractual relationships with the originator (deposits, bonds, derivatives, other financial products, etc.). Compensation risk exists when the positions of some products can be offset against the positions of other products. This risk varies depending on each jurisdiction, type of asset and structure.

2.5 Commingling Risk

The risk of commingling arises when is operational inefficient for the Sponsor, the clients and the Fund Managers to direct the “Clients of the Sponsor” or the “Debtors” to make their periodic instalments in a different account that of the SPV Account. Therefore, in any given stress scenario there is an operational, and legal risk when the sponsors manage the SPV Funds in their own account.

The most common structural features, to mitigate this, are the reduction of the days between the time of payment of the debtor and the transfer of that amount to the bank account of the Fund (daily sweeping

charges), substitution triggers to ensure a minimum credit quality of the third party during the life of the Fund, additional credit improvements such as liquidity lines to cover possible delays. It is important to mention the at all times the accounts of the sponsor designated to serve the SPV Accounts, most be legally pledge in favour of the SPV Accounts.

EthiFinance might incorporate Commingling's risk in their financial assessment assuming that at the beginning of the transaction the loss of asset flow is equal to one month as a general guide. This stress scenario is assumed at the beginning of the transaction.

2.6 Macroeconomic and Sovereign Risk

Depending on the macroeconomic environment and future perspectives, stress to some factors may be applied. Sovereign risk will not be treated as a separate qualitative risk when qualifying the transaction. The different specific macroeconomic conditions that could deteriorate the quality of collateral in each country will be analysed, although EthiFinance Ratings does not apply a ceiling to the sovereign risk of each country.

3. Quantitative Assessment

3.1 Collateral Assessment

EthiFinance Ratings must estimate the credit quality of the collateral, to estimate the cash flows properly and accurately from such assets. Additionally, the main characteristics of the portfolio are analyzed to select the methodological approach. Some of the most important characteristics are the granularity/concentration of the portfolio, if the collateral is static or changes over the time, or the type of the assets included in the portfolio. The intrinsic characteristics of each loan determine its own credit risk or its own amortization calendar, but also potential recoveries in case of increasing the delinquency.

3.2 Credit Quality of the Collateral

The portfolio credit risk analysis is the first step to issue the rating for securitizations. This is a credit quality's estimate of the collateral, in order to properly and accurately estimates the cash flows (including default scenarios) from such assets.

The securitization bond rating's dependence to the collateral credit risk requires the design of a number of conservative assumptions about some basic elements that determine the behaviour of the portfolio's cash flows. These assumptions are divided into 3 groups: early repayments assumptions, non-performing loans assumptions and recoveries assumptions.

Additionally, the main characteristics of the portfolio are analyzed in order to adjust the methodological approach. Some of the most important characteristics are the granularity/concentration of the portfolio, if the collateral is static or changes over the time or the type of the assets included in the portfolio.

To evaluate the quality of the portfolio or the probability of default regarding each rating level, two tools have been developed depending on the type of analysis. The Granular Model is a tool that provides a solution for the analysis of large and homogeneous loan portfolios. The Monte Carlo Analysis allows analysing portfolios with a diversity of loans, both for medium and small portfolios.

3.2.1 Corporate Default Rates Idealized Curve

EthiFinance Ratings relies on its Idealized Probability of Default in order to benchmark the modelling results involved in rating structured finance instruments. Is a table calculated by EthiFinance Ratings that represents the evolution of the idealized bankruptcy probability at each rating level for the next 10 years, that is used as an input in the Granular or the Monte Carlo Analysis.

Users of this table understand that EthiFinance Ratings assumptions reflected in this table may be modified from time to time. Users understand further that the table is provided purely as an accommodation by EthiFinance Ratings, and that such accommodation creates no obligations of any kind on the part of EthiFinance Ratings other than those parts of the regulation applicable to European credit rating agencies. This table has been revised and updated in this methodology as the following.

Rating / Years	1	2	3	4	5	6	7	8	9	10
AAA	0,00%	0,02%	0,04%	0,08%	0,13%	0,20%	0,29%	0,40%	0,52%	0,67%
AA+	0,00%	0,03%	0,06%	0,12%	0,19%	0,28%	0,40%	0,53%	0,69%	0,88%
AA	0,01%	0,04%	0,09%	0,17%	0,27%	0,39%	0,54%	0,72%	0,92%	1,15%
AA-	0,01%	0,06%	0,14%	0,25%	0,38%	0,55%	0,74%	0,97%	1,23%	1,51%
A+	0,02%	0,10%	0,21%	0,36%	0,54%	0,76%	1,02%	1,31%	1,63%	1,99%
A	0,04%	0,15%	0,31%	0,52%	0,77%	1,07%	1,40%	1,76%	2,17%	2,61%
A-	0,06%	0,23%	0,47%	0,76%	1,10%	1,48%	1,91%	2,38%	2,89%	3,43%
BBB+	0,11%	0,37%	0,71%	1,11%	1,56%	2,07%	2,62%	3,21%	3,84%	4,51%
BBB	0,18%	0,57%	1,06%	1,61%	2,22%	2,88%	3,58%	4,33%	5,11%	5,92%
BBB-	0,30%	0,90%	1,59%	2,35%	3,16%	4,01%	4,91%	5,84%	6,80%	7,78%
BB+	0,51%	1,40%	2,38%	3,41%	4,49%	5,59%	6,72%	7,87%	9,04%	10,23%
BB	0,87%	2,19%	3,57%	4,97%	6,38%	7,79%	9,20%	10,62%	12,03%	13,44%
BB-	1,47%	3,43%	5,36%	7,23%	9,06%	10,85%	12,60%	14,32%	16,00%	17,66%
B+	2,47%	5,36%	8,04%	10,53%	12,88%	15,11%	17,25%	19,31%	21,29%	23,20%
B	4,17%	8,38%	12,05%	15,32%	18,30%	21,05%	23,62%	26,04%	28,32%	30,48%
B-	7,05%	13,10%	18,07%	22,30%	26,01%	29,33%	32,35%	35,12%	37,68%	40,05%
CCC	20,07%	32,02%	40,65%	47,24%	52,53%	56,92%	60,65%	63,87%	66,68%	69,15%
CC	57,19%	78,29%	91,41%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%
C	96,52%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%

*Source: Ethifinance Ratings.

A detailed description of the models used to analyse the Collateral Performance is included in Annex III.

3.3 Cashflow Analysis

3.3.1 Initial Cash Flow Parameters

The analysis of the underlying assets makes it possible to estimate the future cash flows of the portfolio, a key element for calculating the receipt of resources in the Fund's accounts, to subsequently assess if this matches with the liability payments of the Fund. The intrinsic characteristics of each loan determine its own credit risk or amortization schedule, but also the potential recoveries in the event of default; these are some of the key elements for properly modelling securitization.

Portfolio analysis has as its goal to calculate the future cash flows deriving from each asset, considering their amortization profile, possible early amortization from the debtor, probability of default at each point in time (influenced by existing correlations between portfolio assets), early repayments, estimated recoveries and risk exposure at default.

For example, the repayment rate and the recovery rate depend on the historical information the originator has. Anyway, in the specific methodologies, some recovery parameters are stated depending on the specific asset in case there is no historical information.

If the transaction is a CLO or has as underlying assets SME loans, the recoveries in the following matrix can be considered in the cashflow depending on the objective rating.

	AAA AAA (sf)	AA AA (sf)	A A (sf)	BBB BBB (sf)	BB BB (sf)	B B (sf) or below
Recovery Rate Unsecured	10%	12.5%	15%	18%	22%	25%

*Source: Ethifinance Ratings.

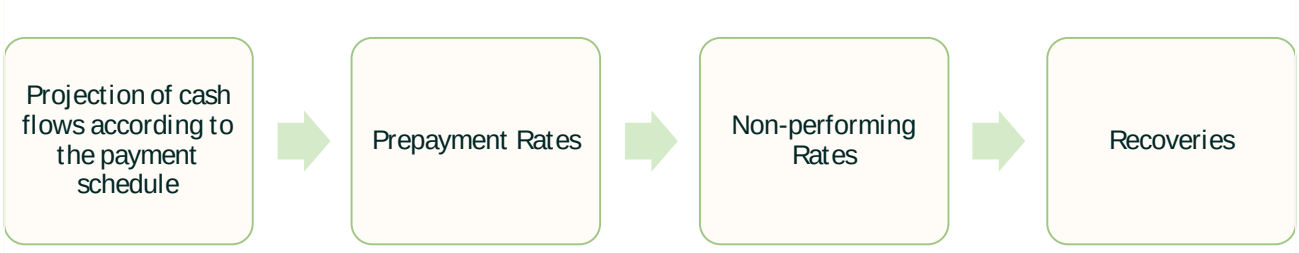
-If the underlying assets are unsecured debt, we use the following matrix.

Collateral	AAA AAA (sf)	AA AA (sf)	A A (sf)	BBB BBB (sf)	BB BB (sf)	B B (sf) or below
Market Value Decline in Residential Properties	70%	66%	60%	56%	49%	45%
Market Value Decline in Commercial Properties	80%	76%	70%	66%	59%	55%

*Source: Ethifinance Ratings.

To determine the loss distribution of the portfolio, it is essential to establish a forecast model that takes into account the variables mentioned above. Historical information and loan-by-loan data, both provided by the originator, as well as debtor information collected by EthiFinance Ratings, will be the main input to estimate the cash flows, although other public market information or from other transactions rated by EthiFinance Ratings or other rating agencies may be a source of information to effectively calibrate the estimations.

The portfolio's cashflow depends on factors mentioned in the previous section.



Source: EthiFinance Ratings

Another aspect that is initially assessed is the static/dynamic nature of the Fund's assets. In ABS or RMBS for example, the collateral of the transaction will be mainly static, so the analysis performed by the analyst will focus on the current portfolio information. In case the securitization's structure is opened through the assets (as ABCP used to be), analysis will not only contemplate current conditions of the portfolio but also possible variations that may take place in its future composition; if the structure has triggers regarding concentration, they may be modelized or taken into consideration for the future portfolio.

3.3.2 Cash Flow Model Analysis

Once, we have the future cashflow that considers all the characteristics of the collateral, EthiFinance Ratings build the Cashflow Model tailoring it to the specific characteristics of the transaction:

1. Payment Waterfall: Priority of payments made by the collection of the assets.
2. Expected Interest Rates: EthiFinance Ratings analyses the SPV of the structure with several interest rate scenarios: ascending, decreasing and flat yield curve, to address any possible mismatch. It is stressed through a variety of scenarios with monthly increases/decreases.
3. Servicer Payments Fees: EthiFinance Ratings models senior expenses by stressing the transaction against potential counterparty replacements. Stress will vary depending on the complexity of the tasks carried out by each of the counterparts.

When the Cashflow Model is complete, it can be adjusted with the Credit Enhancements that bring additional strength to the transaction. Some of the most common Credit Enhancements are mentioned in the next point.

3.3.3 Credit Enhancement

There are some credit enhancements that are applied in the Cashflow model, in this way the cashflow model can stand more stress.

1. Subordination: The existence of tranches with different payments priority reduces more senior tranches' risks. This credit enhancement is added as one more element of bonds' payments modelling, including the implementation of the cash flow waterfall to the flows' modelling.

   Regarding the subordination of bonds, the different triggers which are defined in the structure will be considered. In particular, the trigger of sequential amortization, that restricts the amortization by pro rata of bonds with different priority, and the interest trigger, which protects the payment of the bond's principal with higher priority over the interests' payments, will be included in the modelling and will be an additional element that will define the bonds payment waterfall.

   The activation of the triggers will depend on each scenario considered and the moment of time. The simulation model allows the trigger activation according to the expected definition and the outstanding NPL in each moment of time of each scenario, altering the payment priority waterfall according to such possible activation.
2. Over collateral: Even if unusual in Europe in corporate securitization and freelance loans, the Fund can have an asset transfer value bigger than the issuance volume; the difference between the emitted volume and the asset´s value is the overcollateralization. This credit enhancement is incorporated as another element of the modelling of bonds payment.
3. Excess Spread: The difference between the loans weighted average interest rate and the bonds' average interest rate. This credit improvement is provided as one more element of the bonds' payments modelling.
4. Payment Funds: One example of these funds is the interest fund, that is created to contain the resources needed to pay one month of interests on liabilities or it can cover a greater term like 60 or 90 days.
5. Reserve Funds: Independent funds are created, by bonds issuance or by loans generally granted by the originator of the Fund, to cover losses. It also acts as a mechanism to mitigate liquidity risk. This credit improvement is provided as one more element of the bond's payments

modelling, considering the theoretical and modelled amortization. The Trade Receivables methodology also mentions the default reserve, the concentration reserve, and the dilution reserve which can be used to cover losses and give credit enhancements to the transaction.

6. Liquidity Line: The existence of a liquidity line brings a credit enhancement, in this way, the Fund can take the resources needed in case liquidity pressures are presented. If the provider of the liquidity line has an investment grade, it gives more robustness to the transaction.
7. Triggers: A credit default in a securitization Fund is defined as one that has been in default for certain months and has the obligation of amortizing the full amount of the liability; this is a common definition in certain European jurisdictions. In case we are referring to a securitization Fund with tranches, most of the triggers protect the bonds with more seniority because it speeds up the amortization of the classes with more payment priority, but it can also induce a default in each moment. There are more kind of triggers.
8. Hedging Swaps: Interest rate swaps (or Exchange rate swaps) will be given the value if they can be established in the Fund. The credit improvement is incorporated by modelling both side payments of the swap, future or forward taking into account the result as more (or less) available funds in each payment date. In case of the existence of a swap, the counterparty's quality and the triggers specified in the contract will be verified, in order to establish the requirements for the substitution of the counterparty if it is necessary to do so, as described before when speaking about the Fund's counterparties.
9. Third Party Guaranty or Credit Risk Insurance: The credit performance of the underlying collateral pool can be supported by a financial guarantee or a credit risk insurance policy that functions as a financial guarantee (the Policy) in case that the final debtor does not meet its obligations.

   Insurance policies and financial guarantees feature in structured finance transactions involving a wide range of underlying assets. The Policy may cover an individual asset, a pool of assets, or the rated liability itself. For Policies covering the entire pool, an insurance claim may arise subject to a breach of certain performance levels, such as losses or cash flow available to service securitization debt. There may be one or several insurers involved in a single transaction and, if several are involved, they may be jointly or severally liable.

   The analysis of structured finance transactions in which one or several insurer(s) provide(s) support involves an assessment of the risk presented by the underlying assets securitized, consideration of the credit quality of the insurer (or insurers), an assessment of the terms and validity of the Policy, and consideration of the sufficiency of funds available to the issuer, in stressed circumstances, to make payments due to the holders of the obligations to be rated.

   EthiFinance considers a cap on the overall rating of the SPV to one notch below the Corporate Rating of the Guarantor. This as consequence of the subordination inherent to the payment of the insurance claim or guarantee.

   Also, EthiFinance will take into consideration the dependence on the servicer to deliver the service or product promised in the Policy, especially when the servicer has to perform a service in any given period of time and the payment of that service is dependent on the correct delivery of that service. Annex IV.

3.3.4 Cash Flow Analysis and Collateral Stress Test

The Cashflow Analysis reflects how the collections or the execution of the guarantees with various levels of stress are distributed, the priority of payments established in the legal opinion, the operating expenses and interest payments of the bonds. Cash flow seeks to determine the relevant risk points of the structure, and consider the stressors mentioned above and test the ability of the issuing fund to make timely payments of interest and capital in the notes.

EthiFinance then will apply a Stress Test to gauge the maximum stress that the collateral can withstand with any given conditions and still being able to fulfil its obligations. The maximum stress for any given Rating category will be defined by the Collateral Analysis depending on its characteristics (E.G., for the SME-CLO´s we will apply highest stress in the cash flows and the portfolio concentration, and then, it will be compared with the Rating Category yielded from the Monte-Carlo simulation)

3.3.5 Sensitivity Analysis

A sensitivity analysis of the assumptions will be made for the key parameters in the rating, to determine the rating's stability. This analysis is based on changes in macroeconomic factors, correlations, or other idiosyncratic elements of the portfolio that may affect the default probability of the assets that are part of the originator's portfolio or securitized portfolio, as well as in early repayment rates or in the recovery rates; and those that may influence other structural features of the Fund.

The sensitivity analysis allows us to evaluate the consistency of the rating. The default rate for high rating scenarios is expected to remain stable over time, while the level of sensitivity may increase significantly in lower rating scenarios.

Once the transaction is qualified, a series of sensitivity analysis will be performed in order to predict the stability of the rating.

The sensitivity is performed on the main inputs and assumptions used to determine portfolio flows and the waterfall of bond payments. Particularly, and without it being a closed list, independent sensitivity scenarios will be performed on:

1. The expected interest rate.
2. The macroeconomic scenario foreseen. A stressed macroeconomic scenario will be developed, where the trend in GDP is lower than in the baseline scenario. Including assumptions of worst-case scenarios based in the past economic crisis.
3. Change in the asset's probability of default and the correlations between them.
4. Temporal distribution of defaults: most structures are more vulnerable to defaults closer in time.
5. Early redemption assumptions.
6. Prepayments
7. Recoveries estimations.
8. Delay in recoveries.
9. Fees and expenses: stresses are introduced into the transaction for counterparty replacements (e.g., Administrator).

Compliance with bond payments under these stress scenarios corroborate the ratings assigned to the bonds. In case the structure does not withstand sensitivity scenarios set, the initial rating assigned to the bonds will be reviewed.

4. Review and Monitoring

From the time of the rating issuance, continuous monitoring will be performed of the bond quality and the evolution of the underlying portfolio quality and Fund counterparties from public information and information provided by the management of the Fund, the originator or any other participant in it.

To conduct regular monitoring of the companies and freelancer's securitization bond performance, the monitoring of following elements will be performed:

1. Collateral quality: Default, delinquency and recovery rates are evaluated to check if they are in line with the initial assumptions applied. The composition of the underlying portfolio is monitored, amongst others on changes to industry concentration, geographic concentration, debtor concentration, asset type concentration, weight average interest rate and weight average life.
2. Credit enhancement levels: Credit enhancement can come in the form of subordination, liquidity facilities, reserve funds and excess spread, among others. Credit enhancements are monitored to test their ability to cover projected losses.
3. Triggers: Transactions may have triggers based on portfolio performance or changes in ratings for transaction participants. Breaches of triggers can lead changes in terms of increasing the credit enhancement or replacement of transaction parties. These triggers are typically linked to default rates and delinquency rates but can also be linked to certain concentration levels.
4. Counterparties: If any of these counterparties suffer deterioration and cannot meet their contractual obligations, the Agency may initiate a review process in relation to thresholds or triggers.
5. Related events to the originator, servicer or any other party involved in the transaction.

Possible credit enhancements, as well as all factors that affect the structure of the securitization will also be discussed, from legal to operating factors. Emphasis will be placed on reviewing the assets concentration percentages, which may increase significantly depending on the amortized portfolio. Periodically, an analysis will be carried out to verify that the credit enhancements that remain in the fund are sufficient to cover the concentration risk in the portfolio.

With respect to counterparty risk, the monitoring process conducted includes a periodic analysis of the situation of the originator, servicer, swap counterparties if any, etc. If any of these parties suffer deterioration in their financial situation so that it cannot meet its contractual obligations, the risk of decreased cash flows for investors increases. Therefore, changes in the financial stability of a company with significant importance in the process of qualifying securitization bonds may involve starting a rating review process.

Annex I: Legal Review

EthiFinance typically expects an issuer to be created as a bankruptcy remote SPV in a manner consistent with all the Structured Finance methodologies. In addition, EthiFinance also considers matters related to the validity and enforceability of the rights under the Policy by the issuer. As such, EthiFinance usually expects to receive opinions of the legal counsel to the effect that the Policy is the legal, valid, and binding obligation of the Policy provider, enforceable by the issuer (or its assign) against the Policy provider in accordance with the Policy's terms and no consent, license, approval, or authorization or registration or declaration with any governmental or regulatory authority is necessary in connection with the Policy provider's execution or delivery of the Policy or the Policy provider's performance of its obligations thereunder.

EthiFinance also expects the following matters to be addressed by a combination of legal opinions and representations of the Policy provider: The due organization, valid existence, solvency, power, and authority, the authorization of, and due execution and delivery of the Policy by the Policy provider; and the execution, delivery, and performance of the Policy by the Policy provider not conflicting with any law, order, rule, or regulation applicable to the Policy provider.

EthiFinance expects that structural protections be in place to protect the cash flows payable by the Policy provider and available to the issuer to service the rated securitization obligations as long as such debt obligations are outstanding. As such, EthiFinance typically reviews the transaction structure and documentation to assess if, in addition to relying on the credit of the Policy provider, sufficient structural protections are in place (including, for example, liquidity reserves to cover timely interest payments and senior expenses, including the ongoing payment of the premium itself, if it is not front ended).

EthiFinance is usually unable to rate a structured finance obligation in the absence of an adequate servicer with sufficient experience of the operational processes necessary to ensure the issuer of the rated obligation is able to receive the collections due under the assets securitized. In the context of a Policy, the servicing includes undertaking the actions necessary to obtain payment under the Policy in the event of an insured event occurring.

Annex II: Operational Review

The operational done by EthiFinance takes into consideration several characteristics of the Servicer, and its involvement in the entire SPV performance. With than in mind, it is important to analyse its capability to manage all the operations towards the SPV and to maintain a low variation versus its historical performance. The basic information required to assess the operational review is as follows.

1. **Company structure, financial stability and strategy**
    a. Provide organizational chart.
    b. Provide most recent financial statements (last 3 years).
    c. Actual portfolio size and composition.
    d. Funding profile and maturities. Have covenants ever been breached?
    e. Evolution of the different business lines (last 3 years).
    f. Provide past and actual business strategy.
    g. Geographical and business diversification.
    h. Market positioning.
        i. Why did you select this target market?
        ii. What is your expectation to grow in this market?
        iii. What makes you different from the competition in this market?
2. **Management and staffing**
    a. Management stability.
    b. Review track-record.
    c. Provide curriculum vitae of the management.
    d. Quantify the turnover of the staff in the company.
    e. Comment the training programs being applied to employees.
3. **Origination and underwriting policies**
    a. How are consumer loans sourced and underwritten?
4. **Administration and collection process**
    a. Disclosure of data reconciliation process.
    b. Tools used for the management of the pool.
    c. How are the collection strategies for early, middle and late-stage collections?
        i. Control mechanism of assets in arrears and recoveries.

ii. Protocol to deal with defaulted assets. When are assets considered defaulted?

d. Procedures to prevent and manage fraud. What techniques are used? How is the process?

e. Third party outsourced activities.

5. Quality controls and compliance procedures

a. Explanation of internal control procedures.

b. Any significant internal audit findings.

c. Provide notifications of regulatory investigations (if any).

d. Recompilation of past and most recent complaints.

e. Disclosure of litigations (if any). Any losses?

f. Disclosure of compliance polices for confidential information.

6. Technology and reporting

a. Disclosure data protection process and systems involved.

b. Explanation of the existence of back-up systems.

c. Disclosure of business continuity plan (if any).

d. Booking cycle from front office to back office.

e. Reporting process.

Annex III: Granular Model and Monte-Carlo Simulation

A) Granular Analysis

EthiFinance Ratings has developed an Excel-based tool "Ethifinance_GranularModel.xlsx" for the analysis of large and homogeneous portfolios. This tool allows to know the probability of bankruptcy of a portfolio as well as its distribution of losses and the percentage of losses supported in specific scenarios.

To generate this information, we rely in the following inputs, the current probability of bankruptcy of the portfolio, a single correlation factor between the behaviour of the debtors' assets and the maturity period of the portfolio. This, in addition to the Idealized Curve of Corporate Default Rates.

The granular model starts from a few parameters:

1. Hazard Rate: probability of bankruptcy of the portfolio to one year.
2. Risk Score: is the probability of bankruptcy to 5 years. It is not really an input parameter, since it can be calculated from the Hazard Rate assuming that the bankruptcy of the portfolio is distributed as an exponential distribution, so that:

   Risk Score = 1- 〖exp〗 ^ (- 5 * (Hazard Rate))
3. Correlation: is a single value that represents the coefficient of linear correlation between the asset of any two debtors.
4. Tenor: these are the years until the maturity date of the loans in the portfolio.
5. Idealized Corporate Default Rates: is a table calculated by EthiFinance Ratings that represents the evolution of the idealized bankruptcy probability at each rating level for the next 10 years.

From here, four steps are performed to generate the necessary outputs to analyse a portfolio:

1. Estimation of the PD (probability of bankruptcy) in the future.
2. Calculation of the distribution of losses.
3. Calculation of statistics associated with the distribution of losses.
4. Estimation of losses incurred by rating level.

Estimation of Future PD

This process consists of interpolating the probability of bankruptcy of the portfolio for the given maturity date, considering the Idealized Curve of Corporate Default Rates. That is, it starts from the probability of bankruptcy to 5 years (Risk Score) and with this the rating tranche of the portfolio to 5 years is assigned, and then, the probability of bankruptcy in the years given for the maturity of the loans is obtained by looking at the assigned rating tranche.

The following example shows in more detail how these calculations are performed. We have a portfolio with a one-year probability of bankruptcy (Hazard Rate) of 9.86%, and that expires within 3 years and 10 months (Tenor = 3.83). In addition, the correlation influence for portfolio debtors is 12.37%.

So, we can calculate the Risk Score as:

Risk Score=1-〖exp〗^(- 5 * (0,0986))=38,92%

The table of idealized bankruptcy probabilities shows us that this Risk Score is in the range between the probability of bankruptcy to 5 years of the rating B- and CCC (yellow):

	Years to maturity				
Rating	1	2	3	4	5
B-	7.050%	13.100%	18.070%	22.300%	26.010%
CCC	20.070%	32.020%	40.650%	47.240%	52.530%

So, to know the probability of bankruptcy of the portfolio on the given maturity date, it will be necessary to interpolate between the B- and CCC ratings between the maturity terms corresponding to 3 and 4 years (green).

With this we already have the estimate of the probability of future bankruptcy of the card, which in this example would be:

PD = 33,53%

A more detailed description of the interpolation procedure is not given as a linear interpolation is used. We consider that having a table with 19 ratings and annual future projections, a linear interpolation is enough to achieve a good result.

Calculation of the Distribution of Losses

Methodologically the distribution of losses is calculated using a simplified form of Vasiçek's (1987) model. The following is a brief development of the mathematical operations necessary to obtain the distribution of losses. This model is known as one-factor model, which assumes that the portfolio is large and homogeneous. After performing these calculations, the distribution of losses is graphically represented, and we get the losses that each rating level needs to withstand.

B) Monte-Carlo Simulation Analysis

EthiFinance Ratings has developed an Excel-based tool “Ethifinance_ModeloSMEsCLO.xlsx” which is a tool based on Monte Carlo simulation that allows analysing portfolios with a diversity of loans, both for large and small portfolios.

The model for SMEs and CLOs is a tool developed by EthiFinance to be able to analyse loan portfolios where each loan has different characteristics. This tool pursues the same objectives as the granular model, allowing us to know the probability of bankruptcy of a portfolio as well as its distribution of losses and the percentage of losses borne in specific scenarios.

The difference between the granular model and the model for SMEs and CLOs is based on the fact that to generate this information is based on information from each loan in the portfolio, in addition to a series of options that make it a completer and more versatile tool.

Another fundamental difference between the granular model and the model for SMEs and CLOs is that the fact of working with specific information of each loan does not allow to assume a model that has an

asymptotic performance of the entire portfolio, so the results are obtained from a model based on Monte Carlo simulation.

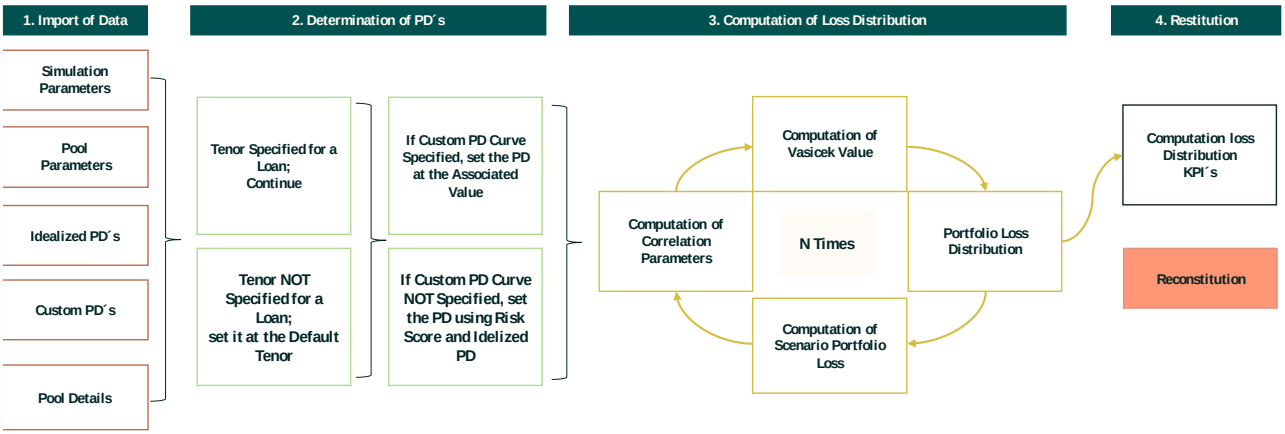
The Model "Ethifinance_ModeloSMEsCLO.xlsx" use as input these items.

1. Trials. Number of simulations that are performed.
2. Intra-industry Correlation
3. Inter-industry Correlation

	AAA AAA (sf)	AA AA (sf)	A A (sf)	BBB BBB (sf)	BB BB (sf)	B B (sf)*
Correlation Intra-Industry	28% / 23%	26% / 22%	25% / 21%	22% / 18%	20% / 17%	18% / 15%
Correlation Inter-Industry	12% / 10%	11% / 9%	10% / 8%	9% / 7.5%	8% / 6.5%	6% / 5%

*Or below.
Source: Ethifinance Ratings.

4. Asset Specific Recovery
5. Asset Specific Tenor
6. Idealized Curve Corporate Default Rates
7. Portfolio Details of each Loan. Obligor, security number, industry code (codes of economic sector or industry according with NACE National Classification of Economic Activities), region code, hazard rate, par (loan nominal), recovery rate, tenor.



Source: EthiFinance Ratings.

Annex IV: Credit Risk Insurance Review

A) Credit Quality of Insurer

In transactions relying on the Policy's protection for repayment of principal and payment of accrued interest on securitization debt obligations, the credit profile of an insurance company or a guaranteeing entity is an important consideration. In the absence of an additional collateral performance assessment, the Policy provider's credit rating becomes the rating driver for a securitization obligation. As a result of the nature of the credit support in such structures, to the extent that the Policy provider's rating changes or it appears to EthiFinance that the Policy provider will not be able to meet the payment obligations to the securitization entity, the rating of the transaction/tranche will likely be affected.

EthiFinance expects to assess the credit quality of the Policy provider based on its financial strength rating (FSR), when available, which represents the insurance company's ability to make payments due under its policies. Alternatively, EthiFinance may use the issuer rating if no FSR is available. If neither financial strength nor issuer ratings are available, or in cases where the provider may not qualify as an insurance company, a senior unsecured credit rating may be used. EthiFinance may aggregate the exposures for its review purposes depending on certain considerations (when, for example, the credit support is afforded by an insurance company to the members of its syndicates or when the Policy providers are affiliated).

In situations when the transaction/tranche benefits from the Policy provided by a single insurer or guarantor, EthiFinance may rate such transaction/tranche by applying the rating of the Policy provider to the rating of the security. When multiple Policy providers' liabilities with respect to payment of a claim under a single Policy are several, EthiFinance typically uses the first-to-default analysis, which reviews default probabilities corresponding to a tenor of the Policy for each Policy provider.

B) Terms and Conditions of the Policy

EthiFinance recognizes that each Policy is unique and may be drafted to address specific circumstances. While EthiFinance assesses each Policy individually, a Policy (regardless of its form) is generally expected to represent a functional equivalent of a financial guaranty. Generally, this may result in a Policy displaying certain characteristics, including the following:

1. The extent of credit protection and the process and timing of claims under the Policy are clearly defined and incontrovertible.
2. The Policy is an explicitly documented obligation assumed by the provider.
3. The Policy only has a limited number of customary excluded claims under such Policy (e.g., customary force majeure provisions, such as loss, damage, or liability stemming from any weapon or device employing atomic or nuclear fission and/or fusion or from any chemical, biological, biochemical, or electromagnetic weapon), and does not contain any provisions, the fulfilment of which is outside of the direct control of a party benefiting from such Policy.
4. The Policy provides direct credit protection and is not subject to significant maintenance and compliance requirements.

5. The Policy does not contain provisions or contingent obligations of the insured party with respect to the underlying collateral covered by the Policy, which may be expected to allow the Policy provider to raise legal defences against the claim under the Policy.
6. The issuer of rated securitization debt benefits from the Policy and is named a loss payee, and/or the Policy does not contain provisions materially impeding its assignability and enforceability.
7. The Policy may not be amended or modified without the written consent of the issuer and/or a third-party creditor relying on such Policy.
8. The Policy is legally effective and enforceable in all relevant jurisdictions.

Furthermore, EthiFinance expects the Policy to include only reasonable and customary requirements with respect to filing of claims, provision of information, and enforcement action by the insured party upon default of the underlying collateral assets.

This document updates the previous version while preserving its original methodological criteria; therefore, all existing ratings remain unchanged. In this version, the format has been updated and includes a higher level of detail.