EthiFinance Ratings

Structured Finance Rating Methodology - Reverse Mortgages

1. Introduction

This methodology needs to be evaluated as a whole with the document "General Structured Finance Rating Methodology" published in February 2023.

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.

2. Scope

The methodology described in this document applies to transactions backed by loans that have a mortgage without periodic amortizations (Reverse Mortgages or Equity Release Operation), but the total of the loan is repaid with the sale of the mortgaged asset once the debtor dies. The nature of the asset is different from the traditional mortgage credit analysis from the point of view of the form of repayment of the loan mainly, so the main variable to analyse at the time of origination is the real value of the guarantee and the life expectancy of the debtor. EthiFinance Ratings evaluates qualitative and quantitative factors to determine the final rating of the transaction.

The Rating is determined by applying a stress on the cash flow that mainly impacts two factors. i) the increase in the life expectancy of the debtor to stress the level of the financial obligation of the debtor and, ii) the initial depreciation in the prices of the house that functions as collateral for the repayment of the debt. In that sense, the objective of applying these two stressors is to determine the final stressed Loan to Value of the underlying assets.

3. Reverse Mortgage Assessment

3.1. Collateral

3.1.1. Historical Performance Information

EthiFinance Ratings is based on historical information provided by the originator as the key input for analysis and is used to establish the base case. The originator is expected to provide a historical sample equivalent to the transaction expected to be carried out. That is, if a transaction is expected to have a repayment period of 10 years, it would be expected to have historical information that has sufficient statistical validity to replicate this in our model.

EthiFinance Ratings expects to receive historical performance information in the form of static and dynamic data, as they are related to the mortality rate and real valuations for the recovery of the expected flow.

In cases where the information provided is considered insufficient, the Agency may apply a rating limit or even refuse to rate the transaction.

3.1.2. Portfolio Composition

The cash flows produced by a set of reverse mortgages depend specifically on when each loan matures (at the time of the debtor's death) and the value of the collateral at the time of the event. The primary administrator and / or assignor, is responsible for making the necessary arrangements for the correct collection of the credits originated, and if necessary, to include a substitute administrator.

To analyse the portfolio that is expected to securitize, the most relevant aspects are:

1. The characteristics of the Loan
2. The age of debtors
3. The valuation of current and estimated properties
4. Life expectancy of debtors
5. The capitalizable interest rate of the loan
6. Geographical area of the mortgage guarantee

Key aspects of the underlying loan portfolio:

Reverse mortgages generally do not have amortizations of capital and periodic interest, so analysing the seasoning of the underlying asset is relevant to determine the liquidity needs of the operation, since there must be a death for the collection of the guarantee to begin. Additional guarantees will be analyzed to provide liquidity to the fund if the seasoning of the portfolio is not considered adequate.

3.2. Structure Analysis

Credit enhancement and structural features will be analyzed and incorporated into the cash flow model. These include i) overcollateralization, ii) subordination (structured within different tranche levels), iii) payments fund, iv) reserve fund (to mitigate liquidity deficits), v) liquidity line (to cover possible liquidity stresses and/or absorb some losses), vi) prepayments, vii) substitute administrator, viii) triggers and ix) hedging instruments.

For the analysis of the structure of reverse mortgages, two factors take on greater relevance: i) the Liquidity Reserves and the mechanisms that the transaction could have to mitigate said risk. The above, given that reverse mortgages, do not consider a constant accrual of principal and/or interest, but the total payment of the debt is made when a death occurs and proceeds to sell and/or refinance the property by other debtors). With this, the liquidity reserve will be analyzed according to the seasoning of the portfolio and the schedule of the interest payments of the liability side of the bond, and ii) the substitute administrator in the event of bankruptcy proceedings by the assignor and/or primary originator for the enforcement of the security.

3.2.1. Stress Factors

In the particular case of reverse mortgages, the default rate is related to life expectancy and the appraisal of the properties (Final Loan to Value). In this case, life expectancy will set the tone for the increase in the financial burden of the debtor and with it the "Loan to Value", since there is no periodic amortization, the amount of the debt will be capitalized month by month until the death of the debtor occurs, and the originator can claim the mortgaged guaranty. EthiFinance Ratings uses a Stress matrix for the life expectancy of debtors under the reasoning: the longer the debtor's life expectancy is extended, the greater the financial burden and the lower the guarantee.

To determine the values and stress scenarios discussed below, EthiFinance Ratings analyzed the evolution of the mortality curve of the last 40 years, to have a parameter on the evolution of life expectancy for the coming years. As a result, the combination of incremental factors for each Rating level was determined for different age ranges. Annex I.

On the other hand, as long as the interest on the debtor's financial burden is kept capitalized, and his life expectancy is extended, there is a greater probability that the value of the guarantee will be less than that of the capitalized loan and will be insufficient to pay the financial debt to the assignor. With this, the possible variations in the appraisals of the homes are a relevant factor to consider analysing the financial strength of a reverse mortgage transaction. Annex I.

EthiFinance Ratings developed a series of scenarios to determine the most appropriate stressors to determine the market value of the guarantee. With this, for different levels of Ratings were assumed:

1. A decrease factor in the price of the property in a period of 5 years from the beginning of the operation.
2. A gradual and cyclical recovery of the value of the property.

EthiFinance Ratings will retain the criterion of what type of macroeconomic stress it will apply for each transaction (Cyclical Stress or Sustained Recovery).

Being these two factors (Life Expectancy and Guarantee Appraisal) the main ones to stress the expected flows for the transaction, it can be concluded that, the longer the life expectancy, as a whole with a recession in the appraisal of the guarantee, it could dilute the guarantee (Loan to value greater than 100%), and with it the incentive of payment by the debtor (or where appropriate, the heirs and/or financial obligors). In this way, in the cash flow analysis, EthiFinance Ratings considers that a Loan to Value above 95% reduces the incentive of the final debtor to make the payment of the debt. With this, an additional stress factor would be incorporated for the recovery of the property according to the possible recovery according to the market decline (Market Value Decline).

3.3. Cashflow and Sensitivity

The cashflow analysis reflects how the collections of 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. Also, the cashflow will consider specific recoveries, trends in interest rates and stressed senior expenses. The cashflow 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.

The sensitivity analysis allows 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.

For more detail consult the sections Qualitative Assessment, Quantitative Assessment and the section Review and Monitoring from the "General Structured Finance Methodology".

Annex I. Stress Factors Matrix for Spain

To adapt this methodology to specific demographic characteristics, EthiFinance ratings analyzed the evolution of the mortality curve of the last 40 years to have a parameter on the evolution of life expectancy for the coming years[1].

For example, in this specific Region for a pool of debtors who average the age of 71, the stress factor in their current life expectancy is 5.24% to obtain a rating at AAs levels (This stress factor must be complemented with the factors of housing prices in guarantee and interest rates). EthiFinance Ratings can complement the analysis of life expectancy and age adjustment due to stress according to demographic characteristics at expert discretion.

Stressed Life Expectations Improvement by Age

Age Range	AAA AAA (sf)	AA AA (sf)	A A (sf)	BBB BBB (sf)	BB BB (sf)	B B (sf)	Cs
0	9.39%	7.51%	5.94%	4.53%	3.36%	2.42%	1.72%
61	7.72%	6.17%	4.89%	3.73%	2.76%	1.99%	1.41%
71	6.55%	5.24%	4.15%	3.17%	2.35%	1.69%	1.20%
86	3.29%	2.63%	2.08%	1.59%	1.18%	0.85%	0.60%

*Source: Ethifinance Ratings.

Also, EthiFinance acknowledges that housing prices variations may differ from one country to another, so, to better analyse these variations in Spain, EthiFinance proceed to analyse the House Price Index (HPI) for the last 30 years with information provided by the Instituto Nacional de Estadística (INE)[2] in Spain.

As an example, a Rating in BB's is associated in our models with a decrease in the valuation of the property of 16.0% in the first 5 years and a gradual recovery of 2,00%.

[1] https://www.ine.es/consul/serie.do?s=TM2177&c=2&nult=0

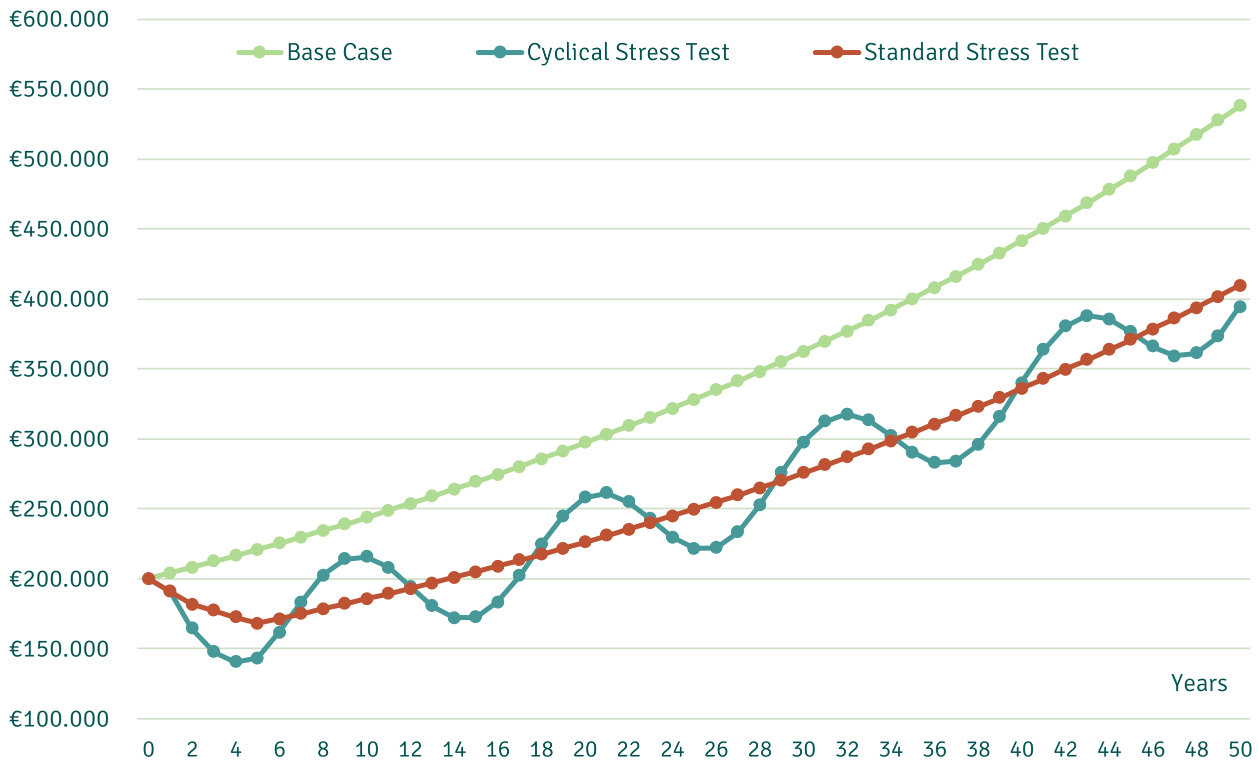
[2] https://www.ine.es/consul/serie.do?d=true&s=IPV949&c=2&

Value and Interest Rate Assumptions							
Ratings	AAAs	AAs	As	BBBs	BBs	Bs	Cs
Value decrease of housing prices in 5 years	40.0%	34.0%	28.0%	22.0%	16.0%	10.0%	5.0%
Annual recovery value of housing value	1.85%	1.88%	1.94%	1.98%	2.00%	2.20%	2.50%
Value fully recovered in years	21.6	18.1	14.4	11.1	8.0	4.5	2.0
Market Value Decline	70%	66%	60%	56%	49%	45%	40%

*Source: Ethifinance Ratings.

With this, a higher Rating should have a portfolio and guarantees (Loan to Value) to withstand a greater fall in the value of the guarantee and a slower recovery.

Housing Adjusted Value based on the expected Rating (BBs)



Source: Ethifinance Ratings.

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.