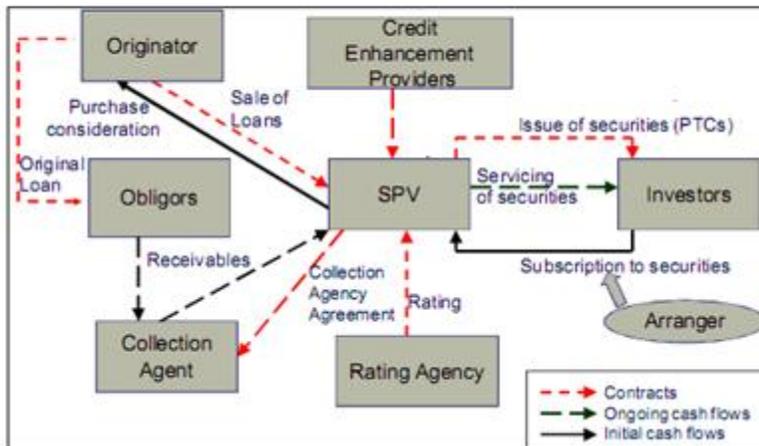


# Rating Methodology for Securitization Transactions

## 1.1. Background

**Figure 1: Typical securitization structure**



### Key features of Securitisation:

- 1) All the risks and rewards associated with underlying pool are transferred to the buyer;
- 2) The transaction structure should be such that the bankruptcy of seller does not affect the underlying pool;
- 3) There is no recourse to seller once the underlying pool is sold.

Securitisation is the process in which the underlying pool of assets are structured or packaged and sold as financial instruments to investor(s) typically through a Special Purpose Vehicle (SPV). The underlying assets could be secured loan receivables like housing loans, auto loans, commercial vehicle loans, construction equipment loans, two-wheeler loans, tractor loans, three-wheeler loans and unsecured loans like personal loans, consumer durable loans. The SPV is formed in the form of trust, settled and managed by a trustee. The trust purchases the pool for a consideration either at par or premium. The investors subscribe to the Pass through Certificates (PTCs) issued by the trust. These PTCs are backed by the underlying loan receivables and the beneficial interest lies with investors. The Servicer (typically, Originator) is appointed by the trust to service the loans. Servicer passes on the periodic collections from the underlying borrowers to the trust which is further passed on to the investors as per scheduled payouts. Credit Enhancement is provided to an SPV to cover the losses associated with the pool of assets.

The methodology followed by CRAF to assign rating or credit opinion to the Pass Through Certificates (PTCs) or Assignee Payouts and Credit Enhancement in Asset Backed Securitization (ABS) or Mortgage Backed Securitization (MBS) transactions is presented here. The risk analysis of ABS / MBS transactions can be broadly summarized as follows:

### 1) Analyzing the underlying asset pool

The Securitization process de-links the underlying pool of assets from the risk of lender, who originated the assets. The analysis of underlying asset pool involves evaluating the originator's sourcing process, credit appraisal system / underwriting standards and collection and monitoring mechanism and studying the originator's historical performance for that asset class. Based on the historical data analysis, actual pool characteristics, prevalent and expected economic environment, the cash inflows from underlying asset pool is estimated in base-case and stress-case scenarios.

### 2) The transaction structure

The transaction structure is analyzed to assess its impact on the cash flows. CRAF also takes into account the effect of market variables, the counterparty's experience and credit worthiness and legal soundness of the transaction.

### 3) Assigning the rating / credit opinion

The cash inflows from underlying asset pool are compared with cash outflows to investor(s) in both base-case and stress-case scenarios to assess the sufficiency of given credit enhancement.

## 1.2. Analysis of Key Risks in Securitization



### 1) Credit Risk

It is the risk of non-payment by the underlying obligors, which is dependent on underlying obligor's ability and willingness to pay. The underlying obligor's ability to pay is primarily driven by adequacy and stability of income. Loan to value (LTV) ratio and income generating capability of the underlying asset will indicate the obligor's willingness to pay. CRAF analyzes the originator's sourcing and credit appraisal system, historical portfolio performance (both static and dynamic performance data) and actual pool to assess the credit and liquidity risk

## 2) Market Risk

- **Macro-economic Risk** - The macro-economic scenario affects underlying asset valuation, income generating capacity of the asset (if case of certain asset class), borrower's income, market interest rates, etc. The expected economic scenario has an impact on future behavior of the pool. The regulatory scenario is also a critical aspect to consider for different asset classes, for e.g. change in regulations for repossession process.
- **Asset Risk** - The general risk perception of the asset, introduction of new models/substitutes or new technology will directly impact the performance of pool. CRAF considers the historical performance of asset-class and the factors expected to impact the future performance of asset-class to assess this risk.
- **Prepayment Risk** – The prevailing and expected market interest rates and expected income levels will influence the prepayment rates. CRAF assesses the historical prepayment rates observed for that asset class for the originator as well as similar issuances. Based on the historical data and expected interest rates and income levels, scenario analysis is carried out.
- **Interest rate Risk** – The interest rate type mismatch may arise in case where the collections from underlying borrowers are based on fixed interest rate and the payouts to investors are based on floating rate or vice versa. The interest rate benchmark mismatch may arise when the both collections and payouts are based on floating rate but reference benchmarks are different. CRAF assesses the interest rate risk assuming different interest rate scenarios and its consequent impact on collections from underlying borrowers. This risk is more prominent in MBS transactions.

## 3) Counterparty Risk

**Servicer / Originator Risk** – The ability of the Servicer to service the pool over the tenure of the transaction is an important risk factor. CRAF takes into account the Servicer's experience and the strength of the pool is a direct reflection of the sourcing, underwriting norms and credit appraisal system of the Originator. The collection and monitoring methods used by Originator becomes equally important. The Originator analysis involves evaluating the management quality and experience, changes in the management in recent years, business growth, strategies and policies, major policy changes,

financial strength, etc. CRAF studies Originator's sourcing channel, underwriting norms, credit appraisal system, monitoring methods, collection mechanism and changes in the any of them over a period of time.

### **1.3. Analyzing the Underlying Asset Pool**

#### **Portfolio Analysis (Dynamic)**

CRAF analyzes the performance of Originator's portfolio in terms of collection efficiency, portfolio ageing (bucket movement), prepayments, etc. This quantitative analysis supplements the qualitative analysis of Originator, as mentioned above.

**Collection Efficiency** The collection efficiencies are calculated to analyze the effectiveness of collection mechanism employed by the Originator. The collection efficiency can be further divided into two components – collection efficiency from current billings and collection efficiency from overdues.

**Portfolio Ageing (bucket movement)** The portfolio Days Past Due (DPD) – asset class wise is an important performance indicator. The principal outstanding as on a particular date is classified into various buckets based on payment status of loans in the portfolio. Buckets formed are Current, 1 to 30 DPD, 31 to 60 DPD, 61 to 90 DPD and so on & so forth. CRAF studies the bucket movement as on different dates over a period of time. For e.g. - as on quarter ends for the last two years. CRAF also analyzes the delinquency numbers, like 90 DPD & above, 180 DPD & above, over a period of time. The lagged delinquency levels may be also calculated to account for possible understatement of delinquency levels in a growing portfolio scenario. The lagged delinquency refers to outstanding amount on the delinquent contracts as expressed as a percentage of total portfolio outstanding at an earlier point of time. For e.g. lagged 180+ DPD as on March 2009 is calculated as total principal outstanding for 180+ DPD contracts as on March 2009 as a percentage of total portfolio outstanding as on September 2008. 6

**Prepayments** The monthly prepayments observed over a period of time for the originator are taken into consideration while assuming the prepayment rates for the pool. The portfolio analysis indicates the trend in delinquency levels over the period. It also helps to understand the effect of any change in underwriting norms and / or collection mechanism by the Originator. The peer comparison of delinquency levels indicates the relative performance of the Originator for that asset class. It should be noted that Portfolio analysis is dynamic in nature in the sense that new disbursed loans gets added in the portfolio whereas the pool to be securitized is static in nature as no new loans can be added in the

pool. Therefore the delinquency levels as observed in the Portfolio analysis is not the best estimate of the expected delinquency levels for pool to be securitized. The Static pool analysis overcomes this limitation of Portfolio analysis.

**Static Pool Analysis**

A static pool refers to fixed set of loans in which no new loans are added. Typically, the static pools are formed based on period of origination and their performance is measured periodically, preferably month on month, over the tenure. The performance measures are overdue curves (less than 90 days overdue curve - for liquidity shortfalls and greater than 90 days overdue curve - for credit shortfalls), DPD curves, prepayment curve, recovery rate, etc. As past securitized pools are akin to static pools, they are also analyzed in terms of collection efficiency, overdue curves, DPD curves, prepayment curve, recovery, etc. Based on above analysis, CRAF observes the average values, volatility and trend in the overdue curves, DPD curves, recovery rates and prepayments. CRAF also analyses the static pool performance based on various parameters like borrower profile, asset type, loan to value ratio (LTV), geography, etc. Such analysis helps in identifying key risk parameters for that asset class.

**Collateral Analysis**

The collateral analysis or the actual pool analysis involves the following factors:

**Pool selection criteria** The pool selection criteria play an important role in estimating the expected future performance of the pool. The pool selection criteria typically involve conditions on certain characteristics like minimum seasoning, upper limit on LTV, tenor, months overdue, geographical concentration and obligor concentration, etc.

**Pool characteristics** Pool characteristics are key inputs to determine the pool quality and future performance. Typical pool characteristics assessed are as follows:

Key pool Characteristics	Remarks
Asset type	Proportion of used / refinanced asset. Generally, used / refinanced asset have shown comparatively higher delinquency levels.
Asset Classification	Based on Asset manufacturer or model or class. Some manufacturer or models may have high resale value compared to others. Some class like Light

	Commercial Vehicles (LCV) in Commercial Vehicle (CV) asset class have shown comparatively higher delinquency levels than Medium or Heavy CV (MCV / HCV)
Borrower Profile	Certain borrower profiles like First Time Buyers (FTB) or First Time Users (FTU) in Commercial Vehicle (CV) / Construction Equipment (CE) loan segment and self-employed category in Auto loan segment have historically shown comparatively higher delinquency levels.
Geographical Distribution	Concentration in geography poses an additional risk.
Obligor Distribution	If few borrowers account for large proportion of the pool, it is an additional risk.
Seasoning	Typically, high seasoning is accompanied by higher build-up of equity, thereby lowering the credit risk.
Loan To Value Ratio (LTV)	Indicates the obligor's willingness to pay. Higher the LTV higher the credit risk.
Installment to Income ratio (IIR)	Indicates the obligor's ability to pay. Higher the IIR higher the credit risk.
Original Tenure	Typically, higher the tenor higher the credit risk.
Payment Status (Overdue composition)	Higher the composition of loans in overdue category, higher the credit risk.

**Portfolio Vs Actual pool comparison:** CRAF analyzes the characteristics of actual pool in comparison to originator's portfolio wide characteristics for that asset class. Such comparison will help in determining the quality of the actual pool vis-a-vis the originator's portfolio. The comparison is with respect to various characteristics like asset type, asset classification, borrower profile, geographical distribution, obligor distribution, LTV, IIR, original tenure, etc. The proportion of the pool in each characteristic type is benchmarked against the delinquency levels observed for that characteristic in the originator's portfolio.

#### **1.4. Transaction Structure**

CRAF reviews the Term Sheet and other documents to understand the transaction structure.

##### **a) Legal soundness of the transaction**

For a securitization transaction, the legal soundness of the transaction structure is an important pre-requisite. The transaction should be in compliance with the prevailing laws, guidelines and / or regulations. The transfer of pool assets (pool of loan receivables) to SPV / Assignee should satisfy the true sale criterion. The transaction structure should be such that it creates bankruptcy remoteness of pool assets from originator / seller. Also the credit enhancement / liquidity enhancement provided in the form of cash collateral should be bankruptcy remote of the provider. For the legal risk analysis of the transaction, CRAF relies on a legal opinion from an independent legal counsel certifying the above.

##### **b) Par or Premium**

The structure of the transaction - whether par or premium, will impact the requirement of credit enhancement. In case of premium structure, the default or prepayment of higher interest rate loans in the pool will lead to premium loss. This may require utilization of credit enhancement. On the other hand, in case of par structure the default or prepayment of higher interest rate loans in the pool will reduce the excess interest spread (EIS) if available in the form of credit enhancement. CRAF applies stressed prepayment rates and EIS compression to account for this risk.

##### **c) Waterfall Mechanism**

The waterfall mechanism refers to the hierarchy of payments out of the receivables from underlying pool assets. The waterfall should be well defined and water-tight. CRAF incorporates the waterfall mechanism in its cash flow analysis.

##### **d) Counterparties in the transaction**

The counterparties involved in the securitization transaction are Servicer, Trustee / Assignee Representative, Collection Account Bank and Credit Enhancement provider.

- **Servicer** –The Originator Analysis also incorporates the Servicer analysis whereby CRAF assesses the track record and performance of the Servicer. CRAF also takes into account the credit quality of the Servicer vis-à-vis the length of the transaction.
- **Trustee / Assignee Representative** – CRAF takes into account the trustee / assignee representative's experience and capability to perform its duties and responsibilities.

- **Collection Account Bank** – The collection account bank should have the short-term credit risk.
- **Credit Enhancement / Liquidity Enhancement provider** – When the credit enhancement / liquidity enhancement is provided in the form of fixed deposit, the deposit holding bank should have short-term credit risk commensurate with the rating of PTC.

## 1.5. Assigning the rating / credit opinion

### a) Base Case and Stress Case scenarios

The actual pool to be securitized is static in nature. The base case assumptions for estimating the expected cash inflows from the actual pool should therefore be based primarily on the static pool analysis. However, it should be noted that the static pool analysis provides the historical performance of the originator for that asset-class. To some extent this limitation is mitigated by incorporating the recent trend observed in Portfolio analysis in the assumptions. Further, these assumptions are adjusted to account for deviation of actual pool from static pool features and expected economic environment. For stress-case scenario, the assumptions in base case scenario are stressed according to the rating level and cash inflows from underlying asset pool are estimated. As the credit losses tend to follow log normal distribution, the stress factors are determined based on log normal distribution applied on historical data of the Originator.

### b) Cash Inflow Vs Cash Outflow – Sufficiency of Credit Enhancement

The Cash inflows from underlying asset pool in the base case scenario and stress case scenario is compared with Cash outflows (as per payment waterfall mechanism) to assess the sufficiency of given credit enhancement. Similar approach is followed to assess the adequacy of First loss facility, if Second loss facility is to be rated.

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