

GCR

RATINGS

CRITERIA FOR RATING CONSUMER ASSET
BACKED SECURITIES

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Scope of the Criteria

1. This criteria titled 'Criteria for Rating Consumer Asset Backed Securities' ('ABS Criteria') will be used to rate each asset backed securities ('ABS') transaction and will be accompanied by a transaction specific report that will disclose any additional observations or modifications to the Criteria. The Criteria should be read in conjunction with GCR Ratings' ("GCR") Criteria for Rating Structured Finance Transactions, updated and published in September 2018 available on www.GCRratings.com/criteria.
2. This Criteria applies globally, although each individual jurisdiction and each specific transaction may give rise to additional observations and/or deviations, which will be disclosed in the transaction-specific reports.

Summary of the Criteria Changes

3. This Criteria is an update to the version published in May 2017¹. Going forward, all new transactions will be rated using this Criteria.

¹ This version of the criteria, published in September 2019, has been updated for formatting, naming conventions and alignment with GCR's updated Rating Symbols, Scales and Definitions only. This criteria is applicable to all previous publications referring to "Global Consumer Asset Backed Securitisation (ABS) Rating Criteria, November 2018".

Introduction

4. GCR's Criteria for Rating Consumer Asset-Backed Securities ("ABS")' (the "Criteria") applies to ABS transactions that benefit from a large number of underlying obligors, who are usually individuals. The Criteria applies to a wide variety of receivables with known repayment profiles, which can be secured by an underlying asset (such as car loans, equipment leases etc.) or unsecured (personal loans etc.). Please note that the Criteria exclude Residential Mortgage-Backed Securities ("RMBS") which are subject to a separate rating methodology.
5. This Criteria applies globally, although every individual country and specific transaction may give cause to additional observations or deviations, which will be disclosed in the transaction specific reports.

Asset Analysis

6. The consumer ABS asset class includes various receivables written to individuals, as well as small and medium-sized corporates (in the instance of leases). To analyse the assets and form a view on their credit quality, GCR examines the three main elements around the receivables: the obligors, the receivables type and the underlying security. These all have a strong influence on the probability of default and/or recovery expectations attached to the receivable.

Obligors

7. To understand the credit profile of the obligors, it is important for GCR to understand the factors that may affect their affordability and willingness to pay, which correlate to a propensity to default. The obligor's socio-economic segmentation (e.g. indicated by the Living Standard Measure ("LSM") in South Africa) and his/her level of indebtedness are strong indicators of his/her ability to pay the loan and of his/her resilience in a difficult economic environment. The willingness to pay, meaning how likely the obligor is to drop payments in the event of financial difficulties, can be driven by the asset class (someone invested for instance in a primary residence is more likely to carry on payments in harsher economic conditions compared to someone with a personal loan. This is why, although Residential-Mortgage Backed Securities ("RMBS") are strictly speaking a subset of the ABS asset class, they are subject to a separate rating Criteria) or by his/her personal investment in the acquisition (i.e. through the deposit made to complement the loan).
8. It is paramount for GCR to understand the industry in which the Originator operates, as well as its underwriting practices. The originator's risk appetite, its own analysis of the credit profile of the loan applicant, as well as its requirements to mitigate risks constitute the drivers of the credit quality of the asset portfolio sold to the SPV. As part of the rating process, GCR performs a review of the Originator's credit granting procedures. For more details, please refer to GCR's Criteria for Rating Structured Finance Transactions report.

9. Obligor concentrations are also examined as these may expose the SPV to higher defaults and losses. Please refer to the “Expected Defaults” section of this report for a detailed explanation of GCR’s approach to concentrations.

Receivable Type

10. The securitised receivables generally fall into two categories:
- Loans. These represent a sum of money provided to an individual in exchange for future repayments. The money can be used for a purpose agreed between the lender and the borrower (secured loans) or undefined purpose (personal/unsecured loans). These instruments can fully amortise or incorporate a balloon payment at maturity. Balloon payments are generally deemed to be riskier than fully amortising loans. While balloon loans improve the affordability for the obligor, the lump sum amount due at maturity may place the obligor under higher financial strain increasing his/her probability of default;
 - Leases. These are contracts by which the owner of an asset (lessor) grants a party (lessee) the right to use this asset in exchange for periodic rental payments. Typical assets leased include automotive vehicles, equipment etc. Please note that in the instance of equipment leases, the underlying obligors are generally small and medium enterprises (SMEs). However, given their usual high dependence on the consumer market, lease behaviour can be associated to individuals’. Leases can be fully amortising or incorporate residual values whereby the lease amortises down to an amount corresponding to the expected value of the asset at maturity of the lease. At this point in time, the asset can be purchased by the lessee or be returned to the lessor. In the latter case, the SPV is left exposed to potential losses should the resale value of the asset be lower than the residual amount under the lease at this time. Some lease agreements allow the lessee to rent the asset beyond the maturity of the agreement. While GCR acknowledges that these “secondary leases” constitute an additional income to the SPV, the Rating Agency usually disregards them due to the discretionary nature of these rentals. Usually, the rentals are made on a month-to-month basis and extended at the lessee’s discretion.

Underlying Security

11. The security attached to a receivable (e.g. automotive vehicles, equipment etc.), if any, will directly drive recoveries in the event of default. GCR examines the factors that will determine both the resale value of the underlying asset as well as the timing for such sale (such as the type of asset, market conditions etc.) For instance, the value of an automotive vehicle will generally dramatically decline at the beginning of its life, which is likely to create a wide gap between the balance of the loan advanced and the value of the vehicle. A default during this “negative equity zone” is likely to cause low recoveries on the loan, whereas, as the loan amortises, the gap between the two narrows which reduces the likelihood of losses in the event of default.

12. GCR expects the assets to be located within the same jurisdiction as the originator. The recoverability of an asset situated in another country from the originator is generally diminished given the potential operational and legal hurdles to recoup the asset. In this instance, GCR generally severely haircuts the expected recovery of the asset unless historical evidence to the contrary is provided.
13. GCR also considers the conditions of transfer of ownership to the obligor, both dictated by the loan agreement as well as the legal framework of the relevant jurisdiction. The SPV is typically the owner of the underlying security, once the receivable portfolio has been sold to it. Ownership is transferred to the obligor only once all of his/her obligations with respect to the loan have been discharged. In instances where ownership is transferred to the obligor at inception of the loan, the recovery process may be lengthened or even compromised. The recovery procedures established by the Originator/Servicer are also key in determining the timing for such recoveries.

Eligibility Criteria

14. Eligibility criteria limit the type and quality of assets that can be initially and/or subsequently sold by the originator to the securitisation vehicle. These criteria ensure that the characteristics of the assets sold to the SPV are consistent with those of the larger book underwritten by the originator, thus aligning the performance expectations of the portfolio sold to the SPV with the originator's book.
15. Eligibility criteria also naturally mitigate certain risks such as fraud and to a certain extent defaults. GCR expects the assets to have a minimum seasoning (typically at least one instalment must be received from the obligor) prior to being sold to the SPV. This assists in limiting fraud risk as well as expunging technical arrears which are typically caused by administrative errors (e.g. the obligor's banking details being captured inaccurately etc.). Assets sold to the SPV are generally fully performing. Should arrears be included in the securitised portfolio, GCR would apply certain adjustment to its analysis such as adding stresses to their probability of default or applying a cap to the ratings.

Typical loan-level eligibility criteria include assets which are, amongst others:

- Originated in line with the originator's underwriting guidelines;
- Compliant with and enforceable under applicable consumer finance legislation;
- Fully performing; and
- First payment has been received.
- Eligibility criteria may also set parameters for the transaction such as:
 - maximum loan / lease tenor;
 - minimum interest rate or spread for each loan in the pool;
 - maximum original maturity for every contract;
 - geographic / regional exclusions.

16. Transaction documentation usually obliges the originator to repurchase any assets sold to the issuer which were not eligible at the time of sale. GCR therefore assumes that the originator will comply with eligibility

criteria and also with their contractual obligations to repurchase assets if the eligibility criteria are breached or assets become ineligible. The credit analysis therefore does not address the risk of ineligible assets being sold into the pool.

17. A lack of eligibility criteria may result in a potential rating cap for the transaction or the inability to rate the securities to be issued.

Portfolio Covenants

18. For revolving transactions, i.e. transactions where additional assets can be sold to the SPV into the securitisation vehicle during a certain period of time, GCR expects portfolio covenants to be in place at inception of the transaction. Portfolio covenants being met are a condition precedent to the sale of assets to the SPV. They are designed to provide visibility on the assets to be added to the securitised pool and to limit the potential degradation of the credit quality of the portfolio following the sale. These also allow the Rating Agency to make sensible assumptions on the expected characteristics of the portfolio following the revolving period for the purpose of its cash flow modelling.
19. Portfolio covenants typically include asset concentration limits, a minimum weighted average portfolio yield etc.

Performance Analysis

20. GCR uses the historical performance data to determine a base case relevant to a certain credit parameter (e.g. defaults, recoveries etc.). A base case corresponds to the average historical occurrence of a credit factor (e.g. defaults, recoveries etc.) over the life of the transaction taking into account volatility.
21. GCR prefers to obtain historical data over an economic cycle and expects to review at least 3 years of data. It is important to highlight that such data relates to the whole portfolio historically originated by the originator, as opposed to the sold portfolio only. Please note that GCR may also use data collected from sources other than the originator to derive an appropriate base case should the data provided not be conclusive. In the absence of sufficient information, GCR may decline to rate a transaction.

Expected Defaults

Base Case Calculation

22. To quantify the cumulative defaults base case, GCR generates cumulative default curves using the vintage data provided. The vintage data displays for every month or quarter, 1) the amount of assets originated and 2) going forward from the relevant month/quarter, the outstanding principal amount of the defaults that have occurred. Please note that the data must record the occurrence of defaults irrespective of their rehabilitation if it occurs. The Rating Agency then builds cumulative default curves by

expressing the cumulative defaults as a percentage of assets originated for the month/quarter and by bringing them to the same origin. GCR extends the shorter curves using extrapolation methods. Appendix A shows an example of vintage curve analysis.

23. Please note that GCR expects the definition of defaults in the transaction documents to match the originator's usual business procedures and policies and expects to receive historical data based on this definition.
24. The vintage curve analysis is the source of abundant and crucial information to the Rating agency:
 - It allows to quantify the expected cumulative default risk on the asset portfolio;
 - It allows to determine the distribution of defaults over time. Defaults typically follow a log normal pattern on a non-cumulative basis. According to GCR's observation, approximately 50% of the defaults related to consumer-related debt occur within the first two years of the life of a typical five-year loan;
 - Isolating origination vintages removes the noise caused by portfolio growth which could dilute default percentages in a dynamic default analysis whereby defaults are aggregated as a percentage of the total portfolio;
 - It highlights the evolution of the credit risk associated to the asset originated overtime. GCR pays close attention to the evolution of the vintage curves over time. Recent vintages that stack above the older ones are a cause of concern as it may indicate a deterioration of the credit quality of the assets originated. GCR would seek to identify the reasons for such behaviour such as a more stringent macro-economic environment or a change in the originator's underwriting policy (e.g. a more aggressive origination strategy). On the contrary, decreasing younger default vintage curves could indicate an improvement in the underwriting policies of the originator. GCR may take a sterner stance in its analysis in the former case.
25. Once the curves have been drawn and extrapolated, GCR generally calculates the base case cumulative default probability as an average of the maximum levels reached by the curves plus a fraction of standard deviation to take into account the historical volatility of the data. Base case assumptions are determined for each asset group that presents distinct default behaviour (e.g. New/Used vehicles, fully amortising/ balloon loans etc.). GCR evaluates the effectiveness of the portfolio covenants to limit the portion of riskier assets in the securitised portfolio. This allows the Rating agency to calculate the base case as a weighted average of each individual base case assuming a worst case portfolio composition in line with the contractual portfolio concentration limits. In the absence of covenants, the Rating Agency may apply the most conservative individual base case to the entire portfolio.

Seasoned Assets

26. In non-revolving structures and in the event that a seasoned portfolio is being securitised, GCR may factor such seasoning into its analysis provided that the seasoning translates into a meaningful lapse of defaults. GCR would only consider giving credit to seasoning for amortising assets that present at least 6 to 12

month seasoning. The Rating Agency would first look at the distribution of defaults over time and determine what percentage of the cumulative defaults have lapsed within the seasoning time frame. GCR then decreases the cumulative default accordingly. Please note that in any instance, GCR would cap the credit given to seasoning to 50% to err on the side of caution when assigning a rating. Because the cumulative default probability is expressed as a percentage of the initial portfolio amount, the default probability adjusted for seasoning must be recalibrated to the outstanding portfolio balance at inception of the transaction. As a result, the amortisation of the portfolio greatly influences the seasoned cumulative default percentage, however the corresponding cumulative defaults amounts assumed remain the same. The table below provides an illustration of the calculation in two scenarios where the seasoning of the portfolios is the same but where the portfolio in scenario B amortised faster.

Table 1: Credit for Seasoning: Illustrative example			
		Scenario A	Scenario B
1	Unadjusted cumulative Default %	5.0%	5.0%
2	Defaults already occurred	3.0%	3.0%
3	Adjusted cumulative Default %	2.0%	2.0%
4	Initial portfolio balance	10,000	10,000
5	Current portfolio balance	7,000	3,500
6	Amortisation factor = (4) divided by (5)	1.43	2.86
7	Adjusted cum. Default % = (3) times (6)	2.9%	5.7%

Source: GCR

Arrears Sold to the SPV

27. Assets to be sold to the SPV are generally fully performing. However, should the securitised portfolio include assets in arrears, GCR would apply additional stresses to calculated cumulative default probability. Such stresses are calculated on the basis of historical rolling rates that GCR expects to receive.
28. In any case, if such assets were to be sold to the SPV, GCR expects them to form a limited part of the portfolio.

Cumulative Default Rate Stress Multiples

29. The base case is in principle deemed to be commensurate with a 'B(sf)' (single B) National scale rating scenario. This scenario is expected to occur during the life of the transaction at closing. For higher rating scenarios, a stress multiple is applied to the base case. This is to account for potentially higher defaults in periods of greater economic distress. The stress multiples listed in the table below provide an indication of the multiples typically applied for relevant international rating scenarios. In any event, the default probability is capped at 100%.

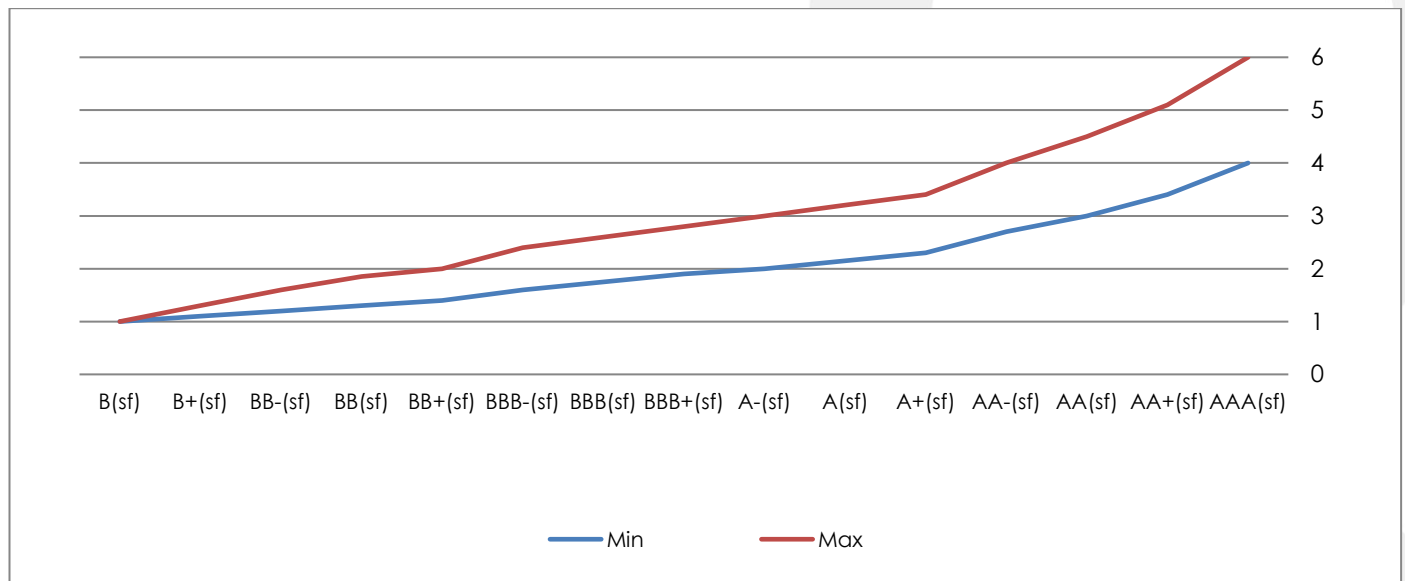
Table 2: International Default Stress Multiples

Rating Scenario	Stress Range (Min -Max)
AAA _(sf)	4.0 – 6.0
AA _(sf)	3.4 – 4.5
A _(sf)	2.2 – 3.4
BBB _(sf)	1.8 – 2.6
BB _(sf)	1.3 – 1.9
B _(sf)	1.0

Source: GCR

30. The stresses follow a linear progression with a hinging point set at 'BBB_(sf)', 'AA_(sf)' and 'AAA_(sf)' as exhibited in the chart below.

Chart 1 – International Default Stress Multiples



Source: GCR

31. The actual stress multiple is determined by the rating committee and may be higher or lower than indicated above depending on other qualitative and quantitative aspects of the contemplated transaction. Lower multiples may be used particularly in the case of unsecured loan transactions in certain jurisdictions whereby the occurrence of defaults is naturally high. In this instance, applying the abovementioned multiples may lead to mathematical aberrations (default probability higher than 100%) or be fundamentally disconnected with the economic reality of the transaction (when defaults are historically high, there can only be a limited amount of additional defaults one can expect in a stressed environment). Lower multiples could also be used if for example, the base case assumption is already relatively high because it has been derived from data covering a period of economic stress. Other considerations in this respect are underwriting standards and the availability and quality of data.

32. For country specific stresses, GCR would apply a “Macro Risk Factor” (“MRF”) bespoke to each jurisdiction. GCR is of the opinion that two types of risks need to be embedded into the stresses: country risk (relates to micro and macro-economic factors such as inflation etc.) and macro risk (e.g. risk of political instability, moratorium risk etc.). While the country risk (and to a certain extent the sovereign risk) is by nature incorporated in the data on which the base case is calculated, the macro risk is fully taken into account through the MRF.
33. GCR departed from its initial approach whereby international stresses were applied to national ratings to improve the comparability of its international ratings. Moreover, given the international rating stresses and the MRF moving in opposite directions following a change in the Sovereign rating of a given country, GCR expects limited movements in National scale ratings should a small variation of the Sovereign rating occur.
34. The table below shows the Default stress multiples in South Africa.

Table 3: Default Stress Multiples in South Africa	
Rating Scenario	Stress Range (Min-Max)
AAA _(sf)	2.50 – 3.40
AA _(sf)	2.10 – 2.85
A _(sf)	1.75 – 2.30
BBB _(sf)	1.60 – 1.85
BB _(sf)	1.20 – 1.30
B _(sf)	1.0

Source: GCR

Obligor Concentrations

35. The vintage curve analysis is generally performed in relation to a granular portfolio whereby an obligor underlying to a receivable typically represents less than 1% of the securitised portfolio. In the event that the securitised portfolio includes concentrations, each rating scenario is expected to be able to withstand at least a certain number of obligor defaults. Concentrations occur when a small number of obligors makes up for a significant part of the asset portfolio. An indication of the assumed number of top obligor defaults is listed in the table below:

Table 4: Top Obligor Assumed to Default	
Rating Scenario	Range (Min-Max)
AAA _(sf)	7 – 8
AA _(sf)	6 – 7

A _(sf)	5 – 6
BBB _(sf)	4 – 5
BB _(sf)	3 – 4
B _(sf)	1 – 2

Source: GCR

36. The corresponding default rate is determined by assuming a worst case portfolio composition in line with the contractual portfolio concentration limits.
37. The following table displays the Top obligor defaults for South Africa:

Table 5: Top Obligors Assumed to Default (South Africa)	
Rating Scenario	Range (Min-Max)
AAA _(sf)	5– 7
AA _(sf)	5 – 6
A _(sf)	4– 5
BBB _(sf)	3– 4
BB _(sf)	2–3
B _(sf)	1 – 2

Source: GCR

Expected Recoveries

Base Case Calculation

38. To determine an expected loss on the asset portfolio over the life of the transaction, GCR performs a similar vintage curve analysis of the amounts recovered on the defaulted loans. Such recoveries include repayments from the obligors in an attempt to rehabilitate his/her loan or proceeds from the sale of the underlying asset, if any, that constitutes the security attached to the loan.
39. GCR builds cumulative recovery curves based on the vintage data provided. The data displays for every month/quarter 1) the amounts of defaults occurring during the period and 2) going forward from this month/quarter, the principal amount recovered out of these defaults. In preparing the data, it is important not to double count the recoveries from defaulted loans that rehabilitated more than once. Cumulative recovery percentages for every vintage are calculated by expressing the amounts recouped as a percentage of the defaults.
40. GCR expects the data to show the principal amount of recoveries only as opposed to the total cash received (i.e. interest, principal and any other amounts) to isolate the intrinsic value of the assets from

other economic factors such as interest rate cycles etc. Should the originator fail to restrict the recoveries to their principal component, GCR will analyse the data in light of the economic environment applicable at the time of the vintage and conservatively strip out the interest portion.

41. GCR uses the same extrapolation techniques as for the default probability to obtain a set of full curves and calculates accordingly a base case of cumulative recoveries using averages and incorporating an element of volatility. Calculations of recoveries per relevant asset group are also performed if needed to determine a weighted average base case assumption.
42. The base case is in principle deemed to be commensurate with a 'B(sf)' (single B) rating scenario. For higher rating scenarios, a haircut is applied to the base case recovery rate. This is to account for potentially lower recoveries in periods of greater economic stress. The haircuts listed in the table below provide an indication of stress applied for the relevant rating scenarios:

Table 6: International Recovery Haircuts

Rating Scenario	Range (Min-Max)
AAA _(sf)	40% – 60%
AA _(sf)	30% – 45%
A _(sf)	20% – 35%
BBB _(sf)	15% – 25%
BB _(sf)	10% – 20%
B _(sf)	0%

Source: GCR

43. The actual haircut is determined by the rating committee and may be higher or lower than indicated above depending on other qualitative and quantitative aspects of the contemplated transaction. If, for example, the base case assumption is already relatively low because it has been derived from data covering a period of economic stress, a lower haircut may be justified. Other considerations in this respect are the legal framework, recovery procedures and the availability and quality of data.
44. The combined effect of the expected default and expected recovery will result in the expected loss for the transaction.
45. For country specific stresses, recovery haircuts would be affected commensurately to the MRF.
46. The table below shows the Recovery haircuts in South Africa.

Table 7: Recovery Haircuts in South Africa

Rating Scenario	Range (Min-Max)
AAA(sf)	25% – 35%
AA(sf)	18% – 27%
A(sf)	12% – 18%
BBB(sf)	9% – 12%
BB(sf)	5% – 6%
B(sf)	0%

Source: GCR

Residual Value Risk

47. Residual value risk relates to leases, the tenor of which does not match the useful life of the underlying assets. At the end of the lease, the lessee can either purchase the asset or return it back to the SPV. This exposes the latter to fluctuating market conditions given that it will have to lease the asset again or sell it to meet the residual payments of the debt that funded the full value of the lease. Residual value risk is analysed by GCR on a bespoke basis, depending on the asset type, market conditions and legal framework applicable to the relevant jurisdiction.

Expected Prepayments

48. GCR applies an appropriate base case annual prepayment rate on the basis of the historical prepayment data received. For each month/quarter, GCR analyses the prepayments occurring out of the outstanding balance of the portfolio observed. The base case is in principle deemed to be commensurate with a 'B(sf)' (single B) rating National scale scenario. For higher rating scenarios, a sensitivity analysis is done in the cash flow model by assuming both higher and lower prepayment rates for the portfolio as follows:

Table 8: International Annual Prepayment Rate Stresses (Increase/Decrease)

Rating Scenario	Low	Mid	High
AAA(sf)	-50%	0%	50%
AA(sf)	-42%	0%	42%
A(sf)	-32%	0%	32%
BBB(sf)	-23%	0%	23%
BB(sf)	-12%	0%	12%
B(sf)	0%	0%	0%

Source: GCR

49. While prepayments in pass-through transactions are likely to accelerate the repayment of the notes and shorten the exposure to the credit risk of the asset portfolio, they typically lead to a loss of income over the life of the transaction and could potentially lead to a decrease in the average portfolio yield should the loan with higher margins prepay (Cf. Cash flow model section for more details).
50. In addition to the abovementioned risks, in transactions where the securities are repaid according to a pre-determined schedule, prepayments may expose the SPV to negative carry should such monies collected not be reinvested in adequately yielding instruments or assets.
51. The table below shows the Prepayment stresses for South Africa:

Table 9: Annual Prepayment Rate Stresses (Increase/Decrease) for South Africa			
Rating Scenario	Low	Mid	High
AAA(sf)	-35%	0%	35%
AA(sf)	-27%	0%	27%
A(sf)	-18%	0%	18%
BBB(sf)	-12%	0%	12%
BB(sf)	-6%	0%	6%
B(sf)	0%	0%	0%

Source: GCR

Cash Flow Modelling

52. The base case and stressed scenarios as described above are used as inputs to GCR's ABS cash flow model. Additional stress factors such as arrears or asset yield compression, as well as the structural features of the transaction are also incorporated into the model under the tested rating scenario, e.g. a liquidity facility, running expenses for the issuer (e.g. trustee fees) and the priority of payments. Each rating scenario is tested against the proposed capital structure and the terms and conditions of the debt instruments to be issued.
53. The model tests the ability of the cash flows to service the debt on a timely manner in a specific rating scenario in light of the available credit enhancements. The resilience of the cash flows is also tested using a combination of variation of the timing of occurrence of defaults and recoveries, intensity of prepayments and level of interest rates. It is important to note that irrespective of the cash flow model results, GCR may deem that additional credit enhancement may be needed to support the rated instruments on the basis of, for instance, qualitative information. For more details on GCR's modelling approach of ABS transactions, please refer to the Research report: Asset-Backed Securities Cash Flow Model published in September 2018.

54. GCR does not typically model the revolving period and assumes the structure to have entered into a pre-enforcement/amortising phase. The asset portfolio at the end of the revolving period is assumed to have the most conservative characteristics dictated by the portfolio covenants in place. In addition, GCR expects early amortisation triggers to be in place at inception of the transaction to ensure the start of the amortisation of the rated securities in the event of a notable degradation of the performance of the portfolio and also to make sure that the credit enhancement available remains intact at the start of the amortisation period. For example, triggers can be linked to a dynamic arrears (delinquency) rate, a maximum cumulative default rate, a certain level of excess spread available in the transaction, an asset cover ratio etc. Where triggers are considered inadequate, these will be considered in analysing the expected loss of the transaction.
55. Some transactions may allow for the pre-funding of assets whereby an additional amount of securities is issued to fund the purchase of assets after the initial issuance of debt. This mechanism is typically used when assets have been originated but are waiting to be eligible (e.g. to satisfy the eligibility criterion related to the minimum seasoning) or when an additional portfolio is about to be originated. The pre-funding period, i.e. the period during which the proceeds from the securities issuance remain unused, exposes the SPV to negative carry. GCR expects the pre-funding period to be limited and will incorporate the impact of such negative carry into its analysis.

Distributions of Defaults and Recoveries

Default Vector

56. The cumulative default probability calculated as per the previous section of this document only represents a static measure of the risk. Using the same vintage default data, GCR calculates the average distribution of the defaults over the life of the asset portfolio ("Default vector"). This vector forms the basis of the stress added to the cash flow model. GCR assumes that defaults will occur over the life of the securitised assets according to three patterns. These are exhibited in the table below:

Table 10: Default Vectors	
Default Vector	Description
Front loaded	Defaults occur 50% faster than the average historical distribution observed
Stable	Defaults occur as per base case
Back loaded	Defaults occur 50% slower than the average historical distribution observed

Source: GCR

57. The model tests the resilience of the cash flows in these three situations within each rating scenario as each vector adds unique pressure to the cash flows. Please note that GCR may manually bring corrections to the vector to allow all defaults to be allocated to the asset portfolio. This may happen when the amortisation of the portfolio is greatly accelerated due to certain parameters such as high prepayments.

Recovery Vector

58. A similar exercise is conducted by GCR to determine the distribution of the recoveries following default. The same distribution patterns are used in the cash flow model:

Table 11: Recovery Vectors	
Recovery Vector	Description
Front loaded	Recoveries occur 50% faster than the average historical distribution observed
Stable	Recoveries occur as per base case
Back loaded	Recoveries occur 50% slower than the average historical distribution observed

Source: GCR

Portfolio Yield

59. One of the inputs to the model is the Weighted-average yield of the asset portfolio. Even though such yield is known at the start of a transaction, there is no guarantee that it will remain the same throughout the life of the portfolio. Assets with the highest rate may be affected by defaults or prepayments causing the weighted-average (WA) yield on the portfolio to decrease over time. To model such a situation, GCR splits the WA yield on the assets (i.e. the margin over the reference rate for floating rate assets and the rate for fixed rate assets) into several buckets and allocate a portion of defaults and prepayments to the highest yield bucket thus decreasing the WA yield. For risk-priced receivables, GCR generally allocates 100% of the defaults towards the compression of the yield irrespective of the rating scenario. A lower percentage may be considered if a dissociation between defaults and yield level is evidenced. Also, GCR allocates between 50% and 100% of the prepayments towards such compression. The percentage is determined according to the characteristics of the lending product offered by the originator or according to the market conditions in which it operates (e.g. refinancing opportunities in the market).

Senior Expenses

60. GCR incorporates in its analysis the expected senior expenses incurred by the SPV at inception and on an on-going basis. Senior expenses typically include Trustee and director fees, fees payable to the servicer and administrator etc. GCR expects an exhaustive list of fees to be provided and split between variable costs (i.e. those varying according to the outstanding balance of the portfolio or the debt issued) and fixed costs.
61. GCR assumes the servicing fees to be the higher of (a) the contractual servicing fees, (b) the contractual backup servicing fees, or (c) another fee in the event that the rating panel has indications that in a specific market, higher servicing fees would be appropriate. To cater for unexpected costs, GCR typically increases the senior expenses by 10% irrespective of the rating scenario. The Rating Agency also applies

an annual escalation rate indexed to the Consumer Price Index ("CPI") applicable to the relevant jurisdiction.

Arrears

62. In addition to defaults, the ABS model incorporates loans in arrears that would not go into default but would rehabilitate. Such arrears create a temporary cash shortfall in the structure. GCR models these arrears as a multiple of the defaults. Such arrears are determined on an asset class basis and according to the relevant jurisdiction.

Interest Rates

63. Securitisation transactions are exposed to all sorts of risks linked to interest rates:
- Basis risk. In certain jurisdictions, the lending and borrowing rate are different, although often correlated. This exposes the structure to a compression of the gap between the two indices, thus decreasing the excess spread generated.
 - Fixed/floating risk. This corresponds to a mismatch between the nature of the rates related to the assets and the securities issued. Some or all of the assets may yield a fixed rate and some or all of the securities may pay interest based on a floating rate, and conversely. This exposes the SPV to potential fluctuations of the interest rates over time which could significantly impact on the excess spread.
64. The SPV often enters into hedge agreements to mitigate these risks. In the absence of such instrument, GCR would incorporate the basis risk in its analysis by assuming a severe compression of the gap between the two indices. Please refer to Appendix B for details on GCR's approach to basis risk in South Africa. In the instance of fixed/floating risk, GCR would assume different variations of the interest rates as explained below. If a hedge agreement is entered into by the SPV, GCR would model the characteristics of the instrument to ascertain whether a residual mismatch remains.
65. Irrespective of whether a transaction is perfectly hedged or not, GCR always incorporates variations to the interest rates in its cash flow model. The Rating Agency assumes for each rating scenario three trends in the interest rate: 1) rising, 2) stable and 3) declining. Such fluctuations, in conjunction with defaults, can have negative consequences on the cash flows.
66. Please refer to Appendix B for more details on GCR's interest rate assumptions in South Africa.

Structural Features

67. The Cash flow model incorporates the specificities of the transaction such as:
- Capital structure and terms and conditions of the securities. Each tranche of securities is modelled with its own characteristics e.g. amount, coupon, step-up coupon, if any, schedules and final legal maturities.

- Priority of payments. Cash inflows are allocated as per the priority of payments whereby each secured creditor is paid according to a contractual order. When securities are paid sequentially, the model takes into account the resulting subordination of each tranche.
 - Reserve funds and/or overcollateralization. The model caters for various reserves (typically cash reserve fund, arrears reserve etc.) as well as overcollateralization, often funded by a loan from the originator/seller and subordinated to the debt issued.
 - Any other mechanism bespoke to the transaction. Any other relevant mechanism would also be factored into the cash flow model, such as interest deferral mechanisms, the potential redemption amount definition, a switch from a sequential to a pro rata amortisation of the securities etc.
68. GCR's ABS model was built in a very flexible manner so that it can incorporate as many specificities of a structure as possible without being amended. However, GCR's model can be altered to accommodate any relevant feature not catered for, after internal checks are performed and validations obtained.

Monitoring and Surveillance

69. On-going monitoring of the performance of transactions and the underlying assets is key to the rating process and maintaining current ratings. GCR expects sufficient performance information to be provided on a monthly/quarterly basis.
70. The purpose of the monitoring exercise is to confirm that the transaction performed as per the Rating Agency's expectations meaning that each credit-related aspect of the transaction (defaults, losses, credit enhancement etc.) behaves as per GCR's assumptions.
71. Amongst others, GCR expects to receive the following reported performance:
- the portfolio composition compared to the portfolio criteria;
 - the actual interest and principal collections received on the assets;
 - the availability of credit enhancement (including excess spread) in the transaction;
 - the evolution of defaults, delinquencies and recoveries compared to the base case expectation at closing;
 - Details on the repurchase of non-performing assets by the originator;
 - transaction account balances;
 - the application of available cash through the priority of payments; and
 - an overview of compliance with all transaction performance and counterparty triggers.
72. Other relevant factors considered during the surveillance process include, for example the macro-economic and asset specific outlook.
73. Certain transactions allow for tap issuances that can be rated or unrated. In any instance where GCR rated the tranches initially issued, the Rating Agency expects to be notified sufficiently in advance of the

tap issuance to assess its impact on the ratings of the initial rating(s). GCR also expects to be notified in advance of changes brought to the composition of the asset portfolio or to the transaction documents to analyse their incidence on the ratings assigned to the securities.

Surveillance panels are held at a minimum annually or as events warrant. Negative or improved performance of the underlying portfolio may trigger a surveillance panel and potential rating action. For public transactions, GCR will publish a performance report at a minimum on an annual basis or as events warrant.

Appendix A – Example of Cumulative Default Base Case

The example below is purely fictitious and is for illustration purposes only.

Unextrapolated Cumulative Default data (Amounts)

Month	Origination amounts	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	1,296.0	0.0	7.2	18.4	25.6	36.9	43.0	51.2	54.3	66.6	71.7	73.7	76.8	78.8	81.9	87.0	89.1	92.1	94.2	95.2	98.3	99.3	100.8	101.4	103.1	102.4
2	4,251.6	0.0	11.6	29.8	41.5	59.7	69.6	82.9	87.9	107.8	116.1	119.4	124.4	127.7	132.7	140.9	144.3	149.2	152.5	154.2	159.2	160.8	163.3	164.2	166.9	
3	9,684.3	0.0	64.4	165.6	230.0	331.2	386.4	460.0	487.6	598.0	644.0	662.4	690.0	708.4	736.0	782.0	800.4	828.0	846.4	855.6	883.2	892.4	906.2	910.8		
4	929.6	0.0	6.3	16.2	22.5	32.5	37.9	45.1	47.8	58.6	63.1	64.9	67.6	69.4	72.1	76.6	78.5	81.2	83.0	83.9	86.6	87.5	88.8			
5	9,227.7	0.0	51.7	132.9	184.6	265.8	310.1	369.1	391.3	479.8	516.8	531.5	553.7	568.4	590.6	627.5	642.3	664.4	679.2	686.5	708.7	716.1				
6	2,041.6	0.0	11.6	29.8	41.3	59.5	69.5	82.7	87.6	107.5	115.8	119.1	124.0	127.3	132.3	140.6	143.9	148.8	152.1	153.8	158.8					
7	3,789.6	0.0	15.7	40.2	55.9	80.5	93.9	111.8	118.5	145.3	156.5	161.0	167.7	172.2	178.9	190.0	194.5	201.2	205.7	207.9						
8	6,634.9	0.0	37.6	96.7	134.4	193.5	225.7	268.7	284.8	349.3	376.2	386.9	403.1	413.8	429.9	456.8	467.6	483.7	494.4							
9	2,025.5	0.0	10.8	27.7	38.5	55.4	64.7	77.0	81.6	100.1	107.8	110.8	115.5	118.5	123.1	130.8	133.9	138.5								
10	5,475.1	0.0	33.3	85.7	119.1	171.5	200.1	238.2	252.5	309.6	333.4	343.0	357.3	366.8	381.1	404.9	414.4									
11	1,636.5	0.0	7.0	18.0	25.0	35.9	41.9	49.9	52.9	64.9	69.9	71.9	74.9	76.9	79.9	84.9										
12	4,249.0	0.0	19.0	48.9	68.0	97.9	114.2	136.0	144.1	176.8	190.4	195.8	204.0	209.4	217.5											
13	5,845.2	0.0	16.8	43.1	59.9	86.3	100.7	119.8	127.0	155.8	167.8	172.5	179.7	184.5												
14	7,102.6	0.0	21.9	56.3	78.1	112.5	131.3	156.3	165.6	203.1	218.8	225.0	234.4													
15	2,311.4	0.0	12.5	32.0	44.5	64.1	74.8	89.0	94.3	115.7	124.6	128.1														
16	519.3	0.0	3.1	8.0	11.2	16.1	18.8	22.3	23.7	29.0	31.3															
17	5,086.5	0.0	32.0	82.4	114.4	164.8	192.3	228.9	242.6	297.6																
18	3,947.5	0.0	15.5	39.8	55.3	79.6	92.8	110.5	117.2																	
19	2,747.2	0.0	9.0	23.2	32.3	46.5	54.2	64.6																		
20	5,215.7	0.0	14.6	37.6	52.2	75.1	87.6																			
21	3,645.9	0.0	14.5	37.4	52.0	74.8																				
22	1,120.9	0.0	1.7	4.4	6.2																					
23	6,223.5	0.0	16.6	42.6																						
24	3,369.6	0.0	16.7																							
25	4,257.4	0.0																								

Unextrapolated Cumulative Default data (%)

Month	Origination amounts	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	1,296.0	0.0%	0.6%	1.4%	2.0%	2.8%	3.3%	4.0%	4.2%	5.1%	5.5%	5.7%	5.9%	6.1%	6.3%	6.7%	6.9%	7.1%	7.3%	7.3%	7.6%	7.7%	7.8%	7.8%	8.0%	7.9%
2	4,251.6	0.0%	0.3%	0.7%	1.0%	1.4%	1.6%	2.0%	2.1%	2.5%	2.7%	2.8%	2.9%	3.0%	3.1%	3.3%	3.4%	3.5%	3.6%	3.6%	3.7%	3.8%	3.8%	3.9%	3.9%	
3	9,684.3	0.0%	0.7%	1.7%	2.4%	3.4%	4.0%	4.8%	5.0%	6.2%	6.7%	6.8%	7.1%	7.3%	7.6%	8.1%	8.3%	8.6%	8.7%	8.8%	9.1%	9.2%	9.4%	9.4%		
4	929.6	0.0%	0.7%	1.7%	2.4%	3.5%	4.1%	4.9%	5.1%	6.3%	6.8%	7.0%	7.3%	7.5%	7.8%	8.2%	8.4%	8.7%	8.9%	9.0%	9.3%	9.4%	9.6%			
5	9,227.7	0.0%	0.6%	1.4%	2.0%	2.9%	3.4%	4.0%	4.2%	5.2%	5.6%	5.8%	6.0%	6.2%	6.4%	6.8%	7.0%	7.2%	7.4%	7.4%	7.7%	7.8%				
6	2,041.6	0.0%	0.6%	1.5%	2.0%	2.9%	3.4%	4.1%	4.3%	5.3%	5.7%	5.8%	6.1%	6.2%	6.5%	6.9%	7.0%	7.3%	7.5%	7.5%	7.8%					
7	3,789.6	0.0%	0.4%	1.1%	1.5%	2.1%	2.5%	3.0%	3.1%	3.8%	4.1%	4.2%	4.4%	4.5%	4.7%	5.0%	5.1%	5.3%	5.4%	5.5%						
8	6,634.9	0.0%	0.6%	1.5%	2.0%	2.9%	3.4%	4.1%	4.3%	5.3%	5.7%	5.8%	6.1%	6.2%	6.5%	6.9%	7.0%	7.3%	7.5%							
9	2,025.5	0.0%	0.5%	1.4%	1.9%	2.7%	3.2%	3.8%	4.0%	4.9%	5.3%	5.5%	5.7%	5.9%	6.1%	6.5%	6.6%	6.8%								
10	5,475.1	0.0%	0.6%	1.6%	2.2%	3.1%	3.7%	4.4%	4.6%	5.7%	6.1%	6.3%	6.5%	6.7%	7.0%	7.4%	7.6%									
11	1,636.5	0.0%	0.4%	1.1%	1.5%	2.2%	2.6%	3.1%	3.2%	4.0%	4.3%	4.4%	4.6%	4.7%	4.9%	5.2%										
12	4,249.0	0.0%	0.4%	1.2%	1.6%	2.3%	2.7%	3.2%	3.4%	4.2%	4.5%	4.6%	4.8%	4.9%	5.1%											
13	5,845.2	0.0%	0.3%	0.7%	1.0%	1.5%	1.7%	2.1%	2.2%	2.7%	2.9%	3.0%	3.1%	3.2%												
14	7,102.6	0.0%	0.3%	0.8%	1.1%	1.6%	1.8%	2.2%	2.3%	2.9%	3.1%	3.2%	3.3%													
15	2,311.4	0.0%	0.5%	1.4%	1.9%	2.8%	3.2%	3.9%	4.1%	5.0%	5.4%	5.5%														
16	519.3	0.0%	0.6%	1.5%	2.2%	3.1%	3.6%	4.3%	4.6%	5.6%	6.0%															
17	5,086.5	0.0%	0.6%	1.6%	2.3%	3.2%	3.8%	4.5%	4.8%	5.9%																
18	3,947.5	0.0%	0.4%	1.0%	1.4%	2.0%	2.4%	2.8%	3.0%																	
19	2,747.2	0.0%	0.3%	0.8%	1.2%	1.7%	2.0%	2.4%																		
20	5,215.7	0.0%	0.3%	0.7%	1.0%	1.4%	1.7%																			
21	3,645.9	0.0%	0.4%	1.0%	1.4%	2.1%																				
22	1,120.9	0.0%	0.2%	0.4%	0.6%																					
23	6,223.5	0.0%	0.3%	0.7%																						
24	3,369.6	0.0%	0.5%																							
25	4,257.4	0.0%																								

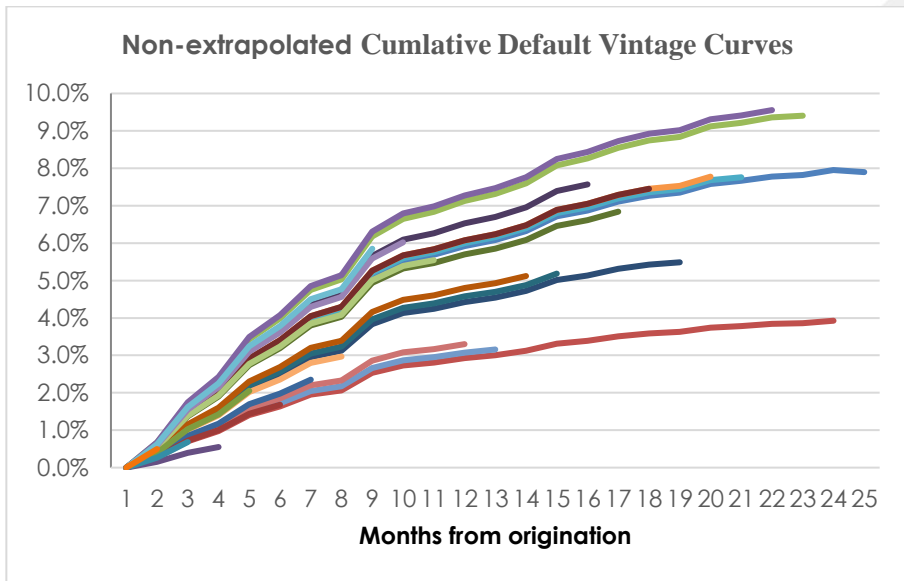
Average distribution (absolute)	0.0%	0.5%	1.2%	1.7%	2.5%	2.9%	3.5%	3.8%	4.7%	5.0%	5.1%	5.3%	5.6%	6.0%	6.5%	6.7%	6.9%	7.0%	7.0%	7.5%	7.6%	7.6%	7.6%	7.6%	7.9%
Average distribution (100 basis)	0%	6%	15%	21%	31%	37%	45%	48%	60%	64%	64%	67%	70%	76%	82%	85%	87%	89%	89%	95%	96%	97%	97%	97%	100%

Source: GCR

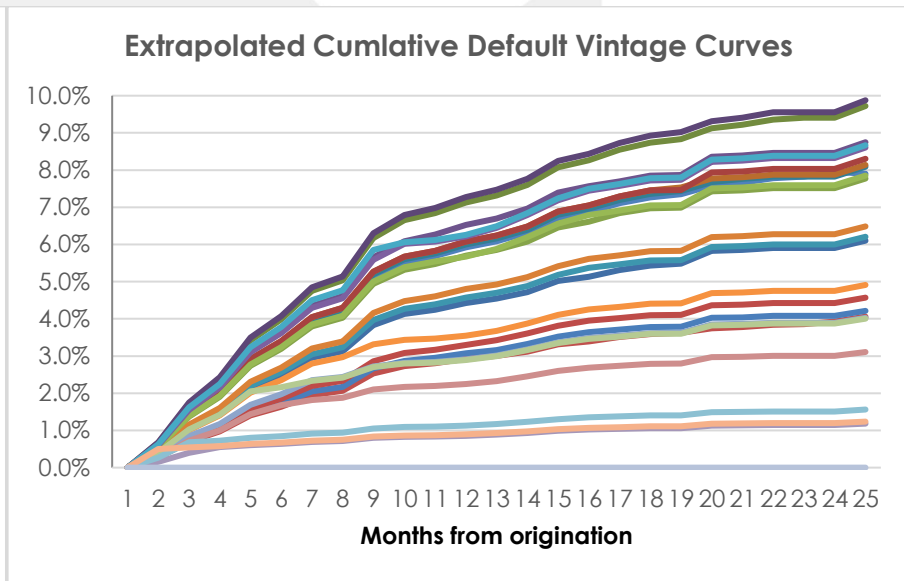
Extrapolated Cumulative Default data (%)

Month	Origination amounts	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	1,296.0	0.0%	0.6%	1.4%	2.0%	2.8%	3.3%	4.0%	4.2%	5.1%	5.5%	5.7%	5.9%	6.1%	6.3%	6.7%	6.9%	7.1%	7.3%	7.3%	7.6%	7.7%	7.8%	7.8%	8.0%	7.9%
2	4,251.6	0.0%	0.3%	0.7%	1.0%	1.4%	1.6%	2.0%	2.1%	2.5%	2.7%	2.8%	2.9%	3.0%	3.1%	3.3%	3.4%	3.5%	3.6%	3.6%	3.7%	3.8%	3.8%	3.9%	3.9%	4.1%
3	9,684.3	0.0%	0.7%	1.7%	2.4%	3.4%	4.0%	4.8%	5.0%	6.2%	6.7%	6.8%	7.1%	7.3%	7.6%	8.1%	8.3%	8.6%	8.7%	8.8%	9.1%	9.2%	9.4%	9.4%	9.4%	9.7%
4	929.6	0.0%	0.7%	1.7%	2.4%	3.5%	4.1%	4.9%	5.1%	6.3%	6.8%	7.0%	7.3%	7.5%	7.8%	8.2%	8.4%	8.7%	8.9%	9.0%	9.3%	9.4%	9.6%	9.6%	9.6%	9.9%
5	9,227.7	0.0%	0.6%	1.4%	2.0%	2.9%	3.4%	4.0%	4.2%	5.2%	5.6%	5.8%	6.0%	6.2%	6.4%	6.8%	7.0%	7.2%	7.4%	7.4%	7.7%	7.8%	7.8%	7.8%	7.8%	8.1%
6	2,041.6	0.0%	0.6%	1.5%	2.0%	2.9%	3.4%	4.1%	4.3%	5.3%	5.7%	5.8%	6.1%	6.2%	6.5%	6.9%	7.0%	7.3%	7.5%	7.5%	7.8%	7.8%	7.9%	7.9%	7.9%	8.1%
7	3,789.6	0.0%	0.4%	1.1%	1.5%	2.1%	2.5%	3.0%	3.1%	3.8%	4.1%	4.2%	4.4%	4.5%	4.7%	5.0%	5.1%	5.3%	5.4%	5.5%	5.8%	5.9%	5.9%	5.9%	5.9%	6.1%
8	6,634.9	0.0%	0.6%	1.5%	2.0%	2.9%	3.4%	4.1%	4.3%	5.3%	5.7%	5.8%	6.1%	6.2%	6.5%	6.9%	7.0%	7.3%	7.5%	7.5%	7.9%	8.0%	8.0%	8.0%	8.0%	8.3%
9	2,025.5	0.0%	0.5%	1.4%	1.9%	2.7%	3.2%	3.8%	4.0%	4.9%	5.3%	5.5%	5.7%	5.9%	6.1%	6.5%	6.6%	6.8%	7.0%	7.0%	7.4%	7.5%	7.5%	7.5%	7.5%	7.8%
10	5,475.1	0.0%	0.6%	1.6%	2.2%	3.1%	3.7%	4.4%	4.6%	5.7%	6.1%	6.3%	6.5%	6.7%	7.0%	7.4%	7.6%	7.7%	7.9%	7.9%	8.4%	8.4%	8.5%	8.5%	8.5%	8.7%
11	1,636.5	0.0%	0.4%	1.1%	1.5%	2.2%	2.6%	3.1%	3.2%	4.0%	4.3%	4.4%	4.6%	4.7%	4.9%	5.2%	5.4%	5.5%	5.6%	5.6%	5.9%	6.0%	6.0%	6.0%	6.0%	6.2%
12	4,249.0	0.0%	0.4%	1.2%	1.6%	2.3%	2.7%	3.2%	3.4%	4.2%	4.5%	4.6%	4.8%	4.9%	5.1%	5.4%	5.6%	5.7%	5.8%	5.8%	6.2%	6.2%	6.3%	6.3%	6.3%	6.5%
13	5,845.2	0.0%	0.3%	0.7%	1.0%	1.5%	1.7%	2.1%	2.2%	2.7%	2.9%	3.0%	3.1%	3.2%	3.3%	3.5%	3.6%	3.7%	3.8%	3.8%	4.0%	4.0%	4.1%	4.1%	4.1%	4.2%
14	7,102.6	0.0%	0.3%	0.8%	1.1%	1.6%	1.8%	2.2%	2.3%	2.9%	3.1%	3.2%	3.3%	3.4%	3.6%	3.8%	4.0%	4.0%	4.1%	4.1%	4.4%	4.4%	4.4%	4.4%	4.4%	4.6%
15	2,311.4	0.0%	0.5%	1.4%	1.9%	2.8%	3.2%	3.9%	4.1%	5.0%	5.4%	5.5%	5.7%	5.9%	6.2%	6.6%	6.8%	6.9%	7.0%	7.1%	7.5%	7.5%	7.6%	7.6%	7.6%	7.9%
16	519.3	0.0%	0.6%	1.5%	2.2%	3.1%	3.6%	4.3%	4.6%	5.6%	6.0%	6.1%	6.2%	6.4%	6.8%	7.2%	7.4%	7.6%	7.7%	7.7%	8.2%	8.3%	8.3%	8.3%	8.3%	8.6%
17	5,086.5	0.0%	0.6%	1.6%	2.3%	3.2%	3.8%	4.5%	4.8%	5.9%	6.1%	6.1%	6.3%	6.5%	6.8%	7.2%	7.5%	7.6%	7.8%	7.8%	8.3%	8.3%	8.4%	8.4%	8.4%	8.7%
18	3,947.5	0.0%	0.4%	1.0%	1.4%	2.0%	2.4%	2.8%	3.0%	3.3%	3.4%	3.5%	3.5%	3.7%	3.9%	4.1%	4.2%	4.3%	4.4%	4.4%	4.7%	4.7%	4.8%	4.8%	4.8%	4.9%
19	2,747.2	0.0%	0.3%	0.8%	1.2%	1.7%	2.0%	2.4%	2.4%	2.7%	2.8%	2.8%	2.9%	3.0%	3.2%	3.4%	3.5%	3.5%	3.6%	3.6%	3.8%	3.9%	3.9%	3.9%	3.9%	4.0%
20	5,215.7	0.0%	0.3%	0.7%	1.0%	1.4%	1.7%	1.8%	1.9%	2.1%	2.2%	2.2%	2.2%	2.3%	2.5%	2.6%	2.7%	2.7%	2.8%	2.8%	3.0%	3.0%	3.0%	3.0%	3.0%	3.1%
21	3,645.9	0.0%	0.4%	1.0%	1.4%	2.1%	2.2%	2.3%	2.4%	2.7%	2.8%	2.8%	2.9%	3.0%	3.2%	3.3%	3.5%	3.5%	3.6%	3.6%	3.8%	3.8%	3.9%	3.9%	3.9%	4.0%
22	1,120.9	0.0%	0.2%	0.4%	0.6%	0.6%	0.6%	0.7%	0.7%	0.8%	0.8%	0.8%	0.9%	0.9%	0.9%	1.0%	1.0%	1.0%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.2%
23	6,223.5	0.0%	0.3%	0.7%	0.7%	0.8%	0.8%	0.9%	0.9%	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%	1.3%	1.4%	1.4%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%	1.6%
24	3,369.6	0.0%	0.5%	0.5%	0.6%	0.6%	0.7%	0.7%	0.7%	0.8%	0.9%	0.9%	0.9%	0.9%	1.0%	1.0%	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%
25	4,257.4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: GCR



Source: GCR



Source: GCR

1. 3-month Johannesburg Interbank Agreed Rate ("Jibar") Stresses

74. The study below shows GCR's stress assumptions on the JIBAR rate. In designing its stresses, GCR considered the following avenues: 1) modelling an absolute maximum (minimum) interest rate or 2) modelling relative increases or decreases irrespective of an absolute level. Both approaches have shortfalls in that they ignore the fact that the likelihood of breaching an absolute interest rate level may vary substantially over time depending on the current rate level or wouldn't prove to be adequately stressful.
75. GCR used a "mid-point" approach as an alternative. The 3-month Jibar is modelled to increase from its current level over a fixed period according to an average gradient. If at the end of the period, the resulting stressed rate is below the maximum historical rate, the rate continues to increase to such maximum level over a capped period of time. If at the end of the period, the resulting stressed rate is higher than the maximum historical rate, GCR retains the midpoint between the resulting stressed rate and the maximum rate.

Historical Period Retained

76. The South African Reserve Bank (SARB) sets the Repurchase (Repo) Rate. This directly affects the level of interest rates such as JIBAR through the monetary policy transmission mechanism in the economy.
77. In February 2000, the SARB changed its framework for setting monetary policy. From 1986 until this date, SARB primarily set rates with the aim of controlling the M3 money supply. Since 2000, in contrast, SARB targets inflation directly and uses monetary policy as a tool to keep inflation in the 3%-6% range.

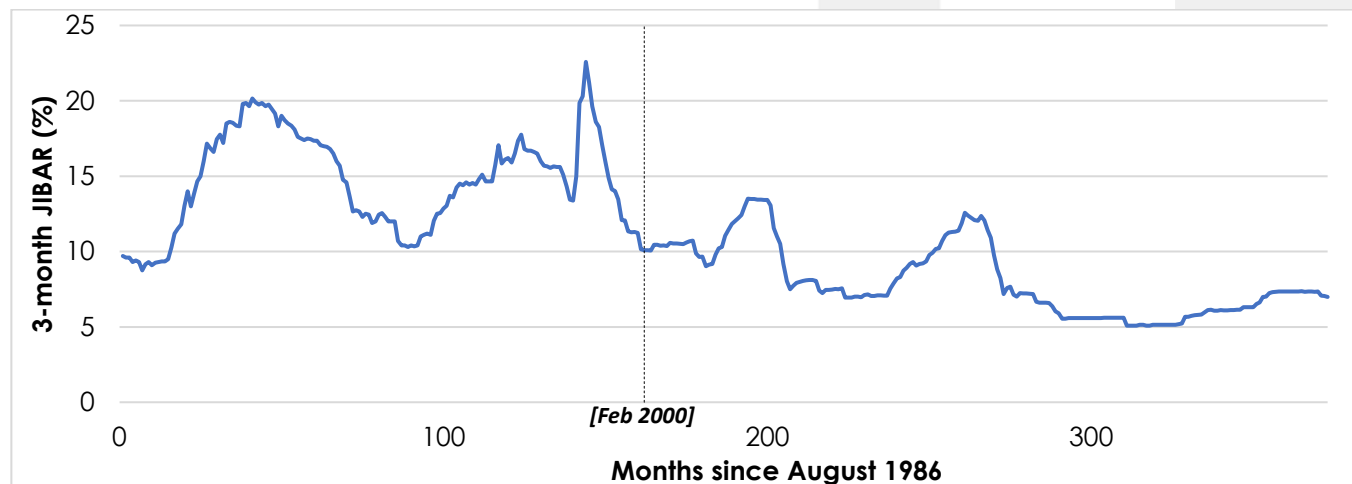
EVOLUTION OF SOUTH AFRICA'S MONETARY POLICY FRAMEWORK	
Years	Monetary Policy Framework
1960-1981	Liquid asset ratio-based system with quantitative controls over interest rates and credit.
1981-1985	Mixed system during transition.
1986-1998	Cost of cash reserves-based system with pre-announced monetary targets.
1998-1999	Daily tenders of liquidity through repurchase transactions, plus pre-announced M3 targets and informal targets for core inflation.
2000-	Formal inflation targeting.

Source: GCR, Johannesburg Stock Exchange

78. The old (pre-2000) system led to interest rates being inherently unstable. This was partly a result of unstable demand for money and a changing relationship between money growth and inflation. The introduction of direct inflation-targeting helped to reduce the volatility, as well as the aggregate level, of interest rates.

The fact that the target is set as a band (3%-6%) and not as an absolute figure reinforces this stabilising effect.

3-month JIBAR September 1986 – January 2000 vs JIBAR February 2000 – September 2017



Source: Johannesburg Stock Exchange

3-month JIBAR PRE- vs POST- FEBRUARY 2000			
Average 3-month JIBAR (%)		Standard Deviation 3-month JIBAR (%)	
Sep 1986-Jan 2000	Feb 2000-Sep 2017	Sep 1986-Jan 2000	Feb 2000-Sep 2017
14.7	8.1	3.2	2.3

Source: GCR, Johannesburg Stock Exchange

79. The data above shows the hiatus pre- and post- 2000 in terms of monetary policy in South Africa. As a result, GCR retained the period from 2000 to design its interest rate stresses.

Historical Length of Rise and Fall Periods and Gradient

80. To design interest rate stresses, GCR looked at the periods of continuous rise or fall of the 3-month Jibar rate since 2000 as well as the gradient of such movements. The movements of the 3-month Jibar rate can be divided into eight buckets:

Period	01/2000-09/2001	10/2001-10/2002	11/2002-10/2003	11/2003-5/2006	6/2006-5/2008	6/2008-12/2010	1/2011-12/2013	01/2014-04/2018
Movement	Fall	Rise	Fall	Flat	Rise	Fall	Flat	Rise
Length (months)	21	13	12	31	24	31	36	44
Gradient (period)	-0.11	0.48	-0.40	-0.06	0.67	-0.55	-0.06	0.22

Source: GCR, Johannesburg Stock Exchange

81. While prior to 2000, interest rates rose over a much shorter timeframe than they declined, these timeframes tend to be more comparable since then.

82. GCR derived the following base case from the above observation:

3-month Jibar Movements - Historical Observations vs Base case

	Historical	Base case
Min rate	5.1%	5.0%
Average Fall period (months)	21.3	25
Average Fall gradient	-0.36	-0.40
Max rate	13.5%	14.0%
Average Rise period (months)	18.5	20
Average Rise gradient	0.57	0.60
Cap to the period (months)		25

Source: GCR

83. In a declining interest rate environment, rates are assumed to fall within 25 months by 40% over the period. In a rising interest rate environment, rates are assumed to increase by 60% over 20 months. In any event, the maximum or minimum rate is reached within 25 months ("Cap to the period").
84. The table below exhibits an illustrative example whereby the 3-month Jibar current level is assumed to be 1) 6.9% and 2) 10%.

3-month Jibar	6.9%	10.0%
Rising Scenario		
Theoretical Max	11.0%	16.0%
Retained Max	14.0%	15.0%
Retained Period (months)	25	17
Falling Scenario		
Theoretical Min	4.1%	6.0%
Retained Min	5.0%	5.5%
Retained Period (months)	18	25

Source: GCR

Interest Rate Multiples Applied to the 3-month Jibar Rate

85. The following multiples apply to the abovementioned interest rate thresholds to derive a maximum and minimum stressed rate over a stressed period.

3-month Jibar stress multiples

Rating Scenario	Rising	Stable	Declining
AAA _{(za)(sf)}	1.20	1.0	0.50
AA _{(za)(sf)}	1.17	1.0	0.57
A _{(za)(sf)}	1.13	1.0	0.68
BBB _{(za)(sf)}	1.09	1.0	0.79
BB _{(za)(sf)}	1.04	1.0	0.89
B _{(za)(sf)}	1.0	1.0	1.0

Source: GCR

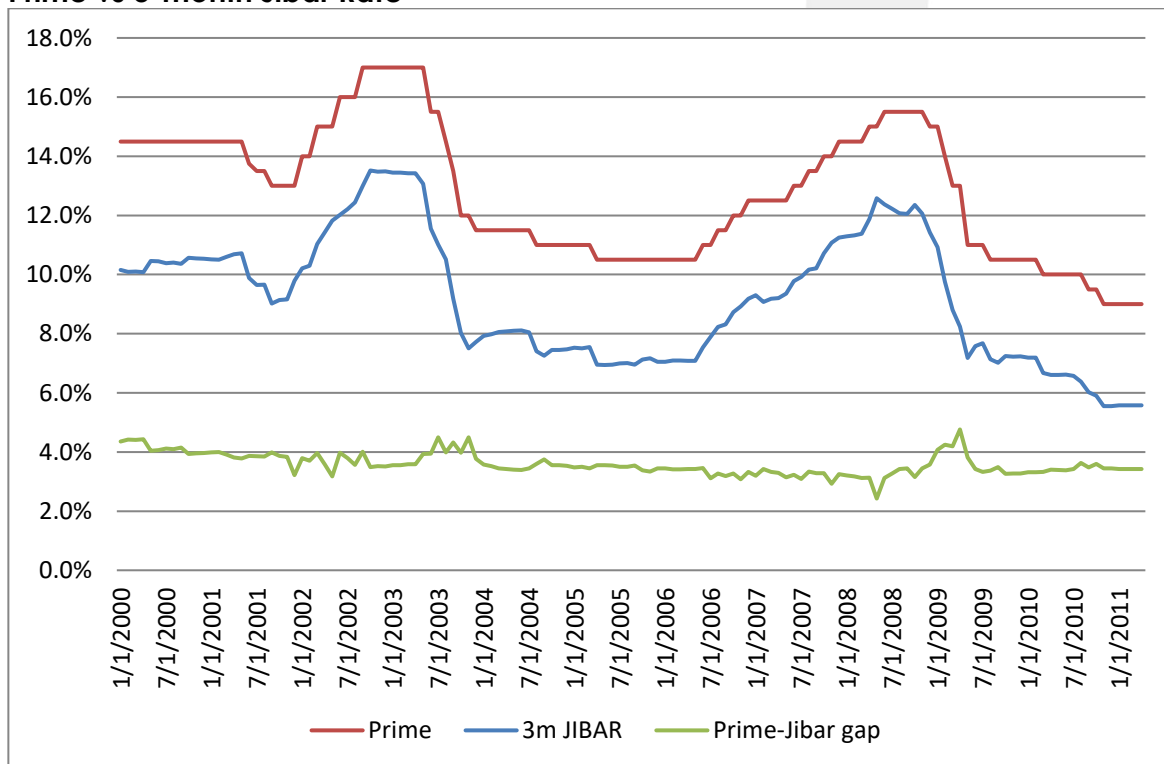
Illustrative example – Interest Rate Levels in each Rating Scenario and Related Timing for a 3-month Jibar = 6.90%

Rating Scenario	Rising		Stable		Declining	
	Max	Over	Max	Over	Min	Over
AAA _(za) (sf)	16.8%	25 months	6.9%	n.a.	2.5%	24 months
AA _(za) (sf)	16.4%	25 months	6.9%	n.a.	2.9%	24 months
A _(za) (sf)	15.8%	25 months	6.9%	n.a.	3.4%	23 months
BBB _(za) (sf)	15.2%	25 months	6.9%	n.a.	3.9%	22 months
BB _(za) (sf)	14.6%	25 months	6.9%	n.a.	4.5%	21 months
B _(za) (sf)	14.0%	25 months	6.9%	n.a.	5.0%	19 months

2. Prime/3-month Jibar Stresses

86. In the absence of swap agreement in place, the SPV is exposed to a compression of the gap between the Prime and the 3-month Jibar rates. The two indices have historically shown a high positive correlation. The following graph shows the historical levels of the Prime rate vs the 3-month Jibar since 2000:

Prime vs 3-month Jibar Rate



Source: Johannesburg Stock Exchange

87. In unhedged transactions, GCR assumes, irrespective of the rating scenario, a constant Prime/3-month Jibar differential of 2.45%.

Glossary of Terms/Acronyms

Administrator	A transaction appointed agent responsible for the managing of a Conduit or a Special Purpose Vehicle. The responsibilities may include maintaining the bank accounts, making payments and monitoring the transaction performance.
Advance	A lending term, to transfer funds from the creditor to the debtor.
Agreement	A negotiated and usually legally enforceable understanding between two or more legally competent parties.
Amortisation	From a liability perspective, the paying off of debt in a series of installments over a period of time. From an asset perspective, the spreading of capital expenses for intangible assets over a specific period of time (usually over the asset's useful life).
Amortisation Period	A period that may follow the Revolving Period of a transaction, during which the outstanding balance of the related securities may be partially repaid.
Arrears	General term for non-performing obligations, i.e. obligations that are overdue.
Arrears Reserve	An accounting provision made in a reserve fund for arrears.
Asset	An item with economic value that an entity owns or controls.
Asset Backed Securities	Securitisation: debt securities issued that are backed or covered by a pool of assets or receivables (Auto loans and leases, consumer loans, commercial assets, credit cards, mortgage loans).
Balloon Loan	A loan which does not fully amortise over the term of the loan agreement.
Basis Risk	The risk of imperfect hedging using futures.
Borrower	The party indebted or the person making repayments for its borrowings.
Capital	The sum of money that is used to generate proceeds.
Cash Flow	A financial term for monetary changes in operations, investing and financing activities.
Concentrations	A high degree of positive correlation between factors or excessive exposure to a single factor that share similar demographics or financial instrument or specific sector or specific industry or specific markets.
Coupon	Interest payment on a security.
Covenant	A provision that is indicative of performance. Covenants are either positive or negative. Positive covenants are activities that the borrower commits to, typically in its normal course of business. Negative covenants are certain limits and restrictions on the borrowers' activities.
Credit	A contractual agreement in which a borrower receives something of value now, and agrees to repay the lender at some date in the future, generally with interest. The term also refers to the borrowing capacity of an individual or company
Credit Enhancement	Limited protection to a transaction against losses arising from the assets. The credit enhancement can be either internal or external. Internal credit enhancement may include: Subordination; over-collateralisation; excess spread; security package; arrears reserve; reserve fund and hedging. External credit enhancement may include: Guarantees; Letters of Credit and hedging.
Credit Rating	An opinion regarding the creditworthiness of an entity, a security or financial instrument, or an issuer of securities or financial instruments, using an established and defined ranking system of rating categories.
Credit Risk	The probability or likelihood that a borrower or issuer will not meet its debt obligations. Credit Risk can further be separated between current credit risk (immediate) and potential credit risk (deferred).
Creditor	A credit provider that is owed debt obligations by a debtor.
Debt	An obligation to repay a sum of money.
Default	A default occurs when: 1.) The Borrower is unable to repay its debt obligations in full; 2.) A credit-loss event such as charge-off, specific provision or distressed restructuring involving the forgiveness or postponement of obligations; 3.) The borrower is past due more than X days on any debt obligations as defined in the transaction documents; 4.) The obligor has filed for bankruptcy or similar protection from creditors.
Default Risk	The probability or likelihood that a borrower or issuer will not meet its debt obligations. Credit Risk can further be separated between current credit risk (immediate) and potential credit risk (deferred).
Discharge	Performance of obligations in a natural way according to a contractual relationship.
Eligibility Criteria	Limitations imposed on the type and quality of assets that can be sold by the Originator / Servicer into the Securitisation vehicle which ensure the transaction will track the performance of historical data analysed as closely as possible.
Enforceable	To make sure people do what is required by a law or rule et cetera.
Enforcement	To make sure people do what is required by a law or rule et cetera.
Environment	The surroundings or conditions in which an entity operates (Economic, Financial, Natural).
Excess Spread	The net weighted average interest rate receivable on a pool of assets being greater than the weighted average interest rate payable for the debt securities.
Exposure	Exposure is the amount of risk the holder of an asset or security is faced with as a consequence of holding the security or asset. For a company, its exposure may relate to a particular product class or customer grouping. Exposure may also arise from an overreliance on one source of funding.
Guarantee	An undertaking for performance of another's obligations in event of default.
Haircut	The percentage by which the market value of a security used as collateral for a loan is reduced. The size of the haircut reflects the expected ease of selling the security and the likely reduction necessary to the realised value relative to the fair value.
Hedge	A form of insurance against financial loss or other adverse circumstances.

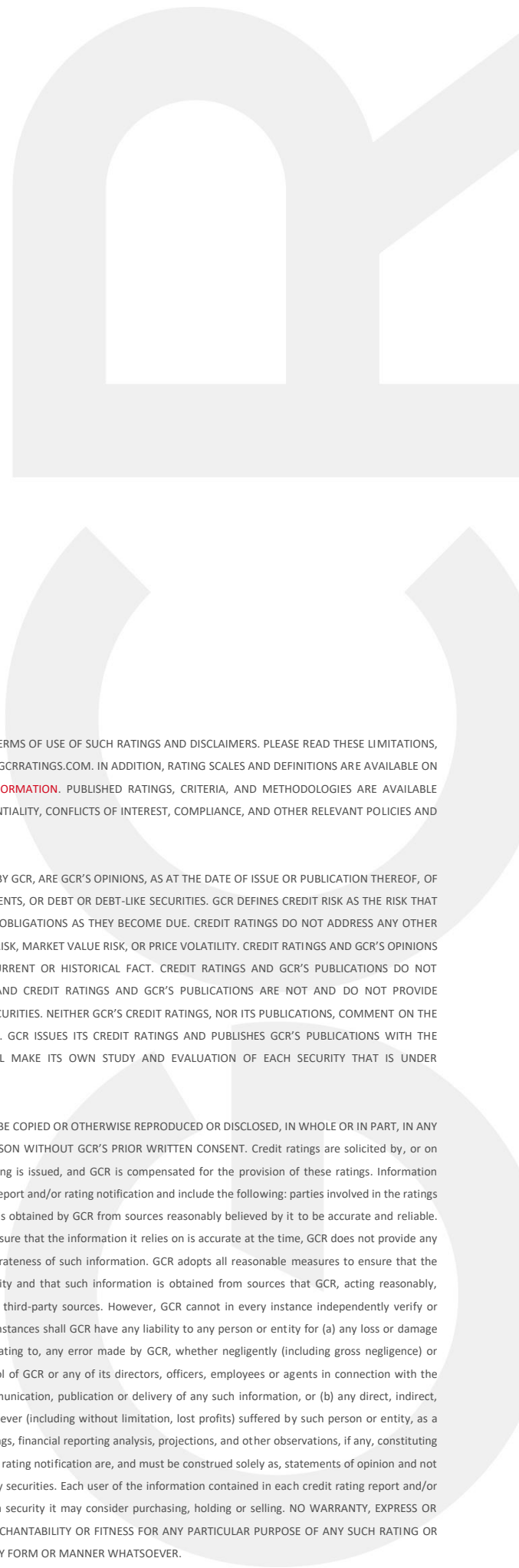
Income	Money received, especially on a regular basis, for work or through investments.
Index	An assessment of the property value, with the value being compared to similar properties in the area.
Instalment	Payment made to honour obligations in regards to a credit agreement in the following credited order: 1.) Satisfy the due or unpaid interest charges; 2.) Satisfy the due or unpaid fees or charges; and To reduce the amount of the principal debt.
Issuer	The party indebted or the person making repayments for its borrowings.
Lease	Agreement or temporary use and enjoyment of a corporeal thing (movable or immovable property) the whole or part thereof for rent. The essential elements of a contract of lease are: 1.) Undertaking of lessor to give the lessee the use and enjoyment of something; 2.) Agreement between the lessor and lessee that the lessee's right to use and enjoyment is temporary; and 3.) Lessee's undertaking to pay a sum or rent.
Lender	A credit provider that is owed debt obligations by a debtor.
Lessee	The party that enjoys temporary use of a corporeal thing.
Lessor	The owner or agent that acts on behalf of the owner of property that grants the temporary use of a corporeal thing.
Liquidity	The ability to repay short-term obligations or short-term availability of liquid assets to a market or entity.
Liquidity Facility	A facility provided to a structured finance transaction that will pay the Noteholders interest in the event that the underlying assets cash flows are inadequate.
Loan	A sum of money borrowed by a debtor that is expected to be paid back with interest to the creditor. A debt instrument where immovable property is the collateral for the loan. A mortgage gives the lender a right to take possession of the property if the borrower fails to repay the loan. Registration is a prerequisite for the existence of any mortgage loan. A mortgage can be registered over either a corporeal or incorporeal property, even if it does not belong to the mortgagee. Also called a Mortgage bond.
Loss	A tangible or intangible, financial or non-financial loss of economic value.
Market	An assessment of the property value, with the value being compared to similar properties in the area.
National Scale Rating	The national scale provides a relative measure of creditworthiness for rated entities only within the country concerned. Under this rating scale, a 'AAA' long term national scale rating will typically be assigned to the lowest relative risk within that country, which in most cases will be the sovereign state.
Obligation	The title given to the legal relationship that exists between parties to an agreement when they acquire personal rights against each other for entitlement to perform.
Obligor	The party indebted or the person making repayments for its borrowings.
Origination	A process of creating assets.
Originator	An entity that created assets and hold on balance sheet for securitisation purposes.
Performing	An obligation that performs according to its contractual obligations.
Portfolio Criteria	Limitations imposed on the type and quality of assets that can be sold by the Originator / Servicer into the Securitisation vehicle which ensure the transaction will track the performance of historical data analysed as closely as possible.
Prepayment	Early or excess repayment of an obligation. Partial or full prepayment of the outstanding loan amount.
Prepayment Rate	The rate of prepayment in relation to the pool of obligations. Also called prepayment speed.
Principal	The total amount borrowed or lent, e.g. the face value of a bond, excluding interest.
Proceeds	Funds from issuance of debt securities or sale of assets.
Rated Securities	Debt securities that have been accorded a credit rating.
Receivables	General term for economic benefit derived from an asset.
Recovery	The action or process of regaining possession or control of something lost. To recoup losses.
Redemption	The repurchase of a bond at maturity by the issuer.
Reference Rate	A rate that is the basis of the calculation such as JIBAR.
Rent	Payment from a lessee to the lessor for the temporary use of an asset.
Repayment	Payment made to honour obligations in regards to a credit agreement in the following credited order: 3.) Satisfy the due or unpaid interest charges; 4.) Satisfy the due or unpaid fees or charges; and 5.) To reduce the amount of the principal debt.
Reserve Fund	A funded account available for use by a Special Purpose Vehicle for one or more specified purposes. A reserve fund is often used as a form of credit enhancement. Typically accumulated over time, through excess cash flows.
Reserves	A portion of funds allocated for an eventuality.
Seasoning	The age of an asset, the time period passed since origination.
Secured Creditor	A creditor that has specific assets pledged as collateral that will receive the proceeds in the event of default.
Securities	Various instruments used in the capital market to raise funds.
Securitisation	Is a process of repackaging portfolios of cash-flow producing financial instruments into securities for sale to third parties.
Securitisation Vehicle	An entity that is created to fulfill specific objectives. Normally insolvency remote and created to isolate financial risk.
Security	An asset deposited or pledged as a guarantee of the fulfilment of an undertaking or the repayment of a loan, to be forfeited in case of default.
Senior	A security that has a higher repayment priority than junior securities.
Servicer	A transaction appointed agent that performs the servicing of mortgage loans, loan or obligations.

Servicing	The calculation of interest and repayments, collection of repayments, advancing of loans, foreclose procedures, maintaining records and seeing that the proceeds of each loan are passed on to the respective party.
Spread	The interest rate that is paid in addition to the reference rate for debt securities.
Standard Deviation	An indication of risk amongst the dispersion of values. Higher value indicates greater risk.
Structured Finance	A method of raising funds in the capital markets. A Structured Finance transaction is established to accomplish certain funding objectives whilst reducing risk.
Subordination	The prioritising of the payment of interest and principal payments to tranches (senior, junior etc. Senior tranches are paid before junior tranches.
Surveillance	Process of monitoring a transaction according to triggers, covenants and key performance indicators.
Swap	An agreement between two parties for the exchange of a series of future cash flows. The exchange of one security for another. Normally an investment bank, which provides a swap.
Tenor	The term or duration of a debt security.
Tranche	In a structured finance, a slice or portion of debt securities offered that is structured or grouped to resemble the same degree of risk associated with the underlying asset or with a similar degree of risk. A junior tranche has a higher degree of default risk than a senior tranche.
Transaction	A transaction that enables an Issuer to issue debt securities in the capital markets. A debt issuance programme that allows an Issuer the continued and flexible issuance of several types of securities in accordance with the programme terms and conditions.
Trust	A third party that acts in the best interest of another party, according to the trust deed, usually the investors. Owner of a securitisation vehicle that acts in the best interest of the Noteholders.
Trustee	A third party that acts in the best interest of another party, according to the trust deed, usually the investors. Owner of a securitisation vehicle that acts in the best interest of the Noteholders.
Weighted	The weight that a single obligation has in relation to the aggregated pool of obligations. For example, a single mortgage principal balance divided by the aggregated mortgage pool principal balance.
Weighted Average	An average resulting from the multiplication of each component by a factor reflecting its importance or, relative size to a pool of assets or liabilities.
Yield	Percentage return on an investment or security, usually calculated at an annual rate.
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Prepayment	Early or excess repayment of an obligation. Partial or full prepayment of the outstanding loan amount.
Prepayment Rate	The rate of prepayment in relation to the pool of obligations. Also called prepayment speed.
Principal	The total amount borrowed or lent, e.g. the face value of a bond, excluding interest.

Proceeds	Funds from issuance of debt securities or sale of assets.
Rated Securities	Debt securities that have been accorded a credit rating.
Receivables	General term for economic benefit derived from an asset.
Recovery	The action or process of regaining possession or control of something lost. To recoup losses.
Redemption	The repurchase of a bond at maturity by the issuer.
Reference Rate	A rate that is the basis of the calculation such as JIBAR.
Rent	Payment from a lessee to the lessor for the temporary use of an asset.
Repayment	Payment made to honour obligations in regards to a credit agreement in the following credited order: 3.) Satisfy the due or unpaid interest charges; 4.) Satisfy the due or unpaid fees or charges; and 5.) To reduce the amount of the principal debt.
Reserve Fund	A funded account available for use by a Special Purpose Vehicle for one or more specified purposes. A reserve fund is often used as a form of credit enhancement. Typically accumulated over time, through excess cash flows.
Reserves	A portion of funds allocated for an eventuality.
Seasoning	The age of an asset, the time period passed since origination.
Secured Creditor	A creditor that has specific assets pledged as collateral that will receive the proceeds in the event of default.
Securities	Various instruments used in the capital market to raise funds.
Securitisation	Is a process of repackaging portfolios of cash-flow producing financial instruments into securities for sale to third parties.
Securitisation Vehicle	An entity that is created to fulfill specific objectives. Normally insolvency remote and created to isolate financial risk.
Security	An asset deposited or pledged as a guarantee of the fulfilment of an undertaking or the repayment of a loan, to be forfeited in case of default.
Senior	A security that has a higher repayment priority than junior securities.
Servicer	A transaction appointed agent that performs the servicing of mortgage loans, loan or obligations.
Servicing	The calculation of interest and repayments, collection of repayments, advancing of loans, foreclose procedures, maintaining records and seeing that the proceeds of each loan are passed on to the respective party.
Spread	The interest rate that is paid in addition to the reference rate for debt securities.
Standard Deviation	An indication of risk amongst the dispersion of values. Higher value indicates greater risk.
Structured Finance	A method of raising funds in the capital markets. A Structured Finance transaction is established to accomplish certain funding objectives whilst reducing risk.
Subordination	The prioritising of the payment of interest and principal payments to tranches (senior, junior etc. Senior tranches are paid before junior tranches.
Surveillance	Process of monitoring a transaction according to triggers, covenants and key performance indicators.
Swap	An agreement between two parties for the exchange of a series of future cash flows. The exchange of one security for another. Normally an investment bank, which provides a swap.
Tenor	The term or duration of a debt security.
Tranche	In a structured finance, a slice or portion of debt securities offered that is structured or grouped to resemble the same degree of risk associated with the underlying asset or with a similar degree of risk. A junior tranche has a higher degree of default risk than a senior tranche.
Transaction	A transaction that enables an Issuer to issue debt securities in the capital markets. A debt issuance programme that allows an Issuer the continued and flexible issuance of several types of securities in accordance with the programme terms and conditions.
Trust	A third party that acts in the best interest of another party, according to the trust deed, usually the investors. Owner of a securitisation vehicle that acts in the best interest of the Noteholders.
Trustee	A third party that acts in the best interest of another party, according to the trust deed, usually the investors. Owner of a securitisation vehicle that acts in the best interest of the Noteholders.
Weighted	The weight that a single obligation has in relation to the aggregated pool of obligations. For example, a single mortgage principal balance divided by the aggregated mortgage pool principal balance.
Weighted Average	An average resulting from the multiplication of each component by a factor reflecting its importance or, relative size to a pool of assets or liabilities.
Yield	Percentage return on an investment or security, usually calculated at an annual rate.

For a detailed glossary of terms utilized in this announcement please click [here](#)



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