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Criteria | Structured Finance | RMBS:

Australian RMBS Rating Methodology And Assumptions

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Table Of Contents

Table Of Contents (cont.)

Table Of Contents (cont.)

Criteria | Structured Finance | RMBS:

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*(**Editor's Note:** This article partially supersedes the collateral credit risk assessment aspect of "Australia and New Zealand RMBS: Analyzing Credit Quality," published on Feb. 21, 2007, for Australian RMBS only. The 2007 criteria will continue to apply to New Zealand RMBS.)*

1. Standard & Poor's Ratings Services is updating its methodology and assumptions for analyzing credit risk associated with collateral backing Australian residential mortgage-backed securities (RMBS). This follows our request for comment (RfC), "Request For Comment: Rating Methodology And Assumptions For Australian RMBS", published on Aug. 10, 2010. This article focuses on the "credit quality of securitized assets" principle, as described in "Principles Of Credit Ratings", Feb. 16, 2011, and partially supersedes the collateral credit risk assessment aspect of "Australia and New Zealand RMBS: Analyzing Credit Quality," Feb. 21, 2007.

2. Australian RMBS and their underlying housing loan portfolios have performed strongly through the recent financial crisis and global economic slowdown. The positive macroeconomic, demographic, and property market conditions, as well as low interest rates over a sustained period, continue to underpin an overall stable performance. However, the stable performance and related drivers have, at the same time, masked the increasing level of financial vulnerability for Australian borrowers during the recent economic downturn. The increased financial vulnerability arises from higher household indebtedness, higher living costs, and stronger property price appreciation than two decades ago or the previous recessions. The strong property price appreciation in particular may increase the possibility of a pronounced property market correction if current macroeconomic or credit market conditions deteriorate and have flow-on implications for the performance of housing loan portfolios underlying Australian RMBS (see appendix I).

3. The performance of RMBS and their underlying housing loan portfolios varied significantly across global markets during the recent financial crisis and global economic slowdown. In Australia, which has experienced less-severe economic stress than many other regions, RMBS have performed materially better. These criteria draw on this experience and address the increased level of risk for Australian mortgage loans as a result of market developments and product innovations that have not been tested in Australia under scenarios of severe economic stress.

4. In summary, the revised criteria for rating Australian RMBS consider the expansive historical mortgage performance data available locally and globally, as well as the environment from which those observations were drawn. The criteria incorporate potential implications of the changing housing loan and property market environment on future housing loan performance. The impact of such recent market changes have not yet been observed in historical data, given the relatively positive macroeconomic backdrop in the past 10 years.

5. Furthermore, these methodology and assumptions represent a recalibration of Australian RMBS criteria to a globally consistent analytical framework and a common set of rating stresses. The revised criteria intend to enhance the comparability of RMBS ratings globally and with ratings in other sectors, such as corporates, municipals, sovereigns, and other areas of structured finance (see "Understanding Standard & Poor's Rating Definitions," June 3, 2009).

I. SCOPE OF THE CRITERIA

6. These criteria apply to all new and existing Australian RMBS backed by prime, subprime, and nonconforming mortgages.

A. SUMMARY OF CRITERIA UPDATE

7. This criteria update covers the collateral credit risk assessment aspect of Standard & Poor's RMBS analysis. The application of the criteria will determine credit-enhancement levels at each rating level for RMBS. These credit-enhancement levels do not represent actual credit enhancements available in transactions. The level of credit enhancement will accord to estimated losses that may arise in a housing loan portfolio under stress scenarios commensurate with the relevant rating levels. In summary, the revised Australian RMBS criteria:

- Establish a 'AAA' estimated-loss and credit-enhancement level as an anchor point for an archetypical pool at 5%;
- Define the archetypical pool of mortgage loans for Australian RMBS (previously known as the benchmark pool);
- Calibrate the credit-enhancement levels at other ratings consistent with the 'AAA' anchor point and expected loss (estimated loss under 'B' rating stress);
- Incorporate a current view and outlook on the housing and credit markets into expected loss;
- Introduce a credit-enhancement floor of 4% at 'AAA' and 0.35% at 'B';
- Update the credit-enhancement adjustment factors applied to differentiate the risks in actual mortgage-loan pools underlying RMBS relative to the archetypical pool; and
- Introduce additional estimated-loss projection methods for surveillance.

8. The revised Australian RMBS criteria align to the global RMBS analytical framework to enhance comparability. The comparability of ratings across sectors is important because ratings serve as a common vocabulary to describe credit risk. When a given rating carries the same meaning in all circumstances, investors and other market participants can readily use them to gauge risk across market sectors, geographic regions, and currencies over time. The comparability objective stresses the need for ratings to correspond to the same approximate level of creditworthiness wherever they appear. A given rating, therefore, intends to connote roughly the same level of creditworthiness to widely disparate issuers on a global basis, such as an Australian mining company, a Japanese financial institution, a U.S. school district, U.K. RMBS, or a sovereign nation.

9. Adopting a globally consistent analytical framework does not necessarily mean that estimated losses in different markets or transactions will be the same, even if the level of rating stress is the same. Differences in the local market characteristics of housing loan and property markets, mortgage default drivers, and the level of information may lead to different analytical outcomes and portfolio performance for a given level of rating stress. For example, while defining the archetypical pool is critical to the analytical approach, the composition of the archetypical pool is expected to reflect local market characteristics without necessarily compromising ratings comparability. Some notable differences of the Australian RMBS criteria compared to the U.S. RMBS criteria (see "Methodology And Assumptions For Rating U.S. RMBS Prime, Alternative-A, And Subprime Loans," Sept. 10, 2009) include (refer to appendices I and II for more detail):

- The composition of the archetypical pool, reflecting housing loan product and market differences;
- The 'AAA' anchor point for the archetypical pool, which is 5% for Australia and 7.5% for the U.S., reflecting

expected performance differences under the same set of rating stresses;
- Certain credit-enhancement adjustment factors, reflecting the differences in characteristics of housing loan markets, products, and related performance behavior; and
- The surveillance practice, whereby in Australia loss estimation is based on the higher of estimated losses from the following two analytical outcomes: estimated losses from the loan-level analysis, and observed performance-based loss projection to minimize potential underestimation of losses in changing economic and market circumstances.

B. HOW THE FINAL CRITERIA DIFFER FROM THE REQUEST FOR COMMENT

10. This final criteria article includes changes from the criteria proposed in the Aug. 10, 2010 RfC article to reflect the feedback received from market participants during the RfC process. To enhance global criteria consistency and rating comparability, we also made adjustments to factors that, in our opinion, are likely to have similar effects across markets. Changes from the RfC include:

i. Withdrawing the proposal of one minimum payment on the loans securitized, given that the operational and potential fraud risks this eligibility criterion intended to address would occur in very few cases and can be better captured in an assessment of originators' operational risk-management framework (¶95).

ii. Adjusting the adjustment factors for self-employed borrowers to pinpoint heightened risk associated with self-employed borrowers with limited history and income verification (¶52).

iii. Revising the adjustment factor for first-time home buyers to 1.1x, from 1.5x, and clarifying that this adjustment factor will not apply to performing loans with 18 months or more seasoning (¶¶57 and 151).

iv. Simplifying the loan-to-value adjustment function (¶60).

v. Recognizing that over time the documentation type becomes less indicative of a borrower's likelihood of default as payment records build up--consequently, the relevant adjustment factors applied will lessen over a six-year period to neutral (¶68).

vi. Increasing the adjustment factors for refinanced loans to 1.5x, from 1.1x, for refinanced loans in the subprime and nonconforming sector, and treating refinancing that experiences full underwriting as a purchase, and not applying an adjustment factor (¶¶69–70 and 166).

vii. Changing the adjustment factor for negative amortization loans to 3x rather than deriving it from a calculation (¶¶73 and 150).

viii. Differentiate adjustment factors for balloon loans based on original loan-term to enhance criteria consistency (this is an addition to the RfC; ¶76).

ix. Removing the adjustment factor for loans with fixed-rate periods to enhance criteria consistency (¶77).

x. Revising the adjustment factor for loans with a concessional interest rate (also referred to as "honeymoon rate" or "teaser rate") to 1.2x, from 1.5x, and clarifying that this adjustment factor will apply until six months after the promotional period ends (¶¶79 and 169).

xi. Introducing loan term adjustment factors to reflect the lower default risk associated with loans with shorter terms

than the archetypical term of 30 years and higher risks associated with loans with longer terms (¶80).

xii. Refining adjustment factors for loan seasoning to enhance criteria consistency (¶¶81–82).

xiii. Clarifying lender level analysis and adjustments to credit enhancements (¶¶88–109 and 177–183).

xiv. Withdrawing the proposal for a loss-severity floor of 2% to enhance criteria consistency (¶110).

xv. Factoring in security property values appreciation or depreciation since the time of loan origination as boundaries for rating revision in surveillance (¶¶121–123 and 186–188).

C. IMPACT ON OUTSTANDING RATINGS

11. We expect a limited impact on outstanding ratings. The majority of the loans underlying outstanding Australian RMBS transactions are well-seasoned, or have established payment records. Given the average repayment speeds of Australian housing loan portfolios (15%-25% annualized repayment speeds), coupled with typically limited repayment to subordinated noteholders in the early years, the majority of senior securities currently benefit from an increasing proportion of credit enhancement. Furthermore, RMBS securities issued more recently tend to provide more than the minimum credit enhancement.

D. EFFECTIVE DATE AND TRANSITION

12. These criteria are effective immediately for all new and outstanding Australian RMBS.

II. METHODOLOGY

13. Consistent with the global approach, the Australian RMBS criteria framework anchors 'AAA' rating credit enhancement through a normal business cycle and varies the credit enhancement at the 'B' rating level based on Standard & Poor's prevailing view and outlook on the housing and credit markets. The credit-enhancement levels for 'AAA' and 'B' ratings are used to calibrate the credit-enhancement levels for other ratings between the two established points.

14. The criteria establish the credit-enhancement levels and their components for a predefined archetypical pool of mortgage loans (see table 2). Securitized mortgage pools seldom reflect the full set of characteristics of an archetypical pool, and the criteria articulate adjustments to credit-enhancement levels and its components for observed deviations. However, even if a pool exhibits a stronger credit profile than the archetypical pool, the actual credit-enhancement levels are subject to credit-enhancement floors ranging from 4% at 'AAA' to 0.35% at 'B' (see table 1).

15. The Australian RMBS criteria apply to RMBS at issuance as well as through the life of the transaction. The monitoring of the ratings through their life involves estimating losses based on loan-level analysis, as well as performance-based loss projection as the performance data become available. The higher of estimated losses from these two analytical approaches will be used to minimize potential underestimation of losses in changing economic and market circumstances.

A. ESTABLISHING AN ANCHOR POINT AT 'AAA'

16. The criteria calibration begins with anchoring the 'AAA' credit enhancement for an archetypical pool of loans, reflecting anticipated losses under a Great Depression-like economic stress. The archetypical pool provides a benchmark against which the credit risk of all loans are compared and measured.

17. The 'AAA' credit-enhancement for an Australian archetypical pool is 5.0% (see table 1), and is calibrated to a global standard by using the 'AAA' anchor point of 7.5% established for the U.S. RMBS archetypical pool (see table 1 in U.S. RMBS Criteria) as a reference point. The U.S. 7.5% level is supported by studies of mortgage performance through historical events such as the Great Depression (¶¶21 and 22 in U.S. RMBS Criteria).

18. The 2.5 percentage-point differential in credit enhancement between the Australian 'AAA' anchor point and the U.S. anchor point for their respective archetypical pools reflects the following factors:

- Australian law provides for full recourse to borrowers on residential mortgage loans (lenders will actively pursue this right if necessary). This affects a borrower's credit-risk consciousness and payment behavior through the loan term, and largely limits the decision to default on affordability factors rather than on the borrower's equity in the property.
- The Australian legal environment is relatively more creditor friendly and offers a stronger enforcement regime than the U.S. This reinforces the more conservative credit culture among Australian borrowers.
- The absence of tax deductions on Australian loans secured by owner-occupied homes motivates borrowers to make partial repayments when possible, resulting in a rapid amortization of loan balances and increasing borrower equity in their homes.
- The archetypical Australian residential mortgage pool has lower risk features than the archetypical U.S. pool. Loans in the Australian archetypical pool have at least one year of seasoning for originators with a history of less than five years of stable performance (see table 2).
- The originate-to-distribute model that was popular in the aggregation of mortgage loans for securitization in the U.S. has not been a strong feature in Australia. Most originators in Australia typically assume various roles in transactions, and are thereby closely aligned by their interests to the performance of the RMBS transactions.

19. Although the 'AAA' credit-enhancement level is a fixed anchor point, variations from the archetypical pool's characteristics will cause the credit-enhancement levels for actual pools to vary from the archetypical pool's credit enhancement and its components (detailed in table 1). Credit enhancement is the product of foreclosure frequency and loss severity. The 'AAA' rating level credit enhancement for an archetypical pool accords to the estimated loss that the archetypical pool of mortgages will likely incur under scenarios of extreme economic stress in Australia.

Table 1

Key Credit-Enhancement Components For The Archetypical Pool By Rating

	Standard & Poor's Rating					
	AAA	**AA**	**A**	**BBB**	**BB**	**B**
Credit enhancement (%)	5.0	3.6	2.2	1.3	0.8	0.4
Credit-enhancement floor (%)	4.0	2.5	1.5	1.0	0.5	0.4
Foreclosure frequency (%)	10.0	7.5	5.0	3.2	2.1	1.1
Market value decline	45.0	43.0	41.0	38.0	34.0	30.0
Loss severity*(%)	50.0	47.0	45.0	41.0	36.0	31.0

Table 1

Key Credit-Enhancement Components For The Archetypical Pool By Rating (cont.)

*For illustration purposes, loss severity is calculated assuming 5% variable selling costs, A$5,000 fixed selling costs, a metro property of A$100,000, and an interest rate through accrual of 12.75% (see appendix III for application examples).

B. STANDARD & POOR'S AUSTRALIAN ARCHETYPICAL LOAN POOL

20. The archetypical pool (see table 2) is a reference point against which actual pools are compared and measured in terms of credit risk. The archetypical pool represents an idealized pool for which a given level of loss can be derived from various historical data sources, rather than attempting to be a reflection of current RMBS pool compositions. Adjustments to credit-enhancement levels for the actual pool reflect the extent to which the underlying loans and the pool have stronger or weaker credit characteristics than the archetypical loan pool.

21. The credit enhancement for an archetypical pool assumes prudent underwriting of the underlying loans and assumes that the loans are of a quality that is eligible for cover by Lender's Mortgage Insurance (LMI).

22. The Australian archetypical pool reflects some market and product characteristics unique to Australia; however, where possible archetypical pools aim to be as uniform as possible across markets for comparability reasons.

Table 2

Pool Characteristics Of Archetypical Residential Mortgage Loan Pool For Australia RMBS

References (¶¶)	General
42 - 43	At least 250 consolidated mortgage loans
	Borrower characteristics
49 - 52	Pay-as-you-go (PAYG) employees
53 - 54	Credit check obtained and borrower has a clear credit history
55	Loan is currently performing and not delinquent
56	Australian resident
57	Borrower is not a first-time buyer
58	Owner-occupier
	Loan characteristics
56	First-registered mortgage over freehold land or crown leaseholds with a lease term of at least 15 years longer than the loan term
59 - 60	75% loan-to-value (LTV) ratio
61	Income and affordability fully verified (Full Doc)
61	Borrower's deposit money (or savings history) are verified
71 and 77	Standard discretionary variable rate (without interest-only period)
80	Fully amortizing 30-year loan with even and regular loan installments
81	Greater than 12 months* seasoned and less than 5 years seasoned
	Security property characteristics
38	Geographical diversity, such as state, region, nonmetropolitan, and postcode
56	Full general insurance over security property, including appropriate cover for geographically specific risks, such as earthquakes
84	Residential property -- detached, semi-detached, townhouses, strata-title flats, apartments, and units (excluding high-density apartments and hobby farms)
84	Full valuation (or appraisal) of security property at time of approval
117	Maximum property value A$1,000,000

Table 2

Pool Characteristics Of Archetypical Residential Mortgage Loan Pool For Australia RMBS (cont.)		
	Geographic concentration limits	
	New South Wales	<=60%
	Victoria	<=50%
	Queensland	<=40%
	Western Australia	<=25%
	South Australia	<=25%
	Australian Capital Territory	<=5%
	Tasmania	<=5%
	Northern Territory	<=5%
	Maximum nonmetropolitan exposure	<=10%
	Maximum postcode exposure	<=2%
	Maximum inner-city exposure	0%

*The minimum 12-months seasoning does not apply to issuers of RMBS that have at least five years of stable loan performance data at least in line with the industry performance from RMBS issued to-date.

C. CREDIT-ENHANCEMENT LEVELS THROUGH ECONOMIC CYCLES

23. The 'AAA' credit-enhancement level is expected to be constant for the archetypical pool during normal economic cycles.

24. The criteria allow the credit-enhancement levels below 'AAA' to vary to reflect the economic environment and the state of the housing and credit market at the time of loan origination, as well as the outlook for the economy at the time a rating is assigned to the RMBS. This adjustment begins with the 'B' credit-enhancement level. The credit enhancements between 'AAA' and 'B' are set using interpolation between 'B' credit enhancement and the 'AAA' anchor point. For example, the same archetypical mortgages originated during a booming economy that features rapid house-price appreciation and employment and income growth is at greater risk of default as the economy weakens. As a result, the analysis would expect a higher degree of defaults and losses on those pools as the boom period reversed, and therefore require higher credit-enhancement levels, with credit enhancement at all other rating levels compressing toward the 'AAA' levels.

25. 'AAA' can be higher than the anchor point if economic and market conditions deteriorate significantly beyond the normal ranges for cyclical fluctuations. In other words, in circumstances where economic and market conditions migrate significantly beyond the normal ranges for cyclical fluctuations (or beyond moderate stress levels, as articulated in "Understanding Standard & Poor's Rating Definition," June 3, 2009), the 'AAA' credit enhancement is reviewed and likely adjusted upwards, such that 'AAA' rated securities would be able to withstand extreme stresses to attain or maintain a 'AAA' rating.

D. MINIMUM CREDIT-ENHANCEMENT LEVELS

26. These criteria adopt Standard & Poor's global standard in setting minimum credit-enhancement levels for pools, or a credit-enhancement floor, of 4% for 'AAA' ratings, ranging down to 0.35% for 'B' ratings (see table 1). These minimum credit-enhancement levels cannot be funded solely through soft support such as excess spread (¶19 of the U.S. RMBS Criteria, where this global standard was first published).

27. Recent experience demonstrates that there are limits on the predictability of residential mortgage loan performance. A 'AAA' credit-enhancement level of 4% for RMBS corresponds to 25x leverage. Leverage above that level on residential mortgage loans creates vulnerabilities that are inconsistent with the degree of creditworthiness associated with 'AAA' Standard & Poor's ratings.

III. ASSUMPTIONS

28. The starting point of Standard & Poor's collateral credit-risk analysis is the archetypical loan. The criteria adjust the credit enhancement as the loan or pool characteristics vary from the archetypical loan or pool characteristics. Product-specific features and originator and servicer practices may further revise the credit enhancement. The revision of credit enhancement can occur through its foreclosure frequency and loss severity components (see "II.A. Foreclosure Frequency Adjustments" and "II.B. Loss Severity Adjustments"). Appendix III provides examples of the application of adjustment factors and calculation of default frequency, loss severity, and credit enhancement.

29. The adjustment factors in the criteria are derived from a combination of quantitative and qualitative assessments of historical data and product features. The application of adjustment factors is multiplicative (see appendix III for calculation of portfolio credit enhancement).

30. The Australian adjustment factors are derived from recent observed market data locally and globally, and LMI data on claims frequency and severity in Australia since 1965 (see chart 10 in appendix I, which captures performance through the economic recessions in the early 1980s and 1990s). Standard & Poor's research extends to lender level data, as well as observations published by various market participants or academic research locally and globally.

31. Although the adjustment factors for certain factors reflect statistical observations such as the loan-to-value ratio, size of commitment, seasoning of the loans, borrower cash flow stability, geographic location at the time, and related economic and property market conditions, many other adjustment factors reflect our qualitative assessment of the incremental propensity to default caused by these factors when under pressure. These adjustment factors are then compared against the adjustment factors from other markets such as the U.S. and the U.K., where more expansive performance observations through economic downturns may be available for consistency, comparability, and reasonableness. For example, the U.S. research is supported by analysis of nearly 12 million U.S. loans originated between 1998 and 2006.

32. For consistency, in cases where factors have a similar impact on mortgage default in other markets, the criteria apply the same adjustment factors where possible. In cases where differences arise between different countries due to differences in the level of information, and the same adjustment factors cannot be applied, the criteria apply factors in a consistent approach.

33. Appendix II compares factors used in the Australian and U.S. RMBS criteria, in an effort to enhance comparability and provide an understanding of the rationale for differences in treatment.

A. FORECLOSURE FREQUENCY ADJUSTMENTS

34. This section sets out adjustment factors relating to the foreclosure frequency component of estimated losses or credit enhancement. These adjustment factors reflect likely changes in default risk due to deviation from the archetypical pool. In cases where loan level information is not available, adjustment factors may be applied at the portfolio level

or product level to reflect the risk based on origination practice.

35. Foreclosure frequency adjustments at the portfolio level reflect deviation of an actual pool from archetypical pool in:

- The geographic concentration;
- The small pool size;
- The variability in portfolio parameters, such as redraws and further advances; and
- Where applicable, the absence of data at a loan or product level.

36. Foreclosure frequency adjustments at a loan level reflect deviation of an actual pool from the archetypical pool in:

- Borrower characteristics: borrower employment status, credit history, current loan performance status, residency, first-home buyer, and occupancy type;
- Loan and product characteristics: loan-to-value ratio, documentation standard, loan purpose, repayment method, interest type, loan term, and loan seasoning; and
- Security property characteristics.

37. Foreclosure frequency adjustments at the lender level reflect deviation of the quality of underwriting and servicing practices from those expected for the archetypical pool, including:

- The past historical performance of loans of mortgage originators;
- The quality of underwriting;
- The debt-servicing assessment performance by the lender;
- The establishment and maximization of the realization of the security property; and
- The servicing quality.

1. Portfolio Level Analysis And Foreclosure Frequency Adjustments

a) Geographic Concentration

38. A geographically well-diversified Australian mortgage loan portfolio typically reflects the distribution of the Australian population, which is divided into six states and two territories (the most-populous states are New South Wales, Victoria, and Queensland). The majority of the population is located in urban centers, in and around the capital cities. The concentration limits of the archetypical pool are shown in table 2. To factor in the impact of a localized economic downturn on default risk, the criteria make adjustments (see table 3 for adjustment factors) to estimated-losses for excess concentrations in any particular states and territories, nonmetropolitan areas, and particular postcodes compared to their respective limits defined in the archetypical pool.

Table 3

Adjustments For Exceeding Geographic Concentration Limits

Concentration type	Adjustment factor
State concentration	1.2x
Nonmetropolitan	1.5x
Postcode	1.5x
Inner city	1.2x

39. The geographic-concentration adjustment factors are multiplicative. This reflects the view that more clustered geographic distributions are at greater risk of being adversely affected by a localized economic downturn.

Observations from recessions in the late 1980s and 1990s demonstrated that unemployment rates (particularly changes in the unemployment rate) are a leading indicator of mortgage default rates. Furthermore, regional unemployment rates can be significantly different to the national or state average, particularly in nonmetropolitan areas. To capture the risk of potential portfolio biases to a particular region, and the potential to be subject to a localized economic downturn, the estimated-losses increase as a portfolio displays high concentrations in a state, in nonmetropolitan areas within that state, and in limited postcodes within the state.

40. In Australia, over time the relationship between property price and proximity to city centers and public infrastructure has become more pronounced. Households need stronger loan serviceability (capacity to pay) to afford properties closer to central business district (CBD) or metropolitan areas. There is valuable local data and research on the difference in housing market dynamics by locality. (1) The Australian Housing and Urban Research Institute's (AHURI) studies with respect to Australian non-metropolitan housing markets and an income based migration phenomenon offer valuable insights in this regard. (2)

41. In particular, AHURI's review of Australian and international literature on low-income migration that examines the evidence of a low-income out-migration phenomenon in Australia (3) concluded:
"In large measures, the smaller regional housing markets appear to function less efficiently than metropolitan markets, resulting in reduced investment by the private sector, a greater level of risk and fewer market choices. Regional housing markets, however, have followed the national trend towards declining affordability and recent changes in the housing market may worsen this trend over the next decade". (4)

b) Small Pool Size

42. Like any statistical sample, the number of loans in a mortgage pool is important in determining the applicability of credit-risk factors derived from large populations. Standard & Poor's analysis suggests that a pool of 250 mortgage loans is statistically valid.

43. The Australian archetypical pool consists of at least 250 consolidated mortgage loans without any material concentration bias to a few large loans. A smaller pool size attracts a credit-enhancement adjustment that is calculated using a functional form (see equation 1 and chart 1) to reflect the greater risk from higher borrower concentration.

Equation 1

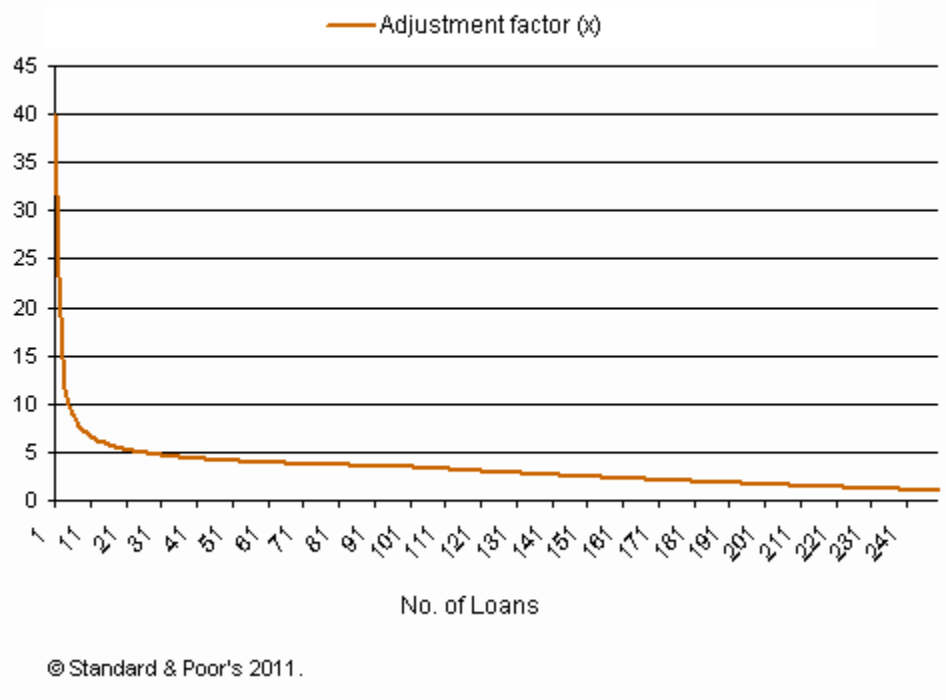
$$f(x) = \begin{cases} 40, & \text{for} \quad n = 1, \\ \dfrac{\hat{\beta}}{\log(n)}, & \text{for} \quad 2 \le n \le 100, \\ \dfrac{\hat{\beta}}{\log(n)}\left[\dfrac{250 - n}{150}\right] + \dfrac{n - 100}{150}, & \text{for} \quad 100 < n < 250 \\ 1, & \textit{otherwise}, \end{cases}$$

Where :

- $\hat{\beta} = 16.0839$,
- log (n) is the natural log of n, and
- n is the number of loans in the pool.

Chart 1

Small Pool Adjustment Factor



c) Redraws And Further Advances

44. The archetypical pool does not anticipate loans with product features such as options to redraw or obtain further advances. The criteria make adjustments to reflect the possibility of declining collateral coverage (as measured by increasing LTV ratios) on these loan types over time as additional funds are drawn down (see table 4).

Table 4

Adjustments For Redraws And Further Advances	
Redraw only	1.05x
Further advance only	1.05x
Both redraw and further advance	1.10x

45. The size of these adjustment factors are based on the capacity for redraw and further advances in a pool or transaction based on loan characteristics and documented restrictions on allowable further advances. If the pool or transaction structure has greater capacity for redraws or further advances than the adjustment factors outlined above suggest, higher adjustment factors may be more appropriate.

2. Loan-Level Analysis And Foreclosure Frequency Adjustments

a) Borrower Characteristics

46. In Australia, the "Privacy Act" regulates the use of consumer credit information. The Act prevents a credit provider from disclosing the satisfactory credit performance of a borrower to a credit-reporting agency.

47. To differentiate potential mortgage performance behavior attributable to borrower characteristics, the criteria focus on factors that tend to impact borrowers' income and cash flow stability, as well as payment behavior, including:

- Employment status of the borrower, such as self-employed versus pay-as-you-go (PAYG) employee, to reflect the differences in cash flow stability of self-employed borrowers (¶¶49–52);
- A borrower's prior credit events that have resulted in payment defaults (¶53);
- A borrower's history of arrears that have subsequently cured (¶54);
- The borrower's country of residence, due to potential challenges in dealing with non-residents once in arrears (¶56);
- Whether or not the borrower is a first-time home buyer (¶57); and
- The borrower's locality, by limiting concentrations in inner city and non-metropolitan areas (¶¶83–87).

48. A borrower in an archetypical loan pool is an Australian resident, an owner occupier, a repeat home buyer, and a PAYG employee; the borrower also has a clear credit history and is not currently in arrears with loan repayments. The criteria make adjustments to the credit enhancement for any borrower characteristics that differs from those of an archetypical loan. For adjustment factors that relate to borrower characteristics, all adjustment factors are greater than one.

49. ***i) Employment Status*** Standard & Poor's approach to analyzing an Australian borrower's ability to service a loan includes an assessment of a borrower's income, the source of that income, and the likely stability of cash flow. Given a borrower's employment status affects income stability, our criteria adjust the credit enhancement based on employment status.

50. Borrowers in the Australian archetypical pool are PAYG full-time or part-time employees (the most-common employment status), whose income tend to be more stable compared to other forms of employment. PAYG full-time

and PAYG part-time employment has regular and known working hours and, therefore, known income for budgeting and access to finance. Conversely, PAYG casual employees do not have certain work hours and do not always have access to the same benefits and entitlement that full-or-part time employees have.

51. Past performance suggests that borrower employment status, particularly changes in a borrower's employment status, is a key trigger to mortgage default. These criteria adjust the credit enhancement for borrowers whose income may be less stable (see table 5).

Table 5

Adjustments For Employment Status

Employment status	Australian adjustment factors
PAYG* – Full time & part time	1.00x
PAYG – casual	3.00x
Commission – based	2.00x
Pension	1.50x
Over 65	1.50x
Unemployed	4.00x

*PAYG –Pay-as-you-go.

52. Self-employed borrowers tend to be more susceptible to business risk as the economic environment deteriorates; in these situations, the cash flow of self-employed borrowers is typically affected more quickly and directly than PAYG employees. Given small business failures tend to be concentrated in the early years of operation, these criteria adjust for tenor of self-employed borrowers. The risk to these borrower groups may be higher when income is not verified at the loan origination. Consequently, adjustment factors are higher in cases where self-employed borrowers take out loans with no documentation, or "no doc" loans (see table 6). The criteria make further adjustments for documentation levels (¶¶61–68).

Table 6

Adjustments For Self-Employed Borrowers

Self employed for:	No Doc* loan	Standard, Low Doc**, and other loans
< 1 year	3.20x	3.00x
>1 year < 2 years	2.50x	2.00x
> 2 years < 3years	2.00x	1.50x
> 3 years < 4 years	1.50x	1.20x
> 4 years < 5 years	1.50x	1.20x
> 5 years	1.00x	1.00x

*No Doc--No documentation. **Low doc--Low documentation.

53. ***ii) Adjustment Factor Relating To Credit History*** The criteria assume that lenders undertake a credit check of the borrowers within the archetypical pool. In cases where the lender does not obtain a credit check, the criteria apply an adjustment factor of 3x. The criteria adjust the credit-enhancement levels for any loan to a borrower with an impaired credit history noted by one or more "credit events" within the past five years to reflect the higher likelihood of default (see table 7). Standard & Poor's considers a credit event to be one event in a borrower's life that may drive a number of events (such as one loss of employment or ill health) that leads to a borrower not being able to meet payment obligations. Standard & Poor's analysis focuses on the number of credit events a borrower has, rather than the number of defaults and judgments (missed payments of A$500 or higher are deemed defaults).

Table 7

Adjustments For Prior Credit Events*

Borrower credit history (number of credit events)	Adjustment factors
0	1.00x
1	2.50x
2 or more	3.00x

54. In addition to adjusting for prior credit events, additional adjustments may apply to loans where borrowers have a history of payment arrears (see table 8). This adjustment factor recognizes the heightened risk associated with borrowers who have no history of credit events but a history of arrears for subprime borrowers. The arrears history adjustment factors are not applied to prime loans, given that prime lenders' underwriting standards generally require clear credit history. For subprime and non-conforming borrowers who have a history of arrears and credit events, only the credit history adjustment factors apply. Adjustment factors are applied for subprime and non-conforming borrowers who do not have a history of prior credit events, but do have a history of arrears in the past 12 months (see table 8).

Table 8

Adjustments For Arrears For Subprime And Nonconforming Loans (With No Credit Events)*

Times in arrears in past 12 months	Adjustment factor
Up to 1	1.00x
2	1.10x
3	1.20x
4	1.50x
5 or more	2.00x

55. ***iii) Current Delinquency Status Of The Loan*** Loans in arrears are more likely to default than performing loans. Adjustment factors are applied to loans in arrears greater than 30 days and which are seasoned more than 6 months in accordance with table 9. For loans that are greater than six months seasoned and in arrears 90 days or more, or less than six months seasoned and more than 30 days in arrears, the loan is considered to be in default, and a default frequency of 100% is assumed.

Table 9

Adjustments For Loan Delinquency Status

Current delinquency status	Australian adjustment factor for 6 or more months seasoned
< 30 days	1.00x
> 30 days and less than 60 days	2.00x
> 60 days and less than 90 days	4.65x
> 90 days	100% foreclosure frequency

56. ***iv) Borrower Residency*** The borrower within the archetypical pool is a resident of Australia, and the loan is an Australian-dollar loan secured by a first-registered mortgage over Australian freehold land or crown leaseholds with a lease term of at least 15 years longer than the loan term. Furthermore, the security property for the archetypical loan has a full general insurance cover, including appropriate cover for geographically specific risks (such as earthquakes or flood). For non-residents, the criteria increase the credit enhancement by a factor of 1.5x to reflect the difficulty of managing the arrears or recovery action should a non-resident borrower default. The adjustment factor reflects practical issues incurred by some lenders when dealing with non-resident borrowers in default.

57. ***v) First-Time Home Buyers*** Standard & Poor's considers first-time home buyers to be more likely to default than borrowers in the archetypical pool due the lack of a home loan payment history. Until a payment history of at least 18 months has been established, the criteria apply a 1.10x adjustment factor to the credit enhancement of a loan made to a first-time borrower with no credit history.

58. ***vi) Occupancy - Loans to Investors*** These criteria apply a 1.1x adjustment factor to the credit enhancement for loans to investors to address the potential greater risk of default compared to loans for home purchase. The investor property classification includes holiday/second homes. This is a qualitative adjustment to reflect relative risk and anecdotal evidence that investment loans of a more speculative nature may have started to emerge, as well as global default experience on second homes in periods of economic stress. To recognize the heighted risk related to investment in an inner city apartment, additional adjustments are made to inner city investment properties (¶85).

b) Loan Characteristics

59. ***i) Loan-to-Value Ratio*** Loan-to-value ratios have historically proven to be a key predictor of default on residential mortgage loans and continue to be a main determinant of credit risk in RMBS transactions. Extensive data relating to the Australian residential loan markets clearly demonstrates a direct correlation. The probability of default increases exponentially the higher the LTV.

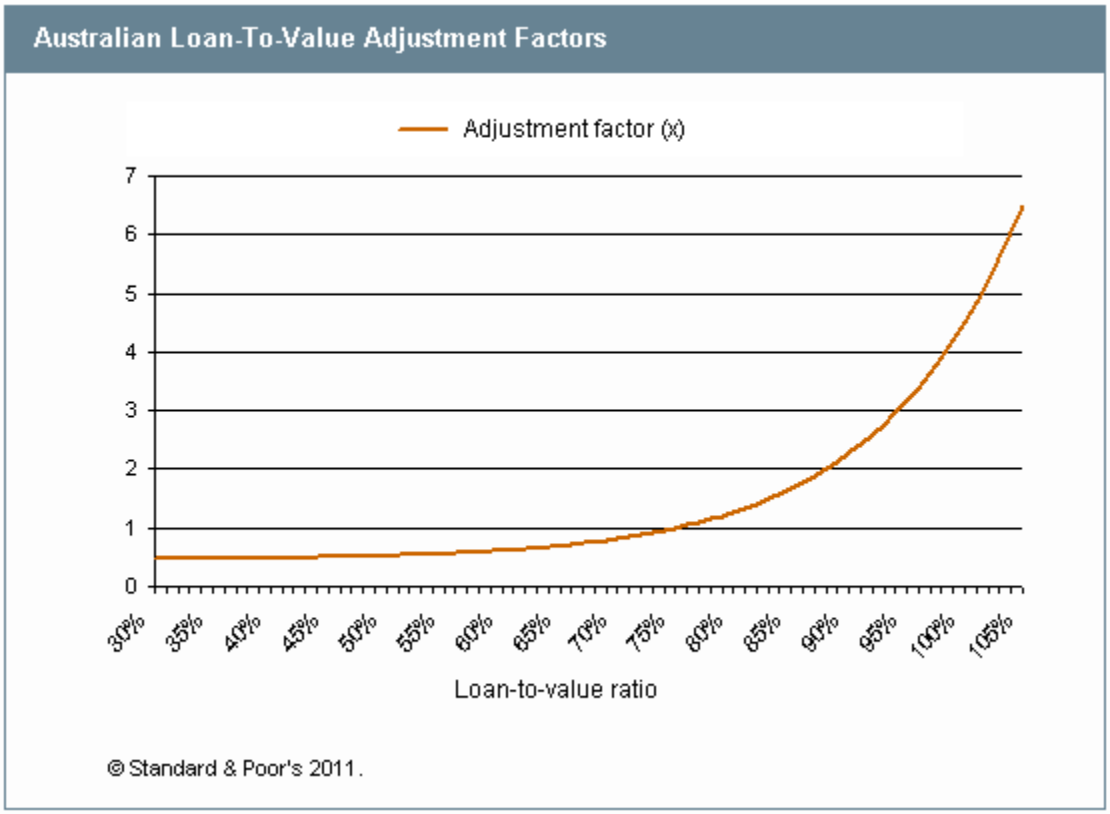
60. The archetypical loan has a 75% LTV, and Standard & Poor's criteria adjust the credit-enhancement for loans with LTVs that differ from the archetypical loan. The continuous function shown in equation 2 defines the adjustment factors applied to the credit-enhancement, which increases exponentially for loans with higher LTVs.

Equation 2

$$f(x) = \hat{\beta}_0 + e^{\hat{\beta}_1 + 100\hat{\beta}_2 x}$$

In equation 2, x denotes the LTV, $f(x)$ denotes the adjustment factor, and $\hat{\beta}_0 = 0.45$, $\hat{\beta}_1 = -6.6$ and $\hat{\beta}_2 = 0.08$.

Chart 2



61. ***ii) Documentation Standards*** The archetypical loan is one where the borrower's income and affordability (in this context, meaning capacity to pay), as well as assets (savings history), are fully verified. In cases where loans are underwritten without deposit money verification for purchase loans, the criteria apply an adjustment factor of 1.05x.

62. Reduced documentation (low doc) or no documentation (no doc) loans were introduced to the Australian markets in the late 1990s. These loans are mainly extended to self-employed borrowers with known employment information. The level of verification and supporting documentation required from borrowers may vary from lender to lender or among loan products offered by a given lender. Lenders sometimes underwrite a loan based on the borrower's unverified claim of a certain amount of income (also referred to as "stated income") or a statement that the borrower can meet his or her obligations under the loan, known as declaration of affordability in Australia. The primary risk is that the borrower's income may be overstated, creating less certainty over the borrower's capacity to meet obligations under the loan. Lenders tend to compensate for the increased risk by reducing the maximum LTV allowed on the loan, compared with the LTV on a loan where the borrower's income history is fully verified with tax-return statements and salary pay slips.

63. For self-employed borrowers in Australia, adjustment factors for income verification are based on the number of verification sources the lender obtains. Apart from tax-return statements and salary pay slips, other sources of income verification include:

- Statements of a borrower's financial position, such as asset and liability statements -- for example, a Business

Activity Statement (BAS), which a business needs to lodge with the Australian Tax Office (ATO) periodically (monthly, quarterly, annually, or other frequencies depending on the circumstances) to report and pay its tax obligations (including business income, PAYG and goods and services tax installments, PAYG withholding, and fringe benefit tax);

- Accountant letters verifying the financial position of borrower; and
- Bank statements verifying income.

64. In Australia, most residential mortgage loan originators require a borrower to provide, at a minimum, a declaration of affordability (stated financial position). In cases where a borrower provides no supporting evidence of income, it is treated as no verification of income; consequently, an adjustment factor of 1.5x will apply (see table 10).

65. If a borrower provides at least one of the additional items of evidence of income or declaration of income listed above, an adjustment factor of 1.4x will likely apply. In cases where a borrower provides two additional items of evidence of income, an adjustment factor of 1.35x will likely apply. If a borrower provides three additional items of evidence of income, a multiple of 1.3x will likely apply, while a borrower who provides all three items of evidence of income, as well as declaration of affordability and declaration of income, has a likely adjustment factor of 1.25x.

66. These adjustment factors are applied in addition to the employment-status adjustment factors, including the self-employment adjustment factors. The adjustment factors show that concerns decrease as the number of sources evidencing income increases (¶63 for the sources of income).

67. The income-verification adjustment factors in Australia are generally applied in conjunction with employment-status adjustment factors in tables 5 and 6. For example, a loan extended to a self-employed borrower without income verification gets an adjustment factor of 4.8x (=1.5 x 3.2).

Table 10

Adjustment For Documentation Standards

No. of credible sources of income verification in addition to the declaration of affordability (stated)	Income verification adjustment factor*
0	1.50x
1	1.40x
2	1.35x
3	1.30x
4	1.25x
Tax returns included	1.00x

68. A borrower's demonstrated loan repayment outweighs the level of income and asset verification at the time of loan origination, and the initial level of income and asset verification becomes less indicative of likelihood of default over time. To account for this, these criteria reduce the adjustment factors over a six-year period using equation 3, which incorporates a seasoning adjustment from 100% to 0% (see table 11) over the same period. Effectively, the documentation-related adjustment factor becomes neutral after six years. The documentation-type adjustments by loan seasoning are applied using equation 3.

Equation 3

$$1+ (\text{initial documentation type adjustment} - 1)* \text{seasoning adjustment}$$

Table 11

Percentage Of Documentation Adjustment Factors Applied By Loan Seasoning

Loan seasoning	<=12	(12-24]	(24-36]	(36-48]	(48-60]	(60-72]	>72
Seasoning adjustment	100%	85%	80%	55%	35%	15%	0%

69. ***iii) Loan Purpose – Refinance*** When a loan is made for the purpose of refinancing existing debt, the mortgage default risk can vary depending on the reason for the refinance. The criteria apply an adjustment factor of 1.5x for a borrower's refinancing between subprime and nonconforming lenders. A refinancing that involves debt consolidation or cash or equity take-out—where a borrowing is against the built-up equity in a property—may also increase the likelihood of default by the borrower; this attracts adjustment factors of 1.1x and 1.2x respectively (see table 12). In cases where the borrower takes advantage of lower lending rate to better manage its financial position, and the lender undertakes a full underwriting process with a reassessment of the security valuation, there are no discernable performance differences observed when compared to purchase loans in Australia. Consequently, there are no adjustments made to these loans.

70. The assessment of a portfolio's exposure to different types of refinance loans is based on loan-level data available, lenders underwriting policies and practices, the lender's portfolio parameters, and industry trends and averages. In cases where there is insufficient data available for analysis, a worst-case adjustment is applied—ranging from 1.2x for prime pools to 1.5x for subprime pools for 100% of the portfolio.

Table 12

Adjustment Factors For Refinance Loans

Loan purpose	Australian adjustment factor
Refinance with debt consolidation	1.10x
Refinance with home equity/cash take-out	1.20x
Refinance across subprime and nonconforming lenders	1.50x

71. ***iv) Repayment Method*** The archetypical pool assumes each loan is a standard discretionary variable rate loan, has no interest-only payment period, and fully amortizes over the term of the loan.

72. Certain products that carry characteristics, such as loans with interest-only periods, bullet repayments, significant residual principal repayment at maturity (also known as balloon loans), and negative amortization features, can heighten a borrower's sensitivity to changes in macroeconomic factors through an economic downturn. In light of added credit risk due to loan-payment characteristics that create a potential payment "shock" for the borrower during the term of the loan, the criteria looks for higher levels of loss protection for non- or partially amortizing loans, bullet loans, and negative amortization loans through adjustments to foreclosure frequency (see tables 13–15).

73. The criteria apply an adjustment factor of 3x for bullet loans. These loans, which are not widely observed in Australian pools, tend to have a short term of five-to-10 years (see table 13).

74. Although interest-only loans that revert to fully amortizing loans after the interest-only period (IO-term) expires somewhat mitigate refinancing risk, the interest-only feature can create a payment shock when the payments revert to fully amortizing over the remaining term of the loan (PI-term). Loan products may also include discounted or subsidized payment structures or repayment obligations that step up over time. The criteria apply a higher foreclosure frequency for such loans (relative to the archetypical loan) in cases where the payment characteristics create an additional payment shock for borrowers. The amount of the adjustment depends on the degree of payment shock in each case (see table 14). This reflects our view that the longer the IO-term relative to the PI-term, the higher

the risk of payment shock-related default. This risk differentiation results in adjustments between 1.1x and 3.5x.

75. The Australian adjustment factors for loans with an IO-term are a product of the IO-term related adjustment factor and PI-term related adjustment factor in table 14. Given loan term is considered in these adjustment factors, the loan-term adjustment factors outlined in paragraph 80 (see table 16) do not apply to these loan types. Similar to bullet loans, loans with a longer IO period are exposed to a longer period of uncertainty and may have a higher probability of default, due to their dependence on refinancing or a limited repayment period.

76. Balloon loans, or loans that do not amortize to zero over the life of the loan, are uncommon in Australian pools. Due to the reliance on the ability to refinance the loan at maturity, the criteria apply adjustment factors to account for the risk (see table 15).

Table 13

Adjustment For Repayment Method

Repayment method	Adjustment factor
Full amortizing loans (principal & interest payment [PI])	1.00x
Partial amortizing loans (interest-only for a period, then revert to PI)	See table 14
Balloon loans (partial amortizing with a residual payment)	See table 15
Bullet loans (interest only until maturity)	3.00x
Negative amortization loans (assume LTV at maximum limit)	3.00x

Table 14

Adjustment For Interest-Only (IO), Then Revert To Fully Amortizing (PI) Loans

IO term (years)	<= 5	>5 to <=10	>10 to <=15	>15 to <=20	>20 to <=25
Adjustment Factor	1.10x	1.25x	1.50x	1.75x	2.00x
PI term (years)	< 3	=3 to <5	=5 to <10	=10 to <15	=15 to 30
Adjustment Factor	1.75x	1.50x	1.25x	1.10x	1.00x

Table 15

Adjustment For Balloon Loans With Residual Value

	Loan term (years)				
Residual LTV	<5	[5-7]	[7-10)	[10-15)	>= 15
<= 60%	2.00x	1.70x	1.50x	1.25x	1.25x
> 60% to =70%	2.40x	2.00x	1.70x	1.50x	1.25x
>70% to = 80%	2.70x	2.40x	2.00x	1.70x	1.25x
>80% to = 90%	3.00x	2.70x	2.25x	1.85x	1.25x
> 90%	3.50x	3.00x	2.50x	2.00x	1.25x

77. ***v) Interest Type*** Discretionary variable-rate loans are the standard or typical loan product offered in Australia. Some variable-rate loans have a short period where interest rates are fixed before reverting to a variable rate for the rest of the loan life. Although the embedded fixed-rate period can be up to 10 years for some, a significant majority are fixed for one-to-three years. The criteria do not make any credit-enhancement adjustments in relation to fixed-rate loans.

78. The observed performance history of mortgage loans in Australia predominantly reflects the performance of variable-rate loans. The lending practices in Australia recognize and account for borrower exposure to interest-rate

changes (repayment shock). The assessment of a borrower's serviceability typically factors in potential increases in interest rates by about 2% as a buffer for payment obligations, depending on the prevailing interest rate environment. Consequently, the criteria only apply adjustment factors to loans in cases where lenders do not build in buffers in their assessments of a borrower's capacity to pay and, therefore, expose the borrower to payment shocks as mortgage rate increase. These additional adjustment factors apply through lender level analysis to reflect the more aggressive underwriting practice than the standard described in paragraph 95.

79. Loans with a lower starting interest rate (also known as "teaser rate") for a promotional period, typically for up to 12 months, could be subject to payment shock when the installment payments increase after the promotional period. An adjustment factor of 1.2x applies until six months after the promotional period ends to recognize the heightened risk associated with this feature.

80. ***vi) Loan Term*** The Australian criteria recognize varying risk relative to loan term for fully amortizing loans. An adjustment factor lower than 1.0x applies to loans with an initial loan term less than 30 years (see table 16). These adjustment factors do not apply to loans with IO periods, bullet loans, negative amortizing loans, or balloon loans. The effect of loan terms have been considered in these adjustment factors for these loan products due to concerns with refinancing and concentrated repayment risk (see Repayment Method section).

Table 16

Adjustment For Loan Term

Loan term	Adjustment factors
Term <= 15 years	0.4x
15 years < term < 30 years	0.7x
= 30 years	1.0x
Term > 30 years	1.2x

81. ***vii) Loan Seasoning*** As loans season, a borrower builds up a track record of repayment, which positively reinforces the borrower's credit profile. In Australia, performance observations from amortizing residential mortgage loans display a very predictable loss curve, with the majority of losses realized within the first five years. To reflect the decreasing likelihood of default over time, the archetypical foreclosure frequency is reduced for loans with more than five years of seasoning (see table 17).

82. No credit is given to seasoning for loans with bullet, balloon, interest-only, or negative amortization features during their period of non-amortization. This is because there will be no equity built up by borrowers during these periods, exacerbating the ability of a borrower to refinance.

Table 17

Adjustment For Loan Seasoning

Loan seasoning	Adjustment factors
<= 5 years	1.00x
>5 to <=6 years	0.75x
>6 to <=7 years	0.70x
>7 to <=8 years	0.65x
>8 to <=9 years	0.60x
>9 to <=10 years	0.55x
>10 years	0.50x

3. Security Property Characteristics Analysis And Foreclosure Frequency Adjustments

83. The foreclosure frequency adjustment factors relating to security property in Australia are built on different default rates for inner city high-density apartments, hobby farms, and metro/non-metro locations, as well as different loss severities for certain properties (¶¶110-114).

84. The archetypical pool assumes a security property as one of the following types of residential properties: detached, semi-detached (two houses joined together side-by-side), a townhouse (medium-density housing, similar to detached or semi-detached homes), a strata title (applies to properties that share common areas, where the properties are owned by individual owners, but the common areas are owned by a corporation of individual owners), or a flat, apartment, or unit (all three refer to housing that occupies only part of a building or property). The archetypical pool excludes high-density apartments and hobby farms, and assumes full valuation (or appraisal) of security property at time of approval.

85. An adjustment factor of 1.25x applies (see table 18) to the foreclosure frequency for owner-occupied, and 1.5x applies to residential investment loans secured by high-density, inner city apartments. The adjustment factor in Australia reflects our view that the value of inner city apartments in Australia can be volatile due to lower market liquidity. Given inner city is also excluded as a location from the Australian archetypical pool, an additional 1.2x adjustment factor is applied to capture the higher volatility of this property type; this results in a cumulative adjustment factor of 1.5x.

Table 18

Adjustments For Security Properties

Security property characteristics:	Adjustment factor
Residential property - detached, semi-detached, townhouses, strata title flats, apartments, and units	1.00x
High-density apartments (before adjusting for geographic concentration)	
--Owner occupied	1.25x
--Investment	1.50x
High-density apartments (after adjusting for geographic concentration)	
--Owner occupied	1.50x
--Investment	1.80x
Full valuation from registered valuer	1.00x

86. These adjustment factors reflect the view that residential loans secured over high-density apartments have a higher propensity to default than those secured by lower density properties. The basis of the decision to purchase a high-density apartment appears to be different from the traditional reasons to buy into the more traditional residential property market. Borrowers may be more motivated by the prospect of short-term capital gain. There are also additional potential demand/supply pressures, and geographic and structural concentration risks exist that may lead to more volatility in resale values.

87. Hobby farms (a small holding that allows a house, as well as keeping of a small number of animals or small crop fields) are less-often observed in mortgage pools underlying RMBS. The inclusion of such security types in a pool requires further analysis. However, as a comparison, a 2.0x adjustment factor applies to manufactured housing, mixed use property, raw land, and other non-residential property in a U.S. mortgage pool.

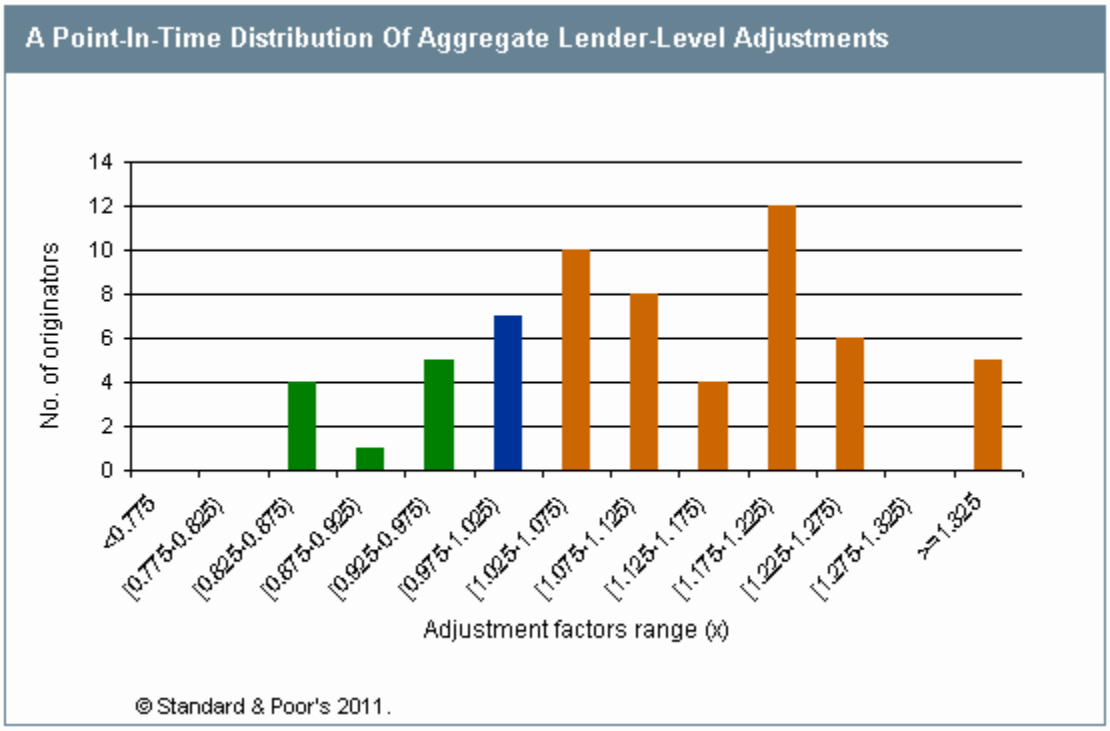
4. Lender-Level Analysis And Foreclosure Frequency Adjustments

88. The quality of a lender's mortgage origination, underwriting, and servicing of portfolios can impact the performance of the portfolio and loss experience. The overall impact of such adjustments is biased to the neutral of 1.0x or higher, as we expect to see very few originators' practices to be materially better than expected for the archetypical pool (see chart 3). These criteria focus on key considerations that could impact losses including:

- The past historical performance of loans of mortgage originators;
- The quality of underwriting;
- The debt-servicing assessment performed by the lender;
- The establishment and maximization of the realizable value of the security property; and
- The servicing quality.

89. A combination of qualitative and quantitative analysis of above factors results in originators classified into three categories: Top Tier, Middle Tier, and Bottom Tier. Overall, the credit-enhancement for Top Tier originators may be reduced by up to 30%, or by a factor of 0.7x. In contrast, the credit-enhancement for Bottom Tier originators may be increased by over 30% or a factor of 1.30x or more. The adjustment factors for Middle Tier originators are centered on 1.0x.

Chart 3



a) Historical performance by originator

90. The analysis of historical performance of an originator's loans at a transaction level relative to other originators forms part of lender level analysis and complements the qualitative analysis (including the quality of underwriting, the debt-servicing assessment performed by the lender, the establishment and maximization of the realizable value of

the security property, and the servicing quality). Originators are classified into three categories: Top Tier, Middle Tier, and Bottom Tier based on their loan portfolio performance. The Top Tier represents the top 15% of ranking, while Bottom Tier represents the bottom 15% of the ranking and the remaining in the middle. This distribution, overlaid with the qualitative considerations, is likely to result in aggregate distribution of lender-level adjustment of no lower than 0.75x and up to or exceed 1.3x.

91. Although the historical performance of loans made by an originator provides some indication of potential future performance of loans it originates, performance in a benign period may only partially reflect and differentiate the quality of origination and servicing. Furthermore, past performance in itself may not be an accurate predictor of future performance if an organization's policies, procedures, processes, resources, and risk-management strategies change over time. Consequently, the complementary quantitative analysis (based on the historical performance of loans of mortgage originators) and qualitative analysis are central to Australian RMBS criteria; lender-level adjustment factors will be refined to reflect the findings of both the qualitative and quantitative analyses.

92. An adjustment factor of 1.1x applies to loans with less than 12 months seasoning where the originator cannot demonstrate a history of stable loan performance (in-line with the industry) for at least five years relative to the industry standard. Pools with loans seasoned less than 12 months attract an adjustment factor of 1.1x even when an originator's track record of operations extends to five years, but the loan performance data does not demonstrate a stable arrears profile as loans season. Our RMBS surveillance observations suggest some loan portfolios with seasoning less than 12 months have greater performance uncertainty than seasoned portfolios with an established arrears profile.

b) Quality of Underwriting

93. The criteria provide for a foreclosure frequency adjustment factor between 0.90x and 1.25x to reflect our assessment of the quality and consistency of the origination and underwriting of the loans in a portfolio. As Australian lending practice and underwriting standards are relatively uniform, it is difficult to exceed the market standard. Therefore, the favorable adjustment factor allowable (below 1.0x) is limited to 10%, compared to a possible 25% upwards adjustment for more aggressive underwriting standards. The overall impact of such adjustments is biased to the neutral of 1.0x or higher, as we expect to see very few originators' practices to be materially better than expected for the archetypical pool and industry standard, which is rather uniform in Australia (see chart 4).

Chart 4

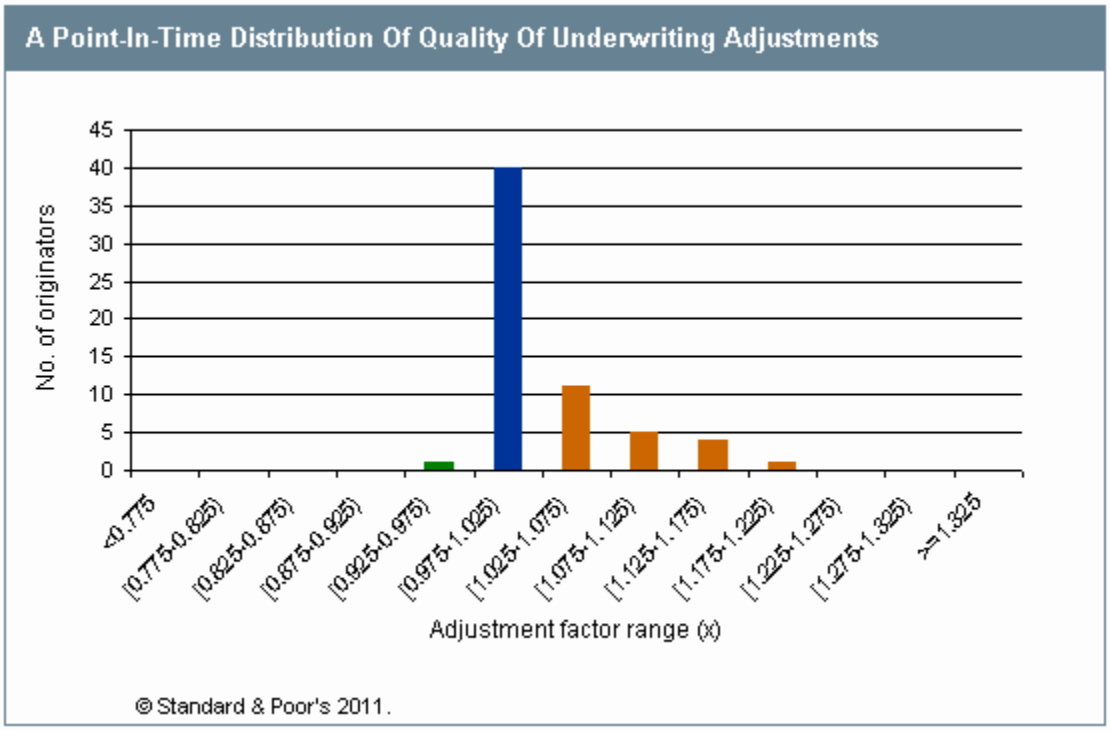


Table 19

Adjustment For Quality Of Underwriting

	Top Tier	Middle Tier	Bottom Tier
Adjustment factor	0.90x	1.00x	1.25x
Business and lending strategy	Underwriting standards are significantly more conservative than industry norms	Reflect industry standard, and a prudent underwriting approach	Below industry standard
Governance and management structure	Strong relative to industry norm	Reflect industry standard	Below industry standard
Risk-management, compliance, quality assurance, including data quality and internal control framework	Demonstrably stronger than industry standards	Reflect industry standard	Below industry standard
Policies, procedures and training programs	Extensive documentation and training of policies and procedures	Robust documentation and training of policies and procedures	Documentation, but not supported with adequate training
The role of mortgage originators and brokers in the origination and underwriting process	N/A	No broker involvement	With broker involvement
Underwriting standards and the quality of credit review	Underwriting standards are significantly more conservative than industry norms	Reflect industry standard, and a prudent underwriting approach	Aggressive compare to industry standard
Frequency of exceptions to established underwriting guidelines	Minimal	Moderate	Moderate to excessive
The role of any mortgage insurer in the underwriting process (if applicable)	Dual underwriting or open policy with very strong audit process	Dual underwriting or open policy with strong audit process	Open policy with limited audit processes

94. The underwriting review assesses a range of issues (which may include an assessment of factors outlined in column one of table 19).

95. Table 19 provides a guide to Standard & Poor's approach to assessing the classification of underwriting risk. Other factors may feature in the assessment as applicable to the specific nature of each originator. The credit enhancement for an archetypical pool assumes prudent underwriting of the underlying loans and that the loans are of insurable quality. Originator practices that represent an assumed underwriting standard of an archetypical pool are classified in the Middle Tier and attract an adjustment factor of about 1.0x. Australian mortgage origination and underwriting standards are relatively uniform, and practices that reflect the industry standard and prudent underwriting standard typically have:

i. A risk-focused business culture, with support from an independent risk-management function.

ii. A well-developed business strategy that results in controlled growth that supports the mid-term to long-term viability of the company and franchise value.

iii. A scalable integrated system in place with a tested continuity plan.

iv. Up-to-date documentation of policies and procedures that are closely followed, and a comprehensive training program is available to staff.

v. Adequate staffing and qualifications.

vi. Processes to ensure compliance with all applicable laws and regulations, and the number of breaches are insignificant or nominal.

vii. Well-managed broker panel and no involvement of broker in underwriting of loans.

viii. Prudent underwriting, with adequate provisioning for expenses and borrowing costs, as well as full assessment of income and variability of income available to service the loan.

ix. Full valuation of mortgaged security properties.

x. Adequate quality control, including internal and external audit.

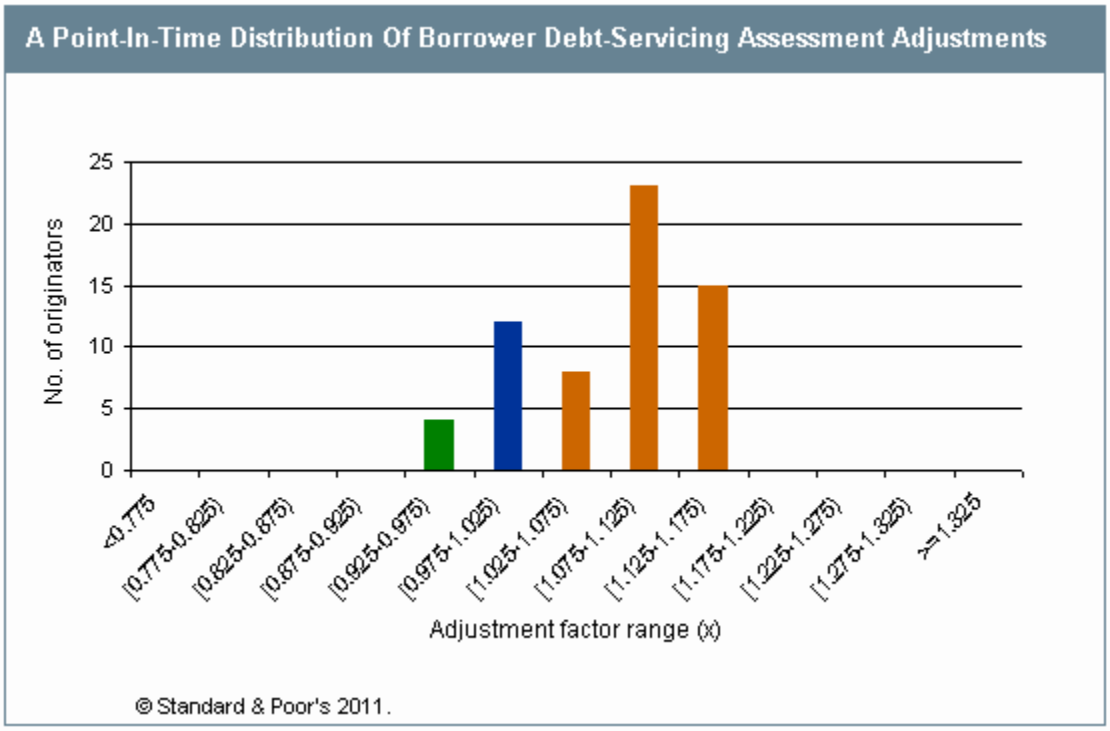
Accurate data and reporting functions.

96. For an originator to attract a multiple of 0.9x, characteristics commensurate with all the factors outlined under Top Tier at least will need to be demonstrated. Likewise a 1.25x adjustment factor as noted for Bottom Tier will most likely apply to originators displaying characteristics commensurate with Bottom Tier for all of the factors. For originators displaying characteristics that fall across the tiers for different factors, an adjustment factor between the ranges specified is possible.

c) Debt-Servicing Assessment Of Borrowers

97. A foreclosure frequency adjustment factor between 0.95x and 1.15x applies to reflect the assessment of the quality and consistency of the repayment capacity assessment of borrowers. For issuers that do not determine the debt-servicing assessment of the borrower, a 1.25x adjustment factor applies (see table 20 for a breakdown of the adjustment factors applied based on the minimum qualifying tests used by originators and as articulated in their credit policy). The overall impact of such adjustments is biased to the neutral of 1.0x or higher, as we expect to see very few originators' practices to be materially better than expected for the archetypical pool (see chart 5).

Chart 5



98. Evaluation of a lender's practice of assessing debt-servicing capacity on a portfolio basis is typically necessary because loan-by-loan data is not readily available. Many Australian lenders have moved away from using debt-to-income (DTI) ratio measures to assess a borrower's capacity to service loans and have adopted the net-surplus ratio (NSR) measure. Although the various approaches may be relatively uniform, in principle the composition and derivation of income and expenses, and the maximum or minimum limits (whichever is applicable), often varies across originators. In addition, a higher qualifying interest rate is generally applied when determining the borrower's capacity to service the loan to allow for a marginal increase in interest rates.

99. The Australian analytical approach to analyzing an NSR includes an assessment of the treatment of:

- The borrower's employment status;
- Various sources of income;
- Other commitments; and
- The derivation of living expenses in the lender's assessment of the borrower's debt-servicing capacity.

100. Originators who include a large interest-rate buffer over prevailing mortgage rates in their assessment, and require income assessed to be greater than a material multiple of the calculated borrower costs, likely attract an adjustment factor at the low end of the range. Those originators requiring a smaller interest-rate buffer, and lower levels of income coverage over assessed costs, most likely attract an adjustment factor at the higher end of the range. Under the criteria, the credit-enhancement adjustment is based on the additional interest-rate buffer and NSR buffer (see table 20), factoring in the considerations listed in paragraph 95. For example, a lender may adopt an NSR of 1.25x, after factoring in all sources of income, including investment income and income from bonuses and overtime; industry standard practice is to take only 80% of more variable income into consideration. In this case, the

adjustment factor may be higher than what is listed in the table for a NSR of 1.25x.

Table 20

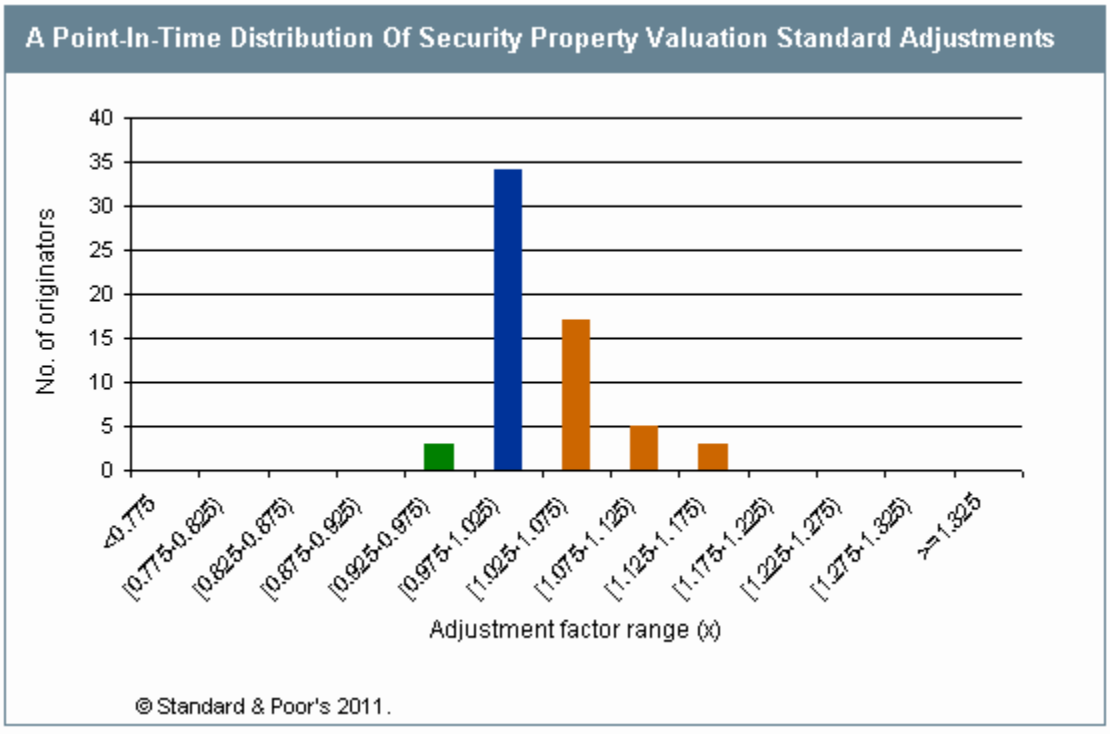
Adjustment For Level Of Interest Rate And Net Surplus Ratio Buffer

	Net surplus ratio						
Interest-rate buffer	=1.00x	>1.00x -1.05x	>1.05x- 1.10x	> 1.10x - 1.15x	> 1.15x - 1.20x	>1.20x - 1.25x	> 1.25x
0%	1.15x	1.15x	1.15x	1.15x	1.10x	1.05x	1.00x
>0% - 0.5%	1.15x	1.15x	1.15x	1.10x	1.05x	1.00x	0.95x
> 0.5% - 1.0%	1.15x	1.15x	1.10x	1.05x	1.00x	0.95x	0.95x
>1.0% - 1.5%	1.15x	1.10x	1.05x	1.00x	0.95x	0.95x	0.95x
>1.5% - 2.0%	1.10x	1.05x	1.00x	0.95x	0.95x	0.95x	0.95x
2.0% +	1.05x	1.00x	0.95x	0.95x	0.95x	0.95x	0.95x

Security Property Valuation (Appraisal) Standard

101. An adjustment factor between 0.95x and 1.25x is applied to the market-value-decline assumption to reflect an assessment of the quality and consistency of the security property valuation (appraisal) standard. The archetypical pool assumes a full valuation of the security property by registered valuers at the time of loan approval. The overall impact of such adjustments is biased to the neutral of 1.0x or higher, as we expect to see very few originators' practices to be materially better than expected for the archetypical pool and industry standard, which is rather uniform in Australia (see chart 6).

Chart 6



102. The industry standard of reporting security value is the lower of valuation or contract of sale. In cases where the

security value is based on contract of sale only, the criteria apply an adjustment factor of 1.05x. Any valuation other than full valuation and contract of sales attracts an adjustment factor of 1.15x (see table 21).

103. A lender's valuation policy and a servicer's asset-realization process may have a significant influence on the estimated losses on a loan. Accordingly, different valuation approaches will have different credit-support requirements (adjustment factors for key valuation types are outlined in table 21). Given that the valuation standards are relatively uniform across the Australian market, most originators will likely receive adjustment factors above 1.0x. Adjustment factors below 1.0x only apply to exceptional cases where originators: adopt far more stringent valuation practices than industry practice; apply a strong level of controls over the valuation instruction process; employ multiple procedures to verify the appropriateness of valuations; and manage the process in a way that minimizes variability in valuations. Those originators with weaker standards than the archetypical pool or industry practice attract an adjustment factor that increases the level of credit enhancement.

Table 21

Adjustment By Valuation Standard

Valuation type	Adjustment factor
Full valuation	1.00x
Contract of sale	1.05x
Other – including Valuer's General Report (government valuer), Electronic Valuation Report, and Drive by valuation	1.15x

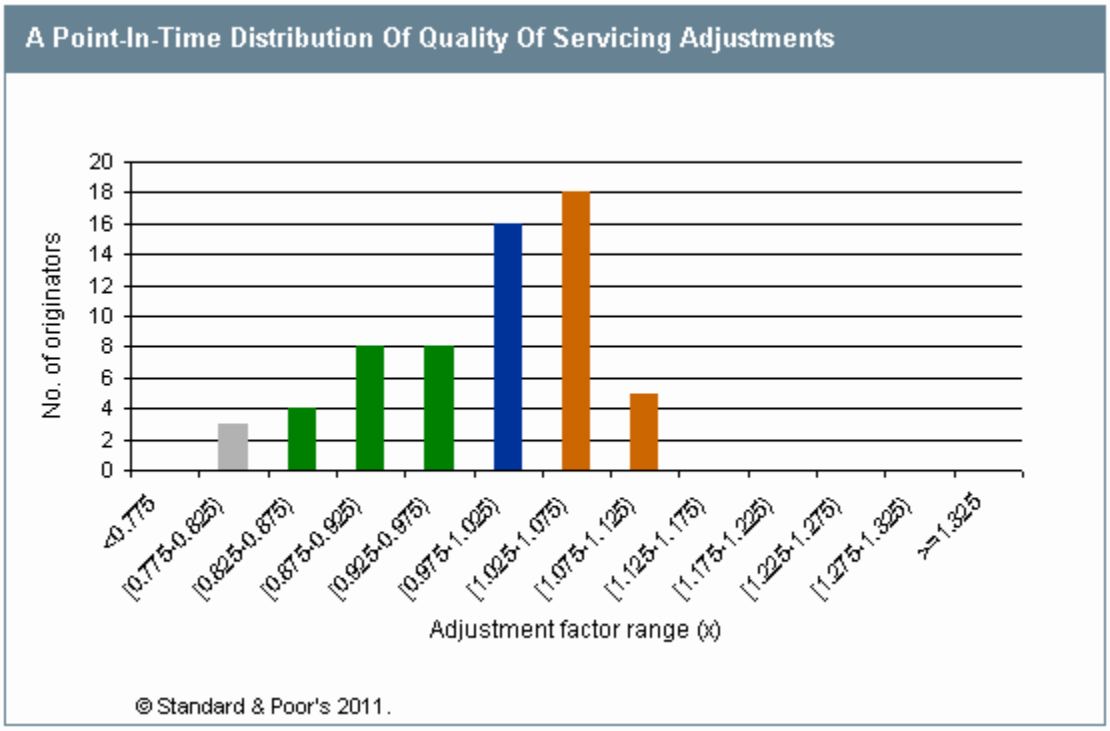
104. The additional adjustment factors outlined above may be incorporated to increase the maximum adjustment factor to 1.25x to reflect factors that Standard & Poor's believes will affect the reliability of the valuation:

1. The originator's policy on instructing valuers;
2. Whether the originator or some other third-party requests and obtains the valuation;
3. Any discounts applied to valuations;
4. Any "check" or additional valuations obtained;
5. The valuer and valuation review process;
6. The role of mortgage originators and brokers; and
7. The effectiveness of workout strategies and the realization process.

e) Servicing Quality

105. A foreclosure frequency adjustment factor between 0.75x and 1.25x is applied to reflect an assessment of the quality and consistency of servicing practices. The assessment is benchmarked against industry standards and performance history when determining the adjustment factors. Adjustment factors below 1.0x are rare, based solely on operational practices. An example of where an adjustment factor below 1.0x is more likely is when a servicer displays strong financial strength and, therefore, the ability to invest in resources that address any servicing issues quickly and benefit the pool performance. The overall impact of such adjustments tends to be centered on the neutral of 1.0x; more favorable adjustments tend to be given to originators with a strong financial strength rating (see chart 7).

Chart 7



106. The servicing review involves an assessment of a range of issues, including:

- Loan-servicing philosophy and experience;
- Experience in servicing assets of the type to be securitized;
- Quality of the loan-servicing platform;
- Financial strength of the servicer;
- Experience of management and staff;
- The role of mortgage originators and brokers;
- The risk management, quality assurance, compliance, and internal control framework;
- Arrears management and recoveries, including whether delinquencies are managed on a 'missed payments' or ' Australian arrears' basis (an industry standard);
- The delinquency history of the portfolios relative to Standard & Poor's SPIN index;
- The relationship with lenders mortgage insurers and claims history;
- Transaction processing and cash management; and
- Investor reporting.

107. The following adjustment factors (see table 22) are relevant to determining the servicing adjustment factor applied. Adjustment factors may vary from the outcome implied by the table below if the originator's level of servicing skill suggests a higher adjustment factor is warranted. If a servicer possesses predominantly attributes in the Top Tier classification, an adjustment factor of lower than 1.0x applies, subject to a floor of 0.75x. In contrast, a servicer with attributes predominantly in the Bottom Tier classification gets an adjustment factor of greater than 1.0x, with a maximum cumulative adjustment factor of 1.25x.

Table 22

Adjustment For Servicing Quality

	Top Tier	Middle Tier	Bottom Tier
Adjustment factor	0.75x	1.00x	1.25x
Operational capacity	Strong	Average	Weak
Arrears-management method	Missed payments basis	Missed payments basis	Scheduled balance basis
Historical delinquency performance against SPIN	First quartile	Second quartile	Third and fourth quartile
LMI claims payment reduction or denial	Industry standard	Industry standard	Below industry standard
Servicer's financial strength	AAA/AA rating category	A rating category	BBB rating category or below

SPIN--Standard & Poor's mortgage performance index.

108. Servicers assessed as having weak operational practices, a poor arrears track record, and a weak history of successful LMI claims on insured loans attract a higher adjustment factor. Although many originators maintain stable servicing practices, the criteria recognize that some servicing practices may change over time; these changes are reflected in estimates of expected-loss, through adjustments to the credit-enhancement levels. At a more granular level, the final adjustment factor is an aggregation of the adjustment factors of:

- Operational quality;
- Arrears-management method;
- Historical delinquency performance ranking;
- LMI performance to detect negative performance observations; and
- Financial strength.

109. A servicer displaying strong operational capacity demonstrates the highest ability efficiency and competence in servicing portfolios, and has a proven record of strong and stable management, state-of-the-art computer technology, and excellent internal controls, policies, and procedures. A servicer displaying an average operational capacity demonstrates an adequate servicing record, internal practices and policies that meet industry or regulatory standards, and a managed portfolio performance history similar to industry averages. A servicer displaying weak operational capacity demonstrates a poor servicing record, evidenced by recurring losses and a serious lack of internal controls.

B. LOSS-SEVERITY ADJUSTMENTS

1. Components Of Loss Severity

110. Credit enhancement is the product of foreclosure frequency and loss severity. Loss severity reflects the unpaid loan balance after applying the liquidation proceeds from a loan's security property, expressed as a percentage of outstanding loan balance. Upon a borrower's default, a loan's loss severity is affected by the LTV of the loan, the security property value decline at liquidation compared against the original appraisable value, the foreclosure expenses, the liquidation period, and the associated interest costs.

111. Upon default, several factors can deplete the collateral coverage available to a lender, resulting in the lender experiencing losses. These factors include:

- A possible decrease in collateral liquidation value due to the security property market value decline (see table 23);

- The need to use property liquidation proceeds to cover liquidation costs; and
- The length of liquidation period and associated loss of interest payments while the borrower is in default.

112. The criteria factor into the loss-severity estimation amounts to cover the foreclosure costs and loss of interest. The foreclosure periods are varied, based on geographic location, property value, and type. An amount intended to approximate selling and legal costs equal to A$5,000 plus 5% of the value of the security property applies after applying Standard & Poor's market-value-decline assumptions. Furthermore, while a loan is in default, accrued interest is calculated using an assumed recovery period of either 12 months or 18 months, depending on the geographic location of the property. The assumed interest rate is Standard & Poor's estimation of the average worst-case interest rate over the assumed stress scenario. The loss-severity floor is set at 0%, rather than the 2% proposed in the RfC, for greater global consistency.

Table 23

Archetypical Pool Market Value Decline And Loss Severity By Rating

	Rating					
	AAA	**AA**	**A**	**BBB**	**BB**	**B**
Market value decline (%)	45	43	41	38	34	30
Loss severity*(%)	50	47	45	41	36	31

*For illustration purposes, loss severity is calculated assuming 5% variable selling costs, A$5,000 fixed selling costs, a metro property of A$100,000, and an interest rate through accrual of 12.75%.

113. As a result of any one or more of these factors, the adjusted liquidation proceeds may not be sufficient to repay the outstanding loan amount. The amount of the loan that is not repaid expressed as a percentage of outstanding of loan is termed loss severity (see table 23) or loss given default. The timing and size of the above-mentioned factors also affect the available cash flow to meet timely payment of the RMBS.

114. The credit-enhancement adjustment factors for security properties in Australia assume different default rates for inner city, high-density apartments, hobby farms, and metro/non-metro locations, as well as different loss given default for certain properties. The following sections detail adjustments made to loss severity relating to security properties.

2. Loss-Severity Adjustments

115. The criteria apply adjustment factors for loss severity and liquidation costs to properties to reflect higher risks associated with high-value properties and properties located in certain geographic locations. Furthermore, the criteria adjust the liquidation period to reflect the higher accrued interest that may be associated with segments of the markets where it may take longer to liquidate properties (see table 24).

116. High-value security properties (with value of greater than A$1 million) may be exposed to a higher degree of resale value volatility due to the narrower range of prospective purchasers in a position to purchase high-value properties. The criteria also adjust for the increased volatility by increasing the archetypical MVD for security properties that are valued above certain amounts. The archetypical MVD is increased by a factor of 1.2x to 1.3x for higher valued properties (see table 24).

117. An adjustment factor of 1.25x is applied to the MVD assumptions for high-density, inner city apartments, which is in addition to the adjustment factor applied to foreclosure frequency in paragraph 85. This adjustment factor

reflects the view that there are potential demand/supply pressures, and geographic and structural concentration risks that may lead to more volatility in resale values (see table 24).

Table 24

Loss Severity Adjustment And Liquidation Period Assumptions

Property size adjustment		
Property size		**Adjustment factor**
>A$0 to A$1,000,000		1.00x
> A$1,000,000 to A$1,500,000		1.20x
>A$1,500,000 to A$2,000,000		1.225x
>A$2,000,000 to A$2,500,000		1.25x
>A$2,500,000 to A$3,000,000		1.275x
>A$3,000,000		1.30x
Location adjustment		
High-density apartment – Inner city		1.25x
Foreclosure period		
	Benchmark archetypical	Value greater than A$1 million
Metropolitan area	12 months	18 months
Non-metropolitan area	18 months	24 months
High-density apartment - Inner city	12 months	18 months

118. The liquidation period for loans greater than A$1 million is differentiated from loans less than A$1 million to reflect an estimation of the increased time to liquidate higher value properties in a downturn (see table 24).

IV SURVEILLANCE

119. The loss-estimation practice in Australia for surveillance is based on the higher of estimated losses from the following two analytical outcomes: estimated losses from the loan-level analysis, and observed performance-based loss projection to minimize potential underestimation of losses in changing economic and market circumstances.

120. The assignment of initial ratings to RMBS reflects the estimated losses during the life of the transaction, the level of credit enhancement available to absorb losses, and assumptions reflecting the timing of those losses. As the pool of mortgage loans seasons, default and loss patterns begin to emerge. Over time, many of a loan's original characteristics may become less indicative of the future performance of that loan. Surveillance of ratings on RMBS incorporates pool-performance analysis and loan-level analysis as the mortgage pool seasons. The rating determination applies a "worst-of" pool performance data (portfolio-level) and origination data (loan-level) analysis in monitoring ratings performance throughout the life of transactions.

121. The criteria update factors in security property value appreciation or depreciation since the time of loan origination in surveillance of ratings. More specifically, before raising a rating, the credit-enhancement estimation factors any adverse impact of property-price depreciation on loss severity through an adjustment of security property values using the HPI adjustment in the loan-level credit model; before lowering a rating, the credit-enhancement estimation factors in upward adjustment of property prices. Effectively, the criteria establish a boundary where a rating is not raised or lowered due to movements in the security property values.

122. The HPI adjustment in establishing rating revision boundaries is based on the "Australian Price Index of Established Houses", which is based on "Capital Cities of states and territories of Australia", produced by the Australian Bureau of Statistics. Property values are adjusted for any price depreciation immediately; however, adjustments for price appreciation require a minimum of six months seasoning. The criteria apply a 50% haircut on any price appreciation. The criteria make additional haircuts of 10% on any price appreciation for properties located in states that have significantly over-performed the national average (weighted average of eight capital cities for Australia). This is to make provision for potential over-valuation as well as the lack of precision of valuation adjustments for specific locations based on the national average.

123. The HPI-adjusted property values are not used to re-estimate Australian's current LTV for foreclosure frequency estimation. Our observation of Australian borrowers suggests that capacity to service debt tends to drive their behavior and this position is not likely to fluctuate from quarter-to-quarter based on property price movements or LTV.

124. For newly originated loans, research shows that loan and borrower characteristics generally do not change significantly early in the transaction life. For pools of newly originated loans, stable indicative performance trends do not generally manifest until about a year after issuance. Therefore, during the early stage of a transaction's life, the surveillance approach relies heavily on the analysis of loan and pool characteristics. Over time and depending on transaction structure and the current performance and industry outlook, the loss projection based on the transaction and industry performance trends is used to supplement the loan-level analysis. The application of either performance data or origination data analysis means the loan-level analysis is likely to prevail in times of stable or strong performance. However, in times of rapid performance deterioration, the performance-based loss projection is likely to prevail. Both analyses are performed where credit enhancement from loan-level analysis and loss projection converge. For example, in the case where the credit enhancement for 'AAA' rated notes is 10%, the historical losses to-date is 0.1%, and the portfolio is 80% through its life with effective credit-enhancement available of 20%, there is little value in estimating projected losses. If the losses to-date is 8%, for example, it may be more meaningful to compare projected losses using a back-loaded loss curve to credit enhancement of loan-level analysis. The availability of loan-level data on a periodic basis is critical for this analysis, and all Australian servicers are able to provide the data.

125. Historical observations provide the basis for the estimation of the time it takes for a loan to move through the different delinquency stages and into foreclosure, and the length of time it takes to sell a foreclosed property. Expected lifetime losses are the sum of losses to date, plus future losses from some portion of the loans that are current or delinquent. Project losses factor in loans currently delinquent, an estimate default from the pool factor and remaining term of the pool, and timing of default (or default curves).

126. In assessing performance data to project expected-losses, various default curves are applied to each transaction we monitor to project future loan defaults. The analysis involves projection of future defaults and, therefore, losses, from information on a security's pipeline of delinquent loans, the pool factor, and default curves. The estimation of total lifetime losses for that transaction involves applying estimated-loss severities against those projected defaulting loans. For delinquent loans, the following roll rate assumptions apply:

- 25% of loans 30-59 days delinquent will default and result in losses;
- 50% of loans 60-89 days delinquent will default and result in losses; and
- 100% of loans 90-days or more delinquent will default and result in losses.

127. Default curves used in loss projection represent vectors of growth rates as a function of time. Given a specific transaction's current age, the amount of loans in foreclosure and the dollar amount of repossessed properties, the growth factors from appropriate product and vintage-specific default curve are used to estimate the foreclosure levels in future periods. The loss-projection method assumes the repossessed properties are liquidated over eight months, with an estimated-loss severity estimated based on these criteria. The foreclosure frequency projection is based on the foreclosure amounts, the loans' seasoning, and the default curves, as explained above. Some proportion of these projected foreclosure amounts are liquidated each future period. Generally, the projection method assumes monthly liquidations equal to one-fifteenth of the foreclosure amount for subprime and nonconforming portfolios, and one-eighteenth for prime portfolios. The sum of the foreclosure losses equals the loss for each period. The transaction's projected lifetime loss is the sum of the expected future loss and the loss incurred to date.

128. Surveillance analysis uses a package of alternative default curves differentiated by products, and loan characteristics are used. The alternative curves address the inherent unpredictability of the timing of losses and reflect the possibility that defaults and losses may be more front-ended than assumed, or they may be more back-ended. Each of these alternate scenarios yields a different loss expectation and affects rated RMBS differently because of the timing shifts. These alternate default scenarios, coupled with multiple prepayment scenarios, provide a range of projected losses. In addition, the loss-projection method estimates the uncertainty around loss projections and sensitivity of projected losses under various scenarios.

Appendix I. BACKGROUND AND CONTEXT FOR CRITERIA REVIEW

129. The criteria development takes into account the homogenous nature of housing-loan portfolios, the availability of industry-level data, and a variety of other factors that we analyze to provide supporting data and trends, including:

- Macroeconomic factors. For example, the domestic and global economies, the legal and regulatory framework, population demographics, the changing dynamics of the housing and residential property markets, lending product development and innovation, the Australian LMI industry, and consumer behavioral trends.
- Lender-specific factors. For example, the lender's experience and performance in the residential mortgage loan market, the credit risk philosophy of each lender, the risk-management, compliance, and internal-control framework, financial strength, whether or not the lenders are regulated and by whom, and the relationship with lenders mortgage insurers.
- Portfolio factors. For example, diversification and concentration risks in the pool, the origination practices and the roles of the referral sources, valuation policies and the approach to managing recoveries, and the quality of lenders' underwriting and servicing policies, standards, and procedures.
- Loan-level factors. For example, the characteristics of the borrower, loan products, security property, and LTV ratio.

A. DIFFERENCES IN MACROCECONOMC BACKDROP AND STRUCTURAL FACTORS UNDERSCORE HOUSING SECTOR PERFORMANCE DIFFERENTIAL

130. The performance of RMBS and their underlying housing loan portfolios varied significantly across global markets and sectors during the recent global financial crisis and economic downturn. These events provide an invaluable opportunity for observations and insights into the sometimes complex interplay between various factors that drive

mortgage loan defaults and losses, as well as a better understanding for differences between markets. The disparity in RMBS performance across different markets through the recent global economic downturn may be attributable to differences in:

- Prevailing macroeconomic conditions and property market dynamics;
- Legal and regulatory frameworks and environments;
- Incentive structures and alignment of interests at both the borrower and lender levels that influence behaviour; and
- Differences in the average credit quality of the securitized housing loan portfolios.

131. Although Australian RMBS and housing market performance deteriorated somewhat during the recent global financial crisis and economic downturn, the sector's performance remained largely resilient. This mainly reflected the more favourable local macroeconomic conditions, population demographics, and other property market dynamics that supported both borrower affordability and property prices. Notwithstanding this favorable performance, certain market segments underperformed our expectations, which this criteria update seeks to address.

1. Recent Performance Re-Emphasizes Observations From Past Downturns

132. Although the Australian market did not experience as severe a downturn as other markets, the events of the past few years have demonstrated that the Australian market is not necessarily totally immune to such risks, particularly an economic downturn.

133. There are global and local mortgage performance observations from past economic downturns that have been re-emphasized by recent experience, including:

- Underlying mortgage stress can be understated or masked in a strong or stable economic and property market environment. This is because mortgage stress is more likely to manifest itself into mortgage prepayments through the voluntary sale of the security property without loss as the borrower chooses to self-manage out of the stress situation. When macroeconomic, property, and loan market fundamentals are weaker, the borrower may lose this flexibility to self-manage; the more likely outcome may be mortgage default, possession, and forced sale of the security property at a loss by the lender.
- Worsening macroeconomic conditions can trigger several events that may influence a borrower's ability to service mortgage loans. These events include increasing unemployment rates, decreasing disposable incomes due to reduced hours, reduced commissions and bonus payments, decreased cash flow from investments or business ventures, reduced equity in assets including the security property, and increased stress on health and relationships. Furthermore, these factors tend to converge and escalate the likelihood of default in periods of severe economic downturns; hence, housing loan performance can be expected to follow a non-linear path as the level of economic stress increases. This gradient appears to steepen significantly when higher-risk borrowers are coupled with higher-risk product features.
- Deteriorating macroeconomic conditions accompanied by house price depreciation, declining turnover of housing stock, reducing equity in the security property, and a lender's tightening underwriting criteria can further undermine a borrower's financial flexibility and ability to manage financial difficulties through loan refinancing to more favorable terms or through the voluntary sale of property.

2. Relevance Of Global Observations To Australia

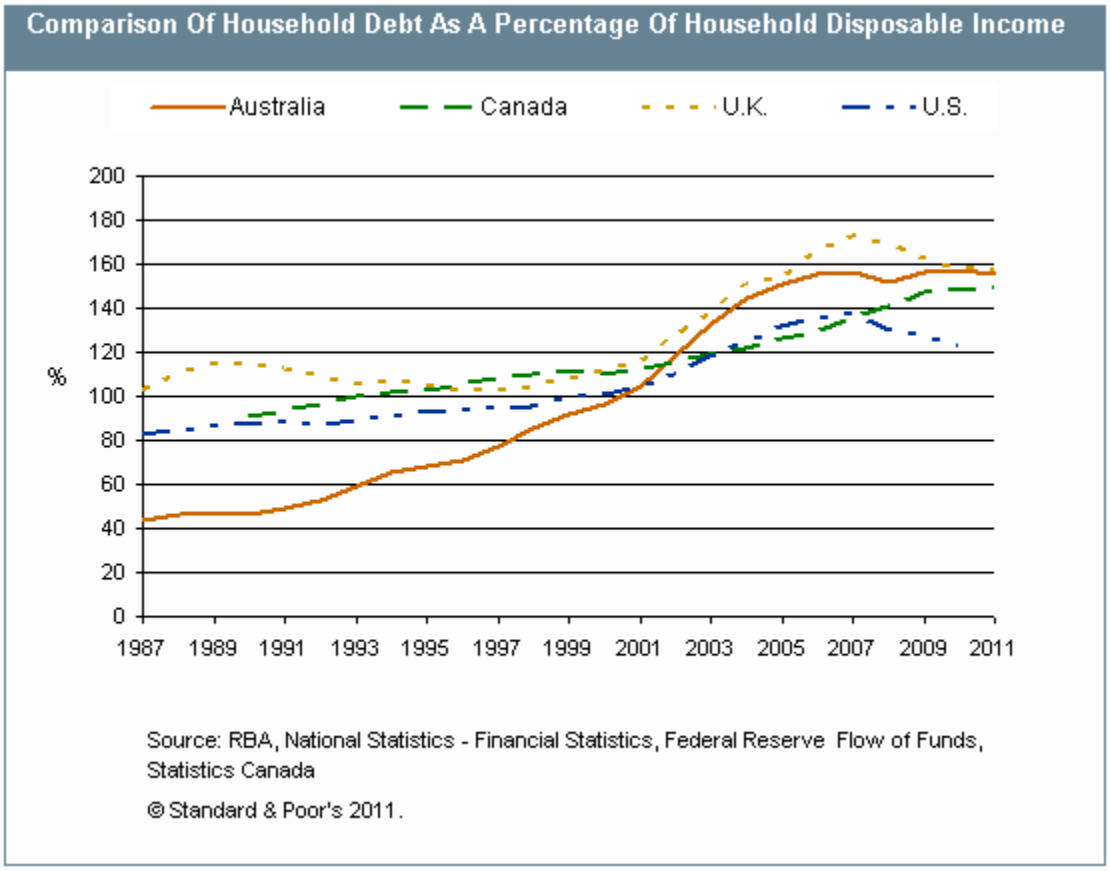
134. Observations from recent economic downturns are particularly relevant to Australia because of the lengthy period of the benign-to-positive macroeconomic, demographic, and property market conditions that have characterized the market for nearly two decades. This in part conceals an increasing level of financial vulnerability of Australian borrowers to severe economic downturns, particularly in light of rising household indebtedness (see chart 9), rising living costs, and strong property price appreciation (see chart 8) -- as seen in other countries such as the U.S. and the U.K. These factors may increase the possibility of a pronounced property market correction -- as seen in other markets -- if the current macroeconomic or credit market conditions deteriorate significantly. Australia's economy is currently in a sound position, aided by the high demand of commodities from the country's trading partners, including China and India. This economic position, coupled with general household deleveraging and a gradual softening of property prices, may lead to a softer landing should the Australia economy experiences economic adversity as a result of current uncertainties in the recovery of global economies (see "Outlook Assumptions For The Australian Residential Mortgage Market", Sept. 2, 2011).

135. Developments in the Australian housing market over the past two decades have not been tested through a severe economic downturn. Evident thus far, however, are reduced housing affordability and reduced home ownership. Tempered by the prudential benefits of greater regulatory oversight, Standard & Poor's believes an economic downturn similar to the early 1990s may result in higher mortgage defaults than was experienced at that time.

136. Standard & Poor's believes it is appropriate to consider observations from markets where the risks of certain characteristics have emerged due to the level of economic stress being experienced in those markets. To date, these risks remain latent in Australia due to the country's currently favorable macroeconomic environment.

Chart 8

Chart 9



B. STRONGER MARKET FUNDAMENTALS ARE LIKELY TO CURB ESCALATION OF MORTGAGE DEFAULT

137. Although future losses could be worse than historical Australian data may suggest, Standard & Poor's believes an escalation of mortgage default is mitigated due to strong market fundamentals and the relatively prudent credit culture prevalent in Australia's housing loan market. Some of the distinguishing characteristics of the Australian housing loan market include:

- Australian housing loans contain full-recourse provisions that allow lenders to pursue defaulted borrowers to personal bankruptcy (a right that Australian lenders actively pursue). This gives borrowers incentives to limit borrowing to what they can afford to repay, to sacrifice other spending choices to maintain loan repayments, and to deleverage as quickly as possible to avoid personal bankruptcy when experiencing financial difficulty. We believe that the more severe consequences of default do not only influence Australian borrowers' behavior at the time of default, but also influence the borrowers' decision at the time the loan is entered into, as well as their payment behavior throughout the loan term.
- About 70% of Australian housing loans are extended to owner-occupiers, who have tax incentives to redirect excess cash flow to pay down their home loans as quickly as possible. This is because owner-occupier home-loan interest payments are not tax deductible; on the other hand, income from investment earnings and savings are

taxed at a borrower's marginal tax rate. This means the most efficient action for most borrowers is to pay down the home loan, ahead of putting money into investments or savings accounts. For this reason, many home-loan borrowers utilize mortgage offset accounts, and Australian home loans typically include a mortgage redraw facility.

- The Australian consumer credit code contains provisions that put the onus on credit providers to demonstrate that borrowers can afford to repay their loan. This has encouraged a distribution of debt on a national aggregate basis to households that can service it, and in part explains the very small and immature sub-prime and otherwise non-conforming loan sector in Australia. When compared with the U.S. and most civil law jurisdictions, Australia has a relatively lender-friendly common law legal regime, which allows for predictable and timely realization of defaulted loans.
- The widespread role of the regulated lenders mortgages insurance (LMI) providers, not only in providing mortgage insurance, but in providing an additional layer of underwriting risk assessment before loans are entered into. In particular, the presence and operating models of the two largest and most established LMI providers, Genworth Mortgage Insurance and QBE Lenders Mortgage Insurance has, in Standard & Poor's opinion, led to overall higher credit quality and less performance variability among smaller lenders and new non-bank entrants than may have been the case absence their involvement in the industry.
- In Australia, loans are readily identifiable with the lender that originated the loan. There is limited whole loan sale activity, pooling, and aggregating of loans from different lenders, and the underlying originators are clearly disclosed in securitizations. This is somewhat different to the experiences in the U.S. originate-to-distribute model. In Standard & Poor's view, the visibility of the lender increases reputational risk and promotes less-aggressive lending practices.

138. Borrower behavior and the decision to default can be influenced by two key variables: affordability (capacity to service debt) and the equity position in the security property. We believe that the credit culture and full-recourse nature of Australian housing loans results in borrower behavior being predominantly motivated by affordability considerations. Higher debt levels or leverage, coupled with rising interest rates and fewer refinancing alternatives, are currently having an impact on Australian borrowers. This is visible in marginal increases in arrears, although we note that this is not translating into default and losses. Over the longer term, defaults in Australia tend to be largely influenced by triggers such as unemployment, divorce, and health-related issues. It is not common in the Australian context for a borrower to decide to default based primarily on the outstanding mortgage debt being greater than market value of the property. This differs to the U.S. experience, where differences in credit culture and the provision or enforcement of lender recourse rights may contribute to the equity position in the security property being a more significant driver for default in the U.S., irrespective of whether the borrower can currently afford to pay the loan or not.

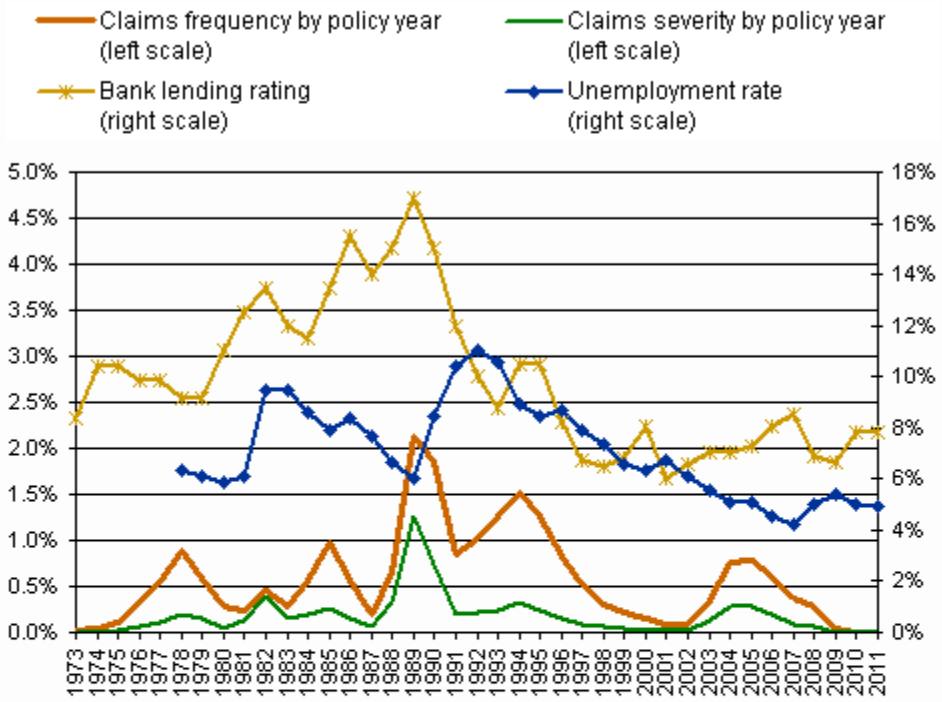
C. RESEARCH SUPPORTING THE CRITERIA DEVELOPMENT

139. Australian RMBS criteria development makes extensive use of the industry level mortgage default and loss-time series and cross-sectional data from LMI providers. This data looks back over five decades and captures experience from two recessions and three economic slowdowns (see chart 10). Furthermore, due to the absence of local data through a period of severe economic stress, as new products such as nonconforming, subprime and low documentation loans have emerged in the Australian market, data from the U.K. and U.S. has been used as comparison points to shape the criteria after giving consideration to the differences in market structure and the

operating environment.

Chart 10

Australian Lenders Mortgage Insurance Claims History



Source: QBE LMI, Genworth, Standard & Poor's, Australian Bureau of Statistics.

Notable periods:
- Loans underwritten in 1973, 1980, & 1985 immediately precede sharp rises in lending rates.
- Loans written after 1989 have long period of cuts in lending rates with moderate rises along the way.
- Property prices spike in 1978, followed by a correction in 1989 & record high interest rates. After 1989, property prices increase, coinciding with a long period of lowering of lending rates from 1996; property prices rise exponentially, with corrections in 2004, 2008, & 2011.
- Australia experiences 2 recessions: 1 in the early 1980s & 1 in the early 1990s.
- Stock market crashes in October 1987, & more price volatility in the past decade.
- Since 2008, global financial crisis & economic slowdown have modest impact on Australian economy.
- Late 2010 & early 2011, Australia experiences severe weather conditions throughout the country, impacting home owners.

140. As the Australian RMBS market has grown, Standard & Poor's has accumulated loan-level data for portfolios underlying Australia RMBS. This includes performance data for nonconforming, subprime, and low-documentation loans, which were the first group of borrowers to experience financial stress as the global economic slowdown filtered through to Australia.

141. The comparative analysis to markets such as the U.S. and the U.K. suggests that Australian housing loans could perform better under moderate stress scenarios akin to the early 1990s recession; however, performance data is not available in Australia through extreme-stress scenarios representative of a 'AAA' rating. Standard & Poor's criteria

for a 'AAA' rating envision extreme economic stress on par with the conditions of the Great Depression as it was experienced in the U.S. for developed markets (see "Understanding Standard & Poor's Ratings Definitions," June 3, 2009). In this instance, we refer to the experience observed in the U.S. as the starting point and arrive at a credit-enhancement level that will withstand the test of extreme stress based on our view of market differences. We have eliminated differences that are temporary in nature--for example, first-home owner grants.

142. The resultant differential was further assessed against extrapolated potential losses from Australian LMI data as well as available field research for reasonableness. The extreme macroeconomic stress-level comparability analysis is the cornerstone of the criteria recalibration to enhance the rating comparability objective as articulated in "Understanding Standard & Poor's Ratings Definitions," June 3, 2009.

143. In contemplating an Australian stress scenario to approach 'AAA' stress conditions, the 1930s depression as it affected Australia may be less appropriate than the 1890s depression, which combined both a financial system failure with a severe economic downturn. This is more consistent with how the 1930s depression was experienced in the U.S. As a consequence of the 1890s experience, Australia's financial system was in a stronger position to withstand the severe economic downturn of the 1930s depression. In the U.S., on the other hand, it was the 1930s depression that combined both a financial crisis with a severe economic downturn.

144. Given the relative youth of Australia as a nation at the time of both the 1890s and 1930s downturn, the small size of the population, and the significant subsequent structural changes to the Australian economy, limited data is available for examination, and may be of limited relevance in the current context. A Reserve Bank of Australia discussion paper (1999-06) released in June 1999 titled "Two Depressions, One Banking Collapse", cited several conditions in the lead up to the 1890s depression that still resonate today, including:

- Sustained increase in private investment associated with extraordinary levels of building activity and intense speculation in the property market;
- Rapid credit growth, fuelled in part by substantial capital inflows from London (much of which appears to have been channeled through financial intermediaries);
- Banks allowing their level of risk to increase in an attempt to maintain market share in the face of greater competition from a proliferation of new non-bank financial institutions; and
- An increase in lending for speculative purposes and a property price bubble.

Appendix II. COMPARABILITY BETWEEN AUSTRALIAN AND U.S. RMBS CRITERIA

145. Although differences exist between the Australian and the larger U.S. market in terms of product features, data, and market, it is appropriate to compare the two markets.

146. This section sets out a comparative analysis performed between the Australian and U.S. RMBS criteria, which Standard & Poor's consider may be helpful. The U.S. housing market has been one of the most affected market in this economic downturn, and U.S. RMBS criteria was the first to be updated and calibrated in line with 'Understanding Standard & Poor's Rating Definition' published June 3, 2009.

147. As criteria for other RMBS markets are calibrated to the global RMBS analytical framework, further comparability analysis is provided where relevant and meaningful.

A. PORTFOLIO COMPOSTION COMPARISON

148. There are differences in the composition of the archetypical pool between the two countries, as well as the credit-enhancement adjustment factors for loan pool characteristic deviations from the archetypical pool when compared to other markets such as the U.S. These differences stem from differences in lending practices, loan products, and the form of information available. For example, some notable differences between the housing loan market in Australia and the U.S. include:

- Australia does not have FICO scores, which are the generic measure of borrower credit quality in the U.S. The focus in Australia for borrower credit quality is on factors such as employment type and credit-history verification. Credit-history verification in Australia is confined to adverse performance because of privacy law restrictions that prevent positive credit reporting. Accordingly, criteria adjustment factors that reduce credit-enhancement in the U.S. are not utilized in Australia due to information limitations.
- Discretionary variable-rate loans are the standard or typical loan product offered in Australia. This is different from the U.S. norm of fixed-rate loans. The performance history observed in Australia, therefore, reflects predominantly the performance of variable-rate loans. The lending practices in Australia recognize and account for borrower exposure to interest-rate changes, and assess a borrower's serviceability (or capacity to pay) by factoring in potential interest-rate increases as a buffer for payment obligations.
- The property type in the U.S. archetypical pool is limited to single-family detached primary residences and planned unit developments. For the Australian archetypical pool, property types include primary residential property (may be detached or semi-detached), townhouses, strata-title flats (¶84), apartments, and units (excluding high-density apartments and hobby farms). Although data in the U.S. suggest loans with different property types have different likelihoods of default, this is not observed in Australia. Instead the credit-enhancement adjustment factors are built around the data available supporting different default rates for inner city high-density apartments, hobby farms, and metro/non-metro locations, as well as different loss severity for certain properties (see adjustment factors for loss severity in ¶¶115–118).
- A snapshot of Standard & Poor's observations from more than 700,000 loans in mortgage loan pools underlying Australian RMBS have allowed comparison of characteristics of Australian securitized mortgage pools to the data set used to develop the U.S. RMBS criteria. Table 25 highlights two key differences between the Australian and the U.S. RMBS markets. The first is the significant impact the agency lenders, Fannie Mae and Freddie Mac, have on the composition of the U.S. RMBS market, which in effect is a biased sub-set of the aggregate U.S. housing loan market given it comprises loans that largely fall outside the dominant agency lenders criteria. This is markedly different to the Australian context, where the RMBS market represents a more representative sample of the broader housing loan market. The second key difference is the significant contribution of sub-prime and otherwise non-conforming loans to the U.S. RMBS sector, in marked contrast to the Australian RMBS and broader housing loan markets.

149. Although the characteristics of pools underlying Australian RMBS demonstrate a stronger credit profile, which partly explains the stronger performance to-date, the portfolio has not experienced the same array of economic scenarios (from a generally favorable to a more-stressful environment) as the U.S. loan pool.

Table 25

A Snapshot Of Characteristics Of Securitized Loans In Australia And The U.S.

Pool characteristics	Australian data set	U.S. data set
Adjustable rate loans	82%	55%
Purchase underlying home	74%	42%
Full documentation	95%	42%
Prime jumbo*	4%	13%
Prime conforming	95%	15%
Subprime and nonconforming	1%	72%
Credit profile	No adverse credit profile	FICO score (min. 300, max. 825, and average 673)
Current LTV	61%	83%
Original term (months)	285	349

*Jumbo loan assumption: a loan that is greater than A$700,000. LTV--Loan-to-value ratio.

B. SIMILARITIES AND ALIGNMENT

150. A number of adjustments in the Australian RMBS criteria that are the same as the U.S. criteria include:

i. No minimum payment in eligibility criteria.

ii. No loss-severity floor.

iii. Borrower's deposit money (or savings history) are verified.

iv. The small pool-size adjustments.

v. Current delinquency status of the loan adjustments.

vi. Loan-to-value ratios adjustments for the archetypical pool borrower.

vii. Treatment of seasoned low- and no-documentation loans.

viii. Fixed-rate feature of amortizing loans.

ix. Balloon loans.

x. Negative amortizing loans.

xi. Loan term.

xii. Loan seasoning (although reduction in credit enhancement due to seasoning is not applied to Australian loans that do not gain equity [¶¶81–82]).

151. There are some adjustment factors applied to Australian RMBS to capture risks relevant to Australia only. These include:

- Borrower residency;
- First-time home buyer;
- Employment status and self-employment status; and
- Lender-level analysis.

C. WHERE A DIFFERENT APPROACH IS NECESSARY

152. In cases where the characteristics of information available regarding borrower behavior are markedly different, a different analytical approach is necessary. In some of these cases, direct comparisons may be challenging For example:

- Adjustments for geographic concentration due to differences in population size and geographic distribution in two countries;
- Adjustments for borrower credit profile, employment status, and self-employed borrowers due to absence of FICO scores in Australia;
- Adjustments for investment loans due to the difference in market environment and performance history;
- Adjustments for payment terms and loan purpose (¶¶69-76) due to differences in market practices and product differences;
- Adjustments for documentation standard due to differences in practice and data;
- Adjustments for lender-level analysis due to differences in practice and data; and
- Surveillance approach and adjustments for property prices movements due differences in the housing market and economic cycle.

1. Geographic Concentration

153. The Australian population and economic zones are concentrated in a few major urban areas and is mainly distributed along the eastern seaboard. This is quite different to the U.S., which has a significantly larger population and has loans distributed across 387 metropolitan statistical areas (MSAs). As a result, the Australian RMBS criteria apply adjustments to estimated-losses for excess geographic concentration in states, nonmetropolitan areas and postcodes to more appropriately associate the measure of economic diversity with Australian loss estimates. The U.S. criteria, on the other hand, utilize the Herfindahl-Hirschman Index as a more suitable measure of concentration risk and make adjustments for excess geographic concentrations accordingly (¶¶62–71 of U.S. RMBS Criteria).

2. Borrower Credit Profile

154. In Australia, the "Privacy Act" regulates the use of consumer credit information. The Act prevents a credit provider from disclosing the satisfactory credit performance of a borrower to a credit-reporting agency. In Australia, therefore, information available from an agency is confined to adverse credit history, credit enquiries made by prospective borrowers, defaulting accounts, court judgments, or bankruptcies. In the U.S. and Canada, details of current financial commitments, available credit limits, and the satisfactory or adverse payment history of a borrower are available to subscribers to credit-reporting agencies.

155. As a result, unlike the U.S.--where FICO scores are used as a key measure of borrower credit quality--Australian credit reports are not available to differentiate borrower credit quality if there have not been any adverse credit events. To supplement collateral risk analysis, Australian criteria adopt a number of borrower profile information that may impact the income and cash flow stability of the borrower, as well as the borrower's potential mortgage payment behavior. For example, employment status is a key consideration in Australian criteria, but is not applied to U.S. mortgage pools. Although FICO scores do not explicitly reflect employment information, FICO assigns the

largest weight (35%) to income history, which may indirectly reflect employment stability.

156. These measures aim to capture credit information. In the U.S., a borrower's credit information is captured by the following components of FICO scores (5):

- Borrower payment history (accounts for 35% of the FICO score--for example, late payments and bankruptcy are negative);
- Amounts owed by the borrower (30% of the FICO score);
- Length of borrower credit history (15% of the FICO score);
- Borrow with new credit (10% of the FICO score); and
- Type of credit used (10% of the FICO score).

157. In contrast, a borrower in the U.S. archetypical pool has a FICO score of 725 (and the loan has an LTV of 75%). Borrowers with FICO scores above 725 are positively differentiated with an adjustment factor of ranging from 0.97x to 0.7x to reflect their stronger capacity to pay. Borrowers with FICO scores below 725 attract an adjustment factor of 1.02x to 3.11x to reflect their weaker capacity to pay (¶50 in U.S. RMBS Criteria). Australian criteria do not make any adjustments below 1.0x due to the absence of positive credit profiling in Australia.

158. For comparison purposes, the Australian borrower credit profile adjustment factors for employment status and borrower credit history are compared to the U.S. FICO score adjustment factors at an LTV ratio of 75% to highlight the credit score that aligns with a similar adjustment factor (see tables 26 and 27).

159. Despite that, direct comparison with U.S. credit-enhancement adjustment factors is difficult due to differences in the data relating to borrower credit profiles. Tables 26 and 27, which show the principle of adjustment for risk, demonstrate that the greater the uncertainty associated with a borrower's employment and earning stability, the greater the adjustment factor. These tables highlight that the archetype borrower for an Australian archetypical pool is a PAYG borrower; for the U.S., it is a borrower with a FICO score of 725. Furthermore, an Australian unemployed borrower adjustment factor reflects significant incremental risk compared to a borrower with another employment status. This compares U.S. borrowers with the lowest scores, although FICO scores do not directly reflect employment status of a borrower.

160. Tables 26 and 27 show comparisons of borrower employment status with FICO score adjustments only. These comparisons show relative risk assessment between markets; it does not suggest what the FICO score should be for borrowers with different employment status.

Table 26

Adjustments For Employment Status Compared To U.S. Factors At 75% Loan-To-Value Loans

Employment status	Australian adjustment factors	U.S. FICO adjustment factors	U.S. FICO
PAYG – Full time & part time	1.00x	1.00x	FICO = 721 to 725
PAYG – Casual	3.00x	2.97x	FICO = 501 to 505
Commission – based	2.00x	2.00x	FICO = 556 to 560
Pension	1.50x	1.50x	FICO = 636 to 640
Over 65	1.50x	1.50x	FICO = 636 to 640
Unemployed	4.00x	3.11x	FICO < 500

Table 27

Adjustments For Self Employed Borrowers Compared To U.S. Factors At 75% Loan-To-Value Loans

Self employed for:	No Doc loan	Standard, Low Doc, and other loans	U.S. FICO adjustment factors	U.S. FICO
< 1 year	3.20x	3.00x	3.11x	FICO < 500
>1 year < 2 years	2.50x	2.00x	2.50x	FICO = 521 to 525
> 2 years < 3years	2.00x	1.50x	2.00x	FICO = 556 to 560
> 3 years < 4 years	1.50x	1.20x	1.50x	FICO = 636 to 640
> 4 years < 5 years	1.50x	1.20x	1.50x	FICO = 636 to 640
> 5 years	1.00x	1.00x	1.00x	FICO = 720 to 725

PAYG--Pay as you go. No Doc--Loans with no documentation. Low Doc--Loans with low documentation.

3. Prior Credit Events Comparison

161. Although adjustments for borrower credit profiles in the U.S. RMBS criteria are based on the FICO scores, such information is not available in Australia. Instead the Australian RMBS criteria use prior credit events as well as past delinquencies data to adjust estimation of losses. Tables 28 and 29 show comparisons of borrower prior credit events and past delinquencies adjustments with FICO score adjustments. These comparisons show relative risk assessment between markets; it does not suggest what the FICO score should be for borrowers with prior credit events.

Table 28

Adjustments For Prior Credit Events Compared To U.S. Factors At 75% Loan-to-Value Loans*

Borrower credit history (no. of credit events)	Adjustment factors	U.S. FICO adjustment factors	U.S. FICO
0	1.00x	1.00x	FICO = 721 to 725
1	2.50x	2.50x	FICO = 521 to 525
2 or more	3.00x	2.97x	FICO = 501 to 505

*These adjustment factors are compared to U.S. FICO score adjustment factors at an LTV ratio of 75% for comparability assessment.

Table 29

Adjustments For Arrears For Subprime And Nonconforming Loans (With No Credit Events) Compared To U.S. Factors At 75% Loan-to-Value Loans *

Times in arrears in past 12 months	Adjustment factor	U.S. FICO adjustment factors	U.S. FICO
up to 1	1.00x	1.00x	FICO = 721 to 725
2	1.10x	1.10x	FICO = 701 to 705
3	1.20x	1.19x	FICO = 686 to 690
4	1.50x	1.50x	FICO = 641 to 645
5 or more	2.00x	2.00x	FICO = 521 to 525

*The adjustment factors are compared to U.S. FICO score adjustment factors at an LTV ratio of 75% for comparability assessment.

4. Documentation Standards

162. Differences in the Australian and the U.S. RMBS analytical approaches for documentation standards arise from differences in the extent of products being offered. In Australia, low- or no-documentation loans are offered to self-employed borrowers, and are in relation to income-verification standards. In the U.S., such products can be

offered to a broader borrower-base, and the reduced documentation standards are not limited to reduced income verification but also reduced employment or asset verification.

163. Therefore, the closest comparison to the U.S. is income-verification-related adjustment factors. From a data perspective, the U.S. documentation standard is based on a number of sources, which refer to the number of pay slips (see "Revised Assumptions For Rating U.S. RMBS Prime, Alternative-A, And Subprime Loans Incorporated Into LEVELS Version 7.3," June 1, 2011, and "Revised U.S. Residential Mortgage Input File Format, Glossary, And Appendices To The Glossary For LEVELS Version 7.3," July 22, 2011, for details and description of U.S. products and features). The differences in adjustment factors are not significant when compared at this level.

164. For illustration purposes only, if a loan extended to an unemployed person with no income information (this product does not exist in Australia), the adjustment factor will be 6x (= 1.5 x 4); this adjustment is the same as the U.S. 6x adjustment factor applied to borrowers with no income, asset, or employment information.

165. Market differences in available income-verification data necessitate a different approach between Australian and the U.S. The Australia criteria adopt the conceptual framework applied in the U.S. of applying a higher adjustment factor for lesser supporting information.

5. Loan Purpose - Refinance

166. In Australia, there has been no discernible difference observed in loan credit quality based on loan purpose. Accordingly, the criteria apply lower adjustments for loan purpose than those applied in the U.S. When assessing a loan refinancing from another lender, a new lender in Australia typically undertakes a full underwriting process with a reassessment of the security valuation in the same manner as for a purchase loan. This differs from other jurisdictions where lenders may not always undertake a full underwriting process, or where the underwriting process does not include a revaluation of a property before extending a refinance loan. In Australia, refinance loans that involve equity take-out are often used for home improvements that improve the property valuation. Nevertheless, a refinancing that involves debt consolidation or cash or equity take-out may increase the likelihood of default by the borrowers and the criteria apply adjustment factors of up to 1.2x.

6. Occupancy - Loans to Investors

167. Performance data in Australia shows Australian investment loans perform more favorably than the U.S. In part, this may reflect market and structural differences, such as the more stringent legal regime and dual underwriting with LMI providers. The criteria reflect this observation. The 1.1x adjustment factor applied in Australian RMBS criteria is similar to the 1.14x second-home adjustment factor and lower than investor property adjustment factors of 1.65x at a 75% LTV (the U.S. adjustment factors vary by LTV – ¶¶51–52 of U.S. RMBS Criteria) applied to the U.S. foreclosure frequency.

7. Loan Terms And Repayment Methods

a) Interest Type

168. Discretionary variable-rate loans are the standard or typical loan product offered in Australia. In the U.S., fixed-rate loans are the standard products, and adjustable rate loans (ARMs) are viewed as more risky products. Australian

variable-rate loans differ to the U.S. ARMs in a number of ways including:

- The demonstrated performance;
- The more stringent lending practices in Australia recognizing and account for borrower exposure to interest-rate changes (repayment shock);
- The motivation in product offering is more conservative as it is the standard product; and
- The higher prepayment rate and more rapid gain in equity position.

169. Although Australian criteria adjust for loans with a "teaser rate", the adjustment is at the low end of the U.S. range of 1.10x to 1.65x for adjustment factors applied to U.S. ARMs. The difference reflects the market practice in Australia of borrowers being assessed at a higher mortgage rate than the prevailing mortgage rate to determine a borrower's capacity to service a loan, even though a lower teaser rate is initially applied for a short period of time.

b) Loans With Payment Shock Risk

170. The criteria apply an adjustment factor of 3x for Australian bullet loans (see table 13). These loans, which are limited in Australia, tend to have a short term of five-to-10 years. The U.S. balloon loans with large residual LTVs (see table 15) are loan products with some comparable features. Balloon loans with large residual LTVs (> 90%) have adjustment factors between 2.5x and 3.5x, reflecting the refinancing risk concerned with bullet loans. Although the Australian criteria for balloon loans are the same as the U.S. criteria, the product variety articulated in the criteria is not observed in actual portfolios, with the exception of the bullet loans that have a similar risk profile; hence, the Australian criteria apply specific criteria for bullet loans.

171. For loans that have an IO-term to start with and then revert to PI-term, the amount of the adjustment depends on the degree of payment shock in each case (see table 14). This reflects our view that in Australia the longer the IO-term relative to the PI-term, the higher the risk of payment shock-related default. This risk differentiation results in adjustments between 1.1x and 3.5x. While the most common IO-term offered is less than five years in Australia, table 14 includes adjustments for those beyond five years. In comparison, the U.S. adjustment factor for interest-only loans that revert to principal and interest-amortizing loans is 1.55x for adjustable-rate mortgages (ARMs) and 1.7x for fixed-rate loans in the U.S., which do not differentiate in IO-term or remaining PI-term. The U.S. criteria apply adjustments for a variety of ARMs with different features, which is not applied in Australia; therefore, direct comparison of such risk assessment is difficult.

8. Loan Seasoning

172. The adjustment factors for loan seasoning are the same as the U.S. treatment of seasoning for the U.S. fixed-rate loans because they represent an archetypical loan type.

173. In the U.S., balloon loans with a term less than 15 years do not receive any adjustments, although adjustment factors for loan types other than fixed-rate loans (whether amortizing or interest-only) are lower than those in table 17. These differences in adjustment factors are attributable to our concerns of more limited refinancing options in Australia than the U.S.

9. High-Density Apartments

174. An adjustment factor of 1.25x applies (see table 30) to the foreclosure frequency for owner-occupied, high-density, inner city apartments. The closest comparison is the 1.2x applied to U.S. condominiums, cooperatives, and two-family homes. The higher adjustment factor in Australia reflects our view that inner city apartments in Australia are more volatile than similar property types in the U.S. due to the smaller market and, consequently, lower market liquidity. Given inner city is also excluded as a location from the Australian archetypical pool, an additional 1.2x adjustment factor is applied to capture the higher volatility of this property type in Australia; this results in a cumulative adjustment factor of 1.5x.

175. Although the U.S. approach applies adjustment factors to the foreclosure frequency depending on property types, in Australia adjustments are made to the loss severity based on the location of the properties. This is because data and research available in Australia tend to focus on differences in risk based on locality rather than property type. Default data from lenders do not show a meaningful correlation between foreclosure frequency and property types.

176. An adjustment factor of 1.5x applies to residential investment loans secured by high-density, inner city apartments. This results in a cumulative adjustment factor of 1.8x (1.5 x 1.2) compared to 1.98x (=1.2 x 1.65) for investments in U.S. condominiums and cooperatives. The modest difference reflects market differences.

Table 30

Adjustments For Security Properties

Security property characteristics:	Australian adjustment factors	U.S. adjustment factors
Residential property - detached, semi-detached, townhouses, strata title flats, apartments, and units	1.00x	1.00x – 1.20x*
High-density apartments (after adjusting for geographic concentration)		
--Owner occupied	1.50x	1.20x
--Investment	1.80x	1.98x
Full valuation from registered valuer	1.00x	1.00x

*The U.S. criteria adjust for each property type included under "Residential Property" because the specific property type is identified in the loan-level data tapes. In Australia, the data are not reported that finely; however, the criteria adjust the relative risk for the different property types through the loss-severity analysis based on loan size (see ¶¶115–118, and table 24).

10. Lender-Level Analysis And Adjustments

177. The principles of lender level analysis are the same as the U.S. RMBS (as published in "Standard & Poor's Enhanced Mortgage Originator And Underwriting Review Criteria For U.S. RMBS," Nov. 25, 2008, and supplemented by "Methodology For Seasoned Loans In U.S. RMBS Transactions," April 30, 2010, and "Standard & Poor's Updated Mortgage Originator And Underwriting Review Criteria For U.S. RMBS," May 5, 2010) The concept of ranking of originators and apply adjustment based on the ranking is similar to the U.S. approach (see "Standard & Poor's Enhanced Mortgage Originator And Underwriting Review Criteria For U.S. RMBS," Nov. 25, 2008, for details of the U.S approach).

178. Under Australian criteria, explicit adjustment factors are built in at the portfolio or lender level to account for some factors that cannot be addressed quantitatively (as they are in U.S. criteria). This includes the debt-servicing assessment performed by the lender and the valuation approach (such as the establishment and maximization of the realizable value of the security property).

179. In the U.S. and Australia, origination, underwriting, and servicing quality are factored in using a qualitative approach. This qualitative approach to some risk factors is necessary in Australia, given that information is not available to be captured at the loan level. For example, many Australian lenders have moved away from using debt-to-income (DTI) ratio measures to assess a borrower's capacity to service loans, and have adopted the net-surplus ratio (NSR) measure. The DTI data are not readily available on a loan-by-loan basis, and NSR is a pass-or-fail assessment, which necessitates analysis of a lender's portfolio approach to assessing borrower serviceability as articulated in documented credit policies. This drives a qualitative adjustment factor applied on a pool-wide basis that adjusts the credit enhancement at the portfolio level. In the U.S., DTI data if provided are assessed at the loan level and the credit-enhancements are risk-adjusted for this factor at the loan; this is overlaid with a qualitative assessment of an originator's methodology for calculating debt-to-income ratio as part of the originator underwriting practice assessment (see page 6 of "Standard & Poor's Enhanced Mortgage Originator And Underwriting Review Criteria For U.S. RMBS," Nov. 25, 2008.)

180. Although the principles of the debt-servicing assessment of the borrowers are the same, the Australian approach is different to the U.S. approach due to the differences in data available. The U.S. criteria apply an adjustment of 0.8x to credit enhancement for a DTI ratio below 25%. For loans with DTI ratios that are greater than 25% but less than 60%, adjustment factors are derived from a continuous function, set to equal to 1.0x at 36% and reach 1.8% at 60% DTI and higher (¶61 of U.S. RMBS Criteria).

181. Although the Household, Income and Labour Dynamics in Australia (HILDA) Survey December 2010 release found that the medium debt-servicing ratio in Australia (the percentage of household disposable income required to service actual principal and interest payments on an owner-occupier mortgage) was about 21%, such data is usually not available at the loan level in Australian RMBS. Therefore, the adjustment factors in table 20 are applied across the portfolio, with limited scope for adjustments below 1.0x.

182. Similar to the U.S. approach articulated in "Standard & Poor's Enhanced Mortgage Originator And Underwriting Review Criteria For U.S. RMBS," Nov. 25, 2008, the historical performance of an originator's loans relative to other originators forms part of the lender level analysis. The lender-level performance analysis for Australian RMBS is evaluated at the transaction level rather than by vintage or by product. This analysis is supplemented by an issuer's mortgage pools' historical losses and arrears percentages benchmarked against the industry average – the Australian Standard & Poor's Mortgage Performance Index (SPIN). In the U.S.--given the diversity of issuers, products, and vintages--performance analysis may be broken down to a more detailed level.

183. The Australian approach to assessing underwriting brings together all of the factors outlined in page 5 and 6 of "Standard & Poor's Enhanced Mortgage Originator And Underwriting Review Criteria For U.S. RMBS," Nov. 25, 2008.

11. Surveillance

184. The Australian criteria apply a worst-of pool performance data (portfolio-level) and origination data (loan-level) analysis in monitoring ratings performance throughout the life of transactions. This is unlike the U.S. approach, where a performance-based approach prevails after a certain period (¶¶36–45 of the U.S. RMBS Criteria).

185. The performance-based surveillance adopts the U.S. methodology, although we expect differences in default curves and prepayment rate behavior in two different countries based on the market fundamentals and circumstances at the

time.

186. Australian RMBS criteria introduce HPI adjustments for monitoring the ratings by analyzing the impact of changes in property prices on the credit quality of the portfolios underlying RMBS.

187. This differs to the approach in the U.S., where Housing Price Index (HPI) and Housing Price Volatility Index (HVI) adjustments are used in the credit-enhancement estimations and the determination of ratings. Given house prices in Australia have experienced an exceptional protracted period of appreciation, incorporating HPI adjustments in the current unique environment in Australia may result in giving too much credit to what could be an over-valuation. At the same time, incorporating HPI adjustments may introduce volatility in credit-enhancement estimations when some downward adjustments may be expected.

188. Unlike the U.S. approach, the current property values are not used to re-estimate Australian's current LTV for foreclosure frequency estimation. Given our observation of Australian borrowers suggests that capacity to pay/service debt tend to drive their behavior, this position is not likely to fluctuate from quarter-to-quarter based on property price movements or LTV. In the Australian market, where lenders have full recourse to borrowers, mortgage loans are less likely to be treated like a put-option; hence, the unadjusted current LTV is a more stable indicator of default where only physical repayment contributes to a reduction in current LTVs.

189. Similar to the U.S. approach, loss severity takes into account the selling and legal costs and lost interest, although the U.S. apply a far more detailed breakdown of liquidation and legal costs per state due to more uniform observable data.

Appendix III. CALCULATION OF PORTFOLIO CREDIT-ENHANCEMENT

190. Credit enhancement of a portfolio for a particular rating outcome (for example 'AAA') is the estimated loss for a portfolio. The components of the credit enhancement are foreclosure frequency and loss severity. Our model computes credit enhancement by aggregating the estimated loss for each loan based on their characteristics and expressing the outcome as a percentage of the total outstanding balance (see equation 4).

Equation 4

$$CE_{portfolio} = \frac{\sum_{i=1}^{n} FF_i \times LS_i \times LoanBalance_i}{\sum_{i=1}^{n} LoanBalance_i}$$

Where:

$CE_{portfolio}$ denotes the credit-enhancement for a portfolio at a particular rating level expressed in percentage terms

i denotes loan identification number. Loan identification of i to n represent all loans in the portfolio included for credit-enhancement calculation

FF_i denotes foreclosure frequency for loan i

LS_i denotes loss severity for loan i

$LoanBalance_i$ denotes current loan balance for loan i or approved limit for a line of credit

191. The foreclosure frequency for a loan in a pool consisting more than 250 loans is the product of adjustment factors applicable to the loan based on its characteristics and necessary portfolio adjustment and the foreclosure frequency for the archetypical pool at a particular rating level (see equation 5).

Equation 5

$$FF_{Loani} = \left(\prod_{j=1}^{m} AF_j \right) \times FF_{BM}$$

Where:

FF_{Loani} denotes the foreclosure frequency of loan *i*

j denotes adjustment factor identifier for a loan characteristic that departs from the archetypical pool feature, and j to m mean there could be more than one adjustment factor

FF_{loani} denotes foreclosure frequency for loan *i*

AF_j denotes adjustment factor *j*

FF_{BM} denotes archetypical pool foreclosure frequency (e.g. at 'AAA' rating level, = 10%)

192. A simplified example would be assuming a 80% LTV variable-rate loan with 3.5 years seasoning to a repeat-home buyer, where the borrower is self-employed for three year at the time of origination; in this example, apart from a declaration of loan affordability, no other income verification was undertaken, and all other features are consistent with archetypical pool characteristics. For this loan, the criteria adjust the foreclosure frequency as shown in table 31. The same adjustment factors apply at all rating levels, and the maximum foreclosure frequency is 100%.

Table 31

An Example Of Adjustment Factor Application

Characteristics	Adjustment factor
Seasoning	1.0x (see table 17)
Self-employment status	1.5x (for adjustments for borrowers with 4.5 years of self-employment, see table 6)
Income verification	1.0x (income verification factor reduces to 1.0x after 6 years of demonstrated payment track record; see ¶68)
LTV adjustment factor	1.1x
Overall adjustment factor	1.65x (=1.0 x 1.5 x 1.0X1.1)

193. For an individual loan, either there will be no default or there will be a default. If the entire portfolio comprises more than 250 loans, and if the loans are geographically well-diversified with the above characteristics, and the underwriting standard represents industry average, the portfolio's 'AAA' foreclosure frequency is 16.5% (= 1.65 x 10%), based on a 'AAA' archetypical pool foreclosure frequency of 10%.

194. Loss severity is the unpaid loan balance after security property liquidation proceeds after foreclosure expense and accrued interest has been applied to the outstanding balance, expressed as a percentage of outstanding loan balance.

See table 32 as an example for loss severity calculation under 'AAA' stress.

Table 32

An Example of 'AAA' Loss Severity Calculation		
	A: Loan-to-value ratio	75%
	B: Original property value	A$100,000
Less:	C: Market value decline (45% - see table 1) (=B*45%)	A$45,000
Equals:	D: New market value (= B-C)	A$55,000
Less:	E: Loan balance (=A*B)	A$75,000
Equals:	F: Market gain or (loss) (D-E)	(A$20,000)
Less:	Realization costs:	
	G: 12 months' accrued interest at 12.75% (=12.75%*E)	A$9,563
	H: Fixed selling, legal, and other costs (=5,000)	A$5,000
	I: Variable selling, legal, and other costs (5% of new market value) (= 5%*D)	A$2,750
	J: Total realization cost (G+H+I)	A$17,313
Equals:	J: Total gain or (loss)	(A$37,313)
	K: Loss severity (= - J/E)	50%

195. The loss severity for the loan in the table 32 example is 50%. If the loan pool comprises more than 250 loans in the table 31 example, the portfolio foreclosure frequency is 16.5% and the credit enhancement at 'AAA' is about 8.3% (16.5% x 50%).

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Footnotes

(1) See "Welfare outcomes of migration of low-income earners from metropolitan to non-metropolitan Australia", Peter Murphy, Graeme, Hugo, Nancy marshal and Ian Burnley for the Australian Housing and Urban Research Institute, UNSW-UWS Research Centre & Southern Research Centre, June 2002, AHURI Positioning Paper No. 34. Also see data such as "Median house prices: metropolitan and Non-Metropolitan Adelaide"(http://www.landservices.sa.gov.au/5publications/Metro_Median_House_Sales/Metro_Non-Metro_Median_House_Tab for price differentials.

(2) See "The drivers of supply and demand in Australia's rural and regional centres", Selina Tually, Andrew Beer, Steve Rowley, Fiona Haslam McKenzie and Christina Birdsall-Jones, for the Australian Housing and Urban Research Institute & Southern Research Centre, May 2010, AHURI Positioning Paper No. 128.

(3) See "Welfare outcomes of migration of low-income earners from metropolitan to non-metropolitan Australia", Peter Murphy, Graeme, Hugo, Nancy marshal and Ian Burnley for the Australian Housing and Urban Research Institute, UNSW-UWS Research Centre & Southern Research Centre, June 2002, AHURI Positioning Paper No. 34. Also see data such as "Median house prices: metropolitan and Non-Metropolitan Adelaide"(http://www.landservices.sa.gov.au/5publications/Metro_Median_House_Sales/Metro_Non-Metro_Median_House_Tab for price differentials.

(4) See "The drivers of supply and demand in Australia's rural and regional centres", Selina Tually, Andrew Beer, Steve Rowley, Fiona Haslam McKenzie and Christina Birdsall-Jones, for the Australian Housing and Urban Research Institute & Southern Research Centre, May 2010, AHURI Positioning Paper No. 128.

(5) See Understanding Credit section of "www.myfico.com".

Table Of Contents

List Of Tables

List Of Charts

List Of Equations