# BARCLAYS CAPITAL LOAN TRANSITION MODEL UPDATE

## Incorporating servicer advances

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At the close of business on Friday, February 3, 2012 we will release to production an updated version of the Barclays Capital Loan Transition Model that includes a new sub-model for projecting servicer advances of scheduled principal and interest on delinquent loans. In addition to the new advance rate model, the release includes updates to our current to delinquent and foreclosure to REO roll rate models, as well as a general refreshing of all coefficients that incorporates the past year's performance data.

The new model, which is currently available in the mortgage calculators through the scenarios labeled with the _beta suffix, will roll to production at the close of business on Friday, February 3, 2012 and the _beta scenarios will disappear. Key features of the model update include the following:

- **Servicer Advances***:* We have added a model for projecting servicer advances of scheduled principal and interest. The advance rate model uses as its primary driver expected severity, calculated by applying our severity model to non-cashflowing delinquent loans. The model also adjusts for observed differences in advancing policy across servicers.
- **Always Current to Delinquent Roll Rates***:* The new model allows for a gradual reduction in the negative credit signal implied by limited documentation of income and assets for lim-doc borrowers with unblemished pay histories. Similarly, it allows for a gradual reduction in the negative credit signal for IO and NegAm borrowers who make amortizing payments.
- **Dirty Current to Delinquent Roll Rates***:* The new model distinguishes more fully between modified and self cured borrowers in the dirty current delinquency bucket. For example, it now allows modified and self-cured borrowers to have entirely different re-default seasoning curves and allows for different credit signals associated with their delinquency state prior to curing or being modified.
- **Foreclosure Processing Times***:* The new model assumes a more gradual increase in foreclosure to REO roll rates than previously assumed. The change pushes peak CDRs on 2006 subprime collateral out from mid-2013 to late 2014, and increases the peak number of months delinquent at liquidation from 36 to 40.

## Servicer Advances

- We have added a model for projecting servicer advances of scheduled principal and interest. The advance rate model uses as its primary driver expected severity, calculated by applying our severity model to non-cashflowing delinquent loans.
- The advance rate model also adjusts for observed differences in advancing policy across servicers.
- Model projections of future advance rates are automatically passed through to Intex along with advance rate adjusted severity projections and incorporated into collateral and security cashflows.

When a mortgage backing a non-agency MBS becomes delinquent, the servicer of the loan will typically advance scheduled payments of principal and interest (P&I) to bondholders and then, in the event of foreclosure, reimburse itself out of proceeds from the sale of the property. Indeed, most prospectuses require the advance of any P&I the servicer deems recoverable from liquidation proceeds. When the servicer advances P&I on delinquent loans, the result, in terms of overall deal cashflows, is higher scheduled P&I cashflows up front at the cost of lower recovery related cashflows (i.e., higher severities) in the future. When delinquencies are low, servicer advance rates have only minor effects on overall deal cashflows. However, when delinquencies are high, servicer advance rates can have sizeable effects on the timing of deal-level cashflows and their distribution across tranches within the deal.

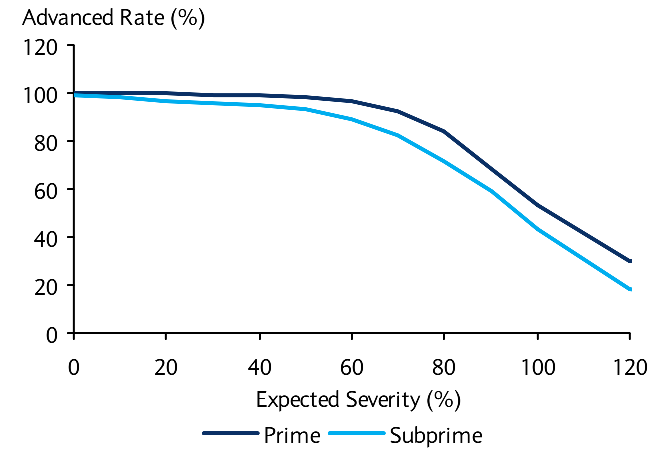
The dramatic slowdown in foreclosure processing times over the past several years has swelled delinquency pipelines across the non-agency universe, especially in deals backed by subprime, option ARM and weaker Alt-A collateral. This trend, in combination with a steady decline in servicer advances of P&I have made it increasingly important for investors to incorporate accurate projections of advance rates into their valuations of bonds backed by credit-impaired collateral. This is especially true in the subprime sector where close to half of outstanding loans are delinquent and the large gap between the average note rate on underlying mortgages and the coupons on the securities they back means that much of the advanced interest goes to paying down principal on the top most tranches in the deal.

### Projecting Servicer Advances

For the most part, the decision to stop advancing P&I on delinquent loans is about whether those advances can be recovered from liquidation proceeds in the event of foreclosure. For this reason, the primary input used to project advance rates in the new model is the expected severity—calculated using our severity model—if the delinquent loan in question were to be liquidated. The relationship between advance rates and expected severity is allowed to differ between prime (i.e., jumbo and Alt-A) and subprime mortgages. This is because the greater prevalence in the subprime market of smaller servicers with higher funding costs and higher cost servicing portfolios causes advance rates on subprime mortgages to be lower than on prime mortgages, even after adjusting for expected severity.

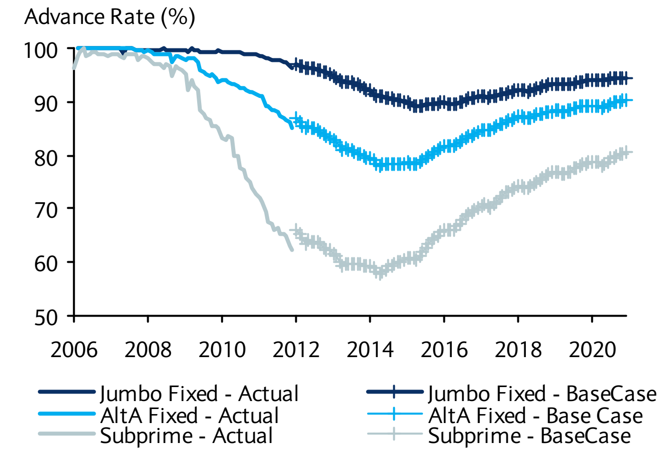
Figure 1 displays the relationship between advance rates and expected severity in the advance rate model. For both subprime and prime loans, expected severities of 60 or less imply a close to 100% probability of advancing P&I. However, for expected severities above 80, projected advance rates decline steadily, falling well below 50% once expected severity increases above 100.

**Figure 1: Model Advance Rates Are a Function of Expected Severity**




Source: Barclays Capital

**Figure 2: Actual & Projected Advance Rates by Collateral Type, 2006 Issuance**




Source:: CoreLogic, Barclays Capital

Figure 2 shows actual advance rates to date for 2006 jumbo fixed, Alt-A fixed and subprime collateral along with base case model projections of future advance rates. Not surprisingly, actual and projected future advance rates are lowest on subprime mortgages, where low average loan sizes, extremely high ULTVs and long durations in delinquency contribute to actual and anticipated severities that are on average 15-30 points higher than for Alt-A or jumbo mortgages. Notice also, however, the common trend in advance rates, both historical and projected, across prime jumbo, Alt-A and subprime mortgages. Weak home price growth, combined with lengthening foreclosure timelines cause projected severities to increase and projected advance rates to decline through 2013 for all non-agency mortgages, before steadily increasing through 2020 in response to improving conditions in the housing market and an increase in the pace at which delinquent loans pass through the foreclosure pipeline.

Figure 3 displays recent actual and model advance rates across collateral types and servicers. To accommodate the wide variation in advancing policies across servicers, the new advance rate model contains a number of servicer-specific effects. Notice, for example, that advance rates on subprime mortgages for the big five servicers (BofA/Countrywide, Citi, JPM/EMC, RFC and Wells Fargo) are higher than the average across all subprime servicers, even though there is no significant difference in the proportion of loans with expected severities above 90 for these servicers than for the subprime sector on average. In contrast, advance rates on Wilshire serviced loans tend to be extremely low due to the fact that the PSAs of a number of subprime deals serviced by Wilshire require that advances be stopped on mortgages that are five or more months delinquent.

**Figure 3: Actual vs. Model P&I Advance Rates by Sector and Servicer, March 2011 – August 2011**

| | Jumbo | | | | Alt-A | | | | Subprime | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Advance Rate | | Implied | % with | Advance Rate | | Implied | % with | Advance Rate | | Implied | % with |
| | Actual | Model | Severity | Sev>=90 | Actual | Model | Severity | Sev>=90 | Actual | Model | Severity | Sev>=90 |
| All Servicers | 98 | 97 | 42 | 1.9 | 87 | 87 | 61 | 13.6 | 69 | 69 | 70 | 21.2 |
| Accredited | | | | | | | | | 98 | 97 | 59 | 0.5 |
| ALS | 94 | 92 | 31 | 0.6 | 64 | 59 | 62 | 16.5 | 69 | 72 | 72 | 26.4 |
| AmericanHomeMortgage | 100 | 98 | 40 | 0.0 | 50 | 50 | 71 | 26.7 | 53 | 55 | 65 | 15.9 |
| Ameriquest | | | | | | | | | 94 | 96 | 52 | 4.7 |
| BankofAmerica | 96 | 95 | 46 | 2.8 | 82 | 84 | 68 | 18.0 | 72 | 74 | 71 | 22.3 |
| Carrington | | | | | | | | | 20 | 21 | 74 | 27.0 |
| Cenlar | 100 | 99 | 41 | 0.0 | 100 | 98 | 79 | 37.1 | | | | |
| Centex | | | | | | | | | 13 | 14 | 75 | 30.5 |
| Citi | 100 | 100 | 33 | 1.1 | 100 | 100 | 61 | 9.2 | 100 | 100 | 75 | 24.4 |
| Countrywide | 99 | 99 | 44 | 1.7 | 99 | 98 | 58 | 9.4 | 88 | 89 | 71 | 20.5 |
| EMC | 100 | 100 | 46 | 1.0 | 91 | 91 | 74 | 30.2 | 90 | 83 | 75 | 27.1 |
| EquityOne | | | | | | | | | 33 | 36 | 67 | 19.2 |
| FirstHorizon | 99 | 99 | 38 | 1.0 | 99 | 99 | 58 | 9.3 | | | | |
| FirstTennessee | 99 | 99 | 31 | 0.5 | 100 | 100 | 58 | 18.0 | | | | |
| Greenpoint | | | | | 86 | 87 | 50 | 6.5 | | | | |
| HomecomingFinancial | | | | | | | | | 80 | 84 | 67 | 15.4 |
| HomeEq | | | | | | | | | 38 | 38 | 65 | 16.9 |
| IndyMac | 100 | 99 | 33 | 0.0 | 89 | 90 | 55 | 10.7 | 71 | 73 | 75 | 32.4 |
| JPMorganChase | 97 | 96 | 46 | 2.3 | 94 | 96 | 59 | 11.6 | 86 | 82 | 69 | 19.7 |
| Litton | 70 | 67 | 42 | 2.7 | 31 | 36 | 68 | 17.0 | 34 | 35 | 69 | 21.8 |
| NatCity | 100 | 100 | 40 | 0.9 | 92 | 94 | 58 | 14.7 | 62 | 66 | 68 | 16.6 |
| Nationstar | | | | | | | | | 26 | 24 | 69 | 21.4 |
| NewCentury | | | | | | | | | 57 | 58 | 67 | 18.4 |
| Novastar | | | | | | | | | 99 | 100 | 67 | 14.7 |
| Ocwen | | | | | | | | | 62 | 58 | 70 | 24.0 |
| OptionOne | | | | | | | | | 87 | 89 | 58 | 10.0 |
| PHH | 72 | 71 | 35 | 0.2 | 71 | 61 | 56 | 6.3 | 76 | 80 | 68 | 12.4 |
| RFC | 97 | 97 | 39 | 1.8 | 88 | 89 | 58 | 10.8 | 81 | 82 | 69 | 21.0 |
| SLS | | | | | | | | | 47 | 48 | 71 | 20.6 |
| SPS | | | | | 60 | 65 | 71 | 24.4 | 66 | 69 | 70 | 24.0 |
| Suntrust | 100 | 100 | 49 | 3.1 | 100 | 100 | 64 | 15.6 | | | | |
| WAMU | 98 | 99 | 36 | 4.5 | 97 | 97 | 57 | 7.6 | 91 | 92 | 69 | 18.1 |
| WellsFargo | 100 | 99 | 38 | 1.0 | 90 | 93 | 63 | 15.8 | 86 | 85 | 72 | 24.2 |
| Wilshire | | | | | | | | | 15 | 15 | 83 | 42.5 |

Source: CoreLogic, Barclays Capital

## Current to Delinquent Roll Rates

### Always Current to Delinquent Roll Rates

- The new model allows for a gradual reduction in the negative credit signal implied by limited documentation of income and assets for lim-doc borrowers with unblemished pay histories. For example, for always current hybrid Alt-A mortgages, the effective multiplier on the always-current to delinquent roll rate for lim-doc vs. full doc loans (ceteris paribus) is about 2x at 12 months of seasoning compared with a 1.3x multiplier by month 60.

- Similarly, the model allows for a gradual reduction in the negative credit signal for IO and NegAm borrowers who make amortizing payments. For example, always current to delinquent roll rates for AltA Hybrid IO borrowers who have made three years of amortizing payments are about one-third that of otherwise similar borrowers who have made only IO payments over that time period.

- We have also added y/y changes in the MSA-level unemployment rate as a factor in the always-current to delinquent roll rate model (in addition to the cumulative change since origination currently used) in order to track shorter-term trends in local labor markets.

### Dirty Current to Delinquent Roll Rates

- The new model distinguishes more fully between modified and self-cured borrowers in the dirty current delinquency bucket. For example, the model now allows modified and self-cured borrowers to have entirely different re-default seasoning curves and allows for different credit signals associated with their delinquency state prior to curing or being modified. In particular, the re-default rate on self-cured borrowers is initially very high (e.g., 10%-20% per month) but then declines rapidly with the number of consecutive payments. This is because many borrowers who become delinquent cycle in and out of delinquency before eventually ending up in foreclosure. Consequently, the longer a self-cured borrower remains current, the less likely it is that he will re-default. In contrast, modified borrowers who have received large payment reductions have effectively been re-underwritten into a new, more affordable mortgage. As a result, the re-default rates of modified borrowers look a bit more like the default seasoning curves of newly originated mortgages with weak credit characteristics. That is, initially low re-default rates that increase gradually over time.

- Also, similar to the always current to delinquent roll rate model, we have added y/y changes in the MSA-level unemployment rate as a factor in the dirty current to delinquent roll rate model in order to track shorter-term trends in local labor markets.

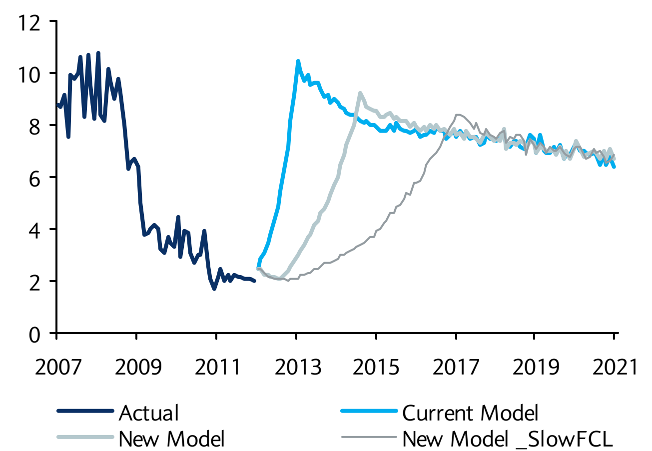
## Foreclosure Processing Times

- The new model assumes a more gradual increase in foreclosure to REO roll rates than previously assumed. The production model, released in December 2010, assumed that foreclosure to REO roll rates would remain at historic lows throughout 2011 and then normalize over 2012, as servicers became more efficient at processing the large volume of delinquent loans. One year later, all available evidence points to a more extended period of normalization in foreclosure to REO roll rates, and so we have incorporated this into the new model. The change pushes peak CDRs on 2006 subprime collateral out from mid-2013 to late 2014, and increases the peak number of months delinquent at liquidation from 36 to 40.

- In order to accommodate the possibility of an even slower recovery of foreclosure to REO roll rates than embedded in the new model, we have added an additional BaseCase_SlowFCL scenario. This additional scenario pushes peak CDRs on 2006 subprime collateral out to mid-2016 and increases the peak number of months delinquent at liquidation to 48 months. Figure 4 displays the evolution of FCL to REO roll rates in the current model, new model and new model with extended normalization ramp, while Figures 5 through 7 display the effect of these assumptions on projected CDRs, severities and months delinquent at liquidation.

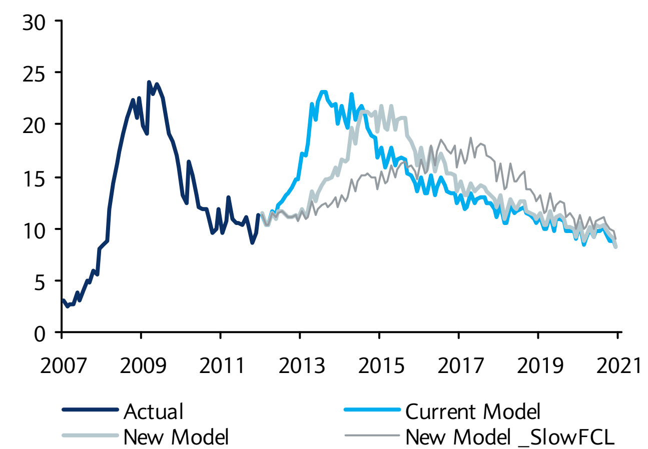
## Model Projections for 2006 Subprime, Base Case HPA Scenario

**Figure 4: FCL to REO Roll Rate**



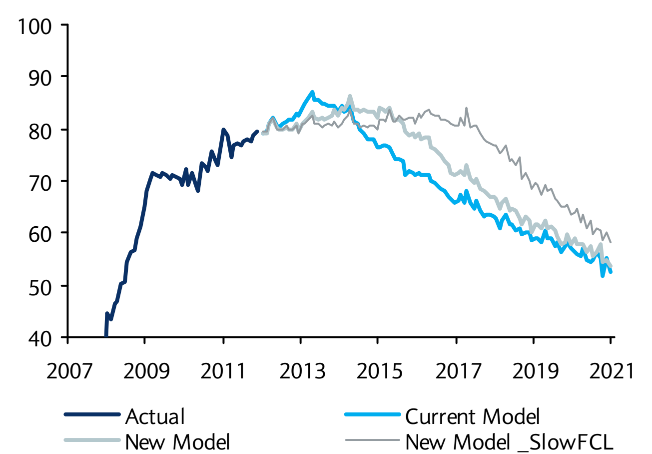

Source: CoreLogic, Barclays Capital

**Figure 5: CDR**



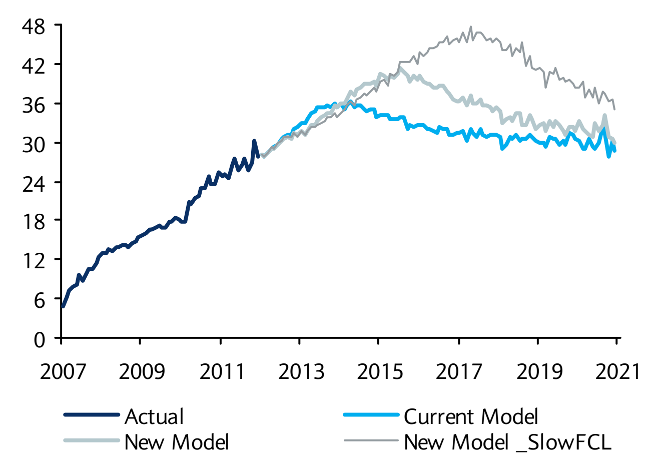

Source: CoreLogic, Barclays Capital

**Figure 6: Severity**




Source: CoreLogic, Barclays Capital

**Figure 7: Months DQ at Liquidation**




Source: CoreLogic, Barclays Capital

## Cumulative Default & Loss

Figure 8 displays projected cumulative defaults and losses in the new model vs. the current model. Overall, projected performance is similar in the two models with the noticeable exception of option ARMs for which actual declines in current to delinquent roll rates have significantly exceeded what the current model had been predicting. Also note that projected losses on 2004-2005 collateral are higher in the new model, despite generally lower projected default rates. This is because projected severities on these vintages in the current model have been running noticeably lower than where actual severities have been coming in whereas projections in the new model are more in line with actual severities on seasoned mortgages.

**Figure 8: Projected Cumulative Defaults and Losses by HPA Scenario, % of Current Balance**

| | | New Model | | | | | | Current Model | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Stress | | Base Case | | Recovery | | Stress | | Base Case | | Recovery | |
| Sector | Issue Yr | Default | Loss | Default | Loss | Default | Loss | Default | Loss | Default | Loss | Default | Loss |
| Jumbo Fixed 30Y | 2004 | 10.0 | 4.0 | 7.7 | 2.9 | 6.8 | 2.3 | 10.2 | 3.6 | 8.0 | 2.3 | 7.0 | 1.7 |
| | 2005 | 24.1 | 11.7 | 19.1 | 8.7 | 16.6 | 7.0 | 23.1 | 11.2 | 18.1 | 7.9 | 15.8 | 6.2 |
| | 2006 | 34.7 | 18.2 | 28.8 | 14.2 | 25.5 | 11.9 | 32.9 | 17.5 | 27.1 | 13.2 | 24.1 | 10.7 |
| | 2007 | 37.7 | 19.2 | 31.4 | 15.1 | 27.8 | 12.6 | 35.6 | 18.4 | 29.4 | 13.9 | 26.1 | 11.2 |
| Jumbo Hybrid | 2004 | 14.2 | 5.9 | 11.9 | 4.6 | 10.9 | 3.8 | 18.3 | 6.5 | 14.8 | 4.5 | 13.2 | 3.5 |
| | 2005 | 27.0 | 12.7 | 22.0 | 9.7 | 19.4 | 7.9 | 29.8 | 13.6 | 24.1 | 9.8 | 20.9 | 7.6 |
| | 2006 | 41.7 | 21.1 | 34.9 | 16.5 | 31.1 | 13.7 | 42.1 | 21.4 | 35.1 | 16.2 | 31.1 | 12.9 |
| | 2007 | 50.0 | 26.1 | 43.0 | 21.0 | 38.6 | 17.7 | 48.8 | 25.2 | 41.6 | 19.5 | 37.3 | 15.9 |
| AltA Fixed | 2004 | 25.1 | 13.2 | 21.2 | 10.3 | 19.2 | 8.6 | 27.2 | 11.9 | 22.8 | 8.7 | 20.5 | 6.8 |
| | 2005 | 40.0 | 23.5 | 34.9 | 19.2 | 31.9 | 16.5 | 42.3 | 23.0 | 36.6 | 18.1 | 33.4 | 15.0 |
| | 2006 | 56.7 | 37.4 | 51.5 | 32.1 | 48.3 | 28.6 | 58.8 | 36.5 | 53.2 | 30.5 | 49.8 | 26.4 |
| | 2007 | 58.4 | 36.5 | 53.0 | 31.3 | 49.6 | 27.6 | 60.1 | 35.9 | 54.2 | 29.7 | 50.6 | 25.5 |
| AltA Hybrid | 2004 | 35.1 | 16.4 | 30.6 | 13.0 | 27.7 | 10.8 | 35.2 | 14.8 | 31.1 | 11.3 | 28.2 | 8.9 |
| | 2005 | 53.7 | 30.2 | 48.5 | 25.3 | 44.6 | 21.7 | 53.0 | 28.5 | 48.0 | 23.3 | 44.1 | 19.5 |
| | 2006 | 69.8 | 44.4 | 65.2 | 38.9 | 61.5 | 34.7 | 68.3 | 42.2 | 63.8 | 36.3 | 60.0 | 31.6 |
| | 2007 | 73.8 | 46.4 | 69.1 | 40.7 | 65.2 | 36.3 | 72.7 | 44.8 | 68.0 | 38.6 | 64.1 | 33.5 |
| AltA NegAm | 2004 | 45.7 | 23.5 | 41.3 | 19.5 | 38.3 | 16.7 | 53.1 | 26.5 | 47.4 | 21.0 | 43.3 | 16.9 |
| | 2005 | 64.2 | 41.3 | 60.0 | 36.4 | 56.9 | 32.5 | 71.0 | 45.2 | 66.2 | 38.8 | 62.3 | 33.6 |
| | 2006 | 74.6 | 50.5 | 71.0 | 45.4 | 68.3 | 41.2 | 80.8 | 55.2 | 77.0 | 48.7 | 73.7 | 43.2 |
| | 2007 | 77.4 | 49.1 | 73.6 | 43.8 | 70.6 | 39.5 | 81.7 | 53.8 | 77.7 | 47.3 | 74.2 | 41.7 |
| Subprime | 2004 | 49.3 | 34.5 | 45.1 | 29.7 | 42.6 | 26.4 | 51.1 | 30.5 | 46.6 | 25.4 | 44.1 | 22.0 |
| | 2005 | 66.4 | 50.8 | 62.4 | 45.1 | 59.7 | 41.1 | 68.4 | 48.5 | 64.3 | 42.3 | 61.7 | 37.8 |
| | 2006 | 76.4 | 62.2 | 72.9 | 56.5 | 70.3 | 52.1 | 76.8 | 60.3 | 73.2 | 54.0 | 70.7 | 49.2 |
| | 2007 | 77.1 | 60.5 | 73.4 | 54.7 | 70.8 | 50.3 | 76.5 | 58.8 | 72.7 | 52.3 | 70.2 | 47.4 |

Source: CoreLogic, Barclays Capital

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