New model version for GSE risk transfer transactions

Steve Bergantino
+1 212 412 2164
steven.bergantino@barclays.com

Chun Li
+1 212 412 7951
chun.li@barclays.com

At the close of business on Friday, August 16, 2013, we will update the non-agency RMBS calculator to include a new version of the Barclays Capital Loan Transition Model for use in evaluating GSE risk transfer transactions. The new model version has been calibrated to loan-level credit data released by the GSEs, including adjustments to the definition of terminal credit events. After the update, the new model version will automatically be loaded and used when running GSE risk transfer transactions.

STACR 2013-DN1 and Model Adjustments

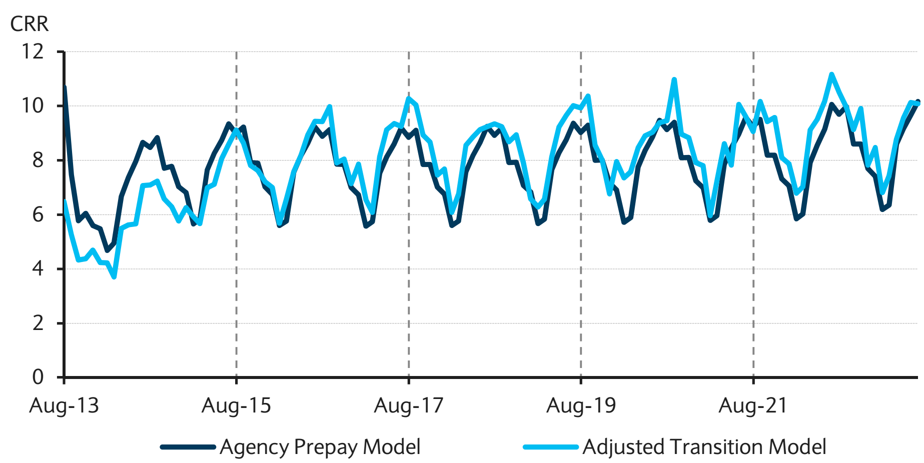
Freddie Mac issued the inaugural deal in this new mortgage sector, STACR 2013-DN1, as a means of transferring credit risk to private investors on a portion of the mortgages it guarantees. The deal is technically a debt issuance but in all other respects is a straight forward transfer of mezzanine level credit risk. The principal pay-downs received and losses incurred by bondholders are linked to the prepayment and credit performance of a reference pool of mortgages guaranteed by Freddie Mac, with the GSE retaining the first 30bp of loss associated with credit events on the reference pool and investors bearing the next 270bp of loss. Losses beyond the first 300bp are also born by Freddie Mac.

The changes made to the transition model were tailored to the structural features of this deal. However, early indications from the GSEs suggest that future risk transfer transactions are likely to hue closely to the key features of the STACR deal (eg, definition of credit events, pre-specified severity schedules, treatment of modifications, etc.). Thus, the new model version described below is likely to be applicable beyond this first deal. For a detailed description of the GSE risk transfer sector and STACR 2013-DN1, please refer to *Introduction to GSE risk transfer deals*, July 29, 2013. Below we describe those features of the STACR deal related to the new model version.

- **Prepayments:** We have calibrated the always current to prepayment transition function in the loan transition model to better match the projections of Barclays Fixed Rate Agency Prepayment Model (Figures 1, 2 and 3). This involved adjustments to the

FIGURE 1

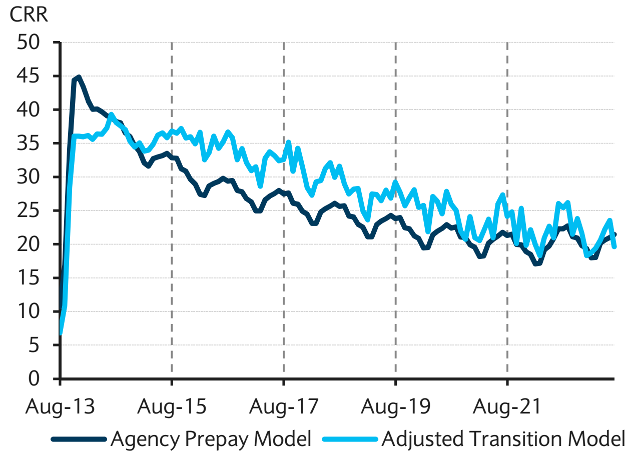
Prepayment projections for STACR 2013-DN1, static rates



Note: Closing rates as of July 16, 2013. Source: Freddie Mac, Barclays Research

FIGURE 2

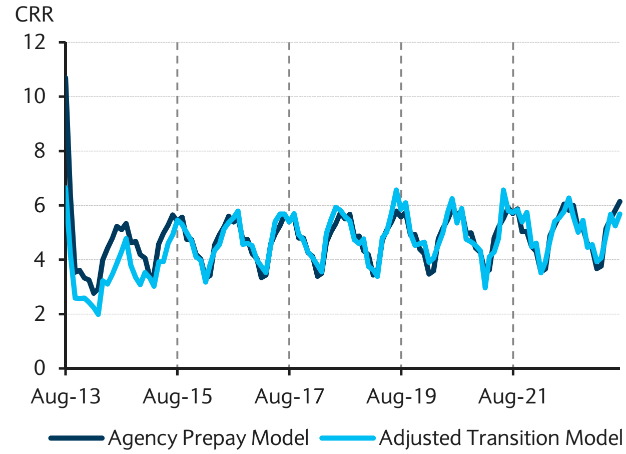
Prepayment projections for STACR 2013-DN1, rates down 200bp



Note: Closing rates as of July 16, 2013. Source: Freddie Mac, Barclays Research

FIGURE 3

Prepayment projections for STACR 2013-DN1, rates up 200bp



Note: Closing rates as of July 16, 2013. Source: Freddie Mac, Barclays Research

interest rate sensitivity of the turnover, cash-out and refinance functions, including modifications to the loan size and FICO multipliers of the refinance function, as well as the steepening of the refinance burnout function.

- **Current to Delinquent Roll Rates:** The reference pool for the STACR deal consists of approximately ninety-six thousand loans acquired by Freddie Mac during Q3 12 with an aggregate unpaid principal balance of $22bn. The shear size of the reference pool eliminates any of the idiosyncratic risk associated with a typical private label transaction. In addition, the eligibility criteria used to select loans produced a pool of high credit quality. All of the loans are full documentation, fully amortizing, 30-year fixed rate, first lien mortgages with original LTVs greater than 60% and less than or equal to 80%. HARP loans and loans with mortgage insurance were excluded. To accommodate the high credit quality of the reference pool, we classify all loans in the deal as prime fixed rate mortgages. This classification is most important in projecting always current to delinquent roll rates, where we have separate models for prime jumbo, alt-A and subprime collateral. Figure 4 compares cumulative credit performance by vintage, FICO and OCLTV for the loan-level credit data released by Freddie Mac and for full documentation, fully amortizing, fixed rate non-agency jumbo mortgages. As can be seen, the credit performance is comparable after controlling for original FICO scores and OCLTV.

FIGURE 4

Cumulative credit performance, Freddie Mac vs. non-agency jumbo

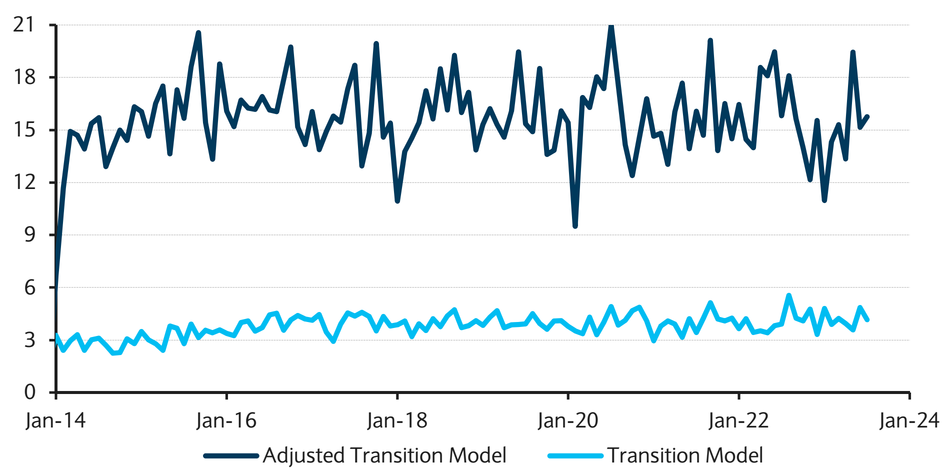
	Freddie Mac				Non-Agency Jumbo			
	FICO > 740		FICO <= 740		FICO > 740		FICO <= 740	
Orig Year	OCLTV <= 80	OCLTV >80	OCLTV <= 80	OCLTV >80	OCLTV <= 80	OCLTV >80	OCLTV <= 80	OCLTV >80
2000	0.1%	0.6%	1.6%	3.4%	0.2%	1.0%	1.5%	3.5%
2001	0.2%	0.9%	1.7%	4.5%	1.0%	1.3%	1.7%	4.1%
2002	0.3%	1.2%	2.1%	4.9%	1.4%	1.4%	2.1%	4.3%
2003	0.6%	1.8%	3.1%	5.7%	0.5%	1.3%	2.1%	4.3%
2004	1.3%	2.8%	5.2%	7.8%	1.2%	3.0%	4.6%	9.2%
2005	3.0%	5.2%	10.2%	13.2%	3.7%	7.4%	11.4%	17.4%
2006	4.4%	6.9%	14.4%	18.1%	4.6%	8.4%	15.5%	22.9%
2007	3.8%	8.9%	15.0%	22.7%	4.5%	9.2%	14.9%	26.1%
2008	2.2%	5.6%	10.2%	16.9%				
2009	0.4%	0.7%	1.5%	1.8%				
2010	0.1%	0.2%	0.3%	0.3%				
2011	0.1%	0.1%	0.1%	0.1%				

Note: Cumulative credit performance is through June 2012, and includes 180+ day delinquencies as well as short sales, third-party sales, deeds in lieu of foreclosure, and REO acquisitions that occur before the borrower becomes 180 days delinquent. Source: Freddie Mac, Corelogic, Barclays Research

- **Credit Events:** Terminal credit events include 180+ day delinquencies as well as any short sales, third-party sales, deeds received in lieu of foreclosure, or REO acquisitions that occur before the borrower becomes 180-days delinquent. To accommodate this, the delinquency transitions of the loan transition model have been modified to force a liquidation event whenever a mortgage becomes six-months (180 days) delinquent (Figure 5). If the model projects a liquidation event to occur prior to the loan becoming 180-days delinquent, the liquidation event is left unchanged.

FIGURE 5

Projected liquidation rates out of serious delinquency for STACR 2013-DN1



Note: Serious delinquency includes 60+ OTS, foreclosure and REO. Source: Freddie Mac, Barclays Research

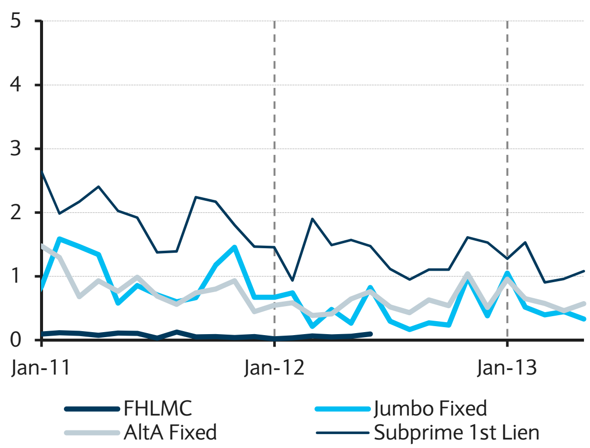
- **Credit Event Reversals:** In the event that a loan associated with a credit event is deemed by Freddie Mac to have an underwriting defect, the associated credit event is reversed and tranche balances are written back up using the appropriate severity. The new model version does not include projections of credit event reversals.

- **Loss Severity:** The loss severity associated with credit events in the STACR deal are a pre-specified function of cumulative credit events net of any reversals. Specifically, a 15% loss severity is applied to the first 100bp of net credit events (measured as a percentage of the initial reference pool balance), a 25% severity is applied to the next 100bp of net credit events, and a 40% severity is applied to all additional credit events. Since this eliminates the need for severity projections, we have turned off the severity model. Consequently, collateral severities displayed along with pricing output will show up as 0. This does not affect the valuation of STACR securities since the deal structure automatically calculates the severity to be applied to projected credit events.

- **Modifications:** In the STACR deal, modified loans are not removed from the reference pool. Modification is an action of the servicer. As a result, modification behavior can vary noticeably across servicers or sectors even after adjusting for visible borrower characteristics. We used the loan-level credit data provided by Freddie Mac to recalibrate the modification functions of the loan transition model where necessary. Overall, the loan transition model did a reasonable job of fitting the modification rates observed on severely delinquent loans, but several patterns emerged that required some minor adjustments (Figures 6 and 7). They were as follows: First, modification rates on performing, previously delinquent (ie, dirty current) loans were significantly lower than in the non-agency sector. In addition, modification rates on non-owner occupied properties were significantly lower than in the non-agency sector. Finally, the loan transition model modification functions contain a decay factor to reflect the assumption of a gradual decline in modification activity over time as most loans remaining in the delinquency pipeline of heritage non-agency transactions will have already been screened for modification. This assumption is much less applicable to the GSE transactions since most of the loans are recently originated performing loans. We have therefore removed the modification rate decay factor.

FIGURE 6

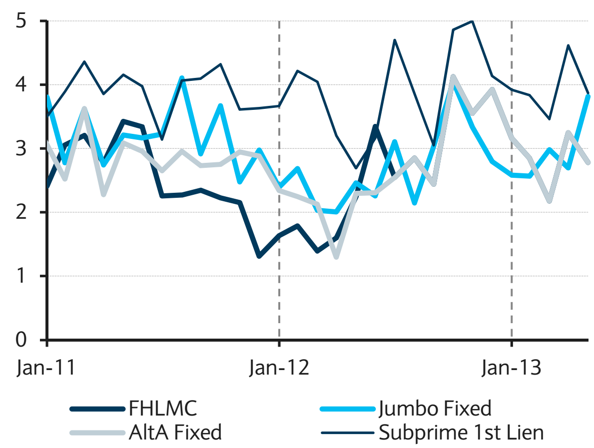
Modification rates on performing, previously delinquent loans, 2007 originations



Source: Freddie Mac, Corelogic, Barclays Research

FIGURE 7

Modification rates on 60+ day OTS delinquent loans, 2007 originations



Source: Freddie Mac, Corelogic, Barclays Research

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