

AGENCY FIXED RATE PREPAYMENT MODEL UPDATE

Incorporating recent program changes

We are releasing an update to the existing beta agency prepayment model at the close of business on Friday, March 16, 2012 (Ver 1.19) and plan to roll this version of the model to production on April 13, 2012.

On October 28, 2011, we introduced a beta version of the agency fixed rate prepayment model (Ver. 1.16) to address changes to the Home Affordable Refinancing Program (HARP). Since then, the GSEs have increased their guarantee fee (g-fee) and released the implementation details of HARP 2.0, while the FHA has increased the mortgage insurance (MI) premium it charges borrowers and introduced its own version of HARP. In this update we address all of these program changes and also introduce a separate mortgage rate process for GNMA mortgages. This new process addresses the persistently wide GN/FN swap and its effect on the mortgage rates available to GNMA borrowers as well as the differential effect on conventional versus FHA mortgage rates of changes in the g-fee charged by the GSEs and MI premium charged by the FHA. Given the trend toward higher g-fees and MI premiums, there is an increased need for a separate GNMA mortgage rate process.

The key changes in this update to the existing beta model include:

- Introduction of a new mortgage rate model for GNMA mortgages.
- Incorporating changes to the FHA MI structure.
- Introduction of a 10bp increase in the g-fee for conventional loans.
- Updates to the refinance model for conventional pre-HARP collateral.
- Adding broker and correspondent originations as an additional factor affecting model projections. This replaces the TPO effect that we added in the prior release.
- Adjustments to refinancing aging ramp to reflect recent prepayment performance.

These changes are in addition to the following changes that were introduced in the beta model on October 28. (Refer to the article titled [Agency Fixed Rate Prepayment Model Update: Adjustments for HARP and TPO](#), October 28, 2011.)

- Incorporation of the prepayment effect of changes to the HARP program.
- Elimination of most differences in prepayment performance across securities issued by Fannie Mae and Freddie Mac.
- Run the FHA and VA portion of GNMA pools as separate aggregates.
- Updates to the primary-secondary spread model.

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Mortgage rate model for GNMA

Historically, there has been little difference in the mortgage rates available to conventional and GNMA borrowers. There were a number of reasons for this. Pre-2008, GNMA market share was small relative to that of the GSEs, and most lenders used the conventional mortgage rate as a proxy when fixing their GNMA rate. Moreover, the GN/FN swap traded in a fairly narrow range and tended to mean-revert to its historical average quickly.

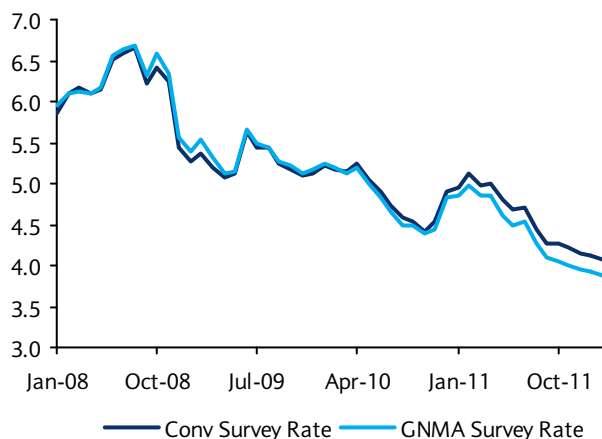
More recently, three factors have materially altered this relationship. First, the market share of GNMA has increased from less than 10% in 2007 to more than 40% by 2009. Second, Since January of 2011, the GN/FN swap has increased from an historical average of around 0.5 points to over 1.5 points and has remained persistently at the higher level. Finally, the GSEs have increased the g-fee they charge originators for guaranteeing conventional mortgages, while the FHA has imposed several increases in the MI premiums it charges borrowers. While g-fee increases flow through to the mortgage rates on conventional mortgages, changes to the FHA MI premium do not. Rather, much like private mortgage insurance they are a separate, explicit cost paid by FHA borrowers. As a result, the recent 10bp increase in the GSE g-fee has pushed reported survey mortgage rates for conventional loans higher by 10bp but has had no effect on the GNMA survey rate. Figure 1 compares the HSH survey rate for conventional and GNMA borrowers. Through early 2011, they track each other very closely but over the past few months they have diverged substantially. After adjusting for the recent g-fee change, most of this difference can be explained by changes in the GN/FN swap.

The GN/FN swap varies across the coupon stack. We find that changes to the GN/FN swap for the production coupon (i.e., the average coupon of all pools originated in a particular month) are the most highly correlated with differences between GNMA and conventional mortgage rates. The price of the FNMA production coupon has averaged around 102 over the past few years, and we choose to use this coupon as our proxy for the GN/FN swap. In the model, we interpolate across the FNMA TBA coupon stack to calculate the coupon that would trade at 102. We then interpolate GNMA TBA prices to calculate the price at which that coupon would trade. The difference between this interpolated price and 102 is used as a proxy for the GN/FN swap. We regress this GN/FN swap versus the difference in the survey rate for GNMA and conventional loans (Figure 2). The regression suggests that roughly 35% of the price change in GN/FN swap is passed on to the borrowers in terms of lower mortgage rates. For example, if we assume 1 point is worth 25bp and the GN/FN swap widens 1 point, then GNMA mortgage rates would be roughly 9bp lower.

Everyday at close we recomputed the GN/FN swap and new GNMA mortgage rate based on closing prices. On Barclays Capital Live, we now report both the conventional and GNMA mortgage rate (Figure 3). For reporting purposes, the primary secondary spread remains the difference between the FNMA par coupon and zero-point survey mortgage rate¹. For projections, the GN/FN swap is held constant across time and across all paths of the simulation.

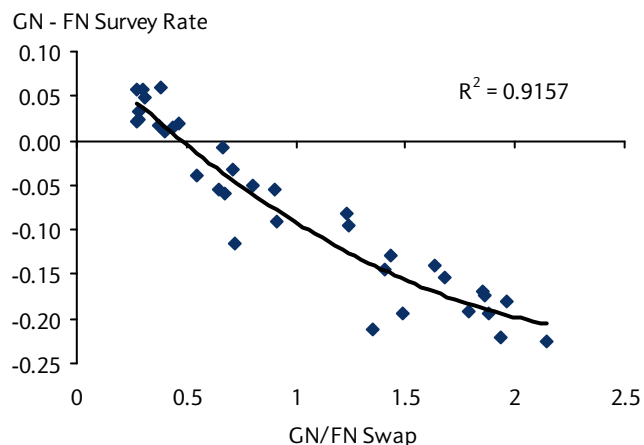
¹ Internally, we use the HSH survey rate because apart from a conventional mortgage rate the survey also includes a GNMA mortgage rate. In addition, once adjusted for points the HSH survey rate for conventional mortgages matches the Freddie Mac survey rate closely.

Figure 1: Recently, GNMA survey rates have diverged from conventional survey rates



Source: HSH Survey, Barclays Capital

Figure 2: ...adjusted for g-fee changes most of the difference can be attributed to the GN/FN swap



Source: Barclays, HSH Survey

Figure 3: Barclays Capital Live now displays separate mortgage rates for conventional and GNMA borrowers

Calculated: Wed, Mar 14, 2012 11:49:20 AM (Elapsed time: 23 sec.)								Market Rates: NY 3PM Close of Tue, Mar 13, 2012			
	1 Month	3 Month	6 Month	1 Year	2 Year	3 Year	5 Year	10 Year	20 Year	30 Year	40 Year
Treasury	0.051	0.081	0.152	0.200	0.340	0.500	0.972	2.108	2.870	3.246	
Swap Rates	0.242	0.474	0.744	1.057	0.608	0.756	1.220	2.475	2.789	2.926	2.933
Mtg Rates	30Y Conv. 4.160	15Y Conv. 3.432	FNCL Current Coupon 2.965		FNCL Current Coupon 2.237		30Y GNMA 3.922		Conv. Prim-Sec Spread(bps) 120		

Source: Barclays Capital

Changes to the structure of the FHA mortgage insurance premium

- The FHA has made significant changes to the structure of the FHA MI to address: 1) the requirement under the *Temporary Payroll Tax Cut Continuation Act of 2011* to increase running MI by 10bp, 2) the need to bolster capital reserves of the MMI fund, and 3) the need for seasoned borrowers with high mortgage rates to refinance to lower rates. To achieve these goals the FHA made the following changes:
 - A 10bp across the board increase in running MI for all case numbers assigned after April 9 2012. This takes the running MI for FHA loans from 110/115bp to 120/125bp. This change is pursuant to the *Temporary Payroll Tax Cut Continuation Act of 2011*
 - A 0.75 pt increase in upfront MI for all case numbers assigned after April 9, 2012. In addition, they also raised the running MI by 25bp for all loans with balance exceeding \$625K. These changes are aimed at bolstering the capital reserve of the MMI fund.

For loans that were endorsed on or before May 2009, FHA has decreased the upfront MI to 0.01 points and running MI to 55bp. These changes are designed to allow seasoned borrowers to refinance more easily. This change is effective for case numbers assigned on or after June 11, 2012.

In the model, we measure economic incentive (EI) to refinance as the percentage change in monthly payment, assuming the borrower refinances into another loan with similar maturity at prevailing mortgage rates. In the case of FHA mortgages, the monthly payment of the existing loans is calculated based on the current balance, loan rate and MI that was enforced when the loan was originated. The monthly payment of the new loan is calculated as the gross of the current balance, including the upfront MI (net of any MI refund), the prevailing mortgage rate and current running MI. Thus, all of these changes flow through to the model as changes in EI.

For loans endorsed on or before May 2009, the running and upfront MI will actually increase by 10bp and 0.75 pt, respectively, between April and June and then subsequently decline by 70bp and 1.75 pt beginning in June. We therefore expect that speeds for these cohorts will decline in the near term and then increase. In the model, the decline is based on just the change in EI; however, in practice most lenders and borrowers would choose to postpone refinancing by a couple of months to take advantage of the changes that go into effect in June. This could lead to even lower speeds than projected for a few months for pre-June 2009 originations. Figure 4 displays the expected increase in prepayments from current levels because of the changes to the FHA program (i.e., after this adjustment period).

Figure 4: Prepayment effect of FHA HARP

Coupon	Vintage	Increase in Model Projected Prepayments
5.5	2008	8.1
	2007	5.8
	2006	6.3
	2005	4.7
6	2008	4.3
	2007	3.3
	2006	3.5
	2005	2.8
6.5	2007	2.4
	2006	2.5
	2005	1.9

Source: Barclays Capital

It is important to note that none of these changes apply to VA loans. In our last update to the model, we started running VA loans as a completely separate aggregate and so the model projections for VA loans will be unaffected by these changes. For CMOs, we have also added a new aggregation criteria based on whether the pool is eligible for the lower MI (i.e., originated on or before May 2009). The Barclays Capital calculator will also display what percent of the collateral in a CMO falls in this bucket. For more details on all of our aggregation criteria, please refer to page 31 of [Inside Mortgage Valuation: A guide to models on Barclays Capital Live](#), March 18, 2011.

Increase in guarantee fee for conventional loans

Pursuant to the Temporary Payroll Tax Cut Continuation Act of 2011, Fannie Mae and Freddie Mac increased their guarantee fee by 10bp on all single family residential mortgages effective April 1, 2012. This has the effect of increasing the primary-secondary spread (which we define as the difference between the FNMA par coupon and the zero-point Freddie Mac survey rate) by 10bp. We incorporate this by adding 10bp to the primary-secondary spread model starting February 2012. We believe that all of the increase in g-fee will be passed on to borrowers.

Adjustments for HARP 2.0

Since our last release, we have received the implementation details on HARP 2.0. Our basic view remains relatively unchanged. The extension of the HARP end date by an additional 18 months, the easing of all LTV constraints and waiver of some of the reps and warrants are all likely to increase prepayments on HARP eligible collateral. The magnitude of the increase will depend not only on the program changes but also the response rate from borrowers. Consequently, we still expect a higher response rate from lower coupon cleaner credit borrowers than from higher coupon weaker credit borrowers.

In this update we have made three key changes. First, we have capped delivery fees at 75bp. This was part of the implementation detail that was released after the October model update. Second, we have added a ramp to the HARP 2.0 effect so that it does not get fully realized until June. Third, we have muted the effect of HARP 2.0 on lower LTV (i.e., less than 80 LTV borrowers). When the HARP program was first introduced in 2009 it had significant impact on the prepayment performance of lower LTV, HARP eligible borrowers. While we do not expect that to diminish significantly, we now believe that HARP 2.0 is much more targeted to higher LTV borrowers and so will have limited incremental effect on low LTV borrowers. This brings down our model projections on pre-2004 collateral and pre-HARP 2009 collateral.

Figure 5, shows model projections for April prepayments (May reporting) assuming the same mortgage rate as in December, 2011. Overall, the effect of HARP 2.0 is roughly 5-9 CPR. This is in line with our strategy view and the broader consensus in the market. Model projections remain elevated at these levels (conditional on rates) for the next 12 months before HARP 2.0-related prepayments start to decline.

Figure 5: Projected model speeds for key HARP eligible cohorts

Cpn	Vintage	Actual		Model Projection		Change from	
		Feb-2012	Dec-2011	Apr-12	Feb-12	Dec-11	
5.0	2008	39.3	34.9	42.4	3.1	7.5	
	2003	31.3	31.9	35.0	3.7	3.1	
5.5	2008	33.2	30.4	37.1	3.9	6.7	
	2007	31.8	27.9	36.2	4.4	8.3	
	2006	31.3	28.1	35.4	4.1	7.3	
	2005	25.0	23.2	29.2	4.2	6.0	
	2004	25.2	24.3	29.6	4.4	5.3	
6.0	2008	28.4	26.3	32.2	3.8	5.9	
	2007	26.8	24.4	32.5	5.7	8.1	
	2006	27.2	23.7	31.7	4.5	8.0	
	2005	19.9	19.0	25.8	5.9	6.8	
	2004	20.9	19.8	24.2	3.3	4.4	
6.5	2007	23.2	22.1	27.8	4.6	5.7	
	2006	22.1	21.7	27.1	5.0	5.4	
	2005	19.4	18.1	23.8	4.4	5.7	
	2004	16.7	14.6	20.8	4.1	6.2	

Source: Fannie Mae, Barclays Capital

Other Sundry Changes

In addition to the more significant model changes highlighted above, we have also made a number of smaller changes that can have significant effect on small sectors of the market.

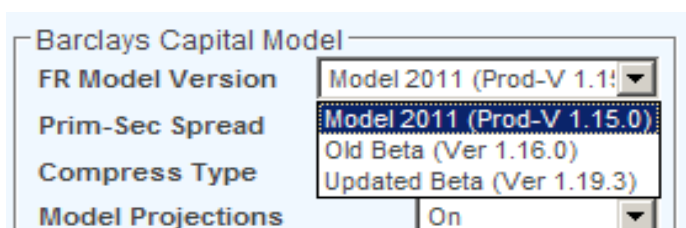
- In our prior release, we had introduced TPO as another factor affecting model prepayment projections. At that time, the model plumbing did not allow us to

distinguish between broker and correspondent originations, even though empirical data clearly showed a significant difference in their prepayment performance. Since then we have added that capability. Both broker and correspondent loans pay faster than retail loans in a narrow WALA range (4-18 WALA). However, broker loans pay even faster than correspondent loans, and there is a residual long-term effect for broker loans. In this update to the model we have made these adjustments. Model projections on broker loans should increase across the board, while model projections on correspondent loans remain unchanged in the 4-18 WALA bucket but decrease after that. For more details on the original TPO effect, please refer to [Agency Fixed Rate Prepayment Model Update: Adjustments for HARP and TPO](#), October 28, 2011.

- Over the past year, once adjusted for TPO, the refinance aging ramp has extended by a few months. The current model had a refinancing aging ramp that gets to 90% of the refinancing function by 9 WALA; we have pushed it out to 12 WALA.
- There are some GNMA issuers (Bank of America, in particular) that have allowed their 90+ delinquency pipelines (that have not been bought out) to increase dramatically. This creates a binary risk in the market that they might suddenly buy them out next month. To allow users to simulate this risk, we have added a new knob to the prepayment model that allows the user to specify the number of months over which existing 90+ delinquencies are flushed out. By default, the model assumes a certain percentage of the delinquent loans will be bought out where the percentage is driven mostly by the relative coupon of the pool.
- We have also fine tuned our 20-year model. In general the model projections were faster than recent actual prepayments. We have therefore recalibrated the model by giving more weight to recent data.

How to access the updated beta model?

The Updated Beta model may be accessed from the preference page on SSA and by choosing “Updated Beta (Ver 1.19.3)” from the pull-down menu for “FR Model Version”. This is the first input field in the right-hand corner of the preference screen. Users will also continue to have access to the previous Beta model. The updated beta model will be rolled to production on April 13, 2012. Please feel free to contact us if you have trouble accessing the model or with any feedback on the model changes.



Valuation impact of the model changes

The 10bp increase in g-fee dominates valuation changes in the conventional sector. OAS on most post-HARP cohorts widened 8-12 bp. These cohorts were also helped by separating TPO into broker and correspondent originations. Broker-originated loans are a smaller percentage of TPO and pay significantly faster increasing TPO related burnout. For post-2009 GNMA cohorts, changes to the mortgage rate process somewhat offset the increase upfront and running MI, and, overall, OAS widening was only 0-6 bp. Pre May-2009 origination were hurt by the changes to the FHA MI structure.

Figure 6: Effect of model change on Fannie Mae TBA and cohort (current beta – V 1.16 vs. updated beta V 1.19)

Current Beta (V 1.16)											Updated Beta (V 1.19)							OAS Change
Coupon	Vintage	Price	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life		
3.5	TBA	\$	102.16	3.04	80	5.6	30	11.6	12.8	13.7	3.10	80	6.1	38	7.9	9.3	11.0	8
	2011	\$	102.16	3.09	78	5.8	29	10.2	10.4	11.9	3.14	78	6.5	37	7.3	7.8	9.6	8
	2010	\$	102.16	3.04	79	5.5	30	12.1	12.9	13.4	3.11	79	6.1	38	8.9	9.7	10.9	8
4.0	TBA	\$	104.41	2.84	92	4.1	30	21.8	19.7	18.1	3.01	96	5.1	44	16.0	15.5	14.9	14
	2011	\$	104.47	2.99	94	5.0	38	17.7	16.3	15.2	3.10	97	5.7	48	12.5	13.1	13.1	10
	2010	\$	104.42	2.92	93	4.5	36	19.7	18.1	16.6	3.06	97	5.3	48	14.6	14.5	14.0	12
4.5	TBA	\$	105.98	2.68	101	3.2	41	29.5	24.4	21.5	2.95	112	4.0	57	22.9	20.0	17.7	17
	2011	\$	106.30	2.93	106	4.2	50	22.9	19.6	17.3	3.10	114	4.9	63	17.5	16.2	14.9	12
	2010	\$	106.14	2.87	106	4.0	50	25.0	21.0	18.4	3.06	113	4.6	62	19.8	17.7	15.8	12
	2009	\$	106.00	2.56	94	2.9	33	33.2	26.6	23.0	2.81	105	3.5	49	27.4	22.7	19.6	16
5.0	TBA	\$	107.69	2.16	88	2.6	34	34.7	29.5	27.2	2.33	97	2.7	44	33.1	27.9	25.3	9
	2010	\$	108.31	2.97	119	4.3	73	20.5	18.4	16.9	3.13	126	4.6	81	17.5	16.2	15.3	8
	2009	\$	107.91	2.86	118	3.8	70	24.3	21.1	19.0	3.04	125	4.1	79	21.2	18.8	17.1	9
5.5	TBA	\$	108.64	1.91	81	2.1	39	36.1	32.5	30.8	2.04	90	2.2	48	35.1	31.6	29.6	8
	2008	\$	108.67	2.15	94	2.4	52	34.2	30.6	28.5	2.27	101	2.4	59	33.3	29.8	27.4	7
	2007	\$	108.67	2.33	101	2.7	63	32.3	28.8	26.7	2.30	100	2.5	62	32.9	29.3	27.1	-2
	2006	\$	108.67	2.39	106	2.7	68	31.3	28.1	26.0	2.36	104	2.6	66	31.9	28.6	26.3	-2
6.0	TBA	\$	109.86	2.27	102	2.6	71	32.5	29.7	28.0	2.35	108	2.6	76	32.4	29.4	27.3	5
	2008	\$	109.92	2.62	121	3.0	90	30.0	27.1	24.9	2.67	124	2.9	93	29.8	26.8	24.5	3
	2007	\$	109.92	2.68	123	3.0	95	29.5	26.5	24.3	2.63	121	2.9	92	30.2	27.1	24.7	-3
	2006	\$	109.92	2.76	129	3.1	101	28.4	25.6	23.4	2.71	127	2.9	97	29.2	26.1	23.8	-3
6.5	TBA	\$	112.02	2.60	116	3.1	93	27.4	25.3	23.8	2.48	108	2.9	85	28.7	26.4	24.7	-8
	2006	\$	112.14	2.97	136	3.5	117	24.8	22.6	20.6	2.89	132	3.3	112	25.6	23.3	21.2	-5
	2007	\$	112.14	2.87	128	3.4	109	26.0	23.7	21.5	2.81	124	3.3	106	26.6	24.1	21.9	-4

Note: Pricing date: March 14, 2012. Source: Barclays Capital

Figure 7: Impact of model change on GNMA TBA and cohort (Current Beta – V 1.16 vs. Updated Beta V 1.19)

Current Beta (V1.16)											Updated Beta (V1.19)							OAS Change
Coupon	Vintage	Price	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life		
3.5	TBA	\$	103.69	2.93	59	6.3	34	8.1	8.9	9.0	2.92	59	6.3	34	9.0	9.2	9.0	0
4.0	TBA	\$	106.94	2.70	62	5.1	18	10.0	12.9	12.4	2.70	61	5.2	19	10.6	13.2	12.4	2
	2011	\$	107.03	2.58	57	4.5	7	14.1	15.0	13.7	2.58	56	4.7	9	14.6	15.2	13.7	2
	2010	\$	107.06	2.79	60	5.3	24	10.6	11.2	10.7	2.78	59	5.4	26	11.5	11.6	10.7	2
4.5	TBA	\$	108.50	2.57	74	3.8	23	19.0	18.5	15.8	2.67	75	4.2	29	17.9	17.1	14.7	6
	2011	\$	108.75	2.50	67	3.9	18	20.5	19.2	16.0	2.60	69	4.2	24	19.0	17.7	15.0	6
	2010	\$	108.75	2.78	76	4.3	33	15.8	14.8	12.9	2.83	77	4.6	37	15.4	14.1	12.4	5
5.0	2009	\$	108.55	2.75	77	4.1	34	16.3	15.4	13.7	2.50	65	3.8	23	20.6	19.3	16.2	-12
	TBA	\$	110.19	2.41	76	3.2	32	22.9	21.1	18.3	2.56	80	3.6	40	21.3	19.5	16.9	8
	2010	\$	110.44	2.71	84	4.1	46	19.8	18.1	15.0	2.79	87	4.3	52	18.6	17.1	14.3	5
	2009	\$	110.19	2.50	78	3.4	37	22.0	20.4	17.4	2.38	69	3.4	31	23.7	21.8	18.4	-6
5.5	TBA	\$	111.14	1.89	59	2.3	23	28.4	26.6	24.2	1.41	22	2.2	-6	30.9	30.2	27.9	-29
6.0	TBA	\$	112.34	1.77	52	2.1	23	30.0	28.3	25.9	1.64	29	2.4	10	30.2	29.1	26.8	-13
6.5	TBA	\$	114.52	1.88	43	2.8	28	27.8	26.4	24.0	1.98	43	3.0	30	26.6	25.6	23.5	2

Note: Pricing date: March 14, 2012. Source: Barclays Capital

Figure 8: Impact of model change on IOS (Current Beta – V 1.16 vs. Updated Beta V 1.19)

Current Beta (V 1.16)											Updated Beta (V1.19)							OAS Change
Security	Cpn	Price	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life		
IOS-33510 IO	3.5	\$	19.23	0.27	491	-22.9	216	13.7	13.8	14.0	3.34	575	-14.4	376	10.1	10.5	11.4	160
IOS-34011 IO	4.0	\$	20.00	0.12	470	-25.1	280	20.3	17.6	16.1	2.91	642	-17.5	478	14.2	13.9	13.6	198
IOS-34010 IO	4.0	\$	18.42	0.42	534	-25.3	341	21.5	19.0	17.2	3.59	717	-16.8	561	15.9	15.1	14.4	220
IOS-34009 IO	4.0	\$	15.06	-0.38	624	-34.4	429	30.4	25.2	21.9	2.97	864	-27.4	664	24.8	21.2	18.7	235
IOS-34511 IO	4.5	\$	20.45	0.24	365	-22.8	291	24.6	20.4	17.8	3.02	569	-17.4	493	18.9	16.8	15.3	202
IOS-34510 IO	4.5	\$	18.47	0.91	464	-23.4	401	26.9	21.9	19.0	3.85	682	-18.2	612	21.4	18.4	16.3	212
IOS-34509 IO	4.5	\$	15.08	0.53	585	-31.1	528	35.0	27.5	23.7	4.30	875	-25.4	798	29.2	23.5	20.1	269
IOS-35010 IO	5.0	\$	20.94	2.63	515	-14.5	504	21.4	18.8	17.2	4.61	646	-13.0	623	18.4	16.6	15.5	119
IOS-35009 IO	5.0	\$	17.91	3.65	698	-16.6	695	25.4	21.7	19.5	5.96	858	-15.3	837	22.4	19.4	17.5	142
IOS-35008 IO	5.0	\$	13.88	-3.25	364	-26.0	466	39.5	33.9	32.0	-1.28	525	-25.8	598	38.0	32.5	30.2	132
IOS-35005 IO	5.0	\$	15.59	-0.79	420	-22.2	448	33.8	28.9	26.3	1.78	593	-20.6	601	31.5	26.7	23.8	153
IOS-35508 IO	5.5	\$	13.92	2.77	730	-18.5	884	35.3	31.4	29.2	4.09	856	-18.5	992	34.3	30.5	28.1	108
IOS-35505 IO	5.5	\$	15.98	6.42	917	-12.4	963	27.0	24.2	21.8	7.75	1017	-11.9	1056	25.8	23.1	20.7	92
IOS-36008 IO	6.0	\$	15.86	6.11	820	-10.4	963	30.6	27.6	25.3	6.69	879	-10.9	1013	30.3	27.3	24.8	51
IOS-36567 IO	6.5	\$	18.09	9.18	949	-4.0	1031	25.8	23.5	21.3	8.58	904	-4.9	995	26.4	24.0	21.8	-36
IG2-34010 IO	4.0	\$	21.47	4.82	541	-8.3	389	10.3	10.8	10.4	4.83	538	-8.7	396	11.2	11.1	10.3	7
IG2-34510 IO	4.5	\$	20.83	4.64	629	-14.4	471	16.7	15.2	13.2	5.24	646	-11.9	521	16.8	14.7	12.6	50
IG2-35010 IO	5.0	\$	20.23	4.93	701	-20.0	539	20.5	18.1	15.6	6.27	774	-15.3	644	19.2	16.6	14.4	105

Note: Pricing date: March 14, 2012. Source: Barclays Capital

Figure 9: Impact of model change on Fannie Mae TBA and cohort (Production Model – V 1.15 vs. Updated Beta V 1.19)

Production Model (V 1.15)											Updated Beta (V 1.19)							OAS Change
Coupon	Vintage	Price	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life		Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life	
3.5	TBA	\$	102.16	3.09	82	5.8	35	7.7	10.0	11.7	3.10	80	6.1	38	7.9	9.3	11.0	3
	2011	\$	102.16	3.14	80	6.3	35	5.2	7.6	9.9	3.14	78	6.5	37	7.3	7.8	9.6	1
	2010	\$	102.16	3.09	82	5.8	35	9.1	10.5	11.5	3.11	79	6.1	38	8.9	9.7	10.9	3
4.0	TBA	\$	104.41	2.94	95	4.5	36	17.9	17.6	16.2	3.01	96	5.1	44	16.0	15.5	14.9	8
	2011	\$	104.47	3.06	97	5.2	43	12.9	14.3	13.8	3.10	97	5.7	48	12.5	13.1	13.1	5
	2010	\$	104.42	3.00	96	4.8	41	16.3	16.2	15.0	3.06	97	5.3	48	14.6	14.5	14.0	7
4.5	TBA	\$	105.98	2.79	105	3.1	43	26.7	23.0	20.0	2.95	112	4.0	57	22.9	20.0	17.7	14
	2011	\$	106.30	2.99	109	4.1	53	20.5	18.8	16.4	3.10	114	4.9	63	17.5	16.2	14.9	10
	2010	\$	106.14	2.92	107	3.8	50	23.5	20.5	17.7	3.06	113	4.6	62	19.8	17.7	15.8	12
	2009	\$	106.00	2.60	97	2.7	34	30.9	26.0	22.4	2.81	105	3.5	49	27.4	22.7	19.6	14
5.0	TBA	\$	107.69	2.33	98	2.7	43	31.5	27.4	25.4	2.33	97	2.7	44	33.1	27.9	25.3	0
	2010	\$	108.31	2.90	116	3.7	67	21.7	19.5	17.6	3.13	126	4.6	81	17.5	16.2	15.3	15
	2009	\$	107.91	2.86	117	3.5	67	24.2	21.2	19.0	3.04	125	4.1	79	21.2	18.8	17.1	12
5.5	TBA	\$	108.64	1.80	81	2.0	36	34.9	32.9	31.9	2.04	90	2.2	48	35.1	31.6	29.6	12
	2008	\$	108.67	2.16	99	2.4	54	32.3	30.0	28.5	2.27	101	2.4	59	33.3	29.8	27.4	5
	2007	\$	108.67	2.50	116	2.9	75	28.2	26.6	25.3	2.30	100	2.5	62	32.9	29.3	27.1	-13
	2006	\$	108.67	2.51	117	2.9	76	27.8	26.4	24.9	2.36	104	2.6	66	31.9	28.6	26.3	-10
6.0	TBA	\$	109.86	2.06	97	2.3	60	32.4	30.9	29.8	2.35	108	2.6	76	32.4	29.4	27.3	15
	2008	\$	109.92	2.61	125	2.9	91	28.6	26.7	25.0	2.67	124	2.9	93	29.8	26.8	24.5	3
	2007	\$	109.92	2.89	140	3.2	109	25.6	23.9	22.5	2.63	121	2.9	92	30.2	27.1	24.7	-18
	2006	\$	109.92	2.93	144	3.2	112	24.9	23.4	21.9	2.71	127	2.9	97	29.2	26.1	23.8	-15
6.5	TBA	\$	112.02	2.81	135	3.3	109	24.0	23.2	22.3	2.48	108	2.9	85	28.7	26.4	24.7	-23
	2006	\$	112.14	3.14	151	3.6	130	22.0	20.6	19.3	2.89	132	3.3	112	25.6	23.3	21.2	-18
	2007	\$	112.14	3.09	145	3.6	125	23.0	21.4	19.9	2.81	124	3.3	106	26.6	24.1	21.9	-19

Note: Pricing date: March 14, 2012. Source: Barclays Capital

Figure 10: Impact of model change on Ginnie Mae TBA and cohort (Production Model – V 1.15 vs. Updated Beta V 1.19)

Production Model (V 1.15)										Updated Beta (V 1.19)								OAS Change
Coupon	Vintage	Price	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life		
3.5	TBA	\$ 103.69	2.93	61	6.4	35	7.9	8.7	8.9	2.92	59	6.3	34	9.0	9.2	9.0		-1
4.0	TBA	\$ 106.94	2.74	64	5.3	22	8.7	11.8	11.9	2.70	61	5.2	19	10.6	13.2	12.4		-3
	2011	\$ 107.03	2.70	60	4.9	14	11.2	12.6	12.2	2.58	56	4.7	9	14.6	15.2	13.7		-5
	2010	\$ 107.06	2.86	62	5.7	31	8.8	9.6	9.7	2.78	59	5.4	26	11.5	11.6	10.7		-5
4.5	TBA	\$ 108.50	2.70	78	4.0	30	15.5	16.1	14.6	2.67	75	4.2	29	17.9	17.1	14.7		-1
	2011	\$ 108.75	2.58	71	4.0	22	17.2	17.3	15.3	2.60	69	4.2	24	19.0	17.7	15.0		1
	2010	\$ 108.75	2.85	81	4.5	38	12.4	13.0	12.3	2.83	77	4.6	37	15.4	14.1	12.4		0
	2009	\$ 108.55	2.84	82	4.3	41	12.7	13.3	12.7	2.50	65	3.8	23	20.6	19.3	16.2		-18
5.0	TBA	\$ 110.19	2.49	78	3.3	35	21.3	20.1	17.6	2.56	80	3.6	40	21.3	19.5	16.9		5
	2010	\$ 110.44	2.67	82	3.9	45	18.7	17.9	15.4	2.79	87	4.3	52	18.6	17.1	14.3		7
	2009	\$ 110.19	2.54	79	3.4	41	20.1	19.4	17.1	2.38	69	3.4	31	23.7	21.8	18.4		-9
5.5	TBA	\$ 111.14	2.14	69	2.5	34	26.1	24.4	22.3	1.41	22	2.2	-6	30.9	30.2	27.9		-40
6.0	TBA	\$ 112.34	1.98	62	2.2	34	28.3	26.8	24.4	1.64	29	2.4	10	30.2	29.1	26.8		-24
6.5	TBA	\$ 114.52	1.94	45	2.8	31	27.3	25.8	23.7	1.98	43	3.0	30	26.6	25.6	23.5		0

Note: Pricing date: March 14, 2012. Source: Barclays Capital

Figure 11: Impact of model change on IOS (Production Model – V 1.15 vs. Updated Beta V 1.19)

Production Model (V 1.15)										Updated Beta (V 1.19)								OAS Change
Security	Cpn	Price	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life	Yield	ZV	OAD	OAS	1-Yr	3-Yr	Life		
IOS-33510 IO	3.5	\$ 19.23	2.68	517	-17.0	303	9.9	11.1	11.9	3.34	575	-14.4	376	10.1	10.5	11.4		73
IOS-34011 IO	4.0	\$ 20.00	2.26	572	-19.8	396	13.2	14.8	14.2	2.91	642	-17.5	478	14.2	13.9	13.6		82
IOS-34010 IO	4.0	\$ 18.42	2.35	598	-21.7	427	17.3	16.8	15.4	3.59	717	-16.8	561	15.9	15.1	14.4		135
IOS-34009 IO	4.0	\$ 15.06	-0.79	645	-36.3	436	27.8	25.2	22.2	2.97	864	-27.4	664	24.8	21.2	18.7		228
IOS-34511 IO	4.5	\$ 20.45	1.39	422	-22.5	333	21.0	19.1	16.7	3.02	569	-17.4	493	18.9	16.8	15.3		159
IOS-34510 IO	4.5	\$ 18.47	1.61	484	-24.7	399	25.1	21.4	18.3	3.85	682	-18.2	612	21.4	18.4	16.3		213
IOS-34509 IO	4.5	\$ 15.08	0.78	616	-33.0	538	33.0	27.2	23.5	4.30	875	-25.4	798	29.2	23.5	20.1		259
IOS-35010 IO	5.0	\$ 20.94	1.82	441	-18.1	399	22.6	19.9	17.9	4.61	646	-13.0	623	18.4	16.6	15.5		224
IOS-35009 IO	5.0	\$ 17.91	3.48	679	-19.4	649	25.6	22.0	19.6	5.96	858	-15.3	837	22.4	19.4	17.5		188
IOS-35008 IO	5.0	\$ 13.88	-3.97	363	-27.8	444	38.4	33.9	32.5	-1.28	525	-25.8	598	38.0	32.5	30.2		154
IOS-35005 IO	5.0	\$ 15.59	0.39	528	-22.3	525	31.3	27.4	25.1	1.78	593	-20.6	601	31.5	26.7	23.8		77
IOS-35508 IO	5.5	\$ 13.92	2.22	746	-19.3	878	33.9	31.3	29.8	4.09	856	-18.5	992	34.3	30.5	28.1		114
IOS-35505 IO	5.5	\$ 15.98	7.93	1060	-11.8	1077	24.4	22.5	20.7	7.75	1017	-11.9	1056	25.8	23.1	20.7		-21
IOS-36008 IO	6.0	\$ 15.86	5.99	856	-11.3	970	29.2	27.2	25.6	6.69	879	-10.9	1013	30.3	27.3	24.8		44
IOS-36567 IO	6.5	\$ 18.09	11.28	1158	-3.2	1205	22.9	21.3	19.9	8.58	904	-4.9	995	26.4	24.0	21.8		-211
IG2-34010 IO	4.0	\$ 21.47	5.86	549	-5.1	435	8.4	9.4	9.6	4.83	538	-8.7	396	11.2	11.1	10.3		-39
IG2-34510 IO	4.5	\$ 20.83	6.94	737	-11.1	584	11.3	11.8	11.4	5.24	646	-11.9	521	16.8	14.7	12.6		-63
IG2-35010 IO	5.0	\$ 20.23	6.55	801	-17.6	641	16.2	15.9	14.4	6.27	774	-15.3	644	19.2	16.6	14.4		3

Note: Pricing date: March 14, 2012. Source: Barclays Capital

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