

Agency Fixed Rate Prepayment Model Update – Pre Beta V1.31

Modeling FHA to Conventional Rate Incentives

After the close of business on Friday December 13, 2013, we introduced a new Pre Beta agency fixed rate prepayment model on Barclays Live. The new model can be accessed by setting the “FR Model Version” to Pre Beta (V1.31) in the Preferences tab on the mortgage calculator. The update includes the introduction of an FHA-to-conventional rate incentive to the GNMA model, as well as changes to the turnover, cash-out/trade-up and refinance functions of the conventional and GNMA models.

We are also releasing a new primary-secondary spread model. The model can be accessed by setting the “Prim-Sec Spread Model” to P-S(Par Coupon) v1.2 in the Preferences tab on the mortgage calculator. In addition to updating the time-varying add-on to our base par coupon primary-secondary spread model, the new model incorporates information about impending g-fee increases announced by the Federal Housing Finance Agency (FHFA) on Monday December 9, 2013.¹ P-S (Par Coupon) v1.2 can be used with any prepayment model version and is the default primary-secondary spread model for Pre Beta (V1.31).

As is standard with Pre Beta releases, users should think of this as an intermediate model update which may not roll to production in its current form. In particular, the FHFA announcement indicated that there would be changes to the up-front delivery fee matrices of the GSEs in the near term. Those changes were made public on Monday December 16, 2013, after our model release. We therefore expect to make additional model updates over the course of the next several weeks to incorporate the new delivery fees. There are no changes to the production model at this time.

The key changes introduced in Pre Beta V1.31 and P-S(Par Coupon) V1.2:

- **FHA-to-conventional rate incentive:** We have made a significant change to the way rate incentive is calculated in the GNMA model. A strong recovery in home prices and high mortgage insurance premiums on new FHA mortgages have increased the incentive to refinance into a conventional mortgage for some better credit quality FHA borrowers who’ve experienced significant home price appreciation (Figure 1 and *GNMA New Production Discount Speeds*, September 20, 2013). The observed magnitude of the effect is already visible in recently originated GNMA jumbo pools and is likely to become more broadly visible in GNMA prepayments over time as the housing recovery gains traction and the mark-to-market LTVs of FHA borrowers fall (*G2JM Speeds – Canary In The Coal Mine?*, November 22, 2013).

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¹ FHFA Takes Further Steps to Advance Conservatorship Strategic Plan by Announcing an Increase in Guarantee Fees

To capture this effect, we have introduced an FHA-to-conventional rate incentive to the GNMA model. The calculated incentive takes into account differences between the up-front and annual MIP on a new FHA mortgage and the private mortgage insurance, annual g-fees, and up-front delivery fees faced in the conventional market for borrowers of differing credit scores and mark-to-market LTVs. We also attempt to capture the more stringent and costly underwriting in the conventional market relative to the streamlined refinancing programs offered by the FHA by making the effect of the calculated rate incentive stronger for FHA borrowers with higher credit scores.

Figure 2 shows three-year voluntary prepayment projections from the new model for the G2SF 3.5 2012 and G2SF 4.5 10 cohorts across several mortgage rate scenarios, with and without the FHA-to-conventional rate incentive turned on. There are a couple of points to note about these cohorts. First, although the 4.5s have about 105bp higher nominal WAC (4.86% versus 3.81%), they have only a 38bp higher effective WAC after accounting for differences in annual MIP (55bp versus 102bp). Second, the 4.5s have marginally lower FICO (703 versus 709) and cumulative HPA to date (8.12 versus 11.05) than the 3.5s. As a result, the base case pickup in prepayment rates resulting from the FHA-to-conventional refinance option is only marginally larger for the 4.5s than for the 3.5s. The size of the effect and the difference between cohorts becomes more noticeable in the down 50bp and down 100bp scenarios as the resulting refinance incentives for both cohorts become more meaningful. In the up rate scenarios, the effect of the FHA-to-conventional rate incentive shrinks as both cohorts become deep discounts relative to FHA and conventional mortgage market opportunities. In these scenarios, the primary effect of the conventional option is not to stimulate refinancing activity but to limit the effect of lock-in on discount prepayments.

FIGURE 1

Effective rate/term refinance mortgage rates by FICO/LTV

FICO/ULTV	90-95	85-90	80-85	<80
FHA				
Post HARP	6.18%	6.18%	6.18%	6.18%
Pre HARP	4.99%	4.99%	4.99%	4.99%
Conventional				
660	7.00%	6.44%	6.14%	5.14%
680	6.23%	5.81%	5.55%	4.96%
700	6.17%	5.75%	5.43%	4.77%
720	5.62%	5.38%	5.15%	4.64%
760	5.39%	5.18%	4.97%	4.58%

Note: Assumes 4.58% 30-year conventional mortgage rate and 4.24% 30-year FHA mortgage rate. Effective Post HARP FHA mortgage rate includes 1.75% UFMI and 1.35% annual MIP. Effective Pre HARP FHA mortgage rate includes up-front MI of 0.01% and annual MIP of 0.55%. Conventional mortgage rate includes monthly premium for private MI, including rate/term refinance add-on, along with annual g-fees and delivery fees charged by the GSEs, not including the impending g-fee and delivery fee changes announced by the FHFA on December 9, 2013. Source: Radian, Fannie Mae, Barclays Research

FIGURE 2

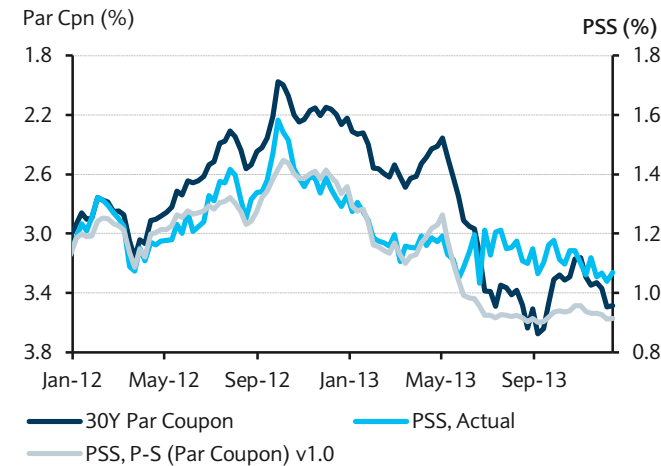
Pre Beta (V1.31) 3-year CRR projections, static rate scenarios

	Mortgage Rate Shift Scenario (bp)						
	-200	-100	-50	0	50	100	200
G2SF 3.5 12							
FHA-to-Conv On	38.0	20.1	11.3	8.6	6.7	5.7	5.1
FHA-to-Conv Off	31.8	14.0	9.4	7.3	6.0	5.4	5.0
Difference	6.2	6.1	1.9	1.3	0.7	0.3	0.1
G2SF 4.5 10							
FHA-to-Conv On	35.8	23.7	15.5	10.8	8.7	7.2	5.7
FHA-to-Conv Off	29.3	14.6	11.4	9.0	7.3	6.4	5.5
Difference	6.5	9.1	4.1	1.8	1.4	0.8	0.2

Note: Projections use rates as of 12/12/2013 close. The base case conventional 30-year mortgage rate is 4.58% (4.68% with new 10bp g-fee). The base case FHA mortgage rate is 4.24%. Source: Barclays Research

FIGURE 3

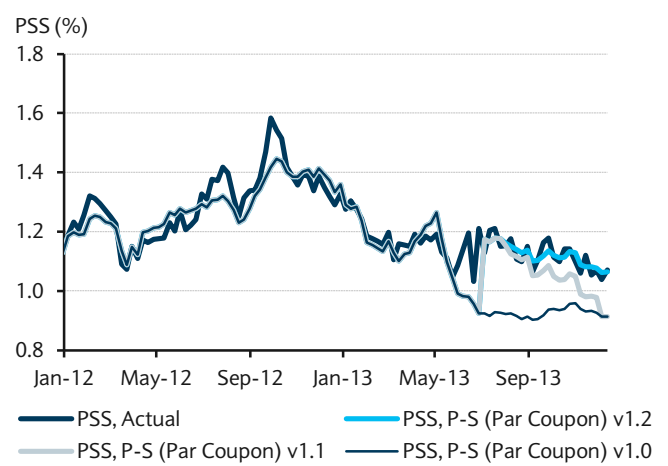
Primary-secondary spread versus par coupon



Source: HSH Associates, Barclays Research

FIGURE 4

Adjustments to the base primary-secondary spread model

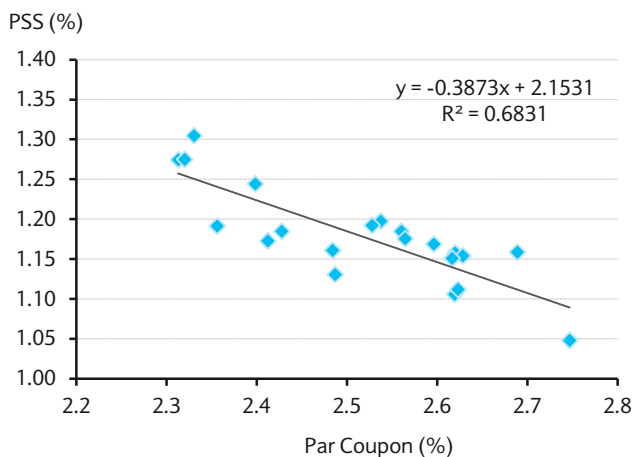


Source: HSH Associates, Barclays Research

- Primary-secondary spread:** The spread between survey mortgage rates for 30-year fixed rate loans and the par coupon on MBS is about 15bp higher than the spread predicted by our base primary-secondary spread model (Figure 3). This is down from a gap of 25bp in July 2013. As can be seen in Figure 1, the base primary-secondary spread model was faring reasonably well predicting actual primary-secondary spreads through the end of May 2013. However, beginning in late May after the release of the minutes for the May 1, 2013 FOMC meeting and Fed Chairman Bernanke's testimony before Congress, taper-related uncertainty led to a significant breakdown in the correlation between the primary-secondary spread and par coupon. Even as par coupon continued to increase throughout the summer, the primary-secondary spread failed to tighten as historical experience would have suggested. Figures 5 and 6 show the extent of the breakdown. Figure 5 shows that, for the first half of 2013, the primary-secondary spread displayed a strong negative correlation with the level of par coupon. However, as can be seen in Figure 6, the correlation has almost completely broken down in the second half of the year. We estimate that approximately 10bp of the current gap between the primary-secondary spread implied by survey mortgage rates and that predicted by our base primary-secondary spread model is likely to be temporary given historical

FIGURE 5

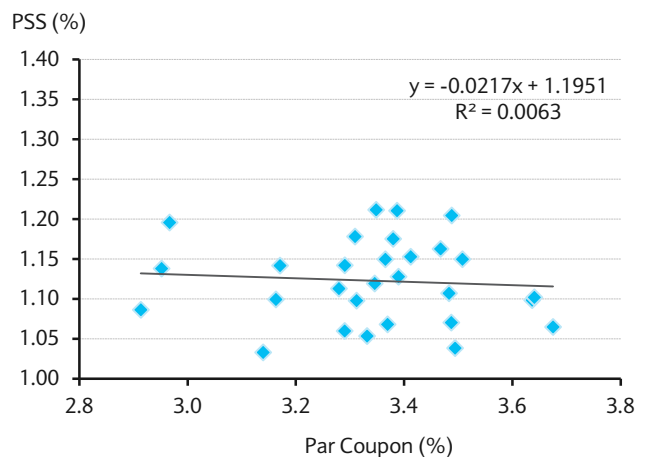
PSS versus Par Coupon, January 4, 2013 to May 24, 2013



Source: HSH Associates, Barclays Research

FIGURE 6

PSS versus Par Coupon, May 24, 2013 - December 13, 2013



Source: HSH Associates, Barclays Research

relationships. To adjust for this, the latest iteration of our primary-secondary spread model adds 15bp to projected 30-year mortgage rates for December 2013, gradually declining to a 5bp add-on by December 2014 (Figure 4).

- **GSE g-fee increases:** On Monday December 9, 2013, the FHFA added an additional wrinkle to primary-secondary spread modelling by announcing changes to the *annual* g-fees and *up-front* delivery fees charged by Fannie Mae and Freddie Mac. The changes include (1) an across the board 10bp increase in base g-fees, (2) the elimination of the up-front 25bp adverse market delivery fee for all but four states with exceptionally high foreclosure carrying costs (New York, New Jersey, Connecticut, and Florida), and (3) changes to the up-front delivery fee matrix to be specified at a future date. The FHFA expects the net effect of all changes to be equivalent to an annual g-fee increase of 14bp on typical 30-year mortgages and 4bp on 15-year mortgages.

This implies that the net effect of (2) and (3) on the up-front delivery fees of 30-year mortgages will be to add an additional 4bp to effective annual g-fees above and beyond the across the board 10bp increase specified in (1). Moreover, according to additional information provided in the FHFA announcement and accompanying documents, it appears that increases in effective annual g-fees resulting from changes to the delivery fee matrix are likely to be skewed toward a lower FICO score, higher LTV loans, and are, therefore, less likely to be reflected in survey mortgage rates, which tend to represent the mortgage rates available to higher quality borrowers making standard down payments.

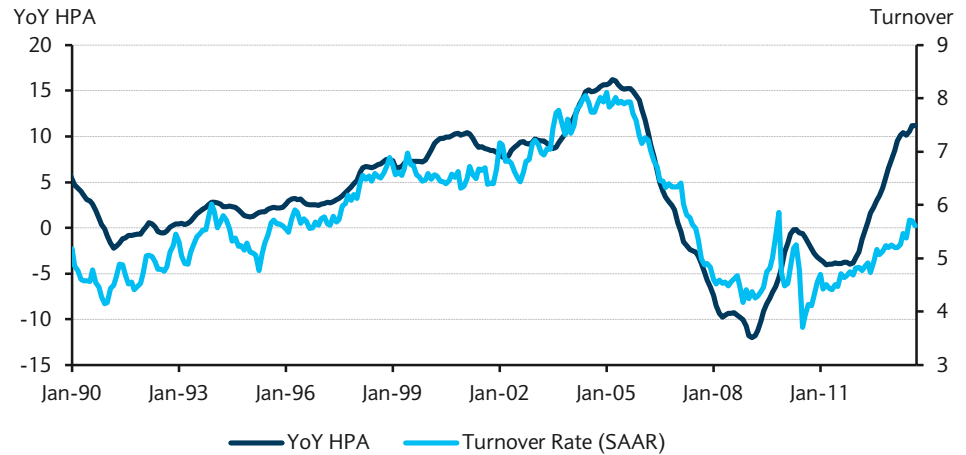
For 15-year mortgages, which are not subject to the same FICO/LTV based add-ons as 30-year mortgages, it appears that the only change to up-front delivery fees is the elimination of the 25bp adverse market delivery fee. This equates to approximately a 6bp reduction in annual g-fees on 15-year mortgages, and is consistent with the FHFA's estimate of a net increase of 4bp in effective annual g-fees on 15-year mortgages resulting from all three changes.

In response to the FHFA announcement, we are adding 10bp to the 30-year g-fee used by the new primary-secondary spread model and 4bp for 15-year mortgages. We will make further adjustments to our model once details of impending changes to up-front delivery fees are made public. According to the announcement, the new fees will apply to loans exchanged for MBS with settlement dates on or after April 1, 2014, and for loans sold for cash with commitments on or after March 1, 2014. Given the typical 60-90 day rate locks received by borrowers when applying for a new mortgage, we phase the increases in over two months beginning January 2014.

- **Turnover, cash-out, & trade-up:** We made several changes to the turnover model. Tighter underwriting standards and a lack of equity among many home-owners has led existing home sales to lag the recovery in home prices (Figure 7). We expect this to persist for some time, producing discount prepayments on recently originated cohorts that fall somewhere between levels observed in the mid 1990s and early 2000. We have therefore lowered base case turnover rates in the prepayment model and reduced the hpa sensitivity of projected turnover to be more in line with historical relationships (Figure 8). We have also reduced the slope of the lock-in function and updated the geographic effects in the turnover model. Finally, to capture the reduced lock-in and higher discount speeds typically observed on lower loan balance collateral, we added a loan size effect to the turnover function.

FIGURE 7

Housing turnover has lagged the recovery in home prices

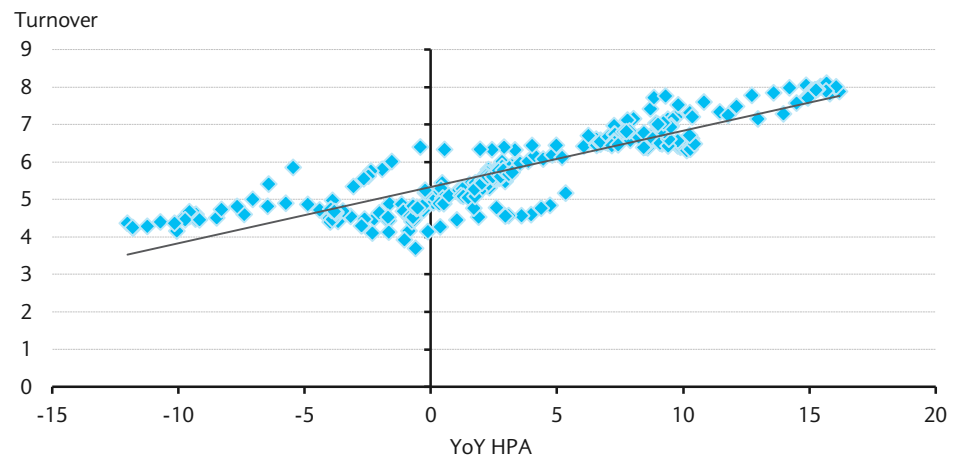


Source: National Association of Realtors, U.S. Census Bureau, CoreLogic, Barclays Research

The primary driver of cash-out and trade-up activity in the prepayment model is cumulative home price appreciation since origination. Historically, high levels of cumulative home price appreciation have coincided with low LTVs and, hence, increased cash-out/trade-up opportunities. However, in the current recovery, many borrowers with high levels of home price appreciation have little or no equity available for such transactions. To capture this, we have added an updated LTV effect to the cash-out function that reduces prepayments for mortgage pools with significant cumulative home price appreciation but high current LTVs. This model change improves fits on MHA, CQ, and CR collateral across the coupon stack.

FIGURE 8

Housing turnover versus recent home price appreciation, 1990 -2011



Source: National Association of Realtors, U.S. Census Bureau, CoreLogic, Barclays Research

- Refinancing/Burnout:** We made several adjustments to the refinancing model. They included a reduction in the burnout applied to Pre-HARP collateral, the introduction of a 15-year mortgage rate incentive in the 20-year model, and a reduction in the average GSE FICO score used to gauge underwriting conditions in the mortgage market from 760 to 750.
- User knobs for HARP expansion and FHA-to-conventional rate incentive:** In addition to the above-mentioned model updates, we have made enhancements to several user

knobs and have added two new knobs. First, users who wish to simulate an expansion of the HARP eligibility date can do so without assuming that the change occurs immediately. By creating and saving a “HARP/FHA Eligibility Date” vector in the Vectors tab of the mortgage calculator, users can specify the new eligibility end date and the future factor date at which it becomes operative. The burnout multiplier has also been vectorized, allowing users to set different burnout multipliers for different origination dates (e.g., pre/post HARP origination dates).

When evaluating GNMA MBS, users can adjust the effect of the new FHA-to-conventional rate incentive effect in the GNMA model with the “FHA-to-Conv Rate Incentive Mult”. Setting this multiplier to a value greater/less than one increases/decreases the effective FHA to conventional rate incentive in the model. Setting the multiplier to zero turns off the FHA-to-conventional rate incentive effect in entirety. In addition, this multiplier can be entered in vector form with different values for different origination cohorts. Finally, users can specify their own vector of elbow shifts for FHA borrowers with the “FHA Elbow Shift (bp)”.

Appendix: OAS Effect of Model Changes, Pre Beta V1.30.1 vs Pre Beta V1.31

FIGURE 1

FN 30Y, Market Rates: NY 3PM Close of Thursday, Dec 12, 2013

Pre Beta V1.30.1										Pre Beta V1.31							Change						
Coupon	Vintage	Price	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life
3.0	TBA	95-06+	3.66	46	37	8.0	4.7	5.8	6.7	3.63	48	40	8.0	3.9	5.1	6.2	-0.03	1	3	-0.1	-0.8	-0.7	-0.5
3.0	2013	95-06+	3.68	50	40	7.9	6.0	6.5	7.1	3.65	50	43	7.8	4.8	5.6	6.4	-0.03	1	3	0.0	-1.2	-0.9	-0.7
3.0	2012	95-06+	3.69	53	43	7.7	6.9	7.0	7.2	3.66	53	46	7.7	5.6	6.0	6.5	-0.03	0	3	0.0	-1.3	-1.0	-0.7
3.5	TBA	99-19+	3.55	50	32	6.8	9.1	8.9	8.7	3.55	49	34	6.9	6.9	7.2	7.4	0.00	-1	2	0.1	-2.2	-1.7	-1.3
3.5	2013	99-19+	3.55	46	31	7.5	7.0	8.0	8.5	3.55	48	36	7.5	5.3	6.5	7.6	0.00	1	5	0.0	-1.7	-1.5	-0.9
3.5	2012	99-19+	3.55	50	34	7.1	9.0	8.9	8.7	3.55	51	38	7.2	6.9	7.2	7.7	0.00	1	4	0.0	-2.1	-1.7	-1.0
3.5	2011	99-19+	3.55	52	34	6.9	9.6	9.1	8.8	3.55	52	38	6.9	7.4	7.5	7.7	0.00	0	4	0.0	-2.2	-1.6	-1.1
3.5	2010	99-19+	3.55	56	37	6.6	10.4	9.7	9.2	3.55	56	40	6.6	8.1	8.0	8.1	0.00	0	3	-0.1	-2.3	-1.7	-1.1
4.0	TBA	103-08+	3.38	54	24	5.8	12.5	11.9	11.2	3.45	54	27	5.9	9.5	9.7	9.5	0.06	0	3	0.2	-3.0	-2.2	-1.7
4.0	2013	103-08+	3.45	53	24	6.6	7.5	9.3	9.8	3.49	54	30	6.7	5.6	7.6	8.9	0.03	1	6	0.1	-1.9	-1.7	-0.9
4.0	2012	103-08+	3.42	54	33	6.6	11.1	10.8	10.2	3.44	57	39	6.6	9.5	9.8	9.9	0.01	3	6	0.0	-1.6	-1.0	-0.3
4.0	2011	103-08+	3.42	55	29	6.1	11.4	10.9	10.3	3.45	56	34	6.2	9.1	9.2	9.2	0.04	1	5	0.1	-2.3	-1.7	-1.1
4.0	2010	103-08+	3.39	56	30	5.9	12.1	11.4	10.7	3.43	58	34	5.9	9.6	9.7	9.6	0.04	1	4	0.0	-2.5	-1.7	-1.1
4.0	2009	103-08+	3.35	60	28	5.1	14.2	12.8	11.5	3.37	61	27	4.7	12.1	11.7	11.1	0.02	1	-2	-0.4	-2.1	-1.1	-0.4
4.5	TBA	106-06+	3.08	62	19	4.1	18.4	17.0	14.8	3.14	64	22	4.1	15.5	15.4	14.1	0.06	2	3	-0.1	-2.9	-1.6	-0.7
4.5	2013	106-10+	3.40	65	31	6.2	8.5	10.5	10.8	3.42	67	38	6.2	6.8	9.2	10.4	0.03	2	7	0.0	-1.7	-1.3	-0.4
4.5	2012	106-08+	3.35	62	37	6.2	12.5	12.1	11.3	3.32	65	43	6.0	11.5	11.9	11.7	-0.02	3	5	-0.1	-1.0	-0.2	0.4
4.5	2011	106-06+	3.34	63	31	5.4	13.2	12.5	11.4	3.36	66	36	5.4	11.3	11.4	11.0	0.03	2	5	-0.1	-1.9	-1.1	-0.4
4.5	2010	106-06+	3.28	64	29	5.0	14.2	13.4	12.1	3.32	66	33	5.0	12.0	12.0	11.5	0.04	2	5	0.0	-2.2	-1.4	-0.6
4.5	2009	106-06+	3.23	64	28	4.7	15.3	14.1	12.6	3.27	67	33	4.7	13.0	12.8	12.0	0.04	2	5	0.0	-2.3	-1.3	-0.6
5.0	TBA	108-18	2.05	49	-6	2.0	31.0	28.4	25.1	2.13	57	-1	1.7	28.8	27.6	24.4	0.08	8	6	-0.3	-2.2	-0.8	-0.7
5.0	2011	109-02	3.19	67	33	5.0	15.2	14.2	12.7	3.22	70	36	4.8	13.2	13.3	12.5	0.03	3	3	-0.2	-2.0	-0.9	-0.2
5.0	2010	108-30	3.11	67	30	4.5	16.5	15.4	13.7	3.17	71	34	4.4	14.1	13.9	13.1	0.06	4	4	-0.1	-2.4	-1.5	-0.6
5.0	2009	108-18	3.12	72	34	4.3	17.3	16.2	14.2	3.16	76	37	4.1	15.1	15.0	13.8	0.04	4	3	-0.2	-2.2	-1.2	-0.4
5.0	2008	108-18	2.02	48	-7	1.9	31.2	28.6	25.4	2.09	56	-2	1.7	29.2	27.9	24.7	0.07	8	5	-0.3	-2.0	-0.7	-0.7
5.0	2004	108-26	2.80	63	29	3.3	20.9	18.2	15.7	2.73	64	22	2.5	20.3	18.6	16.5	-0.07	1	-6	-0.8	-0.6	0.4	0.8
5.0	2003	109-02	2.88	63	34	3.6	17.6	15.4	13.7	2.81	64	30	3.1	17.4	16.1	14.5	-0.06	1	-4	-0.5	-0.2	0.7	0.8
5.5	TBA	109-19	1.53	46	-9	1.4	36.1	33.0	30.8	1.32	50	-9	0.8	36.8	34.6	32.6	-0.22	5	-1	-0.5	0.7	1.6	1.8
5.5	2008	109-19	1.86	58	5	1.6	34.1	30.8	28.0	1.70	63	5	1.0	34.5	32.1	29.4	-0.17	5	0	-0.6	0.4	1.3	1.4
5.5	2007	109-19	1.89	57	7	1.8	33.3	30.0	27.6	1.70	60	6	1.2	33.8	31.4	29.3	-0.19	3	-1	-0.5	0.5	1.4	1.7
5.5	2006	109-19	2.15	65	19	2.1	31.0	27.8	25.2	2.01	69	19	1.6	31.3	28.8	26.5	-0.14	3	0	-0.5	0.3	1.0	1.3
5.5	2005	109-19	2.80	88	51	3.0	23.3	21.5	18.9	2.67	90	46	2.3	23.5	22.8	20.2	-0.13	2	-5	-0.6	0.2	1.3	1.3
5.5	2004	110-03	2.79	79	45	3.1	22.8	20.2	17.5	2.49	75	30	1.9	25.4	23.3	20.3	-0.30	-4	-15	-1.2	2.6	3.1	2.8
5.5	2003	110-03	2.89	83	53	3.2	20.9	18.5	16.0	2.70	81	41	2.2	22.7	20.6	17.9	-0.20	-2	-12	-1.0	1.8	2.1	1.9
6.0	TBA	110-18	1.34	42	-7	1.1	38.6	34.9	33.0	0.95	39	-15	0.5	40.0	37.2	35.9	-0.39	-3	-8	-0.6	1.4	2.3	2.9
6.0	2008	110-18	2.07	73	27	1.8	33.4	29.9	27.4	1.76	71	21	1.2	34.5	31.9	29.9	-0.31	-2	-6	-0.5	1.1	2.0	2.5
6.0	2007	110-18	2.07	72	28	1.8	33.1	29.7	27.3	1.75	68	21	1.3	34.5	31.8	29.8	-0.32	-4	-7	-0.6	1.4	2.1	2.5
6.0	2006	110-18	2.37	84	44	2.2	30.4	27.1	24.7	2.11	82	38	1.7	31.5	28.9	26.9	-0.26	-2	-6	-0.5	1.1	1.8	2.2
6.5	TBA	111-04	1.55	59	20	1.2	38.7	35.1	33.0	1.10	48	5	0.6	41.0	37.7	36.2	-0.45	-11	-15	-0.7	2.3	2.6	3.2
6.5	2008	111-05	2.57	107	70	2.3	31.2	28.2	25.6	2.30	102	62	1.8	32.2	29.9	27.7	-0.27	-6	-9	-0.5	1.0	1.7	2.1
6.5	2007	111-05	2.81	115	84	2.7	28.3	26.1	23.7	2.55	109	75	2.2	29.6	27.7	25.8	-0.26	-6	-9	-0.5	1.3	1.6	2.1
6.5	2006	111-05	2.93	122	91	2.7	27.3	24.9	22.5	2.70	117	83	2.3	28.5	26.4	24.4	-0.23	-5	-8	-0.4	1.2	1.5	1.9

Source: Barclays Research

FIGURE 2

IOS, Market Rates: NY 3PM Close of Thursday, Dec 12, 2013

Pre Beta V1.30.1										Pre Beta V1.31							Change						
Security	Coupon	Price	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life
IFN-33012 IO	3.0	22-25+	2.10	127	30	-2.9	6.9	7.0	7.2	2.89	138	63	-0.2	5.6	6.1	6.5	0.79	12	33	2.7	-1.3	-0.9	-0.7
IFN-33510 IO	3.5	23-15	1.36	173	32	-9.6	10.7	10.0	9.4	2.67	215	74	-7.4	8.4	8.2	8.2	1.31	43	42	2.1	-2.3	-1.8	-1.2
IFN-33512 IO	3.5	24-21+	1.68	181	61	-6.3	9.0	8.9	8.7	2.82	211	107	-3.4	7.1	7.4	7.8	1.14	30	46	2.8	-1.9	-1.5	-0.9
IFN-34009 IO	4.0	23-09	0.96	245	65	-16.7	14.4	13.1	11.7	2.41	334	137	-14.6	11.5	11.0	10.5	1.45	89	72	2.2	-2.9	-2.1	-1.2
IFN-34010 IO	4.0	24-24+	0.82	218	71	-12.2	13.0	12.2	11.2	2.04	294	123	-11.1	10.5	10.5	10.1	1.23	76	52	1.0	-2.5	-1.7	-1.1
IFN-34011 IO	4.0	25-21+	0.92	210	68	-11.0	12.1	11.6	10.8	2.19	274	123	-9.0	9.7	9.9	9.7	1.26	64	55	2.0	-2.4	-1.7	-1.1
IFN-34509 IO	4.5	22-18+	1.54	413	235	-19.0	17.8	16.2	14.0	2.28	519	291	-19.2	15.4	14.8	13.4	0.74	106	56	-0.2	-2.4	-1.4	-0.6
IFN-34510 IO	4.5	24-03	1.50	348	211	-14.3	15.8	14.8	13.1	2.01	443	260	-14.6	13.8	13.7	12.7	0.51	95	49	-0.4	-2.0	-1.1	-0.4
IFN-34511 IO	4.5	26-06+	0.97	240	122	-12.3	14.6	13.8	12.4	1.42	314	158	-12.4	12.7	12.8	12.0	0.45	74	36	0.0	-1.9	-1.0	-0.4
IFN-35003 IO	5.0	21-29+	1.98	296	211	-14.1	18.9	16.5	14.5	1.09	294	141	-18.3	18.9	17.2	15.3	-0.89	-1	-70	-4.2	0.0	0.7	0.8
IFN-35005 IO	5.0	21-22+	-1.68	223	91	-21.8	24.4	22.1	19.0	-2.44	272	51	-27.0	24.1	22.7	19.8	-0.76	50	-40	-5.2	-0.3	0.6	0.8
IFN-35008 IO	5.0	19-28	-5.39	265	87	-32.0	31.7	28.7	25.5	-4.96	395	136	-34.5	30.2	28.1	24.9	0.44	130	49	-2.6	-1.5	-0.6	-0.6
IFN-35009 IO	5.0	21-09	3.80	635	525	-15.1	19.0	17.5	15.4	3.92	722	551	-16.8	17.6	17.0	15.3	0.13	87	27	-1.7	-1.4	-0.5	-0.1
IFN-35010 IO	5.0	23-03	3.44	512	429	-12.1	17.1	16.0	14.2	3.88	617	482	-13.0	15.3	15.1	13.9	0.44	105	52	-0.9	-1.8	-0.9	-0.3
IFN-35503 IO	5.5	19-13+	5.11	728	650	-13.9	21.9	19.3	16.8	2.49	636	473	-21.5	24.3	21.9	19.2	-2.63	-92	-177	-7.7	2.4	2.6	2.4
IFN-35505 IO	5.5	20-10+	2.07	559	469	-17.0	24.2	21.9	19.2	0.56	562	397	-22.2	24.9	23.2	20.6	-1.51	4	-72	-5.3	0.7	1.3	1.4
IFN-35508 IO	5.5	18-10	-3.41	473	363	-28.2	33.8	30.5	27.5	-4.60	536	356	-32.8	34.1	31.5	28.7	-1.19	63	-6	-4.6	0.3	1.0	1.2
IFN-36008 IO	6.0	18-22	-2.47	421	384	-23.4	34.7	31.1	28.3	-4.99	379	307	-28.1	36.0	33.0	30.6	-2.52	-42	-77	-4.8	1.3	1.9	2.3
IFN-36567 IO	6.5	20-15	0.59	437	439	-14.6	30.2	27.6	25.1	-1.83	345	327	-18.2	31.7	29.3	27.2	-2.42	-92	-112	-3.6	1.5	1.7	2.1
IG2-34010 IO	4.0	24-04+	4.99	425	332	-4.1	9.6	9.0	7.8	2.54	268	144	-7.1	11.0	11.2	10.1	-2.45	-157	-188	-2.9	1.4	2.2	2.3
IG2-34510 IO	4.5	23-04	6.34	663	557	-7.3	12.8	11.4	9.3	4.09	487	353	-9.6	13.5	13.2	11.5	-2.25	-176	-204	-2.3	0.7	1.8	2.2
IG2-35010 IO	5.0	23-11	7.08	782	692	-8.2	14.7	13.1	10.5	5.92	643	536	-8.2	14.3	13.6	11.7	-1.15	-139	-155	0.0	-0.4	0.5	1.2

Source: Barclays Research

FIGURE 3

FN 15Y, Market Rates: NY 3PM Close of Thursday, Dec 12, 2013

Pre Beta V1.30.1										Pre Beta V1.31							Change						
Coupon	Vintage	Price	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life
2.5	TBA	99-02	2.68	22	15	5.4	6.2	7.9	8.3	2.67	20	14	5.4	4.9	6.7	7.4	-0.01	-2	-1	0.1	-1.3	-1.2	-0.9
2.5	2013	99-02	2.68	26	19	5.2	7.1	8.3	8.6	2.67	24	18	5.3	5.7	7.0	7.5	-0.01	-2	-1	0.1	-1.4	-1.3	-1.1
2.5	2012	99-02	2.69	34	28	4.9	8.6	9.1	9.2	2.68	32	27	5.0	7.0	7.8	8.0	-0.01	-2	-1	0.1	-1.6	-1.3	-1.2
3.0	TBA	102-04	2.43	29	18	4.2	11.8	11.7	11.3	2.46	28	18	4.3	9.9	10.1	9.9	0.03	-1	0	0.1	-1.9	-1.6	-1.4
3.0	2013	102-04	2.51	16	5	5.1	7.4	9.2	9.4	2.53	15	6	5.1	6.2	8.1	8.5	0.02	-1	0	0.1	-1.2	-1.1	-0.9
3.0	2012	102-04	2.46	24	15	4.6	10.3	10.4	10.2	2.48	24	16	4.7	8.9	9.3	9.3	0.02	0	1	0.1	-1.4	-1.1	-0.9
3.0	2011	102-04	2.44	29	19	4.3	11.3	11.2	10.8	2.46	28	19	4.4	9.7	9.9	9.7	0.02	0	0	0.1	-1.6	-1.3	-1.1
3.5	TBA	104-23	2.11	23	9	3.5	15.1	14.3	13.5	2.14	24	10	3.5	14.0	13.5	12.8	0.03	1	1	0.0	-1.1	-0.8	-0.7
3.5	2012	104-27	2.30	17	7	4.4	10.6	10.7	10.5	2.33	18	9	4.5	9.6	10.0	9.9	0.03	1	1	0.0	-1.0	-0.7	-0.6
3.5	2011	104-23	2.25	22	10	4.0	12.4	12.0	11.6	2.28	22	11	4.0	11.4	11.2	10.9	0.03	1	1	0.0	-1.0	-0.8	-0.7
3.5	2010	104-23	2.17	24	13	3.7	13.4	12.7	12.2	2.20	25	13	3.7	12.4	11.9	11.5	0.03	1	1	0.0	-1.0	-0.8	-0.7
4.0	TBA	106-13	1.99	31	19	3.0	15.4	14.2	13.7	1.97	31	17	2.9	15.6	14.5	14.0	-0.01	0	-1	-0.1	0.2	0.3	0.3
4.0	2011	106-13	2.28	32	20	3.8	12.7	12.3	11.9	2.29	33	20	3.8	12.3	12.1	11.7	0.01	1	0	-0.1	-0.4	-0.2	-0.2
4.0	2010	106-13	2.16	32	20	3.5	13.6	12.9	12.5	2.17	33	20	3.4	13.3	12.8	12.4	0.00	1	0	-0.1	-0.3	-0.1	-0.1
4.0	2009	106-13	2.03	32	21	3.2	14.3	13.4	13.0	2.02	33	20	3.1	14.3	13.5	13.1	-0.01	1	-1	-0.1	0.0	0.1	0.1
4.5	TBA	106-19+	2.42	73	61	3.1	14.9	13.9	13.6	2.38	72	59	2.9	15.5	14.7	14.2	-0.04	0	-2	-0.2	0.6	0.8	0.6
4.5	2010	106-19+	2.57	75	63	3.4	13.6	13.0	12.6	2.55	75	62	3.3	13.8	13.2	12.8	-0.01	0	-1	-0.1	0.2	0.2	0.2
4.5	2009	106-19+	2.45	74	64	3.1	14.1	13.3	12.9	2.43	74	62	3.0	14.5	13.8	13.3	-0.02	0	-2	-0.1	0.4	0.5	0.4

Source: Barclays Research

FIGURE 4

GN2 30Y, Market Rates: NY 3PM Close of Thursday, Dec 12, 2013

Pre Beta V1.30.1										Pre Beta V1.31							Change						
Coupon	Vintage	Price	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life
3.0	TBA	96-13+	3.49	32	24	7.8	5.4	6.5	6.5	3.53	44	36	7.3	5.4	7.2	7.7	0.04	12	13	-0.5	0.0	0.7	1.2
3.0	2013	96-13+	3.49	33	25	7.7	5.8	6.4	6.5	3.54	46	38	7.2	6.1	7.5	7.8	0.04	13	13	-0.5	0.3	1.1	1.3
3.0	2012	96-14	3.50	35	27	7.6	6.5	6.8	6.6	3.55	49	40	7.0	7.5	8.4	8.2	0.05	14	13	-0.6	1.0	1.6	1.6
3.5	TBA	100-31+	3.35	29	14	7.0	8.4	8.4	7.7	3.33	37	21	6.4	9.5	10.0	9.4	-0.02	8	7	-0.6	1.1	1.6	1.7
3.5	2013	100-31+	3.36	27	13	7.2	7.5	7.9	7.4	3.34	35	22	6.8	7.2	8.5	8.6	-0.01	8	8	-0.4	-0.3	0.6	1.2
3.5	2012	100-31+	3.35	29	15	7.0	8.4	8.4	7.7	3.33	37	22	6.4	9.4	10.0	9.4	-0.02	8	7	-0.6	1.0	1.6	1.7
3.5	2011	100-31+	3.34	30	14	6.8	9.6	9.5	8.3	3.32	39	21	6.2	11.0	11.3	10.0	-0.02	9	7	-0.6	1.4	1.8	1.7
4.0	TBA	104-12	3.25	35	12	6.1	12.2	11.9	9.7	3.20	40	15	5.6	12.4	12.6	10.8	-0.05	5	3	-0.4	0.2	0.7	1.1
4.0	2012	104-12	3.31	33	15	6.6	11.6	10.5	8.7	3.25	37	18	6.1	12.2	11.5	9.9	-0.05	4	4	-0.5	0.6	1.0	1.2
4.0	2011	104-12	3.26	35	13	6.2	12.2	11.8	9.6	3.21	39	15	5.7	12.3	12.5	10.7	-0.05	5	2	-0.5	0.1	0.7	1.1
4.0	2010	104-13+	3.32	36	20	6.4	9.7	9.2	7.9	3.22	41	20	5.7	11.3	11.5	10.2	-0.10	5	0	-0.8	1.6	2.3	2.3
4.5	TBA	107-04+	3.23	45	19	5.6	13.9	13.2	10.5	3.17	47	18	5.2	13.4	13.5	11.4	-0.06	2	-1	-0.4	-0.5	0.3	0.9
4.5	2011	107-04+	3.23	45	20	5.6	13.9	13.2	10.4	3.16	47	18	5.1	13.6	13.7	11.5	-0.07	2	-2	-0.5	-0.3	0.5	1.1
4.5	2010	107-10+	3.28	45	24	5.8	12.3	11.2	9.2	3.15	46	20	5.1	13.0	12.7	11.1	-0.14	1	-5	-0.7	0.7	1.5	1.9
4.5	2009	107-06+	3.26	47	26	5.6	13.2	11.5	9.6	3.16	48	24	5.1	13.4	12.6	11.1	-0.11	1	-2	-0.5	0.2	1.1	1.5
5.0	TBA	108-23	3.01	61	33	4.7	20.6	18.0	14.9	2.75	57	23	3.7	22.7	20.8	17.7	-0.27	-4	-11	-1.0	2.1	2.8	2.8
5.0	2010	109-17	3.30	60	36	5.3	14.4	12.8	10.4	3.21	59	32	4.9	14.1	13.4	11.5	-0.10	-1	-5	-0.4	-0.3	0.6	1.1
5.0	2009	109-03	3.32	65	41	5.1	15.5	13.2	10.8	3.25	65	40	4.9	14.9	13.5	11.7	-0.07	0	-1	-0.2	-0.6	0.3	0.9
5.5	TBA	110-08	2.77	68	38	3.9	23.4	21.6	18.3	2.17	52	11	2.5	28.3	26.7	23.6	-0.61	-15	-27	-1.4	4.9	5.1	5.3
6.0	TBA	111-28	3.19	91	69	4.4	19.5	18.2	15.7	2.14	55	20	2.7	27.9	26.5	23.7	-1.05	-36	-50	-1.7	8.4	8.3	8.0
6.5	TBA	112-27	3.63	125	108	4.7	17.9	16.5	14.3	2.47	77	47	2.9	26.5	25.1	22.8	-1.15	-48	-60	-1.7	8.6	8.6	8.5

Source: Barclays Research

FIGURE 5

GN30Y, Market Rates: NY 3PM Close of Thursday, Dec 12, 2013

Pre Beta V1.30.1										Pre Beta V1.31							Change						
Coupon	Vintage	Price	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	1-Yr	3-Yr	Life
3.0	TBA	96-12+	3.51	33	24	7.8	4.9	6.4	6.8	3.54	45	37	7.3	4.9	7.0	7.8	0.03	12	13	-0.5	0.0	0.6	1.0
3.0	2013	96-12+	3.51	34	26	7.7	6.2	6.9	6.8	3.56	47	38	7.2	6.3	7.9	8.1	0.04	12	12	-0.5	0.1	1.0	1.3
3.0	2012	96-13	3.51	35	27	7.7	6.8	7.2	6.7	3.56	48	39	7.2	7.6	8.5	8.1	0.05	13	12	-0.5	0.8	1.3	1.4
3.5	TBA	100-27+	3.37	32	16	6.8	9.7	9.7	8.5	3.35	40	23	6.3	10.5	11.1	10.1	-0.01	8	7	-0.5	0.8	1.4	1.6
3.5	2013	100-27+	3.38	28	16	7.4	7.1	8.0	7.3	3.37	37	24	6.9	6.7	8.4	8.5	-0.01	8	8	-0.5	-0.4	0.4	1.2
3.5	2012	100-27+	3.37	31	16	7.0	9.6	9.5	8.2	3.36	39	22	6.5	10.3	10.9	9.7	-0.02	8	7	-0.5	0.7	1.4	1.5
3.5	2011	100-27+	3.36	33	16	6.8	10.5	10.4	8.8	3.35	42	23	6.2	11.4	11.7	10.3	-0.01	9	7	-0.5	0.9	1.3	1.5
4.0	TBA	104-05+	3.25	39	13	5.8	13.7	13.3	10.8	3.19	45	16	5.4	13.8	14.3	12.2	-0.06	5	3	-0.4	0.1	1.0	1.4
4.0	2012	104-05+	3.29	36	17	6.6	13.1	12.6	9.9	3.27	41	20	6.1	12.5	12.5	10.4	-0.02	6	3	-0.5	-0.6	-0.1	0.5
4.0	2011	104-05+	3.28	38	16	6.1	13.1	12.7	10.1	3.23	44	17	5.6	13.1	13.3	11.3	-0.05	5	2	-0.5	0.0	0.6	1.2
4.0	2010	104-06	3.36	40	24	6.5	10.1	9.4	8.1	3.26	45	24	5.7	11.7	11.7	10.4	-0.10	5	-1	-0.8	1.6	2.3	2.3
4.5	TBA	106-26+	2.85	46	11	4.2	22.5	19.5	16.1	2.90	50	18	4.1	20.1	18.3	15.6	0.04	4	6	-0.1	-2.4	-1.2	-0.5
4.5	2011	106-26+	3.31	49	25	5.9	14.1	13.2	10.2	3.21	52	22	5.3	14.4	14.4	11.7	-0.11	3	-3	-0.7	0.3	1.2	1.5
4.5	2010	106-31	3.32	50	29	5.7	13.1	11.7	9.6	3.19	52	25	5.1	13.5	13.1	11.5	-0.13	1	-4	-0.6	0.4	1.4	1.9
4.5	2009	106-28	3.30	52	31	5.5	13.7	11.9	9.9	3.24	54	33	5.2	13.4	12.3	10.8	-0.06	2	2	-0.2	-0.3	0.4	0.9
5.0	TBA	108-23	2.89	57	27	4.2	22.5	19.5	16.2	2.67	55	19	3.5	23.8	21.7	18.7	-0.23	-2	-7	-0.7	1.3	2.2	2.5
5.0	2010	109-17	3.34	58	37	5.7	15.1	12.9	10.1	3.25	59	35	5.2	14.5	13.3	11.0	-0.08	1	-3	-0.5	-0.6	0.4	0.9
5.0	2009	109-04	3.30	63	40	5.1	16.3	13.6	11.1	3.25	63	41	4.9	15.7	13.9	11.7	-0.06	1	1	-0.2	-0.6	0.3	0.6
5.5	TBA	110-03	2.25	51	13	2.8	29.6	27.2	23.3	1.89	46	0	2.0	31.1	29.3	26.4	-0.36	-5	-13	-0.8	1.5	2.1	3.1
6.0	TBA	111-23	2.46	59	30	3.1	27.3	25.2	21.8	1.60	33	-5	2.0	32.4	30.9	28.1	-0.86	-26	-34	-1.1	5.1	5.7	6.3
6.5	TBA	112-23	3.36	112	94	4.1	20.9	19.3	16.6	2.37	69	42	2.8	27.6	26.1	23.8	-0.99	-43	-51	-1.3	6.7	6.8	7.2

Source: Barclays Research

Analyst Certification

I, Steve Bergantino, hereby certify (1) that the views expressed in this research report accurately reflect my personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

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