# Completed: 30-Jan-17, 10:01 GMT Released: 30-Jan-17, 13:00 GMT

# Bloomberg

# Agency Fixed Rate Prepayment Model V1.39.1

#### Mortgage Index Models

Steven Bergantino 1-212-617-2740 sbergantino1@bloomberg.net

Nicholas Strand 1-212-617-3256 nstrand4@bloomberg.net

William Sarrett 1-212-617-0419 wsarrett1@bloomberg.net

January 25, 2017

#### 1.0 HUD rolls back FHA MIP cuts

After the close of business on Friday, January 27, 2017, we will introduce a new Beta agency fixed rate prepayment model on Barclays Live. It can be accessed by setting the "FR Model Version" to Beta (V1.39.1) in the Preferences tab of the mortgage calculator. This model version rolls back the reduction in FHA mortgage insurance premiums included in V1.39. This is being done in response to HUD *Mortgagee Letter 2017-07*<sup>1</sup>, which suspends the annual MIP reductions announced in *Mortgagee Letter 2017-01*.<sup>2</sup> In all other respects, model version V1.39.1 is identical to V1.39. For more information about model versions V1.39 and V1.39.1 please refer to *Agency Fixed Rate Prepayment Model V1.39, January 13, 2017.* 

#### Model update rolls back FHA mortgage insurance cuts

On January 9, 2017, the U.S. Department of Housing and Urban Development (HUD) released Mortgagee Letter 2017-01, reducing the annual mortgage insurance premium (MIP) charged on most Federal Housing Administration (FHA) insured loans closed on or after January 27, 2017 by 25bp. For loans with LTV greater than 95% and base loan amount less than \$625,000, this would have reduced the annual MIP paid by borrowers from 85bp down to 60bp. On January 13, 2017 we introduced agency fixed rate prepayment model version Beta (V1.39) which incorporated these MIP reductions along with several other model updates and enhancements. On January 20, 2017, HUD released Mortgagee Letter 2017-07, suspending the MIP cuts announced in Mortgagee Letter 2017-01. In response, we are introducing agency fixed rate prepayment model version Beta (V1.39.1). This model version rolls back the MIP reductions included in Beta (V1.39) but in all other respects is identical to that model version.

#### Removing the MIP cut lowers GNMA II prepayment projections by 1-4 CPR

After reverting back to the previous MIP structure, projections for GNMA II cohorts under V1.39.1 are 1-4 CPR lower as most FHA borrowers' rate incentive fall in response to the higher mortgage insurance fees (Figure 1). The largest decreases are for newer production cuspy cohorts (3.5s and 4s), which display prepayment reductions of 2-4 CPR. Prepayment declines on more seasoned Post-HARP cohorts are much smaller due to their lower and flatter model refinance response functions (i.e. burnout). Pre-HARP cohorts display no change in projected prepayments because the MIP these borrowers would pay on new mortgages originated through the HARP program are unaffected by the recent policy announcements.

#### Material effect on valuations and risk metrics

Rolling back the MIP change has a noticeable effect on model valuations and risk metrics. OASs widen by 0-10 bps relative to V1.39, with new production GNMA II 3.5s and 4s most affected. OADs extend by 0-0.4 years relative to model version V1.39. Figures 1 and 2 show the valuation and risk metrics for selected GNMA and GNMA II cohorts under model V1.39 and V1.39.1

<sup>&</sup>lt;sup>1</sup> https://portal.hud.gov/hudportal/documents/huddoc?id=17-07ml.pdf

<sup>&</sup>lt;sup>2</sup> https://portal.hud.gov/hudportal/documents/huddoc?id=17-01ml.pdf

FIGURE 1
GN2 30Y, Market Rates: NY 3PM Close of Monday, Jan 23, 2017

		Beta V1.39										Beta V1.39.1									Change								
Coupon	Vintage	Price	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life			
3.0	TBA	101-02	2.81	54	6	5.1	6.0	8.0	9.1	10.3	2.83	54	9	5.3	6.3	5.6	7.5	9.2	0.01	0	3	0.2	0.3	-2.4	-1.6	-1.1			
3.0	2016	101-02	2.82	54	8	5.2	6.1	7.7	8.7	9.8	2.83	54	11	5.4	6.4	5.7	7.4	8.9	0.01	0	3	0.3	0.3	-2.0	-1.3	-0.9			
3.0	2015	101-05	2.79	53	8	5.1	5.9	9.9	10.1	10.6	2.80	52	10	5.3	6.1	8.5	9.0	9.7	0.01	-1	2	0.2	0.2	-1.4	-1.1	-0.9			
3.0	2014	101-10	2.75	51	7	5.0	5.7	12.5	12.1	11.2	2.76	51	8	5.2	5.8	10.7	11.1	10.7	0.01	0	1	0.2	0.2	-1.8	-1.0	-0.5			
3.0	2013	101-12	2.74	51	12	5.3	5.7	12.1	11.8	10.9	2.75	50	13	5.4	5.9	11.4	11.2	10.5	0.01	-1	1	0.2	0.2	-0.7	-0.6	-0.4			
3.0	2012	101-18	2.70	48	10	5.2	5.7	12.3	11.9	11.0	2.71	47	11	5.4	5.9	11.4	11.0	10.3	0.01	0	2	0.2	0.2	-0.9	-0.9	-0.7			
3.5	TBA	103-27	2.66	57	3	3.8	5.2	15.8	15.1	14.5	2.72	61	9	4.3	5.6	12.6	12.9	13.2	0.06	4	7	0.5	0.4	-3.2	-2.2	-1.3			
3.5	2016	103-27	2.68	59	3	3.8	5.3	15.3	14.9	14.3	2.76	63	11	4.3	5.7	11.1	11.6	12.5	0.08	4	8	0.5	0.5	-4.2	-3.3	-1.8			
3.5	2015	103-29	2.67	57	3	3.9	5.3	15.1	14.7	14.2	2.72	60	10	4.4	5.6	12.1	12.6	12.9	0.06	3	7	0.5	0.4	-3.0	-2.1	-1.3			
3.5	2014	104-05	2.58	50	0	3.9	5.1	16.7	16.2	14.6	2.64	52	4	4.1	5.3	14.4	14.4	13.5	0.05	2	4	0.2	0.2	-2.3	-1.8	-1.1			
3.5	2013	104-11	2.61	49	7	4.4	5.4	14.3	14.1	12.9	2.63	51	11	4.7	5.6	13.7	13.5	12.5	0.02	2	3	0.2	0.2	-0.6	-0.6	-0.4			
3.5	2012	104-15	2.59	46	6	4.4	5.4	14.4	13.9	12.8	2.61	48	10	4.6	5.6	13.8	13.3	12.3	0.02	2	4	0.2	0.2	-0.6	-0.6	-0.5			
3.5	2011	104-18	2.52	42	1	4.1	5.2	15.7	15.0	13.6	2.55	44	4	4.4	5.3	14.8	14.3	13.1	0.03	2	4	0.3	0.2	-0.9	-0.7	-0.5			
4.0	TBA	105-27	2.51	54	11	3.5	4.6	21.0	20.1	17.8	2.64	61	18	3.7	4.9	18.1	17.6	15.8	0.13	7	7	0.2	0.3	-2.9	-2.5	-2.0			
4.0	2016	105-27	2.65	64	18	3.5	5.0	17.4	17.3	16.0	2.79	72	28	4.0	5.4	13.3	14.1	14.0	0.13	9	10	0.5	0.4	-4.1	-3.2	-2.0			
4.0	2015	105-30	2.51	56	6	3.1	4.7		19.3	17.6	2.67	65	17	3.6	5.1	16.1	15.8		0.16	10	12	0.5	0.4	-4.3	-3.5	-2.2			
4.0	2014	106-01	2.55	54	13	3.6	4.8	19.9	18.8	16.5	2.67	60	20	3.9	5.1	16.9	16.3	14.7	0.13	6	7	0.3	0.3	-3.0	-2.5	-1.8			
4.0	2013	106-07	2.53	52	12	3.6	4.8	19.3	18.1	16.0	2.64	56	18	3.9	5.1	16.6	16.0	14.5	0.11	5	6	0.3	0.3	-2.7	-2.1	-1.5			
4.0	2012	106-15	2.59	51	20	4.3	5.1		15.6	14.1	2.64	54	25	4.6	5.3	15.6	14.8	13.4	0.05	3	5	0.3	0.2	-1.0	-0.8	-0.7			
4.0	2011	106-25	2.46	42	8	3.9	4.9		16.7	15.0	2.54	46	14	4.2	5.2	15.9	15.1		0.09	4	6	0.3	0.2	-1.9	-1.6	-1.2			
4.0	2010	106-31	2.46	42	4	3.6	5.0	16.0	15.5		2.51	48	11	3.9	5.2	15.3	14.8	13.5	0.05	6	7	0.3	0.2	-0.7	-0.7	-0.7			
4.5	TBA	107-03	2.52	62	28	3.2	4.3	23.7	22.1	19.8	2.72	74	38	3.4	4.6	20.5	19.3	17.4	0.20	12	10	0.2	0.3	-3.2	-2.8	-2.4			
4.5	2014	107-19	2.60	62	32	3.6	4.6			17.5	2.76	72	40	3.8	4.9		17.0		0.16	9	8	0.2	0.3	-2.8	-2.5	-1.9			
4.5	2013	108-03	2.52	52	24	3.6	4.7	20.2	19.1	17.0	2.66	60	32	3.8	4.9	17.7	17.0	15.4	0.15	8	8	0.2	0.3	-2.5	-2.1	-1.6			
4.5	2011	109-03	2.42	39	14	3.8	4.9		17.2		2.55	47	22	4.1	5.1	16.2	15.4		0.13	7	8	0.3	0.2	-2.2	-1.8	-1.4			
4.5	2010	109-11	2.34	34	2	3.1	4.8	18.0	17.1		2.42	41	12	3.6	5.0	16.8	16.1		0.08	7	10	0.5	0.2	-1.2	-1.0	-0.8			
4.5	2009	108-31	2.36	38	5	2.9	4.6	18.4		15.8	2.43	44	15	3.5	4.9	17.2		14.9	0.08	6	10	0.5	0.2	-1.2	-1.0	-0.9			
5.0	TBA	107-24	3.06	102	84	4.0	4.4		17.6	16.2	3.06	102	84	4.0	4.4	18.3	17.6	16.2	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
5.0	2010	110-00	2.63	63	40	3.5	4.7		17.4	15.6	2.78	71	50	3.9	4.9	16.4	15.6	14.3	0.14	8	10	0.4	0.2	-2.0	-1.8	-1.3			
5.0	2009	109-12	2.65	68	44	3.3	4.5	19.5	18.4	16.6	2.81	77	55	3.7	4.7	17.1	16.4	15.1	0.16	9	11	0.4	0.3	-2.4	-2.0	-1.5			
5.0	2005	109-28	2.67	62	51	4.0	4.5		14.9	13.7	2.67	62	51	4.0	4.5	15.7	14.9	13.7	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
5.0	2004	110-04	2.66	60	51	4.1	4.5	14.0	13.4	12.5	2.66	60	51	4.1	4.5	14.0	13.4	12.5	0.00	0	0	0.0	0.0	0.0	0.0	0.0			

			Beta V1.39									Beta V1.39.1									Change								
Coupon	Vintage	Price	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life			
5.0	2003	110-16	2.57	51	42	4.1	4.5	13.3	12.7	11.9	2.57	51	42	4.1	4.5	13.3	12.7	11.9	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
5.5	TBA	111-05+	2.77	73	61	3.9	4.4	17.5	17.0	15.9	2.77	73	61	3.9	4.4	17.5	17.0	15.9	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
5.5	2008	111-31+	2.60	56	45	3.9	4.4	17.5	17.0	15.9	2.60	56	45	3.9	4.4	17.5	17.0	15.9	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
5.5	2005	112-29+	2.58	51	44	4.2	4.6	14.6	14.0	13.0	2.58	51	44	4.2	4.6	14.6	14.0	13.0	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
5.5	2004	113-21+	2.43	36	30	4.2	4.6	13.7	13.1	12.2	2.43	36	30	4.2	4.6	13.7	13.1	12.2	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
5.5	2003	113-29+	2.32	27	21	4.1	4.5	13.4	12.8	12.1	2.32	27	21	4.1	4.5	13.4	12.8	12.1	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	TBA	112-28	2.94	87	80	4.0	4.4	16.4	15.7	14.6	2.94	87	80	4.0	4.4	16.4	15.7	14.6	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2008	112-28	2.90	83	75	3.9	4.3	17.2	16.8	15.7	2.90	83	75	3.9	4.3	17.2	16.8	15.7	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2007	113-10	2.78	72	64	3.9	4.3	17.4	16.7	15.5	2.78	72	64	3.9	4.3	17.4	16.7	15.5	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2006	113-24	2.76	69	62	4.0	4.4	16.4	15.7	14.5	2.76	69	62	4.0	4.4	16.4	15.7	14.5	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2004	114-26	2.65	57	53	4.3	4.5	13.6	13.1	12.3	2.65	57	53	4.3	4.5	13.6	13.1	12.3	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2003	115-12	2.47	41	37	4.2	4.4	13.4	12.9	12.3	2.47	41	37	4.2	4.4	13.4	12.9	12.3	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.5	TBA	113-00	3.48	138	133	4.2	4.4	14.8	14.3	13.4	3.48	138	133	4.2	4.4	14.8	14.3	13.4	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.5	2008	113-08	3.25	117	110	3.9	4.2	17.6	17.0	15.8	3.25	117	111	3.9	4.2	17.6	17.0	15.8	0.00	0	0	0.0	0.0	0.0	0.0	0.0			

Source: Bloomberg L.P., Barclays

FIGURE 2
GN 30Y, Market Rates: NY 3PM Close of Monday, Jan 23, 2017

	Beta V1.39										Beta V1.39.1									Change								
Coupon	Vintage	Price	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life		
3.0	TBA	100-31	2.81	58	18	5.2	5.5	13.2	12.7	11.7	2.82	57	19	5.4	5.7	12.6	12.1	11.2	0.00	-1	1	0.2	0.2	-0.6	-0.6	-0.5		
3.0	2015	101-03	2.81	54	12	5.5	6.1	9.4	10.0	10.1	2.82	53	14	5.7	6.4	8.1	8.9	9.2	0.01	-1	2	0.2	0.2	-1.3	-1.1	-0.9		
3.0	2013	101-09	2.76	53	14	5.2	5.6	13.0	12.5	11.4	2.76	52	15	5.4	5.8	12.3	11.9	10.9	0.01	-1	1	0.2	0.2	-0.7	-0.6	-0.5		
3.0	2012	101-13	2.74	51	14	5.4	5.8	12.3	11.8	10.8	2.75	50	15	5.5	5.9	11.7	11.2	10.3	0.01	0	1	0.1	0.2	-0.6	-0.6	-0.5		
3.5	TBA	103-25	2.67	56	14	4.2	5.1	16.0	15.4	14.1	2.70	58	17	4.5	5.3	15.2	14.7	13.5	0.02	2	4	0.3	0.2	-0.8	-0.7	-0.6		
3.5	2015	103-25	2.75	60	14	4.5	5.5	14.0	13.7	12.9	2.79	63	19	5.0	5.9	11.4	12.1	11.9	0.04	3	6	0.5	0.4	-2.6	-1.6	-1.0		
3.5	2014	103-29	2.73	58	14	4.6	5.5	14.6	14.0	12.6	2.76	59	18	4.9	5.8	12.8	12.8	11.9	0.03	2	3	0.3	0.2	-1.8	-1.2	-0.7		
3.5	2013	104-03	2.73	56	22	5.2	5.8	12.8	12.4	11.5	2.78	58	25	5.3	6.0	11.7	11.3	10.4	0.04	2	3	0.1	0.2	-1.1	-1.1	-1.1		
3.5	2012	104-09	2.63	49	12	4.7	5.4	14.5	13.9	12.8	2.65	51	15	4.9	5.6	14.0	13.4	12.3	0.02	2	3	0.2	0.2	-0.5	-0.5	-0.5		
3.5	2011	104-11	2.57	46	5	4.2	5.1	16.0	15.1	13.8	2.59	48	9	4.5	5.3	15.1	14.4	13.2	0.03	2	4	0.3	0.2	-0.9	-0.7	-0.6		
4.0	TBA	105-22+	2.58	57	17	3.4	4.5	20.3	19.0	16.9	2.68	62	25	3.8	4.8	17.7	16.8	15.2	0.11	5	8	0.4	0.3	-2.6	-2.2	-1.7		
4.0	2015	105-22+	2.66	62	21	3.7	4.8	18.8	17.8	16.3	2.76	69	30	4.2	5.2	15.8	15.4	14.8	0.10	7	9	0.5	0.4	-3.0	-2.4	-1.5		
4.0	2014	105-26+	2.84	71	36	4.6	5.5		14.4		2.89	74	40	4.9	5.7	13.2	13.2	12.0	0.05	3	4	0.3	0.2	-1.8	-1.2	-0.8		
4.0	2013	105-30+	2.86	71	41	5.0	5.7		13.2		2.88	73	44	5.2	5.8	13.3	12.9	11.6	0.02	2	3	0.2	0.2	-0.3	-0.3	-0.3		
4.0	2012	106-04+	2.74	61	35	4.9	5.3			13.0	2.78	63	38	5.1	5.5	14.8		12.4	0.03	2	4	0.3	0.2	-0.7	-0.7	-0.6		
4.0	2011	106-18+	2.53	47	12	3.9	4.9		16.4		2.60	50	18	4.3	5.1	15.8	15.1		0.07	3	6	0.4	0.2	-1.5	-1.3	-1.0		
4.0	2010	106-24+	2.51	46	6	3.5	5.0			14.3	2.56	52	13	3.9	5.2	15.4		13.5	0.06	6	7	0.4	0.2	-1.0	-0.8	-0.8		
4.5	TBA	108-02	2.38	44	12	3.0	4.3	23.4	21.0	18.3	2.58	56	23	3.3	4.6	19.6	18.0	16.0	0.21	12	11	0.3	0.3	-3.8	-3.0	-2.3		
4.5	2011	108-10	2.64	59	31	4.0	4.9			14.7	2.77	65	38	4.2	5.1	15.9		13.2	0.13	6	7	0.3	0.2	-2.4	-1.9	-1.5		
4.5	2010	108-14	2.56	54	19	3.2	4.7		16.6		2.63	60	29	3.7	5.0	16.7			0.06	6	10	0.5	0.3	-0.9	-0.8	-0.7		
4.5	2009	108-12	2.48	48	14	3.0	4.5			16.0	2.55	54	25	3.5	4.8	17.4	16.6	15.1	0.07	6	10	0.5	0.2	-1.0	-0.9	-0.9		
5.0	TBA	109-15+	2.64	62	46	3.8	4.3	18.7	18.0	16.6	2.64	62	46	3.8	4.3	18.7	18.0	16.6	0.00	0	0	0.0	0.0	0.0	0.0	0.0		
5.0	2010 2009	110-13+ 110-05+	2.71	66 55	45 34	4.0 3.5	4.9	17.0	15.9 17.6	14.2	2.82	72 62	52 43	4.3 3.9	5.1 4.7	15.3 16.6	14.5	13.2	0.11	6 7	8	0.3	0.2	-1.7	-1.4	-1.0 -1.2		
5.0	2009	111-00+	2.56	43	32	4.0	4.5 4.6		14.1		2.49	43	32	4.0	4.7		16.0 14.1		0.00	0	0	0.0	0.2	-1.9 0.0	-1.6 0.0	0.0		
5.0	2003	111-00+	2.45	38	29				12.9		2.45	38	29			13.5	12.9	12.1		0	0		0.0		0.0	0.0		
5.0	2004	111-09+	2.45	33	25	4.1	4.5 4.5		12.5	12.1	2.45	33	25	4.1	4.5 4.5		12.5		0.00	0	0	0.0	0.0	0.0	0.0	0.0		
5.5	TBA	111-10+	2.71	69	56	3.7	4.3		17.3		2.71	69	56	3.7	4.3		17.3		0.00	0	0	0.0	0.0	0.0	0.0	0.0		
5.5	2008	111-10+	2.71	75	62	3.7	4.3		16.6		2.71	75	62	3.9	4.3		16.6		0.00	0	0	0.0	0.0	0.0	0.0	0.0		
5.5	2005	112-06+	2.80	71	64	4.4	4.6	14.0	13.3	12.3	2.80	71	64	4.4	4.6	14.0	13.3	12.3	0.00	0	0	0.0	0.0	0.0	0.0	0.0		
5.5	2003	113-02+	2.61	53	47	4.3	4.6		12.6		2.61	53	47	4.3	4.6		12.6		0.00	0	0	0.0	0.0	0.0	0.0	0.0		
5.5	2004	113-027	2.01	33	47	4.5	4.0	13.2	12.0	11.0	2.01	55	4/	4.3	4.0	13.2	12.0	11.0	0.00	J	J	0.0	0.0	0.0	0.0	0.0		

	•	-	Beta V1.39									Beta V1.39.1									Change								
Coupon	Vintage	Price	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life	Yield	ZV	OAS	OAD	OASD	1-Yr	3-Yr	Life			
5.5	2003	113-08+	2.48	41	36	4.2	4.5	13.1	12.4	11.7	2.48	41	36	4.2	4.5	13.1	12.4	11.7	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	TBA	112-14	3.08	100	92	4.1	4.4	16.5	16.1	15.0	3.08	100	92	4.1	4.4	16.5	16.1	15.0	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2008	112-14	3.08	100	92	4.1	4.4	16.5	16.1	15.0	3.08	100	92	4.1	4.4	16.5	16.1	15.0	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2007	112-14	3.06	99	90	4.0	4.4	16.6	15.9	14.8	3.06	99	90	4.0	4.4	16.6	15.9	14.8	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2006	112-18	3.09	101	93	4.1	4.4	15.7	14.9	13.9	3.09	101	93	4.1	4.4	15.7	14.9	13.9	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2004	113-26	2.90	81	77	4.3	4.5	13.2	12.7	12.0	2.90	81	77	4.3	4.5	13.2	12.7	12.0	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.0	2003	114-10	2.72	65	61	4.2	4.4	13.0	12.5	11.9	2.72	65	61	4.2	4.4	13.0	12.5	11.9	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.5	TBA	112-14	3.70	159	156	4.3	4.4	12.4	11.8	11.2	3.70	159	156	4.3	4.5	12.4	11.8	11.2	0.00	0	0	0.0	0.0	0.0	0.0	0.0			
6.5	2008	112-14	3.64	152	147	4.3	4.4	15.5	15.2	14.3	3.64	152	147	4.3	4.4	15.5	15.2	14.3	0.00	0	0	0.0	0.0	0.0	0.0	0.0			

Source: Bloomberg L.P., Barclays

Copyright (c) 2017 Bloomberg Finance L.P. All right reserved.

No contents of this document ("Contents") are intended as an offering of financial instruments or investment advice, and shall not be construed as a recommendation to "buy," "sell" or "hold" an investment. BLOOMBERG FINANCE L.P. AND ITS AFFILIATES ("BLOOMBERG") MAKE NO WARRANTY REGARDING THE ACCURACY, CORRECTNESS, COMPLETENESS, QUALITY, OR TIMELINESS OF THE CONTENTS. TO THE MAXIMUM EXTENT PERMITTED BY LAW, BLOOMBERG DISCLAIMS LIABILITY ARISING FROM THE CONTENTS. No portion of the Contents may be photocopied, reproduced, scanned into an electronic system or transmitted, forwarded or distributed in any way without the prior written consent of Bloomberg.

BLOOMBERG, BLOOMBERG PROFESSIONAL, BLOOMBERG MARKETS, BLOOMBERG NEWS, BLOOMBERG ANYWHERE, BLOOMBERG TRADEBOOK, BLOOMBERG TELEVISION, BLOOMBERG RADIO, BLOOMBERG PRESS, BLOOMBERG.COM and BLOOMBERG INDICES are trademarks and service marks of Bloomberg Finance L.P.