VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 10yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Feb	Jan	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
FNMA 10yr 2	7,323	0.447	539	2.6	102	16	249,404	16.5	14.5	2.0	14%	14.45	13.64	14.11	0.11	0.10	0.08	0.18	0.16	0.03	0.02	0.00	0.00	99.44	0.32	0.23
2020	6,177	0.922	112	2.6	112	5	253,016	14.5	11.6	2.8	24%	11.64	9.97	7.10	0.13	0.08	0.06	0.03	0.15	0.02	0.01	-	-	99.60	0.30	0.1
2019	77	0.691	16	2.8	102	15	275,072	33.1	21.7	11.4	52%	30.16	29.44	22.06	0.00	0.00	0.00	0.43	0.14	0.00	0.00	-	-	97.93	0.53	1.54
2017	12	0.478	8	2.6	72	44	260,827	13.0	4.4	8.6	*n.m.	9.87	16.92	14.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	1.00	-	-
2016	337	0.339	67	2.6	63	53	254,015	24.7	26.8	-2.1	-8%	25.58	23.03	19.13	0.00	0.23	0.11	0.06	0.22	0.11	0.09	0.05	-	98.61	0.45	0.89
2015	49	0.222	42	2.7	49	67	231,186	30.4	32.0	-1.5	-5%	28.77	26.60	22.38	0.00	0.00	0.38	0.19	0.07	0.18	0.00	-	-	98.72	0.26	1.02
2014	33	0.170	23	2.9	41	75	233,100	21.8	18.3	3.5	19%	20.70	20.44	19.63	0.00	1.21	1.04	0.52	0.45	0.11	0.16	-	-	97.62	0.74	1.64
2013	543	0.085	210	2.7	25	92	213,266	25.6	26.2	-0.6	-2%	25.45	24.78	22.15	0.00	0.14	0.09	0.06	0.23	0.09	0.10	0.02	0.01	98.61	0.44	0.91
2012	96	0.054	61	2.7	20	98	197,859	33.2	31.7	1.5	5%	30.44	28.50	25.30	0.00	0.26	0.20	0.11	0.21	0.04	0.02	-	-	98.72	0.59	0.7
FNMA 10yr 2.5	8,125	0.176	1,634	3.0	68	48	221,549	25.8	25.8	0.0	0%	24.99	24.29	21.07	0.04	0.18	0.19	0.14	0.28	0.09	0.05	0.01	0.02	98.60	0.43	0.94
2020	1,933	0.829	75	3.1	109	8	234,258	24.3	22.8	1.5	7%	22.98	19.60	13.48	0.00	0.08	0.09	0.11	0.19	0.02	0.01	-	0.03	99.31	0.36	0.3
2019	933	0.655	41	3.1	101	15	243,191	34.3	33.6	0.7	2%	31.66	31.60	25.03	0.00	0.11	0.15	0.13	0.25	0.17	0.10	-	0.03	98.51	0.30	1.16
2018	18	0.430	11	3.2	80	35	242,232	38.6	13.1	25.5	194%	23.68	33.91	27.17	0.00	0.00	0.00	0.00	0.79	0.22	0.17	-	-	97.52	1.51	0.97
2017	487	0.398	71	3.0	73	42	234,925	22.7	27.0	-4.3	-16%	23.91	24.99	22.09	0.00	0.20	0.12	0.06	0.23	0.06	0.11	-	-	98.38	0.37	1.24
2016	1,901	0.323	165	2.9	62	53	222,251	22.3	23.1	-0.8	-4%	22.29	22.06	19.33	0.13	0.32	0.23	0.16	0.28	0.12	0.04	0.01	0.02	98.40	0.42	1.14
2015	996	0.206	193	3.0	49	67	212,087	22.2	23.6	-1.4	-6%	22.92	23.01	20.83	0.00	0.25	0.30	0.19	0.28	0.06	0.09	0.02	0.01	98.41	0.40	1.16
2014	521	0.130	189	3.2	38	78	203,180	23.2	24.4	-1.3	-5%	23.61	23.92	21.75	0.00	0.09	0.15	0.16	0.42	0.09	0.07	0.02	0.03	98.31	0.55	1.1
2013	707	0.078	362	3.0	26	92	182,432	27.6	26.7	1.0	4%	25.68	25.21	22.36	0.05	0.12	0.27	0.16	0.47	0.12	0.05	0.01	0.05	97.96	0.71	1.28
2012	614	0.038	489	3.0	17	101	211,805	34.2	32.4	1.8	6%	31.89	30.79	27.44	0.07	0.21	0.18	0.11	0.29	0.07	0.05	0.02	0.02	98.58	0.50	0.88
2011	16	0.013	38	3.1	9	110	200,264	40.2	45.6	-5.4	-12%	41.59	39.94	33.22	0.00	0.00	0.00	0.06	0.32	0.00	0.00	-	-	98.80	0.64	0.57
FNMA 10yr 3	3,892	0.105	1,356	3.5	65	50	182,680	26.5	27.6	-1.0	-4%	26.73	26.85	23.76	0.03	0.17	0.23	0.19	0.48	0.15	0.13	0.02	0.04	97.70	0.70	1.55
2020	210	0.793	28	3.6	106	10	183,917	24.2	20.7	3.5	17%	25.50	24.46	15.94	0.00	0.00	0.15	0.07	0.29	0.08	0.21	-	-	98.66	0.38	0.96
2019	706	0.613	47	3.6	98	16	214,522	30.6	34.3	-3.7	-11%	32.50	32.54	27.11	0.00	0.13	0.20	0.18	0.45	0.08	0.17	-	0.09	97.74	0.46	1.71
2018	231	0.435	36	3.5	80	34	212,936	25.3	26.9	-1.6	-6%	28.13	27.97	25.71	0.00	0.39	0.19	0.12	0.19	0.06	0.00	0.06	0.11	98.65	0.59	0.6
2017	1,019	0.390	98	3.4	72	42	190,614	25.0	24.1	0.9	4%	23.75	24.55	22.12	0.00	0.07	0.24	0.14	0.40	0.22	0.13	0.02	0.02	97.69	0.59	1.69
2016	442	0.292	88	3.5	60	54	164,485	19.9	23.0	-3.2	-14%	21.59	22.04	20.03	0.00	0.03	0.18	0.09	0.42	0.21	0.10	0.01	0.02	97.05	1.00	1.92
2015	393	0.205	128	3.5	49	65	161,175	21.2	23.1	-2.0	-8%	21.56	22.11	19.88	0.00	0.24	0.29	0.22	0.89	0.22	0.14	0.02	0.01	97.34	1.11	1.52
2014	336	0.125	161	3.6	38	78	148,513	26.5	25.0	1.4	6%	23.81	22.92	21.00	0.00	0.19	0.27	0.22	0.56	0.07	0.12	0.03	0.02	97.40	0.78	1.77
2013	266	0.081	240	3.6	28	89	147,832	28.5	29.0	-0.6	-2%	27.11	26.17	22.63	0.25	0.46	0.34	0.22	0.70	0.14	0.09	0.03	0.05	97.35	0.95	1.62
2012	146	0.025	294	3.5	15	104	164,152	34.5	34.6	-0.1	0%	33.27	31.92	28.62	0.18	0.26	0.19	0.17	0.53	0.17	0.16	0.01	0.00	97.99	0.78	1.22
2011	143	0.008	236	3.4	8	111	197,760	41.5	43.1	-1.5	-4%	40.94	39.58	35.01	0.15	0.39	0.27	0.16	0.30	0.09	0.04	-	0.05	98.61	0.47	0.87
2010	0	#DIV/0!	0	3.5	1	119	208,498	0.0	92.2	-92.2	*n.m.	99.95	98.76	91.44	0.00	0.00	0.12	0.06	0.00	0.38	0.00	-	-	98.78	0.09	1.13
FNMA 10yr 3.5	1,513	0.138	596	4.0	77	37	160,667	27.9	28.7	-0.9	-3%	28.63	29.10	27.53	0.15	0.34	0.33	0.20	0.71	0.17	0.14	0.03	0.04	96.94	0.92	2.06
2020	28	0.793	11	4.1	106	11	146,965	21.6	30.4	-8.8	-29%	24.03	20.05	15.87	0.00	2.06	1.57	0.79	1.57	0.00	0.00	-	-	96.90	1.57	1.54
2019	381	0.502	49	4.1	93	21	178,241	33.2	34.3	-1.1	-3%	34.15	34.07	32.45	0.00	0.24	0.22	0.11	0.47	0.06	0.16	0.07	0.03	97.18	0.70	2.02
2018	538	0.427	73	4.0	83	31	181,347	26.8	27.5	-0.7	-3%	28.25	29.75	28.23	0.00	0.25	0.24	0.15	0.65	0.15	0.17	0.03	0.06	97.13	0.77	2.01
2017	345	0.383	53	3.9	72	42	136,835	23.4	24.1	-0.7	-3%	24.38	23.96	21.82	0.61	0.43	0.55	0.87	0.80	0.31	0.10	-	0.04	96.65	1.18	2.14
2016	48	0.285	30	4.1	59	55	120,071	26.7	24.7	2.0	8%	20.92	19.70	17.10	0.00	0.50	0.25	0.13	0.76	0.18	0.12	-	-	96.95	1.00	2.05
2015	31	0.198	31	4.2	49	66	105,857	13.6	15.1	-1.5	-10%	16.80	20.36	17.83	0.00	0.00	0.08	0.12	1.16	0.22	0.22	-	-	94.29	1.38	4.33
2014	64	0.113	63	4.2	36	79	117,772	27.3	26.8	0.5	2%	24.40	24.36	22.47	0.00	0.48	0.24	0.16	1.56	0.30	0.19	0.06	-	96.39	1.32	2.23
2013	49	0.082	77	4.1	29	88	112,990	23.0	25.5	-2.5	-10%	22.36	21.86	20.11	0.00	0.29	0.28	0.25	0.59	0.26	0.08	0.01	0.05	97.46	1.19	1.29
2012	9	0.023	49	4.1	14	105	117,452	35.1	20.7	14.4	69%	29.09	29.20	27.49	0.00	0.23	0.20	0.10	1.54	0.06	0.02	-	-	96.26	1.35	2.4
2011	19	0.003	160	4.0	6	114	155,808	58.8	55.7	3.1	5%	55.00	48.74	41.46	0.71	0.36	0.55	0.29	0.39	0.12	0.00	0.02	-	97.38	0.99	1.61
2010	0	#DIV/0!	0	3.9	1	119	193,129	0.0	98.8	-98.8	*n.m.	94.14	90.24	76.88	0.00	0.00	0.12	0.15	0.01	0.11	0.65	-	-	95.69	0.42	3.89
FNMA 10yr 4	302	0.166	203	4.6	85	30	125,662	25.2	34.2	-9.1	-26%	28.51	29.06	26.68	0.69	0.55	0.41	0.24	0.78	0.08	0.13	0.01	0.00	97.29	0.84	1.85
2019	47	0.624	19	4.7	95	21	102,296	18.6	22.5	-3.9	-17%	23.68	21.05	17.73	0.00	0.49	0.73	0.36	0.96	0.00	0.10	-	-	98.22	0.74	1.04
2018	243	0.445	61	4.6	85	29	131,906	26.0	36.2	-10.2	-28%	29.17	30.29	27.54	0.86	0.55	0.35	0.21	0.77	0.10	0.13	0.02	-	97.19	0.86	1.93

*n.m. - Not Meaningful

Source: Bloomberg

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 15yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Feb*	*Jan*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
FNMA 15yr 1.5	82,239	0.970	931	2.3	175	3	334,606	**6.6**	5.6	1.0	**18%**	5.68	4.57	2.87	0.05	0.03	0.02	0.02	0.28	0.04	0.01	-	0.00	99.49	0.45	0.06
2020	82,199	0.970	921	2.3	175	3	334,673	**6.6**	5.6	1.0	**18%**	5.68	4.57	-	0.05	0.03	0.02	-	0.28	0.04	0.01	-	0.00	99.49	0.45	0.06
FNMA 15yr 2	191,941	0.828	5,739	2.7	167	10	290,238	**17.4**	15.0	2.4	**16%**	14.86	12.97	10.07	0.06	0.08	0.09	0.07	0.23	0.05	0.03	0.00	0.00	99.32	0.40	0.27
2020	178,047	0.924	3,553	2.7	172	5	291,267	**16.9**	14.3	2.6	**18%**	14.12	11.85	7.28	0.06	0.07	0.07	0.04	0.24	0.04	0.02	0.00	0.00	99.39	0.40	0.21
2019	2,059	0.718	64	2.8	161	15	318,678	**36.1**	34.7	1.5	**4%**	33.74	32.06	22.13	0.00	0.19	0.27	0.17	0.30	0.09	0.07	-	-	97.92	0.32	1.76
2017	68	0.637	30	2.6	132	43	285,250	**11.6**	11.4	0.2	**2%**	18.25	16.87	13.95	0.00	0.00	0.00	0.00	0.30	0.51	0.00	-	-	96.63	1.89	1.48
2016	4,387	0.498	343	2.6	122	53	285,469	**26.0**	23.8	2.2	**9%**	24.07	22.93	17.57	0.05	0.19	0.27	0.15	0.19	0.06	0.05	0.01	0.02	98.50	0.36	1.1
2015	491	0.382	173	2.7	106	68	286,985	**21.0**	24.4	-3.4	**-14%**	23.35	22.53	18.67	0.00	0.28	0.26	0.15	0.33	0.07	0.10	0.15	0.03	97.71	0.65	1.46
2014	96	0.435	40	2.7	98	77	279,070	**14.2**	18.2	-3.9	**-22%**	18.17	18.61	14.74	0.00	0.00	0.00	0.05	0.41	0.00	0.00	-	-	97.92	0.98	1.1
2013	4,288	0.270	1,015	2.6	81	93	267,835	**18.6**	19.5	-0.9	**-5%**	18.30	17.78	14.99	0.10	0.33	0.26	0.16	0.23	0.06	0.05	0.01	0.03	98.58	0.43	0.95
2012	2,287	0.238	479	2.6	76	98	249,469	**18.9**	20.7	-1.8	**-9%**	18.96	18.59	15.87	0.00	0.13	0.16	0.10	0.22	0.08	0.06	0.01	0.00	98.80	0.46	0.72
FNMA 15yr 2.5	175,681	0.427	20,483	3.1	133	42	259,786	**26.2**	27.1	-0.9	**-3%**	26.07	25.73	20.65	0.08	0.21	0.24	0.16	0.30	0.10	0.08	0.01	0.02	98.25	0.49	1.22
2020	57,422	0.854	2,689	3.1	169	8	251,161	**23.9**	23.3	0.6	**3%**	22.61	20.51	13.30	0.10	0.14	0.20	0.13	0.27	0.08	0.06	0.00	0.01	98.88	0.45	0.66
2019	29,990	0.623	1,054	3.2	160	15	284,159	**39.6**	40.9	-1.3	**-3%**	39.77	40.18	31.90	0.10	0.28	0.29	0.18	0.30	0.12	0.10	0.02	0.02	97.74	0.43	1.8
2018	414	0.504	85	3.2	139	35	289,836	**41.1**	36.0	5.1	**14%**	37.94	36.38	30.27	0.00	0.35	0.17	0.09	0.29	0.38	0.10	0.09	0.14	96.46	0.67	2.64
2017	5,416	0.507	695	3.0	132	42	273,417	**30.8**	32.3	-1.5	**-5%**	30.74	31.06	24.94	0.13	0.35	0.32	0.21	0.38	0.14	0.10	0.04	0.05	97.54	0.59	1.78
2016	30,508	0.452	3,142	2.9	120	53	262,414	**24.1**	25.4	-1.3	**-5%**	24.49	24.62	19.86	0.06	0.22	0.25	0.16	0.33	0.12	0.09	0.02	0.02	97.90	0.49	1.57
2015	11,886	0.345	2,038	3.0	106	67	262,633	**23.5**	25.7	-2.2	**-8%**	24.07	24.26	20.09	0.06	0.28	0.28	0.19	0.32	0.09	0.10	0.02	0.04	97.98	0.54	1.42
2014	2,711	0.272	1,046	3.1	98	75	263,004	**25.3**	26.9	-1.6	**-6%**	25.67	24.98	21.05	0.03	0.17	0.25	0.16	0.32	0.15	0.07	0.01	0.03	98.11	0.48	1.37
2013	16,245	0.251	4,074	2.9	81	93	239,510	**18.3**	19.7	-1.5	**-7%**	18.37	18.12	15.50	0.08	0.24	0.23	0.17	0.35	0.12	0.08	0.02	0.04	97.93	0.64	1.37
2012	20,656	0.196	5,468	3.0	73	101	254,831	**19.9**	21.4	-1.6	**-7%**	20.02	19.83	17.07	0.04	0.14	0.19	0.12	0.29	0.08	0.07	0.01	0.02	98.44	0.51	1.01
2011	401	0.142	183	3.1	64	110	237,461	**20.3**	23.9	-3.6	**-15%**	21.24	21.18	19.12	0.00	0.21	0.32	0.16	0.44	0.05	0.08	-	0.02	98.43	0.50	1.05
FNMA 15yr 3	108,448	0.310	27,653	3.5	120	54	222,244	**27.1**	30.1	-3.0	**-10%**	28.25	28.51	24.78	0.10	0.30	0.34	0.23	0.51	0.19	0.14	0.03	0.03	96.96	0.81	2.16
2020	8,119	0.837	851	3.7	167	9	208,842	**24.8**	26.5	-1.7	**-6%**	24.60	21.98	14.50	0.29	0.29	0.39	0.22	0.51	0.14	0.14	0.01	0.00	97.61	0.80	1.57
2019	19,710	0.570	1,451	3.6	158	17	240,201	**38.1**	40.6	-2.5	**-6%**	39.08	40.04	34.98	0.07	0.33	0.35	0.23	0.45	0.21	0.15	0.02	0.04	96.74	0.66	2.54
2018	4,687	0.427	618	3.7	141	33	254,802	**37.0**	42.9	-5.9	**-14%**	40.06	40.88	37.26	0.08	0.37	0.35	0.24	0.42	0.23	0.18	0.05	0.03	96.64	0.68	2.6
2017	21,741	0.465	2,977	3.5	132	42	232,201	**29.0**	33.1	-4.1	**-12%**	30.77	31.28	26.83	0.07	0.31	0.35	0.27	0.49	0.21	0.15	0.04	0.04	96.63	0.77	2.52
2016	9,280	0.413	2,932	3.5	119	55	194,374	**21.6**	24.8	-3.2	**-13%**	22.94	22.98	19.98	0.07	0.31	0.39	0.29	0.69	0.24	0.19	0.04	0.04	96.02	1.15	2.74
2015	12,638	0.333	3,614	3.5	107	66	212,918	**22.2**	24.8	-2.6	**-11%**	23.43	23.10	19.74	0.13	0.33	0.35	0.26	0.58	0.21	0.13	0.03	0.03	96.82	0.94	2.18
2014	9,380	0.252	3,338	3.5	95	78	215,895	**21.1**	24.0	-2.9	**-12%**	22.24	22.52	19.52	0.10	0.35	0.38	0.29	0.59	0.16	0.15	0.04	0.05	97.01	0.94	1.96
2013	7,674	0.225	3,818	3.5	84	89	202,020	**19.5**	21.4	-1.9	**-9%**	19.91	19.87	17.32	0.14	0.40	0.38	0.26	0.55	0.18	0.11	0.03	0.05	97.13	0.94	1.86
2012	8,276	0.156	5,464	3.5	69	104	208,423	**19.7**	22.0	-2.3	**-11%**	20.33	19.85	17.61	0.10	0.16	0.19	0.14	0.46	0.12	0.10	0.01	0.03	97.75	0.75	1.46
2011	6,204	0.116	2,185	3.5	63	111	237,175	**20.7**	23.3	-2.6	**-11%**	21.18	21.19	18.80	0.03	0.13	0.16	0.10	0.32	0.08	0.05	0.01	0.02	98.33	0.54	1.1
2010	739	0.077	404	3.6	53	122	220,708	**26.7**	24.4	2.2	**9%**	24.75	23.80	21.11	0.02	0.22	0.25	0.15	0.23	0.05	0.05	-	-	98.80	0.53	0.67
FNMA 15yr 3.5	45,130	0.222	20,563	4.0	118	55	184,065	**27.2**	30.5	-3.3	**-11%**	28.62	29.06	27.09	0.21	0.40	0.43	0.32	0.74	0.27	0.22	0.05	0.03	96.01	1.11	2.8
2020	1,589	0.807	307	4.1	165	10	193,221	**26.3**	26.4	-0.1	**0%**	25.96	25.54	17.55	0.50	0.58	1.04	0.55	0.74	0.27	0.19	0.05	0.01	96.43	0.92	2.59
2019	10,697	0.549	1,402	4.1	155	19	197,532	**34.2**	39.3	-5.1	**-13%**	36.54	36.64	34.04	0.24	0.40	0.42	0.31	0.71	0.31	0.26	0.06	0.04	95.58	0.92	3.4
2018	8,529	0.405	1,739	4.1	142	31	211,784	**36.1**	39.8	-3.7	**-9%**	38.04	39.74	38.60	0.21	0.42	0.40	0.31	0.68	0.29	0.27	0.07	0.04	95.77	1.00	3.12
2017	5,899	0.484	1,999	4.0	130	43	155,825	**21.7**	25.8	-4.1	**-16%**	23.24	23.41	21.11	0.32	0.53	0.58	0.46	0.93	0.35	0.23	0.06	0.03	94.91	1.47	3.53
2016	1,422	0.415	995	4.0	117	55	130,182	**16.6**	19.2	-2.5	**-13%**	18.20	18.27	16.71	0.34	0.40	0.57	0.41	0.94	0.33	0.24	0.04	0.04	95.36	1.33	3.23
2015	1,894	0.340	1,521	4.0	106	66	133,032	**19.3**	20.5	-1.2	**-6%**	19.44	18.81	16.63	0.00	0.48	0.51	0.38	1.10	0.32	0.27	0.06	0.05	95.56	1.48	2.85
2014	3,453	0.251	2,585	4.1	94	79	152,612	**18.9**	21.3	-2.4	**-11%**	19.83	19.50	17.23	0.19	0.39	0.39	0.39	1.05	0.34	0.26	0.05	0.04	95.33	1.65	2.94
2013	2,740	0.217	2,017	4.0	86	88	163,952	**18.0**	21.2	-3.2	**-15%**	19.54	19.09	16.95	0.10	0.40	0.45	0.31	0.79	0.19	0.20	0.02	0.02	96.34	1.31	2.31
2012	1,110	0.145	2,036	4.0	69	105	150,315	**22.0**	20.6	1.4	**7%**	20.27	20.02	17.73	0.30	0.28	0.33	0.28	0.64	0.21	0.15	0.01	0.02	96.90	1.10	1.96
2011	3,860	0.096	3,389	3.9	60	114	195,766	**21.2**	21.3	-0.1	**0%**	20.43	20.56	18.26	0.11	0.31	0.33	0.21	0.51	0.14	0.10	0.01	0.02	97.56	0.90	1.51
2010	3,889	0.061	2,410	3.9	52	123	209,871	**22.0**	23.6	-1.5	**-6%**	22.14	21.89	19.58	0.05	0.14	0.16	0.13	0.36	0.10	0.05	0.02	0.03	98.27	0.67	1.02
2009	46	0.038	156	4.0	39	138	197,057	**29.0**	17.1	11.9	**70%**	20.33	20.19	19.52	0.00	0.23	0.27	0.25	0.20	0.00	0.28	-	-	97.62	0.94	1.44
FNMA 15yr 4	13,383	0.083	11,052	4.5	105	69	163,801	**26.8**	30.2	-3.4	**-11%**	27.96	27.93	26.46	0.29	0.53	0.55	0.44	0.88	0.27	0.23	0.04	0.04	95.64	1.38	2.9
2020	94	0.860	41	4.5	163	10	122,645	**19.5**	19.7	-0.2	**-1%**	17.61	17.54	-	1.81	1.14	1.04	-	0.47	0.21	0.17	-	-	97.11	1.09	1.8
2019	1,540	0.633	478	4.7	152	20	141,731	**27.5**	29.5	-2.1	**-7%**	27.99	27.20	24.89	0.51	0.68	0.82	0.57	0.91	0.34	0.28	0.06	0.06	94.48	1.54	3.86
2018	5,683	0.453	1,264	4.6	143	30	159,407	**31.1**	37.2	-6.1	**-16%**	34.05	34.30	33.53	0.42	0.65	0.65	0.52	1.06	0.33	0.32	0.05	0.05	94.74	1.50	3.66
2017	396	0.449	186	4.5	130	43	142,645	**25.0**	25.2	-0.1	**-1%**	24.10	24.45	22.25	0.20	0.76	1.07	0.72	0.99	0.51	0.33	0.07	0.02	93.57	1.74	4.6
2016	20	0.410	29	4.4	117	56	116,812	**21.7**	44.3	-22.6	**-51%**	30.71	25.53	21.65	0.00	1.55	0.78	0.39	0.22	0.57	0.00	-	-	96.85	0.67	2.47
2014	94	0.241	226	4.7	90	81	89,195	**18.7**	24.6	-5.9	**-24%**	19.66	18.33	17.36	1.32	1.24	0.78	0.51	1.65	0.29	0.23	0.06	-	94.81	2.03	3.09

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 15yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Feb*	*Jan*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2013	155	0.229	303	4.6	85	87	102,238	**19.8**	19.9	-0.1	**-1%**	19.15	18.62	16.09	0.00	0.15	0.32	0.37	1.23	0.34	0.23	0.05	-	94.93	2.12	2.89
2012	86	0.131	350	4.5	68	106	121,002	**20.1**	24.6	-4.6	**-19%**	22.64	22.28	19.45	0.00	0.07	0.04	0.06	1.10	0.24	0.04	0.08	0.20	95.65	2.34	1.73
2011	1,831	0.076	2,726	4.4	57	117	170,883	**21.2**	22.2	-1.0	**-4%**	20.63	20.33	18.41	0.03	0.35	0.32	0.20	0.73	0.21	0.18	0.03	0.03	96.61	1.29	2.04
2010	2,047	0.041	2,828	4.4	48	127	183,025	**22.0**	22.8	-0.8	**-4%**	21.73	21.66	19.32	0.10	0.25	0.34	0.28	0.60	0.17	0.11	0.03	0.02	97.24	1.07	1.64
2009	1,403	0.021	2,351	4.5	38	138	192,073	**24.2**	24.0	0.3	**1%**	23.20	22.99	20.65	0.06	0.37	0.33	0.26	0.60	0.15	0.10	0.02	0.07	97.50	1.04	1.37
2008	24	0.011	212	4.6	26	152	198,845	**16.2**	29.7	-13.4	**-45%**	23.47	24.42	21.88	0.00	0.00	0.11	0.06	0.15	0.00	0.11	-	-	97.81	1.03	1.16
FNMA 15yr 4.5	1,991	0.028	5,955	4.9	67	108	154,636	**23.3**	24.9	-1.6	**-6%**	23.28	22.74	20.74	0.21	0.55	0.57	0.51	1.08	0.31	0.23	0.06	0.06	95.34	1.68	2.87
2020	17	0.867	9	5.2	165	11	167,432	**21.6**	12.7	9.0	**71%**	16.13	12.29	10.36	0.00	0.00	0.00	0.00	1.28	0.38	0.00	-	-	97.41	0.46	2.13
2019	239	0.664	122	5.2	153	20	126,867	**23.9**	27.7	-3.8	**-14%**	24.90	23.70	22.17	0.00	0.60	0.78	0.63	0.86	0.46	0.40	-	-	93.27	1.54	5.18
2018	201	0.529	66	5.1	147	26	142,799	**27.4**	34.8	-7.4	**-21%**	29.57	29.87	27.81	0.00	0.24	0.57	0.59	1.92	0.34	0.25	0.38	0.07	92.22	1.70	5.63
2011	258	0.081	929	4.8	57	117	139,927	**20.1**	23.3	-3.2	**-14%**	21.04	20.40	18.49	0.40	0.76	0.77	0.64	1.07	0.40	0.25	-	0.02	95.25	2.11	2.63
2010	449	0.043	1,300	4.8	46	129	149,367	**22.8**	24.0	-1.2	**-5%**	22.71	21.83	19.59	0.70	0.88	0.65	0.49	0.86	0.24	0.26	0.04	0.10	95.85	1.65	2.36
2009	663	0.023	2,130	4.9	38	138	168,556	**22.5**	22.1	0.4	**2%**	21.70	21.37	19.13	0.00	0.31	0.38	0.29	1.02	0.27	0.15	0.01	0.06	96.60	1.61	1.72
2008	145	0.006	991	5.1	25	153	193,860	**27.5**	24.8	2.7	**11%**	24.80	24.27	22.67	0.00	0.67	0.55	0.49	1.15	0.29	0.20	0.11	0.05	95.67	1.53	2.63
2007	10	0.006	249	5.3	18	161	176,784	**28.2**	29.2	-1.0	**-3%**	25.36	24.46	20.54	0.00	0.39	0.20	0.31	1.37	0.00	0.22	-	-	94.67	1.70	3.63
FNMA 15yr 5	282	0.008	3,417	5.6	30	148	156,136	**22.3**	23.4	-1.1	**-5%**	22.65	22.67	21.78	0.15	0.44	0.73	0.50	1.30	0.35	0.36	0.06	0.06	94.42	2.25	3.21
2010	19	0.054	184	5.4	47	129	117,911	**22.4**	17.6	4.7	**27%**	21.69	20.09	20.00	0.00	0.82	0.67	0.34	2.48	0.07	0.43	-	-	95.26	2.04	2.7
2009	56	0.032	591	5.5	39	138	124,932	**25.1**	17.7	7.4	**42%**	20.97	19.71	18.33	0.00	0.16	0.61	0.41	0.99	0.35	0.34	-	-	94.44	2.32	3.24
2008	159	0.008	1,331	5.6	26	152	167,994	**20.6**	23.8	-3.2	**-14%**	21.87	22.07	20.33	0.27	0.52	0.78	0.53	1.22	0.32	0.42	0.09	0.10	94.39	2.06	3.37
2007	34	0.004	753	5.7	17	161	180,135	**25.7**	31.2	-5.5	**-18%**	26.84	25.67	22.96	0.00	0.45	1.04	0.67	1.13	0.63	0.13	0.09	-	93.94	2.71	3.27
2006	6	0.001	496	5.7	8	171	195,931	**36.5**	41.2	-4.7	**-11%**	41.14	41.11	37.91	0.00	0.13	0.07	0.08	1.34	0.88	0.07	-	-	94.25	2.77	2.99

**n.m. - Not Meaningful*

Source: Bloomberg

INTENDED FOR INSTITUTIONAL INVESTORS ONLY. The information included herein has been obtained from sources deemed reliable, but it is not in any way guaranteed, and it, together with any opinions expressed, is subject to change at any time. Any and all details offered in this publication are preliminary and are therefore subject to change at any time. This has been prepared for general information purposes only and does not consider the specific investment objectives, financial situation and particular needs of any individual or institution. This information is, by its very nature, incomplete and specifically lacks information critical to making final investment decisions. Investors should seek financial advice as to the appropriateness of investing in any securities or investment strategies mentioned or recommended. The accuracy of the financial projections is dependent on the occurrence of future events which cannot be assured; therefore, the actual results achieved during the projection period may vary from the projections. Interest rate swaps and derivatives are offered and sold via Vining Sparks Interest Rate Products, LLC (VSIRP). VSIRP is an independent operating entity and is not a subsidiary of Vining Sparks IBG, LP. VSIRP is not a broker/dealer registered with the SEC. The firm may have positions, long or short, in any or all securities mentioned. Vining Sparks is a member FINRA/SIPC.

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 20yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Feb	Jan	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
FNMA 20yr 2	55,519	0.959	475	2.9	234	5	306,520	10.6	8.9	1.7	19%	8.58	6.59	3.66	0.04	0.03	0.03	0.02	0.22	0.04	0.02	-	0.00	99.50	0.36	0.14
2020	55,516	0.959	471	2.9	234	5	306,528	10.6	8.9	1.7	19%	8.58	6.59	-	0.04	0.03	0.03	-	0.22	0.04	0.02	-	0.00	99.50	0.36	0.14
FNMA 20yr 2.5	39,388	0.736	861	3.3	224	14	285,247	32.0	32.3	-0.3	-1%	31.23	30.00	21.52	0.15	0.17	0.17	0.10	0.24	0.10	0.06	0.01	0.01	98.66	0.39	0.94
2020	31,276	0.853	476	3.3	231	8	283,810	28.2	27.6	0.7	2%	26.70	24.10	14.45	0.18	0.17	0.17	0.09	0.23	0.09	0.05	0.00	0.01	98.91	0.37	0.7
2019	4,302	0.583	36	3.4	223	15	312,395	52.5	55.0	-2.5	-4%	52.60	52.26	38.78	0.08	0.21	0.18	0.10	0.33	0.17	0.13	0.02	0.01	97.25	0.47	2.25
2017	46	0.524	15	3.4	193	42	268,381	52.0	39.0	13.0	33%	41.59	40.06	33.88	0.00	0.00	0.00	0.00	0.55	0.00	0.00	-	0.62	95.99	0.56	2.83
2016	2,408	0.453	85	3.2	182	52	281,562	39.2	40.0	-0.7	-2%	39.71	41.93	34.05	0.00	0.13	0.19	0.11	0.26	0.07	0.06	0.01	0.01	98.15	0.41	1.42
2015	53	0.417	16	3.4	161	70	275,491	19.7	50.5	-30.8	-61%	37.56	35.69	31.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	98.34	-	1.66
2013	524	0.342	83	3.3	138	94	245,752	25.4	23.7	1.6	7%	23.88	23.08	18.39	0.00	0.04	0.15	0.10	0.33	0.11	0.17	-	-	97.97	0.61	1.43
2012	764	0.317	138	3.2	133	98	232,042	23.4	27.4	-4.0	-15%	25.23	24.73	19.45	0.00	0.14	0.13	0.07	0.22	0.08	0.07	-	0.01	98.51	0.51	0.97
FNMA 20yr 3	52,046	0.410	3,619	3.7	180	54	244,202	34.0	37.7	-3.7	-10%	35.59	36.05	29.60	0.05	0.22	0.31	0.21	0.47	0.18	0.14	0.03	0.03	97.05	0.69	2.2
2020	5,191	0.817	251	3.8	229	9	248,923	31.1	32.4	-1.2	-4%	30.03	26.73	16.81	0.10	0.27	0.56	0.33	0.35	0.19	0.18	0.01	0.01	97.56	0.56	1.85
2019	10,194	0.568	213	3.8	222	16	268,253	48.1	52.0	-3.9	-8%	49.36	49.55	39.47	0.06	0.24	0.35	0.22	0.46	0.25	0.21	0.04	0.03	96.44	0.59	2.91
2018	206	0.466	37	3.7	200	35	269,228	40.7	41.2	-0.6	-1%	40.39	43.27	39.57	0.00	0.00	0.00	0.00	0.65	0.08	0.18	-	0.06	96.90	0.90	2.14
2017	3,322	0.452	166	3.7	193	42	250,739	41.0	45.6	-4.6	-10%	42.84	43.64	37.52	0.03	0.22	0.24	0.19	0.55	0.21	0.15	0.02	0.05	96.50	0.71	2.72
2016	12,603	0.445	513	3.6	181	53	244,031	32.5	37.1	-4.6	-12%	34.86	36.00	30.34	0.06	0.20	0.28	0.21	0.47	0.19	0.13	0.04	0.05	96.80	0.70	2.41
2015	5,672	0.354	361	3.7	166	67	243,590	33.5	37.0	-3.5	-10%	35.53	36.71	31.49	0.02	0.24	0.30	0.20	0.42	0.16	0.09	0.04	0.02	97.26	0.64	2.03
2014	890	0.269	108	3.8	157	75	235,146	33.7	37.6	-3.9	-10%	35.71	36.57	31.89	0.00	0.04	0.17	0.12	0.66	0.19	0.20	0.04	0.03	97.33	0.86	1.73
2013	6,602	0.331	923	3.6	139	93	213,445	20.8	22.5	-1.6	-7%	21.78	21.41	17.60	0.04	0.29	0.30	0.22	0.59	0.16	0.13	0.02	0.02	97.18	0.93	1.86
2012	7,296	0.271	1,016	3.6	131	101	233,420	23.2	26.8	-3.6	-13%	24.73	25.13	20.63	0.04	0.17	0.21	0.16	0.40	0.11	0.09	0.02	0.04	97.91	0.67	1.36
2011	61	0.196	24	3.6	121	110	230,586	34.8	36.9	-2.1	-6%	31.63	27.86	25.07	0.00	0.00	0.00	0.00	0.06	0.18	0.00	-	-	99.12	0.46	0.42
2010	9	0.173	7	3.8	108	123	209,079	27.7	13.7	14.0	102%	33.42	27.35	21.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	1.00	-	-
FNMA 20yr 3.5	26,343	0.294	4,687	4.1	168	65	214,482	31.0	36.1	-5.1	-14%	33.62	33.96	30.27	0.15	0.31	0.39	0.28	0.68	0.23	0.18	0.04	0.04	96.07	1.05	2.81
2020	725	0.812	84	4.2	228	11	224,361	31.4	34.8	-3.4	-10%	30.96	27.50	17.01	0.48	0.37	1.36	0.83	0.36	0.39	0.35	-	0.02	96.39	0.78	2.81
2019	3,214	0.493	213	4.3	219	19	236,447	44.3	51.0	-6.7	-13%	47.53	47.97	43.35	0.26	0.36	0.34	0.25	0.73	0.37	0.26	0.06	0.05	94.88	0.87	4.14
2018	1,879	0.425	162	4.0	201	34	239,285	42.2	50.3	-8.2	-16%	45.90	46.30	42.67	0.00	0.24	0.29	0.16	0.55	0.22	0.13	0.05	0.02	96.04	0.88	3.02
2017	5,142	0.438	479	4.0	193	42	225,061	36.1	42.9	-6.8	-16%	39.95	40.83	36.14	0.27	0.40	0.52	0.37	0.75	0.21	0.21	0.04	0.05	95.65	1.03	3.23
2016	1,474	0.437	274	4.0	182	52	198,931	28.0	33.0	-5.0	-15%	31.05	31.43	27.47	0.14	0.32	0.42	0.52	0.94	0.27	0.30	0.03	0.02	94.73	1.26	3.95
2015	2,434	0.353	649	4.1	167	67	186,270	25.6	28.5	-2.8	-10%	27.14	27.78	25.11	0.09	0.28	0.30	0.27	0.84	0.24	0.22	0.09	0.07	95.50	1.49	2.86
2014	1,927	0.257	368	4.2	155	77	201,471	28.7	30.4	-1.7	-6%	29.62	29.38	25.88	0.17	0.31	0.38	0.33	0.75	0.26	0.11	0.03	0.03	95.97	1.31	2.66
2013	2,556	0.282	842	4.1	143	90	186,748	22.1	25.5	-3.4	-13%	22.90	22.00	18.96	0.10	0.42	0.48	0.34	0.82	0.19	0.21	0.04	0.04	96.07	1.30	2.56
2012	3,935	0.218	1,198	4.0	127	104	211,917	22.6	25.6	-3.0	-12%	24.28	24.17	20.58	0.03	0.24	0.25	0.19	0.58	0.18	0.12	0.03	0.03	96.96	0.97	2.01
2011	2,435	0.155	332	4.0	120	111	221,022	22.6	26.7	-4.1	-15%	24.93	24.52	21.79	0.11	0.21	0.24	0.24	0.35	0.13	0.09	0.01	0.01	97.94	0.69	1.35
2010	620	0.116	83	4.0	109	122	219,341	22.0	23.1	-1.0	-5%	22.82	24.07	21.04	0.00	0.00	0.18	0.13	0.46	0.11	0.03	-	0.00	98.02	0.78	1.2
FNMA 20yr 4	16,407	0.235	3,812	4.5	171	63	196,213	30.0	34.3	-4.3	-12%	32.32	32.72	30.52	0.30	0.55	0.55	0.40	1.03	0.37	0.25	0.06	0.04	94.72	1.48	3.71
2020	149	0.826	56	4.7	229	10	189,262	28.5	31.8	-3.3	-10%	26.71	25.71	18.14	0.00	1.69	1.84	1.11	1.18	0.28	0.18	-	-	95.67	1.61	2.72
2019	994	0.573	210	4.7	218	20	201,649	34.9	35.7	-0.8	-2%	35.26	36.84	34.05	0.25	0.71	0.68	0.44	0.86	0.49	0.21	0.12	-	93.72	1.36	4.81
2018	4,626	0.396	495	4.6	204	31	217,381	41.7	47.4	-5.7	-12%	44.99	45.63	43.55	0.39	0.52	0.51	0.37	0.91	0.35	0.27	0.06	0.04	94.87	1.07	3.96
2017	2,923	0.465	534	4.4	193	43	194,748	29.3	34.3	-5.1	-15%	32.25	32.15	29.08	0.48	0.66	0.76	0.59	1.29	0.48	0.32	0.07	0.07	93.09	1.85	4.92
2016	634	0.430	219	4.4	179	55	184,131	23.7	26.4	-2.8	-10%	24.65	24.31	21.37	0.20	0.51	0.36	0.28	1.25	0.56	0.36	0.14	0.05	93.25	1.96	4.61
2015	946	0.362	442	4.4	168	66	162,172	23.1	25.9	-2.9	-11%	23.82	23.33	21.21	0.09	0.32	0.51	0.56	1.04	0.47	0.20	0.03	0.07	93.88	1.79	4.24
2014	1,569	0.291	492	4.6	154	79	169,339	22.7	24.2	-1.5	-6%	23.16	22.94	20.24	0.39	0.65	0.58	0.46	1.63	0.40	0.34	0.04	0.01	94.07	2.16	3.71
2013	873	0.271	353	4.7	146	87	163,684	18.0	24.4	-6.4	-26%	21.00	21.15	18.56	0.11	0.42	0.59	0.57	1.20	0.35	0.30	0.01	0.03	94.92	1.80	3.24
2012	291	0.203	294	4.5	126	105	181,007	25.0	23.5	1.5	6%	24.53	22.40	19.28	1.24	1.43	1.20	0.65	0.96	0.28	0.20	0.10	0.05	95.34	1.44	3.08
2011	1,413	0.139	320	4.5	118	113	199,274	20.1	23.3	-3.2	-14%	21.81	22.10	19.11	0.11	0.33	0.27	0.25	0.73	0.20	0.13	0.04	0.04	96.25	1.30	2.38
2010	1,681	0.088	253	4.4	108	123	204,440	20.6	23.8	-3.2	-13%	22.29	21.90	19.38	0.00	0.44	0.40	0.24	0.63	0.18	0.12	0.02	0.03	97.26	1.06	1.63
2009	303	0.047	101	4.5	91	139	192,762	20.8	22.7	-1.8	-8%	21.33	21.11	18.84	0.00	0.24	0.16	0.27	0.49	0.20	0.06	0.07	0.09	97.41	1.15	1.28
FNMA 20yr 4.5	4,043	0.092	1,357	5.0	147	87	171,096	22.8	28.3	-5.5	-19%	25.59	25.44	23.40	0.30	0.76	0.73	0.67	1.25	0.45	0.29	0.06	0.06	94.18	1.88	3.82
2020	32	0.874	16	5.1	229	9	141,757	12.5	19.2	-6.7	-35%	20.68	24.07	14.62	0.00	0.00	2.72	1.37	0.94	0.23	0.00	0.15	-	96.93	2.16	0.75
2019	379	0.633	149	5.1	215	21	143,027	27.2	29.3	-2.1	-7%	29.25	30.78	27.14	0.19	0.41	0.68	0.55	1.33	0.32	0.42	-	-	92.73	2.33	4.94
2018	1,176	0.505	250	5.2	205	29	161,690	30.1	37.6	-7.5	-20%	33.29	32.59	30.83	0.40	0.94	0.86	0.82	1.53	0.74	0.49	0.06	0.12	91.77	2.25	5.8
2017	92	0.489	52	5.0	194	41	155,669	24.9	36.8	-11.9	-32%	28.70	25.25	23.64	3.15	2.11	1.44	0.97	2.51	0.74	0.98	0.19	0.19	89.49	3.16	6.97
2014	55	0.284	51	5.2	151	82	142,365	19.7	38.5	-18.8	-49%	24.95	21.78	20.37	0.00	0.72	0.61	0.56	1.27	0.68	0.37	0.41	0.09	89.88	2.30	7.33
2013	48	0.271	43	5.1	147	87	142,012	26.0	21.9	4.2	19%	24.74	22.10	19.98	0.00	0.28	1.45	1.00	1.08	0.14	0.14	0.03	-	95.59	1.77	2.61
2011	703	0.121	149	4.9	115	117	183,310	17.3	24.3	-7.0	-29%	20.83	20.51	18.07	0.00	0.79	0.51	0.48	1.04	0.38	0.21	0.04	0.08	95.56	1.39	2.93

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 20yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Feb*	*Jan*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2010	789	0.074	159	4.9	104	127	190,075	**17.4**	21.6	-4.2	**-19%**	20.20	21.22	19.01	0.36	0.86	0.78	0.75	1.06	0.31	0.11	0.09	0.02	95.84	1.80	2.26
2009	630	0.045	191	4.9	94	138	178,732	**18.8**	20.9	-2.1	**-10%**	20.46	19.58	18.15	0.13	0.37	0.49	0.34	0.88	0.26	0.10	0.05	0.01	96.51	1.32	2.11
2008	14	0.018	34	5.0	83	150	191,828	**13.9**	9.0	4.8	**54%**	11.36	19.50	19.60	0.00	0.00	3.23	1.63	1.61	0.06	0.00	-	-	98.14	0.75	1.12
2005	14	0.015	38	5.2	48	188	186,679	**21.0**	18.8	2.3	**12%**	15.39	14.14	14.29	0.00	0.00	0.00	0.14	2.53	0.00	0.00	0.00	-	95.45	2.08	2.46
2004	34	0.015	64	5.1	35	202	157,934	**20.5**	21.6	-1.1	**-5%**	21.36	20.04	17.76	0.00	0.32	0.16	0.55	1.58	0.48	0.05	0.07	0.02	95.53	2.42	1.97
2003	60	0.011	126	5.0	28	209	152,688	**22.1**	22.5	-0.4	**-2%**	21.02	20.99	19.18	0.00	0.64	0.63	0.43	1.27	0.48	0.08	0.00	-	96.05	2.00	1.95
FNMA 20yr 5	944	0.017	1,249	5.5	78	157	159,735	**18.7**	22.1	-3.5	**-16%**	19.90	19.70	18.22	0.16	0.64	0.79	0.76	1.71	0.35	0.29	0.03	0.03	94.13	2.66	3.15
2019	21	0.613	19	5.8	216	21	153,656	**20.1**	33.9	-13.8	**-41%**	29.23	25.51	28.49	0.00	2.46	1.93	1.17	0.96	0.87	0.19	-	-	95.46	2.11	2.43
2018	55	0.503	40	5.7	208	29	171,621	**20.2**	44.0	-23.8	**-54%**	33.70	32.69	31.94	0.00	2.14	1.34	1.31	3.78	0.18	0.75	-	-	90.30	2.96	6.74
2011	68	0.125	48	5.4	115	118	176,185	**24.9**	26.6	-1.7	**-6%**	23.28	21.08	19.09	0.00	0.26	0.73	0.53	2.38	0.65	0.10	-	-	92.32	3.39	4.29
2010	120	0.072	57	5.4	103	129	169,298	**15.4**	23.5	-8.2	**-35%**	20.24	20.31	18.14	0.00	0.31	0.44	0.59	1.49	0.30	0.45	-	0.07	93.37	1.92	4.64
2009	113	0.060	86	5.4	96	137	164,568	**17.6**	19.8	-2.2	**-11%**	18.13	18.10	17.34	0.00	0.45	0.63	0.73	1.83	0.16	0.12	0.04	0.10	94.64	2.27	2.95
2008	89	0.014	129	5.6	80	153	165,573	**20.6**	16.5	4.0	**24%**	17.20	17.70	16.11	0.00	0.38	0.80	0.55	1.30	0.42	0.67	-	-	93.48	3.42	3.1
2007	16	0.016	51	5.7	71	163	176,294	**12.7**	10.7	2.0	**19%**	13.57	17.90	16.34	0.00	0.00	1.87	0.94	1.49	0.86	0.00	-	-	91.34	5.10	3.56
2006	11	0.015	35	5.6	61	174	173,630	**14.5**	6.2	8.2	**132%**	11.67	15.79	13.25	0.00	4.32	2.18	1.10	2.19	0.65	0.35	0.37	-	94.75	3.33	1.54
2005	138	0.016	113	5.6	48	187	155,967	**13.3**	17.7	-4.4	**-25%**	14.72	14.99	13.73	0.73	0.57	0.74	0.75	1.35	0.45	0.20	0.08	0.00	95.34	2.32	2.25
2004	129	0.013	175	5.5	38	199	150,113	**20.3**	18.0	2.3	**13%**	18.10	18.52	16.61	0.00	0.63	0.77	0.58	1.73	0.32	0.16	0.04	0.04	94.74	2.85	2.33
2003	175	0.008	429	5.5	27	211	146,631	**19.9**	22.0	-2.1	**-9%**	20.43	20.00	18.21	0.00	0.42	0.70	0.56	1.47	0.23	0.19	0.02	0.01	95.44	2.58	1.96

**n.m. - Not Meaningful*

Source: Bloomberg

INTENDED FOR INSTITUTIONAL INVESTORS ONLY. The information included herein has been obtained from sources deemed reliable, but it is not in any way guaranteed, and it, together with any opinions expressed, is subject to change at any time. Any and all details offered in this publication are preliminary and are therefore subject to change at any time. This has been prepared for general information purposes only and does not consider the specific investment objectives, financial situation and particular needs of any individual or institution. This information is, by its very nature, incomplete and specifically lacks information critical to making final investment decisions. Investors should seek financial advice as to the appropriateness of investing in any securities or investment strategies mentioned or recommended. The accuracy of the financial projections is dependent on the occurrence of future events which cannot be assured; therefore, the actual results achieved during the projection period may vary from the projections. Interest rate swaps and derivatives are offered and sold via Vining Sparks Interest Rate Products, LLC (VSIRP). VSIRP is an independent operating entity and is not a subsidiary of Vining Sparks IBG, LP. VSIRP is not a broker/dealer registered with the SEC. The firm may have positions, long or short, in any or all securities mentioned. Vining Sparks is a member FINRA/SIPC.

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 30yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Feb	Jan	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
FNMA 30yr 1.5	133,625	0.989	686	2.5	355	3	399,429	2.7	3.0	-0.4	*n.m.	2.76	1.78	0.90	0.03	0.02	0.02	0.01	0.37	0.06	0.02	-	0.00	99.33	0.60	0.06
2020	133,588	0.989	660	2.5	355	3	399,451	2.7	3.0	-0.4	*n.m.	2.76	1.77	-	0.03	0.02	0.01	-	0.37	0.06	0.02	-	0.00	99.33	0.60	0.06
FNMA 30yr 2	817,553	0.973	7,420	2.9	352	4	363,193	7.7	7.1	0.6	8%	6.71	5.60	3.66	0.03	0.03	0.04	0.02	0.34	0.07	0.03	0.00	0.00	99.30	0.52	0.18
2020	815,095	0.973	7,083	2.9	352	4	363,424	7.7	7.1	0.6	8%	6.72	5.59	-	0.03	0.03	0.03	-	0.34	0.07	0.03	0.00	0.00	99.30	0.52	0.18
2019	54	0.852	19	3.0	341	16	315,983	23.5	24.2	-0.7	-3%	21.70	21.97	12.47	0.00	0.00	3.51	1.77	0.23	0.00	1.35	-	1.18	96.07	0.82	1.93
2017	33	0.889	40	2.8	314	42	195,737	0.6	5.5	-4.8	*n.m.	2.17	8.50	5.68	0.00	0.00	3.70	1.87	1.75	0.57	0.00	-	-	92.39	0.78	6.83
2016	132	0.771	104	3.0	303	53	192,078	3.6	14.7	-11.1	-76%	6.39	11.87	8.53	0.00	0.00	5.38	2.82	1.01	1.00	0.75	-	-	93.16	2.09	4.75
2015	16	0.628	33	3.0	290	65	191,321	12.4	24.6	-12.2	-50%	19.28	20.48	16.85	0.00	0.00	6.36	0.00	1.70	0.00	1.42	-	-	94.36	-	5.64
2013	11	0.555	16	2.8	262	92	197,242	26.5	0.4	26.2	*n.m.	9.93	11.19	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	95.20	-	4.8
FNMA 30yr 2.5	660,445	0.850	12,893	3.4	347	9	340,109	28.6	28.3	0.3	1%	26.67	23.48	16.27	0.10	0.16	0.20	0.12	0.40	0.14	0.11	0.01	0.01	98.25	0.58	1.16
2020	591,998	0.894	10,351	3.4	349	7	338,754	25.8	24.8	1.0	4%	23.28	18.97	11.26	0.10	0.14	0.18	0.10	0.39	0.14	0.10	0.00	0.01	98.50	0.58	0.91
2019	57,986	0.622	708	3.5	341	15	359,714	51.2	52.8	-1.7	-3%	50.65	49.39	35.86	0.10	0.29	0.32	0.20	0.48	0.21	0.17	0.04	0.02	95.86	0.59	3.48
2018	39	0.798	50	3.5	322	34	198,930	8.0	7.3	0.7	10%	13.34	20.30	12.48	0.00	0.00	11.33	5.83	1.79	2.10	1.13	-	-	91.93	3.43	4.65
2017	299	0.724	129	3.4	311	42	259,996	27.0	29.6	-2.6	-9%	25.29	25.91	19.48	1.24	0.72	2.51	1.40	1.16	0.52	1.10	-	-	93.90	1.81	4.29
2016	4,334	0.553	392	3.3	297	54	321,041	34.8	40.7	-5.8	-14%	38.39	38.87	29.76	0.00	0.25	0.37	0.22	0.42	0.14	0.19	0.03	0.01	96.68	0.48	2.8
2015	288	0.535	181	3.4	282	68	257,619	31.6	35.3	-3.7	-10%	30.58	30.38	22.12	0.00	0.00	1.79	0.90	1.07	0.52	0.56	0.05	-	93.99	1.41	4.55
2014	36	0.569	42	3.2	274	76	249,834	26.1	40.3	-14.2	-35%	31.10	22.95	16.31	0.00	0.00	2.79	1.40	0.00	0.00	0.35	-	-	92.94	2.17	4.89
2013	1,311	0.439	353	3.1	251	95	305,488	27.7	27.0	0.8	3%	27.53	27.09	20.23	0.00	0.55	0.31	0.17	0.28	0.19	0.07	-	0.04	97.73	0.76	1.46
2012	3,821	0.398	595	3.2	247	98	301,345	31.9	36.2	-4.3	-12%	33.20	32.82	24.74	0.00	0.20	0.22	0.12	0.31	0.11	0.06	0.00	0.02	98.16	0.52	1.3
FNMA 30yr 3	693,640	0.504	37,234	3.8	314	40	300,320	41.3	44.4	-3.1	-7%	42.18	41.43	32.96	0.17	0.37	0.43	0.27	0.58	0.25	0.20	0.04	0.03	95.79	0.79	3.34
2020	161,791	0.814	6,444	3.8	348	9	300,211	35.3	35.2	0.1	0%	33.64	29.98	19.01	0.24	0.36	0.57	0.31	0.60	0.27	0.22	0.02	0.01	96.53	0.82	2.61
2019	223,578	0.587	5,724	3.9	340	16	312,362	49.1	51.9	-2.7	-5%	49.45	48.36	38.68	0.21	0.43	0.45	0.28	0.66	0.33	0.27	0.06	0.04	94.40	0.80	4.7
2018	1,554	0.476	305	3.9	320	33	297,041	46.3	53.2	-6.9	-13%	49.05	49.81	43.37	0.00	0.18	0.67	0.42	0.56	0.22	0.32	0.11	0.02	94.68	0.70	4.48
2017	7,295	0.481	815	3.8	312	41	305,825	46.2	49.7	-3.5	-7%	48.48	48.75	41.35	0.15	0.38	0.40	0.27	0.64	0.30	0.22	0.02	0.03	94.88	0.95	4.12
2016	136,639	0.448	6,678	3.7	298	54	295,772	41.0	46.0	-5.0	-11%	43.34	43.90	35.80	0.13	0.39	0.43	0.30	0.57	0.23	0.18	0.04	0.04	95.68	0.83	3.41
2015	30,478	0.376	3,234	3.8	281	68	301,924	42.7	48.2	-5.5	-11%	45.88	46.77	38.82	0.08	0.29	0.30	0.20	0.41	0.14	0.14	0.02	0.02	96.88	0.61	2.47
2014	1,988	0.292	555	3.9	273	74	288,026	44.8	48.2	-3.5	-7%	47.98	48.21	40.86	0.16	0.30	0.24	0.16	0.53	0.19	0.17	0.03	0.07	96.82	0.58	2.5
2013	63,176	0.355	6,001	3.6	253	94	280,493	31.7	35.4	-3.7	-10%	33.50	33.26	26.16	0.05	0.31	0.34	0.23	0.49	0.17	0.12	0.03	0.04	96.89	0.81	2.23
2012	66,904	0.324	7,342	3.6	246	100	287,579	33.8	38.2	-4.4	-12%	36.13	36.19	28.51	0.07	0.20	0.26	0.20	0.44	0.12	0.10	0.02	0.04	97.43	0.70	1.81
2011	195	0.271	94	3.7	228	110	276,619	36.7	32.7	4.1	12%	36.06	34.99	28.19	0.00	0.27	0.32	0.16	0.74	0.04	0.20	-	-	97.96	0.83	1.21
2010	34	0.380	28	3.6	222	123	227,519	22.5	29.0	-6.5	-22%	22.08	21.44	17.08	0.00	0.00	0.00	0.51	0.90	0.00	0.18	-	-	96.62	1.81	1.57
FNMA 30yr 3.5	524,392	0.353	68,845	4.1	298	54	268,456	40.5	45.5	-4.9	-11%	43.09	43.36	38.58	0.22	0.53	0.59	0.41	0.82	0.36	0.28	0.06	0.05	94.08	1.19	4.62
2020	29,229	0.820	2,480	4.3	347	10	267,304	31.3	35.1	-3.8	-11%	32.16	28.37	18.19	0.46	0.63	1.13	0.65	0.91	0.43	0.31	0.03	0.02	94.78	1.26	3.91
2019	114,674	0.497	5,964	4.4	338	18	284,027	46.1	50.6	-4.5	-9%	48.07	47.87	44.45	0.34	0.73	0.73	0.49	0.95	0.52	0.40	0.10	0.05	91.88	1.18	6.78
2018	20,898	0.371	2,100	4.2	320	33	300,956	50.7	55.5	-4.8	-9%	53.26	54.18	50.59	0.29	0.71	0.69	0.45	0.74	0.34	0.29	0.08	0.05	93.40	0.98	5.48
2017	90,797	0.422	7,702	4.1	311	41	279,981	45.6	51.0	-5.4	-11%	48.40	49.23	43.77	0.23	0.52	0.56	0.40	0.73	0.34	0.27	0.07	0.05	94.19	1.04	4.66
2016	54,139	0.407	8,932	4.0	298	54	248,852	37.1	41.6	-4.5	-11%	39.44	39.59	34.51	0.18	0.56	0.68	0.52	1.05	0.42	0.35	0.07	0.06	93.01	1.56	5.3
2015	78,599	0.311	10,310	4.1	284	66	266,903	39.7	46.1	-6.4	-14%	43.38	44.00	38.21	0.11	0.45	0.51	0.37	0.81	0.32	0.24	0.06	0.05	94.69	1.26	3.95
2014	25,143	0.238	5,413	4.2	273	76	260,823	40.9	44.9	-3.9	-9%	43.43	44.14	38.80	0.25	0.38	0.43	0.33	0.76	0.26	0.20	0.05	0.05	95.08	1.20	3.61
2013	34,965	0.295	8,486	4.0	256	92	241,601	29.1	33.4	-4.2	-13%	31.61	31.59	26.39	0.14	0.48	0.47	0.36	0.83	0.28	0.19	0.05	0.06	95.15	1.33	3.41
2012	59,186	0.246	14,079	4.0	242	103	249,229	32.0	35.9	-3.9	-11%	33.96	33.91	27.99	0.12	0.29	0.36	0.26	0.64	0.19	0.15	0.04	0.05	96.29	1.06	2.57
2011	12,251	0.181	2,102	4.0	234	110	267,419	36.7	40.8	-4.1	-10%	39.00	39.07	32.51	0.03	0.20	0.29	0.22	0.45	0.16	0.10	0.02	0.02	97.15	0.81	1.99
2010	4,256	0.146	1,078	4.1	221	123	266,810	37.5	42.3	-4.8	-11%	39.39	39.56	33.09	0.12	0.31	0.31	0.27	0.51	0.15	0.08	0.00	0.02	97.26	0.95	1.76
2009	224	0.172	141	4.0	203	140	246,478	20.5	26.8	-6.3	-24%	25.04	29.40	23.88	0.89	0.48	0.72	0.43	0.93	0.18	0.65	0.03	-	95.60	1.22	3.15
2008	10	0.213	20	4.0	202	151	300,152	29.8	15.7	14.1	90%	20.39	22.90	18.53	0.00	0.00	0.00	0.00	1.87	0.00	0.00	-	-	91.07	3.91	5.02
2004	13	0.189	9	4.0	148	202	203,484	4.3	0.7	3.6	*n.m.	10.84	12.75	12.04	0.00	0.00	0.00	0.00	2.38	0.75	1.04	-	1.53	91.56	1.43	5.48
FNMA 30yr 4	381,360	0.273	76,109	4.6	296	56	245,812	38.1	43.5	-5.4	-12%	40.93	41.18	38.66	0.34	0.78	0.83	0.63	1.18	0.51	0.38	0.11	0.06	92.00	1.72	6.12
2020	12,067	0.828	1,599	4.7	348	9	256,585	30.0	32.7	-2.7	-8%	30.69	27.57	17.89	0.43	0.82	1.33	0.86	1.03	0.50	0.35	0.03	0.03	94.10	1.53	4.32
2019	55,524	0.509	5,155	4.8	336	20	259,068	40.5	45.7	-5.2	-11%	42.92	42.34	40.39	0.46	1.11	1.05	0.73	1.33	0.68	0.52	0.17	0.07	89.83	1.66	8.27
2018	84,082	0.334	7,164	4.7	324	31	277,860	48.4	54.2	-5.8	-11%	51.66	52.54	51.20	0.42	0.87	0.90	0.63	1.07	0.55	0.43	0.15	0.07	91.13	1.45	7.21
2017	67,172	0.415	9,057	4.5	311	43	246,520	39.5	44.9	-5.4	-12%	42.18	42.40	39.06	0.45	0.78	0.89	0.74	1.30	0.59	0.46	0.12	0.07	90.69	1.85	7.28
2016	19,784	0.396	6,229	4.5	298	54	221,839	31.4	36.7	-5.3	-14%	34.34	33.84	30.43	0.34	0.83	0.97	0.81	1.56	0.57	0.49	0.10	0.07	90.43	2.25	7.15
2015	22,844	0.315	7,892	4.6	286	66	217,009	31.5	36.8	-5.3	-14%	34.50	34.19	30.28	0.31	0.73	0.91	0.78	1.58	0.59	0.40	0.08	0.06	91.30	2.41	6.15
2014	33,045	0.223	9,386	4.6	271	79	223,696	32.7	38.1	-5.4	-14%	35.63	36.07	32.33	0.23	0.62	0.68	0.56	1.29	0.46	0.32	0.10	0.06	93.03	2.10	4.71
2013	25,671	0.211	7,709	4.6	259	88	215,963	30.9	35.6	-4.6	-13%	33.49	33.60	29.50	0.17	0.54	0.58	0.54	1.13	0.37	0.26	0.08	0.08	94.03	1.73	4.08
2012	15,481	0.232	7,724	4.5	241	104	203,829	25.1	30.2	-5.1	-17%	27.81	27.33	23.07	0.16	0.56	0.58	0.48	1.03	0.35	0.23	0.05	0.06	94.25	1.73	3.91

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 30yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Feb*	*Jan*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2011	18,250	0.157	6,094	4.5	233	113	231,526	**30.1**	34.9	-4.8	**-14%**	32.48	32.03	27.33	0.09	0.43	0.40	0.33	0.74	0.24	0.15	0.03	0.04	95.74	1.24	2.95
2010	18,668	0.119	5,006	4.5	222	123	242,099	**31.5**	36.7	-5.2	**-14%**	34.13	34.35	29.19	0.14	0.47	0.41	0.31	0.70	0.20	0.16	0.04	0.04	96.21	1.24	2.47
2009	8,471	0.069	2,752	4.5	204	140	247,476	**29.9**	34.6	-4.6	**-13%**	32.42	32.24	27.94	0.05	0.46	0.45	0.41	0.72	0.19	0.16	0.05	0.02	95.96	1.32	2.64
2008	100	0.062	78	4.7	196	147	231,852	**26.3**	40.0	-13.7	**-34%**	30.57	28.18	24.39	0.00	0.28	0.47	0.37	0.93	0.06	0.33	-	-	95.60	1.22	3.18
2007	47	0.075	14	4.7	181	162	195,987	**33.6**	42.7	-9.2	**-21%**	34.53	30.41	26.11	0.00	3.13	1.58	0.79	2.38	0.00	0.10	-	0.36	91.53	5.70	2.41
2006	26	0.121	16	4.6	170	177	200,455	**35.0**	25.7	9.3	**36%**	28.93	27.65	20.34	0.00	0.00	0.00	0.00	1.12	0.00	0.15	-	-	93.74	1.69	4.56
2005	47	0.115	38	4.6	160	189	205,155	**14.7**	10.2	4.5	**44%**	11.31	17.92	15.24	0.00	0.00	0.00	0.00	2.18	0.57	0.57	-	-	91.50	3.31	5.2
2004	23	0.062	35	4.9	149	199	168,837	**26.5**	15.4	11.1	**72%**	18.75	22.50	18.57	0.00	0.47	0.23	0.71	0.50	0.00	0.00	-	-	97.15	1.06	1.79
2003	57	0.070	156	4.7	135	210	166,610	**26.2**	15.9	10.3	**65%**	20.29	19.41	16.31	1.87	0.63	0.42	0.28	0.71	0.25	0.08	-	-	95.25	2.08	2.67
FNMA 30yr 4.5	167,844	0.181	54,812	5.1	289	62	224,024	**33.4**	38.8	-5.4	**-14%**	36.26	35.84	33.58	0.52	1.10	1.16	0.95	1.56	0.67	0.51	0.15	0.07	89.92	2.27	7.61
2020	3,963	0.807	827	5.2	348	9	241,119	**35.0**	38.2	-3.2	**-8%**	34.61	29.48	20.76	0.69	0.77	1.16	1.06	1.13	0.57	0.37	0.04	0.01	93.80	1.70	4.44
2019	22,834	0.574	3,562	5.2	336	20	232,982	**34.7**	40.1	-5.4	**-13%**	37.12	36.44	33.94	0.58	1.36	1.42	1.05	1.61	0.86	0.63	0.18	0.08	88.02	2.16	9.57
2018	58,025	0.410	6,917	5.1	325	30	236,185	**40.2**	45.7	-5.5	**-12%**	43.22	42.92	41.51	0.74	1.33	1.41	1.11	1.68	0.82	0.65	0.21	0.08	87.55	2.30	9.86
2017	18,593	0.428	4,881	5.0	312	42	223,922	**32.5**	38.1	-5.6	**-15%**	35.90	35.26	32.41	0.68	1.31	1.39	1.20	2.01	0.86	0.67	0.17	0.08	86.78	2.72	10.25
2016	3,403	0.362	1,607	4.9	298	54	207,245	**30.2**	33.7	-3.5	**-10%**	31.18	30.92	28.59	0.71	1.17	1.46	1.24	1.98	0.79	0.60	0.16	0.10	87.24	3.03	9.48
2015	2,149	0.359	1,454	4.9	283	66	149,779	**22.8**	29.7	-6.9	**-23%**	26.24	25.54	22.48	0.12	1.25	1.30	1.00	1.94	0.70	0.49	0.09	0.08	90.48	3.04	6.31
2014	6,389	0.244	4,586	5.0	270	80	173,618	**25.5**	30.6	-5.0	**-16%**	27.99	27.78	24.89	0.20	0.88	1.03	0.89	1.94	0.63	0.49	0.14	0.08	90.69	3.08	6.01
2013	5,268	0.220	3,327	5.0	261	88	177,652	**25.7**	30.6	-4.9	**-16%**	28.14	27.54	24.45	0.33	0.76	0.84	0.68	1.81	0.53	0.39	0.10	0.08	91.88	2.70	5.24
2012	1,392	0.219	1,778	5.0	240	106	172,254	**22.8**	28.5	-5.7	**-20%**	25.84	23.91	20.63	0.06	0.60	0.72	0.42	1.72	0.40	0.39	0.06	0.04	92.78	2.31	4.81
2011	13,704	0.133	8,037	4.9	229	116	210,988	**26.0**	30.5	-4.5	**-15%**	28.67	28.16	24.44	0.15	0.64	0.57	0.44	1.12	0.32	0.23	0.06	0.04	94.19	1.80	3.91
2010	12,273	0.095	6,674	4.9	220	126	224,962	**27.0**	32.3	-5.3	**-17%**	30.13	29.73	25.89	0.27	0.68	0.65	0.51	1.11	0.36	0.24	0.06	0.05	94.55	1.85	3.5
2009	17,187	0.055	6,560	4.9	207	139	231,381	**27.1**	32.8	-5.7	**-17%**	30.14	30.09	26.43	0.21	0.76	0.66	0.50	1.05	0.30	0.21	0.06	0.04	94.81	1.95	3.14
2008	467	0.025	707	5.2	198	149	225,396	**24.6**	30.6	-6.1	**-20%**	26.26	26.45	23.04	0.49	1.37	1.03	0.76	1.24	0.48	0.04	0.14	0.01	93.37	2.39	4.1
2007	77	0.050	194	5.2	183	162	201,372	**34.2**	20.4	13.8	**67%**	26.99	29.33	22.15	0.00	0.77	0.38	0.35	1.86	0.22	0.20	0.14	-	95.06	2.34	2.46
2006	65	0.060	114	5.3	167	176	201,152	**21.3**	10.3	11.0	**107%**	21.41	19.46	15.86	0.00	0.39	0.64	0.43	2.01	0.76	0.12	-	-	93.43	3.04	3.52
2005	351	0.029	885	5.2	161	187	196,377	**19.6**	25.1	-5.5	**-22%**	20.82	22.33	19.03	0.00	0.35	0.48	0.58	1.30	0.47	0.35	0.10	0.07	93.70	2.15	3.98
2004	376	0.045	721	5.1	149	199	187,152	**16.1**	22.1	-6.0	**-27%**	19.12	18.91	17.04	0.00	0.24	0.47	0.34	1.14	0.49	0.17	0.12	-	94.47	1.96	3.46
2003	1,317	0.033	1,920	5.1	138	210	183,681	**17.7**	23.0	-5.3	**-23%**	20.36	20.30	17.49	0.11	0.47	0.75	0.58	1.23	0.41	0.18	0.03	0.01	95.30	1.99	2.66
FNMA 30yr 5	57,102	0.069	46,323	5.6	254	97	202,554	**27.8**	32.7	-5.0	**-15%**	29.92	29.32	27.04	0.56	1.23	1.27	1.19	1.92	0.76	0.51	0.17	0.05	89.12	2.85	7.8
2020	501	0.741	173	5.7	346	10	247,110	**34.6**	44.2	-9.6	**-22%**	41.36	39.71	27.91	0.00	0.89	1.95	1.13	2.01	0.93	1.04	-	0.01	89.60	2.76	7.63
2019	8,509	0.596	2,184	5.7	336	20	222,638	**32.8**	39.0	-6.2	**-16%**	35.29	34.64	32.48	0.82	1.54	1.61	1.28	1.98	0.97	0.74	0.27	0.05	85.49	2.71	11.48
2018	16,500	0.478	3,082	5.7	326	29	205,320	**35.3**	40.4	-5.1	**-13%**	37.08	36.00	34.07	0.79	1.66	1.70	1.55	2.19	1.10	0.78	0.23	0.08	84.72	2.88	12.09
2017	553	0.380	274	5.5	311	44	220,164	**28.5**	37.0	-8.5	**-23%**	32.08	32.80	30.75	1.21	2.00	1.96	1.41	2.35	1.70	0.64	0.25	0.13	81.58	3.32	14.73
2016	17	0.372	15	5.4	294	52	162,518	**53.6**	33.2	20.4	**61%**	35.23	33.24	30.26	0.00	0.00	1.76	1.06	1.05	0.88	0.52	0.58	-	86.82	1.86	10.74
2014	518	0.266	539	5.4	269	81	148,630	**23.3**	28.6	-5.4	**-19%**	25.81	25.15	22.10	0.00	0.95	1.00	1.23	2.43	0.63	0.56	0.24	0.06	89.38	4.13	6.2
2013	482	0.208	438	5.4	261	88	171,665	**23.9**	25.5	-1.6	**-6%**	25.14	27.11	24.14	0.76	0.77	0.66	1.00	2.12	0.50	0.48	0.11	0.07	91.05	3.51	5.25
2012	64	0.211	168	5.5	240	106	154,281	**25.1**	16.2	8.9	**55%**	21.27	21.86	19.92	0.00	0.00	0.25	0.60	1.74	0.56	0.73	-	0.60	91.10	4.08	4.22
2011	4,024	0.135	4,268	5.4	230	117	201,610	**25.2**	28.7	-3.5	**-12%**	26.49	25.71	22.99	0.27	0.77	0.79	0.68	1.55	0.48	0.30	0.13	0.05	91.87	2.67	5.28
2010	6,059	0.095	4,023	5.4	219	128	212,992	**26.3**	30.4	-4.1	**-13%**	28.26	27.49	24.30	0.58	1.18	0.99	0.81	1.53	0.51	0.28	0.11	0.04	91.90	2.74	5.22
2009	5,472	0.066	4,691	5.4	210	137	202,967	**22.8**	29.2	-6.4	**-22%**	26.51	26.00	22.83	0.48	1.09	1.12	0.92	1.62	0.57	0.32	0.12	0.03	92.53	2.85	4.47
2008	1,872	0.019	2,887	5.6	196	152	213,045	**18.9**	23.8	-4.9	**-21%**	20.64	21.75	19.60	0.11	0.64	0.93	0.96	1.95	0.50	0.31	0.16	0.03	92.38	2.91	4.52
2007	523	0.024	1,418	5.7	185	164	215,596	**15.0**	21.4	-6.5	**-30%**	19.05	20.16	18.17	0.83	1.31	1.47	1.15	1.70	0.85	0.26	0.19	0.08	92.60	3.18	3.96
2006	538	0.029	1,162	5.8	173	174	195,209	**20.2**	17.2	3.0	**17%**	18.41	18.05	16.29	0.39	0.69	0.82	0.82	2.06	0.51	0.41	0.19	0.02	93.42	2.87	3.51
2005	3,442	0.025	6,260	5.6	162	187	196,226	**19.4**	22.9	-3.5	**-15%**	21.22	20.90	18.40	0.36	0.69	0.82	0.81	2.05	0.55	0.29	0.07	0.02	92.68	3.06	4.17
2004	2,383	0.027	5,677	5.6	148	200	182,521	**18.3**	20.9	-2.6	**-13%**	19.32	19.44	17.12	0.39	0.89	0.94	0.87	1.86	0.46	0.29	0.14	0.04	93.25	2.84	3.74
2003	5,515	0.024	8,549	5.5	137	210	164,693	**16.9**	20.7	-3.8	**-18%**	18.80	18.18	16.30	0.15	0.70	0.72	0.64	1.85	0.41	0.23	0.09	0.03	93.95	2.84	3.09
2002	101	0.029	402	5.7	128	219	151,881	**15.3**	22.4	-7.1	**-32%**	19.59	17.84	15.56	0.00	1.13	0.86	0.59	1.01	0.33	0.17	0.17	-	94.68	2.46	2.69
2001	12	0.056	49	5.6	114	230	113,840	**9.2**	26.8	-17.7	**-66%**	15.76	17.47	15.31	0.00	0.78	0.39	0.20	1.65	0.36	0.00	-	-	98.26	0.84	0.9
FNMA 30yr 5.5	24,494	0.022	57,801	6.0	176	173	172,570	**18.1**	21.9	-3.8	**-18%**	20.01	19.82	18.08	0.36	1.09	1.27	1.27	2.28	0.69	0.40	0.14	0.05	91.30	3.45	5.07
2020	16	0.758	10	6.0	345	11	178,603	**54.3**	44.1	10.2	**23%**	36.46	34.96	23.52	12.36	4.30	8.92	4.57	1.72	0.00	0.00	-	-	93.28	2.16	4.57
2019	558	0.598	320	6.2	333	21	182,323	**32.4**	30.9	1.6	**5%**	31.49	32.03	30.33	2.74	1.85	1.98	1.69	2.27	1.44	0.71	0.26	0.08	81.59	3.12	14.95
2018	1,391	0.488	515	6.2	327	28	198,678	**34.9**	38.3	-3.3	**-9%**	36.25	35.10	34.25	0.48	2.05	2.70	2.26	2.21	1.60	1.06	0.42	0.10	79.25	3.00	17.23
2011	192	0.140	536	5.9	228	117	148,378	**24.9**	28.1	-3.2	**-11%**	25.97	24.13	21.21	2.54	2.07	1.49	0.93	1.50	0.26	0.75	0.08	-	90.99	2.40	6.52
2010	490	0.118	988	5.9	218	129	179,074	**23.3**	27.0	-3.7	**-14%**	24.63	25.11	22.20	0.52	1.68	1.56	1.17	2.23	0.60	0.46	0.06	0.02	90.18	2.86	6.88
2009	880	0.089	1,712	5.9	209	137	170,315	**19.1**	28.9	-9.8	**-34%**	25.26	23.38	20.67	0.71	1.85	1.63	1.42	2.29	0.78	0.33	0.08	0.06	91.16	3.82	4.88
2008	2,537	0.019	5,491	6.0	196	152	192,683	**17.5**	22.4	-4.9	**-22%**	19.72	19.67	17.72	0.28	0.95	1.31	1.12	2.32	0.64	0.47	0.11	0.09	90.87	3.56	5.36

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 30yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Feb*	*Jan*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2007	2,659	0.016	5,739	6.1	186	163	203,913	**16.8**	20.6	-3.8	**-18%**	18.55	18.91	17.63	0.11	0.86	1.15	1.16	2.58	0.70	0.41	0.21	0.03	91.22	3.59	4.95
2006	1,427	0.017	4,062	6.1	175	174	194,840	**18.0**	23.1	-5.2	**-22%**	19.66	19.19	16.99	0.16	0.96	1.08	1.07	2.39	0.69	0.34	0.15	0.08	92.07	3.48	4.23
2005	3,566	0.028	10,358	6.0	162	186	169,690	**16.7**	20.2	-3.6	**-18%**	18.59	18.50	16.40	0.43	1.29	1.37	1.44	2.51	0.65	0.38	0.12	0.06	92.29	3.76	3.77
2004	3,460	0.027	10,017	5.9	149	198	161,574	**15.1**	18.5	-3.4	**-18%**	17.14	17.23	15.26	0.30	1.02	1.35	1.43	2.29	0.66	0.32	0.13	0.03	92.53	3.60	3.71
2003	5,721	0.019	12,459	5.9	136	211	151,349	**14.8**	18.5	-3.7	**-20%**	16.84	16.44	14.71	0.21	0.84	0.86	0.83	2.13	0.52	0.30	0.09	0.04	93.29	3.28	3.31
2002	1,458	0.011	4,479	6.0	128	219	150,597	**16.4**	18.2	-1.7	**-10%**	17.28	17.38	15.87	0.07	0.56	0.63	0.54	1.76	0.49	0.27	0.07	0.03	94.03	3.14	2.73
2001	66	0.010	568	6.1	117	232	135,157	**16.7**	17.7	-1.0	**-6%**	18.23	17.75	16.06	0.00	0.25	0.44	2.47	1.75	0.62	0.21	-	0.03	94.13	3.64	2.19
1999	15	0.017	179	6.1	91	261	122,745	**14.7**	15.0	-0.3	**-2%**	12.11	12.85	11.69	0.00	0.00	0.00	0.00	1.06	0.37	0.45	-	-	92.76	3.64	3.6
1998	21	0.008	247	6.2	82	267	116,149	**11.3**	12.6	-1.3	**-10%**	10.61	11.76	12.07	0.00	0.00	0.00	0.11	2.59	0.41	0.29	0.29	-	94.15	2.84	2.72
FNMA 30yr 6	14,694	0.017	57,233	6.5	166	182	157,037	**15.8**	18.7	-2.9	**-16%**	17.28	17.32	15.84	0.42	1.26	1.45	1.41	2.71	0.75	0.43	0.13	0.06	90.99	4.23	4.59
2019	64	0.489	44	6.5	335	22	209,402	**32.6**	35.3	-2.8	**-8%**	35.48	42.14	45.60	0.00	1.70	2.04	1.18	1.24	1.72	1.65	0.71	-	80.86	2.99	15.43
2018	126	0.471	56	6.5	329	27	217,861	**46.7**	48.7	-2.1	**-4%**	45.59	44.96	43.94	0.00	3.80	4.22	4.22	2.67	1.13	1.74	0.67	-	74.98	4.61	19.75
2010	15	0.145	74	6.5	217	129	134,539	**4.3**	20.4	-16.0	**-79%**	14.82	17.06	17.09	0.00	0.86	0.43	1.00	1.32	2.05	0.00	1.51	-	89.11	1.88	7.49
2009	123	0.077	554	6.5	207	139	153,644	**17.2**	25.2	-8.0	**-32%**	23.71	21.87	18.58	0.00	1.87	2.39	1.33	2.00	0.69	0.30	0.03	0.01	90.89	3.46	5.61
2008	1,414	0.021	5,043	6.5	196	151	173,748	**15.4**	19.1	-3.7	**-19%**	17.15	17.58	16.02	0.31	1.26	1.60	1.31	2.86	1.00	0.51	0.24	0.05	89.82	4.51	5.38
2007	3,536	0.019	8,575	6.6	186	162	175,899	**15.9**	19.9	-4.0	**-20%**	18.14	17.90	16.07	0.26	1.26	1.57	1.62	3.01	0.90	0.44	0.14	0.07	89.76	4.65	5.38
2006	2,813	0.018	8,459	6.6	174	175	171,707	**15.7**	19.1	-3.3	**-18%**	17.40	17.66	16.15	0.63	1.45	1.43	1.41	2.91	0.70	0.47	0.16	0.07	90.96	4.36	4.45
2005	1,391	0.030	5,586	6.5	163	185	147,610	**16.4**	18.7	-2.4	**-13%**	17.54	16.96	15.49	0.77	1.56	1.84	1.72	2.83	0.69	0.44	0.10	0.05	91.42	4.28	4.15
2004	1,672	0.029	5,463	6.5	148	199	132,919	**14.6**	16.9	-2.3	**-13%**	15.72	15.70	14.06	0.15	1.22	1.43	1.16	2.65	0.77	0.41	0.09	0.07	91.64	4.22	3.99
2003	1,274	0.019	5,356	6.5	137	210	135,222	**13.9**	16.0	-2.1	**-13%**	15.05	15.03	13.27	0.68	1.08	1.19	1.01	2.64	0.63	0.32	0.09	0.04	92.01	3.94	3.91
2002	1,419	0.009	7,173	6.5	127	221	135,635	**13.6**	15.8	-2.2	**-14%**	14.55	15.09	13.85	0.55	0.83	0.91	0.82	1.95	0.53	0.33	0.08	0.06	93.36	3.45	3.05
2001	475	0.006	3,949	6.6	116	232	121,192	**15.7**	16.2	-0.5	**-3%**	15.03	14.91	14.44	0.18	0.53	0.64	0.58	2.26	0.42	0.27	0.02	0.06	93.83	3.65	2.44
1999	105	0.005	1,724	6.6	87	262	121,172	**15.1**	13.2	1.9	**14%**	13.20	14.83	13.15	0.54	0.83	0.91	1.11	2.26	0.49	0.22	-	0.05	94.09	3.64	2.22
1998	201	0.004	3,706	6.6	82	268	117,356	**15.7**	15.8	-0.1	**-1%**	15.08	14.60	12.98	0.00	0.71	0.67	0.62	1.72	0.52	0.20	0.08	0.05	94.37	3.01	2.49
1993	16	0.003	745	6.7	30	327	114,024	**19.3**	14.9	4.4	**30%**	16.73	16.43	14.20	0.00	0.43	0.21	0.22	0.91	0.23	0.06	-	0.10	97.13	1.92	0.85

**n.m. - Not Meaningful*

Source: Bloomberg

INTENDED FOR INSTITUTIONAL INVESTORS ONLY. The information included herein has been obtained from sources deemed reliable, but it is not in any way guaranteed, and it, together with any opinions expressed, is subject to change at any time. Any and all details offered in this publication are preliminary and are therefore subject to change at any time. This has been prepared for general information purposes only and does not consider the specific investment objectives, financial situation and particular needs of any individual or institution. This information is, by its very nature, incomplete and specifically lacks information critical to making final investment decisions. Investors should seek financial advice as to the appropriateness of investing in any securities or investment strategies mentioned or recommended. The accuracy of the financial projections

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS Jumbos

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Feb	Jan	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
15yr Jumbo 2	560	0.745	48	2.5	166	12	637,695	35.4	33.8	1.6	5%	30.52	25.14	16.53	0.00	0.00	0.00	0.00	0.28	0.00	0.00	-	-	99.05	0.67	0.28
2013	37	0.289	17	2.6	83	92	545,582	17.9	41.8	-23.9	-57%	28.40	24.33	15.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	96.40	0.57	3.02
15yr Jumbo 2.5	1,060	0.295	212	3.0	106	68	543,732	36.5	44.3	-7.8	-18%	39.00	41.36	32.26	1.24	0.71	0.41	0.25	0.45	0.06	0.09	0.07	0.03	97.70	0.44	1.77
2019	62	0.295	9	3.2	161	16	586,562	60.6	82.2	-21.6	-26%	72.44	77.22	68.17	0.00	0.00	0.00	0.00	1.82	0.00	0.00	-	-	94.35	2.80	2.85
2017	48	0.417	18	3.0	134	41	534,000	47.1	73.1	-26.0	-36%	54.27	51.30	41.41	11.79	4.10	2.07	1.04	0.00	0.00	0.00	-	-	98.10	-	1.9
2016	340	0.410	24	2.9	123	52	525,356	42.2	47.4	-5.2	-11%	42.86	44.70	31.81	0.00	0.91	0.62	0.38	0.33	0.13	0.09	0.12	-	98.18	0.22	1.48
2015	129	0.286	33	3.0	105	68	541,159	28.3	45.9	-17.6	-38%	36.48	41.58	31.34	0.00	0.00	0.00	0.21	0.34	0.00	0.26	-	-	96.06	0.58	3.35
2013	256	0.281	55	3.0	81	93	546,577	27.5	23.0	4.6	20%	24.36	23.29	18.16	2.81	0.95	0.47	0.24	0.54	0.09	0.00	-	0.11	97.89	0.26	1.74
2012	173	0.186	41	3.0	75	99	553,733	33.2	29.5	3.6	12%	27.97	27.63	21.62	0.00	0.00	0.00	0.00	0.17	0.00	0.01	0.17	-	98.41	0.26	1.15
15yr Jumbo 3	212	0.114	169	3.5	86	88	561,157	29.7	43.2	-13.5	-31%	35.62	31.63	25.99	0.00	0.00	0.00	0.26	0.49	0.00	0.16	0.23	-	96.81	0.43	2.53
2017	41	0.423	17	3.5	132	43	570,009	39.3	46.8	-7.6	-16%	38.81	40.75	33.46	0.00	0.00	0.00	0.00	1.20	0.00	0.00	1.18	-	90.93	0.89	7
2012	45	0.094	40	3.5	68	105	546,880	21.6	25.3	-3.7	-15%	23.85	22.23	17.82	0.00	0.00	0.00	0.00	0.45	0.00	0.32	-	-	98.55	0.45	1
2011	84	0.075	43	3.4	64	111	571,675	27.5	27.3	0.2	1%	26.04	25.83	19.67	0.00	0.00	0.00	0.00	0.00	0.00	0.24	-	-	99.18	-	0.82
15yr Jumbo 3.5	84	0.049	117	3.9	76	99	592,653	36.1	36.6	-0.5	-1%	32.14	28.39	23.64	0.00	0.39	0.89	0.44	0.86	0.00	0.56	-	-	95.79	0.23	3.98
2011	45	0.042	57	3.9	61	114	571,322	37.0	33.5	3.6	11%	28.34	25.24	20.31	0.00	0.00	1.29	0.65	1.18	0.00	0.00	-	-	97.61	-	2.39
30yr Jumbo 2.5	19,171	0.777	352	3.4	349	9	635,298	48.2	43.9	4.3	10%	42.17	37.87	24.65	0.11	0.17	0.17	0.12	0.36	0.18	0.14	0.01	0.01	97.99	0.50	1.49
2016	312	0.624	29	3.3	298	52	552,940	31.7	49.6	-17.8	-36%	40.11	40.64	28.68	0.00	0.76	0.38	0.32	0.31	0.14	0.20	-	-	94.60	0.60	4.8
2012	75	0.290	16	3.5	248	98	551,599	63.8	56.8	7.0	12%	59.28	52.33	43.71	0.00	0.00	0.00	0.00	0.01	0.00	0.55	-	-	97.58	0.01	2.41
30yr Jumbo 3	24,475	0.358	1,093	3.8	308	46	578,965	60.2	63.6	-3.5	-5%	61.17	62.02	50.78	0.11	0.33	0.49	0.29	0.52	0.27	0.22	0.03	0.03	94.07	0.72	5.15
2020	4,478	0.633	137	3.9	349	9	645,170	67.3	61.8	5.5	9%	61.44	56.56	36.98	0.29	0.32	1.25	0.75	0.54	0.31	0.33	-	-	94.73	0.85	4.42
2019	6,186	0.393	140	3.9	342	16	612,197	68.9	73.1	-4.2	-6%	69.92	70.86	58.89	0.00	0.47	0.45	0.25	0.81	0.41	0.31	0.05	0.06	91.05	0.80	8.03
2018	106	0.525	16	3.9	324	31	591,926	42.4	46.8	-4.5	-10%	51.59	51.41	42.22	0.00	0.00	0.00	0.00	0.50	0.51	0.00	-	0.85	86.52	1.56	11.07
2017	848	0.368	70	3.8	312	42	551,865	55.5	66.9	-11.5	-17%	60.90	64.65	55.99	0.00	0.25	0.13	0.07	0.33	0.18	0.06	0.12	-	93.74	0.84	5.3
2016	5,289	0.347	166	3.7	298	54	537,577	54.1	60.9	-6.8	-11%	57.57	61.05	51.41	0.18	0.39	0.50	0.30	0.50	0.27	0.21	0.03	0.02	94.29	0.72	4.94
2015	1,846	0.323	144	3.7	283	68	544,566	54.0	60.4	-6.4	-11%	57.84	59.51	50.17	0.00	0.18	0.13	0.08	0.35	0.21	0.15	0.05	-	95.36	0.63	3.96
2014	304	0.339	24	3.8	274	75	533,952	42.3	40.3	2.1	5%	44.19	48.08	39.61	0.00	0.00	0.00	0.00	0.43	0.14	0.00	-	-	96.82	0.58	2.6
2013	2,723	0.266	174	3.7	255	94	544,309	49.2	54.5	-5.3	-10%	53.19	54.06	43.65	0.00	0.18	0.20	0.12	0.30	0.10	0.09	0.03	0.05	96.10	0.57	3.25
2012	2,693	0.245	220	3.7	249	99	545,498	51.2	56.4	-5.2	-9%	54.53	55.68	46.11	0.21	0.18	0.16	0.09	0.28	0.08	0.07	0.03	0.03	96.61	0.46	2.86
30yr Jumbo 3.5	12,678	0.219	1,329	4.2	302	53	574,313	55.9	60.7	-4.8	-8%	58.69	59.56	54.96	0.81	0.86	0.98	0.61	0.92	0.44	0.32	0.17	0.03	89.92	1.16	8.72
2020	701	0.563	50	4.4	347	11	670,189	61.1	67.4	-6.3	-9%	64.33	61.95	43.89	0.00	0.32	3.62	1.83	1.41	0.27	0.43	-	-	91.52	1.20	7.28
2019	2,547	0.324	161	4.4	340	18	630,121	60.0	65.1	-5.1	-8%	62.84	63.87	62.22	1.87	1.43	1.28	0.77	1.28	0.87	0.27	0.29	-	84.65	1.63	13.42
2018	679	0.277	78	4.3	322	33	586,155	58.5	65.7	-7.2	-11%	62.74	63.18	61.07	0.00	0.57	0.92	0.46	1.12	0.88	0.39	0.32	-	86.77	1.07	11.84
2017	2,838	0.260	140	4.2	313	42	552,488	59.1	66.2	-7.1	-11%	62.90	63.97	59.97	1.29	1.23	0.95	0.60	0.91	0.34	0.43	0.20	0.02	89.62	1.20	8.95
2016	1,569	0.266	112	4.2	302	53	561,488	54.4	58.5	-4.1	-7%	56.48	56.17	50.64	0.79	0.99	1.04	0.62	0.81	0.46	0.44	0.12	0.03	88.67	1.16	10.02
2015	1,088	0.200	155	4.1	287	66	541,556	52.9	54.8	-1.9	-3%	55.34	56.67	49.89	0.00	0.47	0.40	0.22	0.94	0.40	0.14	0.21	0.05	90.87	1.10	7.78
2014	486	0.143	79	4.2	273	77	530,112	55.8	47.9	7.9	17%	52.52	53.93	48.58	0.00	0.56	0.42	0.28	0.65	0.18	0.27	0.09	0.09	92.87	0.54	6.42
2013	606	0.178	107	4.0	260	91	546,089	49.6	51.9	-2.3	-4%	48.78	50.40	42.86	0.00	0.00	0.20	0.14	0.52	0.30	0.61	-	0.06	92.98	1.03	5.93
2012	1,958	0.135	347	4.0	245	103	543,887	47.4	51.9	-4.5	-9%	50.00	51.60	43.59	0.27	0.32	0.33	0.21	0.58	0.12	0.10	0.09	0.10	95.81	0.75	3.25
2011	182	0.074	87	4.1	237	111	563,334	49.1	40.1	9.0	22%	51.03	53.25	45.93	0.00	0.00	0.00	0.00	0.31	0.00	0.00	-	-	96.13	0.73	3.13
30yr Jumbo 4	5,739	0.106	1,243	4.7	295	59	596,682	47.6	55.7	-8.1	-15%	51.64	52.02	49.55	0.85	1.16	1.13	0.77	1.38	0.55	0.43	0.21	0.08	86.35	1.58	11.78
2020	226	0.610	27	4.9	348	11	688,973	58.0	60.5	-2.6	-4%	61.16	56.42	39.56	3.38	1.14	2.52	1.27	1.11	0.83	0.00	0.51	-	88.65	1.64	9.2
2019	923	0.349	112	4.9	338	19	642,079	51.7	61.6	-10.0	-16%	54.28	55.65	56.41	1.51	1.83	1.72	1.13	1.81	0.86	0.72	0.17	0.05	80.57	1.97	17.23
2018	1,257	0.233	117	4.8	326	31	592,260	52.8	64.3	-11.5	-18%	57.71	58.70	58.41	0.44	1.02	1.18	0.76	1.69	0.58	0.58	0.41	0.05	82.37	1.86	15.32
2017	998	0.259	98	4.7	315	42	584,675	49.9	52.4	-2.6	-5%	51.32	51.52	49.19	0.65	1.95	1.21	0.73	1.26	0.82	0.39	0.21	0.16	83.74	1.36	14.54
2016	216	0.241	52	4.7	302	55	608,429	31.9	50.2	-18.3	-36%	39.12	39.52	38.69	2.71	1.79	1.86	1.30	1.66	0.19	0.49	0.20	-	83.72	2.66	13.42
2015	79	0.174	66	4.7	289	65	586,281	42.9	42.4	0.5	1%	43.66	42.70	41.39	0.00	0.00	0.00	0.00	0.63	0.00	0.70	-	-	81.84	1.67	16.49
2014	197	0.093	78	4.6	274	79	537,442	52.6	43.7	8.8	20%	48.53	46.26	40.67	0.00	0.75	0.78	0.53	2.48	0.46	0.56	0.42	-	88.15	2.48	8.96
2013	253	0.075	82	4.6	263	87	532,947	43.9	56.8	-12.9	-23%	52.37	50.52	44.03	1.86	1.85	1.16	0.83	0.85	0.31	0.00	-	-	92.64	0.89	6.47
2012	160	0.081	112	4.5	240	106	547,857	43.3	58.2	-14.9	-26%	50.18	43.40	37.52	0.00	0.00	0.00	0.00	2.19	0.00	0.32	-	0.31	92.27	0.95	6.48
2011	741	0.048	300	4.5	237	113	588,655	36.3	46.4	-10.1	-22%	42.42	44.40	37.69	0.56	0.37	0.47	0.32	0.40	0.24	0.32	0.12	0.13	93.83	0.81	5.12
2010	673	0.040	178	4.5	226	123	590,194	41.4	45.5	-4.1	-9%	47.01	47.88	40.08	0.00	0.24	0.55	0.33	1.28	0.31	0.19	-	0.05	93.36	1.47	5.11
30yr Jumbo 4.5	1,566	0.043	680	5.2	280	73	612,206	38.0	47.8	-9.8	-20%	44.16	45.38	40.38	1.56	1.84	1.84	1.20	1.74	0.86	0.84	0.39	0.04	83.84	2.47	13.26
2020	32	0.672	10	5.3	345	11	718,982	56.8	35.6	21.2	59%	51.11	49.73	-	0.00	0.00	9.21	-	2.16	0.00	0.00	-	-	90.14	-	9.86
2019	299	0.381	53	5.4	338	20	653,825	43.5	48.4	-4.9	-10%	51.49	54.98	52.60	2.52	1.53	1.66	0.83	2.56	1.01	1.16	0.76	-	76.01	3.29	19.95

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS Jumbos

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Feb*	*Jan*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2018	420	0.279	46	5.4	329	28	625,073	**41.4**	60.0	-18.6	**-31%**	51.47	50.19	50.08	2.52	1.53	1.66	0.83	2.56	1.01	1.16	0.76	-	76.01	3.29	19.95
2017	62	0.252	26	5.2	312	44	620,709	**27.7**	62.2	-34.5	**-55%**	45.38	40.82	36.81	1.47	3.25	2.56	1.91	2.02	1.39	0.87	0.78	0.15	77.47	2.34	19.26
2011	209	0.030	200	4.9	233	116	596,449	**37.8**	39.2	-1.4	**-3%**	40.88	39.31	35.12	8.98	6.05	3.07	1.55	2.48	1.83	3.25	-	-	68.68	4.18	27.14
2010	344	0.022	177	4.9	222	126	580,505	**31.6**	37.3	-5.6	**-15%**	33.08	37.46	34.03	0.00	0.65	0.66	0.47	0.82	0.45	0.16	-	-	94.11	0.98	4.91
2009	165	0.017	67	4.9	211	137	576,069	**28.6**	37.4	-8.8	**-23%**	31.98	35.07	32.37	0.00	0.61	0.66	0.41	0.70	0.60	0.48	0.16	-	91.24	2.83	5.76
30yr Jumbo 5	332	0.018	239	5.5	239	113	581,883	**39.0**	41.9	-2.9	**-7%**	38.46	36.02	35.01	0.00	0.77	1.41	0.00	1.82	0.26	1.22	-	-	90.84	2.02	7.13
2011	25	0.044	42	5.4	234	118	631,929	**37.1**	37.3	-0.3	**-1%**	32.01	37.21	29.05	0.00	0.40	0.95	1.09	2.26	0.72	1.08	-	-	84.79	2.60	12.61
2010	75	0.017	69	5.3	222	128	564,163	**29.3**	39.8	-10.4	**-26%**	33.52	37.08	30.68	0.00	0.00	0.00	0.00	2.32	0.00	0.00	-	-	88.95	2.32	8.73
2009	107	0.013	46	5.4	214	136	570,426	**23.8**	35.6	-11.9	**-33%**	23.88	26.76	27.52	0.00	1.79	2.11	1.45	1.05	0.54	1.22	-	-	87.91	0.50	11.59

**n.m. - Not Meaningful*

Source: Bloomberg

INTENDED FOR INSTITUTIONAL INVESTORS ONLY. The information included herein has been obtained from sources deemed reliable, but it is not in any way guaranteed, and it, together with any opinions expressed, is subject to change at any time. Any and all details offered in this publication are preliminary and are therefore subject to change at any time. This has been prepared for general information purposes only and does not consider the specific investment objectives, financial situation and particular needs of any individual or institution. This information is, by its very nature, incomplete and specifically lacks information critical to making final investment decisions. Investors should seek financial advice as to the appropriateness of investing in any securities or investment strategies mentioned or recommended. The accuracy of the financial projections is dependent on the occurrence of future events which cannot be assured; therefore, the actual results achieved during the projection period may vary from the projections. Interest rate swaps and derivatives are offered and sold via Vining Sparks Interest Rate Products, LLC (VSIRP). VSIRP is an independent operating entity and is not a subsidiary of Vining Sparks IBG, LP. VSIRP is not a broker/dealer registered with the SEC. The firm may have positions, long or short, in any or all securities mentioned. Vining Sparks is a member FINRA/SIPC.

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 105-125 LTV

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Feb*	*Jan*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
15yr 105-125 LTV 2.5	322	0.255	417	3.0	82	92	203,168	**16.8**	17.3	-0.4	**-2%**	16.29	16.76	13.95	0.13	0.43	0.64	0.35	0.90	0.10	0.14	0.06	0.05	95.54	1.67	2.68
2013	174	0.266	205	3.0	81	93	198,887	**13.5**	14.0	-0.5	**-4%**	14.46	15.84	12.98	0.00	0.14	0.77	0.39	1.03	0.09	0.07	0.10	-	95.29	1.65	2.95
2012	115	0.212	168	3.0	74	100	216,428	**21.7**	22.5	-0.8	**-3%**	19.22	19.21	16.26	0.35	0.12	0.18	0.19	0.52	0.14	0.14	-	0.07	96.52	1.28	2.13
15yr 105-125 LTV 3	604	0.262	771	3.6	90	84	188,139	**15.0**	20.6	-5.6	**-27%**	17.60	18.55	15.87	0.07	0.63	1.06	0.80	0.98	0.43	0.26	0.07	0.05	94.75	1.58	3.54
2016	55	0.514	62	3.7	120	55	169,620	**6.2**	17.5	-11.4	**-65%**	16.47	19.56	15.32	0.00	0.00	0.68	0.34	1.56	1.19	0.45	0.12	-	92.52	1.95	5.41
2015	76	0.436	81	3.7	109	67	177,926	**6.1**	21.7	-15.6	**-72%**	14.17	16.73	14.68	0.00	0.18	1.11	0.65	1.58	0.70	0.14	0.06	0.26	92.88	2.15	4.66
2014	59	0.344	94	3.7	97	78	182,018	**23.4**	14.5	9.0	**62%**	17.12	18.81	15.88	0.00	0.91	2.99	2.30	1.15	0.35	0.37	-	-	95.08	2.16	2.76
2013	220	0.246	238	3.5	83	92	187,680	**15.6**	22.8	-7.2	**-31%**	17.84	18.43	15.46	0.00	0.90	0.94	0.55	0.79	0.23	0.17	0.07	-	95.21	1.60	3.11
2012	169	0.185	257	3.5	73	100	204,304	**19.1**	20.1	-1.0	**-5%**	19.81	19.85	17.78	0.24	0.69	0.81	0.65	0.53	0.19	0.29	0.10	0.07	95.95	0.84	3.03
15yr 105-125 LTV 3.5	257	0.282	503	4.1	94	81	168,914	**16.4**	23.6	-7.2	**-31%**	19.62	19.67	16.79	0.73	0.57	0.53	0.34	0.94	0.40	0.19	0.03	0.11	94.35	1.91	3.61
2014	90	0.320	122	4.2	95	79	168,176	**12.8**	23.2	-10.5	**-45%**	18.71	19.77	16.45	0.00	0.00	0.03	0.21	1.18	0.75	0.33	0.05	-	93.63	1.81	4.52
2013	93	0.262	154	4.1	86	88	174,984	**20.0**	24.0	-4.0	**-17%**	21.74	20.98	17.20	2.01	0.85	1.07	0.54	0.64	0.28	0.11	0.04	0.08	95.52	1.34	3.02
2012	25	0.161	112	4.0	72	102	187,141	**23.2**	25.4	-2.2	**-9%**	22.81	22.45	20.12	0.00	0.00	0.00	0.00	1.45	0.00	0.36	-	0.78	94.51	1.71	3
30yr 105-125 LTV 2.5	27	0.407	31	3.3	188	89	212,249	**20.6**	27.1	-6.5	**-24%**	21.23	24.74	19.10	0.00	0.00	1.27	0.64	1.42	0.92	0.00	0.94	-	90.83	3.61	4.63
30yr 105-125 LTV 3	2,106	0.387	957	3.7	228	92	230,915	**20.8**	24.9	-4.1	**-17%**	22.83	21.90	17.87	0.14	0.54	0.67	0.44	1.07	0.43	0.29	0.03	0.04	94.21	1.84	3.89
2016	143	0.631	91	3.8	267	54	224,893	**18.3**	19.9	-1.6	**-8%**	19.48	19.33	14.09	0.00	1.82	1.77	1.40	1.87	0.56	0.75	0.15	-	89.69	3.16	7
2015	52	0.556	55	3.9	203	67	215,339	**7.3**	35.4	-28.0	**-79%**	19.70	15.65	13.58	0.00	0.85	0.43	0.21	2.07	0.77	1.32	-	-	93.68	1.82	4.5
2013	1,187	0.389	418	3.7	230	94	228,610	**20.3**	25.0	-4.7	**-19%**	22.71	21.66	17.64	0.24	0.50	0.63	0.43	1.13	0.50	0.32	0.02	0.06	94.00	1.87	4.05
2012	709	0.348	374	3.7	218	99	237,417	**23.0**	24.5	-1.4	**-6%**	23.93	23.39	19.39	0.00	0.34	0.55	0.30	0.76	0.28	0.06	0.01	0.02	95.45	1.54	2.97
30yr 105-125 LTV 3.5	8,326	0.325	2,529	4.1	244	94	231,103	**27.8**	30.1	-2.3	**-8%**	28.92	28.05	23.42	0.33	0.78	0.87	0.72	1.17	0.42	0.33	0.08	0.05	93.46	2.02	4.39
2017	66	0.672	63	4.1	267	44	227,564	**17.9**	37.1	-19.1	**-52%**	24.63	15.87	17.29	0.00	0.90	0.45	1.37	1.32	0.65	0.47	-	-	89.49	2.78	7.73
2016	263	0.602	134	4.2	286	55	224,385	**17.6**	22.6	-5.0	**-22%**	18.06	18.83	15.86	0.00	0.48	0.76	0.52	1.09	0.63	0.59	0.18	0.04	90.29	2.72	6.78
2015	306	0.515	237	4.2	255	67	216,505	**30.5**	18.6	11.8	**63%**	25.52	23.45	20.09	1.71	1.11	1.21	0.92	1.30	0.73	0.52	0.03	0.08	91.74	2.68	5.47
2014	114	0.438	137	4.3	213	77	212,889	**28.9**	25.9	2.9	**11%**	27.80	25.43	21.14	0.00	0.78	0.86	0.61	1.68	1.11	0.21	-	0.14	92.69	2.66	4.51
2013	3,151	0.357	849	4.1	248	93	225,482	**25.7**	27.1	-1.4	**-5%**	26.60	25.41	20.95	0.55	0.95	0.96	0.62	1.29	0.42	0.36	0.11	0.06	93.26	2.11	4.47
2012	4,402	0.287	1,060	4.1	238	101	237,124	**29.8**	33.3	-3.5	**-10%**	31.37	30.82	25.80	0.11	0.66	0.79	0.50	1.07	0.37	0.27	0.06	0.04	93.98	1.84	4.08
30yr 105-125 LTV 4	5,530	0.293	2,593	4.6	251	91	222,753	**29.2**	31.5	-2.3	**-7%**	29.85	29.02	24.63	0.39	0.92	1.09	1.00	1.42	0.56	0.39	0.15	0.09	92.57	2.24	4.96
2018	38	0.752	27	4.7	298	33	208,068	**11.5**	14.5	-2.9	**-20%**	16.89	18.40	13.61	0.00	3.41	3.51	2.32	2.27	0.00	0.41	-	0.11	86.84	2.74	10.31
2017	238	0.686	108	4.6	303	43	226,877	**21.5**	15.3	6.1	**40%**	18.17	16.99	13.91	1.30	1.22	1.94	2.15	2.10	0.77	1.13	0.06	0.27	88.75	2.76	8.16
2016	196	0.579	103	4.6	294	56	218,229	**28.5**	27.2	1.3	**5%**	24.55	22.36	15.97	2.16	2.30	2.41	1.43	2.25	0.81	0.81	0.56	0.17	89.37	2.79	7.11
2015	408	0.498	215	4.6	280	67	210,115	**22.6**	21.4	1.2	**6%**	23.40	23.33	18.93	1.11	1.08	1.81	1.30	1.97	1.01	0.40	0.13	0.03	91.05	2.70	6.08
2014	579	0.417	391	4.7	255	79	214,126	**28.3**	24.9	3.4	**14%**	25.50	24.74	21.08	0.81	1.67	1.42	1.83	1.89	0.71	0.33	0.09	0.03	91.27	3.09	5.53
2013	1,275	0.347	676	4.6	252	90	212,297	**26.9**	31.1	-4.3	**-14%**	28.47	26.63	22.14	0.40	1.05	1.25	0.80	1.36	0.49	0.48	0.24	0.09	92.76	2.17	4.75
2012	2,525	0.235	845	4.5	239	104	230,969	**31.8**	35.3	-3.5	**-10%**	33.28	32.71	28.01	0.00	0.54	0.69	0.46	1.18	0.45	0.29	0.11	0.09	93.47	1.96	4.37
2011	224	0.187	153	4.6	220	111	234,714	**32.8**	41.1	-8.3	**-20%**	35.96	34.85	31.38	0.00	0.54	0.61	0.55	0.88	0.61	0.03	-	0.13	94.49	1.77	3.61
2010	48	0.143	72	4.5	207	123	233,572	**41.5**	35.0	6.5	**18%**	33.73	38.88	36.51	0.00	0.00	0.00	0.00	0.47	0.25	0.46	-	-	95.57	1.38	3.05
30yr 105-125 LTV 4.5	1,988	0.224	1,426	5.0	247	97	223,606	**28.9**	32.4	-3.5	**-11%**	30.86	29.93	26.24	0.57	1.26	1.05	1.06	1.74	0.66	0.37	0.09	0.05	92.14	2.41	5.32
2015	24	0.472	59	4.9	281	69	189,957	**18.5**	20.2	-1.7	**-8%**	23.46	24.15	18.22	0.00	0.00	1.34	0.67	0.88	3.13	1.08	-	-	87.55	2.06	10.4
2014	459	0.379	276	5.1	267	80	205,911	**21.4**	26.2	-4.8	**-18%**	24.89	23.63	20.61	1.29	2.08	1.50	1.32	2.06	0.81	0.24	0.23	0.04	91.09	2.92	5.71
2013	506	0.322	291	5.1	259	87	207,844	**30.4**	30.3	0.1	**0%**	29.03	27.99	23.70	0.57	0.83	0.86	0.71	2.31	0.81	0.39	0.06	0.08	91.47	2.96	5.44
2012	192	0.202	172	5.0	238	106	225,904	**36.2**	35.8	0.4	**1%**	37.56	33.98	29.53	0.00	0.18	1.20	0.84	1.48	0.26	0.44	-	-	93.26	1.60	5.14
2011	576	0.163	346	5.0	227	114	246,528	**31.5**	34.6	-3.1	**-9%**	33.47	33.30	29.47	0.44	1.10	0.76	0.42	1.36	0.48	0.46	0.03	0.05	92.70	2.01	5.21
2010	169	0.123	182	5.0	220	123	246,399	**29.7**	45.9	-16.2	**-35%**	37.45	37.66	34.27	0.00	0.69	0.49	0.32	0.99	0.40	0.12	0.04	-	95.33	1.85	2.78
30yr 105-125 LTV 5	563	0.127	655	5.4	232	114	239,675	**32.1**	35.5	-3.4	**-10%**	36.48	34.28	30.52	0.00	2.40	1.76	1.06	1.74	0.54	0.25	0.10	0.06	90.92	2.79	6.13
2011	315	0.135	288	5.4	229	116	246,091	**30.3**	37.8	-7.5	**-20%**	37.56	35.06	30.78	0.00	2.60	1.79	1.05	1.46	0.26	0.32	0.10	0.11	91.53	2.68	5.59
2010	146	0.091	236	5.5	221	126	245,951	**42.3**	34.3	8.0	**23%**	39.54	37.82	34.76	0.00	0.92	1.26	0.81	1.89	0.80	0.16	-	-	91.74	2.93	5.33
2009	26	0.087	48	5.5	215	134	260,138	**33.5**	50.4	-16.9	**-34%**	39.23	37.90	31.35	0.00	0.00	0.00	0.00	1.85	0.00	0.00	-	-	88.66	3.69	7.65
30yr 105-125 LTV 5.5	48	0.107	141	5.9	219	131	221,069	**24.5**	41.2	-16.7	**-41%**	34.67	36.64	31.50	0.00	0.74	0.48	0.39	1.89	1.71	0.22	-	-	90.72	2.97	6.31

**n.m. - Not Meaningful*

Source: Bloomberg

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS 125+ LTV

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Feb	Jan	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
15yr 125+ LTV 2.5	198	0.254	304	3.1	81	94	199,138	**20.1**	16.5	3.7	**22%**	16.48	16.44	14.36	0.00	0.48	0.43	0.43	0.69	0.34	0.12	-	-	97.44	0.90	1.66
2013	111	0.269	159	3.1	82	93	189,266	**20.7**	13.2	7.5	**57%**	14.32	16.39	13.95	0.00	0.34	0.27	0.40	0.86	0.49	0.10	-	-	97.21	0.93	1.85
2012	77	0.220	129	3.0	75	99	215,265	**21.4**	22.5	-1.0	**-5%**	21.08	18.08	16.02	0.00	0.72	0.70	0.45	0.52	0.16	0.00	-	-	98.73	0.56	0.71
15yr 125+ LTV 3	473	0.243	526	3.5	84	90	188,930	**18.1**	18.2	-0.1	**-1%**	19.03	18.47	16.06	0.00	0.47	0.59	0.53	1.03	0.35	0.13	0.06	0.11	95.94	1.27	2.62
2015	35	0.442	51	3.7	108	67	157,124	**11.5**	10.9	0.6	**6%**	11.59	12.96	12.12	0.00	1.91	1.42	0.83	0.68	0.55	0.20	-	0.09	96.04	1.21	2.67
2014	25	0.388	45	3.7	97	78	166,835	**18.2**	22.8	-4.6	**-20%**	17.91	16.59	13.42	0.00	0.96	1.18	1.85	0.20	1.35	0.27	-	-	93.53	2.08	4.39
2013	184	0.253	195	3.5	82	92	187,539	**18.0**	20.8	-2.7	**-13%**	20.75	19.61	16.94	0.00	0.50	0.71	0.76	1.25	0.21	0.07	0.06	0.03	96.32	1.43	2.16
2012	196	0.192	196	3.5	73	100	204,488	**19.9**	17.5	2.5	**14%**	19.98	19.55	17.30	0.00	0.10	0.29	0.15	0.85	0.34	0.13	0.03	0.14	96.57	0.81	2.46
15yr 125+ LTV 3.5	244	0.270	368	4.1	90	84	162,825	**16.0**	19.4	-3.4	**-18%**	18.20	16.61	15.62	0.30	0.73	0.68	0.42	1.04	0.48	0.14	-	0.02	95.20	1.57	3.21
2014	66	0.329	89	4.2	94	80	147,447	**19.8**	19.4	0.4	**2%**	20.55	17.87	16.84	1.09	1.79	1.44	1.02	1.64	0.71	0.11	-	-	94.65	2.05	3.31
2013	110	0.268	139	4.1	85	89	170,395	**15.7**	22.0	-6.3	**-29%**	17.76	15.60	14.97	0.00	0.53	0.48	0.24	0.79	0.46	0.10	-	0.05	95.41	1.61	2.93
2012	38	0.163	90	4.0	72	102	194,168	**16.9**	19.7	-2.8	**-14%**	16.99	19.62	18.20	0.00	0.00	0.43	0.22	0.46	0.00	0.14	-	-	97.56	0.66	1.78
15yr 125+ LTV 4	40	0.278	78	4.6	93	82	146,493	**17.0**	13.6	3.4	**25%**	12.55	14.49	14.61	0.00	0.33	0.16	0.33	1.27	1.11	0.63	0.20	-	92.48	2.43	4.89
2013	18	0.259	37	4.7	88	87	148,880	**21.3**	15.5	5.9	**38%**	16.31	18.93	17.67	0.00	0.72	0.36	0.72	2.06	2.01	0.49	0.45	-	89.50	3.95	6.09
30yr 125+ LTV 2.5	12	0.479	19	3.3	219	95	225,354	**0.6**	0.8	-0.2	***n.m.**	8.27	7.63	6.10	0.00	0.00	0.00	0.00	1.86	0.00	0.00	-	-	88.63	-	11.37
30yr 125+ LTV 3	1,779	0.406	674	3.8	238	95	230,116	**21.7**	26.7	-5.0	**-19%**	23.85	22.64	18.07	0.29	0.86	0.92	0.58	0.95	0.44	0.31	0.06	0.02	93.95	1.73	4.24
2013	1,012	0.419	341	3.8	239	94	227,117	**19.9**	26.9	-7.0	**-26%**	23.17	22.25	17.91	0.46	1.21	0.90	0.51	1.04	0.60	0.27	0.03	0.02	93.77	1.87	4.32
2012	706	0.376	280	3.7	233	98	235,896	**24.7**	27.3	-2.6	**-10%**	25.62	23.74	18.78	0.06	0.45	0.86	0.63	0.80	0.25	0.27	0.10	0.02	94.59	1.43	3.86
30yr 125+ LTV 3.5	9,450	0.347	1,825	4.1	244	96	227,678	**26.9**	30.4	-3.4	**-11%**	28.24	27.89	23.19	0.23	0.56	0.71	0.59	1.12	0.40	0.28	0.08	0.05	93.96	1.80	4.11
2016	117	0.671	73	4.2	288	55	208,864	**9.6**	26.9	-17.3	**-64%**	20.54	16.13	13.23	0.00	0.75	0.83	1.77	1.97	0.32	0.37	0.08	-	92.41	1.92	5.59
2015	143	0.537	125	4.2	256	67	199,163	**24.3**	24.0	0.3	**1%**	25.49	23.25	18.60	0.00	3.77	2.64	2.44	0.98	0.51	0.93	-	0.27	91.49	2.65	5.59
2014	47	0.499	59	4.4	215	77	188,080	**14.8**	26.6	-11.8	**-44%**	19.18	17.08	14.05	0.00	2.08	1.04	0.57	0.90	0.53	0.33	-	-	91.87	1.02	7.11
2013	3,600	0.388	738	4.1	249	93	220,102	**23.0**	26.4	-3.4	**-13%**	24.25	24.59	20.44	0.14	0.56	0.79	0.64	1.32	0.49	0.31	0.10	0.03	93.41	2.07	4.39
2012	5,505	0.316	795	4.1	239	100	234,273	**30.0**	33.1	-3.1	**-9%**	31.07	30.41	25.31	0.29	0.46	0.61	0.49	0.97	0.33	0.24	0.07	0.05	94.48	1.59	3.81
30yr 125+ LTV 4	5,112	0.320	1,790	4.6	249	94	216,577	**28.7**	31.8	-3.1	**-10%**	29.60	28.91	24.63	0.65	0.97	1.03	0.76	1.11	0.45	0.30	0.09	0.06	93.32	1.79	4.74
2017	94	0.733	56	4.6	301	43	197,729	**16.3**	12.1	4.2	**35%**	13.36	12.16	9.35	5.12	3.58	2.91	2.27	2.62	1.59	0.06	-	-	87.45	3.25	9.3
2016	78	0.650	70	4.6	292	56	194,750	**8.7**	9.2	-0.5	**-6%**	11.55	14.17	11.46	0.00	0.78	2.68	1.60	1.17	0.44	0.43	-	0.06	91.97	2.26	5.71
2015	211	0.556	155	4.6	277	67	189,596	**18.2**	19.8	-1.6	**-8%**	18.70	19.56	15.26	0.00	1.37	2.16	1.50	1.88	1.14	0.43	0.27	0.12	90.82	2.36	6.43
2014	329	0.461	240	4.7	252	79	198,824	**18.9**	27.1	-8.2	**-30%**	22.03	21.33	18.44	0.14	1.28	1.32	1.12	2.13	0.51	0.30	0.18	0.05	91.26	3.10	5.42
2013	1,247	0.387	605	4.6	252	91	207,963	**24.7**	28.0	-3.3	**-12%**	25.60	25.30	20.98	0.33	0.79	1.20	0.89	1.33	0.43	0.31	0.15	0.07	93.08	1.96	4.74
2012	3,135	0.275	650	4.5	242	102	224,838	**32.7**	35.5	-2.8	**-8%**	33.35	32.33	27.79	0.75	0.92	0.78	0.56	0.80	0.36	0.29	0.05	0.05	94.07	1.49	4.34
30yr 125+ LTV 4.5	1,265	0.356	801	5.1	257	88	205,508	**23.3**	30.3	-7.0	**-23%**	26.19	25.19	21.57	1.15	1.52	1.54	1.46	1.74	0.60	0.39	0.15	0.01	91.42	2.74	5.68
2014	364	0.450	236	5.1	265	81	196,874	**19.9**	29.8	-10.0	**-33%**	24.55	22.68	18.47	0.81	1.58	1.49	0.91	2.07	0.74	0.41	0.22	-	90.88	3.47	5.43
2013	581	0.386	293	5.1	257	88	204,032	**22.3**	30.8	-8.5	**-28%**	25.44	24.37	21.00	1.32	1.27	1.51	1.73	1.64	0.64	0.35	0.11	0.01	91.45	2.69	5.74
2012	281	0.240	167	5.0	243	104	223,101	**31.2**	32.4	-1.2	**-4%**	31.61	31.17	27.26	1.40	1.87	1.59	1.48	1.58	0.40	0.46	0.15	0.04	92.25	1.85	5.71
30yr 125+ LTV 5	87	0.390	80	5.5	268	82	180,926	**26.6**	40.6	-13.9	**-34%**	30.53	27.42	21.09	0.00	6.18	3.84	3.24	0.71	0.26	0.40	0.45	-	91.01	1.71	6.83

**n.m. - Not Meaningful*

Source: Bloomberg

INTENDED FOR INSTITUTIONAL INVESTORS ONLY. The information included herein has been obtained from sources deemed reliable, but it is not in any way guaranteed, and it, together with any opinions expressed, is subject to change at any time. Any and all details offered in this publication are preliminary and are therefore subject to change at any time. This has been prepared for general information purposes only and does not consider the specific investment objectives, financial situation and particular needs of any individual or institution. This information is, by its very nature, incomplete and specifically lacks information critical to making final investment decisions. Investors should seek financial advice as to the appropriateness of investing in any securities or investment strategies mentioned or recommended. The accuracy of the financial projections is dependent on the occurrence of future events which cannot be assured; therefore, the actual results achieved during the projection period may vary from the projections. Interest rate swaps and derivatives are offered and sold via Vining Sparks Interest Rate Products, LLC (VSIRP). VSIRP is an independent operating entity and is not a subsidiary of Vining Sparks IBG, LP. VSIRP is not a broker/dealer registered with the SEC. The firm may have positions, long or short, in any or all securities mentioned. Vining Sparks is a member FINRA/SIPC.

VINING SPARKS

UMBS Prepayment Speeds
February 2021
UMBS Relocation

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Feb	Jan	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
15yr RELO 2	21	0.282	18	2.5	101	69	312,312	32.6	29.9	2.7	9%	23.50	19.61	15.42	0.00	0.00	0.00	0.00	0.39	0.00	0.00	-	-	99.61	0.00	-
15yr RELO 2.5	107	0.198	84	3.0	97	75	279,643	26.9	30.3	-3.3	-11%	26.88	27.81	23.90	0.00	0.00	0.00	0.00	0.15	0.00	0.00	-	0.19	98.83	0.67	0.32
2014	46	0.207	42	3.0	95	78	277,166	15.1	23.4	-8.3	-36%	20.18	25.65	20.47	0.00	0.00	0.00	0.00	0.14	0.00	0.00	-	-	99.22	0.53	0.25
30yr RELO 2.5	312	0.467	59	3.3	304	49	347,794	31.2	25.2	6.0	24%	28.85	25.28	18.55	0.00	0.00	0.32	0.16	0.10	0.22	0.00	-	-	98.26	0.17	1.57
2016	45	0.507	10	3.1	299	52	326,621	36.0	27.7	8.3	30%	28.56	29.96	22.40	0.00	0.00	0.00	0.00	0.71	0.72	0.00	-	-	97.82	-	2.18
2013	79	0.289	24	3.1	253	94	318,498	17.0	38.1	-21.1	-55%	30.12	27.88	21.51	0.00	0.00	0.24	0.00	0.00	0.00	0.00	-	-	97.93	0.52	1.55
30yr RELO 3	2,353	0.355	351	3.7	294	55	326,518	42.4	44.8	-2.3	-5%	43.98	44.60	36.89	0.00	0.07	0.15	0.08	0.35	0.16	0.10	-	-	98.20	0.42	1.38
2019	149	0.672	22	3.9	339	17	376,314	44.6	30.5	14.1	46%	40.51	39.75	29.54	0.00	0.00	0.66	0.33	0.56	0.84	0.00	-	-	97.34	0.26	2.4
2018	232	0.414	39	4.1	319	32	331,642	52.2	54.4	-2.2	-4%	55.07	53.78	49.07	0.00	0.00	0.29	0.15	0.12	0.24	0.00	-	-	98.46	0.28	1.26
2017	697	0.440	91	3.8	310	41	325,801	46.2	50.3	-4.2	-8%	47.22	48.75	40.16	0.00	0.11	0.14	0.10	0.37	0.08	0.09	-	-	98.04	0.47	1.5
2016	305	0.399	24	3.6	297	53	320,153	42.6	33.3	9.3	28%	39.53	39.25	32.17	0.00	0.00	0.09	0.00	0.37	0.15	0.20	-	-	97.51	0.43	2.06
2015	494	0.328	58	3.7	281	67	317,529	39.1	45.2	-6.1	-13%	42.39	42.18	33.43	0.00	0.00	0.00	0.00	0.39	0.13	0.09	-	-	98.75	0.41	0.85
2014	146	0.243	44	3.9	269	77	321,794	45.1	51.9	-6.7	-13%	47.69	49.17	40.46	0.00	0.00	0.00	0.00	0.32	0.18	0.22	-	-	98.09	0.75	1.16
2013	168	0.247	34	3.5	255	92	323,486	28.6	32.8	-4.2	-13%	33.38	35.59	28.59	0.00	0.00	0.00	0.00	0.00	0.00	0.09	-	-	97.93	0.38	1.69
2012	142	0.226	31	3.5	243	103	322,398	26.1	38.4	-12.3	-32%	33.02	33.33	27.12	0.00	0.71	0.35	0.18	0.79	0.00	0.06	-	-	99.17	0.44	0.4
30yr RELO 3.5	745	0.192	195	4.1	272	76	309,083	47.8	48.5	-0.8	-2%	47.07	50.32	44.42	0.41	0.22	0.30	0.17	0.39	0.13	0.16	-	0.03	97.37	0.68	1.92
2019	7	0.415	5	4.4	329	22	295,636	26.5	1.9	24.6	*n.m.	20.66	55.44	49.06	0.00	0.00	7.07	3.60	0.00	0.00	3.54	-	-	96.46	-	3.54
2017	80	0.326	15	4.1	307	45	313,133	52.4	55.3	-2.9	-5%	49.63	56.82	49.19	0.00	0.00	0.00	0.00	0.00	0.00	0.33	-	-	97.46	0.56	1.98
2014	240	0.173	63	4.2	268	79	292,090	47.8	46.0	1.8	4%	45.72	50.17	43.78	0.00	0.26	0.13	0.07	0.85	0.09	0.12	-	0.08	96.94	0.53	2.45
2013	79	0.159	24	4.1	259	88	296,895	43.5	49.0	-5.5	-11%	45.66	49.48	43.02	0.00	0.00	0.00	0.00	0.00	0.41	0.21	-	-	98.89	0.29	0.82
2012	57	0.163	19	3.9	237	107	306,735	35.7	37.8	-2.2	-6%	38.34	39.62	34.08	0.00	0.00	0.00	0.00	0.75	0.00	0.00	-	-	99.01	0.41	0.58
2011	74	0.152	27	3.9	231	112	314,326	43.4	50.1	-6.7	-13%	48.37	41.56	33.76	0.00	0.00	0.00	0.00	0.00	0.61	0.33	-	-	97.98	1.34	0.68
2010	64	0.130	14	3.9	218	122	312,489	40.6	40.9	-0.3	-1%	43.33	41.04	34.21	0.00	0.00	0.70	0.00	0.21	0.00	0.00	-	-	98.86	-	1.14
30yr RELO 4	222	0.081	131	4.5	241	104	296,922	38.6	54.4	-15.8	-29%	46.78	46.03	41.09	1.26	0.42	0.37	0.19	0.50	0.12	0.00	-	-	97.75	0.61	1.64
2014	43	0.119	37	4.5	266	82	271,514	36.9	59.2	-22.4	-38%	49.83	46.54	39.99	0.00	0.00	0.00	0.00	0.22	0.00	0.00	-	-	98.68	0.68	0.64
2011	77	0.071	43	4.4	225	116	292,929	33.1	50.1	-17.0	-34%	41.51	41.27	37.37	0.00	0.00	0.00	0.00	0.76	0.34	0.00	-	-	98.05	0.96	0.99
2010	69	0.064	25	4.4	220	126	313,598	35.3	31.8	3.5	11%	36.44	38.76	32.05	4.03	1.36	0.68	0.00	0.00	0.00	0.00	-	-	96.37	0.48	3.16
30yr RELO 4.5	47	0.027	249	5.0	188	158	245,466	32.7	11.6	21.0	181%	23.02	27.16	24.54	0.00	0.00	0.00	0.00	1.39	0.28	0.00	-	-	97.86	0.82	1.32

**n.m. - Not Meaningful*

Source: Bloomberg

INTENDED FOR INSTITUTIONAL INVESTORS ONLY. The information included herein has been obtained from sources deemed reliable, but it is not in any way guaranteed, and it, together with any opinions expressed, is subject to change at any time. Any and all details offered in this publication are preliminary and are therefore subject to change at any time. This has been prepared for general information purposes only and does not consider the specific investment objectives, financial situation and particular needs of any individual or institution. This information is, by its very nature, incomplete and specifically lacks information critical to making final investment decisions. Investors should seek financial advice as to the appropriateness of investing in any securities or investment strategies mentioned or recommended. The accuracy of the financial projections is dependent on the occurrence of future events which cannot be assured; therefore, the actual results achieved during the projection period may vary from the projections. Interest rate swaps and derivatives are offered and sold via Vining Sparks Interest Rate Products, LLC (VSIRP). VSIRP is an independent operating entity and is not a subsidiary of Vining Sparks IBG, LP. VSIRP is not a broker/dealer registered with the SEC. The firm may have positions, long or short, in any or all securities mentioned. Vining Sparks is a member FINRA/SIPC.