VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS 10yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Oct*	*Sep*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
FNMA 10yr 2	9,921	0.472	627	2.6	102	14	228,410	**18.6**	17.6	1.0	**6%**	17.17	16.48	16.04	0.04	0.06	0.06	0.07	0.17	0.01	0.01	0.00	0.00	99.41	0.48	0.1
2021	4,118	0.937	82	2.6	113	5	205,657	**9.7**	8.6	1.1	**12%**	8.50	6.95	-	0.09	0.05	0.02	-	0.19	0.01	0.01	-	-	99.42	0.57	0.01
2020	5,084	0.749	122	2.6	103	13	246,392	**23.8**	22.2	1.6	**7%**	21.40	19.62	16.64	0.00	0.07	0.07	0.07	0.15	0.01	0.01	-	-	99.44	0.42	0.13
2019	57	0.510	16	2.8	92	23	272,465	**30.5**	25.9	4.6	**18%**	26.53	27.18	29.95	0.00	0.00	0.00	0.00	0.44	0.00	0.00	-	-	98.42	1.00	0.58
2016	245	0.246	67	2.6	55	61	250,720	**27.5**	23.3	4.2	**18%**	25.21	24.57	24.97	0.00	0.00	0.13	0.18	0.09	0.02	0.06	0.03	-	99.33	0.23	0.42
2015	35	0.155	42	2.7	42	75	226,664	**15.7**	29.9	-14.3	**-48%**	23.07	24.88	25.61	0.00	0.00	0.00	0.19	0.21	0.00	0.00	-	-	99.34	0.16	0.5
2014	21	0.111	23	2.9	34	83	227,638	**21.0**	28.0	-7.0	**-25%**	30.20	30.77	26.40	0.00	0.00	0.00	0.30	0.49	0.14	0.00	0.17	0.09	98.61	0.55	0.58
2013	307	0.047	209	2.7	18	100	214,045	**27.6**	27.0	0.6	**2%**	28.28	28.06	27.32	0.00	0.00	0.03	0.06	0.17	0.02	0.00	0.02	0.02	99.25	0.29	0.42
2012	47	0.026	59	2.7	13	106	198,287	**33.2**	32.6	0.5	**2%**	31.52	30.65	30.67	0.00	0.00	0.00	0.10	0.25	0.01	0.05	0.02	-	99.03	0.55	0.4
FNMA 10yr 2.5	5,739	0.123	1,636	3.0	64	51	218,399	**25.5**	26.2	-0.7	**-3%**	25.58	25.49	25.64	0.10	0.09	0.09	0.13	0.21	0.04	0.01	0.02	0.01	99.17	0.41	0.39
2021	78	0.939	19	3.2	114	5	136,060	**18.8**	10.3	8.6	**84%**	12.07	8.29	-	0.00	0.00	0.00	-	0.09	0.10	0.00	-	-	99.57	0.34	0.09
2020	1,487	0.635	76	3.0	99	16	226,372	**28.2**	26.0	2.2	**8%**	26.36	24.57	24.65	0.00	0.09	0.06	0.10	0.22	0.01	0.01	0.03	0.01	99.39	0.45	0.12
2019	690	0.485	41	3.1	92	23	237,692	**29.3**	31.4	-2.1	**-7%**	29.74	27.73	30.15	0.00	0.00	0.05	0.05	0.06	0.06	0.02	-	0.02	99.19	0.30	0.5
2018	9	0.303	10	3.2	73	42	239,373	**6.6**	24.3	-17.7	**-73%**	15.81	20.40	29.45	0.00	0.00	0.00	0.00	0.00	3.41	0.00	-	-	96.30	3.02	0.68
2017	362	0.292	72	3.0	65	50	231,646	**23.3**	26.4	-3.2	**-12%**	25.56	26.85	25.92	0.54	0.18	0.33	0.23	0.28	0.00	0.01	0.00	-	99.30	0.36	0.34
2016	1,412	0.238	166	2.9	54	61	220,570	**21.3**	22.9	-1.6	**-7%**	22.01	22.87	22.68	0.13	0.16	0.08	0.16	0.22	0.04	0.01	0.02	0.01	99.15	0.34	0.48
2015	702	0.144	192	3.0	41	75	210,583	**22.3**	23.6	-1.3	**-5%**	22.80	24.28	23.94	0.13	0.06	0.05	0.11	0.16	0.06	0.00	0.04	0.03	99.06	0.42	0.46
2014	347	0.086	188	3.2	31	86	202,687	**23.0**	26.4	-3.5	**-13%**	24.77	25.18	24.70	0.00	0.04	0.04	0.08	0.37	0.01	0.02	0.02	-	98.78	0.59	0.62
2013	396	0.044	356	3.0	19	100	182,449	**28.3**	28.9	-0.6	**-2%**	28.34	28.49	27.44	0.00	0.04	0.13	0.15	0.34	0.07	0.02	0.02	0.01	98.72	0.62	0.64
2012	255	0.016	490	3.0	11	109	211,997	**34.7**	34.9	-0.2	**-1%**	34.33	34.35	33.01	0.34	0.17	0.15	0.15	0.25	0.03	0.03	0.02	0.01	99.21	0.38	0.38
FNMA 10yr 3	2,643	0.091	1,232	3.5	61	54	179,292	**26.3**	26.2	0.1	**0%**	26.40	26.95	27.31	0.08	0.06	0.11	0.13	0.38	0.06	0.05	0.01	0.00	98.50	0.71	0.78
2021	1	0.982	1	3.6	115	3	64,706	**3.4**	1.2	2.2	***n.m.**	-	-	-	0.00	-	-	-	0.00	0.00	0.00	-	-	96.25	3.00	-
2019	502	0.437	46	3.6	89	25	208,351	**31.2**	27.8	3.4	**12%**	30.55	30.75	32.84	0.00	0.00	0.00	0.05	0.38	0.07	0.11	-	-	98.35	0.69	0.96
2018	173	0.325	36	3.5	72	42	209,555	**18.3**	21.2	-2.9	**-14%**	23.04	25.46	26.89	0.00	0.00	0.00	0.10	0.28	0.11	0.00	-	-	98.89	0.85	0.27
2017	759	0.289	97	3.4	64	50	186,845	**24.0**	25.7	-1.6	**-6%**	24.93	25.41	25.04	0.09	0.04	0.11	0.14	0.32	0.02	0.01	0.01	-	98.87	0.43	0.69
2016	323	0.213	89	3.5	52	62	161,989	**28.1**	26.1	2.0	**8%**	25.45	24.55	23.27	0.28	0.15	0.23	0.14	0.41	0.09	0.00	-	-	98.34	0.84	0.82
2015	283	0.147	128	3.5	42	73	159,961	**20.5**	19.0	1.5	**8%**	20.54	22.45	22.46	0.06	0.02	0.01	0.11	0.56	0.04	0.12	0.05	-	98.42	0.75	0.78
2014	221	0.082	157	3.6	31	86	146,164	**25.6**	29.3	-3.7	**-13%**	26.89	26.00	24.94	0.00	0.25	0.15	0.19	0.46	0.13	0.05	0.02	0.02	98.13	0.99	0.84
2013	161	0.048	241	3.6	21	96	147,181	**29.0**	24.4	4.6	**19%**	26.15	26.45	26.47	0.12	0.04	0.06	0.18	0.47	0.11	0.07	0.02	-	97.98	1.03	0.98
2012	51	0.008	299	3.5	8	111	160,842	**41.5**	37.0	4.5	**12%**	38.39	37.54	36.36	0.28	0.16	0.14	0.16	0.61	0.08	0.03	0.03	-	98.33	0.71	0.93
FNMA 10yr 3.5	1,073	0.202	459	4.0	70	44	156,900	**28.2**	26.6	1.6	**6%**	27.65	28.33	28.91	0.06	0.16	0.14	0.23	0.57	0.14	0.08	0.05	0.01	97.82	1.10	1.01
2020	22	0.616	11	4.1	98	19	144,643	**47.5**	23.7	23.8	**100%**	30.07	26.44	23.84	0.00	0.00	0.00	0.75	0.00	0.00	0.00	-	-	99.81	0.00	-
2019	271	0.357	49	4.1	85	28	172,318	**28.1**	27.6	0.5	**2%**	29.00	31.20	33.54	0.00	0.27	0.13	0.23	0.45	0.15	0.02	0.02	-	97.68	1.22	1.08
2018	389	0.307	74	4.0	74	39	175,671	**29.5**	31.4	-2.0	**-6%**	29.73	30.23	29.75	0.00	0.08	0.16	0.21	0.50	0.18	0.13	0.07	-	98.09	0.87	0.97
2017	259	0.289	50	3.9	64	50	135,282	**24.6**	18.3	6.3	**35%**	22.66	23.12	23.67	0.00	0.13	0.07	0.21	0.70	0.14	0.11	-	0.02	97.74	1.27	0.97
2016	35	0.211	31	4.1	52	63	119,882	**28.2**	17.4	10.8	**62%**	22.92	21.19	21.45	1.91	0.64	0.32	0.29	0.74	0.12	0.07	0.14	0.23	97.00	1.19	1.45
2015	22	0.141	31	4.2	41	74	101,862	**20.7**	23.3	-2.7	**-11%**	23.75	23.38	22.06	0.00	0.00	0.40	0.20	1.34	0.00	0.00	0.25	-	95.71	1.53	2.52
2014	42	0.073	64	4.2	29	87	117,638	**28.5**	28.8	-0.3	**-1%**	29.81	26.78	25.50	0.00	0.26	0.13	0.18	0.83	0.02	0.04	0.06	-	97.41	1.58	0.95
2013	30	0.049	76	4.1	22	96	112,187	**26.3**	29.6	-3.3	**-11%**	27.88	28.46	26.60	0.00	0.00	0.16	0.22	0.82	0.03	0.06	0.19	-	98.17	1.21	0.43
FNMA 10yr 4	219	0.292	129	4.6	77	37	120,364	**27.0**	29.7	-2.7	**-9%**	29.33	28.94	28.93	0.00	0.14	0.18	0.24	0.42	0.25	0.15	0.05	0.02	97.83	1.05	1.05
2019	36	0.491	18	4.7	86	29	97,588	**13.7**	28.7	-15.0	**-52%**	25.97	21.85	22.58	0.00	0.00	0.23	0.31	0.38	0.00	0.14	0.14	-	98.32	1.36	0.18
2018	177	0.323	62	4.6	77	37	126,292	**29.5**	30.4	-0.9	**-3%**	30.30	30.42	30.05	0.00	0.18	0.18	0.23	0.40	0.31	0.15	0.04	0.03	97.77	0.98	1.18
FNMA 10yr 4.5	7	0.496	7	5.2	88	28	85,107	**19.1**	16.2	2.9	**18%**	12.78	18.19	21.69	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.01	-	95.25	1.09	3.66

**n.m. - Not Meaningful*

Source: Bloomberg

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UMBS Prepayment Speeds
October 2021
UMBS 10yr

	Indicative Data						Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Oct*	*Sep*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.

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VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS 15yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Oct	Sep	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
FNMA 15yr 1	7,167	0.945	53	1.9	172	6	379,407	7.4	7.0	0.5	7%	6.52	4.93	-	0.04	0.02	0.01	-	0.22	0.04	0.03	-	-	99.46	0.48	0.06
2021	5,459	0.955	34	1.9	173	5	384,632	5.9	6.1	-0.2	-3%	5.51	4.23	-	0.05	0.03	0.02	-	0.21	0.05	0.03	-	-	99.53	0.43	0.04
2020	1,709	0.916	19	1.9	169	9	362,714	12.3	9.3	2.9	31%	9.40	6.83	-	0.00	0.00	0.00	-	0.26	0.02	0.00	-	-	99.22	0.67	0.11
FNMA 15yr 1.5	172,872	0.905	2,322	2.2	171	7	339,299	14.9	16.4	-1.5	-9%	13.44	10.65	8.45	0.04	0.05	0.04	0.04	0.33	0.04	0.01	0.00	0.00	99.15	0.77	0.08
2021	100,614	0.955	1,313	2.2	174	5	346,842	9.3	9.0	0.3	3%	7.72	5.57	-	0.03	0.03	0.02	-	0.42	0.05	0.01	-	0.00	98.97	0.99	0.04
2020	72,253	0.844	1,005	2.3	166	11	328,804	22.0	24.3	-2.2	-9%	19.85	15.54	11.23	0.06	0.06	0.06	0.05	0.20	0.02	0.01	0.00	0.00	99.39	0.46	0.14
FNMA 15yr 2	292,144	0.786	9,689	2.6	165	12	277,697	17.4	17.1	0.3	2%	15.76	14.30	15.15	0.11	0.07	0.07	0.07	0.25	0.03	0.02	0.00	0.00	99.26	0.59	0.14
2021	129,219	0.955	3,825	2.5	173	5	272,020	8.8	7.5	1.3	18%	7.31	5.44	-	0.12	0.06	0.04	-	0.30	0.03	0.01	-	0.00	99.19	0.77	0.04
2020	152,191	0.773	3,722	2.7	163	13	282,795	23.6	23.2	0.4	2%	21.19	18.62	17.29	0.12	0.09	0.08	0.07	0.22	0.03	0.01	0.00	0.00	99.34	0.45	0.2
2019	1,485	0.525	62	2.8	152	23	310,519	33.5	33.4	0.2	1%	30.62	29.64	33.54	0.00	0.08	0.04	0.14	0.20	0.07	0.04	0.04	-	98.63	0.32	1.01
2017	57	0.502	31	2.6	122	51	284,376	18.3	31.5	-13.2	-42%	23.21	24.15	21.49	0.00	0.00	0.00	0.17	0.69	0.07	0.01	-	-	97.66	1.20	1.14
2016	3,459	0.391	343	2.6	113	61	280,276	23.5	24.3	-0.8	-3%	23.15	22.71	23.86	0.06	0.05	0.07	0.11	0.12	0.03	0.03	0.04	0.01	99.07	0.33	0.55
2015	395	0.297	173	2.7	97	76	281,836	24.2	23.5	0.7	3%	23.96	24.47	24.74	0.00	0.00	0.27	0.30	0.21	0.00	0.03	-	-	99.01	0.34	0.65
2014	69	0.333	37	2.8	89	85	269,103	25.0	24.6	0.4	2%	22.74	22.47	19.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	-	99.29	0.16	0.28
2013	3,451	0.213	1,013	2.6	73	101	264,592	17.7	19.2	-1.5	-8%	18.52	18.90	18.80	0.02	0.03	0.03	0.12	0.20	0.03	0.03	0.03	0.01	99.08	0.42	0.46
2012	1,814	0.187	477	2.6	68	106	247,039	18.7	19.3	-0.5	-3%	18.51	18.78	19.06	0.15	0.07	0.03	0.07	0.17	0.03	0.03	0.02	0.00	99.25	0.48	0.25
FNMA 15yr 2.5	150,199	0.350	21,566	3.0	128	46	248,716	24.9	24.5	0.5	2%	23.96	24.13	25.97	0.13	0.12	0.10	0.14	0.29	0.05	0.03	0.02	0.01	98.73	0.62	0.62
2021	14,160	0.960	1,034	3.0	172	5	222,596	8.8	6.8	1.9	28%	6.98	5.39	-	0.10	0.05	0.04	-	0.46	0.06	0.02	-	0.00	98.63	1.32	0.05
2020	46,238	0.675	2,795	3.1	159	16	238,746	27.6	26.0	1.6	6%	25.26	24.46	24.75	0.13	0.14	0.12	0.14	0.29	0.04	0.02	0.01	0.01	98.86	0.65	0.48
2019	21,074	0.438	1,050	3.2	151	23	273,813	36.4	34.8	1.6	5%	33.95	34.05	38.33	0.26	0.21	0.15	0.19	0.25	0.06	0.03	0.03	0.01	98.52	0.45	1
2018	302	0.367	81	3.2	130	43	284,357	26.7	32.9	-6.2	-19%	28.43	30.64	34.97	1.66	0.56	0.34	0.26	0.27	0.18	0.04	0.25	-	97.70	1.12	0.93
2017	4,099	0.378	697	3.0	123	50	267,038	28.9	26.4	2.5	9%	28.01	28.50	30.71	0.20	0.19	0.15	0.22	0.22	0.07	0.02	0.04	0.01	98.40	0.51	1.04
2016	23,796	0.351	3,139	2.9	112	61	256,812	24.2	25.1	-0.9	-4%	24.37	24.26	25.11	0.12	0.10	0.09	0.14	0.27	0.05	0.03	0.04	0.01	98.66	0.50	0.79
2015	9,258	0.266	2,036	3.0	98	75	257,902	24.6	23.7	0.9	4%	23.69	24.17	24.81	0.12	0.11	0.09	0.15	0.24	0.06	0.03	0.04	0.01	98.69	0.46	0.81
2014	2,034	0.209	1,031	3.1	89	84	258,827	21.9	23.8	-2.0	-8%	22.80	23.88	25.15	0.24	0.11	0.12	0.14	0.26	0.06	0.06	0.04	0.02	98.60	0.63	0.71
2013	12,861	0.198	4,054	2.9	73	101	236,849	18.0	19.3	-1.3	-7%	18.83	19.26	19.06	0.05	0.06	0.07	0.13	0.31	0.05	0.03	0.03	0.01	98.67	0.57	0.73
2012	16,069	0.151	5,463	3.0	65	109	253,354	19.5	20.3	-0.8	-4%	19.96	20.29	20.34	0.03	0.05	0.05	0.09	0.23	0.04	0.02	0.02	0.01	99.01	0.48	0.49
2011	303	0.108	182	3.1	56	118	236,084	18.9	21.1	-2.2	-10%	19.92	20.68	20.62	0.00	0.00	0.10	0.10	0.24	0.00	0.00	0.04	0.02	98.91	0.53	0.5
FNMA 15yr 3	82,808	0.234	27,785	3.5	111	62	215,241	26.3	26.5	-0.2	-1%	26.28	27.07	28.37	0.18	0.20	0.18	0.22	0.43	0.11	0.06	0.05	0.01	97.94	0.82	1.18
2021	878	0.955	189	3.6	172	5	185,613	12.2	10.2	2.0	19%	10.70	7.78	-	0.00	0.00	0.00	-	0.81	0.02	0.20	-	-	98.03	1.91	0.06
2020	6,229	0.635	883	3.7	158	17	198,143	30.0	29.5	0.5	2%	29.38	29.26	28.20	0.35	0.25	0.21	0.26	0.50	0.12	0.05	0.04	0.00	97.78	1.05	1.13
2019	13,788	0.399	1,453	3.6	149	25	229,790	35.5	35.7	-0.1	0%	34.78	35.54	38.59	0.21	0.23	0.21	0.25	0.38	0.11	0.07	0.05	0.01	97.82	0.67	1.45
2018	3,247	0.296	606	3.7	131	41	245,872	34.3	33.2	1.1	3%	33.62	35.77	38.89	0.00	0.24	0.23	0.30	0.49	0.13	0.04	0.06	0.01	97.54	0.78	1.61
2017	16,308	0.347	2,978	3.5	123	50	225,120	27.8	27.6	0.2	1%	27.83	29.01	30.68	0.21	0.25	0.24	0.26	0.43	0.11	0.06	0.06	0.01	97.71	0.83	1.38
2016	7,325	0.326	2,923	3.5	110	63	190,562	22.6	23.6	-1.0	-4%	22.88	23.31	23.60	0.32	0.30	0.25	0.27	0.56	0.15	0.07	0.06	0.03	97.41	0.97	1.53
2015	9,913	0.260	3,625	3.5	99	74	208,018	23.0	23.2	-0.2	-1%	23.14	23.71	23.95	0.14	0.13	0.13	0.20	0.46	0.13	0.05	0.04	0.01	97.85	0.91	1.18
2014	7,435	0.197	3,319	3.5	87	86	211,822	20.8	21.8	-1.0	-5%	21.63	22.31	22.70	0.14	0.18	0.16	0.23	0.47	0.10	0.06	0.06	0.01	98.08	0.87	0.98
2013	6,060	0.176	3,802	3.5	76	97	199,134	20.3	20.3	-0.1	0%	20.25	20.74	20.72	0.10	0.12	0.10	0.19	0.47	0.10	0.05	0.06	0.02	98.11	0.87	0.94
2012	6,357	0.120	5,422	3.5	62	112	206,675	19.5	20.8	-1.3	-6%	20.30	20.92	20.80	0.05	0.06	0.06	0.10	0.33	0.06	0.03	0.02	0.01	98.66	0.61	0.69
2011	4,733	0.087	2,186	3.5	55	119	236,128	20.3	20.9	-0.6	-3%	20.59	21.05	21.30	0.15	0.13	0.08	0.10	0.25	0.05	0.02	0.01	0.01	99.00	0.48	0.5
2010	534	0.055	398	3.6	45	130	219,739	22.6	22.4	0.2	1%	22.95	22.72	23.66	0.00	0.00	0.02	0.10	0.20	0.05	0.05	0.05	0.01	98.91	0.74	0.28
FNMA 15yr 3.5	33,930	0.165	20,521	4.0	109	64	177,769	27.3	27.1	0.2	1%	27.35	28.45	29.16	0.37	0.33	0.28	0.32	0.68	0.15	0.08	0.08	0.02	97.16	1.14	1.6
2021	173	0.953	71	4.1	172	4	155,095	13.2	14.5	-1.3	-9%	12.39	9.39	-	0.00	0.00	0.00	-	0.49	0.07	0.00	-	-	98.41	1.00	-
2020	1,211	0.601	320	4.1	156	17	181,637	30.5	30.6	-0.1	0%	31.74	31.35	30.52	0.71	0.55	0.35	0.50	0.64	0.13	0.09	0.07	0.02	96.79	1.24	1.88
2019	7,590	0.388	1,404	4.1	146	27	189,002	35.1	33.4	1.7	5%	33.94	35.37	36.82	0.56	0.56	0.47	0.43	0.71	0.15	0.08	0.10	0.02	96.67	1.10	2.11
2018	6,057	0.283	1,736	4.1	133	39	202,561	34.2	34.0	0.2	1%	34.35	36.31	38.09	0.41	0.33	0.29	0.32	0.62	0.16	0.12	0.11	0.02	96.97	1.09	1.8
2017	4,640	0.377	1,994	4.0	122	51	152,241	23.9	24.6	-0.8	-3%	24.55	25.42	24.95	0.56	0.43	0.32	0.40	0.89	0.20	0.12	0.09	0.01	96.42	1.49	1.98
2016	1,153	0.334	996	4.0	108	63	129,818	20.4	21.7	-1.3	-6%	21.34	21.32	20.11	0.23	0.34	0.31	0.33	0.94	0.18	0.11	0.06	0.02	96.69	1.41	1.82
2015	1,534	0.271	1,522	4.0	98	74	131,686	21.5	20.6	1.0	5%	21.10	21.51	20.77	0.28	0.29	0.24	0.32	0.96	0.24	0.10	0.07	0.02	96.70	1.51	1.69
2014	2,760	0.199	2,574	4.1	86	87	151,615	19.4	20.4	-1.0	-5%	20.09	20.69	20.52	0.25	0.24	0.20	0.27	0.81	0.17	0.09	0.10	0.01	96.91	1.41	1.58
2013	2,175	0.172	2,008	4.0	78	96	162,039	20.3	20.0	0.4	2%	19.93	20.67	20.18	0.11	0.18	0.18	0.24	0.69	0.14	0.06	0.08	0.01	97.50	1.23	1.18
2012	851	0.112	2,001	4.0	61	113	149,979	20.4	19.3	1.2	6%	20.50	20.84	20.69	0.17	0.14	0.17	0.21	0.61	0.16	0.05	0.03	0.00	98.21	0.94	0.81
2011	2,916	0.072	3,358	3.9	52	122	194,847	21.3	20.4	1.0	5%	21.11	21.36	21.02	0.06	0.06	0.10	0.17	0.43	0.06	0.04	0.04	0.01	98.42	0.76	0.78
2010	2,838	0.044	2,377	3.9	44	131	208,752	20.1	22.7	-2.6	-11%	21.49	22.17	22.42	0.06	0.05	0.06	0.10	0.27	0.05	0.02	0.02	0.01	99.00	0.50	0.48

VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS 15yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Oct*	*Sep*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2009	31	0.026	153	4.0	32	146	195,314	**21.3**	22.1	-0.8	**-4%**	23.26	24.22	22.94	0.00	0.22	0.36	0.23	0.44	0.09	0.00	-	-	98.59	1.00	0.4
FNMA 15yr 4	9,821	0.060	10,852	4.5	97	76	159,989	**26.3**	28.2	-2.0	**-7%**	27.39	28.44	28.61	0.41	0.39	0.33	0.37	0.76	0.18	0.12	0.10	0.01	96.81	1.37	1.7
2020	71	0.680	40	4.5	154	18	113,711	**20.0**	25.3	-5.3	**-21%**	22.50	24.81	23.62	0.00	0.00	0.29	0.58	0.35	0.00	0.10	-	-	97.59	1.24	1.17
2019	1,181	0.477	473	4.7	143	28	136,070	**29.9**	30.8	-1.0	**-3%**	29.09	30.80	29.77	0.79	0.77	0.55	0.58	0.91	0.14	0.18	0.17	0.01	96.40	1.38	2.04
2018	4,150	0.327	1,268	4.6	134	38	153,417	**30.1**	32.9	-2.9	**-9%**	31.90	33.59	34.34	0.47	0.46	0.42	0.46	0.92	0.26	0.16	0.14	0.02	95.96	1.62	2.26
2017	309	0.346	187	4.5	121	51	141,112	**24.5**	25.8	-1.3	**-5%**	26.74	26.28	26.39	2.10	1.47	1.07	0.92	1.19	0.16	0.21	0.14	0.01	94.92	2.35	2.58
2016	15	0.313	29	4.4	108	64	110,123	**20.0**	21.5	-1.5	**-7%**	19.40	25.78	28.67	0.00	0.00	0.00	0.39	0.82	0.29	0.14	-	-	96.89	1.08	2.03
2014	74	0.189	224	4.7	83	89	87,041	**22.3**	31.5	-9.2	**-29%**	24.95	22.94	20.93	0.00	0.00	0.00	0.40	1.31	0.33	0.09	0.22	-	95.81	2.19	1.79
2013	123	0.180	302	4.6	78	95	102,011	**21.1**	17.9	3.2	**18%**	21.50	20.53	20.30	0.25	0.34	0.36	0.29	0.89	0.17	0.12	0.15	-	96.21	1.66	1.98
2012	68	0.105	342	4.5	61	114	121,693	**18.6**	21.3	-2.8	**-13%**	20.05	21.39	21.87	1.01	0.51	0.45	0.24	0.51	0.29	0.01	0.01	-	97.70	1.31	0.99
2011	1,398	0.057	2,679	4.4	50	125	170,844	**20.0**	21.0	-0.9	**-5%**	20.75	21.15	21.05	0.13	0.15	0.13	0.20	0.60	0.11	0.05	0.04	0.02	97.68	1.15	1.11
2010	1,471	0.029	2,785	4.4	41	135	183,317	**21.9**	23.4	-1.5	**-6%**	22.57	22.67	22.41	0.12	0.09	0.10	0.17	0.46	0.11	0.05	0.04	0.01	98.15	0.90	0.91
2009	941	0.014	2,289	4.5	31	146	192,817	**22.5**	23.4	-0.9	**-4%**	23.47	23.78	23.85	0.00	0.13	0.07	0.17	0.43	0.10	0.06	0.05	0.01	98.32	0.91	0.71
2008	14	0.007	200	4.6	19	160	196,517	**23.6**	31.9	-8.3	**-26%**	26.33	23.94	23.35	0.00	0.00	0.00	0.00	0.37	0.26	0.09	0.10	-	98.01	1.42	0.47
FNMA 15yr 4.5	1,408	0.020	5,643	4.9	62	113	153,085	**25.5**	23.9	1.6	**7%**	24.51	24.85	24.23	0.40	0.38	0.27	0.38	0.86	0.22	0.13	0.14	0.03	96.58	1.74	1.52
2020	13	0.659	9	5.2	156	19	167,987	**33.3**	22.9	10.4	**46%**	24.00	30.65	24.69	0.00	0.00	0.87	0.44	0.91	1.19	0.00	-	-	94.99	3.36	1.64
2019	190	0.496	125	5.2	144	28	125,233	**36.9**	28.5	8.4	**29%**	31.10	31.24	28.22	1.77	0.85	0.48	0.54	1.12	0.36	0.39	0.30	0.05	94.51	2.36	2.78
2018	143	0.401	63	5.1	138	35	136,953	**26.7**	24.5	2.2	**9%**	27.81	29.09	30.38	0.49	0.31	0.41	0.65	1.66	0.30	0.03	0.54	0.02	94.21	2.90	2.33
2011	193	0.060	897	4.8	49	125	140,781	**23.5**	21.2	2.3	**11%**	22.00	22.08	21.71	0.24	0.30	0.22	0.44	0.80	0.18	0.12	0.05	-	96.97	1.50	1.47
2010	329	0.031	1,277	4.8	39	137	150,179	**23.2**	22.3	0.8	**4%**	22.09	22.39	22.11	0.05	0.35	0.22	0.39	0.59	0.17	0.04	0.07	0.04	97.19	1.45	1.26
2009	450	0.016	2,071	4.9	31	146	169,535	**21.4**	22.9	-1.5	**-7%**	22.61	22.68	22.45	0.04	0.16	0.14	0.19	0.72	0.16	0.13	0.04	0.02	97.50	1.40	1.03
2008	81	0.003	918	5.1	18	161	194,627	**27.8**	29.2	-1.4	**-5%**	27.27	27.85	26.81	0.83	0.94	0.50	0.54	0.67	0.27	0.10	0.03	0.03	97.27	1.62	1.05
FNMA 15yr 5	167	0.005	2,900	5.5	26	152	153,893	**24.6**	23.1	1.6	**7%**	24.33	24.40	24.03	0.70	0.55	0.39	0.50	1.13	0.28	0.06	0.08	0.01	96.09	2.08	1.74
2010	13	0.039	180	5.4	40	137	119,727	**18.6**	19.1	-0.5	**-3%**	21.67	21.37	21.21	0.00	0.00	0.30	0.36	1.96	0.00	0.00	-	-	96.82	1.66	1.53
2009	38	0.023	555	5.5	32	146	123,332	**21.4**	17.6	3.8	**21%**	20.27	22.21	21.94	0.00	0.02	0.07	0.33	1.21	0.22	0.04	0.01	-	95.54	2.48	1.97
2008	93	0.005	1,266	5.6	19	160	169,760	**25.3**	23.9	1.4	**6%**	24.81	24.59	24.00	0.89	0.67	0.39	0.53	0.96	0.35	0.08	0.14	0.02	96.02	2.03	1.8
2007	14	0.002	688	5.7	11	169	182,466	**35.5**	33.3	2.2	**7%**	33.44	31.07	29.02	2.40	1.87	1.39	1.04	1.40	0.36	0.00	-	-	96.69	1.95	1.36

**n.m. - Not Meaningful*

Source: Bloomberg

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VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS 20yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Oct	Sep	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
FNMA 20yr 2	101,127	0.902	994	2.9	230	8	302,010	14.1	13.4	0.7	5%	12.11	10.03	9.91	0.03	0.03	0.04	0.04	0.21	0.03	0.02	0.00	0.00	99.37	0.51	0.12
2021	51,991	0.971	490	2.8	234	5	302,923	6.0	4.7	1.3	*n.m.	4.71	3.33	-	0.03	0.03	0.02	-	0.24	0.03	0.02	-	0.00	99.39	0.56	0.05
2020	49,135	0.839	502	2.9	226	12	301,046	21.9	20.8	1.1	5%	18.61	14.93	12.69	0.02	0.03	0.05	0.04	0.19	0.03	0.02	0.00	0.00	99.35	0.45	0.2
FNMA 20yr 2.5	42,871	0.638	1,313	3.3	221	16	265,805	27.7	26.0	1.7	6%	24.89	24.34	29.44	0.08	0.08	0.09	0.11	0.26	0.05	0.02	0.01	0.00	98.94	0.58	0.47
2021	12,805	0.974	425	3.2	235	4	243,783	6.0	4.7	1.4	*n.m.	4.60	3.31	-	0.03	0.03	0.02	-	0.34	0.03	0.01	-	-	99.22	0.73	0.05
2020	24,028	0.666	502	3.3	223	15	273,506	34.6	31.4	3.1	10%	30.01	27.20	28.31	0.09	0.09	0.10	0.11	0.24	0.06	0.03	0.01	0.00	98.89	0.55	0.54
2019	3,185	0.377	37	3.4	214	23	302,055	45.0	43.4	1.6	4%	41.69	41.67	48.93	0.22	0.22	0.15	0.19	0.25	0.07	0.04	0.04	0.01	98.26	0.36	1.33
2017	34	0.373	17	3.4	183	50	264,205	42.1	38.4	3.7	10%	37.59	31.70	36.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	97.31	0.32	2.37
2016	1,733	0.325	83	3.2	173	60	274,776	33.5	31.6	1.9	6%	31.55	32.43	38.00	0.00	0.00	0.10	0.11	0.17	0.02	0.03	0.04	-	98.87	0.36	0.72
2015	40	0.296	18	3.4	152	78	276,425	29.8	31.7	-1.9	-6%	24.88	31.56	35.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	1.00	-	-
2013	420	0.274	84	3.3	129	102	241,525	22.0	20.9	1.1	5%	21.06	23.05	23.32	0.00	0.00	0.00	0.07	0.23	0.02	0.03	0.01	-	98.77	0.45	0.77
2012	614	0.254	138	3.2	124	106	226,523	17.6	22.1	-4.5	-20%	19.71	20.71	23.40	0.17	0.06	0.03	0.05	0.17	0.04	0.04	0.01	-	99.00	0.50	0.49
FNMA 20yr 3	39,516	0.303	3,736	3.7	170	63	234,328	31.1	30.8	0.3	1%	30.17	31.56	34.84	0.13	0.16	0.17	0.19	0.39	0.09	0.05	0.04	0.01	98.01	0.71	1.23
2021	786	0.973	110	3.6	235	4	187,770	7.7	3.7	4.0	*n.m.	5.02	3.87	-	0.00	0.00	0.00	-	0.51	0.09	0.02	-	-	98.50	1.48	0.02
2020	3,733	0.586	263	3.8	220	17	235,500	37.0	33.5	3.5	10%	34.33	34.13	34.62	0.06	0.18	0.25	0.28	0.40	0.08	0.06	0.02	0.02	98.09	0.75	1.12
2019	6,545	0.365	214	3.8	213	24	256,342	44.8	44.5	0.3	1%	42.68	43.16	47.93	0.10	0.13	0.24	0.25	0.38	0.11	0.05	0.04	0.00	97.52	0.62	1.82
2018	142	0.318	36	3.7	191	43	259,425	32.0	28.2	3.8	14%	31.52	38.21	41.65	0.00	0.00	0.00	0.00	0.44	0.00	0.13	0.14	-	97.73	0.69	1.44
2017	2,347	0.315	162	3.7	184	50	242,140	34.1	32.6	1.5	5%	32.86	36.37	40.72	0.43	0.31	0.25	0.21	0.27	0.12	0.05	0.04	0.02	97.80	0.74	1.41
2016	9,887	0.327	516	3.6	172	61	236,744	31.3	31.1	0.2	1%	30.56	31.59	34.40	0.19	0.18	0.14	0.17	0.37	0.10	0.08	0.04	0.01	97.81	0.69	1.45
2015	4,197	0.259	361	3.7	158	75	237,065	28.7	29.9	-1.3	-4%	28.73	31.49	34.78	0.13	0.20	0.17	0.19	0.37	0.07	0.04	0.03	0.01	98.09	0.69	1.18
2014	672	0.201	107	3.8	148	83	229,187	28.9	27.1	1.8	7%	27.69	29.92	33.40	0.00	0.02	0.15	0.13	0.49	0.08	0.04	0.13	-	98.32	0.88	0.67
2013	5,372	0.267	925	3.6	130	101	209,479	20.6	19.9	0.7	4%	20.07	21.13	22.00	0.09	0.15	0.14	0.19	0.48	0.11	0.04	0.05	0.01	98.09	0.82	1.04
2012	5,779	0.214	1,012	3.6	122	109	228,837	21.2	23.0	-1.8	-8%	21.45	22.77	24.54	0.03	0.08	0.07	0.11	0.36	0.03	0.03	0.02	0.02	98.73	0.58	0.66
2011	50	0.161	24	3.6	112	118	229,019	25.5	14.1	11.4	81%	18.02	17.17	22.56	0.00	0.00	0.00	0.00	0.12	0.00	0.00	-	-	99.30	0.46	0.24
FNMA 20yr 3.5	19,698	0.218	4,705	4.1	157	75	207,141	28.7	29.5	-0.8	-3%	28.75	30.89	33.18	0.35	0.31	0.27	0.28	0.61	0.14	0.08	0.08	0.01	97.27	1.05	1.59
2021	41	0.982	24	4.3	235	4	208,089	5.0	0.3	4.7	*n.m.	1.91	4.52	-	0.00	0.00	0.00	-	0.00	0.00	0.00	-	-	1.00	-	-
2020	514	0.570	90	4.2	219	18	208,762	36.6	35.3	1.3	4%	34.76	38.16	36.44	0.00	0.51	0.48	0.49	0.79	0.19	0.11	0.05	-	96.88	1.41	1.66
2019	2,072	0.317	215	4.3	210	26	224,587	43.0	43.8	-0.8	-2%	41.61	43.97	47.23	0.63	0.56	0.45	0.39	0.74	0.27	0.11	0.13	0.01	96.30	0.98	2.59
2018	1,257	0.281	160	4.0	191	42	230,264	40.2	37.7	2.5	7%	38.61	40.17	44.54	0.19	0.60	0.40	0.31	0.64	0.09	0.15	0.12	0.00	96.86	1.07	1.95
2017	3,671	0.309	478	4.0	184	50	216,587	31.0	33.5	-2.5	-8%	32.25	35.86	39.02	0.37	0.41	0.35	0.37	0.65	0.16	0.06	0.11	0.01	96.70	1.22	1.96
2016	1,139	0.331	274	4.0	173	61	193,295	29.4	29.0	0.4	2%	28.65	29.48	30.95	0.35	0.33	0.22	0.23	0.75	0.18	0.11	0.12	0.04	96.40	1.25	2.19
2015	1,894	0.271	648	4.1	158	75	180,282	27.2	27.1	0.1	0%	26.78	28.22	28.58	0.27	0.25	0.37	0.31	0.78	0.16	0.13	0.07	0.03	96.78	1.37	1.74
2014	1,512	0.199	369	4.2	147	85	197,191	24.7	25.5	-0.8	-3%	25.11	26.66	28.71	0.58	0.24	0.19	0.22	0.65	0.12	0.10	0.08	0.02	97.24	1.27	1.39
2013	2,077	0.227	838	4.1	134	98	184,272	22.0	21.5	0.5	2%	21.03	22.34	22.84	0.46	0.25	0.22	0.33	0.57	0.17	0.09	0.05	0.02	97.53	0.99	1.41
2012	3,124	0.172	1,193	4.0	118	112	208,398	20.6	22.6	-2.1	-9%	21.78	23.28	24.37	0.22	0.11	0.10	0.15	0.45	0.11	0.04	0.06	0.02	98.09	0.86	0.96
2011	1,914	0.121	333	4.0	112	119	217,786	21.6	22.6	-1.1	-5%	22.57	23.78	24.86	0.18	0.14	0.11	0.14	0.38	0.03	0.02	0.05	-	98.65	0.60	0.71
2010	481	0.090	80	4.0	101	130	215,786	21.7	21.9	-0.2	-1%	21.08	23.10	24.10	0.16	0.05	0.03	0.04	0.30	0.01	0.04	0.05	0.01	98.97	0.48	0.49
FNMA 20yr 4	12,269	0.175	3,812	4.5	161	73	189,398	28.6	29.4	-0.8	-3%	29.76	31.46	32.56	0.37	0.44	0.37	0.41	0.93	0.20	0.13	0.11	0.02	96.24	1.54	2.08
2021	30	0.971	18	4.6	235	4	127,539	6.9	17.7	-10.9	-61%	11.64	6.18	-	0.00	0.00	0.00	-	1.11	0.46	0.00	-	-	96.89	3.00	-
2020	121	0.627	63	4.7	221	17	172,278	29.5	26.0	3.5	14%	29.20	30.55	31.05	0.00	0.87	0.44	1.08	0.67	0.00	0.38	-	-	96.37	1.34	2.29
2019	697	0.404	205	4.7	208	28	191,518	34.7	33.5	1.2	4%	35.97	37.10	37.98	0.48	0.90	0.82	0.77	1.15	0.30	0.11	0.23	-	94.58	2.15	3.03
2018	3,112	0.266	496	4.6	195	39	207,959	37.9	38.3	-0.3	-1%	38.96	41.59	43.83	0.38	0.51	0.40	0.41	0.80	0.21	0.15	0.11	0.02	96.13	1.29	2.44
2017	2,141	0.339	534	4.4	184	51	187,723	30.9	33.2	-2.3	-7%	32.86	34.32	34.36	0.49	0.65	0.50	0.54	1.22	0.29	0.22	0.12	0.05	95.00	2.05	2.78
2016	505	0.342	217	4.4	171	64	180,618	26.4	22.1	4.3	19%	24.26	25.21	25.62	1.04	0.50	0.48	0.51	1.24	0.27	0.16	0.05	0.04	95.57	2.18	2.16
2015	761	0.290	442	4.4	159	74	160,262	20.6	23.6	-3.1	-13%	23.91	24.59	24.39	0.57	0.63	0.46	0.37	1.19	0.26	0.15	0.06	-	95.86	1.86	2.21
2014	1,260	0.233	489	4.6	145	87	167,103	22.0	21.8	0.2	1%	22.61	23.81	23.88	0.27	0.33	0.37	0.39	1.34	0.18	0.11	0.17	0.00	95.75	2.00	2.06
2013	710	0.218	349	4.7	137	95	160,339	21.7	22.4	-0.7	-3%	22.17	22.90	22.75	0.57	0.19	0.31	0.36	0.94	0.21	0.02	0.09	0.01	96.92	1.23	1.74
2012	235	0.162	292	4.5	118	113	180,695	19.6	19.9	-0.3	-2%	20.40	21.93	23.13	0.00	0.27	0.36	0.64	0.32	0.13	0.09	0.08	0.03	97.18	1.04	1.67
2011	1,130	0.110	315	4.5	110	121	196,863	20.8	22.3	-1.6	-7%	22.25	23.16	23.04	0.12	0.09	0.12	0.17	0.59	0.09	0.07	0.10	0.02	97.60	1.04	1.24
2010	1,320	0.069	251	4.4	100	131	202,190	21.8	22.8	-1.0	-4%	22.04	23.24	23.30	0.06	0.11	0.08	0.19	0.50	0.07	0.03	0.07	0.02	98.26	0.88	0.78
2009	241	0.038	99	4.5	83	147	191,532	17.6	20.6	-3.1	-15%	20.22	20.56	20.71	0.00	0.11	0.06	0.21	0.49	0.06	0.08	0.01	-	98.25	0.96	0.77
FNMA 20yr 4.5	3,142	0.071	1,340	5.0	137	96	168,602	24.5	26.5	-1.9	-7%	25.26	26.05	26.32	0.34	0.40	0.37	0.48	1.00	0.30	0.15	0.12	0.02	95.95	1.68	2.23
2020	26	0.677	17	5.1	221	17	136,674	36.4	35.8	0.6	2%	29.37	29.55	27.00	0.00	0.00	0.00	0.00	0.23	0.27	0.00	-	-	95.53	2.75	1.72
2019	282	0.470	148	5.1	206	29	138,354	28.1	35.4	-7.3	-21%	31.72	32.98	31.99	0.87	0.66	0.36	0.37	1.22	0.57	0.17	0.19	-	94.33	1.81	3.67
2018	883	0.376	249	5.2	196	37	156,103	29.6	31.7	-2.1	-7%	29.82	32.13	33.22	0.29	0.58	0.49	0.60	1.44	0.36	0.24	0.20	0.01	94.16	2.33	3.3

VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS 20yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Oct*	*Sep*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2017	72	0.385	53	5.0	186	49	151,470	**27.2**	25.1	2.2	**9%**	27.98	29.38	28.35	0.00	0.59	0.29	0.89	1.17	0.53	0.32	0.24	-	90.94	3.25	5.56
2014	47	0.233	51	5.2	143	90	143,794	**23.8**	29.1	-5.3	**-18%**	25.90	23.07	23.27	0.00	0.10	0.50	0.89	1.07	0.08	0.31	-	-	94.73	2.15	3.11
2013	38	0.213	43	5.1	138	95	140,024	**22.7**	17.8	4.9	**27%**	19.64	22.66	23.72	0.00	0.58	0.54	0.38	1.47	0.23	0.00	-	-	96.62	1.63	1.75
2011	575	0.097	151	4.9	107	125	182,164	**21.6**	21.0	0.5	**3%**	21.15	21.72	21.38	0.11	0.20	0.35	0.43	0.85	0.32	0.08	0.07	0.04	96.95	1.31	1.63
2010	623	0.058	156	4.9	96	135	188,091	**22.3**	24.2	-1.9	**-8%**	23.32	22.78	22.23	0.24	0.32	0.22	0.44	0.75	0.09	0.11	0.11	0.04	97.21	1.24	1.41
2009	505	0.036	187	4.9	86	146	177,750	**18.4**	20.3	-1.8	**-9%**	19.64	19.24	20.47	0.61	0.33	0.42	0.38	0.51	0.27	0.10	0.03	0.02	97.99	1.08	0.88
2008	11	0.014	30	5.0	75	158	191,171	**14.7**	7.4	7.3	**99%**	23.47	20.99	18.49	0.00	0.00	0.00	1.74	1.73	0.00	0.00	-	-	95.22	4.07	0.71
2005	10	0.011	42	5.2	41	196	185,744	**8.4**	19.3	-10.9	**-56%**	17.93	19.30	18.24	0.15	0.06	0.03	0.02	1.31	0.01	0.00	-	-	98.86	0.66	0.49
2004	23	0.010	62	5.1	28	209	156,822	**25.8**	22.6	3.2	**14%**	22.43	20.03	21.51	0.00	0.00	0.00	0.08	0.98	0.39	0.06	0.10	-	96.74	1.83	1.32
2003	37	0.006	120	5.0	21	217	152,975	**24.2**	25.4	-1.2	**-5%**	25.55	25.59	23.64	1.02	0.37	0.22	0.38	1.07	0.22	0.06	0.06	-	96.94	1.72	1.28
FNMA 20yr 5	707	0.013	1,199	5.5	72	163	159,314	**19.5**	19.8	-0.3	**-1%**	20.66	21.72	21.10	0.49	0.56	0.53	0.53	1.45	0.32	0.06	0.17	0.01	95.84	2.08	1.9
2019	16	0.455	19	5.8	206	29	145,074	**21.2**	39.2	-18.0	**-46%**	38.09	37.69	32.11	0.00	0.00	0.00	0.62	1.33	0.00	0.00	-	-	96.63	2.35	1.01
2018	37	0.348	39	5.7	199	36	143,851	**33.7**	43.3	-9.7	**-22%**	42.60	42.76	38.27	1.88	4.39	3.34	2.37	2.60	0.43	0.00	0.22	-	92.73	1.57	5.48
2011	56	0.096	45	5.4	107	125	176,760	**32.4**	18.9	13.5	**71%**	25.24	26.45	24.29	0.00	0.00	0.00	0.10	0.96	0.23	0.01	0.57	-	94.80	2.52	2.1
2010	102	0.058	56	5.4	95	137	169,190	**16.0**	11.3	4.7	**42%**	15.80	18.94	20.60	0.00	0.30	0.33	0.39	1.18	0.31	0.01	0.02	0.00	95.00	1.84	3.14
2009	92	0.048	86	5.4	88	145	164,328	**14.2**	15.0	-0.8	**-5%**	16.90	18.71	18.86	0.69	0.41	0.33	0.32	1.60	0.20	0.08	0.27	-	95.70	2.48	1.55
2008	74	0.012	124	5.6	73	161	166,235	**18.9**	15.1	3.7	**25%**	16.23	14.50	15.89	1.67	1.01	0.52	0.53	2.11	0.66	0.16	0.07	-	94.85	3.25	1.82
2007	14	0.013	49	5.7	63	171	176,456	**10.2**	14.1	-3.9	**-28%**	13.71	20.61	17.19	0.00	0.00	1.96	0.99	0.77	0.27	0.06	-	-	96.19	2.99	0.82
2005	105	0.012	111	5.6	41	195	156,307	**14.4**	18.3	-3.9	**-21%**	16.85	17.09	16.49	0.00	0.21	0.19	0.42	1.22	0.17	0.08	0.21	0.03	97.00	1.58	1.18
2004	90	0.009	165	5.5	30	207	150,593	**16.8**	20.6	-3.9	**-19%**	18.47	19.12	19.26	0.86	0.41	0.25	0.40	1.37	0.34	0.02	0.19	0.02	96.69	1.81	1.29
2003	107	0.005	413	5.5	20	219	147,963	**22.8**	22.7	0.1	**0%**	22.06	22.56	21.52	0.13	0.19	0.30	0.31	1.29	0.24	0.11	0.05	0.00	97.03	1.74	1.18

**n.m. - Not Meaningful*

Source: Bloomberg

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VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS 30yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Oct*	*Sep*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
FNMA 30yr 1.5	215,209	0.948	1,392	2.5	348	9	403,566	**7.7**	7.2	0.5	**7%**	6.73	5.49	4.14	0.05	0.06	0.05	0.04	0.23	0.04	0.03	0.00	0.00	99.24	0.54	0.21
2021	86,668	0.967	597	2.5	351	7	410,300	**6.1**	5.2	0.9	**16%**	5.03	4.01	-	0.03	0.04	0.03	-	0.25	0.04	0.03	-	0.00	99.36	0.50	0.14
2020	128,535	0.936	774	2.5	346	11	399,036	**8.8**	8.5	0.3	**3%**	7.84	6.42	4.70	0.06	0.08	0.07	0.04	0.21	0.04	0.02	0.00	0.00	99.16	0.57	0.26
FNMA 30yr 2	1,447,423	0.925	14,992	2.9	348	9	370,176	**12.3**	12.1	0.2	**2%**	10.93	8.95	8.02	0.08	0.08	0.07	0.05	0.32	0.05	0.03	0.00	0.00	99.05	0.69	0.26
2021	690,381	0.973	7,154	2.9	353	5	381,190	**6.9**	6.2	0.7	**11%**	5.87	4.52	-	0.06	0.05	0.03	-	0.33	0.05	0.03	0.00	0.00	99.16	0.72	0.12
2020	756,813	0.886	7,608	2.9	343	12	360,174	**16.9**	16.5	0.4	**3%**	14.81	11.86	9.73	0.10	0.10	0.09	0.06	0.30	0.06	0.04	0.00	0.00	98.94	0.67	0.38
2019	47	0.744	19	3.0	332	24	314,616	**16.5**	27.2	-10.7	**-39%**	17.44	19.24	16.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	98.83	-	1.17
2017	30	0.809	39	2.8	306	50	195,795	**0.4**	8.8	-8.3	***n.m.**	13.99	13.39	9.50	0.00	0.00	0.00	0.00	0.78	0.00	0.00	-	-	97.68	0.75	1.56
2016	120	0.701	103	3.0	294	61	191,980	**14.6**	12.2	2.4	**20%**	11.87	9.47	9.44	0.00	0.00	0.00	0.00	1.53	0.53	0.24	0.23	-	95.56	1.44	2.76
2015	14	0.532	31	3.1	282	73	185,782	**44.2**	28.0	16.2	**58%**	31.88	23.40	20.93	0.00	0.00	0.00	0.00	0.57	0.00	0.00	-	-	99.57	-	0.43
2013	10	0.490	16	2.8	253	100	191,937	**23.1**	1.1	22.0	***n.m.**	20.29	17.39	13.39	0.00	0.00	0.00	0.00	0.00	1.46	0.00	-	-	93.22	1.46	5.33
FNMA 30yr 2.5	987,549	0.790	22,434	3.3	345	11	333,910	**21.6**	21.3	0.3	**1%**	19.93	18.79	23.40	0.14	0.14	0.13	0.14	0.42	0.07	0.05	0.01	0.00	98.56	0.83	0.6
2021	450,985	0.976	9,081	3.2	354	4	340,459	**7.8**	6.2	1.5	**24%**	6.24	4.59	-	0.08	0.05	0.03	-	0.44	0.06	0.03	0.00	0.00	99.03	0.87	0.1
2020	488,619	0.726	10,875	3.4	340	14	327,037	**30.7**	29.7	1.0	**3%**	27.55	24.02	24.44	0.17	0.17	0.16	0.15	0.42	0.09	0.06	0.02	0.00	98.26	0.82	0.9
2019	40,009	0.429	708	3.5	332	23	350,656	**41.5**	39.7	1.8	**4%**	38.07	36.59	44.85	0.37	0.41	0.34	0.31	0.33	0.09	0.06	0.10	0.02	97.09	0.55	2.25
2018	36	0.712	50	3.5	313	42	197,336	**17.4**	18.1	-0.7	**-4%**	22.49	14.85	13.89	4.82	1.63	0.82	0.41	1.50	0.67	0.43	-	-	96.22	0.90	2.88
2017	254	0.607	131	3.4	302	51	253,841	**19.6**	18.3	1.3	**7%**	19.16	19.72	22.70	2.54	1.25	0.79	0.57	0.91	0.37	0.05	0.04	-	96.02	1.57	2.37
2016	3,268	0.417	382	3.3	288	62	314,440	**31.4**	29.6	1.8	**6%**	29.09	29.23	35.11	0.25	0.16	0.15	0.18	0.42	0.06	0.07	0.08	-	97.81	0.48	1.62
2015	231	0.430	179	3.4	274	75	252,300	**23.2**	21.1	2.2	**10%**	25.49	25.27	28.11	0.00	0.24	0.12	0.06	0.77	0.07	0.17	0.55	-	96.37	0.41	2.67
2014	30	0.484	42	3.2	267	84	248,932	**27.9**	11.9	16.0	**135%**	14.65	18.77	22.34	0.00	0.00	0.00	0.39	0.86	0.00	0.00	-	-	96.49	0.69	2.82
2013	1,062	0.358	342	3.1	242	103	300,664	**21.5**	21.5	0.1	**0%**	20.51	22.16	25.52	0.00	0.00	0.07	0.19	0.25	0.02	0.04	-	-	98.60	0.55	0.85
2012	3,042	0.317	595	3.2	239	106	294,891	**24.5**	22.1	2.4	**11%**	22.81	23.66	28.99	0.00	0.06	0.04	0.11	0.17	0.08	0.02	0.02	0.02	98.73	0.46	0.77
FNMA 30yr 3	554,378	0.386	41,499	3.7	308	44	288,044	**33.3**	33.6	-0.3	**-1%**	32.55	33.49	38.93	0.32	0.34	0.32	0.33	0.53	0.13	0.09	0.08	0.01	96.94	0.96	2
2021	55,908	0.973	4,248	3.7	353	4	290,587	**8.9**	7.7	1.3	**16%**	7.45	5.73	-	0.06	0.06	0.04	-	0.65	0.11	0.05	0.00	0.00	98.54	1.32	0.15
2020	119,448	0.610	6,679	3.8	339	16	281,961	**35.3**	34.8	0.5	**1%**	33.44	32.34	34.01	0.33	0.35	0.34	0.35	0.62	0.16	0.12	0.06	0.01	96.74	1.19	2
2019	151,259	0.392	5,710	3.9	331	24	298,939	**42.6**	42.1	0.4	**1%**	40.89	40.57	46.24	0.53	0.55	0.52	0.47	0.56	0.17	0.11	0.15	0.02	95.78	0.85	3.2
2018	1,066	0.327	302	3.9	311	41	286,536	**37.3**	34.9	2.4	**7%**	35.26	38.63	45.09	0.59	0.61	0.37	0.31	0.69	0.29	0.15	0.04	-	95.78	1.01	3.18
2017	5,289	0.332	811	3.8	303	49	297,224	**36.4**	37.8	-1.4	**-4%**	35.65	37.51	44.17	0.27	0.31	0.34	0.31	0.54	0.17	0.09	0.09	0.02	96.23	0.82	2.84
2016	98,410	0.322	6,620	3.6	289	61	287,448	**33.7**	34.2	-0.5	**-1%**	33.20	34.67	40.01	0.31	0.32	0.28	0.30	0.50	0.12	0.08	0.09	0.02	96.87	0.93	2.1
2015	21,499	0.263	3,199	3.8	272	76	293,834	**33.4**	34.6	-1.2	**-3%**	33.79	36.34	42.35	0.15	0.20	0.14	0.18	0.39	0.08	0.05	0.06	0.02	97.76	0.65	1.51
2014	1,381	0.207	546	3.9	264	82	280,552	**33.4**	34.5	-1.1	**-3%**	33.34	36.15	42.61	0.24	0.33	0.26	0.23	0.44	0.07	0.08	0.11	0.02	97.75	0.78	1.35
2013	48,780	0.274	5,973	3.6	244	102	272,884	**25.9**	26.7	-0.8	**-3%**	25.85	27.69	31.54	0.23	0.18	0.16	0.21	0.45	0.09	0.05	0.05	0.02	97.81	0.81	1.32
2012	51,156	0.248	7,280	3.6	238	107	279,820	**26.5**	26.5	0.0	**0%**	26.19	28.12	33.05	0.15	0.14	0.12	0.15	0.35	0.07	0.04	0.04	0.01	98.17	0.73	1.04
2011	148	0.208	89	3.7	218	118	268,208	**20.9**	26.0	-5.2	**-20%**	23.09	26.76	32.44	0.00	0.00	0.00	0.07	0.21	0.02	0.00	-	-	98.70	0.51	0.78
2010	28	0.312	29	3.5	214	132	216,937	**12.6**	16.8	-4.3	**-25%**	14.01	19.39	23.45	0.00	0.00	0.00	0.00	0.00	0.21	0.00	-	-	97.65	1.06	1.29
FNMA 30yr 3.5	375,029	0.250	69,407	4.1	289	62	258,055	**35.0**	36.2	-1.2	**-3%**	35.36	37.73	41.35	0.59	0.55	0.50	0.49	0.77	0.21	0.13	0.15	0.03	95.46	1.39	2.97
2021	6,822	0.968	1,240	4.4	355	4	281,098	**12.8**	10.8	2.0	**18%**	11.53	9.05	-	0.11	0.07	0.05	-	0.86	0.11	0.04	-	0.00	98.15	1.70	0.15
2020	21,803	0.605	2,555	4.2	338	17	250,557	**34.3**	35.0	-0.6	**-2%**	33.69	34.35	34.40	0.56	0.63	0.62	0.63	0.92	0.25	0.15	0.14	0.02	95.17	1.67	3.01
2019	74,365	0.322	5,913	4.3	328	26	270,864	**43.0**	44.6	-1.6	**-4%**	43.43	44.97	47.47	1.10	1.01	0.92	0.80	0.93	0.31	0.21	0.26	0.03	93.41	1.45	4.84
2018	13,605	0.238	2,062	4.2	311	42	291,443	**41.3**	41.2	0.1	**0%**	41.01	44.44	50.09	0.83	0.71	0.64	0.63	0.71	0.23	0.15	0.17	0.02	94.69	1.26	3.86
2017	61,828	0.285	7,655	4.0	302	49	270,491	**37.9**	39.3	-1.4	**-3%**	38.14	40.70	45.54	0.65	0.57	0.48	0.47	0.67	0.21	0.12	0.16	0.03	95.46	1.27	3.07
2016	39,357	0.295	8,871	4.0	289	62	238,937	**33.6**	33.4	0.1	**0%**	33.09	34.99	38.10	0.62	0.58	0.51	0.52	1.00	0.25	0.15	0.19	0.04	94.67	1.80	3.3
2015	55,255	0.218	10,235	4.1	275	74	258,431	**34.4**	35.1	-0.7	**-2%**	34.62	37.45	41.29	0.43	0.35	0.32	0.35	0.75	0.19	0.11	0.13	0.02	95.93	1.41	2.5
2014	17,616	0.167	5,323	4.2	263	84	252,833	**33.0**	35.4	-2.4	**-7%**	34.70	37.86	41.59	0.45	0.44	0.34	0.34	0.71	0.17	0.09	0.13	0.03	96.22	1.35	2.27
2013	26,961	0.228	8,372	4.0	247	100	234,006	**26.5**	27.1	-0.6	**-2%**	27.05	29.04	31.13	0.28	0.30	0.32	0.36	0.75	0.17	0.09	0.11	0.02	96.50	1.42	1.96
2012	45,118	0.187	13,856	4.0	233	111	242,068	**26.3**	27.9	-1.6	**-6%**	26.95	29.42	32.54	0.23	0.22	0.19	0.23	0.57	0.12	0.07	0.06	0.02	97.32	1.08	1.53
2011	8,981	0.133	2,078	4.0	225	119	260,154	**28.4**	30.0	-1.6	**-5%**	28.78	31.65	36.37	0.23	0.17	0.14	0.17	0.43	0.09	0.04	0.03	0.02	97.81	0.86	1.27
2010	3,116	0.107	1,053	4.1	212	131	260,886	**29.3**	31.2	-1.8	**-6%**	30.12	32.46	36.75	0.01	0.11	0.17	0.21	0.34	0.04	0.04	0.02	0.01	98.15	0.87	0.96
2009	177	0.137	136	4.0	193	148	239,566	**19.3**	19.5	-0.2	**-1%**	22.38	25.39	27.32	0.35	0.12	0.51	0.45	0.48	0.03	0.23	0.14	0.26	96.54	1.68	1.38
FNMA 30yr 4	270,838	0.193	75,566	4.6	285	65	236,101	**35.7**	36.7	-0.9	**-2%**	36.20	38.59	40.52	0.84	0.84	0.78	0.75	1.15	0.32	0.19	0.24	0.04	93.72	1.98	4.02
2021	1,575	0.939	457	4.8	354	4	273,726	**19.0**	20.8	-1.8	**-8%**	20.77	19.11	-	0.39	0.29	0.15	-	0.93	0.15	0.04	-	-	97.58	2.22	0.21
2020	8,849	0.591	1,645	4.7	338	17	242,126	**35.6**	36.0	-0.4	**-1%**	36.02	38.09	36.15	0.85	0.77	0.77	0.82	1.15	0.30	0.24	0.13	0.02	94.17	1.97	3.71
2019	37,093	0.341	5,116	4.8	327	27	246,419	**41.4**	42.1	-0.7	**-2%**	41.51	43.35	44.02	1.36	1.38	1.30	1.17	1.35	0.45	0.28	0.35	0.05	91.75	2.03	5.82
2018	52,704	0.209	7,082	4.7	314	39	268,080	**43.8**	45.0	-1.2	**-3%**	44.44	47.54	50.46	1.20	1.16	1.07	0.94	1.06	0.32	0.21	0.31	0.05	92.72	1.82	5.11
2017	48,051	0.287	8,998	4.5	302	51	238,823	**37.3**	37.9	-0.6	**-2%**	37.63	39.81	41.86	0.96	0.99	0.91	0.82	1.31	0.37	0.21	0.29	0.05	92.58	2.27	4.81
2016	14,701	0.293	6,157	4.5	289	62	213,152	**33.4**	32.9	0.6	**2%**	33.04	34.63	35.12	1.00	0.88	0.80	0.78	1.50	0.43	0.20	0.29	0.04	92.60	2.54	4.53

VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS 30yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Oct	Sep	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2015	17,099	0.235	7,784	4.6	277	74	210,242	31.8	31.9	-0.2	-1%	31.92	33.56	34.42	0.84	0.76	0.68	0.67	1.47	0.41	0.21	0.23	0.04	93.36	2.62	3.75
2014	24,431	0.165	9,239	4.6	262	87	217,357	30.0	32.3	-2.3	-7%	31.24	33.71	35.31	0.58	0.57	0.48	0.52	1.21	0.32	0.16	0.19	0.03	94.52	2.20	3.05
2013	19,500	0.160	7,604	4.6	250	97	209,277	28.8	30.1	-1.3	-4%	29.43	31.26	32.90	0.38	0.41	0.36	0.42	1.02	0.25	0.12	0.15	0.02	95.45	1.92	2.45
2012	12,085	0.183	7,558	4.5	232	112	198,514	25.7	27.0	-1.3	-5%	26.26	27.85	28.35	0.23	0.31	0.32	0.40	0.93	0.23	0.11	0.11	0.03	95.86	1.67	2.33
2011	13,933	0.120	5,980	4.5	224	121	226,474	27.8	27.7	0.2	1%	27.52	29.85	31.75	0.14	0.20	0.20	0.28	0.73	0.14	0.09	0.06	0.02	96.72	1.29	1.91
2010	14,120	0.089	4,921	4.5	213	131	236,444	28.6	28.5	0.1	0%	28.74	31.01	33.46	0.20	0.24	0.22	0.28	0.61	0.12	0.07	0.08	0.02	97.26	1.18	1.47
2009	6,408	0.053	2,691	4.5	196	148	242,619	26.2	27.6	-1.4	-5%	27.01	29.48	31.54	0.18	0.15	0.20	0.30	0.52	0.16	0.08	0.07	0.03	97.11	1.14	1.65
2008	123	0.052	80	4.6	188	154	233,067	24.5	27.4	-2.9	-11%	24.59	25.19	29.37	0.00	0.25	0.53	0.35	0.44	0.19	0.28	0.18	-	97.98	0.71	1.13
2007	36	0.057	13	4.7	173	171	188,411	24.4	28.3	-3.9	-14%	24.25	26.40	30.21	0.00	0.29	0.15	0.88	2.34	0.32	0.00	0.38	-	92.50	4.77	2.35
2005	51	0.099	36	4.6	152	196	201,121	15.6	23.8	-8.2	-35%	19.64	19.27	19.61	0.00	1.22	0.87	0.44	0.71	0.42	0.00	0.25	0.29	96.55	1.50	1.41
2004	20	0.053	36	4.9	142	207	166,293	15.8	18.0	-2.2	-12%	18.10	17.95	21.58	0.00	0.28	0.14	0.18	0.21	0.97	0.00	-	-	98.16	1.52	0.32
2003	48	0.059	149	4.7	127	218	164,028	21.2	18.0	3.2	18%	19.65	18.48	18.24	0.00	0.00	0.00	0.21	0.51	0.09	0.06	0.09	-	97.72	1.08	1.11
FNMA 30yr 4.5	122,313	0.132	53,738	5.0	278	73	215,330	34.0	35.6	-1.7	-5%	34.84	36.72	37.08	1.08	1.16	1.04	1.01	1.47	0.46	0.26	0.34	0.05	92.06	2.54	5
2021	91	0.896	57	5.1	353	5	261,746	25.8	17.2	8.7	51%	23.91	28.30	-	0.00	0.00	0.00	-	0.92	0.28	0.40	-	-	97.91	1.69	0.4
2020	2,835	0.572	842	5.2	339	17	222,653	38.9	40.3	-1.4	-4%	39.14	39.58	37.74	0.95	1.16	0.96	0.91	1.38	0.42	0.28	0.16	0.02	93.58	2.21	4.03
2019	15,878	0.398	3,513	5.2	326	28	222,146	39.3	40.5	-1.2	-3%	39.72	41.18	40.16	1.57	1.68	1.48	1.37	1.63	0.58	0.35	0.46	0.06	90.19	2.56	6.73
2018	39,742	0.277	6,848	5.1	316	38	225,341	39.9	42.1	-2.2	-5%	41.16	43.21	43.73	1.50	1.72	1.56	1.38	1.67	0.56	0.33	0.50	0.07	89.73	2.84	6.86
2017	13,479	0.309	4,814	5.0	302	50	214,823	35.7	36.6	-0.9	-2%	35.72	37.33	37.18	1.31	1.32	1.15	1.16	1.88	0.58	0.35	0.40	0.06	89.68	3.32	6.52
2016	2,579	0.270	1,584	4.9	289	62	204,342	31.7	32.3	-0.6	-2%	32.42	34.14	33.41	1.58	1.29	1.09	1.14	2.06	0.63	0.18	0.39	0.06	89.96	3.52	6.07
2015	1,749	0.285	1,430	4.9	274	74	146,900	27.8	28.6	-0.8	-3%	27.85	28.59	27.92	0.77	0.83	0.69	0.87	1.91	0.57	0.29	0.31	0.06	92.24	3.30	4.09
2014	4,991	0.193	4,463	5.0	261	88	169,591	27.8	28.5	-0.7	-2%	27.81	29.34	29.09	1.09	0.85	0.72	0.77	1.82	0.43	0.25	0.22	0.06	93.00	3.11	3.61
2013	4,134	0.172	3,245	5.0	252	96	174,231	27.7	28.4	-0.7	-2%	27.96	29.21	28.99	0.49	0.50	0.53	0.57	1.54	0.43	0.25	0.31	0.04	93.68	2.83	3.13
2012	1,109	0.176	1,719	5.0	231	114	168,804	26.5	25.4	1.1	4%	25.76	27.58	26.59	0.16	0.40	0.36	0.42	1.26	0.22	0.22	0.25	0.02	94.55	2.20	2.98
2011	10,741	0.105	7,825	4.9	221	124	207,396	25.2	27.4	-2.2	-8%	26.35	28.12	28.88	0.22	0.29	0.27	0.39	1.01	0.26	0.14	0.11	0.02	95.76	1.70	2.41
2010	9,681	0.072	6,518	4.9	211	134	222,153	26.4	28.1	-1.7	-6%	27.30	29.15	30.40	0.37	0.38	0.33	0.42	0.90	0.25	0.11	0.10	0.03	96.03	1.69	2.15
2009	13,099	0.043	6,434	4.9	198	147	226,312	25.0	26.7	-1.7	-6%	26.34	28.59	29.80	0.46	0.33	0.32	0.44	0.83	0.22	0.11	0.11	0.02	96.21	1.76	1.89
2008	388	0.021	674	5.2	190	157	222,947	19.6	24.2	-4.6	-19%	23.08	24.05	25.52	0.00	0.69	0.57	0.83	1.20	0.36	0.16	0.12	0.07	95.77	1.81	2.24
2007	64	0.042	191	5.2	176	170	185,394	18.1	44.6	-26.4	-59%	28.99	24.91	24.58	0.00	1.20	0.60	0.49	1.75	0.00	0.01	-	-	95.75	2.90	1.35
2006	56	0.052	105	5.3	159	184	204,699	20.7	24.3	-3.6	-15%	21.35	22.42	21.15	0.00	0.00	0.00	0.27	2.06	0.00	0.03	0.27	-	94.70	2.36	2.67
2005	288	0.024	852	5.2	153	195	192,974	19.6	20.3	-0.8	-4%	20.79	22.60	22.43	0.00	0.33	0.45	0.40	1.06	0.23	0.13	0.11	0.08	95.26	2.16	2.38
2004	313	0.038	693	5.1	141	207	187,215	15.7	18.1	-2.3	-13%	17.81	18.79	18.91	1.15	0.78	0.59	0.38	0.95	0.25	0.03	0.10	-	95.01	2.19	2.7
2003	1,087	0.028	1,871	5.1	130	218	182,609	18.1	17.8	0.4	2%	17.74	19.78	20.32	0.70	0.36	0.31	0.40	1.01	0.21	0.13	0.16	0.02	96.50	1.87	1.46
FNMA 30yr 5	43,255	0.052	45,000	5.6	240	110	196,589	30.2	31.8	-1.6	-5%	31.17	32.30	31.56	1.25	1.37	1.22	1.15	1.75	0.46	0.26	0.39	0.04	91.68	2.93	4.95
2021	16	0.940	9	5.4	352	5	272,257	2.2	13.3	-11.0	-83%	13.08	17.73	-	0.00	0.00	0.00	-	0.87	0.00	0.00	-	-	97.50	2.00	-
2020	329	0.495	168	5.7	336	18	225,942	39.8	41.9	-2.2	-5%	41.63	44.70	44.05	0.00	1.34	1.61	1.31	1.75	0.72	0.16	0.14	-	90.94	2.52	6.4
2019	5,907	0.416	2,160	5.7	326	28	211,732	40.0	40.9	-0.9	-2%	40.46	41.30	39.25	1.70	2.17	1.89	1.67	1.98	0.62	0.36	0.52	0.06	88.39	2.90	8.13
2018	11,638	0.336	3,043	5.7	316	37	197,405	38.1	40.4	-2.4	-6%	39.58	40.45	39.18	2.30	2.53	2.19	1.83	2.14	0.65	0.42	0.73	0.09	87.53	3.50	8.15
2017	404	0.268	266	5.5	302	51	219,472	37.3	38.1	-0.9	-2%	37.06	39.30	37.78	1.73	2.39	1.99	1.82	2.20	0.76	0.46	0.60	0.08	83.76	5.51	10.05
2016	16	0.275	15	5.4	287	60	164,007	55.3	36.6	18.7	51%	36.08	45.49	38.41	0.00	0.00	1.17	1.20	0.92	0.94	0.00	-	-	89.05	8.35	2.6
2014	407	0.211	526	5.4	260	89	141,952	23.0	33.9	-11.0	-32%	28.06	28.40	27.57	1.36	1.37	1.00	0.96	2.30	0.55	0.27	0.26	0.02	91.91	4.12	3.69
2013	390	0.168	428	5.4	252	96	169,112	24.0	31.2	-7.2	-23%	27.40	28.69	27.85	0.00	0.30	0.48	0.53	1.68	0.58	0.29	0.13	-	92.45	3.76	3.66
2012	48	0.166	160	5.5	231	115	148,383	35.0	34.6	0.4	1%	34.98	32.34	27.77	0.00	1.25	0.63	0.31	0.95	0.57	0.21	0.28	-	94.08	3.54	2.1
2011	3,155	0.107	4,103	5.4	221	125	198,862	26.4	28.3	-1.9	-7%	27.54	28.54	28.06	0.43	0.55	0.47	0.63	1.32	0.29	0.18	0.23	0.03	94.41	2.37	2.97
2010	4,705	0.074	3,921	5.4	210	136	209,058	26.4	27.7	-1.3	-5%	28.00	29.59	29.11	0.72	0.59	0.61	0.75	1.47	0.28	0.17	0.22	0.02	93.85	2.61	3.31
2009	4,341	0.053	4,560	5.4	201	145	199,599	25.1	26.0	-0.9	-4%	25.59	26.95	26.97	0.78	0.60	0.57	0.72	1.41	0.34	0.18	0.19	0.01	94.42	2.65	2.73
2008	1,525	0.016	2,773	5.6	187	160	212,004	24.4	23.0	1.4	6%	23.33	23.28	22.92	1.89	1.63	1.03	0.92	1.76	0.32	0.18	0.22	0.01	94.39	2.82	2.56
2007	439	0.020	1,351	5.7	177	171	213,877	15.1	23.6	-8.5	-36%	18.13	19.80	19.87	0.30	0.67	0.64	0.88	1.73	0.38	0.17	0.42	0.02	94.77	2.78	2.01
2006	457	0.025	1,123	5.8	165	182	192,142	16.2	19.2	-3.0	-16%	18.78	21.45	20.83	0.00	0.72	0.52	0.64	1.49	0.35	0.25	0.19	0.05	94.81	2.78	2.16
2005	2,815	0.020	6,064	5.7	154	195	194,680	22.3	20.3	2.0	10%	21.40	22.33	22.06	0.68	0.52	0.53	0.59	1.62	0.35	0.20	0.16	0.01	94.56	2.66	2.61
2004	1,951	0.022	5,525	5.6	140	208	180,416	20.6	21.8	-1.1	-5%	20.83	20.97	20.49	0.48	0.44	0.49	0.61	1.50	0.28	0.11	0.26	0.02	95.06	2.60	2.06
2003	4,604	0.020	8,308	5.5	129	218	164,348	17.3	19.3	-2.0	-10%	18.03	19.12	18.93	0.39	0.33	0.33	0.44	1.51	0.33	0.13	0.14	0.02	95.57	2.52	1.75
2002	88	0.025	390	5.7	120	227	152,228	19.3	16.8	2.6	15%	17.15	15.52	17.58	0.00	0.98	0.70	0.83	1.20	0.36	0.08	0.08	-	95.54	2.59	1.79
2001	10	0.049	48	5.6	109	238	111,755	15.7	5.4	10.3	188%	10.73	13.02	16.48	0.00	0.00	0.00	0.19	1.79	0.02	0.32	-	-	98.44	1.00	-
FNMA 30yr 5.5	20,112	0.018	55,770	6.0	165	183	170,280	20.9	22.4	-1.5	-7%	21.85	22.43	21.60	0.90	1.02	0.81	0.88	2.00	0.45	0.22	0.26	0.04	93.56	3.25	2.89
2020	10	0.513	9	6.0	335	19	154,428	0.5	54.7	-54.1	*n.m.	41.88	41.42	42.64	0.00	0.00	0.00	3.32	3.20	1.85	0.00	-	-	92.68	1.69	5.63
2019	392	0.423	318	6.2	323	29	170,353	34.7	40.2	-5.5	-14%	37.35	39.85	38.06	2.40	3.32	2.41	2.17	2.06	0.58	0.57	0.70	0.06	85.84	4.16	9.24

VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS 30yr

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Oct*	*Sep*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2018	955	0.333	505	6.2	318	36	189,329	**45.7**	45.4	0.3	**1%**	45.22	44.03	41.05	5.02	5.42	4.03	3.04	2.07	0.74	0.75	1.33	0.11	83.20	4.46	10.89
2011	155	0.116	515	5.9	220	125	145,732	**25.8**	28.2	-2.3	**-8%**	25.30	25.22	25.82	1.38	0.79	0.51	0.90	1.85	0.53	0.07	0.08	0.10	92.88	3.01	3.93
2010	382	0.095	952	5.9	209	137	173,047	**26.3**	24.8	1.5	**6%**	27.52	28.69	27.69	0.48	0.78	0.82	1.02	1.97	0.41	0.46	0.65	0.04	92.24	3.64	3.44
2009	719	0.072	1,635	5.9	200	145	168,783	**24.4**	25.8	-1.3	**-5%**	24.84	25.04	25.14	0.10	0.80	0.66	0.87	1.75	0.46	0.23	0.19	0.05	93.33	3.28	3.15
2008	2,108	0.016	5,275	6.0	188	160	191,338	**19.9**	22.0	-2.1	**-10%**	21.43	22.01	21.45	1.14	1.55	1.11	1.05	1.88	0.49	0.17	0.29	0.06	93.78	3.04	2.83
2007	2,202	0.014	5,496	6.1	178	171	202,127	**21.3**	21.8	-0.5	**-2%**	21.56	22.24	21.08	1.49	1.26	0.83	0.89	2.28	0.54	0.21	0.23	0.02	93.46	3.36	2.93
2006	1,190	0.014	3,898	6.1	167	182	193,826	**19.4**	23.0	-3.6	**-16%**	21.95	21.79	20.92	0.50	0.59	0.51	0.70	2.39	0.40	0.24	0.24	0.00	93.70	3.34	2.72
2005	2,956	0.023	9,998	6.0	154	194	167,868	**20.1**	21.6	-1.5	**-7%**	20.53	21.21	20.27	0.51	0.52	0.52	0.79	2.05	0.50	0.21	0.17	0.05	94.36	3.33	2.09
2004	2,907	0.023	9,708	5.9	141	206	160,676	**17.7**	18.2	-0.5	**-3%**	18.30	18.70	18.01	0.49	0.58	0.48	0.67	2.21	0.43	0.20	0.16	0.04	94.10	3.38	2.31
2003	4,804	0.016	12,133	5.9	129	219	150,580	**16.5**	18.3	-1.8	**-10%**	17.61	18.36	17.63	0.43	0.43	0.41	0.53	1.78	0.35	0.13	0.14	0.02	95.10	2.87	1.86
2002	1,218	0.009	4,277	6.0	121	227	150,150	**16.7**	18.6	-1.9	**-10%**	18.10	18.98	18.32	0.31	0.38	0.40	0.40	1.67	0.36	0.21	0.12	0.01	95.22	2.95	1.7
2001	57	0.009	539	6.1	109	240	134,500	**17.9**	16.0	1.9	**12%**	14.89	16.63	17.00	0.00	0.65	0.43	0.43	1.91	0.20	0.17	0.13	-	94.94	2.95	1.98
1999	12	0.015	167	6.1	84	268	119,428	**23.4**	15.3	8.2	**54%**	18.14	22.22	17.12	0.00	0.55	1.23	0.62	1.01	0.12	0.03	0.41	-	95.84	1.35	2.4
1998	18	0.007	237	6.2	75	275	115,275	**18.6**	18.4	0.2	**1%**	16.83	14.31	13.90	0.00	0.00	0.00	0.28	2.84	0.93	0.00	0.37	-	94.67	4.13	0.83
FNMA 30yr 6	12,322	0.014	54,671	6.5	157	191	155,816	**19.1**	20.5	-1.5	**-7%**	19.61	19.71	18.76	0.86	1.02	0.81	0.95	2.48	0.55	0.24	0.23	0.04	93.25	3.86	2.62
2019	41	0.329	45	6.5	326	29	208,264	**59.2**	39.4	19.8	**50%**	47.38	48.92	44.92	0.00	4.60	2.96	2.88	1.76	0.00	0.38	0.32	-	88.86	3.34	7.47
2018	76	0.284	53	6.5	321	35	219,762	**60.6**	55.7	4.9	**9%**	58.73	54.46	51.03	0.00	6.70	6.52	5.08	3.95	0.82	0.74	1.28	-	79.15	7.04	12.52
2010	12	0.116	72	6.5	207	137	132,259	**27.0**	47.4	-20.4	**-43%**	32.10	25.08	19.65	0.00	0.00	3.27	1.87	1.63	0.00	0.00	0.79	-	91.63	1.91	5.68
2009	102	0.066	527	6.5	198	147	154,800	**24.4**	22.1	2.4	**11%**	21.61	23.70	22.93	0.00	0.00	0.50	0.81	2.85	0.26	0.07	0.06	0.04	92.25	4.25	3.4
2008	1,174	0.018	4,819	6.5	188	159	172,854	**18.3**	21.2	-2.9	**-14%**	20.44	20.68	19.69	1.24	1.74	1.07	1.22	2.58	0.68	0.22	0.29	0.07	92.40	4.11	3.13
2007	2,982	0.016	8,288	6.6	178	170	174,940	**21.3**	22.4	-1.1	**-5%**	21.24	20.85	19.81	1.60	1.95	1.34	1.28	2.68	0.62	0.25	0.26	0.04	92.32	4.25	3.13
2006	2,340	0.016	8,148	6.6	166	183	169,802	**18.7**	23.1	-4.4	**-19%**	20.77	20.82	19.31	0.60	0.56	0.64	0.89	2.56	0.61	0.26	0.25	0.05	93.19	3.96	2.55
2005	1,178	0.026	5,331	6.5	155	193	146,921	**18.3**	18.8	-0.6	**-3%**	18.61	19.32	18.34	0.41	0.58	0.50	0.88	2.64	0.53	0.21	0.25	0.05	93.62	3.75	2.33
2004	1,420	0.025	5,268	6.5	140	207	132,010	**17.8**	16.2	1.6	**10%**	16.78	17.40	16.85	0.66	0.54	0.48	0.69	2.39	0.52	0.24	0.15	0.05	93.80	3.69	2.31
2003	1,094	0.016	5,179	6.5	129	218	134,874	**16.6**	15.7	0.8	**5%**	15.91	16.51	15.83	0.78	0.52	0.53	0.67	2.40	0.41	0.25	0.20	0.03	94.21	3.46	2.11
2002	1,201	0.008	6,886	6.5	119	229	135,286	**16.4**	18.5	-2.1	**-11%**	16.81	16.60	15.89	0.30	0.18	0.26	0.47	2.09	0.43	0.19	0.15	0.02	94.86	3.15	1.81
2001	400	0.005	3,703	6.6	108	240	120,709	**12.7**	17.4	-4.7	**-27%**	16.09	15.96	15.50	0.59	0.51	0.30	0.34	1.90	0.37	0.22	0.23	0.00	94.87	3.56	1.34
1999	87	0.005	1,597	6.6	80	270	121,643	**15.0**	13.8	1.2	**9%**	16.12	15.91	15.50	0.00	0.73	0.39	0.50	1.70	0.54	0.09	0.05	-	95.54	3.08	1.34
1998	166	0.003	3,449	6.6	75	276	117,426	**14.5**	14.9	-0.4	**-2%**	14.12	14.80	14.61	0.57	0.19	0.11	0.29	1.34	0.27	0.21	0.13	0.06	95.26	3.01	1.54
1993	11	0.002	667	6.6	23	335	113,697	**13.1**	14.1	-1.0	**-7%**	14.13	18.06	17.48	0.00	0.00	0.00	0.11	0.90	0.11	0.00	-	-	97.55	1.77	0.68

**n.m. - Not Meaningful*

Source: Bloomberg

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VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS Jumbos

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	Factor	# of Pools	WAC	WAM	WALA	WAOLS	Oct	Sep	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
15yr Jumbo 2	441	0.501	61	2.5	161	17	647,702	53.5	56.5	-3.0	-5%	49.86	46.93	43.85	0.00	0.58	0.29	0.15	0.38	0.00	0.00	-	-	99.34	0.38	0.29
2013	27	0.210	17	2.6	76	100	548,850	22.8	46.4	-23.6	-51%	28.86	27.98	28.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	97.03	-	2.97
15yr Jumbo 2.5	741	0.206	213	3.0	96	77	544,248	29.4	32.6	-3.2	-10%	30.63	32.94	37.71	0.00	0.17	0.08	0.32	0.28	0.03	0.00	0.04	-	98.64	0.54	0.78
2021	7	0.800	4	3.2	175	5	688,641	0.4	74.2	-73.8	*n.m.	36.83	59.46	-	0.00	0.00	0.00	-	0.00	0.00	0.00	-	-	1.00	-	-
2020	19	0.623	11	3.1	163	14	641,529	32.2	2.1	30.1	*n.m.	23.20	19.79	36.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	97.00	-	-
2019	32	0.152	9	3.1	150	24	583,572	41.1	55.1	-14.0	-25%	45.17	57.84	67.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	94.69	1.67	3.64
2017	30	0.260	18	3.0	124	49	533,745	17.4	30.3	-12.9	-43%	32.48	42.51	50.66	0.00	0.00	0.00	1.02	0.00	0.00	0.00	-	-	98.64	-	1.36
2016	227	0.274	25	2.9	114	60	524,956	29.2	40.9	-11.7	-29%	34.90	37.45	42.06	0.00	0.00	0.00	0.44	0.66	0.00	0.00	-	-	99.04	0.50	0.46
2015	85	0.188	32	3.0	97	76	534,339	33.7	39.2	-5.5	-14%	36.70	38.02	40.23	0.00	1.46	0.73	0.37	0.36	0.00	0.00	-	-	98.33	0.85	0.81
2013	196	0.215	55	3.0	73	101	546,056	27.7	20.9	6.8	32%	21.77	22.10	23.41	0.00	0.00	0.00	0.24	0.15	0.00	0.00	0.16	-	98.67	0.44	0.74
2012	127	0.137	39	3.0	67	107	552,974	30.3	19.7	10.6	54%	26.24	24.97	27.74	0.00	0.00	0.00	0.18	0.00	0.18	0.00	0.01	-	99.02	0.16	0.81
15yr Jumbo 3	150	0.082	160	3.5	76	98	563,376	23.9	35.3	-11.4	-32%	28.93	30.67	31.60	0.00	0.00	0.00	0.00	0.68	0.00	0.12	-	-	97.87	0.74	1.39
2017	26	0.268	16	3.5	122	51	574,313	21.4	51.8	-30.4	-59%	39.65	45.69	44.74	0.00	0.00	0.00	0.00	1.35	0.00	0.00	-	-	94.91	1.35	3.74
2012	37	0.074	41	3.5	61	113	547,494	11.2	10.2	1.0	10%	12.28	17.62	20.39	0.00	0.00	0.00	0.00	1.26	0.00	0.00	-	-	97.53	1.79	0.68
2011	58	0.054	40	3.4	56	119	574,186	23.1	29.8	-6.7	-23%	27.27	27.02	26.45	0.00	0.00	0.00	0.00	0.17	0.00	0.31	-	-	99.34	-	0.66
15yr Jumbo 3.5	59	0.035	112	3.9	67	108	587,898	18.0	40.7	-22.8	-56%	28.27	30.63	30.16	0.00	0.00	0.00	0.44	0.00	0.00	0.00	-	-	96.71	0.59	2.69
2011	32	0.030	55	3.9	53	122	570,799	29.0	38.4	-9.3	-24%	30.26	27.24	27.76	0.00	0.00	0.00	0.65	0.00	0.00	0.00	-	-	98.05	1.09	0.86
30yr Jumbo 2.5	27,549	0.693	596	3.3	348	10	667,583	29.2	30.6	-1.4	-4%	27.16	27.67	37.91	0.16	0.16	0.12	0.13	0.40	0.07	0.04	0.01	0.00	98.54	0.72	0.73
2016	225	0.449	29	3.3	290	59	554,185	33.4	34.2	-0.8	-2%	32.83	31.57	39.02	0.00	0.00	0.00	0.19	0.00	0.00	0.00	-	-	97.61	-	2.39
2012	48	0.184	17	3.5	240	106	548,705	32.3	48.2	-16.0	-33%	42.37	44.66	50.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	97.14	-	2.86
30yr Jumbo 3	14,411	0.210	1,122	3.8	296	57	578,737	45.5	47.4	-1.9	-4%	45.39	49.35	57.27	0.86	0.85	0.65	0.49	0.50	0.11	0.10	0.23	0.02	95.11	0.84	3.8
2021	185	0.968	45	3.8	356	4	721,295	21.7	5.3	16.4	308%	11.65	6.03	-	0.00	0.00	0.00	-	0.64	0.00	0.00	-	-	98.57	1.00	-
2020	2,383	0.336	143	3.9	340	17	653,158	54.2	53.9	0.3	1%	51.51	54.96	60.57	0.27	0.65	0.46	0.44	0.58	0.03	0.13	0.18	0.02	94.26	0.83	4.71
2019	3,141	0.200	136	3.9	333	24	614,090	56.2	58.0	-1.7	-3%	55.80	58.33	65.81	2.17	1.91	1.47	0.95	0.68	0.13	0.22	0.58	0.02	92.37	1.06	5.97
2018	82	0.341	14	3.9	315	39	599,045	25.7	40.6	-14.9	-37%	38.99	40.52	46.70	0.00	0.00	1.12	0.56	1.91	0.00	0.00	-	-	90.80	0.70	8.5
2017	487	0.215	69	3.8	302	50	551,061	44.1	37.8	6.3	17%	41.80	48.71	57.69	0.00	0.31	0.57	0.43	0.33	0.53	0.00	0.10	-	94.68	0.80	4.42
2016	3,276	0.215	163	3.7	289	62	538,107	40.8	43.8	-3.0	-7%	41.47	45.31	53.65	1.29	1.05	0.73	0.53	0.46	0.10	0.07	0.19	-	95.67	0.92	3.22
2015	1,145	0.200	141	3.7	274	76	543,802	38.7	48.4	-9.7	-20%	42.33	45.26	53.10	0.00	0.00	0.07	0.16	0.38	0.16	0.00	0.08	-	96.62	0.63	2.67
2014	211	0.240	23	3.7	265	83	532,875	38.1	34.4	3.8	11%	35.54	36.33	42.88	0.00	0.00	0.34	0.17	0.29	0.19	0.00	-	-	98.96	0.43	0.61
2013	1,634	0.174	169	3.7	247	101	543,657	35.9	38.3	-2.4	-6%	37.01	41.57	48.77	0.32	0.32	0.20	0.20	0.20	0.06	0.07	0.05	-	97.22	0.42	2.31
2012	1,865	0.157	217	3.7	241	107	544,944	35.7	36.2	-0.5	-1%	35.33	41.50	50.27	0.00	0.18	0.09	0.16	0.48	0.12	0.05	0.10	0.11	96.55	0.87	2.36
30yr Jumbo 3.5	7,381	0.128	1,255	4.2	290	63	575,060	43.8	48.3	-4.5	-9%	45.83	51.77	56.55	1.74	1.34	1.33	1.13	0.85	0.27	0.15	0.50	0.03	91.55	1.64	6.27
2021	22	0.959	8	4.4	352	5	731,484	25.7	0.1	25.6	*n.m.	9.51	17.85	-	0.00	0.00	0.00	-	3.61	0.00	0.00	-	-	96.39	3.00	-
2020	357	0.284	48	4.4	338	19	676,222	55.8	56.4	-0.7	-1%	48.85	59.88	64.36	6.60	2.86	2.65	2.11	0.66	0.49	0.15	0.19	-	90.10	1.81	7.91
2019	1,319	0.169	149	4.4	331	26	637,656	52.3	58.3	-6.0	-10%	54.56	59.58	62.51	1.95	2.14	2.22	2.01	1.51	0.40	0.29	1.03	0.05	86.71	1.73	10.48
2018	369	0.157	67	4.3	313	41	591,699	46.9	46.4	0.6	1%	47.85	54.34	59.32	3.16	1.06	1.97	1.33	0.72	0.16	0.48	0.27	-	88.92	1.33	9.48
2017	1,642	0.149	137	4.2	304	50	554,909	44.1	47.7	-3.6	-8%	46.07	52.65	58.74	2.57	1.68	1.56	1.30	0.65	0.26	0.12	0.50	0.03	91.52	1.44	6.51
2016	953	0.162	106	4.2	293	61	566,238	42.8	45.8	-3.0	-7%	43.40	48.55	53.69	1.33	1.44	1.32	1.04	1.02	0.29	0.16	0.79	0.05	89.90	2.39	6.88
2015	646	0.120	145	4.1	279	74	543,249	43.7	45.0	-1.4	-3%	44.93	50.73	54.54	0.96	1.63	1.12	0.86	0.73	0.46	0.00	0.58	-	92.77	2.24	4.41
2014	299	0.088	74	4.2	264	85	528,578	33.2	48.6	-15.4	-32%	41.47	47.85	51.62	0.00	0.57	0.73	0.58	0.81	0.45	0.00	0.46	-	94.67	2.02	2.85
2013	396	0.117	104	4.0	251	99	547,292	39.2	38.0	1.1	3%	40.49	45.51	47.05	0.00	0.00	0.36	0.24	0.32	0.00	0.20	0.13	-	93.31	1.29	5.27
2012	1,239	0.086	324	4.0	236	111	543,457	34.4	42.9	-8.5	-20%	39.81	43.59	49.03	0.42	0.14	0.12	0.16	0.57	0.04	0.06	0.03	0.04	96.56	1.01	2.35
2011	125	0.051	80	4.1	226	119	556,150	25.8	33.9	-8.1	-24%	34.90	43.72	47.99	0.00	0.00	0.00	0.00	0.87	0.44	0.00	-	-	96.81	1.31	1.87
30yr Jumbo 4	3,569	0.067	1,158	4.7	282	71	598,723	42.8	44.2	-1.4	-3%	44.54	48.40	50.90	1.58	1.95	1.80	1.49	1.24	0.54	0.30	0.76	0.05	88.35	2.18	8.66
2021	7	0.925	5	4.7	356	4	769,262	0.1	75.0	-74.9	*n.m.	36.99	-	-	0.00	0.00	-	-	0.00	0.00	0.00	-	-	1.00	-	-
2020	138	0.365	28	4.9	339	19	699,991	45.9	44.8	1.1	3%	45.84	54.29	56.71	0.00	6.09	6.69	4.76	1.60	0.99	0.50	-	-	92.06	3.34	4.6
2019	509	0.193	99	4.9	329	27	644,063	49.6	49.5	0.1	0%	52.09	57.85	57.68	1.20	2.68	2.73	2.21	1.43	0.76	1.07	1.66	-	81.87	2.87	13.6
2018	713	0.133	110	4.8	316	39	598,201	56.1	52.0	4.1	8%	52.96	55.53	57.07	5.27	3.89	3.21	2.41	0.69	0.63	0.28	0.87	-	84.18	2.17	12.79
2017	600	0.158	90	4.7	306	50	586,661	39.0	46.6	-7.6	-16%	45.88	48.56	51.47	1.83	2.02	1.58	1.48	2.21	0.66	0.16	0.64	-	85.60	2.85	10.91
2016	149	0.166	54	4.7	293	63	615,218	30.6	40.3	-9.7	-24%	40.00	42.54	42.00	0.00	0.00	1.03	1.18	3.52	0.38	0.16	1.83	0.38	84.42	5.23	8.14
2015	57	0.125	64	4.7	280	73	596,680	9.4	46.1	-36.6	-80%	39.21	37.53	37.95	0.00	2.99	1.50	0.76	0.00	0.00	0.00	0.79	-	87.34	1.24	10.63
2014	122	0.058	72	4.6	265	87	534,514	50.9	51.9	-1.0	-2%	49.86	49.60	49.45	0.00	0.00	0.50	0.74	1.71	0.39	0.00	1.17	-	91.58	1.81	5.44
2013	182	0.054	78	4.6	254	95	536,805	36.6	34.7	2.0	6%	34.82	35.30	42.90	0.00	1.06	1.01	0.97	1.00	0.70	0.00	0.23	0.28	93.10	1.24	5.15
2012	110	0.058	100	4.5	230	114	553,543	33.2	32.6	0.6	2%	32.67	37.71	43.12	0.00	0.00	0.00	0.00	1.14	0.00	0.00	1.18	0.38	91.58	2.91	3.95

VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS Jumbos

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Oct*	*Sep*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
2011	510	0.033	278	4.5	228	121	589,260	**36.3**	37.8	-1.5	**-4%**	36.52	40.39	43.01	0.00	0.26	0.13	0.20	0.55	0.18	0.17	0.32	0.08	94.99	0.73	3.87
2010	458	0.027	161	4.5	217	131	591,551	**31.1**	30.0	1.0	**3%**	32.65	38.13	44.25	0.00	0.28	0.29	0.30	0.61	0.40	0.10	0.11	-	94.67	1.37	3.85
30yr Jumbo 4.5	1,049	0.029	617	5.1	266	86	612,958	**38.4**	42.6	-4.2	**-10%**	40.62	44.44	45.45	3.76	3.03	2.91	2.41	1.87	0.41	0.14	0.43	0.05	85.98	2.94	10.59
2020	19	0.396	10	5.3	338	19	755,936	**28.6**	28.4	0.2	**1%**	38.75	57.06	52.02	0.00	0.00	9.01	4.61	0.00	0.00	0.00	-	-	93.52	6.00	-
2019	173	0.221	45	5.4	330	28	663,093	**45.3**	55.5	-10.2	**-18%**	52.38	54.19	55.44	0.00	5.42	4.23	3.24	1.04	0.60	0.32	0.32	0.31	77.41	2.30	19.67
2018	268	0.169	42	5.4	320	36	629,132	**48.2**	48.3	-0.1	**0%**	47.40	50.47	51.41	0.00	5.42	4.23	3.24	1.04	0.60	0.32	0.32	0.31	77.41	2.30	19.67
2017	39	0.153	23	5.2	302	52	641,015	**54.5**	30.0	24.5	**82%**	44.22	55.96	48.58	6.76	4.42	4.28	3.72	3.15	0.55	0.19	1.13	-	77.79	3.83	17.25
2011	150	0.021	179	4.9	224	124	590,232	**33.0**	34.7	-1.7	**-5%**	32.71	36.81	39.06	19.91	7.13	5.55	4.25	3.90	0.00	0.00	1.51	-	74.30	5.01	19.18
2010	253	0.016	163	4.9	213	134	580,783	**24.0**	34.0	-10.0	**-29%**	30.99	34.04	35.62	0.00	1.05	1.35	0.84	1.55	0.36	0.00	-	-	94.22	2.34	3.45
2009	120	0.013	62	5.0	202	145	578,561	**36.5**	42.0	-5.5	**-13%**	34.41	36.39	36.34	2.33	0.78	0.75	0.93	1.33	0.32	0.00	0.15	-	93.76	3.02	3.07
30yr Jumbo 5	240	0.014	213	5.5	225	126	579,258	**26.6**	37.4	-10.7	**-29%**	29.97	36.39	36.67	5.24	2.81	2.57	2.00	1.62	0.35	0.29	-	-	92.61	1.64	5.76
2011	21	0.040	37	5.3	225	126	629,188	**20.8**	22.4	-1.7	**-7%**	20.77	25.91	29.57	2.75	1.71	1.65	1.09	2.15	0.00	0.26	0.76	0.12	87.25	3.26	8.61
2010	57	0.014	61	5.4	213	136	562,404	**26.7**	16.2	10.5	**65%**	21.48	30.38	31.44	0.00	0.00	0.00	0.00	2.67	0.00	0.00	-	-	87.31	2.67	10.02
2009	78	0.010	44	5.4	206	144	567,791	**29.5**	39.1	-9.6	**-24%**	29.01	35.02	32.45	0.00	0.00	0.00	0.45	0.68	0.00	0.00	0.88	0.52	87.79	2.20	8.6

**n.m. - Not Meaningful*

Source: Bloomberg

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VINING SPARKS

UMBS Prepayment Speeds
October 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*	*Oct*	*Sep*	*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	254	0.201	417	3.0	74	100	201,264	**20.0**	21.5	-1.6	**-7%**	19.77	19.79	18.54	0.00	0.23	0.11	0.27	0.71	0.09	0.04	-	-	97.45	1.31	1.24
2013	139	0.212	206	3.0	73	101	197,355	**18.2**	19.9	-1.8	**-9%**	18.78	18.15	17.15	0.00	0.27	0.14	0.30	0.95	0.16	0.00	-	-	97.19	1.40	1.41
2012	88	0.161	167	3.0	66	108	214,784	**23.9**	25.7	-1.9	**-7%**	22.40	22.99	21.57	0.00	0.23	0.11	0.09	0.56	0.00	0.05	-	-	98.08	1.04	0.87
15yr 105-125 LTV 3	479	0.207	765	3.6	83	92	186,415	**19.1**	21.8	-2.6	**-12%**	21.02	20.53	19.64	0.00	0.32	0.25	0.45	0.75	0.20	0.18	0.08	0.01	96.85	1.28	1.77
2016	47	0.428	62	3.7	111	63	168,222	**24.1**	20.9	3.2	**15%**	20.11	19.40	18.17	0.00	0.00	0.00	0.12	0.95	1.07	0.60	0.19	-	94.53	2.25	3.03
2015	65	0.360	83	3.7	101	75	177,025	**19.6**	16.6	3.1	**19%**	17.51	16.03	15.78	0.00	0.00	0.21	0.15	1.06	0.00	0.00	0.08	0.01	95.39	1.61	2.91
2014	45	0.276	92	3.7	88	87	180,597	**16.7**	10.8	5.9	**55%**	19.83	19.93	18.75	0.00	0.00	0.00	0.77	0.97	0.10	0.34	0.48	-	96.75	1.51	1.26
2013	170	0.191	235	3.5	75	100	186,423	**19.0**	25.0	-6.1	**-24%**	22.20	22.46	20.87	0.00	0.56	0.35	0.52	0.73	0.12	0.16	0.02	-	97.26	1.28	1.44
2012	130	0.141	256	3.5	66	109	202,614	**17.8**	23.7	-5.9	**-25%**	21.50	21.54	21.38	0.00	0.20	0.24	0.52	0.57	0.16	0.11	-	0.03	97.98	0.80	1.19
15yr 105-125 LTV 3.5	199	0.219	500	4.1	86	88	167,307	**27.5**	21.1	6.4	**30%**	25.65	23.76	22.17	0.76	0.60	0.66	0.53	1.15	0.31	0.11	0.20	-	95.94	1.75	2.11
2014	69	0.248	118	4.2	86	87	166,822	**25.3**	19.1	6.3	**33%**	26.65	25.17	22.63	0.00	0.99	1.01	0.50	1.15	0.29	0.06	0.47	-	95.78	1.51	2.25
2013	71	0.199	156	4.1	78	96	172,746	**31.8**	24.6	7.2	**29%**	26.88	24.10	23.35	2.12	0.71	0.58	0.64	1.27	0.00	0.26	-	-	97.06	1.50	1.44
2012	19	0.122	111	4.0	64	110	185,563	**27.9**	28.1	-0.2	**-1%**	25.36	24.11	22.67	0.00	0.00	0.44	0.22	0.65	0.00	0.00	0.42	-	95.72	1.13	2.73
30yr 105-125 LTV 2.5	23	0.343	31	3.3	176	96	209,757	**17.5**	21.3	-3.8	**-18%**	14.94	17.84	19.78	0.00	0.00	1.94	0.97	0.00	0.00	0.00	-	-	96.90	1.50	1.6
30yr 105-125 LTV 3	1,683	0.309	950	3.7	219	100	227,207	**23.4**	23.5	-0.1	**0%**	23.72	25.39	24.81	0.32	0.37	0.36	0.42	1.00	0.25	0.11	0.05	0.01	95.85	1.83	2.26
2016	119	0.522	92	3.9	256	62	221,484	**21.0**	29.5	-8.5	**-29%**	22.97	21.63	21.78	0.00	0.71	0.35	0.91	0.87	0.70	0.15	0.17	-	94.30	1.76	3.77
2015	41	0.446	54	3.9	191	75	210,376	**17.2**	16.4	0.8	**5%**	16.17	25.44	22.03	0.00	0.00	0.00	0.22	1.69	0.27	0.00	-	-	95.32	2.37	2.3
2013	956	0.312	417	3.7	221	102	225,661	**21.9**	22.2	-0.3	**-1%**	22.76	25.12	24.23	0.21	0.35	0.44	0.48	1.05	0.22	0.12	0.04	0.01	95.63	1.98	2.33
2012	554	0.272	368	3.7	209	107	232,603	**26.8**	24.9	1.9	**7%**	26.06	26.84	26.75	0.19	0.23	0.21	0.22	0.92	0.19	0.10	0.05	-	96.60	1.59	1.76
30yr 105-125 LTV 3.5	6,378	0.249	2,492	4.1	235	102	227,164	**27.9**	29.9	-2.0	**-7%**	29.10	30.33	30.09	0.36	0.48	0.61	0.65	1.10	0.26	0.17	0.14	0.02	95.35	1.94	2.55
2017	53	0.562	62	4.1	261	51	222,444	**26.2**	15.6	10.6	**68%**	20.64	26.10	22.70	0.00	0.00	1.72	1.09	0.50	0.17	0.51	0.26	-	94.49	0.90	4.35
2016	210	0.477	134	4.2	277	63	219,139	**24.2**	24.2	0.0	**0%**	23.97	26.30	25.00	0.00	1.42	2.15	1.47	1.67	0.29	0.04	0.20	-	93.41	2.11	4.27
2015	242	0.407	237	4.2	246	75	212,290	**21.3**	28.7	-7.4	**-26%**	26.27	28.20	26.78	0.58	1.65	1.19	1.03	1.20	0.42	0.07	0.30	0.03	95.03	2.41	2.24
2014	90	0.346	135	4.3	206	85	209,366	**27.0**	26.0	1.0	**4%**	28.44	25.15	26.39	0.00	0.00	0.29	0.34	1.86	0.25	0.12	0.20	-	93.99	1.91	3.89
2013	2,433	0.277	837	4.1	239	101	222,250	**27.8**	29.0	-1.2	**-4%**	28.61	29.67	28.55	0.40	0.46	0.54	0.69	1.11	0.26	0.15	0.17	0.03	95.35	1.99	2.46
2012	3,333	0.217	1,041	4.1	229	108	232,922	**28.7**	31.1	-2.4	**-8%**	30.07	31.36	31.87	0.35	0.38	0.52	0.55	1.04	0.23	0.19	0.11	0.01	95.54	1.88	2.46
30yr 105-125 LTV 4	4,177	0.221	2,548	4.6	242	98	218,850	**30.3**	33.5	-3.1	**-9%**	31.91	32.51	31.59	0.63	0.75	0.82	0.83	1.39	0.29	0.13	0.24	0.02	94.47	2.41	2.86
2018	31	0.626	28	4.7	289	41	201,225	**38.3**	7.3	31.0	**425%**	24.01	24.86	20.18	2.76	1.31	1.33	1.64	0.86	0.83	0.00	0.94	-	91.10	2.62	5.33
2017	186	0.532	108	4.6	293	51	220,470	**32.1**	38.1	-6.1	**-16%**	33.52	31.27	26.09	2.45	2.08	1.83	1.43	2.43	0.47	0.35	0.60	0.09	90.99	2.82	5.5
2016	152	0.454	102	4.6	284	65	217,241	**26.2**	35.0	-8.9	**-25%**	32.68	30.03	27.85	1.77	1.33	1.47	2.14	2.01	0.13	0.00	0.34	-	93.87	2.65	3.13
2015	317	0.387	216	4.6	272	75	207,131	**25.3**	37.6	-12.3	**-33%**	30.24	31.47	27.77	1.28	0.86	0.88	1.03	1.84	0.30	0.23	0.36	-	93.23	2.94	3.47
2014	449	0.324	385	4.7	247	87	210,508	**34.2**	32.9	1.3	**4%**	30.93	30.34	28.44	0.00	0.33	0.72	0.89	2.00	0.49	0.16	0.21	0.03	93.16	3.16	3.45
2013	979	0.267	658	4.6	243	98	209,002	**28.2**	32.1	-3.9	**-12%**	30.02	31.14	29.89	0.67	0.74	0.99	1.03	1.25	0.22	0.11	0.28	0.06	94.45	2.44	2.76
2012	1,867	0.174	830	4.5	230	111	227,118	**31.5**	33.0	-1.5	**-4%**	32.98	34.03	34.11	0.42	0.73	0.68	0.58	1.15	0.25	0.10	0.18	-	95.23	2.13	2.47
2011	162	0.134	153	4.6	211	119	229,749	**26.8**	33.5	-6.7	**-20%**	34.72	35.64	36.42	0.00	0.00	0.00	0.21	1.17	0.41	0.16	0.06	-	96.62	1.71	1.61
2010	35	0.106	65	4.6	199	131	230,510	**34.7**	50.0	-15.3	**-31%**	35.39	32.18	36.32	0.00	0.00	0.00	0.00	0.33	0.00	0.20	-	-	96.44	2.18	1.37
30yr 105-125 LTV 4.5	1,463	0.166	1,380	5.0	239	104	219,706	**34.4**	34.6	-0.1	**0%**	34.62	35.30	33.71	1.00	1.04	1.08	1.03	1.47	0.40	0.18	0.37	-	93.64	2.59	3.4
2015	17	0.345	60	4.9	271	78	178,858	**45.8**	14.9	30.9	**207%**	31.13	38.65	32.72	0.00	0.00	0.00	0.00	2.98	0.00	0.00	-	-	89.87	4.36	5.77
2014	352	0.292	272	5.1	259	88	204,344	**34.8**	33.2	1.6	**5%**	33.07	33.04	29.22	2.09	1.17	1.26	1.41	1.53	0.69	0.28	0.55	-	92.58	2.84	4.02
2013	381	0.242	287	5.1	249	95	204,670	**32.8**	35.8	-3.0	**-8%**	34.99	33.92	31.68	1.60	1.08	1.55	1.13	2.12	0.57	0.11	0.70	-	93.09	3.26	2.95
2012	139	0.145	157	4.9	229	114	221,602	**44.0**	41.5	2.6	**6%**	38.67	38.36	37.69	0.00	0.00	0.24	0.71	1.27	0.14	0.10	0.06	-	94.81	2.01	3.13
2011	408	0.116	331	5.0	217	122	242,415	**33.2**	31.8	1.4	**4%**	33.11	36.24	36.29	0.29	1.44	0.89	0.78	1.25	0.16	0.22	0.08	-	94.25	2.37	3.3
2010	117	0.085	175	5.0	210	131	244,237	**31.3**	36.4	-5.1	**-14%**	38.04	39.68	40.09	0.00	0.71	0.45	0.39	0.42	0.24	0.18	-	-	95.96	1.69	2.35
30yr 105-125 LTV 5	409	0.093	612	5.4	225	121	235,789	**37.4**	39.7	-2.3	**-6%**	37.33	38.01	37.00	0.00	0.23	0.37	1.01	1.94	0.34	0.35	0.44	0.06	93.42	2.47	3.61
2011	221	0.095	269	5.4	221	124	242,537	**36.3**	42.4	-6.2	**-14%**	39.16	40.81	38.89	0.00	0.43	0.39	1.07	1.97	0.20	0.16	0.29	0.11	94.41	2.34	2.85
2010	104	0.065	222	5.5	212	135	244,905	**41.5**	38.5	3.1	**8%**	40.05	38.79	38.59	0.00	0.00	0.15	0.45	2.03	0.43	0.94	0.33	-	92.21	2.35	5.12
2009	18	0.064	42	5.5	207	142	257,419	**38.4**	47.2	-8.9	**-19%**	35.72	40.17	38.44	0.00	0.00	2.49	1.25	1.59	0.00	0.00	1.79	-	93.52	4.00	-
30yr 105-125 LTV 5.5	33	0.076	129	5.9	208	140	212,465	**39.8**	38.0	1.8	**5%**	39.41	41.47	39.56	0.00	0.00	0.00	0.24	3.65	0.48	0.00	-	-	93.69	5.21	1.11

**n.m. - Not Meaningful*

Source: Bloomberg

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UMBS Prepayment Speeds
October 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*	*Oct*	*Sep*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.

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UMBS Prepayment Speeds
October 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	Oct	Sep	Chg	% Chg	3mo	6mo	12mo	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
15yr 125+ LTV 2.5	157	0.201	302	3.1	73	102	197,852	↓ **17.3**	19.9	-2.6	**-13%**	18.69	17.91	18.06	0.00	0.47	0.26	0.32	0.37	0.14	0.09	-	-	98.50	0.52	0.97
2013	89	0.214	156	3.1	74	101	188,178	↓ **15.0**	22.4	-7.4	**-33%**	19.07	17.67	17.75	0.00	0.83	0.42	0.30	0.45	0.25	0.10	-	-	98.13	0.64	1.22
2012	61	0.175	130	3.0	67	107	214,143	↑ **17.3**	14.4	2.9	**20%**	17.08	17.80	18.39	0.00	0.00	0.07	0.38	0.00	0.00	0.08	-	-	98.87	0.41	0.72
15yr 125+ LTV 3	369	0.190	521	3.5	77	98	188,517	↓ **20.3**	22.4	-2.1	**-9%**	20.95	21.29	20.35	0.10	0.03	0.25	0.35	0.54	0.09	0.13	0.05	0.02	97.58	1.11	1.24
2015	28	0.357	51	3.7	100	75	157,522	↑ **19.3**	13.8	5.5	**40%**	17.40	21.40	17.94	0.00	0.00	0.49	0.73	0.20	0.10	0.00	-	-	96.32	0.88	2.79
2014	20	0.319	45	3.7	88	86	166,389	↓ **17.8**	28.3	-10.4	**-37%**	20.76	17.99	16.87	0.00	0.00	0.00	0.24	0.20	0.65	0.00	0.37	-	96.90	1.47	1.25
2013	146	0.198	196	3.5	74	100	187,411	↓ **17.3**	20.5	-3.3	**-16%**	20.35	20.79	20.40	0.26	0.09	0.35	0.50	0.75	0.00	0.02	-	0.05	97.70	1.28	0.98
2012	147	0.146	190	3.5	65	108	205,282	↑ **24.8**	24.1	0.7	**3%**	22.71	23.23	21.97	0.00	0.00	0.19	0.12	0.46	0.00	0.29	0.06	-	97.78	0.90	1.25
15yr 125+ LTV 3.5	189	0.210	365	4.1	82	92	160,774	↑ **22.3**	22.0	0.4	**2%**	22.10	22.78	21.21	0.43	0.40	0.25	0.37	0.60	0.34	0.04	0.03	-	96.97	0.98	2.01
2014	52	0.252	92	4.2	86	88	147,473	↓ **25.7**	27.6	-1.9	**-7%**	23.65	24.44	22.14	0.00	0.00	0.00	0.54	0.96	0.60	0.00	-	-	96.09	1.33	2.58
2013	84	0.209	133	4.1	77	97	169,146	↓ **19.8**	22.4	-2.6	**-12%**	22.39	22.92	20.60	0.98	0.65	0.43	0.35	0.68	0.06	0.09	0.08	-	97.44	0.98	1.5
2012	28	0.120	90	4.0	64	110	188,132	↑ **30.4**	11.2	19.2	**171%**	21.66	22.95	24.51	0.00	0.00	0.00	0.21	0.26	0.35	0.00	-	-	97.59	0.61	1.8
15yr 125+ LTV 4	31	0.219	77	4.6	86	88	146,955	↓ **17.2**	21.6	-4.4	**-20%**	18.58	21.16	19.22	1.20	0.40	0.20	0.26	0.41	0.08	0.50	-	-	95.34	1.20	3.46
2013	14	0.199	37	4.7	80	95	151,611	↓ **17.8**	30.5	-12.7	**-42%**	19.67	24.66	21.76	2.72	0.92	0.46	0.59	0.00	0.00	0.58	-	-	94.29	1.03	4.68
30yr 125+ LTV 2.5	11	0.422	19	3.3	212	103	219,937	↑ **1.1**	0.5	0.6	***n.m.**	3.70	15.94	11.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	96.17	-	3.83
30yr 125+ LTV 3	1,404	0.319	672	3.8	229	103	225,776	↓ **27.1**	30.0	-2.9	**-10%**	27.53	27.33	26.40	0.38	0.68	0.62	0.70	0.92	0.14	0.20	0.19	0.02	96.02	1.54	2.23
2013	797	0.330	338	3.8	231	102	222,919	↓ **25.4**	29.5	-4.1	**-14%**	26.40	26.79	25.99	0.36	0.79	0.57	0.69	0.98	0.19	0.16	0.23	0.02	95.66	1.71	2.38
2012	557	0.294	281	3.7	224	106	231,173	↓ **29.9**	30.8	-1.0	**-3%**	29.36	28.40	27.51	0.00	0.14	0.53	0.59	0.89	0.09	0.17	0.08	0.02	96.82	1.23	1.85
30yr 125+ LTV 3.5	7,215	0.263	1,809	4.1	235	104	223,410	↓ **29.9**	31.2	-1.3	**-4%**	30.31	31.49	30.79	0.90	0.62	0.60	0.59	0.91	0.27	0.15	0.14	0.02	95.72	1.87	2.26
2016	97	0.555	73	4.2	279	63	203,964	↑ **23.4**	21.3	2.1	**10%**	27.43	25.40	21.91	0.00	0.58	0.40	0.73	2.08	0.73	0.00	0.54	-	93.67	2.98	2.81
2015	113	0.424	125	4.2	246	75	196,524	↓ **23.1**	26.4	-3.3	**-13%**	29.69	29.29	26.81	4.90	1.95	0.98	1.50	0.93	0.70	0.22	0.14	-	94.22	2.93	2.7
2014	39	0.406	61	4.3	203	85	188,957	↓ **7.8**	22.0	-14.2	**-64%**	13.36	21.95	20.52	0.00	0.00	0.00	0.40	2.78	0.85	0.00	0.67	-	92.86	2.30	4.16
2013	2,799	0.299	729	4.1	240	101	216,143	↓ **28.8**	32.0	-3.2	**-10%**	29.83	30.56	28.55	1.17	0.88	0.77	0.69	1.00	0.30	0.18	0.14	0.02	95.46	2.09	2.28
2012	4,136	0.236	786	4.1	231	108	230,030	↑ **31.2**	31.1	0.1	**0%**	30.88	32.46	32.66	0.64	0.40	0.49	0.49	0.80	0.22	0.13	0.12	0.01	96.02	1.65	2.2
30yr 125+ LTV 4	3,848	0.241	1,765	4.6	240	102	212,371	↑ **31.9**	31.3	0.6	**2%**	32.12	32.70	31.75	0.75	0.69	0.77	0.82	0.94	0.26	0.09	0.18	0.02	95.34	1.61	2.86
2017	79	0.612	57	4.6	292	51	194,547	↑ **27.0**	18.6	8.4	**45%**	21.85	22.81	19.65	3.71	1.70	1.35	1.90	1.62	0.37	0.37	0.45	-	92.35	2.69	4.5
2016	63	0.533	69	4.6	283	64	192,101	↑ **33.9**	19.1	14.8	**77%**	29.34	25.90	20.82	0.00	1.32	1.96	1.96	1.30	0.14	0.54	0.51	0.34	95.00	1.16	2.99
2015	168	0.443	155	4.6	269	75	187,735	↑ **33.9**	21.3	12.7	**60%**	29.12	28.48	24.61	0.45	1.02	1.28	1.27	1.40	0.60	0.14	0.34	-	93.41	2.32	3.94
2014	254	0.357	239	4.7	243	87	195,033	↑ **34.8**	33.1	1.7	**5%**	33.12	30.72	27.22	1.49	1.29	1.13	1.09	1.42	0.23	0.11	0.12	0.13	94.19	2.75	2.82
2013	955	0.299	597	4.6	244	99	203,913	↑ **28.8**	28.5	0.3	**1%**	30.05	31.14	28.88	0.98	0.96	0.93	0.95	1.04	0.33	0.11	0.20	-	95.01	1.93	2.87
2012	2,314	0.203	634	4.5	233	110	220,828	↓ **32.8**	33.5	-0.7	**-2%**	33.42	34.34	34.40	0.52	0.44	0.59	0.64	0.78	0.22	0.06	0.14	0.01	95.87	1.27	2.71
30yr 125+ LTV 4.5	972	0.270	794	5.1	249	96	202,139	↓ **30.3**	31.1	-0.8	**-3%**	32.14	32.55	29.81	1.35	1.21	1.23	1.22	1.30	0.27	0.23	0.32	0.01	93.97	2.40	3.3
2014	283	0.350	236	5.1	257	88	193,192	↓ **26.8**	31.2	-4.4	**-14%**	29.60	30.27	27.73	1.24	1.05	1.80	1.62	1.50	0.58	0.21	0.35	-	93.73	3.10	2.82
2013	447	0.297	289	5.1	248	96	200,357	↑ **32.3**	29.9	2.3	**8%**	33.24	31.81	28.99	0.98	1.24	0.83	0.86	1.23	0.19	0.26	0.32	0.03	93.59	2.35	3.71
2012	210	0.172	164	5.0	235	112	220,592	↓ **32.6**	32.9	-0.3	**-1%**	33.61	37.56	35.05	2.47	1.42	1.30	1.29	1.33	0.00	0.13	0.29	-	94.98	1.60	3.13
30yr 125+ LTV 5	76	0.306	76	5.5	259	89	177,800	↑ **42.7**	33.8	9.0	**27%**	37.46	32.41	30.95	1.43	0.99	1.18	2.17	0.75	0.64	0.00	0.91	-	93.71	1.64	3.74

**n.m. - Not Meaningful*

Source: Bloomberg

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VINING SPARKS

UMBS Prepayment Speeds
October 2021
UMBS Relocation

	Indicative Data							Prepayment Speeds							Buyout Prepayment Component				Delinquencies			Borrower Assistance Plan				
	Cur Bal (MM)	*Factor*	*# of Pools*	*WAC*	*WAM*	*WALA*	*WAOLS*	*Oct*	*Sep*	*Chg*	*% Chg*	*3mo*	*6mo*	*12mo*	1mo	3mo	6mo	12mo	30D	60D	90D	Trial	Repay.	N/A	No Workout	Forbear.
15yr RELO 2	16	0.220	18	2.6	96	76	304,147	↓ **4.5**	13.7	-9.3	**-68%**	21.30	21.75	21.89	0.00	0.00	0.00	0.00	0.43	0.00	0.00	-	-	99.57	0.00	-
15yr RELO 2.5	79	0.146	83	3.0	89	84	278,136	↓ **28.3**	34.7	-6.4	**-18%**	31.39	29.89	27.63	0.00	0.00	0.00	0.00	0.00	0.16	0.00	-	-	99.84	-	0.16
2014	35	0.160	42	3.0	87	86	278,140	↓ **24.6**	28.0	-3.4	**-12%**	28.87	25.14	23.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	1.00	-	-
30yr RELO 2.5	251	0.375	59	3.3	294	57	346,367	↓ **19.8**	25.5	-5.7	**-22%**	19.75	22.88	26.31	0.00	0.00	0.00	0.13	0.20	0.00	0.00	-	-	98.74	0.41	0.85
2016	34	0.378	10	3.1	291	59	325,705	↓ **31.0**	32.0	-1.0	**-3%**	31.28	31.33	31.22	0.00	0.00	0.00	0.00	0.95	0.00	0.00	-	-	98.11	0.94	0.95
2013	66	0.242	24	3.1	244	102	317,457	↓ **4.8**	14.1	-9.3	**-66%**	11.64	18.45	23.77	0.00	0.00	0.00	0.00	0.27	0.00	0.00	-	-	99.49	-	0.51
30yr RELO 3	1,582	0.239	344	3.7	284	64	322,413	↓ **38.6**	41.6	-3.0	**-7%**	40.86	41.49	43.88	0.00	0.00	0.02	0.04	0.40	0.09	0.05	0.04	0.04	98.33	0.51	1.08
2019	103	0.468	21	3.8	328	25	373,840	↓ **31.7**	35.5	-3.8	**-11%**	35.71	37.83	40.47	0.00	0.00	0.00	0.00	0.00	0.36	0.35	-	-	97.01	0.36	2.62
2018	135	0.250	34	4.0	310	40	328,334	↓ **42.1**	54.2	-12.1	**-22%**	49.28	48.94	53.43	0.00	0.00	0.00	0.08	0.00	0.00	0.00	-	-	99.23	0.20	0.57
2017	470	0.292	91	3.8	301	48	321,706	↓ **39.0**	43.8	-4.8	**-11%**	41.87	43.05	46.36	0.00	0.00	0.00	0.05	0.57	0.00	0.00	0.15	0.06	98.44	0.61	0.75
2016	211	0.280	24	3.5	288	61	318,390	↑ **43.4**	27.9	15.5	**56%**	38.26	35.77	39.35	0.00	0.00	0.00	0.00	0.49	0.00	0.11	-	-	97.57	0.84	1.59
2015	332	0.220	57	3.7	272	75	312,159	↓ **38.9**	47.8	-8.9	**-19%**	43.35	42.18	43.26	0.00	0.00	0.00	0.00	0.14	0.07	0.05	-	0.08	98.85	0.06	1.02
2014	93	0.154	44	3.9	259	84	317,763	↓ **35.8**	41.0	-5.2	**-13%**	45.27	46.55	47.93	0.00	0.00	0.00	0.00	1.27	0.00	0.00	-	-	97.90	1.33	0.78
2013	118	0.174	34	3.5	244	100	316,115	↑ **36.7**	31.1	5.6	**18%**	32.57	38.46	37.24	0.00	0.00	0.00	0.00	0.29	0.38	0.00	-	-	97.71	0.41	1.88
2012	106	0.168	31	3.5	235	111	320,456	↓ **30.7**	36.1	-5.4	**-15%**	29.26	34.27	32.70	0.00	0.00	0.29	0.32	0.53	0.32	0.00	-	-	98.79	0.85	0.36
30yr RELO 3.5	473	0.123	189	4.1	260	86	302,509	↑ **45.1**	37.5	7.6	**20%**	43.30	46.37	48.47	0.95	0.32	0.24	0.21	0.39	0.18	0.06	-	0.11	97.04	0.98	1.86
2017	50	0.204	15	4.0	299	53	311,504	↓ **37.4**	38.4	-1.1	**-3%**	46.67	48.18	51.66	0.00	0.00	0.81	0.41	0.00	0.00	0.53	-	-	96.86	-	3.14
2014	151	0.109	62	4.2	258	87	287,331	↑ **40.0**	40.0	0.1	**0%**	46.26	47.26	48.84	0.00	0.00	0.00	0.07	0.42	0.13	0.00	-	0.15	96.85	1.10	1.9
2013	52	0.106	24	4.1	250	96	291,641	↑ **48.9**	32.4	16.5	**51%**	39.42	42.80	44.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	98.58	-	1.42
2012	38	0.112	16	3.9	226	115	298,873	↓ **17.7**	29.3	-11.5	**-39%**	31.42	41.52	40.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	97.76	0.79	1.45
2011	51	0.106	26	3.9	221	120	308,735	↓ **33.4**	39.5	-6.0	**-15%**	37.23	41.14	42.54	0.00	0.00	0.00	0.00	0.89	0.00	0.00	-	-	97.57	1.94	0.5
2010	46	0.094	13	3.9	210	130	303,526	↑ **30.8**	20.9	10.0	**48%**	29.45	34.28	38.63	0.00	0.00	0.00	0.00	1.01	0.00	0.00	-	0.62	97.99	1.01	0.38
30yr RELO 4	147	0.054	123	4.5	229	114	296,565	↓ **37.9**	39.8	-1.9	**-5%**	40.28	42.54	45.16	0.00	0.00	0.00	0.11	0.38	0.00	0.22	-	-	98.27	0.64	1.09
2014	29	0.081	36	4.5	256	90	274,883	↓ **25.5**	51.6	-26.1	**-51%**	35.73	38.85	43.25	0.00	0.00	0.00	0.00	0.31	0.00	0.00	-	-	98.26	1.08	0.66
2011	52	0.048	38	4.4	217	124	288,467	↓ **27.3**	32.5	-5.2	**-16%**	28.63	36.71	42.31	0.00	0.00	0.00	0.00	0.91	0.00	0.00	-	-	98.79	0.59	0.62
2010	48	0.045	24	4.4	209	134	315,497	↑ **39.9**	30.2	9.7	**32%**	41.98	40.91	39.25	0.00	0.00	0.00	0.34	0.00	0.00	0.67	-	-	97.06	0.67	2.27
30yr RELO 4.5	35	0.020	235	5.0	176	168	240,058	↓ **12.0**	41.5	-29.5	**-71%**	31.61	34.37	30.12	0.00	2.33	1.17	0.59	1.00	0.00	0.69	-	-	97.19	1.48	1.33

**n.m. - Not Meaningful*

Source: Bloomberg

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