Single-Family Rental Research

Performance Summary Covering All Morningstar-Rated Securitizations

July 2019

Authors:

Monte Bays | Vice President | monte.bays@morningstar.com | +1 646 560-4536
Bhumika Lamba | Analyst | bhumika.lamba@morningstar.com | +91 22 6121 7213

Analytical Manager:
Stephen Buteau | Managing Director | stephen.buteau@morningstar.com | +1 646 560-4557

Introduction

The blended rent change for single-borrower, single-family rental securitizations rated by Morningstar Credit Ratings, LLC decreased to 5.1% in June from 5.3% in May. The average vacancy rate increased 30 basis points to 4.4% in June from 4.1% in May. The average retention rate for expiring leases decreased to 77.9% in May, the latest month for which data is available, from a revised 79.1% in April. Among the top 20 metropolitan statistical areas, Denver-Aurora and Fort Lauderdale for the second consecutive month had the highest vacancy rates at 7.8% and 6.4%, respectively. The Phoenix MSA experienced the highest blended rent growth at 7.9%, followed by the Las Vegas MSA at 7.0%. The Fort Lauderdale and Houston MSAs experienced the lowest blended rent growth at 2.5% and 2.6%, respectively. Rents for properties included in single-family rental securitizations generally exceed or are in line with the RentRange rents for three- and four-bedroom properties located in the same MSAs with the exception of the Tampa, Florida; Phoenix, Arizona; and Fort Lauderdale, Florida MSAs, where RentRange rents exceeded rents for single-family securitizations by over 5.0%. The July Single-Family Rental Performance Summary has 23 single-borrower deals with close to 81,000 properties.

Morningstar publishes its performance summary to provide market participants detailed property-level information on each single-family rental securitization that Morningstar has rated. The data below summarizes issuer-reported property-level information through June. Page 5 includes a summary of the multiborrower transactions. For deals seasoned at least one year, we provide Morningstar Surveillance Analysis reports, available on our website, www.morningstarcreditratings.com.

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Single-Borrower Performance

Lease expirations increased to 8.2% in June, up from 7.6% in May, the highest it has been in the trailing 12 months. HPA 2016-2 had the highest expirations over the past year at 18.5%, followed by AH4R 2015-SFR2 at 12.1%. HPA 2017-1 had the lowest percentage of lease expirations at 3.7%, followed by PRD 2018-SFR1 at 4.2%. The increase in lease expirations on single-family rental properties continues to follow seasonal trends of increasing in the spring and summer months with a corresponding increase in vacancy rates in the following months.

The average retention rate on full-term leases decreased to 77.9% in May, the latest month for which data is available, from a revised 79.1% in April. The overall monthly turnover rate increased to 3.3% in May, the latest month available, from 2.7% in April. The average delinquency rate stayed at 0.6%. HPA 2017-1 and HPA 2018-1 transactions reported a delinquency rate of 1.2% and 1.0% respectively. Please note that any review of delinquency should be viewed within the context of the delinquency definitions in Table 7.

Rents for properties included in single-family rental securitizations rated by Morningstar Credit Ratings increased by 5.1% in June, down from a 5.3% increase in May. Chart 1 shows that the rent gains for securitized properties in June trailed rent gains for three- and four-bedroom properties; the RentRange rent change for three-bedroom properties was 5.5%, down from 6.2% in May, and the RentRange rent change for four-bedroom properties was 5.0%, down from 5.5% in May. The RentRange benchmarks track the year-over-year change on three- and four-bedroom median rents, weighted by MSA to match the geographic concentration of the Morningstar database.

Chart 2 shows the rental change of renewals versus vacant-to-occupied properties. For May, the latest month for which data is available, the rent change for renewal properties increased to 5.0% from 4.9% in April. Rent growth for vacant-to-occupied properties stayed at 5.4%. Chart 4 shows the MSA-level blended rent change. MSAs with rent changes above the 5.1% average are in blue, while those below are in red. The size of the circle indicates the percentage of properties by count from a given MSA in Morningstar's database. Table 3 exhibits the MSA-level blended rent change for the past 12 months.

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Multiborrower Performance

In June, the number of loans decreased to 966. The number of loans 30-59 days delinquent decreased to 15 from 16, the number of loans 60-89 days delinquent decreased to three from five, and loans at least 90 days delinquent increased to 32 from 29. Loans in foreclosure dropped to five, and loans in special servicing increased to 41 from 36.

Table 1 – Multiborrower Loan Performance by Percentage of Balance

	30-59 Delinquent	60-89 Delinquent	90+ Delinquent	Foreclosure	Real Estate Owned	Special Servicing
B2R 2015-1	1.46	0.00	0.78	0.02	0.00	1.49
FKL 2015-SFR1	0.00	0.00	0.00	0.00	0.00	0.00
CAF 2015-1	0.00	0.00	2.72	0.00	0.00	10.46
B2R 2015-2	0.20	0.33	1.89	0.27	0.00	1.92
CAF 2016-1	0.70	0.00	1.94	0.00	0.00	1.97
B2R 2016-1	2.67	0.00	2.45	0.03	0.00	2.74
CAF 2016-2	0.99	0.00	4.10	3.09	0.00	4.47
CAF 2017-1	2.51	1.77	1.49	0.00	0.49	3.29
CAF 2018-1	0.99	0.00	0.92	0.00	0.92	0.93
CAF 2018-2	0.00	0.73	0.83	0.00	0.00	0.83
CAF 2019-1	0.00	0.00	0.00	0.00	0.00	0.00

Table 2 – Multiborrower Loan Performance by Loan Count

	Total Loans	30-59 Delinquent	60-89 Delinquent	90+ Delinquent	Foreclosure	Real Estate Owned	Special Servicing
B2R 2015-1	103	1	0	3	1	0	5
FKL 2015-SFR1	2	0	0	0	0	0	0
CAF 2015-1	40	0	0	2	0	0	3
B2R 2015-2	170	1	1	9	1	0	9
CAF 2016-1	62	1	0	1	0	0	1
B2R 2016-1	147	8	0	7	1	0	10
CAF 2016-2	60	1	0	3	2	0	5
CAF 2017-1	77	1	1	3	0	1	4
CAF 2018-1	116	2	0	2	0	2	2
CAF 2018-2	115	0	1	2	0	0	2
CAF 2019-1	74	0	0	0	0	0	0
Overall	966	15	3	32	5	3	41

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Single-Borrower Charts and Tables

Chart 1 – Single-Family Rental Rent Change Versus RentRange Year-Over-Year Rent Change

Sources: Morningstar Credit Ratings, LLC and RentRange

Chart 2 – Rental Changes for Renewals Versus Vacant-to-Occupied Properties

Source: Morningstar Credit Ratings, LLC

Chart 3 – May Average Contractual Rent Versus Property-Level RentRange Estimate by MSA

Sources: Morningstar Credit Ratings, LLC and RentRange

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Chart 4 – MSA-Level Blended Rent Change*

Sources: Morningstar Credit Ratings, LLC and Tableau Software
*The size of the circles represents the total percentage (by count) of properties in each MSA, ranging from 1.44% to 14.68%. Because of their proximity, the Fort Worth-Arlington, Texas, MSA is hidden behind the Dallas-Plano-Irving, Texas, MSA.

Table 3 – Blended Rent Change (by Percentage) - Top MSAs

		Year 2018						Year 2019					
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Atlanta, GA		4.4	4.8	4.1	4.4	4.5	4.6	4.1	4.1	4.7	6.0	6.3	6.3
Charlotte, NC		4.4	3.4	3.4	3.0	2.5	2.8	3.2	3.5	3.9	4.8	4.3	4.0
Chicago, IL		3.0	3.2	2.5	2.3	2.0	1.1	-1.8	0.7	2.7	3.1	3.3	3.5
Dallas-Plano-Irving, TX		4.1	3.7	4.7	3.5	1.8	2.0	2.5	3.2	3.7	4.2	4.1	3.2
Denver-Aurora, CO		2.4	2.3	2.5	2.4	2.2	2.8	3.6	3.8	4.3	6.9	5.6	4.9
Fort Lauderdale, FL		3.6	3.2	2.6	2.9	2.4	3.5	4.0	2.5	3.2	3.1	2.6	2.5
Fort Worth-Arlington, TX		5.3	4.1	3.9	2.2	2.4	2.7	3.3	3.8	4.7	4.5	4.2	4.8
Houston, TX		3.0	2.9	2.5	1.4	1.7	1.4	1.8	1.8	2.9	3.4	3.4	2.6
Indianapolis, IN		3.8	3.0	2.7	2.6	2.5	0.7	1.5	4.1	3.3	5.4	4.1	4.7
Jacksonville, FL		5.6	5.3	4.6	4.2	3.2	3.0	3.8	4.4	4.3	5.7	4.5	5.7
Las Vegas, NV		5.1	5.2	6.4	5.6	5.5	5.6	6.8	6.2	7.1	8.5	7.3	7.0
Los Angeles, CA		5.1	4.5	5.1	6.1	5.3	4.9	6.2	5.5	7.1	7.2	7.2	5.8
Memphis, TN		5.4	5.1	3.6	2.9	3.6	3.2	3.8	2.5	4.5	6.1	4.9	5.5
Nashville, TN		4.5	4.2	3.6	3.1	1.7	2.4	3.4	3.1	3.6	4.1	4.2	3.8
Orlando, FL		6.2	5.2	4.7	4.9	5.0	4.6	4.8	4.9	5.8	5.7	6.1	5.6
Phoenix, AZ		6.1	5.4	6.0	5.9	5.4	5.9	7.0	7.2	7.4	8.2	8.6	7.9
Raleigh-Cary, NC		3.2	2.9	2.7	2.3	2.4	3.4	3.6	3.1	3.1	4.3	4.3	4.0
Riverside-San Bernardino, CA		4.4	3.6	4.6	5.1	5.5	4.5	5.7	5.5	6.6	7.0	7.4	6.6
Sacramento, CA		6.9	5.8	7.4	7.3	6.0	6.2	7.7	10.0	7.6	8.4	9.2	6.5
Tampa, FL		3.8	3.5	2.7	3.0	3.1	4.0	3.3	3.5	4.1	4.7	4.1	4.5

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Table 4a – Month-End Vacancy (by Count)

		Year 2018					Year 2019							Count
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
AH4R 2014-SFR2		152	168	195	185	172	184	197	184	158	138	145	198	4,545
AH4R 2014-SFR3		189	199	247	249	252	239	230	202	169	171	144	151	4,588
AH4R 2015-SFR1		171	173	211	240	236	236	228	221	172	176	140	167	4,697
AH4R 2015-SFR2		182	180	190	214	191	187	173	147	143	157	149	173	4,176
HPA 2016-2		98	86	76	78	74	69	73	67	52	63	80	108	1,257
HPA 2017-1		38	61	84	93	94	92	95	88	75	69	56	59	1,307
HPA 2018-1		94	113	141	149	145	126	106	84	91	89	87	95	1,719
IH 2017-SFR2		204	204	189	183	171	164	161	167	157	159	166	202	4,319
IH 2018-SFR1		233	219	210	188	187	192	196	192	207	198	200	235	4,221
IH 2018-SFR2		236	198	231	233	269	241	233	219	228	237	200	258	5,401
IH 2018-SFR3					279	284	281	291	295	259	279	274	304	6,577
IH 2018-SFR4							253	271	290	260	272	280	342	5,344
PRD 2015-SFR2		108	151	157	157	140	137	162	156	144	148	160	159	3,285
PRD 2015-SFR3		149	172	182	158	132	141	134	118	104	109	129	161	3,149
PRD 2017-SFR1		74	88	102	121	130	131	129	117	105	93	101	96	2,708
PRD 2018-SFR1		56	84	107	123	132	115	85	53	42	50	56	67	2,113
PRD 2018-SFR2				38	50	56	99	116	110	87	82	97	86	2,116
PRD 2019-SFR2												106	102	2,459
SWH 2017-1		269	192	237	206	179	171	195	243	219	248	240	253	4,360
TAH 2016-SFR1		186	230	186	181	163	180	156	146	151	164	174	142	3,413
TAH 2017-SFR1		120	136	100	96	110	160	162	149	129	107	110	71	3,479
TAH 2017-SFR2		99	120	95	110	98	114	87	90	83	68	106	80	2,619
TAH 2018-SFR1		98	112	72	98	99	109	125	88	77	83	86	66	2,509
Overall SFR		2,756	2,886	3,050	3,391	3,314	3,621	3,605	3,426	3,112	3,160	3,286	3,575	80,361

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Table 4b – Month-End Vacancy (by Percentage)

		Year 2018						Year 2019					
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
AH4R 2014-SFR2		3.4	3.7	4.4	4.1	3.8	4.0	4.3	4.0	3.5	3.0	3.2	4.4
AH4R 2014-SFR3		4.2	4.4	5.5	5.5	5.5	5.2	5.0	4.4	3.7	3.7	3.1	3.3
AH4R 2015-SFR1		3.7	3.7	4.6	5.2	5.0	5.0	4.9	4.7	3.7	3.7	3.0	3.6
AH4R 2015-SFR2		4.4	4.4	4.6	5.2	4.6	4.5	4.1	3.5	3.4	3.8	3.6	4.1
HPA 2016-2		7.6	6.6	5.9	6.0	5.7	5.4	5.7	5.2	4.1	4.9	6.3	8.6
HPA 2017-1		2.8	4.5	6.3	7.0	7.1	6.9	7.2	6.6	5.7	5.3	4.3	4.5
HPA 2018-1		5.3	6.4	8.0	8.5	8.2	7.2	6.0	4.8	5.2	5.1	5.0	5.5
IH 2017-SFR2		4.6	4.6	4.3	4.2	3.9	3.8	3.7	3.8	3.6	3.7	3.8	4.7
IH 2018-SFR1		5.4	5.1	4.9	4.4	4.4	4.5	4.6	4.5	4.9	4.7	4.7	5.6
IH 2018-SFR2		4.2	3.5	4.1	4.2	4.9	4.4	4.3	4.0	4.2	4.4	3.7	4.8
IH 2018-SFR3					4.2	4.3	4.2	4.4	4.5	3.9	4.2	4.2	4.6
IH 2018-SFR4							4.7	5.0	5.4	4.8	5.1	5.2	6.4
PRD 2015-SFR2		3.3	4.6	4.8	4.8	4.3	4.2	4.9	4.7	4.4	4.5	4.9	4.8
PRD 2015-SFR3		4.7	5.5	5.8	5.0	4.2	4.5	4.3	3.7	3.3	3.5	4.1	5.1
PRD 2017-SFR1		2.7	3.2	3.8	4.5	4.8	4.8	4.8	4.3	3.9	3.4	3.7	3.5
PRD 2018-SFR1		2.7	4.0	5.1	5.8	6.2	5.4	4.0	2.5	2.0	2.4	2.7	3.2
PRD 2018-SFR2				1.8	2.4	2.6	4.7	5.5	5.2	4.1	3.9	4.6	4.1
PRD 2019-SFR2												4.3	4.1
SWH 2017-1		6.1	4.3	5.4	4.7	4.1	3.9	4.4	5.5	5.0	5.7	5.5	5.8
TAH 2016-SFR1		5.4	6.7	5.4	5.3	4.7	5.2	4.5	4.3	4.4	4.8	5.1	4.2
TAH 2017-SFR1		3.4	3.9	2.9	2.8	3.2	4.6	4.7	4.3	3.7	3.1	3.2	2.0
TAH 2017-SFR2		3.8	4.6	3.6	4.2	3.7	4.4	3.3	3.4	3.2	2.6	4.0	3.1
TAH 2018-SFR1		3.9	4.5	2.9	3.9	3.9	4.3	5.0	3.5	3.1	3.3	3.4	2.6
Overall SFR		4.3	4.5	4.6	4.7	4.5	4.6	4.6	4.4	4.0	4.0	4.1	4.4

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Table 4c – Month-End Vacancy (by Percentage) – Top MSAs

		Year 2018						Year 2019					
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Atlanta, GA		4.7	5.2	4.5	5.0	4.8	4.7	4.8	4.7	4.4	4.1	4.4	4.6
Charlotte, NC		3.8	4.6	4.9	5.1	4.2	4.5	4.3	4.3	4.2	4.7	4.7	4.1
Chicago, IL		3.4	4.2	5.3	6.0	5.7	5.6	4.1	3.7	3.0	2.4	2.3	3.5
Dallas-Plano-Irving, TX		4.9	5.8	5.9	5.6	5.8	5.5	5.3	4.9	4.7	4.6	4.7	5.4
Denver-Aurora, CO		6.1	5.2	7.0	6.5	6.0	5.7	5.8	5.8	5.6	5.2	5.5	7.8
Fort Lauderdale, FL		5.2	6.0	4.4	4.5	3.9	4.9	6.1	5.2	5.8	6.5	7.2	6.4
Fort Worth-Arlington, TX		5.0	5.4	6.1	5.1	4.9	4.6	4.0	3.5	4.1	4.5	4.2	4.1
Houston, TX		6.0	6.7	6.8	6.6	6.8	6.5	6.4	5.8	5.2	5.4	4.2	4.7
Indianapolis, IN		4.3	5.5	5.9	5.4	6.0	5.8	5.0	5.1	3.8	3.3	3.4	3.5
Jacksonville, FL		4.0	4.5	4.5	4.7	4.7	4.5	4.4	4.5	3.7	4.3	3.9	4.6
Las Vegas, NV		3.5	3.2	3.7	3.5	3.2	2.8	3.4	3.5	3.1	2.6	3.0	3.3
Los Angeles, CA		5.4	5.5	5.0	4.9	4.7	4.5	4.0	4.2	4.4	4.1	4.7	5.3
Memphis, TN		3.8	5.0	5.3	5.4	4.9	4.9	5.8	4.6	3.7	3.4	3.7	4.7
Nashville, TN		4.7	5.5	5.3	5.4	4.6	4.5	5.0	4.2	4.1	4.1	4.7	4.4
Orlando, FL		3.5	3.4	3.4	3.4	3.9	4.1	4.4	4.5	4.3	3.4	3.6	3.8
Phoenix, AZ		3.3	3.3	3.6	2.7	2.9	3.1	2.9	2.8	2.7	2.7	2.8	3.4
Raleigh-Cary, NC		4.0	4.0	5.1	5.1	4.8	4.7	4.5	3.6	3.1	4.5	4.7	4.6
Riverside-San Bernardino, CA		4.0	3.4	4.3	4.3	3.8	2.8	3.9	4.5	4.6	4.9	5.2	5.0
Sacramento, CA		3.1	3.5	3.8	4.0	2.9	3.2	3.7	3.3	2.9	3.0	2.8	4.5
Tampa, FL		5.2	5.2	5.0	4.9	4.3	4.6	4.7	4.3	3.9	3.8	4.3	4.3

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Chart 5 – MSA-Level Vacancy and Lease Expiration Percentage (by Count)*

Sources: Morningstar Credit Ratings, LLC and Tableau Software
*The size of the circles represents the past three months of lease expirations by count as a percentage of each MSA, ranging from 19.44% to 31.87%. Because of their proximity, the Fort Worth-Arlington, Texas, MSA is hidden behind the Dallas-Plano-Irving, Texas, MSA.

Table 5a – Lease Expiration (by Count)

		Year 2018					Year 2019							Total Count
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
AH4R 2014-SFR2		378	354	265	215	200	172	245	306	345	405	491	459	4,545
AH4R 2014-SFR3		439	382	280	240	198	161	263	275	297	381	419	454	4,588
AH4R 2015-SFR1		405	364	279	276	252	231	341	359	391	298	352	406	4,697
AH4R 2015-SFR2		376	271	181	155	173	153	198	250	296	349	455	504	4,176
HPA 2016-2		191	49	27	24	24	20	26	34	85	124	158	233	1,257
HPA 2017-1		74	119	98	144	139	99	101	78	94	96	76	48	1,307
HPA 2018-1		229	179	172	122	73	71	69	71	105	113	133	172	1,719
IH 2017-SFR2		373	314	235	243	197	183	218	256	275	273	302	372	4,319
IH 2018-SFR1		380	347	375	324	251	206	260	285	293	292	357	355	4,221
IH 2018-SFR2		378	345	330	346	306	276	320	353	395	338	335	342	5,401
IH 2018-SFR3					416	401	324	428	410	452	441	387	416	6,577
IH 2018-SFR4							250	292	363	345	379	457	514	5,344
PRD 2015-SFR2		200	179	161	221	229	195	191	206	220	279	279	257	3,285
PRD 2015-SFR3		341	342	224	223	140	149	126	142	139	203	214	282	3,149
PRD 2017-SFR1		183	188	203	310	232	231	179	152	146	147	122	154	2,708
PRD 2018-SFR1		151	208	249	423	379	85	21	29	56	81	67	88	2,113
PRD 2018-SFR2				6	7	8	279	345	258	160	181	220	202	2,116
PRD 2019-SFR2												147	202	2,459
SWH 2017-1		342	318	268	217	195	164	285	307	336	418	459	390	4,360
TAH 2016-SFR1		263	250	181	203	135	137	122	154	174	245	215	208	3,413
TAH 2017-SFR1		188	221	209	244	168	162	225	229	263	192	191	195	3,479
TAH 2017-SFR2		155	166	145	156	111	113	155	153	182	135	174	170	2,619
TAH 2018-SFR1		133	166	150	172	112	119	151	125	156	135	137	148	2,509
Overall SFR		5,179	4,762	4,038	4,681	3,923	3,780	4,561	4,795	5,205	5,505	6,147	6,571	80,361

Table 5b – Lease Expiration (by Percentage)

		Year 2018						Year 2019					
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
AH4R 2014-SFR2		8.4	7.9	5.9	4.8	4.4	3.8	5.4	6.7	7.6	8.9	10.8	10.1
AH4R 2014-SFR3		9.8	8.5	6.2	5.3	4.3	3.5	5.7	6.0	6.5	8.3	9.1	9.9
AH4R 2015-SFR1		8.7	7.9	6.0	6.0	5.4	4.9	7.3	7.6	8.3	6.3	7.5	8.6
AH4R 2015-SFR2		9.1	6.6	4.4	3.8	4.1	3.7	4.7	6.0	7.1	8.4	10.9	12.1
HPA 2016-2		14.7	3.8	2.1	1.9	1.9	1.6	2.0	2.7	6.6	9.7	12.5	18.5
HPA 2017-1		5.5	8.9	7.3	10.8	10.4	7.4	7.6	5.9	7.1	7.3	5.8	3.7
HPA 2018-1		12.9	10.1	9.7	6.9	4.1	4.0	3.9	4.0	6.0	6.5	7.7	10.0
IH 2017-SFR2		8.5	7.1	5.3	5.6	4.5	4.2	5.0	5.9	6.3	6.3	7.0	8.6
IH 2018-SFR1		8.9	8.1	8.7	7.6	5.9	4.8	6.1	6.7	6.9	6.9	8.4	8.4
IH 2018-SFR2		6.7	6.2	5.9	6.3	5.6	5.0	5.9	6.5	7.3	6.2	6.2	6.3
IH 2018-SFR3					6.3	6.0	4.9	6.5	6.2	6.8	6.7	5.9	6.3
IH 2018-SFR4							4.6	5.4	6.7	6.4	7.1	8.5	9.6
PRD 2015-SFR2		6.1	5.4	4.9	6.7	7.0	5.9	5.8	6.3	6.7	8.5	8.5	7.8
PRD 2015-SFR3		10.8	10.9	7.1	7.1	4.4	4.7	4.0	4.5	4.4	6.4	6.8	9.0
PRD 2017-SFR1		6.8	6.9	7.5	11.4	8.6	8.5	6.6	5.6	5.4	5.4	4.5	5.7
PRD 2018-SFR1		7.1	9.8	11.8	20.0	17.9	4.0	1.0	1.4	2.7	3.8	3.2	4.2
PRD 2018-SFR2				0.3	0.3	0.4	13.2	16.3	12.2	7.6	8.6	10.4	9.5
PRD 2019-SFR2												6.0	8.2
SWH 2017-1		7.7	7.2	6.1	4.9	4.4	3.7	6.5	7.0	7.7	9.5	10.5	8.9
TAH 2016-SFR1		7.7	7.3	5.3	5.9	3.9	4.0	3.6	4.5	5.1	7.2	6.3	6.1
TAH 2017-SFR1		5.4	6.4	6.0	7.0	4.8	4.7	6.5	6.6	7.6	5.5	5.5	5.6
TAH 2017-SFR2		5.9	6.3	5.5	6.0	4.2	4.3	5.9	5.8	6.9	5.2	6.6	6.5
TAH 2018-SFR1		5.3	6.6	6.0	6.9	4.5	4.7	6.0	5.0	6.2	5.4	5.5	5.9
Overall SFR		8.1	7.4	6.1	6.4	5.4	4.8	5.8	6.1	6.7	7.1	7.6	8.2

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Table 5c – Lease Expiration (by Percentage) – Top MSAs

		Year 2018						Year 2019					
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Atlanta, GA		7.7	7.3	6.2	6.4	5.0	4.8	5.5	5.8	6.4	7.4	6.9	7.7
Charlotte, NC		7.9	8.3	6.2	6.2	4.7	4.0	5.2	5.2	6.2	7.5	7.8	8.5
Chicago, IL		10.0	7.9	7.6	3.7	3.1	3.9	5.3	5.5	7.5	10.1	11.1	10.6
Dallas-Plano-Irving, TX		8.3	8.1	5.7	6.8	5.4	5.0	5.3	6.8	6.3	7.0	7.3	8.4
Denver-Aurora, CO		9.5	7.5	7.3	6.3	4.8	4.5	7.9	5.6	5.7	5.8	7.9	11.9
Fort Lauderdale, FL		6.0	7.3	5.1	6.5	5.1	5.5	8.0	5.8	6.1	8.1	6.0	6.4
Fort Worth-Arlington, TX		7.4	7.9	6.3	5.8	5.3	5.5	5.6	5.8	7.3	7.2	8.1	7.6
Houston, TX		7.9	6.3	6.2	5.7	5.8	5.0	5.4	6.7	6.9	7.0	6.0	6.4
Indianapolis, IN		8.8	8.0	6.0	6.3	4.6	3.9	5.6	5.5	6.5	8.5	10.1	8.2
Jacksonville, FL		6.0	6.1	5.6	6.6	6.0	5.3	5.8	5.7	6.4	6.9	8.5	8.3
Las Vegas, NV		8.3	8.5	7.1	7.9	5.0	5.0	5.8	8.8	7.0	6.1	6.6	7.6
Los Angeles, CA		7.2	7.2	6.7	6.2	5.0	3.5	4.6	5.2	6.8	5.4	9.6	8.4
Memphis, TN		6.8	7.8	7.3	6.3	6.3	6.6	7.0	5.3	5.1	8.2	6.7	7.6
Nashville, TN		8.7	7.2	4.8	6.5	4.1	5.2	6.1	5.6	6.0	8.0	8.5	9.8
Orlando, FL		8.7	9.3	6.0	6.6	5.6	4.9	5.9	5.6	6.0	6.4	7.6	8.5
Phoenix, AZ		7.3	7.5	5.9	6.2	5.9	5.5	6.6	7.2	7.1	7.4	7.2	7.4
Raleigh-Cary, NC		10.2	9.3	6.3	6.6	7.3	5.1	4.9	5.5	5.4	8.0	9.0	10.0
Riverside-San Bernardino, CA		8.6	7.1	8.2	6.5	6.1	3.9	6.4	5.3	6.5	7.8	8.5	7.1
Sacramento, CA		7.2	9.8	6.9	5.0	4.7	3.4	5.0	6.6	7.1	6.3	7.0	7.8
Tampa, FL		7.8	8.6	6.4	7.4	5.5	5.2	6.0	5.7	6.6	6.4	6.5	8.2

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Table 6a – Historical Total Months of Vacancy for June Vacancies (by Count)

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		49	40	28	25	16	14	10	6	5	1	0	4	198
AH4R 2014-SFR3		31	29	22	24	17	7	5	8	6	1	1	0	151
AH4R 2015-SFR1		27	34	28	26	17	17	5	5	2	3	2	1	167
AH4R 2015-SFR2		48	42	24	20	17	8	6	3	2	2	0	1	173
HPA 2016-2		35	32	14	7	8	6	1	0	1	3	0	1	108
HPA 2017-1		13	21	10	6	4	5	0	0	0	0	0	0	59
HPA 2018-1		55	21	6	6	1	0	0	2	0	0	3	1	95
IH 2017-SFR2		98	52	24	10	8	2	5	1	0	0	0	2	202
IH 2018-SFR1		82	55	32	22	16	10	6	5	1	1	1	4	235
IH 2018-SFR2		126	63	25	26	7	6	1	0	1	0	0	3	258
IH 2018-SFR3		145	74	32	20	11	9	1	4	7	1			304
IH 2018-SFR4		167	82	37	14	20	6	11	5					342
PRD 2015-SFR2		32	43	22	22	14	8	4	3	4	1	0	6	159
PRD 2015-SFR3		41	31	27	21	9	7	13	3	2	2	2	3	161
PRD 2017-SFR1		33	26	19	9	4	3	0	0	2	0	0	0	96
PRD 2018-SFR1		39	14	6	4	1	1	0	0	1	0	1	0	67
PRD 2018-SFR2		50	24	7	3	1	0	0	0	1	0	0		86
PRD 2019-SFR2		61	39	2										102
SWH 2017-1		88	63	38	33	17	7	1	3	0	1	1	1	253
TAH 2016-SFR1		22	40	21	20	12	12	4	4	5	0	0	2	142
TAH 2017-SFR1		11	30	14	8	5	1	0	0	0	1	1	0	71
TAH 2017-SFR2		22	32	14	2	4	2	0	1	3	0	0	0	80
TAH 2018-SFR1		22	29	6	3	0	1	1	2	1	0	0	1	66
Overall SFR		1,297	916	458	331	209	132	74	55	44	17	12	30	3,575

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Table 6b – Historical Total Months of Vacancy for June Vacancies (by Percentage)

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		24.7	20.2	14.1	12.6	8.1	7.1	5.1	3.0	2.5	0.5	0.0	2.0	100.0
AH4R 2014-SFR3		20.5	19.2	14.6	15.9	11.3	4.6	3.3	5.3	4.0	0.7	0.7	0.0	100.0
AH4R 2015-SFR1		16.2	20.4	16.8	15.6	10.2	10.2	3.0	3.0	1.2	1.8	1.2	0.6	100.0
AH4R 2015-SFR2		27.7	24.3	13.9	11.6	9.8	4.6	3.5	1.7	1.2	1.2	0.0	0.6	100.0
HPA 2016-2		32.4	29.6	13.0	6.5	7.4	5.6	0.9	0.0	0.9	2.8	0.0	0.9	100.0
HPA 2017-1		22.0	35.6	16.9	10.2	6.8	8.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0
HPA 2018-1		57.9	22.1	6.3	6.3	1.1	0.0	0.0	2.1	0.0	0.0	3.2	1.1	100.0
IH 2017-SFR2		48.5	25.7	11.9	5.0	4.0	1.0	2.5	0.5	0.0	0.0	0.0	1.0	100.0
IH 2018-SFR1		34.9	23.4	13.6	9.4	6.8	4.3	2.6	2.1	0.4	0.4	0.4	1.7	100.0
IH 2018-SFR2		48.8	24.4	9.7	10.1	2.7	2.3	0.4	0.0	0.4	0.0	0.0	1.2	100.0
IH 2018-SFR3		47.7	24.3	10.5	6.6	3.6	3.0	0.3	1.3	2.3	0.3			100.0
IH 2018-SFR4		48.8	24.0	10.8	4.1	5.8	1.8	3.2	1.5					100.0
PRD 2015-SFR2		20.1	27.0	13.8	13.8	8.8	5.0	2.5	1.9	2.5	0.6	0.0	3.8	100.0
PRD 2015-SFR3		25.5	19.3	16.8	13.0	5.6	4.3	8.1	1.9	1.2	1.2	1.2	1.9	100.0
PRD 2017-SFR1		34.4	27.1	19.8	9.4	4.2	3.1	0.0	0.0	2.1	0.0	0.0	0.0	100.0
PRD 2018-SFR1		58.2	20.9	9.0	6.0	1.5	1.5	0.0	0.0	1.5	0.0	1.5	0.0	100.0
PRD 2018-SFR2		58.1	27.9	8.1	3.5	1.2	0.0	0.0	0.0	1.2	0.0	0.0		100.0
PRD 2019-SFR2		59.8	38.2	2.0										100.0
SWH 2017-1		34.8	24.9	15.0	13.0	6.7	2.8	0.4	1.2	0.0	0.4	0.4	0.4	100.0
TAH 2016-SFR1		15.5	28.2	14.8	14.1	8.5	8.5	2.8	2.8	3.5	0.0	0.0	1.4	100.0
TAH 2017-SFR1		15.5	42.3	19.7	11.3	7.0	1.4	0.0	0.0	0.0	1.4	1.4	0.0	100.0
TAH 2017-SFR2		27.5	40.0	17.5	2.5	5.0	2.5	0.0	1.3	3.8	0.0	0.0	0.0	100.0
TAH 2018-SFR1		33.3	43.9	9.1	4.5	0.0	1.5	1.5	3.0	1.5	0.0	0.0	1.5	100.0
Overall SFR		36.3	25.6	12.8	9.3	5.8	3.7	2.1	1.5	1.2	0.5	0.3	0.8	100.0

Table 7 – Delinquency Definition

Issuer	Definition
American Homes 4 Rent	Past due one calendar month or more (not dependent on day count) and owing $200 or more
Invitation Homes/Starwood Waypoint Homes	Past due 30 days or more (not dependent on calendar month) and owing 25% of one month's rent or more
Home Partners of America	Past due 30 days or more (not dependent on calendar month) and owing $500 or more
Progress Residential	Past due 30 days or more (not dependent on calendar month) and owing $200 or more[1]
Tricon American Homes	Past due 30 days or more (not dependent on calendar month) and owing $500 or more[2]

[1] Includes Section 8 rent, pet fees, and MTM fees, but excludes late fees and damage fees.
[2] Based on total receivables.

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Table 8a – Month-End Delinquency (by Count)

		Year 2018					Year 2019							Total Count
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
AH4R 2014-SFR2		13	11	16	16	21	22	18	17	18	8	17	26	4,545
AH4R 2014-SFR3		14	14	12	13	7	15	13	8	9	8	11	15	4,588
AH4R 2015-SFR1		18	11	17	14	17	26	21	25	16	13	13	21	4,697
AH4R 2015-SFR2		11	10	9	11	13	12	15	23	15	8	9	18	4,176
HPA 2016-2		14	16	22	22	16	18	15	11	11	12	16	10	1,257
HPA 2017-1		19	23	22	22	21	20	20	14	11	12	11	16	1,307
HPA 2018-1		24	23	25	28	17	24	23	22	10	19	19	18	1,719
IH 2017-SFR2		24	30	35	30	40	65	52	23	31	40	42	31	4,319
IH 2018-SFR1		21	16	20	20	41	65	22	28	22	17	21	26	4,221
IH 2018-SFR2		54	49	50	53	48	92	58	61	44	37	48	45	5,401
IH 2018-SFR3					67	87	134	70	48	73	59	65	62	6,577
IH 2018-SFR4							65	42	38	33	28	28	39	5,344
PRD 2015-SFR2		25	10	21	20	24	22	21	21	23	13	14	24	3,285
PRD 2015-SFR3		23	16	21	25	25	19	16	36	27	21	22	18	3,149
PRD 2017-SFR1		25	12	12	17	22	18	23	19	11	16	12	14	2,708
PRD 2018-SFR1		16	6	9	9	7	4	10	13	15	10	16	14	2,113
PRD 2018-SFR2				0	17	15	7	10	14	10	12	9	16	2,116
PRD 2019-SFR2												12	19	2,459
SWH 2017-1		27	29	36	34	29	87	29	20	20	14	19	19	4,360
TAH 2016-SFR1		14	8	15	6	7	1	18	1	3	7	14	2	3,413
TAH 2017-SFR1		10	7	11	8	9	0	9	1	2	6	14	0	3,479
TAH 2017-SFR2		3	2	4	2	5	2	11	1	3	6	9	0	2,619
TAH 2018-SFR1		4	2	6	1	7	0	8	0	6	4	7	1	2,509
Overall SFR		359	295	363	435	478	718	524	444	413	370	448	454	80,361

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Table 8b – Month-End Delinquency (by Percentage)

		Year 2018						Year 2019					
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
AH4R 2014-SFR2		0.3	0.2	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.2	0.4	0.6
AH4R 2014-SFR3		0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3
AH4R 2015-SFR1		0.4	0.2	0.4	0.3	0.4	0.6	0.4	0.5	0.3	0.3	0.3	0.4
AH4R 2015-SFR2		0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.6	0.4	0.2	0.2	0.4
HPA 2016-2		1.1	1.2	1.7	1.7	1.2	1.4	1.2	0.9	0.9	0.9	1.3	0.8
HPA 2017-1		1.4	1.7	1.6	1.6	1.6	1.5	1.5	1.1	0.8	0.9	0.8	1.2
HPA 2018-1		1.3	1.3	1.4	1.6	1.0	1.4	1.3	1.3	0.6	1.1	1.1	1.0
IH 2017-SFR2		0.5	0.7	0.8	0.7	0.9	1.5	1.2	0.5	0.7	0.9	1.0	0.7
IH 2018-SFR1		0.5	0.4	0.5	0.5	1.0	1.5	0.5	0.7	0.5	0.4	0.5	0.6
IH 2018-SFR2		1.0	0.9	0.9	1.0	0.9	1.7	1.1	1.1	0.8	0.7	0.9	0.8
IH 2018-SFR3					1.0	1.3	2.0	1.1	0.7	1.1	0.9	1.0	0.9
IH 2018-SFR4							1.2	0.8	0.7	0.6	0.5	0.5	0.7
PRD 2015-SFR2		0.8	0.3	0.6	0.6	0.7	0.7	0.6	0.6	0.7	0.4	0.4	0.7
PRD 2015-SFR3		0.7	0.5	0.7	0.8	0.8	0.6	0.5	1.1	0.9	0.7	0.7	0.6
PRD 2017-SFR1		0.9	0.4	0.4	0.6	0.8	0.7	0.8	0.7	0.4	0.6	0.4	0.5
PRD 2018-SFR1		0.8	0.3	0.4	0.4	0.3	0.2	0.5	0.6	0.7	0.5	0.8	0.7
PRD 2018-SFR2				0.0	0.8	0.7	0.3	0.5	0.7	0.5	0.6	0.4	0.8
PRD 2019-SFR2												0.5	0.8
SWH 2017-1		0.6	0.7	0.8	0.8	0.7	2.0	0.7	0.5	0.5	0.3	0.4	0.4
TAH 2016-SFR1		0.4	0.2	0.4	0.2	0.2	0.0	0.5	0.0	0.1	0.2	0.4	0.1
TAH 2017-SFR1		0.3	0.2	0.3	0.2	0.3	0.0	0.3	0.0	0.1	0.2	0.4	0.0
TAH 2017-SFR2		0.1	0.1	0.2	0.1	0.2	0.1	0.4	0.0	0.1	0.2	0.3	0.0
TAH 2018-SFR1		0.2	0.1	0.2	0.0	0.3	0.0	0.3	0.0	0.2	0.2	0.3	0.0
Overall SFR		0.6	0.5	0.5	0.6	0.7	0.9	0.7	0.6	0.5	0.5	0.6	0.6

Table 9 – Monthly Retention Rate of Expiring Leases (by Percentage)

		Year 2018					Year 2019						
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
AH4R 2014-SFR2		74.9	74.0	77.7	74.9	79.0	69.8	82.9	78.4	83.5	82.2	74.7	TBD
AH4R 2014-SFR3		77.2	79.1	75.4	72.1	71.7	78.3	78.7	79.3	76.4	77.7	76.8	TBD
AH4R 2015-SFR1		71.9	77.5	78.9	71.0	81.3	79.7	78.0	79.4	79.8	78.5	75.0	TBD
AH4R 2015-SFR2		74.2	74.9	68.5	79.4	76.3	68.0	80.8	78.8	74.0	76.8	75.4	TBD
HPA 2016-2		70.7	77.6	77.8	66.7	75.0	80.0	73.1	82.4	80.0	77.4	75.3	TBD
HPA 2017-1		73.0	73.9	89.8	84.7	79.1	83.8	84.2	82.1	76.6	76.0	75.0	TBD
HPA 2018-1		72.5	76.0	75.0	82.0	79.5	85.9	79.7	77.5	80.0	78.8	75.9	TBD
IH 2017-SFR2		79.4	79.0	81.7	76.5	81.7	88.5	81.2	80.9	86.5	78.8	76.2	TBD
IH 2018-SFR1		78.9	74.6	82.1	84.6	78.9	81.6	84.2	78.6	80.5	83.9	81.8	TBD
IH 2018-SFR2		81.5	81.7	79.4	80.1	77.5	83.7	80.6	78.2	75.9	78.1	78.2	TBD
IH 2018-SFR3					78.6	81.5	80.9	78.5	78.3	80.8	75.3	74.9	TBD
IH 2018-SFR4							78.0	83.6	81.8	77.7	80.5	77.5	TBD
PRD 2015-SFR2		79.5	70.4	77.0	76.5	74.7	82.1	73.3	74.3	79.1	77.1	78.9	TBD
PRD 2015-SFR3		77.4	77.5	75.4	76.7	71.4	70.5	71.4	75.4	81.3	76.8	72.9	TBD
PRD 2017-SFR1		79.2	81.9	74.9	74.8	78.4	77.1	79.3	71.1	72.6	73.5	73.8	TBD
PRD 2018-SFR1		81.5	76.9	80.7	78.5	74.4	76.5	81.0	72.4	73.2	80.2	77.6	TBD
PRD 2018-SFR2				83.3	100.0	50.0	78.5	81.7	76.4	80.6	76.8	78.6	TBD
PRD 2019-SFR2												76.9	TBD
SWH 2017-1		79.5	81.4	79.1	80.2	76.9	81.7	82.1	74.9	80.4	78.0	79.5	TBD
TAH 2016-SFR1		78.3	82.0	85.1	83.7	78.5	81.8	85.2	87.7	83.9	80.8	83.7	TBD
TAH 2017-SFR1		74.5	82.8	82.3	82.8	82.1	78.4	79.6	81.7	87.1	87.5	84.3	TBD
TAH 2017-SFR2		82.6	84.9	80.7	85.9	81.1	81.4	83.9	85.6	87.9	87.4	88.5	TBD
TAH 2018-SFR1		82.7	87.3	78.0	82.6	83.9	82.4	79.5	93.6	87.8	83.7	90.5	TBD
Overall SFR		77.2	78.5	78.9	78.8	78.1	79.4	80.4	79.2	80.3	79.1	77.9	TBD

TBD – To Be Determined

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Table 10 – Monthly Retention Rate of MTM Leases (by Percentage)

| | | Year 2018 | | | | | | Year 2019 | | | | | |
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
AH4R 2014-SFR2		86.3	84.4	82.6	85.8	85.6	86.1	85.9	89.1	86.8	83.2	78.2	TBD
AH4R 2014-SFR3		82.8	85.3	82.5	82.7	88.1	92.0	92.7	88.5	85.1	86.7	83.8	TBD
AH4R 2015-SFR1		80.3	79.4	80.1	85.6	80.9	84.1	91.6	88.2	80.9	87.9	78.5	TBD
AH4R 2015-SFR2		80.9	79.7	81.5	81.7	78.9	83.3	88.3	84.9	84.2	83.0	83.9	TBD
HPA 2016-2													TBD
HPA 2017-1													TBD
HPA 2018-1													TBD
IH 2017-SFR2		90.0	88.6	74.7	88.2	76.8	85.7	89.8	88.5	86.4	80.0	76.6	TBD
IH 2018-SFR1		83.3	90.2	86.2	86.4	83.6	86.6	88.9	81.4	85.2	89.1	80.3	TBD
IH 2018-SFR2		88.2	91.4	90.7	84.3	94.0	87.5	83.5	89.5	83.7	82.5	81.3	TBD
IH 2018-SFR3					86.8	87.3	81.9	84.2	82.6	82.6	87.4	81.6	TBD
IH 2018-SFR4							82.1	87.2	89.8	86.2	78.0	82.6	TBD
PRD 2015-SFR2		85.3	79.1	76.5	85.7	63.6	74.2	68.6	75.0	87.5	74.3	79.4	TBD
PRD 2015-SFR3		85.7	71.8	70.5	80.6	67.6	80.0	84.0	75.9	74.2	78.6	75.0	TBD
PRD 2017-SFR1		83.3	75.7	88.6	72.7	92.1	80.5	83.3	71.8	90.6	84.8	90.3	TBD
PRD 2018-SFR1		66.7	62.5	56.3	76.0	66.7	66.7	78.9	85.7	69.2	77.8	71.4	TBD
PRD 2018-SFR2				100.0	100.0	88.9	100.0	64.3	71.4	76.7	67.9	80.0	TBD
PRD 2019-SFR2												66.7	TBD
SWH 2017-1		82.3	79.2	87.5	84.1	78.3	74.1	85.5	87.2	78.3	80.9	76.6	TBD
TAH 2016-SFR1		90.1	96.4	91.8	95.7	93.2	95.3	92.8	95.9	92.5	91.6	97.4	TBD
TAH 2017-SFR1		91.5	95.7	91.6	93.1	84.8	88.9	93.2	87.3	89.9	90.0	95.6	TBD
TAH 2017-SFR2		85.1	92.5	88.0	96.0	86.4	87.8	94.3	90.8	89.7	70.9	95.2	TBD
TAH 2018-SFR1		94.1	98.8	89.2	91.3	97.4	81.2	93.7	90.9	90.0	76.5	96.8	TBD
Overall SFR		85.5	86.6	84.5	87.3	85.3	85.8	88.5	87.4	85.6	83.6	83.6	TBD

TBD – To Be Determined

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Table 11a – MTM Tenants (by Count)

		Year 2018					Year 2019							Total Count
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
AH4R 2014-SFR2		219	202	185	172	157	164	152	163	174	190	218	212	4,545
AH4R 2014-SFR3		218	208	203	185	168	155	159	172	192	189	209	231	4,588
AH4R 2015-SFR1		201	200	176	167	160	148	145	174	203	213	214	213	4,697
AH4R 2015-SFR2		215	178	163	151	141	141	125	146	169	179	197	233	4,176
HPA 2016-2		0	0	0	0	0	0	0	0	0	0	0	0	1,257
HPA 2017-1		0	0	0	0	0	0	0	0	0	0	0	0	1,307
HPA 2018-1		0	0	0	0	0	0	0	0	0	0	0	0	1,719
IH 2017-SFR2		70	88	84	68	69	63	59	61	119	140	136	146	4,319
IH 2018-SFR1		66	61	65	66	67	67	63	86	85	89	118	125	4,221
IH 2018-SFR2		102	82	76	89	84	96	85	86	148	158	169	158	5,401
IH 2018-SFR3					115	118	116	101	109	179	193	202	190	6,577
IH 2018-SFR4							84	86	108	129	131	147	168	5,344
PRD 2015-SFR2		52	60	53	55	60	42	47	52	49	50	52	53	3,285
PRD 2015-SFR3		58	79	61	53	48	40	43	43	42	45	48	51	3,149
PRD 2017-SFR1		50	54	58	68	57	54	52	54	46	50	41	50	2,708
PRD 2018-SFR1		27	34	40	59	74	38	21	18	17	14	15	11	2,113
PRD 2018-SFR2				11	9	9	23	43	53	41	45	41	39	2,116
PRD 2019-SFR2												32	31	2,459
SWH 2017-1		79	72	72	69	60	54	55	86	71	86	114	115	4,360
TAH 2016-SFR1		202	210	232	233	232	205	194	179	184	187	168	182	3,413
TAH 2017-SFR1		103	98	107	118	111	100	83	81	92	98	81	92	3,479
TAH 2017-SFR2		114	111	116	108	112	101	95	91	92	95	68	92	2,619
TAH 2018-SFR1		85	88	95	89	88	90	88	85	88	92	64	78	2,509
Overall SFR		1,861	1,825	1,797	1,874	1,815	1,781	1,696	1,847	2,120	2,244	2,334	2,470	80,361

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Table 11b – MTM Tenants (by Percentage)

		Year 2018 Jul	Aug	Sep	Oct	Nov	Dec	Year 2019 Jan	Feb	Mar	Apr	May	Jun
AH4R 2014-SFR2		4.9	4.5	4.1	3.8	3.5	3.6	3.3	3.6	3.8	4.2	4.8	4.7
AH4R 2014-SFR3		4.8	4.6	4.5	4.1	3.7	3.4	3.5	3.7	4.2	4.1	4.6	5.0
AH4R 2015-SFR1		4.3	4.3	3.8	3.6	3.4	3.2	3.1	3.7	4.3	4.5	4.6	4.5
AH4R 2015-SFR2		5.2	4.3	4.0	3.7	3.4	3.4	3.0	3.5	4.0	4.3	4.7	5.6
HPA 2016-2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HPA 2017-1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HPA 2018-1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IH 2017-SFR2		1.6	2.0	1.9	1.6	1.6	1.4	1.4	1.4	2.7	3.2	3.1	3.4
IH 2018-SFR1		1.5	1.4	1.5	1.5	1.6	1.6	1.5	2.0	2.0	2.1	2.8	3.0
IH 2018-SFR2		1.8	1.5	1.4	1.6	1.5	1.8	1.6	1.6	2.7	2.9	3.1	2.9
IH 2018-SFR3					1.7	1.8	1.7	1.5	1.6	2.7	2.9	3.1	2.9
IH 2018-SFR4							1.6	1.6	2.0	2.4	2.4	2.7	3.1
PRD 2015-SFR2		1.6	1.8	1.6	1.7	1.8	1.3	1.4	1.6	1.5	1.5	1.6	1.6
PRD 2015-SFR3		1.8	2.5	1.9	1.7	1.5	1.3	1.4	1.4	1.3	1.4	1.5	1.6
PRD 2017-SFR1		1.8	2.0	2.1	2.5	2.1	2.0	1.9	2.0	1.7	1.8	1.5	1.8
PRD 2018-SFR1		1.3	1.6	1.9	2.8	3.5	1.8	1.0	0.9	0.8	0.7	0.7	0.5
PRD 2018-SFR2				0.5	0.4	0.4	1.1	2.0	2.5	1.9	2.1	1.9	1.8
PRD 2019-SFR2												1.3	1.3
SWH 2017-1		1.8	1.6	1.6	1.6	1.4	1.2	1.3	2.0	1.6	2.0	2.6	2.6
TAH 2016-SFR1		5.9	6.1	6.8	6.8	6.8	6.0	5.7	5.2	5.4	5.5	4.9	5.3
TAH 2017-SFR1		3.0	2.8	3.1	3.4	3.2	2.9	2.4	2.3	2.6	2.8	2.3	2.6
TAH 2017-SFR2		4.3	4.2	4.4	4.1	4.3	3.9	3.6	3.5	3.5	3.6	2.6	3.5
TAH 2018-SFR1		3.4	3.5	3.8	3.5	3.5	3.6	3.5	3.4	3.5	3.7	2.6	3.1
Overall SFR		2.9	2.8	2.7	2.6	2.5	2.3	2.2	2.4	2.7	2.9	2.9	3.1

Table 12 – Monthly Turnover Rate (by Percentage)

		Year 2018					Year 2019						
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
AH4R 2014-SFR2		4.1	3.5	2.8	2.8	2.0	2.3	2.2	2.4	2.5	2.9	4.1	TBD
AH4R 2014-SFR3		4.0	3.6	3.0	2.9	2.6	2.1	2.2	2.0	2.9	2.9	3.8	TBD
AH4R 2015-SFR1		4.5	3.8	3.0	3.2	2.3	2.6	2.7	2.4	3.1	2.7	3.6	TBD
AH4R 2015-SFR2		4.6	3.4	3.0	2.9	2.3	2.4	1.9	2.3	3.0	3.5	4.4	TBD
HPA 2016-2		5.9	2.1	1.7	1.9	2.1	1.6	2.3	1.5	2.7	3.3	5.5	TBD
HPA 2017-1		3.1	4.5	2.8	2.3	3.1	2.0	2.9	2.5	2.4	3.1	2.8	TBD
HPA 2018-1		6.9	4.8	4.1	2.4	2.4	1.5	1.5	1.8	2.8	2.5	3.4	TBD
IH 2017-SFR2		3.6	3.2	2.2	2.8	1.7	1.7	1.9	2.1	2.0	2.2	2.8	TBD
IH 2018-SFR1		3.2	3.6	2.7	2.6	2.5	2.0	2.5	1.9	3.0	2.4	2.4	TBD
IH 2018-SFR2		3.2	2.5	2.9	2.5	2.6	2.1	2.1	2.0	3.0	2.8	2.6	TBD
IH 2018-SFR3					2.4	2.6	2.2	2.4	2.3	2.6	2.7	2.7	TBD
IH 2018-SFR4							2.1	2.2	2.3	2.8	2.7	3.1	TBD
PRD 2015-SFR2		3.3	2.1	3.3	3.6	3.0	2.8	2.9	2.8	3.1	3.0	3.9	TBD
PRD 2015-SFR3		4.4	3.6	3.6	3.7	2.6	2.7	2.6	2.4	2.3	2.8	3.5	TBD
PRD 2017-SFR1		3.1	2.5	3.4	4.9	3.9	3.5	3.0	2.7	3.1	2.4	2.8	TBD
PRD 2018-SFR1		3.7	4.2	4.2	5.9	6.5	3.7	1.3	1.5	2.3	2.5	2.4	TBD
PRD 2018-SFR2				3.1	1.9	1.9	4.8	4.3	4.2	3.6	3.6	4.5	TBD
PRD 2019-SFR2												7.3	TBD
SWH 2017-1		3.8	2.7	3.1	2.8	2.0	1.7	2.4	2.8	2.7	3.3	2.8	TBD
TAH 2016-SFR1		4.0	3.5	1.0	2.7	2.0	1.8	1.8	1.8	3.0	2.2	2.8	TBD
TAH 2017-SFR1		2.0	3.7	1.0	2.3	2.2	3.0	2.0	2.5	3.3	1.5	2.1	TBD
TAH 2017-SFR2		2.3	2.7	1.1	3.4	2.2	2.2	1.4	2.1	3.4	1.6	2.5	TBD
TAH 2018-SFR1		3.7	2.6	0.8	3.2	1.9	2.1	2.1	2.4	2.7	1.8	2.4	TBD
Overall SFR		3.8	3.3	2.6	3.0	2.5	2.3	2.3	2.3	2.8	2.7	3.3	TBD

TBD – To Be Determined

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Appendix I – Vacancy Versus Lease Expiration

PRD 2015-SFR2

PRD 2015-SFR3

PRD 2017-SFR1

PRD 2018-SFR1

PRD 2018-SFR2

PRD 2019-SFR2

SWH 2017-1

TAH 2016-SFR1

TAH 2017-SFR1

TAH 2017-SFR2

TAH 2018-SFR1

Vacancy
Lease Expiration

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Appendix II – Description of Analysis

Morningstar tracks key metrics to gauge the performance of single-borrower, single-family rental transactions that Morningstar rates. There are several ways to view these metrics. For example, the vacancy rate might be calculated based on property count, by cash flow, or by days of occupancy. To account for different reporting across issuers, Morningstar seeks commonality across the single-borrower issuers' monthly reporting to derive its calculations.

Multiborrower deals are similar to single-borrower transactions in that the underlying collateral is generally single-family rental properties. They differ, though, in that single-borrower deals are backed by one loan, while multiborrower deals have many loans. As such, the monthly reporting for multiborrower deals is different from the data reported in the single-borrower sector. For example, delinquency reported in Tables 8a and 8b are tenants that are past due on rental payments at a property level. For multiborrower transactions, delinquency is measured by borrowers that are past due on payments at the loan level.

Table 1 – Multiborrower Loan Performance by Percentage of Balance

To calculate the percentage of loans delinquent, in foreclosure, and/or in special servicing, Morningstar takes the respective balance divided by the current deal balance.

Table 2 – Multiborrower Loan Performance by Loan Count

Morningstar shows the total loan count in a securitization and the number of loans 30-59 days delinquent, 60-89 days delinquent, over 90 days delinquent, in foreclosure, real estate owned, and in special servicing.

Chart 1 – Single-Family Rental Rent Change Versus RentRange Year-Over-Year Rent Change

To calculate the rent change across single-borrower, single-family rental transactions, Morningstar isolated the leases starting in a given period and compared the contractual rent in that period with the prior occupied contractual rent. Morningstar then compared this rent change with the year-over-year change in three- and four-bedroom median rents from RentRange. Morningstar weighted the RentRange median rents by geography to match the MSA concentration of the Morningstar single-family rental database.

Chart 2 – Rental Changes for Renewals Versus Vacant-to-Occupied Properties

Morningstar calculated the rent change using the contractual rent for the corresponding period versus the prior occupied contractual rent. To determine the lease expiration sample, Morningstar used the logic outlined in the Tables 5a, 5b, and 5c –

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Lease Expiration section. Morningstar then looked at the property tape to determine the renewed properties and compared that contractual rent with the prior contractual rent. For vacant properties subsequently occupied by new tenants, Morningstar isolated those properties that were vacant in a given month and occupied in the next month and again compared the current contractual rent with the prior contractual rent.

Chart 3 – May Average Contractual Rent Versus Property-Level RentRange Estimate by MSA

Chart 3, which shows some of the MSAs most frequently found in single-family rental securitizations, takes a snapshot of the contractual rents in the Morningstar single-family rental database and compares these rents with their property-specific rent estimates from RentRange.

Chart 4 – MSA-Level Blended Rent Change

Chart 4 shows the blended rent change of some of the MSAs frequently found in single-family rental securitizations. The size of each circle represents the percentage of properties by count in each MSA from Morningstar's database. MSAs in red are below the overall average rent change for the month, while those in blue are above.

Table 3 – Blended Rent Change (by Percentage) – Top MSAs

Table 3 shows the MSA-level blended rent change for the past 12 months using the same rent change calculation used in Chart 1 and Chart 4.

Tables 4a, 4b, and 4c – Month-End Vacancy

Table 4a displays deal-level vacancy by the month-end count of empty properties. Table 4b shows the deal-level vacancy as a percentage of the total properties in each pool. Table 4c shows the MSA-level vacancy percentage for some of the MSAs frequently found in single-family rental securitizations. The vacancy rate is heavily influenced by the number of lease expirations in each month. Generally, the more leases expiring in a given month, the higher the vacancy rate will be. Because each transaction or MSA has a distinct lease expiration schedule, the vacancy rate should not be viewed at one point in time, but rather in the context of its lease expiration cycle, as reported in Tables 5a, 5b, and 5c and as seen in the charts in Appendix I.

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Chart 5 – MSA-Level Vacancy and Lease Expiration Percentage (by Count)

Chart 5 shows the vacancy rate of some of the MSAs frequently found in single-family rental securitizations. The size of each circle represents the percentage of leases expiring in the past three months. MSAs in red are above the overall average vacancy percentage for the month, while those in blue are below. Typically, the more leases expiring, the higher the vacancy rate.

Tables 5a, 5b, and 5c – Lease Expiration

Because lease expiration profiles change over time as tenants renew or new tenants occupy vacant properties, Morningstar seeks to rely on more recently published reporting of lease expirations, rather than solely using the lease expiration schedule from the cutoff date. To determine June lease expirations, Morningstar looks for all June lease expirations in the April property tape. Morningstar looks three months back to set a lease expiration sample that more accurately captures tenants who renew their leases in months before their scheduled lease expiration. Certain issuers have indicated that they proactively work to renew tenants a few months before the lease expiration date. Because Morningstar is looking three months back to determine its sample, there are instances when tenants vacate properties between the time Morningstar determines its sample and the month in which the tenant must make a decision to stay in the property. Morningstar excludes those vacated properties from its lease expiration sample and its retention rate calculation in Table 9. In the current example, properties that become vacant or that have move out dates in either April or May are removed from the June lease expiration count.

Tables 6a and 6b – Total Historical Months of Vacancy

Tables 6a and 6b show the number of months of vacancy the May unoccupied properties have experienced. In other words, if a property is unoccupied as of the June property tape, these tables summarize the number of total months the property has been vacant since the transaction cutoff date. Depending on the length of performance history, the overall vacancy may be in line with the number of consecutive vacant months, but this might not always be the case for those properties that have gone through multiple leasing cycles. Table 6a shows historical months of vacancy by count, and Table 6b is as a percentage of the June vacancies.

Table 7 – Delinquency Definition

Morningstar's calculation of delinquency is based on the number of properties flagged as delinquent in the monthly property-level data. Each issuer uses its own criteria for classifying a tenant as delinquent. Table 7 summarizes the delinquency definition for each issuer and contains details on the length of time that must pass from a tenant's due date to be considered

delinquent. The length of time is either based on a count of 30 days or is based on the calendar month. The slight distinction, for example, either results in a property with payment due on May 1 considered as delinquent after 30 days or as delinquent on June 1. None of the issuers factor a grace period into their delinquency definition, meaning their respective measures of past due begin if payment has not been received by the stated due date. In addition to timing, these conditions can also differ by the total dollar threshold an issuer uses to classify a tenant as delinquent and by the types of overdue payments that the issuer uses to count toward that threshold. For example, most issuers use only base rent to determine the dollar amount of delinquency. However, Tricon American Homes counts total receivables to determine the past due amount. Progress Residential includes certain fees above base rent but not total receivables.

Tables 8a and 8b – Month-End Delinquency
Table 8a shows the month-end count of delinquencies based on the definition in Table 7, and Table 8b shows delinquency as a percentage of the total number of properties in each pool. Any review of delinquency should be viewed within the context of the delinquency definitions in Table 7.

Table 9 – Monthly Retention Rate of Expiring Leases
When evaluating an issuer's ability to keep tenants in a property, Morningstar considers a retention rate. Once again, differences in monthly reporting affect the calculation that Morningstar uses. Typically, a renewal rate would review those tenants who signed a full-term lease. Considering the different methods issuers use to designate tenants with either a renewal or an MTM status, Morningstar opted to report the retention rate instead of the renewal rate. The retention rate is defined as those properties that retained previous tenants, whether on full-term or MTM leases, divided by the total number of leases due to expire in that period, as reported in Table 5a and explained in Appendix II. If there is not enough seasoning in the deal to look three months back to determine the lease expiration sample, Morningstar relies on the cutoff tape lease expiration profile. As a result, the first three months of retention rate reported in Table 9 will use the cutoff tape to find the sample of lease expirations. After isolating the applicable lease expiration sample, Morningstar looks at the most recent property tape to determine the lease status of the properties. In this report, Morningstar uses the June property tape to determine the lease status for May expirations. Morningstar relies on the issuer's labeling of vacant, renewal, new lease, or MTM, to the extent that these notations are available in each tape.

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Table 10 – Monthly Retention Rate of MTM Leases

In Table 10, Morningstar reviews the retention rate of those properties in an MTM status. This table looks at previous tenants who went to an MTM status and either renewed or remained in the property on an MTM basis. For the MTM retention rate, Morningstar looks for MTM tenants in the previous month's property tape, and then looks to the current month for their occupancy status. For example, the May 2019 retention rates are the May statuses of April MTM tenants.

Tables 11a and 11b – MTM Tenants

In Tables 11a and 11b, Morningstar shows the count and percentage of properties with MTM tenants. Securitizations with higher concentrations of MTM tenants typically report higher retention rates of their MTM leases. MTM tenants are usually subject to a monthly fee, which may encourage them to eventually sign full-term leases.

Table 12 – Monthly Turnover Rate

In evaluating how effective an issuer is at retaining tenants, Morningstar considers the monthly turnover rate. For this metric, Morningstar strives to apply a consistent calculation given the differences in issuers' reporting. Morningstar considers a property turned over if it meets one of three criteria:

- The property is vacant but was occupied in the previous month and the move-out date, if available, is on or after the first day of the current month;
- The move-out date is on or after the first day of the current month, including the last day of the current month; or
- The property was occupied in the prior month and a tenant has signed a new lease that starts on or after the second day of the current month.

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