

# Single-Family Rental Research

## Performance Summary Covering All Morningstar-Rated Securitizations

May 2018

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### Introduction

The blended rent change increased for the fourth consecutive month by 4.3% in April, compared with a 4.1% rise in March. The average vacancy rate across single-borrower, single-family rental securitizations rated by Morningstar improved for the sixth-consecutive month, declining to 4.1% in April from a revised 4.2% in March. The lower vacancy is likely due to fewer winter lease expirations and a continued strong average retention rate that now stands at 79.8% as of March, the most recent data available. Among the top 20 metropolitan statistical areas, the Houston MSA continued to have the highest vacancy rate at 6.3% in April, though it has improved for three consecutive months and is down from 10.0% in October 2017. The Sarasota-Bradenton-Venice, Florida MSA had the next-highest vacancy rates at 5.5%. The Phoenix MSA continued to experience the highest blended rent growth of 6.7%, while the Denver-Aurora, Jacksonville, Las Vegas, Los Angeles, Orlando and Riverside-San Bernardino MSAs all saw blended rent growth over 5.0%. IH 2015-SFR1 and IH 2015-SFR2 paid off and were removed from the May Single-Family Rental Performance Summary and IH 2018-SFR1 and PRD 2018-SFR1 are now reporting data and were added to this month's report. The May Single-Family Rental Performance Summary includes 23 single-borrower deals with just under 86,100 properties.

Morningstar publishes our 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 April. 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](http://www.morningstarcreditratings.com).

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## Single-Borrower Performance

The average vacancy rate fell to 4.1% in April from a revised 4.2% in March, continuing a six-month trend of improving vacancy rates. AH4R 2015-SFR2 had the highest vacancy rate at 6.0%, up from 5.6% in March. AMSR 2016-SFR1's vacancy rate declined to 5.7% from 6.6% in March and 9.3% in January. The average retention rate on full-term leases increased slightly to 79.8% in March, the latest month for which data is available, with only one transactions reporting rates less than 75.0% and 12 deals having retention rates greater than 80.0%. The overall turnover rate increased slightly to 2.9% in March, the latest month for which data is available. The average delinquency rate improved to 0.4% from 0.5% in March, with only one deal posting a delinquency rate above 1.0%. AMSR 2016-SFR1 continues to have the highest delinquency rate at 1.4%, down from 1.9% in March. Please note that any review of delinquency should be viewed within the context of the delinquency definitions in Table 7.

Rents rose 4.3% in April, compared with an increase of 4.1% in March, and reflecting four straight months of higher rental increases. Chart 1 shows that the rent gains for securitized properties increased above their RentRange benchmarks. 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 March, the latest month for which data is available, the rent change for renewal properties increased 4.3% and vacant-to-occupied properties increased by 4.4%, up from 3.0% in February. Chart 3 shows that the average contractual rents by MSA have been largely in line with or slightly higher than their property-level RentRange estimates. Chart 4 shows the MSA-level blended rent change. MSAs with rent changes above the 4.3% average are blue, while those below are red. The size of the circle indicates the percentage of properties by count from a given MSA in Morningstar's database. Table 3 shows the MSA-level blended rent change for the past 12 months.

Table 11b shows the percentage of loans rented out under a month-to-month lease. AMSR 2016-SFR1 MTM leases have increased to 17.8% of its portfolio from 12.1% in May 2017. TAH 2017-SFR2 has the second-highest percentage of MTM leases with 6.7%.

## Multiborrower Performance

There have been eight multiborrower transactions; as of the most recent remittance report, these transactions were secured by 774 total loans. The number of loans 30-59 days delinquent increased by one to 11, while the number of loans 60-89 days delinquent declined to two from four, and the loans over 90 days delinquent increased by one to 18. Loans in foreclosure remained at declined to two, and loans in special servicing remained at 31.

**Table 1 – Multiborrower Loan Performance by Percentage of Balance**

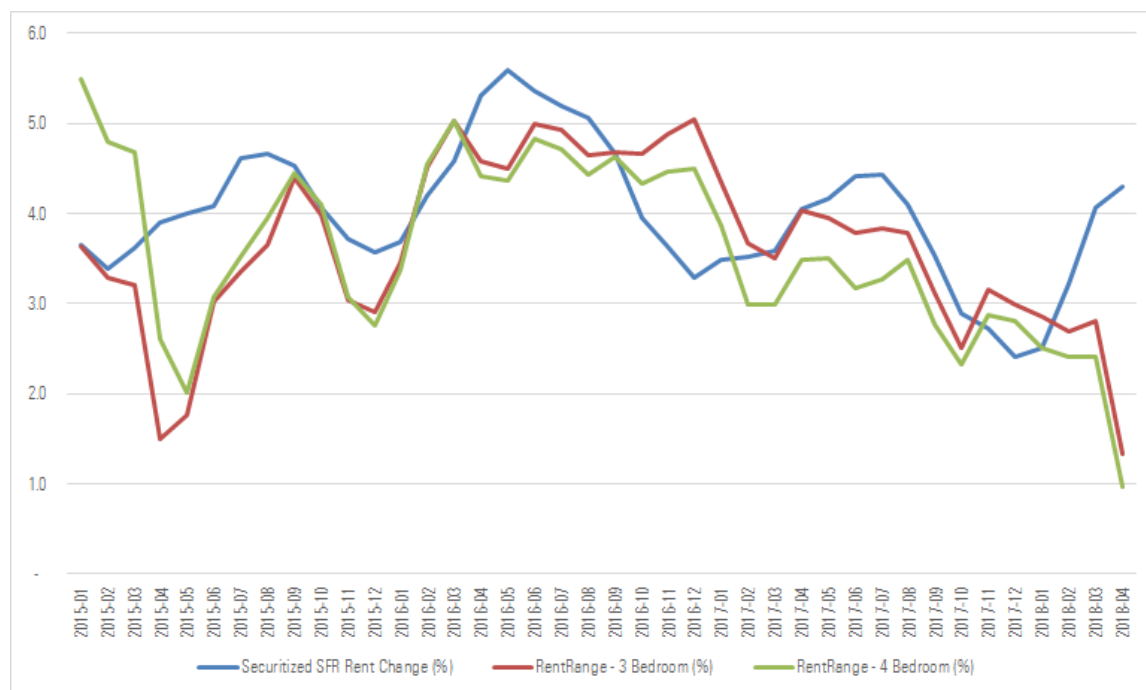
	30-59 Delinquent	60-89 Delinquent	90+ Delinquent	Foreclosure	Real Estate Owned	Special Servicing
B2R 2015-1	0.3	0.0	0.0	0.2	0.0	0.6
FKL 2015-SFR1	0.0	0.0	0.0	0.0	0.0	0.0
CAF 2015-1	0.0	0.0	1.2	0.0	0.0	5.6
B2R 2015-2	0.6	0.3	1.2	0.2	0.0	1.4
CAF 2016-1	0.4	0.0	1.2	0.0	0.0	1.2
B2R 2016-1	1.2	0.2	2.0	0.0	0.0	3.0
CAF 2016-2	0.9	0.0	0.7	0.4	0.0	4.2
CAF 2017-1	0.0	0.0	0.7	0.0	0.0	1.4

**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	128	1	0	0	1	0	4
FKL 2015-SFR1	14	0	0	0	0	0	0
CAF 2015-1	57	0	0	1	0	0	2
B2R 2015-2	190	3	1	6	0	0	7
CAF 2016-1	74	1	0	1	0	0	1
B2R 2016-1	155	5	1	4	0	0	9
CAF 2016-2	70	1	0	4	1	0	5
CAF 2017-1	86	0	0	2	0	0	3
Overall	774	11	2	18	2	0	31

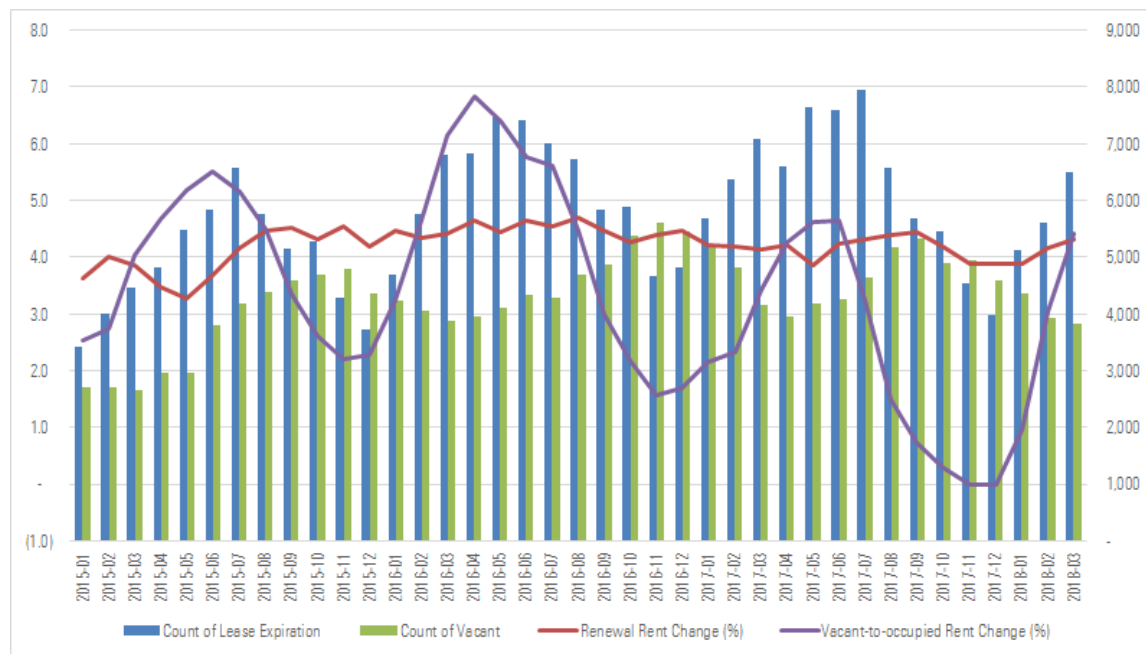
## Single-Borrower Charts and Tables

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



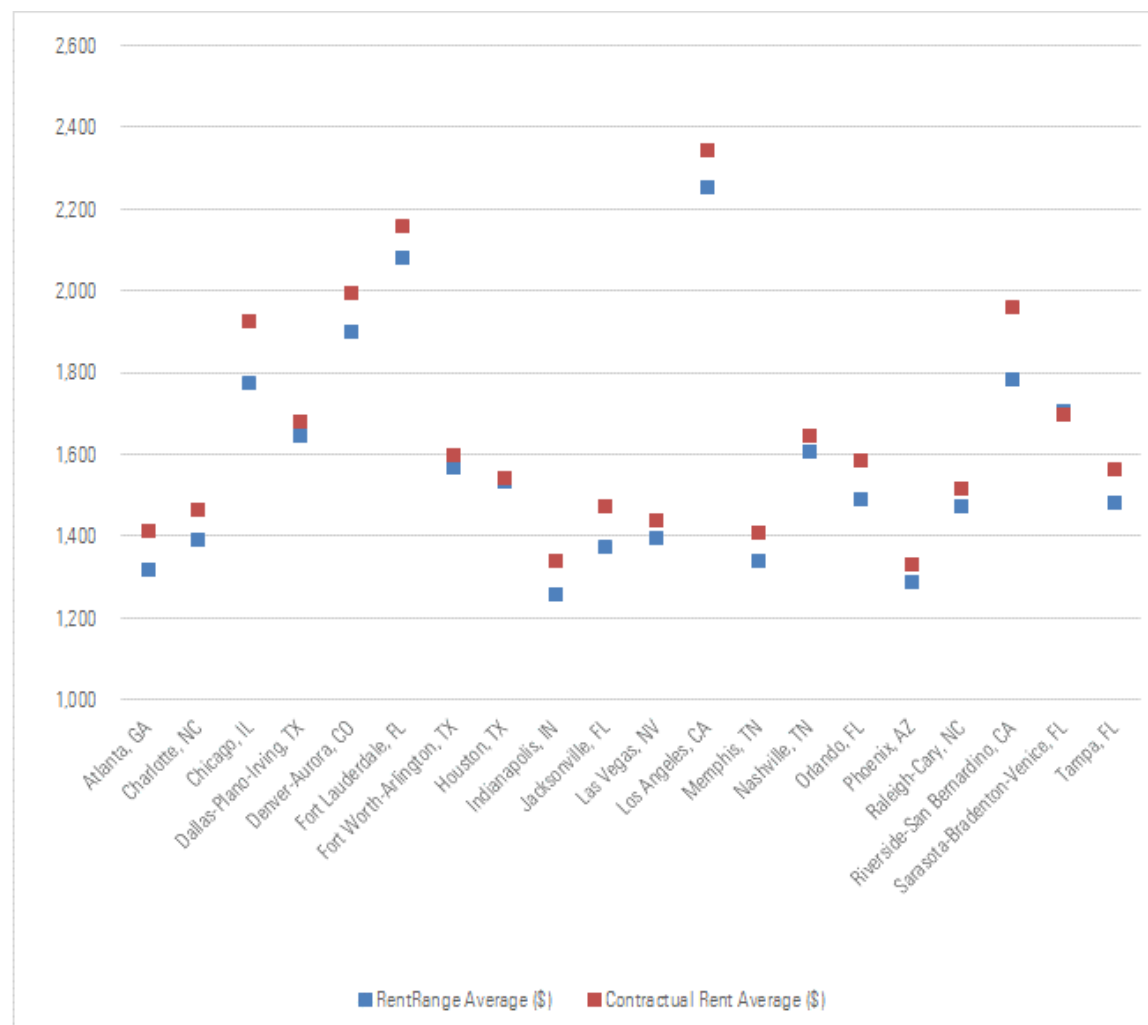
Sources: Morningstar Credit Ratings, LLC; RentRange

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



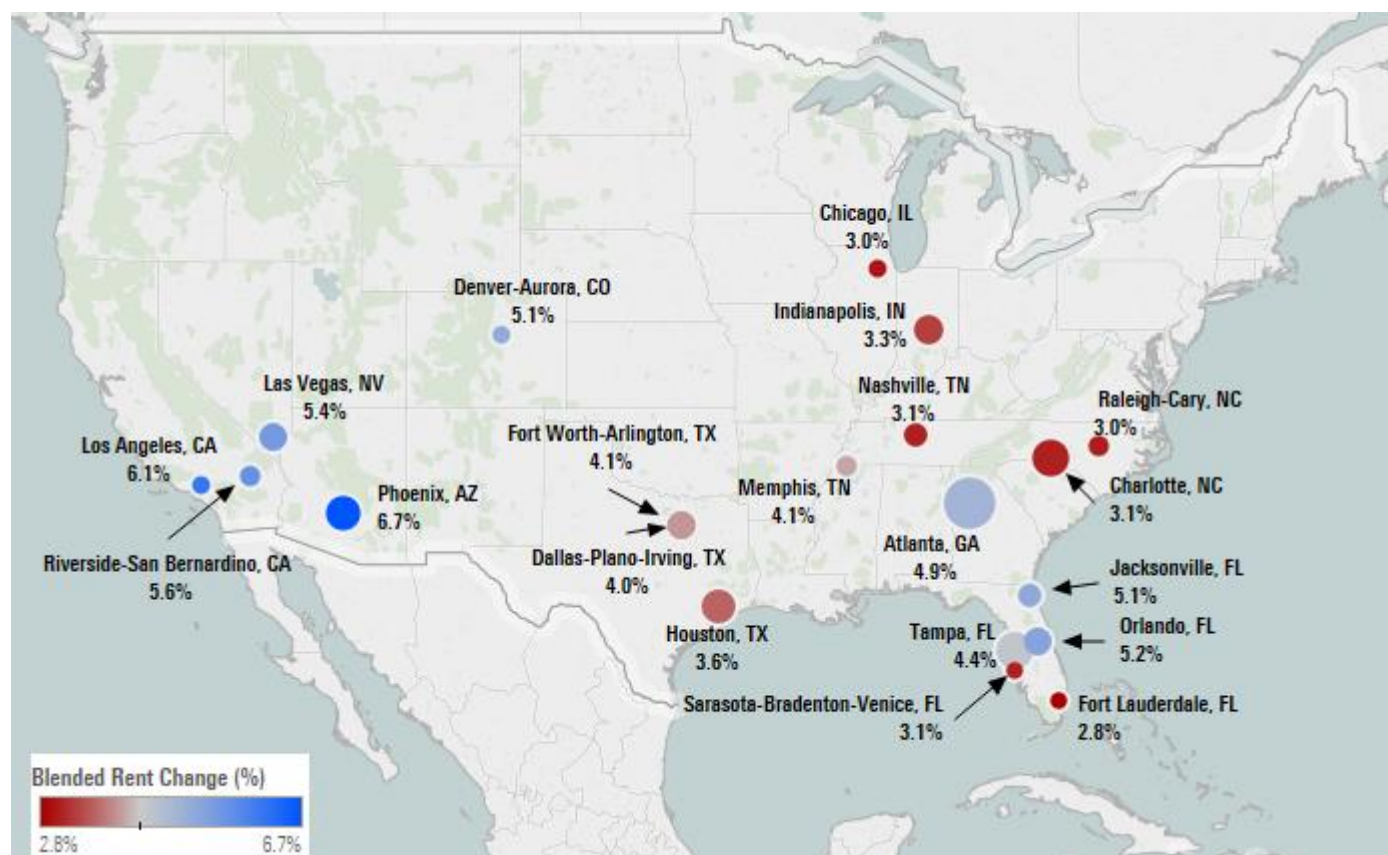
Source: Morningstar Credit Ratings, LLC

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



Sources: Morningstar Credit Ratings, LLC; RentRange

**Chart 4 – MSA-Level Blended Rent Change\***



Sources: Morningstar Credit Ratings, LLC; Tableau Software

\*The size of the circles represents the total percentage (by count) of properties in each MSA, ranging from 1.4% to 13.6%. 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 2017					Year 2018							
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
Atlanta, GA		4.6	5.0	4.9	4.6	4.4	4.3	3.6	3.5	3.1	3.9	5.1	4.9	
Charlotte, NC		4.1	4.3	4.1	3.2	3.0	2.7	1.7	1.0	1.4	2.5	3.4	3.1	
Chicago, IL		2.7	2.7	2.2	2.1	0.8	0.8	-0.2	-0.6	0.7	1.3	1.6	3.0	
Dallas-Plano-Irving, TX		4.9	5.2	5.2	4.3	4.1	2.8	2.8	2.4	2.5	3.2	3.6	4.0	
Denver-Aurora, CO		5.9	7.0	6.2	6.2	4.2	1.7	2.4	3.8	1.6	4.3	5.7	5.1	
Fort Lauderdale, FL		3.6	2.4	2.5	1.8	2.2	2.2	1.2	1.7	1.8	2.5	2.8	2.8	
Fort Worth-Arlington, TX		4.3	4.7	4.6	4.5	4.4	3.3	3.2	2.7	2.3	3.2	4.2	4.1	
Houston, TX		1.7	1.1	1.5	1.6	-0.8	-0.4	-0.6	0.0	1.4	1.4	3.1	3.6	
Indianapolis, IN		2.4	3.4	3.0	3.1	2.0	1.8	0.4	0.2	-0.1	2.9	3.3	3.3	
Jacksonville, FL		2.9	3.6	4.3	3.5	3.7	3.3	2.6	2.3	3.0	3.3	4.1	5.1	
Las Vegas, NV		5.4	5.6	5.4	5.9	5.1	3.1	4.5	4.0	4.2	5.1	5.6	5.4	
Los Angeles, CA		7.2	8.2	8.0	7.5	6.3	6.5	6.0	6.4	6.3	4.6	5.7	6.1	
Memphis, TN		0.8	2.1	2.3	2.7	2.4	1.0	0.2	-0.1	0.9	1.5	3.2	4.1	
Nashville, TN		4.0	4.9	4.8	4.0	3.7	3.3	2.2	1.1	1.7	1.9	2.8	3.1	
Orlando, FL		4.9	4.9	5.2	4.7	4.1	3.2	4.0	4.0	3.2	4.9	4.9	5.2	
Phoenix, AZ		6.6	6.4	6.8	6.1	5.5	4.8	5.0	4.1	4.1	5.0	6.3	6.7	
Raleigh-Cary, NC		3.5	3.7	3.7	3.3	3.4	2.6	2.1	0.5	1.3	1.6	2.4	3.0	
Riverside-San Bernardino, CA		5.5	5.5	5.9	5.2	5.1	5.1	5.0	4.9	4.5	4.6	4.9	5.6	
Sarasota-Bradenton-Venice, FL		2.7	2.9	2.1	1.4	1.0	0.4	1.0	0.4	0.8	2.0	2.9	3.1	
Tampa, FL		3.1	3.7	3.6	3.2	2.6	1.7	2.4	2.1	2.1	2.9	3.7	4.4	

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

		Year 2017								Year 2018				Total Count
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
AH4R 2014-SFR2		194	209	209	230	251	248	235	215	233	217	186	166	4,481
AH4R 2014-SFR3		194	223	234	310	298	317	299	284	266	265	243	226	4,499
AH4R 2015-SFR1		175	197	198	243	282	312	331	304	309	294	253	253	4,658
AH4R 2015-SFR2		232	256	267	253	268	276	252	238	235	217	229	248	4,123
AMSR 2016-SFR1		237	297	355	335	350	339	366	375	397	328	280	242	4,262
CAH 2015-1		224	249	239	261	225	214	226	230	176	165	171	153	3,774
CSH 2016-1		176	176	194	215	207	214	207	207	202	180	189	180	3,529
CSH 2016-2		184	189	241	266	241	230	254	257	256	229	214	217	3,958
HPA 2016-2		48	62	80	63	48	36	42	46	52	45	41	53	1,318
HPA 2017-1				19	26	36	50	64	57	53	34	39	46	1,351
IH 2015-SFR3		270	287	315	317	352	318	343	334	326	300	272	284	6,919
IH 2017-SFR2										177	158	136	124	4,411
IH 2018-SFR1												131	157	4,289
PRD 2015-SFR2		155	132	130	149	180	197	148	113	93	95	95	107	3,288
PRD 2015-SFR3		133	190	222	269	259	245	206	160	114	83	80	87	3,150
PRD 2016-SFR1		229	239	279	314	311	304	277	244	227	215	185	201	5,552
PRD 2016-SFR2		108	144	181	282	265	238	162	122	104	104	105	98	3,742
PRD 2017-SFR1					131	187	203	183	150	94	67	60	60	2,709
PRD 2018-SFR1													36	2,113
SWH 2017-1								184	209	219	238	239	231	4,433
TAH 2016-SFR1		178	188	187	169	199	186	178	156	161	150	162	136	3,436
TAH 2017-SFR1						173	162	164	146	152	145	124	84	3,480
TAH 2017-SFR2										109	93	94	109	2,621
Overall SFR		2,737	3,038	3,350	3,833	4,132	4,089	4,121	3,847	3,955	3,622	3,528	3,498	86,096

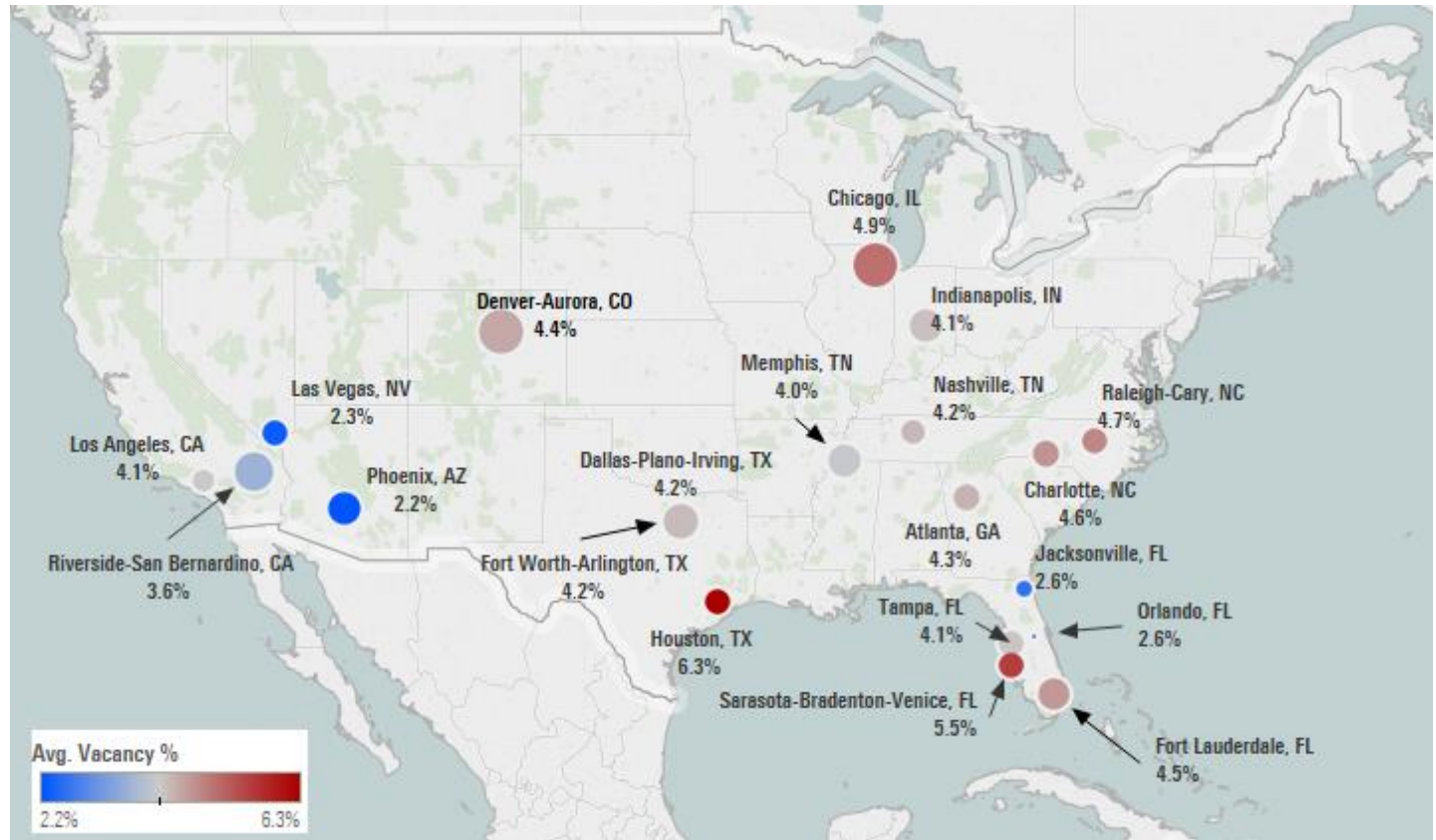
**Table 4b – Month-End Vacancy (by Percentage)**

		Year 2017						Year 2018					
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
AH4R 2014-SFR2		4.3	4.7	4.7	5.1	5.6	5.5	5.2	4.8	5.2	4.8	4.2	3.7
AH4R 2014-SFR3		4.3	5.0	5.2	6.9	6.6	7.0	6.6	6.3	5.9	5.9	5.4	5.0
AH4R 2015-SFR1		3.8	4.2	4.2	5.2	6.1	6.7	7.1	6.5	6.6	6.3	5.4	5.4
AH4R 2015-SFR2		5.6	6.2	6.5	6.1	6.5	6.7	6.1	5.8	5.7	5.3	5.6	6.0
AMSR 2016-SFR1		5.6	7.0	8.3	7.9	8.2	8.0	8.6	8.8	9.3	7.7	6.6	5.7
CAH 2015-1		5.8	6.5	6.2	6.8	5.9	5.6	6.0	6.1	4.6	4.4	4.5	4.1
CSH 2016-1		4.9	4.9	5.4	6.0	5.8	6.0	5.8	5.8	5.7	5.1	5.3	5.1
CSH 2016-2		4.6	4.7	6.0	6.7	6.0	5.8	6.4	6.4	6.4	5.7	5.4	5.5
HPA 2016-2		3.5	4.6	6.0	4.7	3.6	2.7	3.1	3.4	3.9	3.4	3.1	4.0
HPA 2017-1				1.4	1.9	2.6	3.6	4.7	4.2	3.9	2.5	2.9	3.4
IH 2015-SFR3		3.8	4.1	4.5	4.5	5.0	4.6	4.9	4.8	4.7	4.3	3.9	4.1
IH 2017-SFR2										4.0	3.6	3.1	2.8
IH 2018-SFR1												3.1	3.7
PRD 2015-SFR2		4.7	4.0	3.9	4.5	5.5	6.0	4.5	3.4	2.8	2.9	2.9	3.3
PRD 2015-SFR3		4.2	6.0	7.0	8.5	8.2	7.8	6.5	5.1	3.6	2.6	2.5	2.8
PRD 2016-SFR1		4.1	4.3	5.0	5.6	5.6	5.5	5.0	4.4	4.1	3.9	3.3	3.6
PRD 2016-SFR2		2.9	3.8	4.8	7.5	7.1	6.4	4.3	3.3	2.8	2.8	2.8	2.6
PRD 2017-SFR1					4.8	6.9	7.5	6.8	5.5	3.5	2.5	2.2	2.2
PRD 2018-SFR1													1.7
SWH 2017-1								4.2	4.7	4.9	5.4	5.4	5.2
TAH 2016-SFR1		5.2	5.5	5.4	4.9	5.8	5.4	5.2	4.5	4.7	4.4	4.7	4.0
TAH 2017-SFR1						5.0	4.7	4.7	4.2	4.4	4.2	3.6	2.4
TAH 2017-SFR2										4.2	3.5	3.6	4.2
Overall SFR		4.5	5.0	5.4	5.9	6.0	6.0	5.7	5.3	5.0	4.5	4.2	4.1

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

		Year 2017					Year 2018							
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
Atlanta, GA		5.6	5.1	4.4	4.9	4.8	5.0	4.7	4.4	4.6	4.6	4.0	4.3	
Charlotte, NC		4.4	4.4	5.2	5.8	6.6	6.6	6.1	5.8	5.8	5.5	5.4	4.6	
Chicago, IL		4.0	4.5	4.8	5.0	5.0	5.7	5.2	4.5	4.5	4.6	4.3	4.9	
Dallas-Plano-Irving, TX		5.1	4.8	5.0	5.6	5.5	5.5	4.9	5.3	5.0	4.5	4.6	4.2	
Denver-Aurora, CO		4.4	4.5	5.8	6.5	5.4	4.9	4.7	5.4	4.8	5.0	4.0	4.4	
Fort Lauderdale, FL		5.9	6.0	6.3	6.3	6.7	6.8	6.1	5.8	5.1	4.2	5.0	4.5	
Fort Worth-Arlington, TX		4.8	5.5	5.2	5.0	4.8	4.9	5.9	5.2	5.0	4.3	4.0	4.2	
Houston, TX		6.2	6.9	7.9	9.2	9.8	10.0	9.4	8.8	8.8	7.3	6.4	6.3	
Indianapolis, IN		4.1	5.1	6.3	6.7	6.7	6.2	5.6	5.3	4.4	5.1	4.3	4.1	
Jacksonville, FL		4.1	3.7	4.4	5.1	6.4	5.8	5.2	4.5	4.6	4.0	3.2	2.6	
Las Vegas, NV		3.6	4.3	4.3	4.4	4.5	3.8	3.5	3.6	2.6	2.5	2.8	2.3	
Los Angeles, CA		4.4	5.1	5.1	4.6	4.6	4.9	5.2	4.3	5.0	3.7	3.2	4.1	
Memphis, TN		4.5	5.5	6.3	6.7	7.3	7.3	6.2	5.3	5.2	4.3	4.0	4.0	
Nashville, TN		4.1	5.3	6.2	7.1	7.1	7.6	8.0	7.5	7.3	5.9	4.7	4.2	
Orlando, FL		3.8	3.9	4.5	4.8	4.8	4.5	3.8	3.5	3.3	3.1	3.6	2.6	
Phoenix, AZ		3.6	4.4	5.2	5.5	4.5	4.8	4.8	4.0	3.2	3.2	2.7	2.2	
Raleigh-Cary, NC		5.1	5.5	4.9	6.1	7.1	7.1	6.8	5.6	5.8	5.1	5.2	4.7	
Riverside-San Bernardino, CA		3.3	4.2	3.3	3.6	3.4	3.8	3.7	4.3	3.8	4.1	3.7	3.6	
Sarasota-Bradenton-Venice, FL		7.1	6.7	7.0	7.7	7.7	7.0	7.3	5.9	4.5	4.6	4.8	5.5	
Tampa, FL		3.9	4.2	5.1	6.3	6.7	6.3	5.9	5.0	4.5	4.0	4.0	4.1	

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



Sources: Morningstar Credit Ratings, LLC; 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 17.4% to 25.01%. Because of their proximity, the Fort Worth-Arlington, Texas, MSA is hidden behind Dallas-Plano-Irving, Texas, MSA.

**Table 5a – Lease Expiration (by Count)**

		Year 2017								Year 2018				Total Count
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
AH4R 2014-SFR2		518	399	371	331	264	201	189	161	310	346	368	329	4,481
AH4R 2014-SFR3		398	474	448	416	265	241	160	171	348	332	311	280	4,499
AH4R 2015-SFR1		249	382	488	423	336	313	251	235	360	354	291	247	4,658
AH4R 2015-SFR2		516	464	355	214	159	132	133	151	238	310	397	315	4,123
AMSR 2016-SFR1		382	439	281	225	186	193	178	167	178	271	300	320	4,262
CAH 2015-1		294	368	393	378	298	287	266	175	215	207	219	253	3,774
CSH 2016-1		282	337	340	273	264	234	191	170	197	220	276	303	3,529
CSH 2016-2		389	335	300	287	230	243	237	167	232	257	306	325	3,958
HPA 2016-2		276	386	179	11	5	6	10	16	14	12	105	155	1,318
HPA 2017-1				87	141	118	186	149	114	91	74	110	114	1,351
IH 2015-SFR3		368	405	446	499	388	537	464	375	470	522	522	425	6,919
IH 2017-SFR2										242	247	292	294	4,411
IH 2018-SFR1												311	346	4,289
PRD 2015-SFR2		391	186	192	118	179	221	185	142	189	234	260	307	3,288
PRD 2015-SFR3		345	353	525	284	216	157	93	76	81	120	108	187	3,150
PRD 2016-SFR1		448	394	358	176	216	322	230	286	330	426	480	567	5,552
PRD 2016-SFR2		318	402	639	426	270	209	127	113	150	145	148	165	3,742
PRD 2017-SFR1					112	279	381	229	197	162	133	127	89	2,709
PRD 2018-SFR1													54	2,113
SWH 2017-1								210	204	284	385	418	475	4,433
TAH 2016-SFR1		296	280	301	238	171	221	107	92	124	159	197	235	3,436
TAH 2017-SFR1						276	261	206	171	241	229	241	119	3,480
TAH 2017-SFR2										141	161	197	124	2,621
Overall SFR		5,470	5,604	5,703	4,552	4,120	4,345	3,615	3,183	4,597	5,144	5,984	6,028	86,096

**Table 5b – Lease Expiration (by Percentage)**

		Year 2017							Year 2018				
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
AH4R 2014-SFR2		11.6	8.9	8.3	7.4	5.9	4.5	4.2	3.6	6.9	7.7	8.2	7.3
AH4R 2014-SFR3		8.8	10.5	10.0	9.2	5.9	5.4	3.6	3.8	7.7	7.4	6.9	6.2
AH4R 2015-SFR1		5.3	8.2	10.5	9.1	7.2	6.7	5.4	5.0	7.7	7.6	6.2	5.3
AH4R 2015-SFR2		12.5	11.3	8.6	5.2	3.9	3.2	3.2	3.7	5.8	7.5	9.6	7.6
AMSR 2016-SFR1		9.0	10.3	6.6	5.3	4.4	4.5	4.2	3.9	4.2	6.4	7.0	7.5
CAH 2015-1		7.6	9.6	10.3	9.9	7.8	7.5	7.0	4.6	5.7	5.5	5.8	6.7
CSH 2016-1		7.9	9.5	9.5	7.7	7.4	6.6	5.4	4.8	5.6	6.2	7.8	8.6
CSH 2016-2		9.7	8.4	7.5	7.2	5.8	6.1	5.9	4.2	5.8	6.4	7.7	8.2
HPA 2016-2		20.2	28.6	13.3	0.8	0.4	0.4	0.7	1.2	1.1	0.9	7.9	11.8
HPA 2017-1				6.3	10.2	8.6	13.6	10.9	8.4	6.7	5.4	8.1	8.4
IH 2015-SFR3		5.1	5.8	6.4	7.2	5.6	7.7	6.7	5.4	6.8	7.5	7.5	6.1
IH 2017-SFR2										5.5	5.6	6.6	6.7
IH 2018-SFR1												7.3	8.1
PRD 2015-SFR2		11.9	5.6	5.8	3.6	5.4	6.7	5.6	4.3	5.7	7.1	7.9	9.3
PRD 2015-SFR3		10.9	11.2	16.6	9.0	6.9	5.0	3.0	2.4	2.6	3.8	3.4	5.9
PRD 2016-SFR1		8.0	7.1	6.4	3.2	3.9	5.8	4.1	5.1	5.9	7.7	8.6	10.2
PRD 2016-SFR2		8.5	10.7	17.1	11.4	7.2	5.6	3.4	3.0	4.0	3.9	4.0	4.4
PRD 2017-SFR1					4.1	10.3	14.1	8.5	7.3	6.0	4.9	4.7	3.3
PRD 2018-SFR1													2.6
SWH 2017-1								4.7	4.6	6.4	8.7	9.4	10.7
TAH 2016-SFR1		8.6	8.1	8.8	6.9	5.0	6.4	3.1	2.7	3.6	4.6	5.7	6.8
TAH 2017-SFR1						7.9	7.5	5.9	4.9	6.9	6.6	6.9	3.4
TAH 2017-SFR2										5.4	6.1	7.5	4.7
Overall SFR		8.9	9.2	9.2	7.0	6.0	6.3	5.0	4.4	5.8	6.4	7.1	7.0

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

		Year 2017					Year 2018						
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Atlanta, GA		8.4	8.9	8.8	6.7	6.3	6.0	5.2	4.6	5.8	6.3	6.6	7.5
Charlotte, NC		7.7	8.5	9.2	7.7	7.4	7.2	5.0	4.4	5.2	6.1	7.3	6.6
Chicago, IL		9.3	8.3	9.1	7.4	5.9	5.0	3.0	3.0	6.6	8.8	8.2	7.8
Dallas-Plano-Irving, TX		9.0	10.4	9.7	7.0	5.8	6.7	4.9	4.7	5.8	6.5	7.9	6.5
Denver-Aurora, CO		7.7	10.0	10.0	8.3	7.2	6.2	4.8	5.2	5.1	7.3	8.0	9.8
Fort Lauderdale, FL		6.6	7.7	6.8	6.0	6.2	7.9	6.6	5.4	7.8	6.3	7.8	7.1
Fort Worth-Arlington, TX		9.6	11.5	8.7	6.5	6.0	6.4	5.2	4.5	4.8	6.4	8.1	7.5
Houston, TX		7.6	8.6	9.1	6.1	5.5	5.2	5.0	4.4	5.2	6.2	7.2	6.3
Indianapolis, IN		10.5	9.6	11.6	7.4	5.1	5.0	2.3	1.9	6.9	7.3	7.1	7.3
Jacksonville, FL		8.0	7.0	9.2	5.6	5.6	8.6	6.5	5.5	6.9	6.9	6.3	5.2
Las Vegas, NV		8.4	9.4	9.9	7.7	6.4	6.8	5.2	4.4	5.4	5.8	6.5	7.5
Los Angeles, CA		6.9	7.3	7.1	7.3	6.8	7.0	6.9	6.0	6.2	4.7	7.3	7.2
Memphis, TN		11.0	8.7	8.5	6.4	5.4	6.0	3.3	3.1	5.2	5.2	8.1	8.3
Nashville, TN		9.8	10.3	8.5	6.4	5.4	7.4	4.6	4.1	5.3	5.4	6.4	7.7
Orlando, FL		9.8	9.1	9.8	8.0	6.4	7.1	5.6	5.1	6.1	5.7	5.9	5.8
Phoenix, AZ		7.8	7.5	8.9	7.4	5.9	8.0	5.6	5.2	6.7	7.3	7.2	7.0
Raleigh-Cary, NC		10.7	9.8	10.0	7.7	6.8	7.6	5.2	4.0	4.3	6.6	7.1	6.2
Riverside-San Bernardino, CA		6.7	6.9	7.5	7.0	6.8	8.2	7.0	4.1	5.8	7.0	8.2	7.9
Sarasota-Bradenton-Venice, F		6.6	7.8	8.7	7.7	7.2	8.0	6.1	5.4	4.7	6.9	7.4	5.6
Tampa, FL		7.8	8.4	9.8	7.8	6.7	6.1	5.4	4.8	5.7	6.4	6.6	6.8



**Table 6a – Historical Months of Vacancy for April Vacancies (by Count)**

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		26	30	19	25	23	16	9	8	4	3	1	2	166
AH4R 2014-SFR3		26	35	38	26	23	27	17	10	11	4	4	5	226
AH4R 2015-SFR1		25	29	38	39	32	30	16	21	10	7	4	2	253
AH4R 2015-SFR2		61	47	45	32	25	10	15	4	4	2	3	0	248
AMSR 2016-SFR1		67	58	23	33	22	18	8	6	2	3	1	1	242
CAH 2015-1		24	36	33	18	13	12	6	4	2	3	1	1	153
CSH 2016-1		52	55	22	17	11	6	5	4	2	3	1	2	180
CSH 2016-2		69	65	37	15	8	7	4	8	2	1	0	1	217
HPA 2016-2		23	15	6	4	1	3	0	0	0	0	0	1	53
HPA 2017-1		22	13	5	3	0	2	0	1	0	0	0		46
IH 2015-SFR3		66	69	51	34	24	15	10	5	3	2	1	4	284
IH 2017-SFR2		85	27	4	8	0								124
IH 2018-SFR1		27	120	10										157
PRD 2015-SFR2		39	19	20	3	12	6	0	5	2	1	0	0	107
PRD 2015-SFR3		24	21	13	8	3	5	5	5	2	0	0	1	87
PRD 2016-SFR1		84	53	28	16	6	5	1	4	3	0	1	0	201
PRD 2016-SFR2		38	39	5	8	3	1	1	1	2	0	0	0	98
PRD 2017-SFR1		0	33	17	6	3	0	1	0	0	0			60
PRD 2018-SFR1		36	0											36
SWH 2017-1		119	68	21	8	8	7	0						231
TAH 2016-SFR1		58	30	20	18	3	5	1	0	0	1	0	0	136
TAH 2017-SFR1		61	16	6	1	0	0	0	0	0				84
TAH 2017-SFR2		67	27	7	8	0								109
Overall SFR		1,099	905	468	330	220	175	99	86	49	30	17	20	3,498

**Table 6b – Historical Months of Vacancy for April Vacancies (by Percentage)**

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		15.7	18.1	11.4	15.1	13.9	9.6	5.4	4.8	2.4	1.8	0.6	1.2	100.0
AH4R 2014-SFR3		11.5	15.5	16.8	11.5	10.2	11.9	7.5	4.4	4.9	1.8	1.8	2.2	100.0
AH4R 2015-SFR1		9.9	11.5	15.0	15.4	12.6	11.9	6.3	8.3	4.0	2.8	1.6	0.8	100.0
AH4R 2015-SFR2		24.6	19.0	18.1	12.9	10.1	4.0	6.0	1.6	1.6	0.8	1.2	0.0	100.0
AMSR 2016-SFR1		27.7	24.0	9.5	13.6	9.1	7.4	3.3	2.5	0.8	1.2	0.4	0.4	100.0
CAH 2015-1		15.7	23.5	21.6	11.8	8.5	7.8	3.9	2.6	1.3	2.0	0.7	0.7	100.0
CSH 2016-1		28.9	30.6	12.2	9.4	6.1	3.3	2.8	2.2	1.1	1.7	0.6	1.1	100.0
CSH 2016-2		31.8	30.0	17.1	6.9	3.7	3.2	1.8	3.7	0.9	0.5	0.0	0.5	100.0
HPA 2016-2		43.4	28.3	11.3	7.5	1.9	5.7	0.0	0.0	0.0	0.0	0.0	1.9	100.0
HPA 2017-1		47.8	28.3	10.9	6.5	0.0	4.3	0.0	2.2	0.0	0.0	0.0	0.0	100.0
IH 2015-SFR3		23.2	24.3	18.0	12.0	8.5	5.3	3.5	1.8	1.1	0.7	0.4	1.4	100.0
IH 2017-SFR2		68.5	21.8	3.2	6.5	0.0								100.0
IH 2018-SFR1		17.2	76.4	6.4										100.0
PRD 2015-SFR2		36.4	17.8	18.7	2.8	11.2	5.6	0.0	4.7	1.9	0.9	0.0	0.0	100.0
PRD 2015-SFR3		27.6	24.1	14.9	9.2	3.4	5.7	5.7	5.7	2.3	0.0	0.0	1.1	100.0
PRD 2016-SFR1		41.8	26.4	13.9	8.0	3.0	2.5	0.5	2.0	1.5	0.0	0.5	0.0	100.0
PRD 2016-SFR2		38.8	39.8	5.1	8.2	3.1	1.0	1.0	1.0	2.0	0.0	0.0	0.0	100.0
PRD 2017-SFR1		0.0	55.0	28.3	10.0	5.0	0.0	1.7	0.0	0.0	0.0			100.0
PRD 2018-SFR1		100.0	0.0											100.0
SWH 2017-1		51.5	29.4	9.1	3.5	3.5	3.0	0.0						100.0
TAH 2016-SFR1		42.6	22.1	14.7	13.2	2.2	3.7	0.7	0.0	0.0	0.7	0.0	0.0	100.0
TAH 2017-SFR1		72.6	19.0	7.1	1.2	0.0	0.0	0.0	0.0	0.0				100.0
TAH 2017-SFR2		61.5	24.8	6.4	7.3	0.0								100.0
Overall SFR		31.4	25.9	13.4	9.4	6.3	5.0	2.8	2.5	1.4	0.9	0.5	0.6	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
Amherst	Past due one calendar month or more (not dependent on day count) and owing \$500 or more
Colony American Homes/Colony	
Starwood Homes/Starwood	Past due one calendar month or more (not dependent on day count) and owing \$200 or more
Waypoint Homes	
Home Partners of America	Past due 30 days or more (not dependent on calendar month) and owing \$500 or more
Invitation Homes	Past due 30 days or more (not dependent on calendar month) and owing 25% of one month's rent or more
Progress Residential	Past due 30 days or more (not dependent on calendar month) and owing \$200 or more <sup>1</sup>
Tricon American Homes	Past due 30 days or more (not dependent on calendar month) and owing \$500 or more <sup>2</sup>

<sup>1</sup>Includes Section 8 rent, pet fees, and MTM fees, but excludes late fees and damage fees.

<sup>2</sup>Based on total receivables.

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

		Year 2017												Year 2018				Total Count
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr					
AH4R 2014-SFR2		12	10	13	15	9	21	19	20	20	22	8	7	4,481				
AH4R 2014-SFR3		8	9	7	11	7	21	12	14	19	20	7	12	4,499				
AH4R 2015-SFR1		10	10	12	14	21	26	28	26	22	29	13	15	4,658				
AH4R 2015-SFR2		6	7	7	6	10	17	24	10	21	18	6	7	4,123				
AMSR 2016-SFR1		78	114	171	78	66	97	111	114	98	95	80	59	4,262				
CAH 2015-1		17	18	17	22	30	28	31	32	20	23	26	17	3,774				
CSH 2016-1		20	15	24	21	29	28	26	29	33	26	21	7	3,529				
CSH 2016-2		17	30	27	23	43	34	40	48	37	36	24	13	3,958				
HPA 2016-2		6	6	9	12	19	17	12	16	9	10	9	6	1,318				
HPA 2017-1				9	13	17	12	11	7	10	10	5	8	1,351				
IH 2015-SFR3		71	80	99	115	89	94	100	120	101	59	42	39	6,919				
IH 2017-SFR2										33	30	19	15	4,411				
IH 2018-SFR1												15	34	4,289				
PRD 2015-SFR2		15	14	19	14	26	25	23	24	28	21	23	10	3,288				
PRD 2015-SFR3		9	8	16	19	22	23	17	22	29	25	20	17	3,150				
PRD 2016-SFR1		20	24	28	29	27	43	45	44	39	40	31	28	5,552				
PRD 2016-SFR2		14	18	20	16	24	23	19	39	41	0	26	18	3,742				
PRD 2017-SFR1					14	20	19	16	17	17	22	16	17	2,709				
PRD 2018-SFR1													15	2,113				
SWH 2017-1								34	36	45	45	31	19	4,433				
TAH 2016-SFR1		26	15	9	5	3	2	15	15	18	23	10	10	3,436				
TAH 2017-SFR1						25	19	14	12	10	12	2	3	3,480				
TAH 2017-SFR2										7	9	4	6	2,621				
Overall SFR		329	378	487	427	487	549	597	645	657	575	438	382	86,096				

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

		Year 2017						Year 2018					
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
AH4R 2014-SFR2		0.3	0.2	0.3	0.3	0.2	0.5	0.4	0.4	0.4	0.5	0.2	0.2
AH4R 2014-SFR3		0.2	0.2	0.2	0.2	0.2	0.5	0.3	0.3	0.4	0.4	0.2	0.3
AH4R 2015-SFR1		0.2	0.2	0.3	0.3	0.5	0.6	0.6	0.6	0.5	0.6	0.3	0.3
AH4R 2015-SFR2		0.1	0.2	0.2	0.1	0.2	0.4	0.6	0.2	0.5	0.4	0.1	0.2
AMSR 2016-SFR1		1.8	2.7	4.0	1.8	1.5	2.3	2.6	2.7	2.3	2.2	1.9	1.4
CAH 2015-1		0.4	0.5	0.4	0.6	0.8	0.7	0.8	0.8	0.5	0.6	0.7	0.5
CSH 2016-1		0.6	0.4	0.7	0.6	0.8	0.8	0.7	0.8	0.9	0.7	0.6	0.2
CSH 2016-2		0.4	0.8	0.7	0.6	1.1	0.9	1.0	1.2	0.9	0.9	0.6	0.3
HPA 2016-2		0.4	0.4	0.7	0.9	1.4	1.3	0.9	1.2	0.7	0.8	0.7	0.5
HPA 2017-1				0.6	0.9	1.2	0.9	0.8	0.5	0.7	0.7	0.4	0.6
IH 2015-SFR3		1.0	1.1	1.4	1.6	1.3	1.3	1.4	1.7	1.5	0.9	0.6	0.6
IH 2017-SFR2										0.7	0.7	0.4	0.3
IH 2018-SFR1												0.3	0.8
PRD 2015-SFR2		0.5	0.4	0.6	0.4	0.8	0.8	0.7	0.7	0.9	0.6	0.7	0.3
PRD 2015-SFR3		0.3	0.3	0.5	0.6	0.7	0.7	0.5	0.7	0.9	0.8	0.6	0.5
PRD 2016-SFR1		0.4	0.4	0.5	0.5	0.5	0.8	0.8	0.8	0.7	0.7	0.6	0.5
PRD 2016-SFR2		0.4	0.5	0.5	0.4	0.6	0.6	0.5	1.0	1.1	0.0	0.7	0.5
PRD 2017-SFR1					0.5	0.7	0.7	0.6	0.6	0.6	0.8	0.6	0.6
PRD 2018-SFR1													0.7
SWH 2017-1								0.8	0.8	1.0	1.0	0.7	0.4
TAH 2016-SFR1		0.8	0.4	0.3	0.1	0.1	0.1	0.4	0.4	0.5	0.7	0.3	0.3
TAH 2017-SFR1						0.7	0.5	0.4	0.3	0.3	0.3	0.1	0.1
TAH 2017-SFR2										0.3	0.3	0.2	0.2
Overall SFR		0.5	0.6	0.8	0.7	0.7	0.8	0.8	0.9	0.8	0.7	0.5	0.4

**Table 9 – Monthly Retention Rate of Expiring Leases**

		Year 2017								Year 2018			
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
AH4R 2014-SFR2		74.1	73.2	76.0	73.1	74.6	78.6	75.1	75.2	77.4	78.9	80.4	TBD
AH4R 2014-SFR3		71.1	75.5	71.4	72.6	73.6	71.0	78.1	78.9	76.7	81.9	74.3	TBD
AH4R 2015-SFR1		69.1	73.0	74.8	74.9	75.9	75.7	77.3	76.2	75.3	74.9	77.7	TBD
AH4R 2015-SFR2		73.6	69.2	72.7	67.3	62.9	78.0	68.4	76.2	76.1	80.3	75.3	TBD
AMSR 2016-SFR1		80.1	77.2	83.3	79.6	87.1	86.0	87.1	85.6	88.8	83.0	80.3	TBD
CAH 2015-1		75.2	72.8	76.1	73.5	80.2	81.5	74.4	77.1	83.3	75.8	79.9	TBD
CSH 2016-1		77.7	76.0	76.2	75.5	76.1	83.3	73.8	79.4	76.6	82.7	76.1	TBD
CSH 2016-2		76.6	75.8	68.0	68.3	73.0	78.6	67.5	73.1	78.9	80.9	80.7	TBD
HPA 2016-2		81.9	76.2	84.4	63.6	100.0	66.7	90.0	81.3	78.6	75.0	77.1	TBD
HPA 2017-1				81.6	85.1	80.5	82.3	89.3	83.3	87.9	79.7	80.9	TBD
IH 2015-SFR3		78.0	80.2	75.1	78.6	78.6	79.5	80.0	79.5	83.0	79.9	80.5	TBD
IH 2017-SFR2										78.1	80.6	83.2	TBD
IH 2018-SFR1												80.1	TBD
PRD 2015-SFR2		77.7	72.0	75.5	70.3	72.1	78.7	80.0	83.1	79.9	77.4	78.8	TBD
PRD 2015-SFR3		73.3	71.4	71.4	66.9	67.1	73.9	77.4	73.7	72.8	75.8	75.9	TBD
PRD 2016-SFR1		81.0	76.6	69.8	65.9	68.5	79.5	77.0	76.9	80.9	78.4	81.7	TBD
PRD 2016-SFR2		81.1	80.8	75.6	70.4	77.0	79.4	80.3	80.5	87.3	81.4	82.4	TBD
PRD 2017-SFR1					69.6	73.1	79.8	76.0	76.1	82.1	81.2	91.3	TBD
PRD 2018-SFR1													TBD
SWH 2017-1								74.8	84.8	81.3	75.8	78.5	TBD
TAH 2016-SFR1		81.8	77.9	82.7	85.3	81.3	82.8	78.5	84.8	81.5	83.6	81.2	TBD
TAH 2017-SFR1						77.2	82.8	84.0	88.3	79.3	82.5	79.7	TBD
TAH 2017-SFR2										76.6	81.4	80.7	TBD
Overall SFR		76.7	75.2	75.0	73.7	75.4	79.5	77.6	79.4	79.9	79.5	79.8	TBD

TBD – To Be Determined

**Table 10 – Monthly Retention Rate of MTM Leases**

		Year 2017					Year 2018							
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
AH4R 2014-SFR2		81.3	78.5	78.9	80.4	82.4	83.7	87.4	86.8	89.7	87.3	86.9	TBD	
AH4R 2014-SFR3		84.3	77.7	78.6	81.9	86.0	83.2	81.4	89.2	90.0	85.8	83.6	TBD	
AH4R 2015-SFR1		79.0	80.8	81.4	81.3	81.3	81.0	87.1	84.9	86.5	82.3	89.1	TBD	
AH4R 2015-SFR2		77.5	75.9	79.3	81.1	81.2	87.0	80.9	88.8	86.4	85.5	82.9	TBD	
AMSR 2016-SFR1		94.7	90.6	94.2	92.4	96.7	95.7	95.0	93.7	98.2	95.2	94.4	TBD	
CAH 2015-1		67.5	62.5	77.8	81.1	72.5	80.0	74.4	78.0	72.5	91.7	81.0	TBD	
CSH 2016-1		65.9	73.2	66.0	75.6	78.9	67.5	75.0	79.3	77.8	78.6	80.0	TBD	
CSH 2016-2		81.1	62.9	70.2	78.4	57.5	62.9	70.4	74.1	75.0	75.8	78.1	TBD	
HPA 2016-2			100.0	100.0	100.0	100.0							TBD	
HPA 2017-1													TBD	
IH 2015-SFR3		73.9	80.3	83.5	82.1	83.5	84.5	86.0	82.0	87.4	85.6	82.9	TBD	
IH 2017-SFR2										91.0	78.4	89.1	TBD	
IH 2018-SFR1												80.7	TBD	
PRD 2015-SFR2		80.3	73.3	72.6	72.7	82.6	81.0	78.6	79.5	80.6	91.9	76.1	TBD	
PRD 2015-SFR3		78.3	65.0	75.9	73.7	78.6	75.7	75.5	76.7	83.3	80.6	84.4	TBD	
PRD 2016-SFR1		81.5	73.6	79.5	80.0	80.7	88.0	81.8	81.9	85.0	80.9	78.8	TBD	
PRD 2016-SFR2		81.4	74.6	78.3	73.9	77.2	78.8	76.8	81.8	100.0	65.8	91.1	TBD	
PRD 2017-SFR1					81.3	73.5	76.3	66.7	91.4	82.1	91.2	100.0	TBD	
PRD 2018-SFR1													TBD	
SWH 2017-1								61.3	80.8	75.0	71.4	82.4	TBD	
TAH 2016-SFR1		92.7	92.7	92.2	91.3	93.6	95.1	95.5	92.9	95.5	94.4	95.3	TBD	
TAH 2017-SFR1						88.1	92.5	93.5	87.0	90.2	87.6	85.7	TBD	
TAH 2017-SFR2										98.2	93.1	88.1	TBD	
Overall SFR		84.4	81.3	84.2	84.5	86.9	88.1	88.0	88.5	92.0	88.5	88.5	TBD	

TBD – To Be Determined

**Table 11a – MTM Tenants (by Count)**

























		Year 2017						Year 2018						Total Count
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
AH4R 2014-SFR2		256	273	251	245	217	185	178	175	170	190	206	208	4,481
AH4R 2014-SFR3		210	222	227	216	199	180	168	148	155	188	220	200	4,499
AH4R 2015-SFR1		202	189	221	229	227	198	195	187	184	204	220	221	4,658
AH4R 2015-SFR2		238	239	215	207	179	147	156	143	143	150	183	200	4,123
AMSR 2016-SFR1		514	576	574	600	605	648	684	709	696	733	747	758	4,262
CAH 2015-1		40	40	36	37	40	40	43	41	40	36	42	44	3,774
CSH 2016-1		41	41	47	41	38	40	36	29	27	28	30	37	3,529
CSH 2016-2		53	62	47	37	40	35	27	27	28	33	32	27	3,958
HPA 2016-2		0	1	1	1	1	0	0	0	0	0	0	0	1,318
HPA 2017-1				0	0	0	0	0	0	0	0	0	0	1,351
IH 2015-SFR3		163	146	149	137	131	149	160	164	158	166	190	182	6,919
IH 2017-SFR2										92	95	115	101	4,411
IH 2018-SFR1												92	75	4,289
PRD 2015-SFR2		119	96	76	71	63	66	64	49	55	58	68	62	3,288
PRD 2015-SFR3		91	96	112	115	110	87	60	52	49	50	41	46	3,150
PRD 2016-SFR1		187	170	151	125	116	122	111	120	119	127	127	126	5,552
PRD 2016-SFR2		95	103	122	137	123	99	85	70	71	201	59	63	3,742
PRD 2017-SFR1					47	62	76	67	49	46	47	47	108	2,709
PRD 2018-SFR1													6	2,113
SWH 2017-1								31	26	24	28	34	60	4,433
TAH 2016-SFR1		298	311	348	371	379	360	377	339	257	252	261	215	3,436
TAH 2017-SFR1						207	197	217	225	195	197	184	121	3,480
TAH 2017-SFR2										229	195	194	176	2,621
Overall SFR		2,507	2,565	2,577	2,616	2,737	2,629	2,659	2,553	2,738	2,978	3,092	3,036	86,096



**Table 11b – MTM Tenants (by Percentage)**

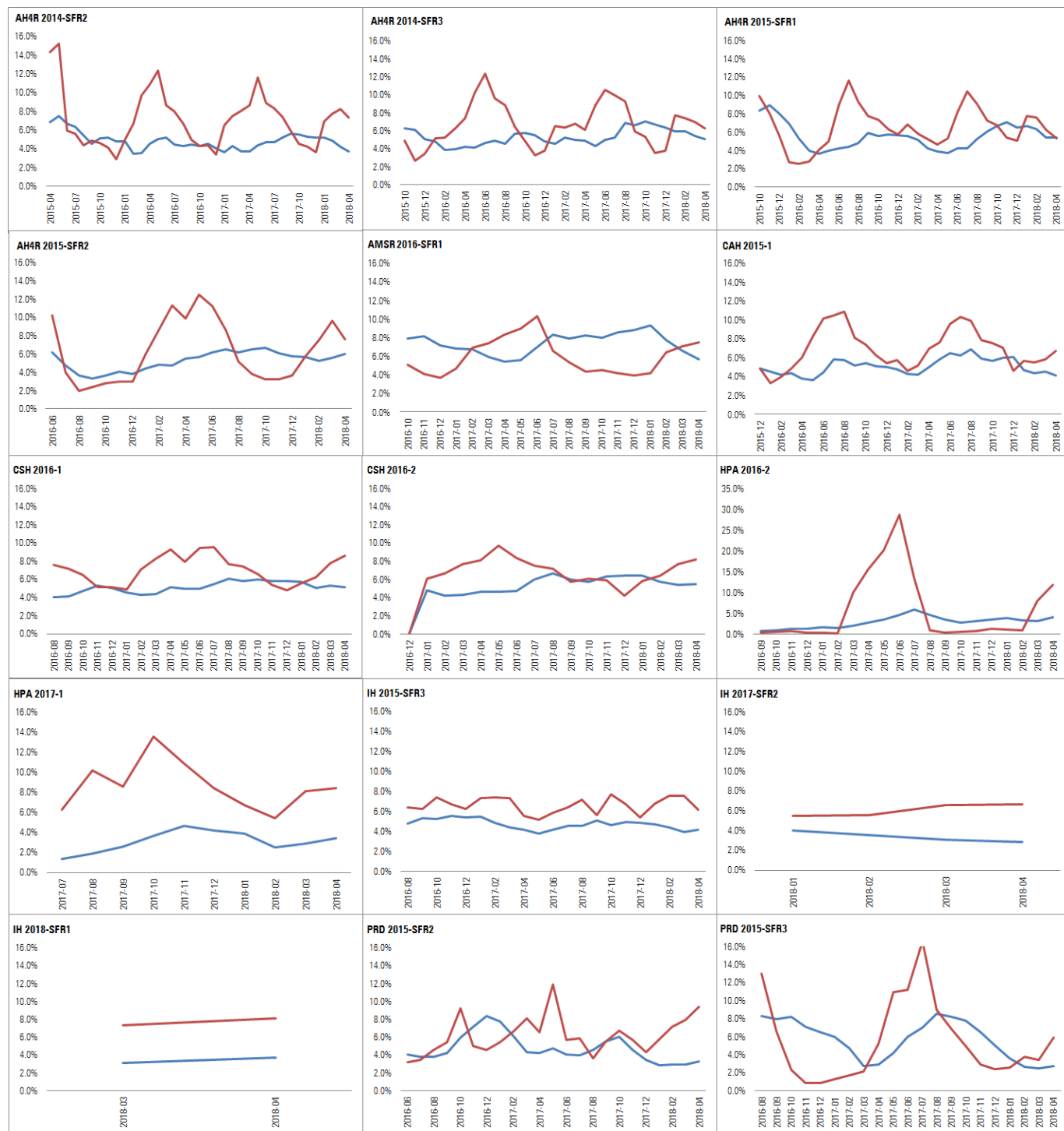
		Year 2017				Year 2018							
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
AH4R 2014-SFR2		5.7	6.1	5.6	5.5	4.8	4.1	4.0	3.9	3.8	4.2	4.6	4.6
AH4R 2014-SFR3		4.7	4.9	5.0	4.8	4.4	4.0	3.7	3.3	3.4	4.2	4.9	4.4
AH4R 2015-SFR1		4.3	4.1	4.7	4.9	4.9	4.2	4.2	4.0	4.0	4.4	4.7	4.7
AH4R 2015-SFR2		5.8	5.8	5.2	5.0	4.3	3.6	3.8	3.5	3.5	3.6	4.4	4.9
AMSR 2016-SFR1		12.1	13.5	13.5	14.1	14.2	15.2	16.0	16.6	16.3	17.2	17.5	17.8
CAH 2015-1		1.0	1.0	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.1	1.2
CSH 2016-1		1.2	1.2	1.3	1.2	1.1	1.1	1.0	0.8	0.8	0.8	0.8	1.0
CSH 2016-2		1.3	1.6	1.2	0.9	1.0	0.9	0.7	0.7	0.7	0.8	0.8	0.7
HPA 2016-2		0.0	0.1	0.1	0.1	0.1	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
IH 2015-SFR3		2.3	2.1	2.1	2.0	1.9	2.1	2.3	2.4	2.3	2.4	2.7	2.6
IH 2017-SFR2										2.1	2.2	2.6	2.3
IH 2018-SFR1												2.1	1.7
PRD 2015-SFR2		3.6	2.9	2.3	2.2	1.9	2.0	1.9	1.5	1.7	1.8	2.1	1.9
PRD 2015-SFR3		2.9	3.0	3.5	3.6	3.5	2.8	1.9	1.7	1.6	1.6	1.3	1.5
PRD 2016-SFR1		3.4	3.1	2.7	2.2	2.1	2.2	2.0	2.2	2.1	2.3	2.3	2.3
PRD 2016-SFR2		2.5	2.8	3.3	3.7	3.3	2.6	2.3	1.9	1.9	5.4	1.6	1.7
PRD 2017-SFR1					1.7	2.3	2.8	2.5	1.8	1.7	1.7	1.7	4.0
PRD 2018-SFR1													0.3
SWH 2017-1								0.7	0.6	0.5	0.6	0.8	1.4
TAH 2016-SFR1		8.7	9.0	10.1	10.8	11.0	10.5	11.0	9.9	7.5	7.3	7.6	6.3
TAH 2017-SFR1						5.9	5.7	6.2	6.5	5.6	5.7	5.3	3.5
TAH 2017-SFR2										8.7	7.4	7.4	6.7
Overall SFR		4.1	4.2	4.1	4.0	4.0	3.8	3.7	3.5	3.4	3.7	3.7	3.5

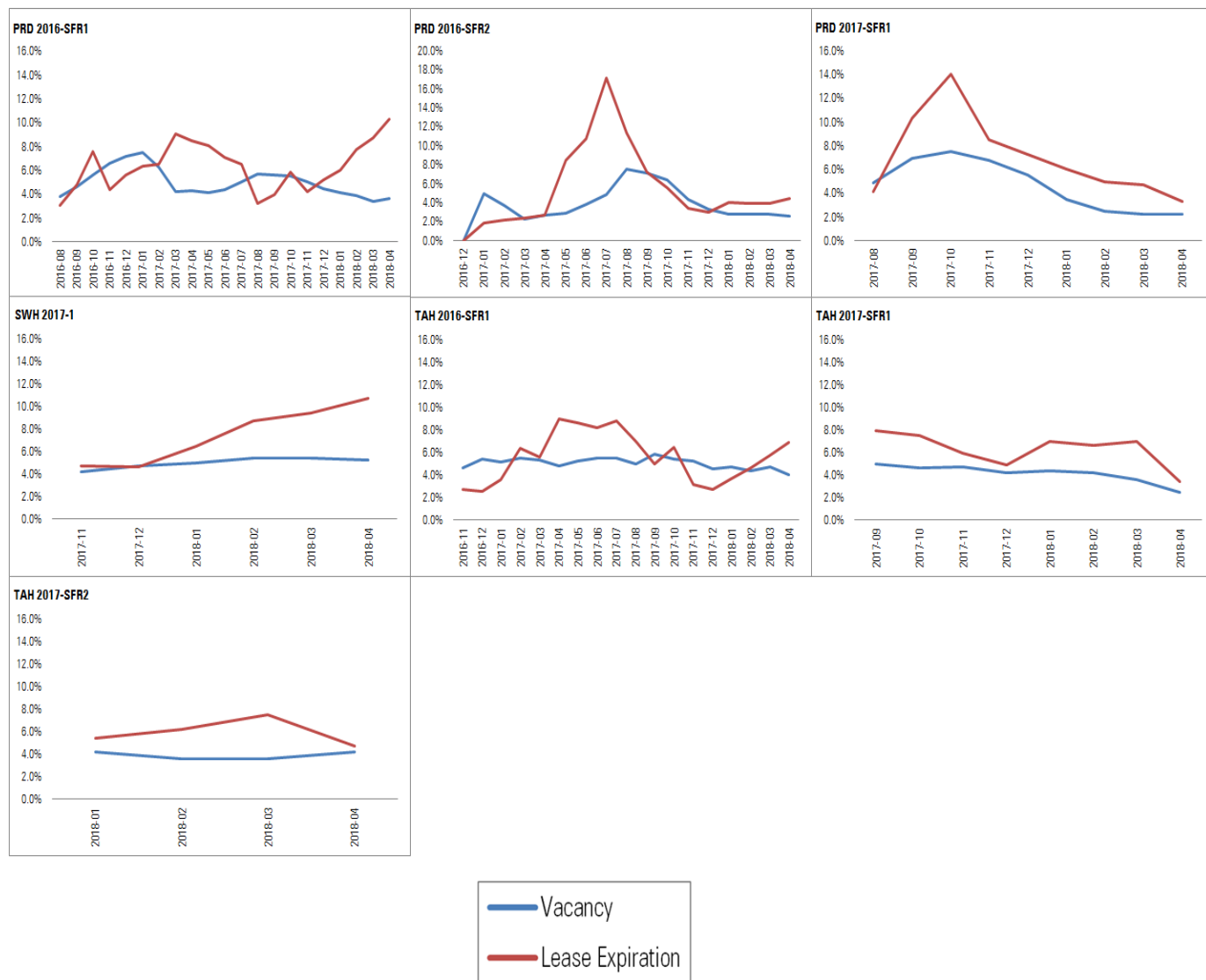
**Table 12 – Monthly Turnover Rate**

		Year 2017						Year 2018					
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
AH4R 2014-SFR2		4.9	4.6	3.9	3.9	2.9	2.9	2.5	2.2	2.8	2.4	2.9	TBD
AH4R 2014-SFR3		3.9	4.3	5.1	4.3	3.4	3.1	2.1	2.4	2.6	2.4	3.3	TBD
AH4R 2015-SFR1		3.9	4.2	4.2	4.1	3.9	3.4	2.8	2.8	3.4	3.2	3.2	TBD
AH4R 2015-SFR2		5.0	5.8	4.4	3.7	3.3	2.5	2.3	2.9	2.5	2.6	4.0	TBD
AMSR 2016-SFR1		2.8	3.5	3.3	2.5	2.1	2.1	2.0	2.2	2.8	1.7	2.7	TBD
CAH 2015-1		4.0	4.6	3.8	4.1	2.7	3.2	2.8	2.3	1.9	2.6	2.6	TBD
CSH 2016-1		3.4	3.9	3.4	3.6	2.9	2.9	2.6	2.1	2.2	2.3	3.2	TBD
CSH 2016-2		4.1	3.4	4.3	4.5	3.0	3.2	3.0	2.4	2.6	2.5	3.2	TBD
HPA 2016-2		4.4	7.5	3.6	1.9	1.0	1.6	2.2	1.2	1.7	1.5	3.5	TBD
HPA 2017-1				2.2	2.5	2.3	3.6	2.3	1.7	1.6	1.9	2.4	TBD
IH 2015-SFR3		2.7	3.0	3.0	3.4	2.8	2.6	2.8	2.3	2.6	2.4	2.9	TBD
IH 2017-SFR2										2.4	2.2	2.4	TBD
IH 2018-SFR1												2.5	TBD
PRD 2015-SFR2		4.2	3.7	3.0	3.2	3.1	2.9	2.5	2.2	2.4	2.5	3.5	TBD
PRD 2015-SFR3		4.1	5.5	7.1	4.6	4.2	3.0	2.4	2.0	2.0	2.0	2.2	TBD
PRD 2016-SFR1		3.6	4.0	3.5	3.2	3.2	2.9	2.4	2.6	2.6	2.8	3.0	TBD
PRD 2016-SFR2		2.9	4.2	5.2	5.3	3.2	3.0	1.7	1.7	2.0	2.2	2.5	TBD
PRD 2017-SFR1					7.5	4.3	4.1	3.8	3.5	2.4	1.8	2.1	TBD
PRD 2018-SFR1													TBD
SWH 2017-1								2.0	2.3	2.4	3.0	3.7	TBD
TAH 2016-SFR1		3.1	3.4	3.1	2.8	3.5	2.2	2.5	1.7	2.1	1.7	2.4	TBD
TAH 2017-SFR1						6.6	3.3	2.7	2.0	3.1	2.4	2.7	TBD
TAH 2017-SFR2										6.3	1.3	2.7	TBD
Overall SFR		3.7	4.2	3.9	3.9	3.3	2.9	2.5	2.3	2.6	2.4	2.9	TBD

TBD – To Be Determined

## Appendix I – Vacancy Versus Lease Expiration





## 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 – 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 – February 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 April 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.

### **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 April lease expirations, Morningstar looks for all April lease expirations in the January 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 February or March are removed from the April lease expiration count.

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

Tables 6a and 6b show the number of months of vacancy the April unoccupied properties have experienced. In other words, if a property is unoccupied as of the April 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 April 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 March 1 considered as delinquent after 30 days or as delinquent on April 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 April property tape to determine the lease status for March 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.

**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 March 2018 retention rates are the April statuses of March 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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