

# Single-Family Rental Research

## Performance Summary Covering All Morningstar-Rated Securitizations

June 2018

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### Authors:

Monte Bays | Vice President | [monte.bays@morningstar.com](mailto:monte.bays@morningstar.com) | +1 646 560-4536

Yash Agarwal | Analyst | [yash.agarwal@morningstar.com](mailto:yash.agarwal@morningstar.com) | +91 22 61217208

Arindam Vatsa | Analyst | [arindam.vatsa@morningstar.com](mailto:arindam.vatsa@morningstar.com) | +91 22 61217213

### Analytical Manager:

Kevin Dwyer | Managing Director | [kevin.dwyer@morningstar.com](mailto:kevin.dwyer@morningstar.com) | +1 646 560-4525

### Introduction

The blended rent change for single borrower, single-family rental securitizations rated by Morningstar Credit Ratings, LLC increased for the fifth consecutive month by 4.7% in May, compared with a revised 4.2% rise in April. The increase in blended rent change in securitizations is in contrast to the rent changes reflected in RentRange, which remained relatively flat for the second consecutive month. The average vacancy rate increased for the first time in seven months, inching up to 4.2% in May from a revised 4.0% in April. The increase in vacancy was likely due to a corresponding increase in lease expirations, following a seasonal trend of higher lease expirations and vacancies in the spring and summer months. The average retention rate for expiring leases declined 50 basis points, but remains strong at 79.5% as of April, the latest month available. Among the top 20 metropolitan statistical areas, the Sarasota-Bradenton-Venice, Florida MSA had the highest vacancy rate at 6.5% followed by Fort Lauderdale, Florida at 6.0%. The Houston MSA vacancy rate continued to improve, declining 50 basis points to 5.8% in May, down from 10.0% in October 2017. The Phoenix MSA continued to experience the highest blended rent growth of 6.4%, while the Las Vegas and Los Angeles MSAs both experienced rent growth over 6.0%. The Houston MSA experienced the lowest rent growth at 3.3%. TAH 2018-SFR1 is now reporting data and was added to this month's report, and IH 2018-SFR2, which closed May 8, 2018, will start reporting at the end of July. The June Single-Family Rental Performance Summary includes 24 single-borrower deals with over 88,500 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 May. 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

Lease expirations increased to 7.8% in May from 7.0% in April, following a seasonal trend of increasing in the spring and summer months. The increase in lease expirations corresponds with a 20-basis-point increase in the vacancy rate. HPA 2016-2 had the highest lease expiration rate at 18.0%, while CSH 2016-2 had the highest vacancy rate at 5.9%, followed by AH4R 2015-SFR2 and HPA 2016-2, both at 5.7%. The average retention rate on full-term leases remained strong at 79.5% in April, the latest month for which data is available, down slightly from a revised 80.0% in March. Only AH4R 2015-SFR1, at 72.5%, had a retention rate below 75.0%, while 11 transactions had a retention rate of 80.0% or higher. The overall turnover rate decreased slightly to 2.7% in April, the latest month for which data is available, from 2.9% in March. The average delinquency rate increased 20 basis points to 0.6% in May, with two transactions reporting delinquency rates greater than 1.0%. AMSR 2016-SFR1 reported a delinquency rate of 1.7% in May, up from 1.4% in April, and CAH-2015-1 reported a delinquency rate of 1.1% in May, up 60 basis points from 0.5% in April. Please note that any review of delinquency should be viewed within the context of the delinquency definitions in Table 7.

Rents rose 4.7% in May, the fifth consecutive month of higher rent increases. Chart 1 shows that the rent gains for securitized properties increased above their RentRange benchmarks, which remained relatively flat for the second consecutive month. 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 April, the latest month for which data is available, the rent change for renewal properties increased 4.0% and vacant-to-occupied properties increased by 4.6%, up from a revised 4.3% in March, the fourth consecutive month of increasing rent change for vacant-to-occupied rent changes. 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, with the exception of Houston, where contractual rents were slightly lower than the RentRange average. Chart 4 shows the MSA-level blended rent change. MSAs with rent changes above the 4.7% 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 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 remained at 17.8% of its portfolio for the second consecutive month. TAH 2016-SFR1 has the second-highest percentage of MTM leases with 8.1% in May, up from 6.3% in April.

## Multiborrower Performance

There have been eight multiborrower transactions; as of the most recent remittance report, these transactions were secured by 770 total loans. The number of loans 30-59 days delinquent decreased by two to nine, while the number of loans 60-89 days delinquent increased to six from two, and the loans over 90 days delinquent decreased by two to 16. Loans in foreclosure increased to five from two, and loans in special servicing declined to 30. One loan in special servicing was foreclosed on and the collateral was sold with no loss to the trust.

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

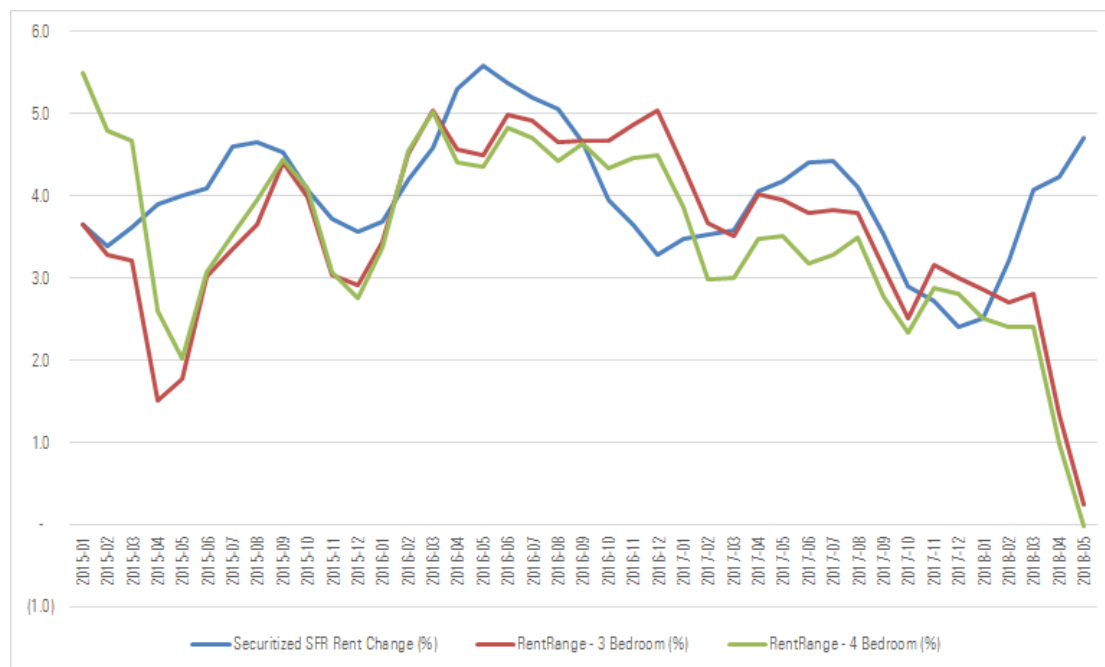
	30-59 Delinquent	60-89 Delinquent	90+ Delinquent	Foreclosure	Real Estate Owned	Special Servicing
B2R 2015-1	0.2	0.3	0.0	0.2	0.0	0.6
FKL 2015-SFR1	0.0	0.0	0.0	0.0	0.0	0.0
CAF 2015-1	0.0	0.0	0.0	0.0	0.0	4.7
B2R 2015-2	0.5	0.5	1.2	0.2	0.0	1.4
CAF 2016-1	0.4	0.0	0.0	0.0	0.0	1.2
B2R 2016-1	1.1	0.4	2.0	0.2	0.0	2.9
CAF 2016-2	0.0	0.9	0.7	2.8	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	126	1	1	0	1	0	3
FKL 2015-SFR1	14	0	0	0	0	0	0
CAF 2015-1	57	0	0	0	0	0	2
B2R 2015-2	189	3	2	6	1	0	7
CAF 2016-1	74	1	0	0	0	0	1
B2R 2016-1	155	4	2	4	1	0	9
CAF 2016-2	69	0	1	4	2	0	5
CAF 2017-1	86	0	0	2	0	0	3
Overall	770	9	6	16	5	0	30

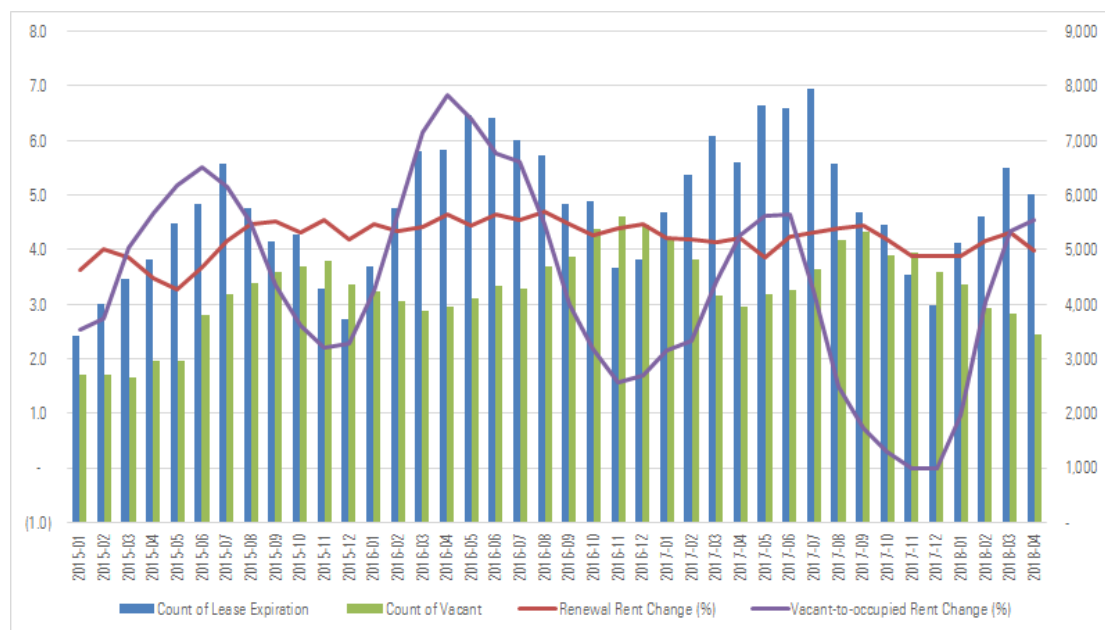
## Single-Borrower Charts and Tables

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



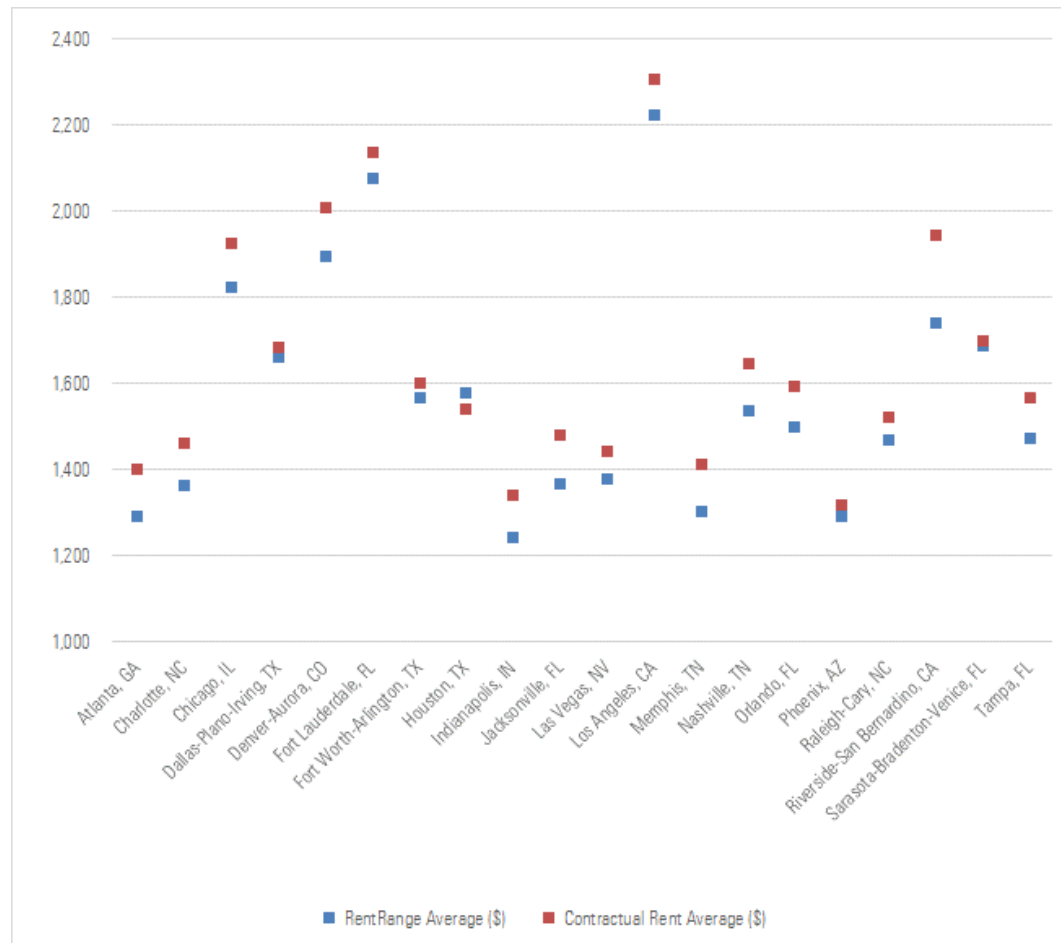
Sources: Morningstar Credit Ratings, LLC; RentRange

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



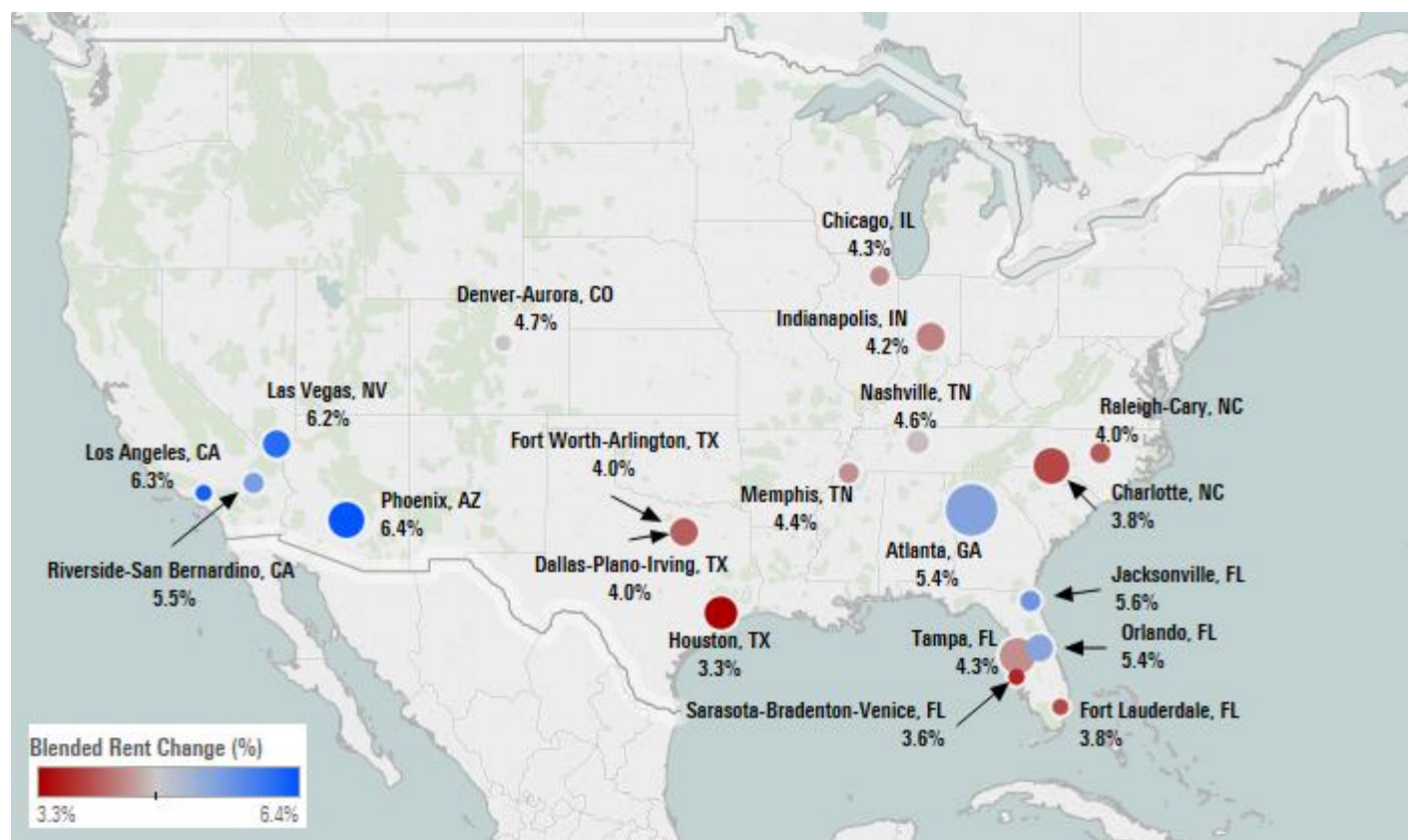
Source: Morningstar Credit Ratings, LLC

**Chart 3 – May 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 1.42% to 14.13%. 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					
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Atlanta, GA		5.0	4.9	4.6	4.4	4.3	3.6	3.5	3.1	3.9	5.1	4.8	5.4
Charlotte, NC		4.3	4.1	3.2	3.0	2.7	1.7	1.0	1.4	2.5	3.4	3.1	3.8
Chicago, IL		2.7	2.2	2.1	0.8	0.8	-0.2	-0.6	0.7	1.3	1.6	3.0	4.3
Dallas-Plano-Irving, TX		5.2	5.2	4.3	4.1	2.8	2.8	2.4	2.5	3.2	3.6	3.9	4.0
Denver-Aurora, CO		7.0	6.2	6.2	4.2	1.7	2.4	3.8	1.6	4.3	5.7	4.9	4.7
Fort Lauderdale, FL		2.4	2.5	1.8	2.2	2.2	1.2	1.7	1.8	2.5	2.8	2.9	3.8
Fort Worth-Arlington, TX		4.7	4.6	4.5	4.4	3.3	3.2	2.7	2.3	3.2	4.2	4.1	4.0
Houston, TX		1.1	1.5	1.6	-0.8	-0.4	-0.6	0.0	1.4	1.4	3.1	3.6	3.3
Indianapolis, IN		3.4	3.0	3.1	2.0	1.8	0.4	0.2	-0.1	2.9	3.3	3.3	4.2
Jacksonville, FL		3.6	4.3	3.5	3.7	3.3	2.6	2.3	3.0	3.3	4.1	5.2	5.6
Las Vegas, NV		5.6	5.4	5.9	5.1	3.1	4.5	4.0	4.2	5.1	5.6	5.2	6.2
Los Angeles, CA		8.2	8.0	7.5	6.3	6.5	6.0	6.4	6.3	4.6	5.7	6.0	6.3
Memphis, TN		2.1	2.3	2.7	2.4	1.0	0.2	-0.1	0.9	1.5	3.2	3.9	4.4
Nashville, TN		4.9	4.8	4.0	3.7	3.3	2.2	1.1	1.7	1.9	2.8	3.1	4.6
Orlando, FL		4.9	5.2	4.7	4.1	3.2	4.0	4.0	3.2	4.9	4.9	5.1	5.4
Phoenix, AZ		6.4	6.8	6.1	5.5	4.8	5.0	4.1	4.1	5.0	6.3	6.4	6.4
Raleigh-Cary, NC		3.7	3.7	3.3	3.4	2.6	2.1	0.5	1.3	1.6	2.4	3.0	4.0
Riverside-San Bernardino, CA		5.5	5.9	5.2	5.1	5.1	5.0	4.9	4.5	4.6	4.9	5.2	5.5
Sarasota-Bradenton-Venice, FL		2.9	2.1	1.4	1.0	0.4	1.0	0.4	0.8	2.0	2.9	2.9	3.6
Tampa, FL		3.7	3.6	3.2	2.6	1.7	2.4	2.1	2.1	2.9	3.7	4.3	4.3

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

		Year 2017							Year 2018					Total Count
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
AH4R 2014-SFR2		209	209	230	251	248	235	215	233	217	186	166	128	4,481
AH4R 2014-SFR3		223	234	310	298	317	299	284	266	265	243	227	200	4,499
AH4R 2015-SFR1		197	198	243	282	312	331	304	309	294	253	256	199	4,658
AH4R 2015-SFR2		256	267	253	268	276	252	238	235	217	229	248	234	4,123
AMSR 2016-SFR1		297	355	335	350	339	366	375	397	328	280	244	215	4,262
CAH 2015-1		249	239	261	225	214	226	230	176	165	171	153	152	3,759
CSH 2016-1		176	194	215	207	214	207	207	202	180	189	180	199	3,525
CSH 2016-2		189	241	266	241	230	254	257	256	229	214	217	232	3,957
HPA 2016-2		62	80	63	48	36	42	46	52	45	41	53	75	1,311
HPA 2017-1			19	26	36	50	64	57	53	34	39	46	49	1,351
IH 2015-SFR3		287	315	317	352	318	343	334	326	300	272	282	328	6,912
IH 2017-SFR2									177	158	136	124	141	4,411
IH 2018-SFR1											131	131	193	4,289
PRD 2015-SFR2		132	130	149	180	197	148	113	93	95	95	95	126	3,288
PRD 2015-SFR3		190	222	269	259	245	206	160	114	83	80	87	107	3,150
PRD 2016-SFR1		239	279	314	311	304	277	244	227	215	185	201	197	5,549
PRD 2016-SFR2		144	181	282	265	238	162	122	104	104	105	98	109	3,742
PRD 2017-SFR1				131	187	203	183	150	94	67	60	60	71	2,708
PRD 2018-SFR1												19	30	2,113
SWH 2017-1							184	209	219	238	239	231	233	4,432
TAH 2016-SFR1		188	187	169	199	186	178	156	161	150	162	136	167	3,436
TAH 2017-SFR1					173	162	164	146	152	145	124	84	109	3,480
TAH 2017-SFR2									109	93	94	109	96	2,621
TAH 2018-SFR1													104	2,509
Overall SFR		3,038	3,350	3,833	4,132	4,089	4,121	3,847	3,955	3,622	3,528	3,447	3,694	88,566

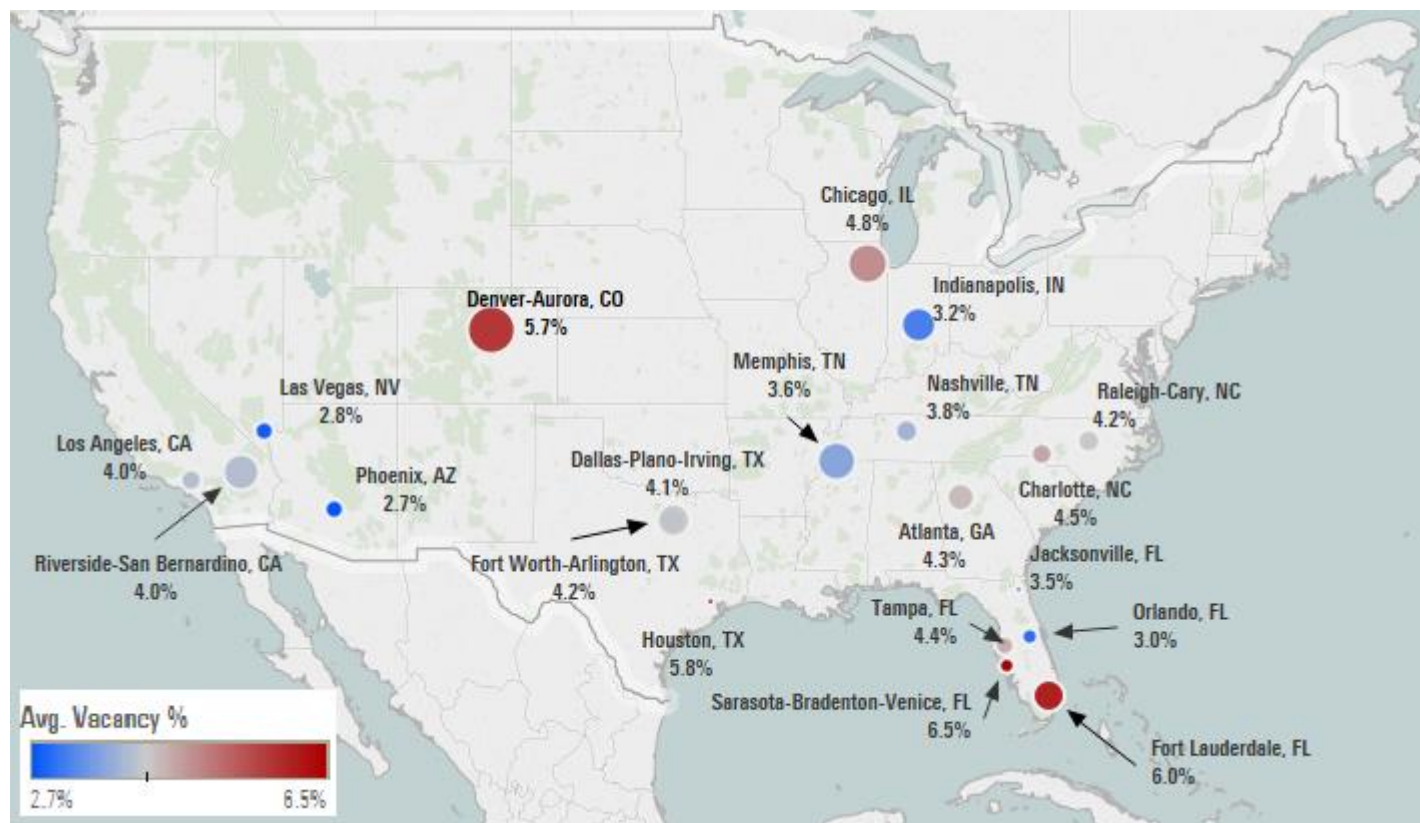
**Table 4b – Month-End Vacancy (by Percentage)**

		Year 2017						Year 2018					
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
AH4R 2014-SFR2		4.7	4.7	5.1	5.6	5.5	5.2	4.8	5.2	4.8	4.2	3.7	2.9
AH4R 2014-SFR3		5.0	5.2	6.9	6.6	7.0	6.6	6.3	5.9	5.9	5.4	5.0	4.4
AH4R 2015-SFR1		4.2	4.2	5.2	6.1	6.7	7.1	6.5	6.6	6.3	5.4	5.5	4.3
AH4R 2015-SFR2		6.2	6.5	6.1	6.5	6.7	6.1	5.8	5.7	5.3	5.6	6.0	5.7
AMSR 2016-SFR1		7.0	8.3	7.9	8.2	8.0	8.6	8.8	9.3	7.7	6.6	5.7	5.0
CAH 2015-1		6.5	6.2	6.8	5.9	5.6	6.0	6.1	4.6	4.4	4.5	4.1	4.0
CSH 2016-1		4.9	5.4	6.0	5.8	6.0	5.8	5.8	5.7	5.1	5.3	5.1	5.6
CSH 2016-2		4.7	6.0	6.7	6.0	5.8	6.4	6.4	6.4	5.7	5.4	5.5	5.9
HPA 2016-2		4.6	6.0	4.7	3.6	2.7	3.1	3.4	3.9	3.4	3.1	4.0	5.7
HPA 2017-1			1.4	1.9	2.6	3.6	4.7	4.2	3.9	2.5	2.9	3.4	3.6
IH 2015-SFR3		4.1	4.5	4.5	5.0	4.6	4.9	4.8	4.7	4.3	3.9	4.1	4.7
IH 2017-SFR2									4.0	3.6	3.1	2.8	3.2
IH 2018-SFR1											3.1	3.1	4.5
PRD 2015-SFR2		4.0	3.9	4.5	5.5	6.0	4.5	3.4	2.8	2.9	2.9	2.9	3.8
PRD 2015-SFR3		6.0	7.0	8.5	8.2	7.8	6.5	5.1	3.6	2.6	2.5	2.8	3.4
PRD 2016-SFR1		4.3	5.0	5.6	5.6	5.5	5.0	4.4	4.1	3.9	3.3	3.6	3.6
PRD 2016-SFR2		3.8	4.8	7.5	7.1	6.4	4.3	3.3	2.8	2.8	2.8	2.6	2.9
PRD 2017-SFR1				4.8	6.9	7.5	6.8	5.5	3.5	2.5	2.2	2.2	2.6
PRD 2018-SFR1												0.9	1.4
SWH 2017-1							4.2	4.7	4.9	5.4	5.4	5.2	5.3
TAH 2016-SFR1		5.5	5.4	4.9	5.8	5.4	5.2	4.5	4.7	4.4	4.7	4.0	4.9
TAH 2017-SFR1					5.0	4.7	4.7	4.2	4.4	4.2	3.6	2.4	3.1
TAH 2017-SFR2									4.2	3.5	3.6	4.2	3.7
TAH 2018-SFR1													4.1
Overall SFR		5.0	5.4	5.9	6.0	6.0	5.7	5.3	5.0	4.5	4.2	4.0	4.2

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

		Year 2017						Year 2018					
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Atlanta, GA		5.1	4.4	4.9	4.8	5.0	4.7	4.4	4.6	4.6	4.0	4.2	4.3
Charlotte, NC		4.4	5.2	5.8	6.6	6.6	6.1	5.8	5.8	5.5	5.4	4.4	4.5
Chicago, IL		4.5	4.8	5.0	5.0	5.7	5.2	4.5	4.5	4.6	4.3	4.9	4.8
Dallas-Plano-Irving, TX		4.8	5.0	5.6	5.5	5.5	4.9	5.3	5.0	4.5	4.6	4.3	4.1
Denver-Aurora, CO		4.5	5.8	6.5	5.4	4.9	4.7	5.4	4.8	5.0	4.0	4.0	5.7
Fort Lauderdale, FL		6.0	6.3	6.3	6.7	6.8	6.1	5.8	5.1	4.2	5.0	4.9	6.0
Fort Worth-Arlington, TX		5.5	5.2	5.0	4.8	4.9	5.9	5.2	5.0	4.3	4.0	4.0	4.2
Houston, TX		6.9	7.9	9.2	9.8	10.0	9.4	8.8	8.8	7.3	6.4	6.3	5.8
Indianapolis, IN		5.1	6.3	6.7	6.7	6.2	5.6	5.3	4.4	5.1	4.3	4.1	3.2
Jacksonville, FL		3.7	4.4	5.1	6.4	5.8	5.2	4.5	4.6	4.0	3.2	2.6	3.5
Las Vegas, NV		4.3	4.3	4.4	4.5	3.8	3.5	3.6	2.6	2.5	2.8	2.2	2.8
Los Angeles, CA		5.1	5.1	4.6	4.6	4.9	5.2	4.3	5.0	3.7	3.2	3.9	4.0
Memphis, TN		5.5	6.3	6.7	7.3	7.3	6.2	5.3	5.2	4.3	4.0	3.9	3.6
Nashville, TN		5.3	6.2	7.1	7.1	7.6	8.0	7.5	7.3	5.9	4.7	4.1	3.8
Orlando, FL		3.9	4.5	4.8	4.8	4.5	3.8	3.5	3.3	3.1	3.6	2.6	3.0
Phoenix, AZ		4.4	5.2	5.5	4.5	4.8	4.8	4.0	3.2	3.2	2.7	2.2	2.7
Raleigh-Cary, NC		5.5	4.9	6.1	7.1	7.1	6.8	5.6	5.8	5.1	5.2	4.7	4.2
Riverside-San Bernardino, CA		4.2	3.3	3.6	3.4	3.8	3.7	4.3	3.8	4.1	3.7	3.5	4.0
Sarasota-Bradenton-Venice, FL		6.7	7.0	7.7	7.7	7.0	7.3	5.9	4.5	4.6	4.8	5.3	6.5
Tampa, FL		4.2	5.1	6.3	6.7	6.3	5.9	5.0	4.5	4.0	4.0	4.1	4.4

**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 19.97% to 28.06%. 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 2017						Year 2018						Total Count
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
AH4R 2014-SFR2		399	371	331	264	201	189	161	310	346	368	329	423	4,481
AH4R 2014-SFR3		474	448	416	265	241	160	171	348	332	311	280	361	4,499
AH4R 2015-SFR1		382	488	423	336	313	251	235	360	354	291	247	295	4,658
AH4R 2015-SFR2		464	355	214	159	132	133	151	238	310	397	315	438	4,123
AMSR 2016-SFR1		439	281	225	186	193	178	167	178	271	300	320	361	4,262
CAH 2015-1		368	393	378	298	287	266	175	215	207	219	251	319	3,759
CSH 2016-1		337	340	273	264	234	191	170	197	220	276	303	308	3,525
CSH 2016-2		335	300	287	230	243	237	167	232	257	306	325	392	3,957
HPA 2016-2		386	179	11	5	6	10	16	14	12	105	155	236	1,311
HPA 2017-1			87	141	118	186	149	114	91	74	110	114	73	1,351
IH 2015-SFR3		405	446	499	388	537	464	375	470	522	522	425	407	6,912
IH 2017-SFR2									242	247	292	294	330	4,411
IH 2018-SFR1											311	346	323	4,289
PRD 2015-SFR2		186	192	118	179	221	185	142	189	234	260	307	324	3,288
PRD 2015-SFR3		353	525	284	216	157	93	76	81	120	108	187	292	3,150
PRD 2016-SFR1		394	358	176	216	322	230	286	330	426	480	567	468	5,549
PRD 2016-SFR2		402	639	426	270	209	127	113	150	145	148	165	271	3,742
PRD 2017-SFR1				112	279	381	229	197	162	133	127	89	136	2,708
PRD 2018-SFR1												54	52	2,113
SWH 2017-1							210	204	284	385	418	475	442	4,432
TAH 2016-SFR1		280	301	238	171	221	107	92	124	159	197	235	225	3,436
TAH 2017-SFR1					276	261	206	171	241	229	241	119	159	3,480
TAH 2017-SFR2									141	161	197	124	154	2,621
TAH 2018-SFR1													160	2,509
Overall SFR		5,604	5,703	4,552	4,120	4,345	3,615	3,183	4,597	5,144	5,984	6,026	6,949	88,566

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

		Year 2017						Year 2018					
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
AH4R 2014-SFR2		8.9	8.3	7.4	5.9	4.5	4.2	3.6	6.9	7.7	8.2	7.3	9.4
AH4R 2014-SFR3		10.5	10.0	9.2	5.9	5.4	3.6	3.8	7.7	7.4	6.9	6.2	8.0
AH4R 2015-SFR1		8.2	10.5	9.1	7.2	6.7	5.4	5.0	7.7	7.6	6.2	5.3	6.3
AH4R 2015-SFR2		11.3	8.6	5.2	3.9	3.2	3.2	3.7	5.8	7.5	9.6	7.6	10.6
AMSR 2016-SFR1		10.3	6.6	5.3	4.4	4.5	4.2	3.9	4.2	6.4	7.0	7.5	8.5
CAH 2015-1		9.6	10.3	9.9	7.8	7.5	7.0	4.6	5.7	5.5	5.8	6.7	8.5
CSH 2016-1		9.5	9.5	7.7	7.4	6.6	5.4	4.8	5.6	6.2	7.8	8.6	8.7
CSH 2016-2		8.4	7.5	7.2	5.8	6.1	5.9	4.2	5.8	6.4	7.7	8.2	9.9
HPA 2016-2		28.6	13.3	0.8	0.4	0.4	0.7	1.2	1.1	0.9	7.9	11.8	18.0
HPA 2017-1			6.3	10.2	8.6	13.6	10.9	8.4	6.7	5.4	8.1	8.4	5.4
IH 2015-SFR3		5.8	6.4	7.2	5.6	7.7	6.7	5.4	6.8	7.5	7.5	6.1	5.9
IH 2017-SFR2									5.5	5.6	6.6	6.7	7.5
IH 2018-SFR1											7.3	8.1	7.5
PRD 2015-SFR2		5.6	5.8	3.6	5.4	6.7	5.6	4.3	5.7	7.1	7.9	9.3	9.9
PRD 2015-SFR3		11.2	16.6	9.0	6.9	5.0	3.0	2.4	2.6	3.8	3.4	5.9	9.3
PRD 2016-SFR1		7.1	6.4	3.2	3.9	5.8	4.1	5.1	5.9	7.7	8.6	10.2	8.4
PRD 2016-SFR2		10.7	17.1	11.4	7.2	5.6	3.4	3.0	4.0	3.9	4.0	4.4	7.2
PRD 2017-SFR1				4.1	10.3	14.1	8.5	7.3	6.0	4.9	4.7	3.3	5.0
PRD 2018-SFR1												2.6	2.5
SWH 2017-1							4.7	4.6	6.4	8.7	9.4	10.7	10.0
TAH 2016-SFR1		8.1	8.8	6.9	5.0	6.4	3.1	2.7	3.6	4.6	5.7	6.8	6.5
TAH 2017-SFR1					7.9	7.5	5.9	4.9	6.9	6.6	6.9	3.4	4.6
TAH 2017-SFR2									5.4	6.1	7.5	4.7	5.9
TAH 2018-SFR1													6.4
Overall SFR		9.2	9.2	7.0	6.0	6.3	5.0	4.4	5.8	6.4	7.1	7.0	7.8

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

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



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

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		29	24	25	13	14	6	6	8	1	1	1	0	128
AH4R 2014-SFR3		31	28	24	27	24	12	15	15	6	8	1	9	200
AH4R 2015-SFR1		23	33	23	29	21	15	14	5	17	8	6	5	199
AH4R 2015-SFR2		59	55	43	25	22	10	8	7	2	1	1	1	234
AMSR 2016-SFR1		65	52	34	14	23	10	6	4	1	2	2	2	215
CAH 2015-1		40	31	29	24	12	7	4	1	0	1	2	1	152
CSH 2016-1		66	52	31	16	12	5	5	3	3	2	3	1	199
CSH 2016-2		86	58	39	27	9	2	3	2	5	1	0	0	232
HPA 2016-2		31	24	16	2	1	0	0	0	0	0	0	1	75
HPA 2017-1		26	14	5	3	1	0	0	0	0	0	0	0	49
IH 2015-SFR3		68	79	63	39	25	18	12	10	7	2	3	2	328
IH 2017-SFR2		93	36	7	2	3	0							141
IH 2018-SFR1		161	1	26	5									193
PRD 2015-SFR2		46	26	30	7	9	3	1	2	2	0	0	0	126
PRD 2015-SFR3		35	27	12	8	6	6	2	6	3	1	0	1	107
PRD 2016-SFR1		78	53	32	19	5	2	4	1	0	3	0	0	197
PRD 2016-SFR2		61	20	15	4	4	1	0	1	1	2	0	0	109
PRD 2017-SFR1		57	6	6	0	1	1	0	0	0	0	0		71
PRD 2018-SFR1		22	8	0										30
SWH 2017-1		127	61	29	7	3	3	3	0					233
TAH 2016-SFR1		51	54	24	13	16	3	4	1	0	0	1	0	167
TAH 2017-SFR1		62	33	9	3	1	0	0	1	0	0			109
TAH 2017-SFR2		50	31	9	2	4	0							96
TAH 2018-SFR1		102	2											104
Overall SFR		1,469	808	531	289	216	104	87	67	48	32	20	23	3,694

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

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		22.7	18.8	19.5	10.2	10.9	4.7	4.7	6.3	0.8	0.8	0.8	0.0	100.0
AH4R 2014-SFR3		15.5	14.0	12.0	13.5	12.0	6.0	7.5	7.5	3.0	4.0	0.5	4.5	100.0
AH4R 2015-SFR1		11.6	16.6	11.6	14.6	10.6	7.5	7.0	2.5	8.5	4.0	3.0	2.5	100.0
AH4R 2015-SFR2		25.2	23.5	18.4	10.7	9.4	4.3	3.4	3.0	0.9	0.4	0.4	0.4	100.0
AMSR 2016-SFR1		30.2	24.2	15.8	6.5	10.7	4.7	2.8	1.9	0.5	0.9	0.9	0.9	100.0
CAH 2015-1		26.3	20.4	19.1	15.8	7.9	4.6	2.6	0.7	0.0	0.7	1.3	0.7	100.0
CSH 2016-1		33.2	26.1	15.6	8.0	6.0	2.5	2.5	1.5	1.5	1.0	1.5	0.5	100.0
CSH 2016-2		37.1	25.0	16.8	11.6	3.9	0.9	1.3	0.9	2.2	0.4	0.0	0.0	100.0
HPA 2016-2		41.3	32.0	21.3	2.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	100.0
HPA 2017-1		53.1	28.6	10.2	6.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
IH 2015-SFR3		20.7	24.1	19.2	11.9	7.6	5.5	3.7	3.0	2.1	0.6	0.9	0.6	100.0
IH 2017-SFR2		66.0	25.5	5.0	1.4	2.1	0.0							100.0
IH 2018-SFR1		83.4	0.5	13.5	2.6									100.0
PRD 2015-SFR2		36.5	20.6	23.8	5.6	7.1	2.4	0.8	1.6	1.6	0.0	0.0	0.0	100.0
PRD 2015-SFR3		32.7	25.2	11.2	7.5	5.6	5.6	1.9	5.6	2.8	0.9	0.0	0.9	100.0
PRD 2016-SFR1		39.6	26.9	16.2	9.6	2.5	1.0	2.0	0.5	0.0	1.5	0.0	0.0	100.0
PRD 2016-SFR2		56.0	18.3	13.8	3.7	3.7	0.9	0.0	0.9	0.9	1.8	0.0	0.0	100.0
PRD 2017-SFR1		80.3	8.5	8.5	0.0	1.4	1.4	0.0	0.0	0.0	0.0	0.0		100.0
PRD 2018-SFR1		73.3	26.7	0.0										100.0
SWH 2017-1		54.5	26.2	12.4	3.0	1.3	1.3	1.3	0.0					100.0
TAH 2016-SFR1		30.5	32.3	14.4	7.8	9.6	1.8	2.4	0.6	0.0	0.0	0.6	0.0	100.0
TAH 2017-SFR1		56.9	30.3	8.3	2.8	0.9	0.0	0.0	0.9	0.0	0.0			100.0
TAH 2017-SFR2		52.1	32.3	9.4	2.1	4.2	0.0							100.0
TAH 2018-SFR1		98.1	1.9											100.0
Overall SFR		39.8	21.9	14.4	7.8	5.8	2.8	2.4	1.8	1.3	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
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
AH4R 2014-SFR2		10	13	15	9	21	19	20	20	22	8	7	7	4,481	
AH4R 2014-SFR3		9	7	11	7	21	12	14	19	20	7	12	9	4,499	
AH4R 2015-SFR1		10	12	14	21	26	28	26	22	29	13	15	8	4,658	
AH4R 2015-SFR2		7	7	6	10	17	24	10	21	18	6	7	10	4,123	
AMSR 2016-SFR1		114	171	78	66	97	111	114	98	95	80	60	74	4,262	
CAH 2015-1		18	17	22	30	28	31	32	20	23	26	17	40	3,759	
CSH 2016-1		15	24	21	29	28	26	29	33	26	21	7	29	3,525	
CSH 2016-2		30	27	23	43	34	40	48	37	36	24	13	36	3,957	
HPA 2016-2		6	9	12	19	17	12	16	9	10	9	6	11	1,311	
HPA 2017-1			9	13	17	12	11	7	10	10	5	8	7	1,351	
IH 2015-SFR3		80	99	115	89	94	100	120	101	59	42	39	33	6,912	
IH 2017-SFR2									33	30	19	15	27	4,411	
IH 2018-SFR1											15	29	30	4,289	
PRD 2015-SFR2		14	19	14	26	25	23	24	28	21	18	12	24	3,288	
PRD 2015-SFR3		8	16	19	22	23	17	22	29	25	20	17	19	3,150	
PRD 2016-SFR1		24	28	29	27	43	45	44	39	40	31	28	27	5,549	
PRD 2016-SFR2		18	20	16	24	23	19	39	41	0	26	18	17	3,742	
PRD 2017-SFR1				14	20	19	16	17	17	22	16	17	14	2,708	
PRD 2018-SFR1												15	16	2,113	
SWH 2017-1							34	36	45	45	31	19	45	4,432	
TAH 2016-SFR1		15	9	5	3	2	15	15	18	23	10	10	21	3,436	
TAH 2017-SFR1					25	19	14	12	10	12	2	3	26	3,480	
TAH 2017-SFR2									7	9	4	6	13	2,621	
TAH 2018-SFR1													0	2,509	
Overall SFR		378	487	427	487	549	597	645	657	575	433	380	543	88,566	

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

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

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

		Year 2017						Year 2018					
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
AH4R 2014-SFR2		73.2	76.0	73.1	74.6	78.6	75.1	75.2	77.4	78.9	80.4	79.3	TBD
AH4R 2014-SFR3		75.5	71.4	72.6	73.6	71.0	78.1	78.9	76.7	81.9	74.3	80.0	TBD
AH4R 2015-SFR1		73.0	74.8	74.9	75.9	75.7	77.3	76.2	75.3	74.9	77.7	72.5	TBD
AH4R 2015-SFR2		69.2	72.7	67.3	62.9	78.0	68.4	76.2	76.1	80.3	75.3	75.2	TBD
AMSR 2016-SFR1		77.2	83.3	79.6	87.1	86.0	87.1	85.6	88.8	83.0	80.3	80.6	TBD
CAH 2015-1		72.8	76.1	73.5	80.2	81.5	74.4	77.1	83.3	75.8	79.9	82.1	TBD
CSH 2016-1		76.0	76.2	75.5	76.1	83.3	73.8	79.4	76.6	82.7	76.1	79.2	TBD
CSH 2016-2		75.8	68.0	68.3	73.0	78.6	67.5	73.1	78.9	80.9	80.7	78.8	TBD
HPA 2016-2		76.2	84.4	63.6	100.0	66.7	90.0	81.3	78.6	75.0	77.1	77.4	TBD
HPA 2017-1			81.6	85.1	80.5	82.3	89.3	83.3	87.9	79.7	80.9	75.4	TBD
IH 2015-SFR3		80.2	75.1	78.6	78.6	79.5	80.0	79.5	83.0	79.9	80.5	76.9	TBD
IH 2017-SFR2									78.1	80.6	83.2	81.0	TBD
IH 2018-SFR1											84.6	78.9	TBD
PRD 2015-SFR2		72.0	75.5	70.3	72.1	78.7	80.0	83.1	79.9	77.4	81.9	82.1	TBD
PRD 2015-SFR3		71.4	71.4	66.9	67.1	73.9	77.4	73.7	72.8	75.8	75.9	80.2	TBD
PRD 2016-SFR1		76.6	69.8	65.9	68.5	79.5	77.0	76.9	80.9	78.4	81.7	81.1	TBD
PRD 2016-SFR2		80.8	75.6	70.4	77.0	79.4	80.3	80.5	87.3	81.4	82.4	78.8	TBD
PRD 2017-SFR1				69.6	73.1	79.8	76.0	76.1	82.1	81.2	91.3	83.1	TBD
PRD 2018-SFR1												85.2	TBD
SWH 2017-1							74.8	84.8	81.3	75.8	78.5	78.5	TBD
TAH 2016-SFR1		77.9	82.7	85.3	81.3	82.8	78.5	84.8	81.5	83.6	81.2	85.5	TBD
TAH 2017-SFR1					77.2	82.8	84.0	88.3	79.3	82.5	79.7	84.0	TBD
TAH 2017-SFR2									76.6	81.4	80.7	78.2	TBD
TAH 2018-SFR1													TBD
Overall SFR		75.2	75.0	73.7	75.4	79.5	77.6	79.4	79.9	79.5	80.0	79.5	TBD

TBD – To Be Determined

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

		Year 2017						Year 2018					
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
AH4R 2014-SFR2		78.5	78.9	80.4	82.4	83.7	87.4	86.8	89.7	87.3	86.9	87.5	TBD
AH4R 2014-SFR3		77.7	78.6	81.9	86.0	83.2	81.4	89.2	90.0	85.8	83.6	86.4	TBD
AH4R 2015-SFR1		80.8	81.4	81.3	81.3	81.0	87.1	84.9	86.5	82.3	88.6	86.1	TBD
AH4R 2015-SFR2		75.9	79.3	81.1	81.2	87.0	80.9	88.8	86.4	85.5	82.9	82.6	TBD
AMSR 2016-SFR1		90.6	94.2	92.4	96.7	95.7	95.0	93.7	98.2	95.2	94.6	95.5	TBD
CAH 2015-1		62.5	77.8	81.1	72.5	80.0	74.4	78.0	72.5	91.7	81.0	77.3	TBD
CSH 2016-1		73.2	66.0	75.6	78.9	67.5	75.0	79.3	77.8	78.6	80.0	73.0	TBD
CSH 2016-2		62.9	70.2	78.4	57.5	62.9	70.4	74.1	75.0	75.8	78.1	77.8	TBD
HPA 2016-2		100.0	100.0	100.0	100.0								TBD
HPA 2017-1													TBD
IH 2015-SFR3		80.3	83.5	82.1	83.5	84.5	86.0	82.0	87.4	85.6	82.9	80.7	TBD
IH 2017-SFR2									91.0	78.4	89.1	82.9	TBD
IH 2018-SFR1											77.2	87.5	TBD
PRD 2015-SFR2		73.3	72.6	72.7	82.6	81.0	78.6	79.5	80.6	91.9	88.4	66.7	TBD
PRD 2015-SFR3		65.0	75.9	73.7	78.6	75.7	75.5	76.7	83.3	80.6	84.4	70.0	TBD
PRD 2016-SFR1		73.6	79.5	80.0	80.7	88.0	81.8	81.9	85.0	80.9	78.8	79.3	TBD
PRD 2016-SFR2		74.6	78.3	73.9	77.2	78.8	76.8	81.8	100.0	65.8	91.1	96.0	TBD
PRD 2017-SFR1				81.3	73.5	76.3	66.7	91.4	82.1	91.2	100.0	68.1	TBD
PRD 2018-SFR1												75.0	TBD
SWH 2017-1							61.3	80.8	75.0	71.4	82.4	78.3	TBD
TAH 2016-SFR1		92.7	92.2	91.3	93.6	95.1	95.5	92.9	95.5	94.4	95.3	95.3	TBD
TAH 2017-SFR1					88.1	92.5	93.5	87.0	90.2	87.6	85.7	84.3	TBD
TAH 2017-SFR2									98.2	93.1	88.1	92.7	TBD
TAH 2018-SFR1													TBD
Overall SFR		81.3	84.2	84.5	86.9	88.1	88.0	88.5	92.0	88.5	88.6	87.7	TBD

TBD – To Be Determined

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

		Year 2017						Year 2018						Total Count
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
AH4R 2014-SFR2		273	251	245	217	185	178	175	170	190	206	208	232	4,481
AH4R 2014-SFR3		222	227	216	199	180	168	148	155	188	220	199	233	4,499
AH4R 2015-SFR1		189	221	229	227	198	195	187	184	204	220	219	223	4,658
AH4R 2015-SFR2		239	215	207	179	147	156	143	143	150	183	200	235	4,123
AMSR 2016-SFR1		576	574	600	605	648	684	709	696	733	747	759	760	4,262
CAH 2015-1		40	36	37	40	40	43	41	40	36	42	44	50	3,759
CSH 2016-1		41	47	41	38	40	36	29	27	28	30	37	42	3,525
CSH 2016-2		62	47	37	40	35	27	27	28	33	32	27	31	3,957
HPA 2016-2		1	1	1	1	0	0	0	0	0	0	0	0	1,311
HPA 2017-1			0	0	0	0	0	0	0	0	0	0	0	1,351
IH 2015-SFR3		146	149	137	131	149	160	164	158	166	190	182	172	6,912
IH 2017-SFR2									92	95	115	101	111	4,411
IH 2018-SFR1											92	104	116	4,289
PRD 2015-SFR2		96	76	71	63	66	64	49	55	58	65	70	61	3,288
PRD 2015-SFR3		96	112	115	110	87	60	52	49	50	41	46	63	3,150
PRD 2016-SFR1		170	151	125	116	122	111	120	119	127	127	126	133	5,549
PRD 2016-SFR2		103	122	137	123	99	85	70	71	201	59	63	78	3,742
PRD 2017-SFR1				47	62	76	67	49	46	47	47	108	49	2,708
PRD 2018-SFR1												6	14	2,113
SWH 2017-1							31	26	24	28	34	60	87	4,432
TAH 2016-SFR1		311	348	371	379	360	377	339	257	252	261	215	278	3,436
TAH 2017-SFR1					207	197	217	225	195	197	184	121	127	3,480
TAH 2017-SFR2									229	195	194	176	174	2,621
TAH 2018-SFR1													118	2,509
Overall SFR		2,565	2,577	2,616	2,737	2,629	2,659	2,553	2,738	2,978	3,089	3,071	3,387	88,566



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

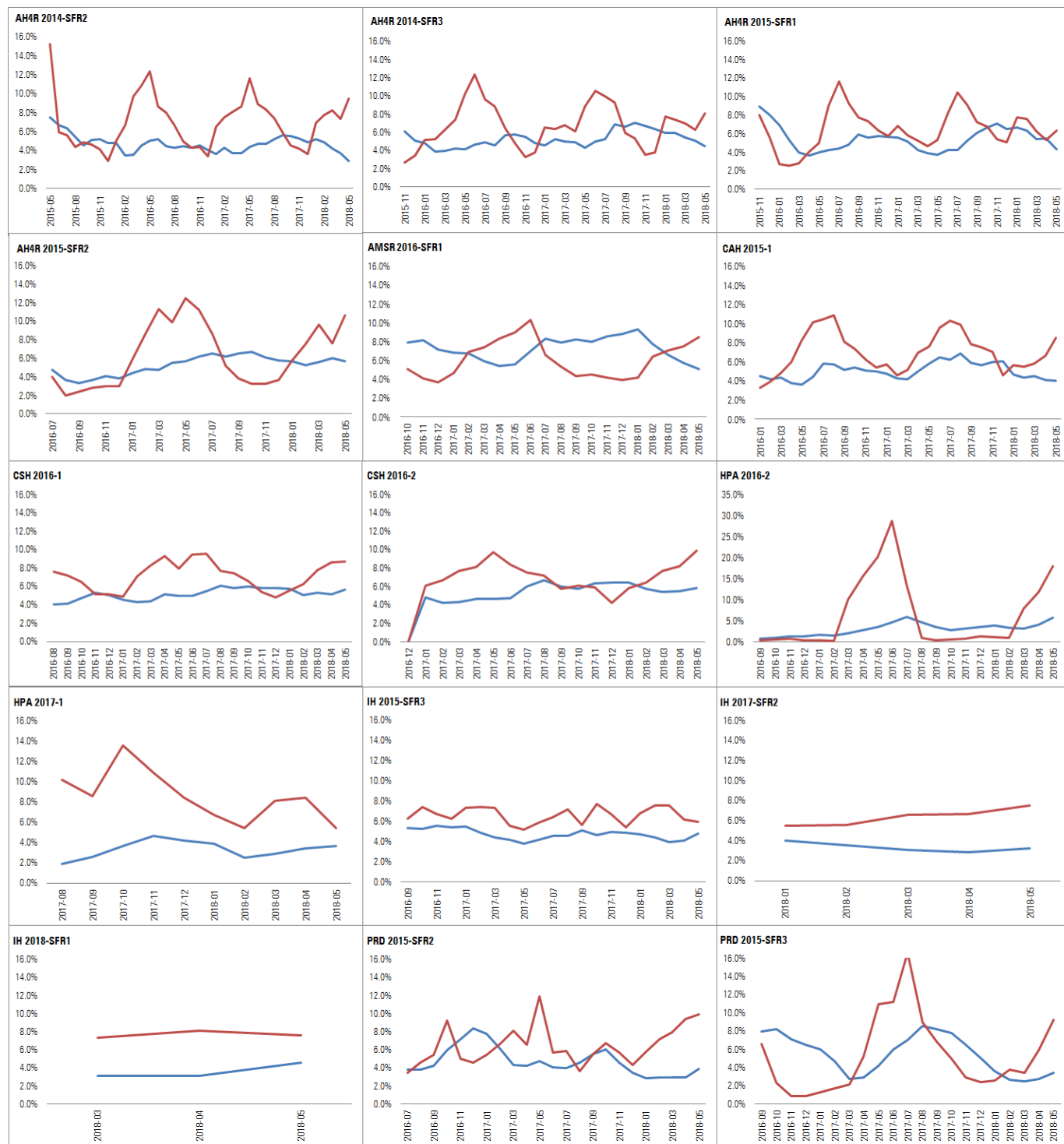
		Year 2017						Year 2018					
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
AH4R 2014-SFR2		6.1	5.6	5.5	4.8	4.1	4.0	3.9	3.8	4.2	4.6	4.6	5.2
AH4R 2014-SFR3		4.9	5.0	4.8	4.4	4.0	3.7	3.3	3.4	4.2	4.9	4.4	5.2
AH4R 2015-SFR1		4.1	4.7	4.9	4.9	4.2	4.2	4.0	4.0	4.4	4.7	4.7	4.8
AH4R 2015-SFR2		5.8	5.2	5.0	4.3	3.6	3.8	3.5	3.5	3.6	4.4	4.9	5.7
AMSR 2016-SFR1		13.5	13.5	14.1	14.2	15.2	16.0	16.6	16.3	17.2	17.5	17.8	17.8
CAH 2015-1		1.0	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.1	1.2	1.3
CSH 2016-1		1.2	1.3	1.2	1.1	1.1	1.0	0.8	0.8	0.8	0.8	1.0	1.2
CSH 2016-2		1.6	1.2	0.9	1.0	0.9	0.7	0.7	0.7	0.8	0.8	0.7	0.8
HPA 2016-2		0.1	0.1	0.1	0.1	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
IH 2015-SFR3		2.1	2.1	2.0	1.9	2.1	2.3	2.4	2.3	2.4	2.7	2.6	2.5
IH 2017-SFR2									2.1	2.2	2.6	2.3	2.5
IH 2018-SFR1											2.1	2.4	2.7
PRD 2015-SFR2		2.9	2.3	2.2	1.9	2.0	1.9	1.5	1.7	1.8	2.0	2.1	1.9
PRD 2015-SFR3		3.0	3.5	3.6	3.5	2.8	1.9	1.7	1.6	1.6	1.3	1.5	2.0
PRD 2016-SFR1		3.1	2.7	2.2	2.1	2.2	2.0	2.2	2.1	2.3	2.3	2.3	2.4
PRD 2016-SFR2		2.8	3.3	3.7	3.3	2.6	2.3	1.9	1.9	5.4	1.6	1.7	2.1
PRD 2017-SFR1				1.7	2.3	2.8	2.5	1.8	1.7	1.7	1.7	4.0	1.8
PRD 2018-SFR1												0.3	0.7
SWH 2017-1							0.7	0.6	0.5	0.6	0.8	1.4	2.0
TAH 2016-SFR1		9.0	10.1	10.8	11.0	10.5	11.0	9.9	7.5	7.3	7.6	6.3	8.1
TAH 2017-SFR1					5.9	5.7	6.2	6.5	5.6	5.7	5.3	3.5	3.6
TAH 2017-SFR2									8.7	7.4	7.4	6.7	6.6
TAH 2018-SFR1													4.7
Overall SFR		4.2	4.1	4.0	4.0	3.8	3.7	3.5	3.4	3.7	3.7	3.6	3.8

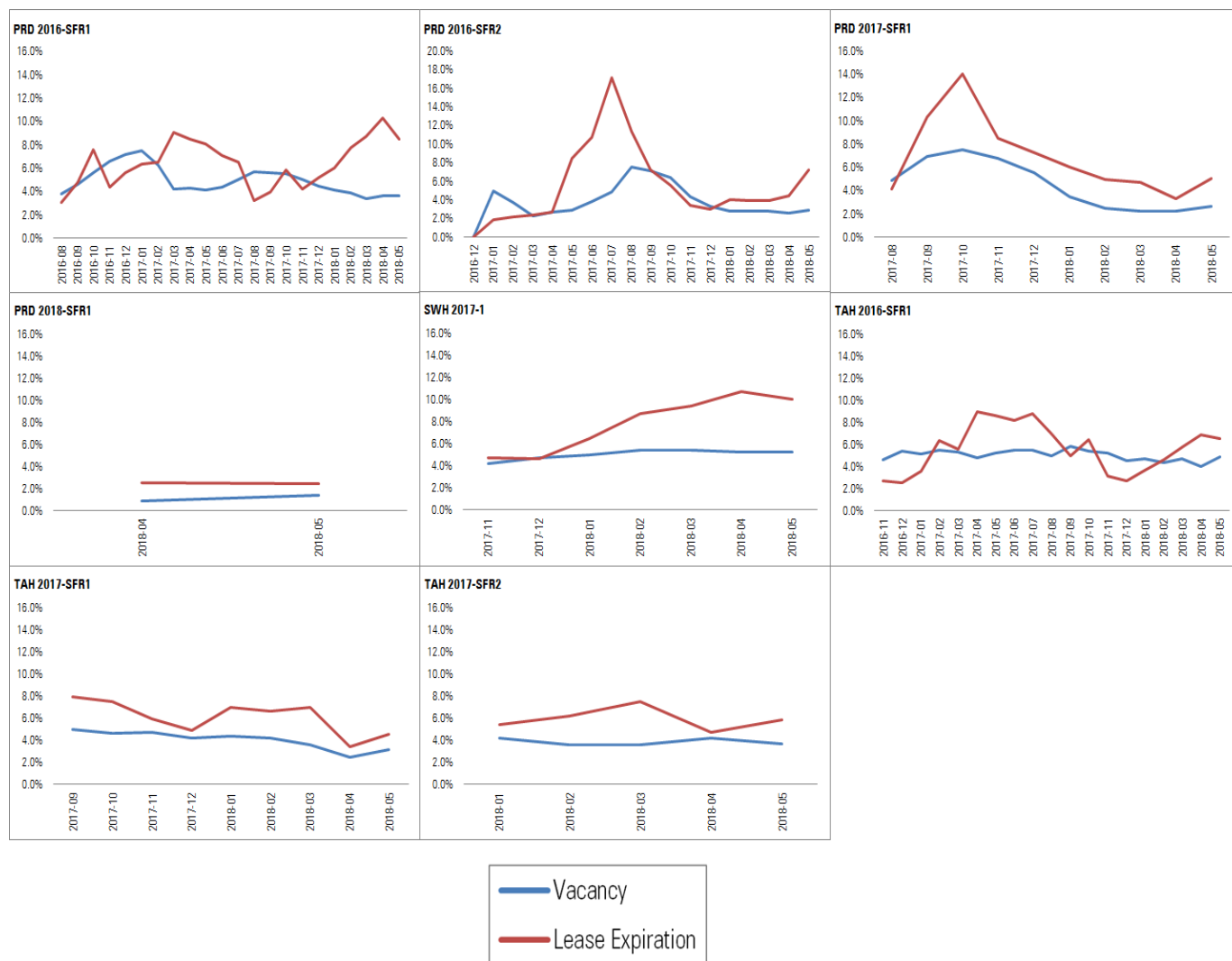
**Table 12 – Monthly Turnover Rate**

		Year 2017						Year 2018					
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
AH4R 2014-SFR2		4.6	3.9	3.9	2.9	2.9	2.5	2.2	2.8	2.4	2.9	2.7	TBD
AH4R 2014-SFR3		4.3	5.1	4.3	3.4	3.1	2.1	2.4	2.6	2.4	3.3	3.0	TBD
AH4R 2015-SFR1		4.2	4.2	4.1	3.9	3.4	2.8	2.8	3.4	3.2	3.2	2.6	TBD
AH4R 2015-SFR2		5.8	4.4	3.7	3.3	2.5	2.3	2.9	2.5	2.6	4.0	3.6	TBD
AMSR 2016-SFR1		3.5	3.3	2.5	2.1	2.1	2.0	2.2	2.8	1.7	2.7	2.9	TBD
CAH 2015-1		4.6	3.8	4.1	2.7	3.2	2.8	2.3	1.9	2.6	2.6	1.7	TBD
CSH 2016-1		3.9	3.4	3.6	2.9	2.9	2.6	2.1	2.2	2.3	3.2	2.5	TBD
CSH 2016-2		3.4	4.3	4.5	3.0	3.2	3.0	2.4	2.6	2.5	3.2	2.3	TBD
HPA 2016-2		7.5	3.6	1.9	1.0	1.6	2.2	1.2	1.7	1.5	3.5	3.8	TBD
HPA 2017-1			2.2	2.5	2.3	3.6	2.3	1.7	1.6	1.9	2.4	2.5	TBD
IH 2015-SFR3		3.0	3.0	3.4	2.8	2.6	2.8	2.3	2.6	2.4	2.9	2.7	TBD
IH 2017-SFR2									2.4	2.2	2.4	2.4	TBD
IH 2018-SFR1											1.8	2.8	TBD
PRD 2015-SFR2		3.7	3.0	3.2	3.1	2.9	2.5	2.2	2.4	2.5	3.5	3.3	TBD
PRD 2015-SFR3		5.5	7.1	4.6	4.2	3.0	2.4	2.0	2.0	2.0	2.2	2.3	TBD
PRD 2016-SFR1		4.0	3.5	3.2	3.2	2.9	2.4	2.6	2.6	2.8	3.0	3.4	TBD
PRD 2016-SFR2		4.2	5.2	5.3	3.2	3.0	1.7	1.7	2.0	2.2	2.5	2.2	TBD
PRD 2017-SFR1				7.5	4.3	4.1	3.8	3.5	2.4	1.8	2.1	1.6	TBD
PRD 2018-SFR1												3.3	TBD
SWH 2017-1							2.0	2.3	2.4	3.0	3.7	2.7	TBD
TAH 2016-SFR1		3.4	3.1	2.8	3.5	2.2	2.5	1.7	2.1	1.7	2.4	2.3	TBD
TAH 2017-SFR1					6.6	3.3	2.7	2.0	3.1	2.4	2.7	2.3	TBD
TAH 2017-SFR2									6.3	1.3	2.7	2.7	TBD
TAH 2018-SFR1													TBD
Overall SFR		4.2	3.9	3.9	3.3	2.9	2.5	2.3	2.6	2.4	2.9	2.7	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 – 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 May 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 May lease expirations, Morningstar looks for all May lease expirations in the February 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 March or April are removed from the May lease expiration count.

**Tables 6a and 6b – 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 May 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 May 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 April 1 considered as delinquent after 30 days or as delinquent on May 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 May property tape to determine the lease status for April 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 April 2018 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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To reprint, translate, or use the data or information other than as provided herein, contact Vanessa Sussman (+1 646 560-4541) or by email to: [vanessa.sussman@morningstar.com](mailto:vanessa.sussman@morningstar.com).