

# Single-Family Rental Research

## Performance Summary Covering All Morningstar-Rated Securitizations

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### Introduction

The average vacancy rate across single-borrower, single-family rental securitizations rated by Morningstar Credit Ratings, LLC improved for the third-consecutive month, declining to 5.0% in January from 5.2% in December. The lower vacancy is likely due to fewer winter lease expirations and a continued strong average retention rate that now stands at 79.2% as of December, the most recent data available. While rents are still increasing, the blended rent change in each of the last four months has been below 3.0%, signaling a willingness by property managers to accept lower rental increases to bolster retention rates and to occupy empty properties. Among the top 20 metropolitan statistical areas, the Houston MSA continued to have the highest vacancy rate at 8.8% in January. The Nashville, Tennessee, MSA's vacancy rate remained the second highest, declining to 7.3% in January from 7.5% in December. Rental changes continue to be highest in California and the southwest. The CAH 2014-1 and CAH 2014-2 transactions paid off in February, while the first data tape for TAH 2017-SFR2 was made available, bringing the performance summary to 23 single-borrower deals with just under 84,000 properties. The removal of the two CAH deals also changed the composition of the top 20 MSAs, leading to the addition of West Palm Beach, Florida in this report and the removal of Los Angeles.

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 January. 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 5.0% in January and may improve further next month if historical seasonal trends continue. AMSR 2016-SFR1's vacancy rate has reached 9.2% and is the highest among single-borrower deals. The average retention rate on full-term leases remains strong at 79.2% in December, the latest available, with all transactions reporting rates of at least 70.0% and eight deals having retention rates greater than 80.0%. The overall turnover rate declined for the fourth consecutive month to 2.3% in December, the latest month for which data is available, compared with 2.5% in November. The average delinquency rate remained unchanged at 0.9% for the third consecutive month, with seven deals having delinquency rates at or above 1.0%, down from eight the month prior. AMSR 2016-SFR1 continues to have the highest delinquency rate, now at 2.3%. HPA 2016-2 saw the largest month-over-month drop, improving to 0.7% from 1.2%, while the Invitation Homes deals saw their delinquency rates improve from the previous month. Please note that any review of delinquency should be viewed within the context of the delinquency definitions in Table 7.

Rents rose 2.5% in January, compared with an increase of 2.4% in December, and as mentioned above, they have been below 3.0% since October. Chart 1 shows that the rent gains for securitized properties crept back above their RentRange benchmarks for the first time since October. 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 December, the latest month for which data is available, the rent change for both renewal properties and vacant-to-occupied properties was unchanged. 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 2.5% 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.

## Multiborrower Performance

There have been eight multiborrower transactions: B2R 2015-1, B2R 2015-2, B2R 2016-1, FKL 2015-SFR1, CAF 2015-1, CAF 2016-1, CAF 2016-2, and CAF 2017-1. As of the most recent remittance report, these transactions were secured by 794 total loans. The number of loans 30-59 days delinquent increased to 15 from 12, while the number of loans 60-89 days delinquent dropped to five from six, and the loans over 90 days delinquent rose to 16 from 15. Loans in foreclosure stayed at three, and loans in special servicing ticked up to 28 from 27. B2R 2015-2 had one loan transferred to special servicing.

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

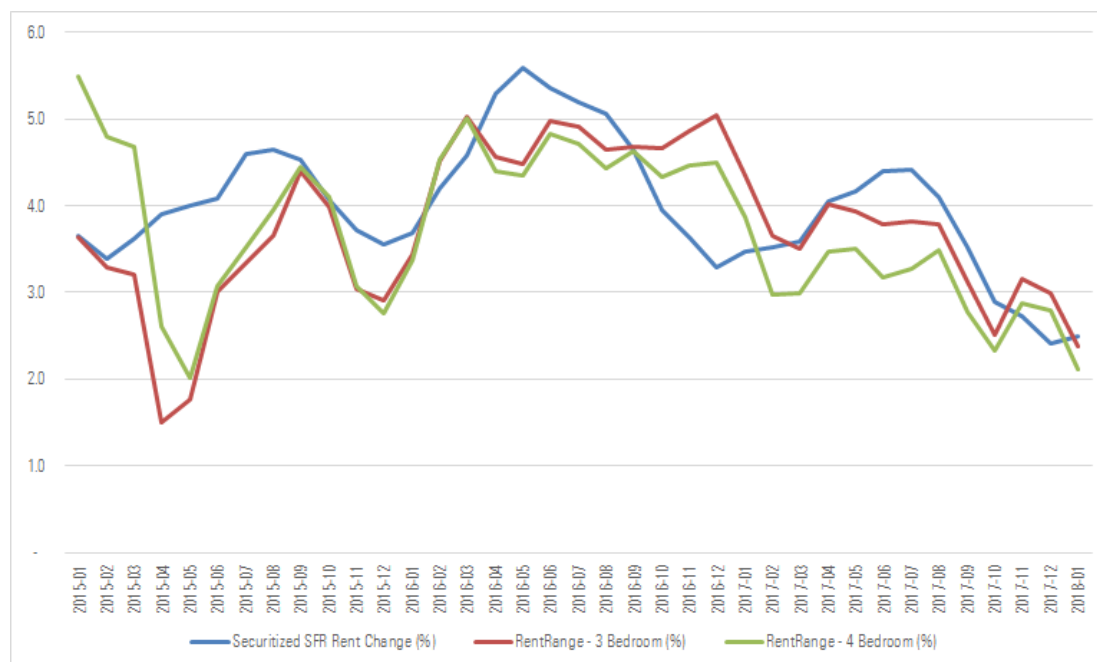
	30-59 Delinquent	60-89 Delinquent	90+ Delinquent	Foreclosure	Real Estate Owned	Special Servicing
B2R 2015-1	0.4	0.0	0.5	0.3	0.0	0.9
B2R 2015-2	1.2	0.6	0.6	0.2	0.0	1.3
B2R 2016-1	1.8	0.1	1.3	0.0	0.0	1.8
CAF 2015-1	1.0	0.0	1.2	0.0	0.0	5.5
CAF 2016-1	0.0	0.0	1.1	0.0	0.0	1.1
CAF 2016-2	2.2	0.2	1.5	0.4	0.0	3.7
FKL 2015-SFR1	0.0	0.0	0.0	0.0	0.0	1.8
CAF 2017-1	0.4	0.0	0.3	0.0	0.0	0.7

**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	131	1	0	2	1	0	4
B2R 2015-2	195	6	3	4	1	0	7
B2R 2016-1	158	5	1	4	0	0	7
CAF 2015-1	59	1	0	1	0	0	2
CAF 2016-1	78	0	0	1	0	0	1
CAF 2016-2	71	1	1	3	1	0	4
FKL 2015-SFR	15	0	0	0	0	0	1
CAF 2017-1	87	1	0	1	0	0	2
Overall	794	15	5	16	3	0	28

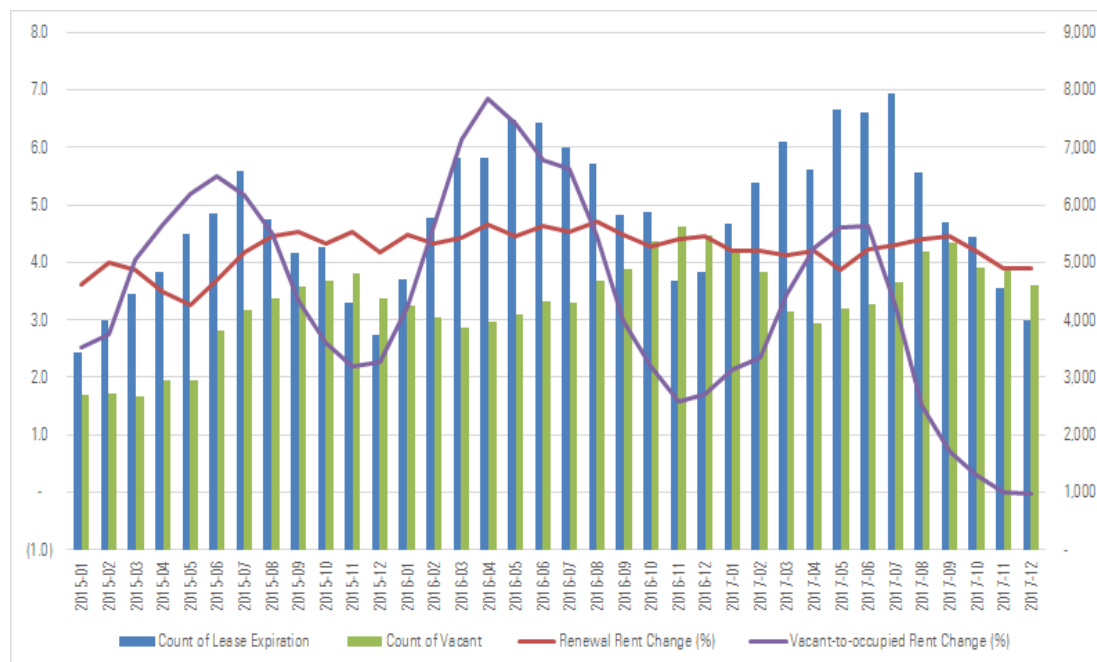
## Single-Borrower Charts and Tables

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



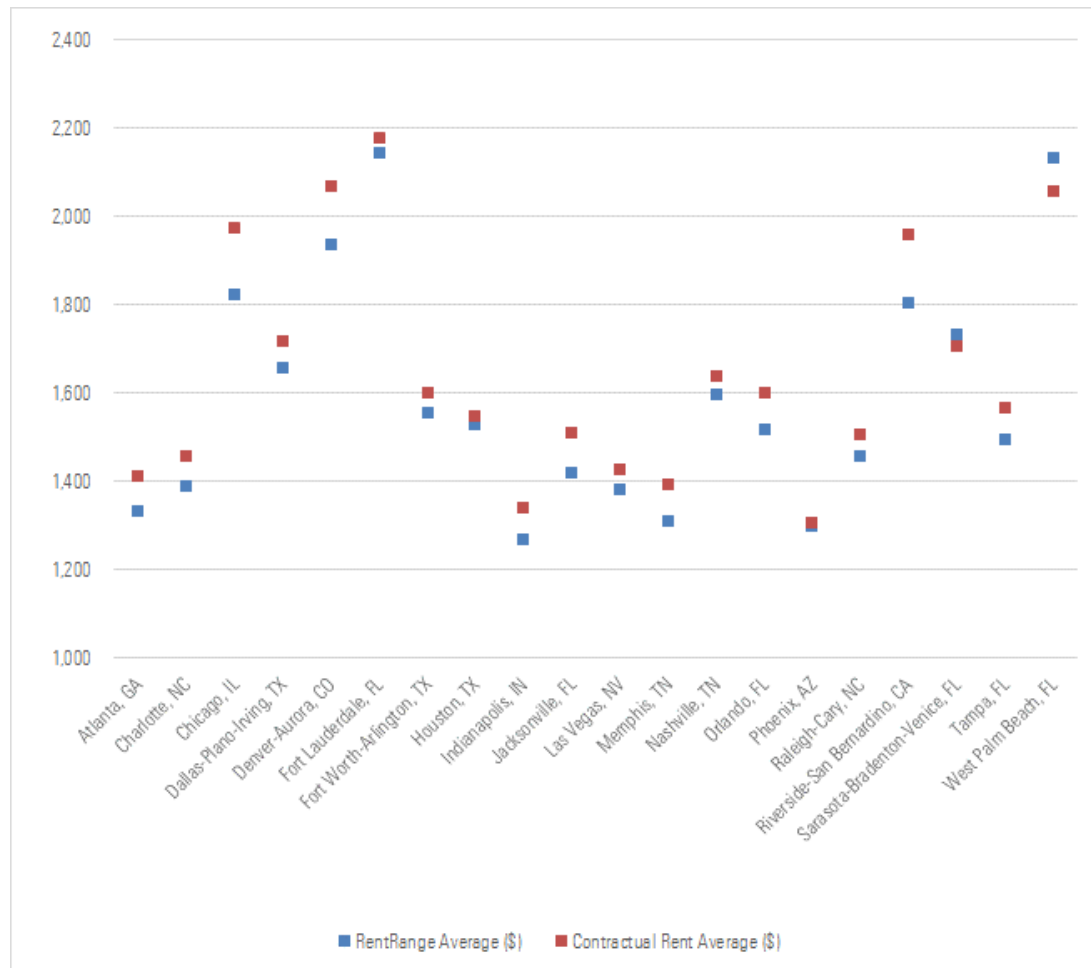
Sources: Morningstar Credit Ratings, LLC; RentRange

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



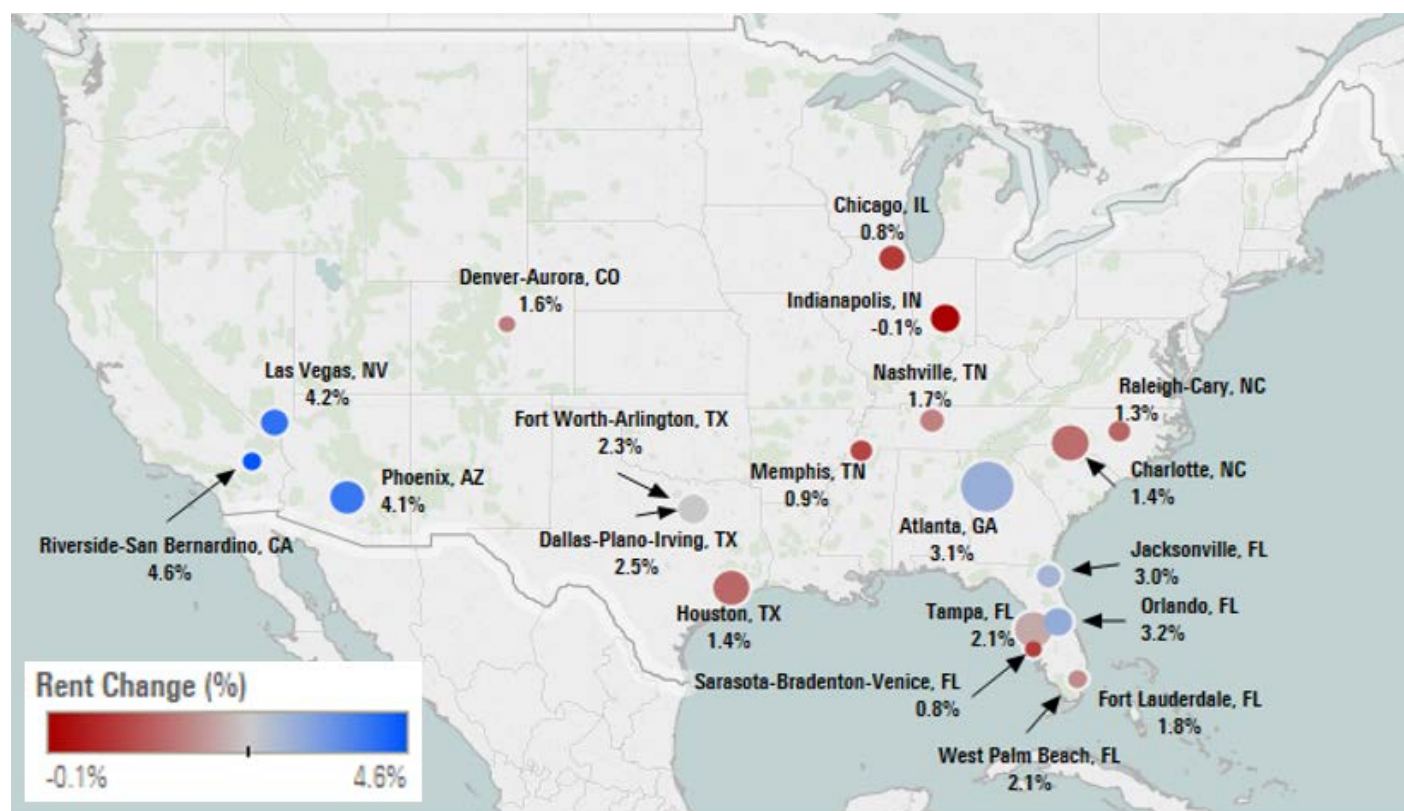
Source: Morningstar Credit Ratings, LLC

**Chart 3 – January 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 1.3% to 13.6%. Because of their proximity, the Fort Worth-Arlington, Texas, MSA is hidden behind the Dallas-Plano-Irving, Texas, MSA, and the West Palm Beach, Florida, MSA is hidden behind the Fort Lauderdale, Florida, MSA.

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

		Year 2017												Year 2018	
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan		
Atlanta, GA		3.9	3.9	4.5	4.6	5.0	4.9	4.6	4.4	4.3	3.6	3.5	3.1		
Charlotte, NC		2.7	2.9	4.1	4.1	4.3	4.1	3.2	3.0	2.7	1.7	1.0	1.4		
Chicago, IL		1.4	1.9	1.7	2.7	2.7	2.2	2.1	0.8	0.8	-0.2	-0.6	0.8		
Dallas-Plano-Irving, TX		3.6	3.8	4.4	4.9	5.2	5.2	4.3	4.1	2.8	2.8	2.4	2.5		
Denver-Aurora, CO		5.4	6.3	6.7	5.9	7.0	6.2	6.2	4.2	1.7	2.4	3.8	1.6		
Fort Lauderdale, FL		2.8	2.8	3.9	3.6	2.4	2.5	1.8	2.2	2.2	1.2	1.7	1.8		
Fort Worth-Arlington, TX		3.8	4.1	4.5	4.3	4.7	4.6	4.5	4.4	3.3	3.2	2.7	2.3		
Houston, TX		-0.1	0.5	1.9	1.7	1.1	1.5	1.6	-0.8	-0.4	-0.6	0.0	1.4		
Indianapolis, IN		0.4	0.7	1.6	2.4	3.4	3.0	3.1	2.0	1.8	0.4	0.2	-0.1		
Jacksonville, FL		2.0	1.7	2.2	2.9	3.6	4.3	3.5	3.7	3.3	2.6	2.3	3.0		
Las Vegas, NV		4.4	4.6	4.8	5.4	5.6	5.4	5.9	5.1	3.1	4.5	4.0	4.2		
Memphis, TN		0.5	0.2	0.5	0.8	2.1	2.3	2.7	2.4	1.0	0.2	-0.1	0.9		
Nashville, TN		2.4	2.5	4.1	4.0	4.9	4.8	4.0	3.7	3.3	2.2	1.1	1.7		
Orlando, FL		4.1	4.1	4.8	4.9	4.9	5.2	4.7	4.1	3.2	4.0	4.0	3.2		
Phoenix, AZ		6.1	5.7	6.4	6.6	6.4	6.8	6.1	5.5	4.8	5.0	4.1	4.1		
Raleigh-Cary, NC		3.0	3.1	4.2	3.5	3.7	3.7	3.3	3.4	2.6	2.1	0.5	1.3		
Riverside-San Bernardino, CA		5.1	4.8	5.0	5.5	5.5	5.9	5.2	5.1	5.1	5.0	4.9	4.6		
Sarasota-Bradenton-Venice, FL		1.8	2.3	2.3	2.7	2.9	2.1	1.4	1.0	0.4	1.0	0.4	0.8		
Tampa, FL		2.7	2.7	3.4	3.1	3.7	3.6	3.2	2.6	1.7	2.4	2.1	2.1		
West Palm Beach, FL		3.1	3.7	2.7	2.9	3.4	2.8	2.2	3.3	1.7	1.7	1.5	2.1		

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

		Year 2017												Year 2018		Total Count
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan			
AH4R 2014-SFR2		193	164	165	194	209	209	230	251	248	235	215	233	4,481		
AH4R 2014-SFR3		236	223	219	194	223	234	310	298	317	299	284	266	4,499		
AH4R 2015-SFR1		239	198	183	175	197	198	243	282	312	331	304	309	4,658		
AH4R 2015-SFR2		198	195	226	232	256	267	253	268	276	252	238	235	4,124		
AMSR 2016-SFR1		288	251	230	237	297	355	335	350	339	366	375	393	4,262		
CAH 2015-1		164	160	194	224	249	239	261	225	214	226	230	176	3,786		
CSH 2016-1		153	155	183	176	176	194	215	207	214	207	207	202	3,544		
CSH 2016-2		168	173	186	184	189	241	266	241	230	254	257	256	3,989		
HPA 2016-1		52	46	48	53	62	75	91	120	123	105	75	94	2,002		
HPA 2016-2		20	29	37	48	62	80	63	48	36	42	46	52	1,333		
HPA 2017-1							19	26	36	50	64	57	53	1,358		
IH 2015-SFR1		153	124	118	104	103	128	142	139	140	142	123	128	2,991		
IH 2015-SFR2		155	145	138	161	157	171	187	160	165	171	172	187	3,499		
IH 2015-SFR3		346	315	298	270	287	315	317	352	318	343	334	330	6,941		
PRD 2015-SFR2		201	140	139	155	132	130	149	180	197	148	113	93	3,290		
PRD 2015-SFR3		149	86	93	133	190	222	269	259	245	206	160	114	3,150		
PRD 2016-SFR1		346	232	238	229	239	279	314	311	304	277	244	227	5,556		
PRD 2016-SFR2		140	84	101	108	144	181	282	265	238	162	122	104	3,743		
PRD 2017-SFR1								131	187	203	183	150	94	2,710		
SWH 2017-1											184	209	219	4,433		
TAH 2016-SFR1		188	183	164	178	188	187	169	199	186	178	156	161	3,439		
TAH 2017-SFR1									173	162	164	146	152	3,480		
TAH 2017-SFR2													109	2,621		
Overall SFR		3,389	2,903	2,960	3,055	3,360	3,724	4,253	4,551	4,517	4,539	4,217	4,187	83,889		

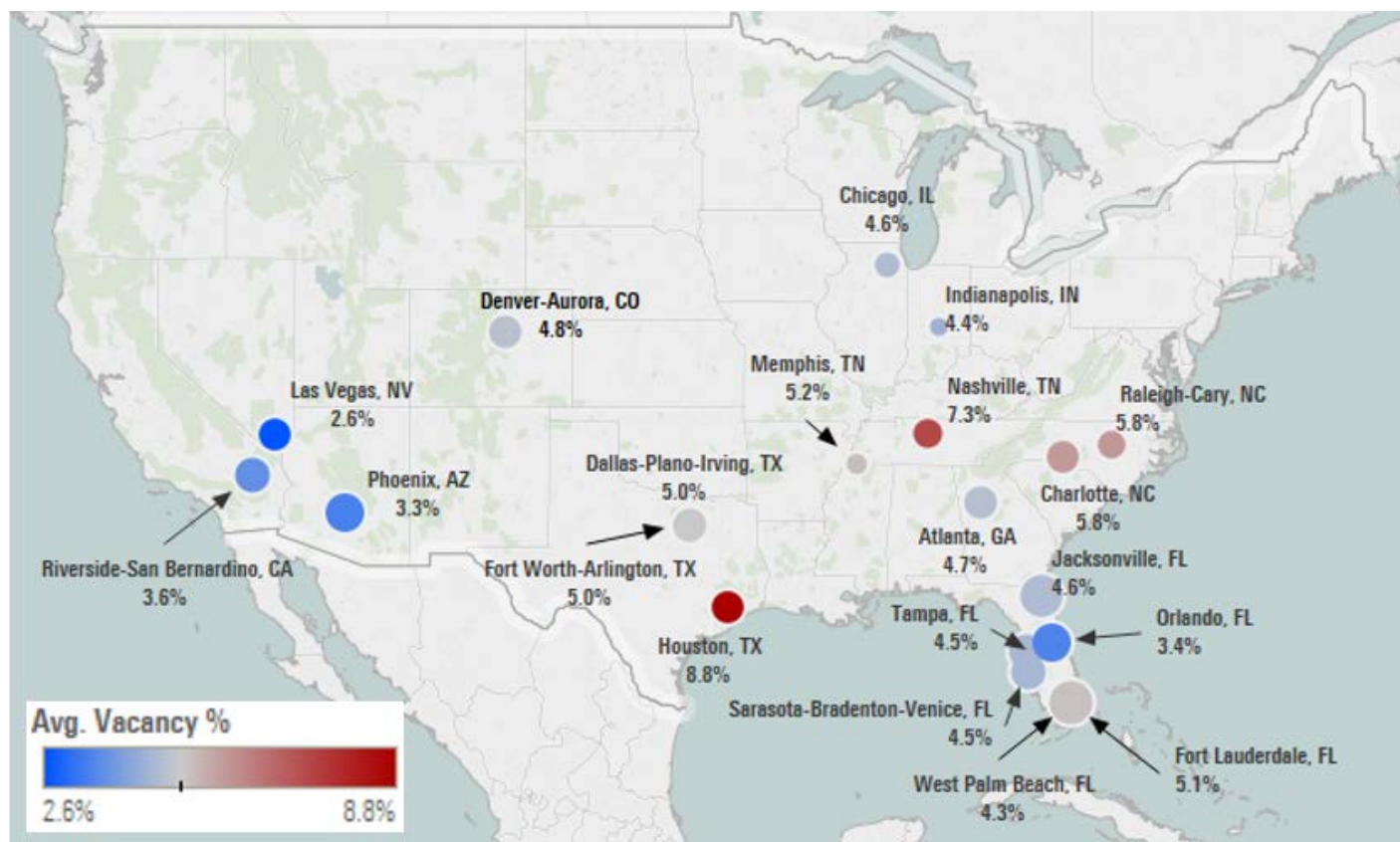
**Table 4b – Month-End Vacancy (by Percentage)**

		Year 2017												Year 2018	
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan		
AH4R 2014-SFR2		4.3	3.7	3.7	4.3	4.7	4.7	5.1	5.6	5.5	5.2	4.8	5.2		
AH4R 2014-SFR3		5.2	5.0	4.9	4.3	5.0	5.2	6.9	6.6	7.0	6.6	6.3	5.9		
AH4R 2015-SFR1		5.1	4.2	3.9	3.8	4.2	4.2	5.2	6.1	6.7	7.1	6.5	6.6		
AH4R 2015-SFR2		4.8	4.7	5.5	5.6	6.2	6.5	6.1	6.5	6.7	6.1	5.8	5.7		
AMSR 2016-SFR1		6.8	5.9	5.4	5.6	7.0	8.3	7.9	8.2	8.0	8.6	8.8	9.2		
CAH 2015-1		4.2	4.1	5.0	5.8	6.5	6.2	6.8	5.9	5.6	6.0	6.1	4.6		
CSH 2016-1		4.3	4.4	5.1	4.9	4.9	5.4	6.0	5.8	6.0	5.8	5.8	5.7		
CSH 2016-2		4.2	4.3	4.7	4.6	4.7	6.0	6.7	6.0	5.8	6.4	6.4	6.4		
HPA 2016-1		2.5	2.2	2.3	2.6	3.0	3.7	4.5	5.9	6.1	5.2	3.7	4.7		
HPA 2016-2		1.4	2.1	2.7	3.5	4.6	6.0	4.7	3.6	2.7	3.1	3.4	3.9		
HPA 2017-1							1.4	1.9	2.6	3.6	4.7	4.2	3.9		
IH 2015-SFR1		5.1	4.1	3.9	3.4	3.4	4.3	4.7	4.6	4.7	4.7	4.1	4.3		
IH 2015-SFR2		4.4	4.1	3.9	4.6	4.5	4.9	5.3	4.6	4.7	4.9	4.9	5.3		
IH 2015-SFR3		4.8	4.4	4.2	3.8	4.1	4.5	4.5	5.0	4.6	4.9	4.8	4.8		
PRD 2015-SFR2		6.1	4.2	4.2	4.7	4.0	3.9	4.5	5.5	6.0	4.5	3.4	2.8		
PRD 2015-SFR3		4.7	2.7	2.9	4.2	6.0	7.0	8.5	8.2	7.8	6.5	5.1	3.6		
PRD 2016-SFR1		6.2	4.2	4.3	4.1	4.3	5.0	5.6	5.6	5.5	5.0	4.4	4.1		
PRD 2016-SFR2		3.7	2.2	2.7	2.9	3.8	4.8	7.5	7.1	6.4	4.3	3.3	2.8		
PRD 2017-SFR1								4.8	6.9	7.5	6.8	5.5	3.5		
SWH 2017-1											4.2	4.7	4.9		
TAH 2016-SFR1		5.5	5.3	4.8	5.2	5.5	5.4	4.9	5.8	5.4	5.2	4.5	4.7		
TAH 2017-SFR1									5.0	4.7	4.7	4.2	4.4		
TAH 2017-SFR2													4.2		
Overall SFR		4.9	4.2	4.2	4.4	4.8	5.3	5.8	5.9	5.9	5.6	5.2	5.0		

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

		Year 2017												Year 2018	
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan		
Atlanta, GA		4.5	4.1	4.1	5.6	5.1	4.4	4.9	4.8	5.0	4.7	4.4	4.7		
Charlotte, NC		4.6	3.7	4.2	4.4	4.4	5.2	5.8	6.6	6.6	6.1	5.8	5.8		
Chicago, IL		4.5	4.3	4.3	4.0	4.5	4.8	5.0	5.0	5.7	5.2	4.5	4.6		
Dallas-Ft. Worth, TX		3.9	3.5	4.0	5.1	4.8	5.0	5.6	5.5	5.5	4.9	5.3	5.0		
Denver-Aurora, CO		4.2	5.3	5.2	4.4	4.5	5.8	6.5	5.4	4.9	4.7	5.4	4.8		
Fort Lauderdale, FL		6.7	5.8	6.7	5.9	6.0	6.3	6.3	6.7	6.8	6.1	5.8	5.1		
Fort Worth-Arlington, TX		4.5	4.1	3.7	4.8	5.5	5.2	5.0	4.8	4.9	5.9	5.2	5.0		
Houston, TX		6.2	6.0	5.8	6.2	6.9	7.9	9.2	9.8	10.0	9.4	8.8	8.8		
Indianapolis, IN		5.2	4.3	4.8	4.1	5.1	6.3	6.7	6.7	6.2	5.6	5.3	4.4		
Jacksonville, FL		4.8	3.5	4.1	4.1	3.7	4.4	5.1	6.4	5.8	5.2	4.5	4.6		
Las Vegas, NV		3.3	3.0	4.1	3.6	4.3	4.3	4.4	4.5	3.8	3.5	3.6	2.6		
Memphis, TN		7.8	5.0	4.1	4.5	5.5	6.3	6.7	7.3	7.3	6.2	5.3	5.2		
Nashville, TN		5.9	4.3	3.6	4.1	5.3	6.2	7.1	7.1	7.6	8.0	7.5	7.3		
Orlando, FL		3.8	3.3	3.4	3.8	3.9	4.5	4.8	4.8	4.5	3.8	3.5	3.4		
Phoenix, AZ		3.0	2.9	3.3	3.6	4.4	5.2	5.5	4.5	4.8	4.8	4.0	3.3		
Raleigh-Cary, NC		5.8	4.6	5.2	5.1	5.5	4.9	6.1	7.1	7.1	6.8	5.6	5.8		
Riverside-San Bernardino, CA		4.5	4.3	4.3	3.3	4.2	3.3	3.6	3.4	3.8	3.7	4.3	3.6		
Sarasota-Bradenton-Venice, FL		6.1	5.1	6.6	7.1	6.7	7.0	7.7	7.7	7.0	7.3	5.9	4.5		
Tampa, FL		4.4	4.0	4.1	3.9	4.2	5.1	6.3	6.7	6.3	5.9	5.0	4.5		
West Palm Beach, FL		7.9	6.8	5.8	6.7	6.4	5.7	6.4	7.1	6.8	5.4	5.0	4.3		

**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 11.1% to 19.7%. Because of their proximity, the Fort Worth-Arlington, Texas, MSA is hidden behind Dallas-Plano-Irving, Texas, MSA, and the West Palm Beach, Florida, MSA is hidden behind the Fort Lauderdale, Florida, MSA.

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

		Year 2017												Year 2018		Total Count
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan			
AH4R 2014-SFR2		334	362	387	518	399	371	331	264	201	189	161	310	4,481		
AH4R 2014-SFR3		287	306	273	398	474	448	416	265	241	160	171	348	4,499		
AH4R 2015-SFR1		272	242	215	249	382	488	423	336	313	251	235	360	4,658		
AH4R 2015-SFR2		355	466	407	516	464	355	214	159	132	133	151	238	4,124		
AMSR 2016-SFR1		294	314	355	382	439	281	225	186	193	178	167	178	4,262		
CAH 2015-1		178	200	268	294	368	393	378	298	287	266	175	215	3,786		
CSH 2016-1		253	294	331	282	337	340	273	264	234	191	170	197	3,544		
CSH 2016-2		266	308	324	389	335	300	287	230	243	237	167	232	3,989		
HPA 2016-1		71	116	165	168	221	249	228	212	142	72	59	88	2,002		
HPA 2016-2		2	139	212	276	386	179	11	5	6	10	16	14	1,333		
HPA 2017-1							87	141	118	186	149	114	91	1,358		
IH 2015-SFR1		213	192	166	138	164	209	191	162	220	185	164	221	2,991		
IH 2015-SFR2		247	258	192	184	199	232	227	211	245	233	213	213	3,499		
IH 2015-SFR3		530	520	395	368	405	446	499	388	537	464	375	470	6,941		
PRD 2015-SFR2		217	266	215	391	186	192	118	179	221	185	142	189	3,290		
PRD 2015-SFR3		55	68	164	345	353	525	284	216	157	93	76	81	3,150		
PRD 2016-SFR1		358	502	470	448	394	358	176	216	322	230	286	330	5,556		
PRD 2016-SFR2		79	87	101	318	402	639	426	270	209	127	113	150	3,743		
PRD 2017-SFR1								112	279	381	229	197	162	2,710		
SWH 2017-1											210	204	284	4,433		
TAH 2016-SFR1		218	190	309	296	280	301	238	171	221	107	92	124	3,439		
TAH 2017-SFR1									276	261	206	171	241	3,480		
TAH 2017-SFR2													141	2,621		
Overall SFR		4,229	4,830	4,949	5,960	6,188	6,393	5,198	4,705	4,952	4,105	3,619	4,877	83,889		

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

		Year 2017											Year 2018	
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
AH4R 2014-SFR2		7.4	8.1	8.6	11.6	8.9	8.3	7.4	5.9	4.5	4.2	3.6	6.9	
AH4R 2014-SFR3		6.4	6.8	6.1	8.8	10.5	10.0	9.2	5.9	5.4	3.6	3.8	7.7	
AH4R 2015-SFR1		5.8	5.2	4.6	5.3	8.2	10.5	9.1	7.2	6.7	5.4	5.0	7.7	
AH4R 2015-SFR2		8.6	11.3	9.9	12.5	11.3	8.6	5.2	3.9	3.2	3.2	3.7	5.8	
AMSR 2016-SFR1		6.9	7.4	8.3	9.0	10.3	6.6	5.3	4.4	4.5	4.2	3.9	4.2	
CAH 2015-1		4.6	5.2	6.9	7.6	9.6	10.3	9.9	7.8	7.5	7.0	4.6	5.7	
CSH 2016-1		7.1	8.3	9.3	7.9	9.5	9.5	7.7	7.4	6.6	5.4	4.8	5.6	
CSH 2016-2		6.7	7.7	8.1	9.7	8.4	7.5	7.2	5.8	6.1	5.9	4.2	5.8	
HPA 2016-1		3.4	5.6	8.0	8.2	10.8	12.2	11.2	10.5	7.1	3.6	2.9	4.4	
HPA 2016-2		0.1	10.0	15.5	20.2	28.6	13.3	0.8	0.4	0.4	0.7	1.2	1.1	
HPA 2017-1							6.3	10.2	8.6	13.6	10.9	8.4	6.7	
IH 2015-SFR1		7.1	6.4	5.5	4.6	5.5	7.0	6.4	5.4	7.3	6.2	5.5	7.4	
IH 2015-SFR2		7.0	7.3	5.5	5.2	5.7	6.6	6.5	6.0	7.0	6.6	6.1	6.1	
IH 2015-SFR3		7.4	7.3	5.5	5.1	5.8	6.4	7.2	5.6	7.7	6.7	5.4	6.8	
PRD 2015-SFR2		6.6	8.1	6.5	11.9	5.6	5.8	3.6	5.4	6.7	5.6	4.3	5.7	
PRD 2015-SFR3		1.7	2.2	5.2	10.9	11.2	16.6	9.0	6.9	5.0	3.0	2.4	2.6	
PRD 2016-SFR1		6.4	9.0	8.4	8.0	7.1	6.4	3.2	3.9	5.8	4.1	5.1	5.9	
PRD 2016-SFR2		2.1	2.3	2.7	8.5	10.7	17.1	11.4	7.2	5.6	3.4	3.0	4.0	
PRD 2017-SFR1								4.1	10.3	14.1	8.5	7.3	6.0	
SWH 2017-1											4.7	4.6	6.4	
TAH 2016-SFR1		6.3	5.5	9.0	8.6	8.1	8.8	6.9	5.0	6.4	3.1	2.7	3.6	
TAH 2017-SFR1									7.9	7.5	5.9	4.9	6.9	
TAH 2017-SFR2													5.4	
Overall SFR		6.1	6.9	7.1	8.5	8.9	9.0	7.1	6.1	6.4	5.0	4.5	5.8	

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

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

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

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		28	47	37	33	28	18	19	9	8	4	1	1	233
AH4R 2014-SFR3		20	39	43	51	41	31	19	10	5	4	1	2	266
AH4R 2015-SFR1		36	59	54	46	40	34	20	11	4	1	3	1	309
AH4R 2015-SFR2		39	51	40	36	33	14	9	8	3	0	1	1	235
AMSR 2016-SFR1		74	76	57	64	47	32	23	13	2	5	0	0	393
CAH 2015-1		25	48	25	28	18	17	8	4	2	0	0	1	176
CSH 2016-1		54	41	20	25	29	14	10	3	3	0	1	2	202
CSH 2016-2		71	61	46	23	28	15	5	5	1	0	0	1	256
HPA 2016-1		29	16	24	16	5	4	0	0	0	0	0	0	94
HPA 2016-2		14	13	19	1	3	1	0	0	0	0	0	1	52
HPA 2017-1		18	9	17	6	2	1	0	0					53
IH 2015-SFR1		16	29	29	18	14	5	8	7	1	0	0	1	128
IH 2015-SFR2		36	41	36	28	16	7	7	8	4	1	0	3	187
IH 2015-SFR3		67	83	58	51	29	15	12	5	6	1	1	2	330
PRD 2015-SFR2		21	19	10	14	9	8	6	3	0	2	0	1	93
PRD 2015-SFR3		19	12	19	12	16	13	12	4	2	5	0	0	114
PRD 2016-SFR1		74	57	33	12	22	20	2	2	2	1	1	1	227
PRD 2016-SFR2		36	33	14	10	6	2	2	1	0	0	0	0	104
PRD 2017-SFR1		45	24	12	3	8	2	0						94
SWH 2017-1		96	54	68	1									219
TAH 2016-SFR1		49	32	40	22	12	3	2	0	0	1	0	0	161
TAH 2017-SFR1		88	30	18	13	3	0							152
TAH 2017-SFR2		100	9											109
Overall SFR		1,055	883	719	513	409	256	164	93	43	25	9	18	4,187

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

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		12.0	20.2	15.9	14.2	12.0	7.7	8.2	3.9	3.4	1.7	0.4	0.4	100.0
AH4R 2014-SFR3		7.5	14.7	16.2	19.2	15.4	11.7	7.1	3.8	1.9	1.5	0.4	0.8	100.0
AH4R 2015-SFR1		11.7	19.1	17.5	14.9	12.9	11.0	6.5	3.6	1.3	0.3	1.0	0.3	100.0
AH4R 2015-SFR2		16.6	21.7	17.0	15.3	14.0	6.0	3.8	3.4	1.3	0.0	0.4	0.4	100.0
AMSR 2016-SFR1		18.8	19.3	14.5	16.3	12.0	8.1	5.9	3.3	0.5	1.3	0.0	0.0	100.0
CAH 2015-1		14.2	27.3	14.2	15.9	10.2	9.7	4.5	2.3	1.1	0.0	0.0	0.6	100.0
CSH 2016-1		26.7	20.3	9.9	12.4	14.4	6.9	5.0	1.5	1.5	0.0	0.5	1.0	100.0
CSH 2016-2		27.7	23.8	18.0	9.0	10.9	5.9	2.0	2.0	0.4	0.0	0.0	0.4	100.0
HPA 2016-1		30.9	17.0	25.5	17.0	5.3	4.3	0.0	0.0	0.0	0.0	0.0	0.0	100.0
HPA 2016-2		26.9	25.0	36.5	1.9	5.8	1.9	0.0	0.0	0.0	0.0	0.0	1.9	100.0
HPA 2017-1		34.0	17.0	32.1	11.3	3.8	1.9	0.0	0.0					100.0
IH 2015-SFR1		12.5	22.7	22.7	14.1	10.9	3.9	6.3	5.5	0.8	0.0	0.0	0.8	100.0
IH 2015-SFR2		19.3	21.9	19.3	15.0	8.6	3.7	3.7	4.3	2.1	0.5	0.0	1.6	100.0
IH 2015-SFR3		20.3	25.2	17.6	15.5	8.8	4.5	3.6	1.5	1.8	0.3	0.3	0.6	100.0
PRD 2015-SFR2		22.6	20.4	10.8	15.1	9.7	8.6	6.5	3.2	0.0	2.2	0.0	1.1	100.0
PRD 2015-SFR3		16.7	10.5	16.7	10.5	14.0	11.4	10.5	3.5	1.8	4.4	0.0	0.0	100.0
PRD 2016-SFR1		32.6	25.1	14.5	5.3	9.7	8.8	0.9	0.9	0.9	0.4	0.4	0.4	100.0
PRD 2016-SFR2		34.6	31.7	13.5	9.6	5.8	1.9	1.9	1.0	0.0	0.0	0.0	0.0	100.0
PRD 2017-SFR1		47.9	25.5	12.8	3.2	8.5	2.1	0.0						100.0
SWH 2017-1		43.8	24.7	31.1	0.5									100.0
TAH 2016-SFR1		30.4	19.9	24.8	13.7	7.5	1.9	1.2	0.0	0.0	0.6	0.0	0.0	100.0
TAH 2017-SFR1		57.9	19.7	11.8	8.6	2.0	0.0							100.0
TAH 2017-SFR2		91.7	8.3											100.0
Overall SFR		25.2	21.1	17.2	12.3	9.8	6.1	3.9	2.2	1.0	0.6	0.2	0.4	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
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan			
AH4R 2014-SFR2		28	21	14	12	10	13	15	9	21	19	20	20	4,481		
AH4R 2014-SFR3		15	12	11	8	9	7	11	7	21	12	14	19	4,499		
AH4R 2015-SFR1		12	20	12	10	10	12	14	21	26	28	26	22	4,658		
AH4R 2015-SFR2		15	12	3	6	7	7	6	10	17	24	10	21	4,124		
AMSR 2016-SFR1		94	56	67	78	114	171	78	66	97	111	114	99	4,262		
CAH 2015-1		27	23	17	17	18	17	22	30	28	31	32	20	3,786		
CSH 2016-1		29	22	17	20	15	24	21	29	28	26	29	33	3,544		
CSH 2016-2		42	40	21	17	30	27	23	43	34	40	48	37	3,989		
HPA 2016-1		16	12	12	7	16	9	13	19	21	17	24	22	2,002		
HPA 2016-2		20	11	8	6	6	9	12	19	17	12	16	9	1,333		
HPA 2017-1							9	13	17	12	11	7	10	1,358		
IH 2015-SFR1		28	25	22	21	36	33	36	29	45	41	44	37	2,991		
IH 2015-SFR2		25	33	38	28	33	42	32	45	38	39	40	34	3,499		
IH 2015-SFR3		82	63	75	71	80	99	115	89	94	100	120	101	6,941		
PRD 2015-SFR2		20	13	18	15	14	19	14	26	25	23	24	28	3,290		
PRD 2015-SFR3		17	4	8	9	8	16	19	22	23	17	22	29	3,150		
PRD 2016-SFR1		42	24	26	20	24	28	29	27	43	45	44	39	5,566		
PRD 2016-SFR2		16	11	10	14	18	20	16	24	23	19	39	41	3,743		
PRD 2017-SFR1								14	20	19	16	17	17	2,710		
SWH 2017-1											34	36	45	4,433		
TAH 2016-SFR1		59	31	29	26	15	9	5	3	2	15	15	18	3,439		
TAH 2017-SFR1									25	19	14	12	10	3,480		
TAH 2017-SFR2													7	2,621		
Overall SFR		587	433	408	385	463	571	508	580	653	694	753	718	83,889		

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

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

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

		Year 2017											Year 2018	
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
AH4R 2014-SFR2		78.4	84.8	75.2	74.1	73.2	76.0	73.1	74.6	78.6	75.1	75.2	TBD	
AH4R 2014-SFR3		78.7	73.9	83.2	71.1	75.5	71.4	72.6	73.6	71.0	78.1	78.9	TBD	
AH4R 2015-SFR1		76.1	75.6	72.1	69.1	73.0	74.8	74.9	75.9	75.7	77.3	76.2	TBD	
AH4R 2015-SFR2		74.1	77.9	75.4	73.6	69.2	72.7	67.3	62.9	78.0	68.4	76.2	TBD	
AMSR 2016-SFR1		83.0	83.8	82.3	80.1	77.2	83.3	79.6	87.1	86.0	87.1	85.6	TBD	
CAH 2015-1		80.3	80.0	76.1	75.2	72.8	76.1	73.5	80.2	81.5	74.4	77.1	TBD	
CSH 2016-1		78.3	82.0	78.5	77.7	76.0	76.2	75.5	76.1	83.3	73.8	79.4	TBD	
CSH 2016-2		79.3	75.6	80.2	76.6	75.8	68.0	68.3	73.0	78.6	67.5	73.1	TBD	
HPA 2016-1		88.7	78.4	80.0	82.1	78.7	76.7	72.8	77.8	78.9	80.6	76.3	TBD	
HPA 2016-2		100.0	88.5	85.8	81.9	76.2	84.4	63.6	100.0	66.7	90.0	81.3	TBD	
HPA 2017-1							81.6	85.1	80.5	82.3	89.3	83.3	TBD	
IH 2015-SFR1		80.3	82.3	80.7	81.9	76.2	77.0	75.4	85.8	77.3	78.9	78.7	TBD	
IH 2015-SFR2		84.6	79.8	77.6	71.2	70.4	73.3	82.8	77.3	78.8	80.7	76.5	TBD	
IH 2015-SFR3		81.3	79.4	75.4	78.0	80.2	75.1	78.6	78.6	79.5	80.0	79.5	TBD	
PRD 2015-SFR2		77.4	77.8	74.9	77.7	72.0	75.5	70.3	72.1	78.7	80.0	83.1	TBD	
PRD 2015-SFR3		72.7	73.5	73.8	73.3	71.4	71.4	66.9	67.1	73.9	77.4	73.7	TBD	
PRD 2016-SFR1		77.9	81.9	77.4	81.0	76.6	69.8	65.9	68.5	79.5	77.0	76.9	TBD	
PRD 2016-SFR2		78.5	72.4	77.2	81.1	80.8	75.6	70.4	77.0	79.4	80.3	80.5	TBD	
PRD 2017-SFR1								69.6	73.1	79.8	76.0	76.1	TBD	
SWH 2017-1											74.8	84.8	TBD	
TAH 2016-SFR1		80.7	78.9	81.2	81.8	77.9	82.7	85.3	81.3	82.8	78.5	84.8	TBD	
TAH 2017-SFR1									77.2	82.8	84.0	88.3	TBD	
TAH 2017-SFR2													TBD	
Overall SFR		79.3	79.7	78.1	76.8	75.2	75.1	74.1	76.0	79.3	77.9	79.2	TBD	

TBD – To Be Determined

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

		Year 2017											Year 2018	
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
AH4R 2014-SFR2		86.3	85.9	87.2	81.3	78.5	78.9	80.4	82.4	83.7	87.4	86.8	TBD	
AH4R 2014-SFR3		79.6	88.2	83.0	84.3	77.7	78.6	81.9	86.0	83.2	81.4	89.2	TBD	
AH4R 2015-SFR1		86.3	82.5	82.5	79.0	80.8	81.4	81.3	81.3	81.0	87.1	84.9	TBD	
AH4R 2015-SFR2		84.8	81.4	82.1	77.5	75.9	79.3	81.1	81.2	87.0	80.9	88.8	TBD	
AMSR 2016-SFR1		93.6	94.8	96.7	94.7	90.6	94.2	92.4	96.7	95.7	95.0	93.7	TBD	
CAH 2015-1		71.1	80.0	61.9	67.5	62.5	77.8	81.1	72.5	80.0	74.4	78.0	TBD	
CSH 2016-1		67.9	68.8	76.9	65.9	73.2	66.0	75.6	78.9	67.5	75.0	79.3	TBD	
CSH 2016-2		64.4	72.7	73.0	81.1	62.9	70.2	78.4	57.5	62.9	70.4	74.1	TBD	
HPA 2016-1								100.0	50.0	100.0	100.0		TBD	
HPA 2016-2						100.0	100.0	100.0	100.0				TBD	
HPA 2017-1													TBD	
IH 2015-SFR1		81.3	68.5	92.7	77.8	74.5	78.6	80.4	87.8	88.4	91.7	92.0	TBD	
IH 2015-SFR2		89.1	86.7	79.1	77.8	85.7	70.7	93.3	87.2	91.8	88.9	84.8	TBD	
IH 2015-SFR3		74.4	86.7	78.6	73.9	80.3	83.5	82.1	83.5	84.5	86.0	82.0	TBD	
PRD 2015-SFR2		77.8	73.8	83.6	80.3	73.3	72.6	72.7	82.6	81.0	78.6	79.5	TBD	
PRD 2015-SFR3		90.9	75.5	82.5	78.3	65.0	75.9	73.7	78.6	75.7	75.5	76.7	TBD	
PRD 2016-SFR1		82.1	79.3	79.7	81.5	73.6	79.5	80.0	80.7	88.0	81.8	81.9	TBD	
PRD 2016-SFR2		84.0	82.2	81.4	81.4	74.6	78.3	73.9	77.2	78.8	76.8	81.8	TBD	
PRD 2017-SFR1								81.3	73.5	76.3	66.7	91.4	TBD	
SWH 2017-1											61.3	80.8	TBD	
TAH 2016-SFR1		92.9	95.3	93.1	92.7	92.7	92.2	91.3	93.6	95.1	95.5	92.9	TBD	
TAH 2017-SFR1									88.1	92.5	93.5	87.0	TBD	
TAH 2017-SFR2													TBD	
Overall SFR		85.6	86.3	86.2	84.0	81.2	83.7	84.6	86.9	88.2	88.1	88.5	TBD	

TBD – To Be Determined

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

		Year 2017												Year 2018		Total Count
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan			
AH4R 2014-SFR2		159	176	216	256	273	251	245	217	185	178	175	170			4,481
AH4R 2014-SFR3		174	174	190	210	222	227	216	199	180	168	148	155			4,499
AH4R 2015-SFR1		206	208	202	202	189	221	229	227	198	195	187	184			4,658
AH4R 2015-SFR2		133	171	186	238	239	215	207	179	147	156	143	143			4,124
AMSR 2016-SFR1		421	433	479	514	576	574	600	605	648	684	709	696			4,262
CAH 2015-1		45	45	42	40	40	36	37	40	40	43	41	40			3,786
CSH 2016-1		28	32	39	41	41	47	41	38	40	36	29	27			3,544
CSH 2016-2		45	44	37	53	62	47	37	40	35	27	27	28			3,989
HPA 2016-1		0	0	0	0	0	0	1	4	1	1	0	0			2,002
HPA 2016-2		0	0	0	0	1	1	1	1	0	0	0	0			1,333
HPA 2017-1							0	0	0	0	0	0	0			1,358
IH 2015-SFR1		67	66	64	64	68	67	54	57	61	65	63	55			2,991
IH 2015-SFR2		64	86	90	81	77	79	51	69	63	79	87	78			3,499
IH 2015-SFR3		173	169	162	163	146	149	137	131	149	160	164	158			6,941
PRD 2015-SFR2		94	96	97	119	96	76	71	63	66	64	49	55			3,290
PRD 2015-SFR3		55	60	67	91	96	112	115	110	87	60	52	49			3,150
PRD 2016-SFR1		163	182	203	187	170	151	125	116	122	111	120	119			5,556
PRD 2016-SFR2		61	54	58	95	103	122	137	123	99	85	70	71			3,743
PRD 2017-SFR1								47	62	76	67	49	46			2,710
SWH 2017-1											31	26	24			4,433
TAH 2016-SFR1		258	278	287	298	311	348	371	379	360	377	339	257			3,439
TAH 2017-SFR1									207	197	217	225	195			3,480
TAH 2017-SFR2													229			2,621
Overall SFR		2,146	2,274	2,419	2,652	2,710	2,723	2,722	2,867	2,754	2,804	2,703	2,779			83,889

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

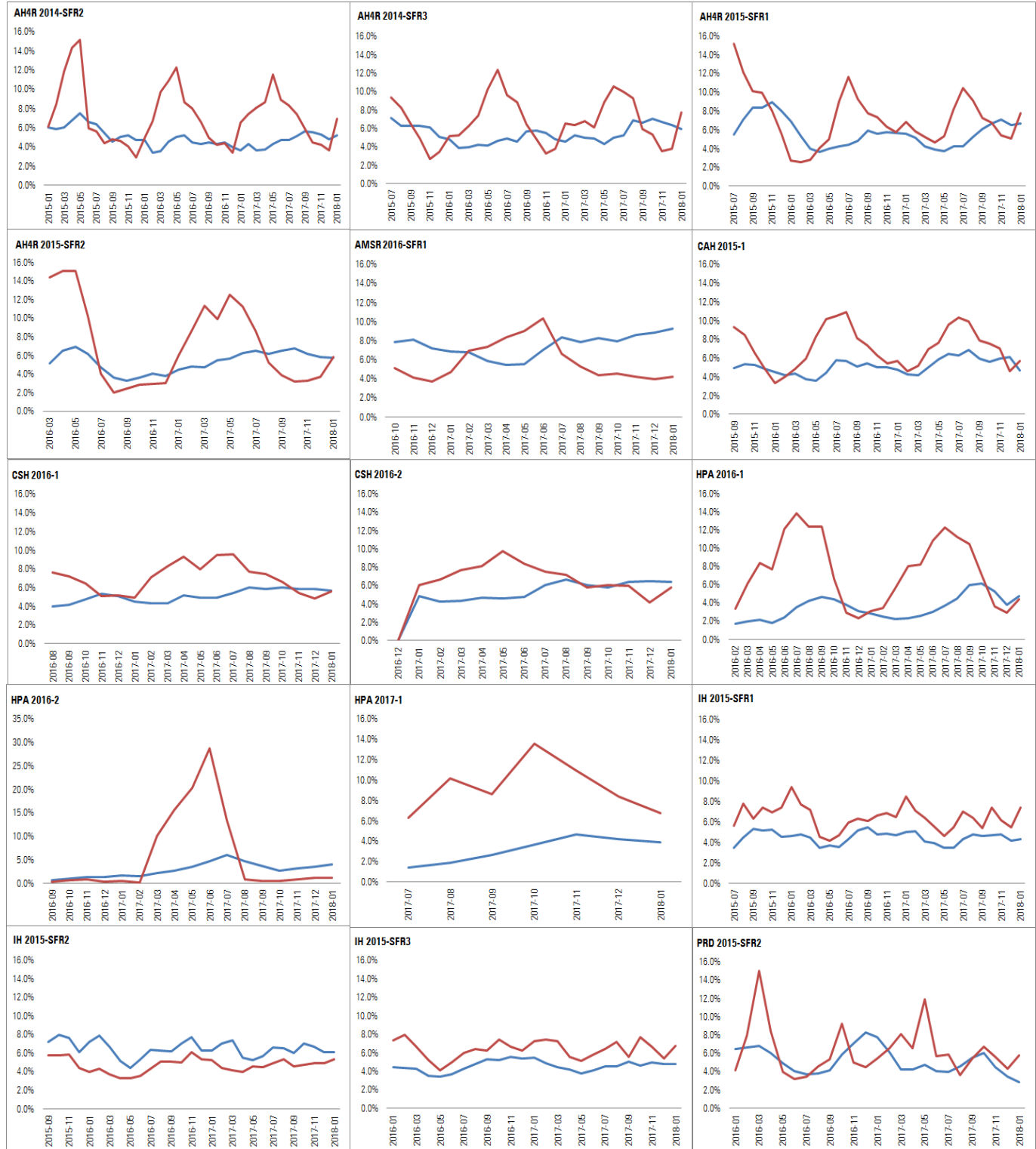
		Year 2017												Year 2018	
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan		
AH4R 2014-SFR2		3.5	3.9	4.8	5.7	6.1	5.6	5.5	4.8	4.1	4.0	3.9	3.8		
AH4R 2014-SFR3		3.9	3.9	4.2	4.7	4.9	5.0	4.8	4.4	4.0	3.7	3.3	3.4		
AH4R 2015-SFR1		4.4	4.5	4.3	4.3	4.1	4.7	4.9	4.9	4.2	4.2	4.0	4.0		
AH4R 2015-SFR2		3.2	4.1	4.5	5.8	5.8	5.2	5.0	4.3	3.6	3.8	3.5	3.5		
AMSR 2016-SFR1		9.9	10.2	11.2	12.1	13.5	13.5	14.1	14.2	15.2	16.0	16.6	16.3		
CAH 2015-1		1.2	1.2	1.1	1.0	1.0	0.9	1.0	1.0	1.1	1.1	1.1	1.1		
CSH 2016-1		0.8	0.9	1.1	1.2	1.2	1.3	1.2	1.1	1.1	1.0	0.8	0.8		
CSH 2016-2		1.1	1.1	0.9	1.3	1.6	1.2	0.9	1.0	0.9	0.7	0.7	0.7		
HPA 2016-1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0		
HPA 2016-2		0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	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		
IH 2015-SFR1		2.2	2.2	2.1	2.1	2.3	2.2	1.8	1.9	2.0	2.2	2.1	1.8		
IH 2015-SFR2		1.8	2.4	2.6	2.3	2.2	2.3	1.5	2.0	1.8	2.3	2.5	2.2		
IH 2015-SFR3		2.4	2.4	2.3	2.3	2.1	2.1	2.0	1.9	2.1	2.3	2.4	2.3		
PRD 2015-SFR2		2.9	2.9	2.9	3.6	2.9	2.3	2.2	1.9	2.0	1.9	1.5	1.7		
PRD 2015-SFR3		1.7	1.9	2.1	2.9	3.0	3.5	3.6	3.5	2.8	1.9	1.7	1.6		
PRD 2016-SFR1		2.9	3.3	3.6	3.4	3.1	2.7	2.2	2.1	2.2	2.0	2.2	2.1		
PRD 2016-SFR2		1.6	1.4	1.5	2.5	2.8	3.3	3.7	3.3	2.6	2.3	1.9	1.9		
PRD 2017-SFR1								1.7	2.3	2.8	2.5	1.8	1.7		
SWH 2017-1											0.7	0.6	0.5		
TAH 2016-SFR1		7.5	8.1	8.3	8.7	9.0	10.1	10.8	11.0	10.5	11.0	9.9	7.5		
TAH 2017-SFR1									5.9	5.7	6.2	6.5	5.6		
TAH 2017-SFR2													8.7		
Overall SFR		3.1	3.3	3.5	3.8	3.9	3.8	3.7	3.7	3.6	3.4	3.3	3.3		

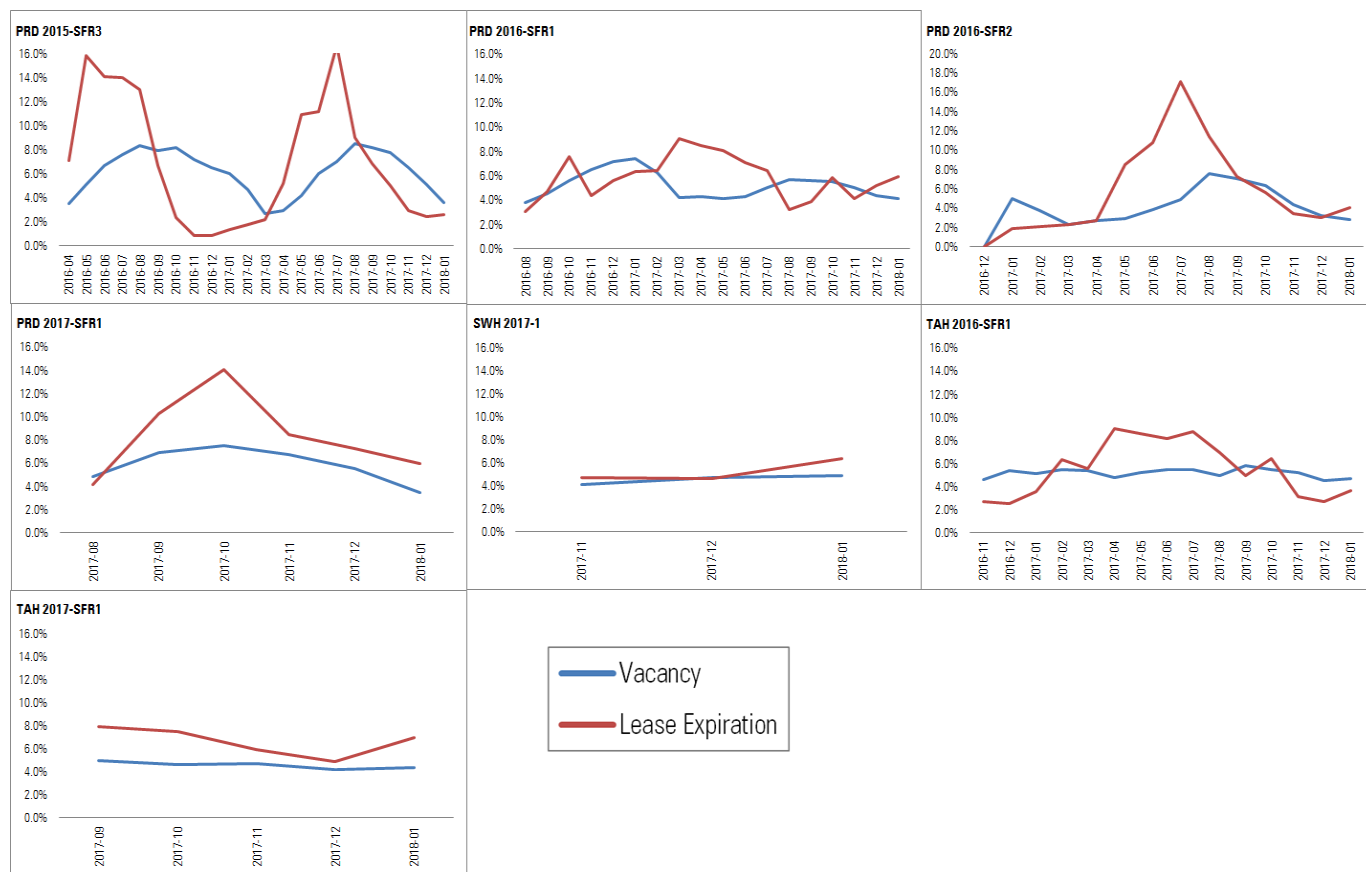
**Table 12 – Monthly Turnover Rate**

		Year 2017											Year 2018	
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
AH4R 2014-SFR2		3.0	2.5	3.5	4.9	4.6	3.9	3.9	2.9	2.9	2.5	2.2	TBD	
AH4R 2014-SFR3		2.9	3.2	2.5	3.9	4.3	5.1	4.3	3.4	3.1	2.1	2.4	TBD	
AH4R 2015-SFR1		2.6	2.9	2.9	3.9	4.2	4.2	4.1	3.9	3.4	2.8	2.8	TBD	
AH4R 2015-SFR2		3.3	4.3	3.9	5.0	5.8	4.4	3.7	3.3	2.5	2.3	2.9	TBD	
AMSR 2016-SFR1		2.5	2.7	2.3	2.8	3.5	3.3	2.5	2.1	2.1	2.0	2.2	TBD	
CAH 2015-1		2.2	2.3	3.1	4.0	4.6	3.8	4.1	2.7	3.2	2.8	2.3	TBD	
CSH 2016-1		3.0	2.8	3.5	3.4	3.9	3.4	3.6	2.9	2.9	2.6	2.1	TBD	
CSH 2016-2		2.5	3.5	3.1	4.1	3.4	4.3	4.5	3.0	3.2	3.0	2.4	TBD	
HPA 2016-1		1.4	2.2	3.0	2.6	3.3	3.5	5.1	3.4	3.2	2.0	1.6	TBD	
HPA 2016-2		1.0	2.1	2.8	4.4	7.5	3.6	1.9	1.0	1.6	2.2	1.2	TBD	
HPA 2017-1							2.2	2.5	2.3	3.6	2.3	1.7	TBD	
IH 2015-SFR1		2.8	2.7	2.7	2.3	2.6	3.6	3.6	2.2	3.1	2.5	2.2	TBD	
IH 2015-SFR2		2.0	2.9	2.4	3.2	3.6	3.4	3.8	2.1	3.0	2.8	2.5	TBD	
IH 2015-SFR3		2.7	3.1	2.4	2.7	3.0	3.0	3.4	2.8	2.6	2.8	2.3	TBD	
PRD 2015-SFR2		2.5	3.6	3.2	4.2	3.7	3.0	3.2	3.1	2.9	2.5	2.2	TBD	
PRD 2015-SFR3		1.4	2.4	2.1	4.1	5.5	7.1	4.6	4.2	3.0	2.4	2.0	TBD	
PRD 2016-SFR1		2.5	3.6	3.4	3.6	4.0	3.5	3.2	3.2	2.9	2.4	2.6	TBD	
PRD 2016-SFR2		1.3	2.1	2.2	2.9	4.2	5.2	5.3	3.2	3.0	1.7	1.7	TBD	
PRD 2017-SFR1								7.5	4.3	4.1	3.8	3.5	TBD	
SWH 2017-1											2.0	2.3	TBD	
TAH 2016-SFR1		2.4	2.8	2.4	3.1	3.4	3.1	2.8	3.5	2.2	2.5	1.7	TBD	
TAH 2017-SFR1									6.6	3.3	2.7	2.0	TBD	
TAH 2017-SFR2													TBD	
Overall SFR		2.4	3.0	2.9	3.6	4.0	3.9	3.9	3.2	2.9	2.5	2.3	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, 60-89, over 90 days, 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 – January 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 January 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 January lease expirations, Morningstar looks for all January lease expirations in the October 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 November or December are removed from the January lease expiration count.

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

Tables 6a and 6b show the number of months of vacancy the January unoccupied properties have experienced. In other words, if a property is unoccupied as of the January 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 January 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 January property tape to determine the lease status for December 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 December 2017 retention rates are the January statuses of December 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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