Single-Family Rental Research

Performance Summary Covering All Morningstar-Rated Securitizations

November 2017

Authors:

Monte Bays | monte.bays@morningstar.com | +1 646 560-4536
Yash Agarwal | yash.agarwal@morningstar.com | +91 22 61217208
Arindam Vatsa | arindam.vatsa@morningstar.com | +91 22 61217213

Analytical Manager:
Brian Grow | Managing Director | brian.grow@morningstar.com | +1 646 560-4513

Introduction

The average retention rate of expiring leases across single-borrower, single-family rental securitizations rated by Morningstar Credit Ratings, LLC remained strong, increasing to 76.3% in September, the latest month available, from a revised 74.6% in August. While vacancies for single-family rentals tend to decline in the late autumn and winter months, the average vacancy remained stable at 5.9% in October. Lease expirations increased slightly to 6.5% in October from revised 6.3% in September, compared with a 2017 high of 9.0% in July. Among the top 20 metropolitan statistical areas, the Houston MSA had the highest vacancy rate at 10.0% and the Nashville, Tennessee MSA followed at 7.6%. The Houston MSA is the first single-family rental MSA in 2017 to have a vacancy rate of 10.0% or higher. Rents in Houston declined for a second consecutive month, declining by 0.4% in October after a 0.8% decline in September. While Hurricane Irma appears to have little to no impact on the Florida single-family rental markets, Hurricane Harvey may have contributed to the increase in vacancies and decline in rents in the Houston market. Morningstar will continue to monitor both markets to determine the long-term impact of the hurricanes. The IH 2014-SFR2 and IH 2014-SFR3 transactions paid off in November, dropping the performance summary to 23 single-borrower deals with close to 84,000 properties. The SWH 2017-1 transaction closed on Sept. 29 and will start reporting in December, so it is not included in the November performance summary.

Morningstar publishes its performance summary to provide market participants detailed property-level information on each single-family rental securitization that Morningstar has rated. The data below summarizes issuer-reported property-level information

through October. Page 4 includes a summary of the multiborrower transactions. For deals seasoned at least one year, we provide Morningstar Surveillance Analysis reports, available on our website, www.morningstarcreditratings.com.

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Single-Borrower Performance

The average vacancy rate remained stable at 5.9% in October. The average retention rate on full-term leases increased slightly to a strong 76.3% in September, the latest month available, from a revised 74.6% in August. Three single-borrower, single-family securitizations posted a retention rate below 70%, compared to six in August, while seven deals had retention rates over 80%, compared to four in August. The overall turnover rate declined to 3.2% in September compared to 3.9% in August.

The average delinquency rate ticked up slightly to 0.9% in October, and seven deals had delinquency rates at or above 1.0%, down from nine the month prior. AMSR 2016-SFR1 and IH 2015-SFR1 saw the largest month-over-month increases. AMSR 2016-SFR1, which had the highest delinquency rate at 2.3%, rose 80 basis points; IH rose 50 basis points. Any review of delinquency should be viewed within the context of the delinquency definitions in Table 5.

Rents rose 2.9% in October. Chart 1 shows that the rent gains for securitized properties were higher than their RentRange benchmarks. The RentRange benchmarks track the year-over-year change on three- and four-bedroom median rents, weighted by MSA to match the geographic concentration of the Morningstar database.

Chart 2 shows the rental change of renewals versus vacant-to-occupied properties. For September, the latest month for which data is available, the rent change for vacant-to-occupied properties was 0.7%, while the rent change for renewal properties was at 4.5%. 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. Minor exceptions are most notable in the Houston and Raleigh-Cary, North Carolina MSAs. Chart 4 shows the MSA-level blended rent change. MSAs with rent changes above the 2.9% 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 1 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. CAF 2017-1, which closed in October, will be added to this write-up when remittance data becomes available. As of the most recent remittance report, B2R 2015-1 had two loans that were 30 days delinquent and two loans that were at least 90 days delinquent. One of the loans at least 90 days delinquent is 0.2% of the transaction balance and was transferred to special servicing in June 2016 for payment default. The other at least 90 days past due loan in B2R 2015-1 makes up 0.3% of the deal balance and is in foreclosure. This loan entered bankruptcy in August 2016 and remains in special servicing. In all, four loans

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from B2R 2015-1, totaling 0.8% of the transaction balance, have been transferred to special servicing. Separately, five loans in B2R 2015-2 were 30 days delinquent, one loan was 60 days delinquent, and two were more than 90 days delinquent. One of the 90 or more days delinquent loans totaling 0.2% of the transaction balance is also in foreclosure. The borrower of this loan filed for bankruptcy in August. In all, three loans in B2R 2015-2 were transferred to special servicing and account for 0.5% of the deal balance. B2R 2016-1 had seven loans that were 30 days past due and five that were more than 90 days delinquent. The past-due loans in B2R 2016-1 comprise 3.4% of the deal balance. Six loans, or 1.7% of the B2R 2016-1 transaction balance, have been transferred to special servicing, up from four last month. CAF 2015-1 had one loan that was at least 90 days delinquent that was transferred to special servicing in June. In total, four loans equaling 10.7% of the transaction balance have been transferred to special servicing. CAF 2016-1 had one loan that was 30 days delinquent and one loan that was at least 90 days delinquent. The at least 90 days delinquent loan totals 1.1% of the transaction balance and was transferred to special servicing in September for being past due. CAF 2016-2 had four loans at least 90 days delinquent, all of which are in special servicing and make up 3.7% of the deal balance. Finally, all borrowers in FKL 2015-SFR1 are current. However, one loan that is approximately 1.8% of the deal balance was transferred to special servicing in October 2016 for imminent default.

Single-Borrower Charts and Tables

Chart 1 – Single-Family Rental Rent Change Versus RentRange Year-Over-Year Rent Change
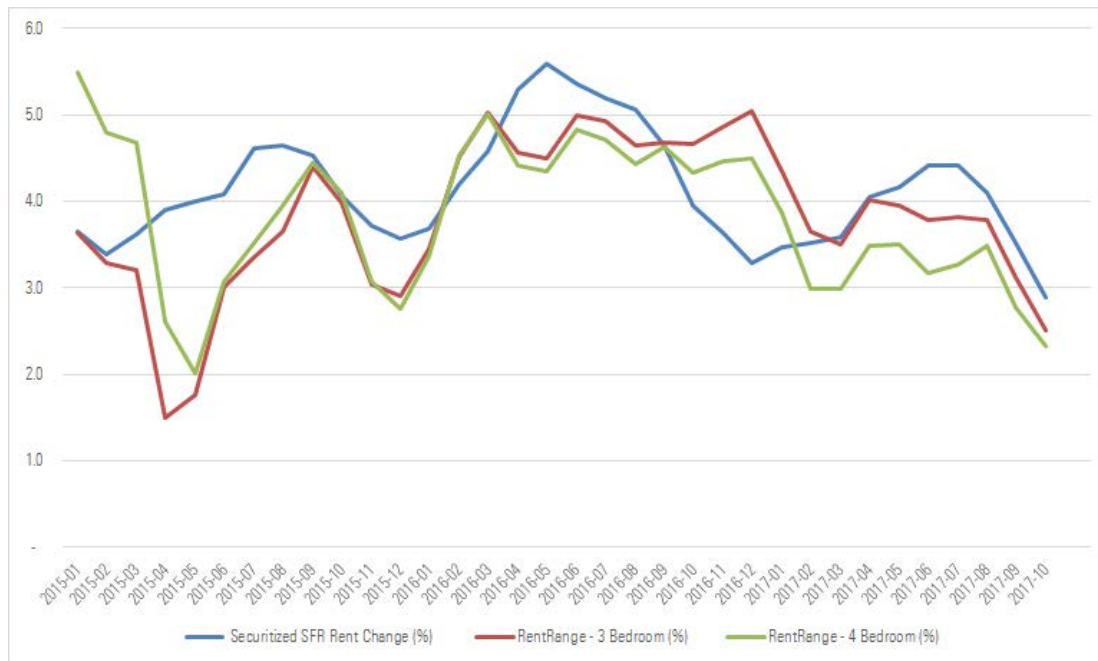
Sources: Morningstar Credit Ratings, LLC; RentRange

Chart 2 – Rental Changes for Renewals Versus Vacant-to-Occupied Properties
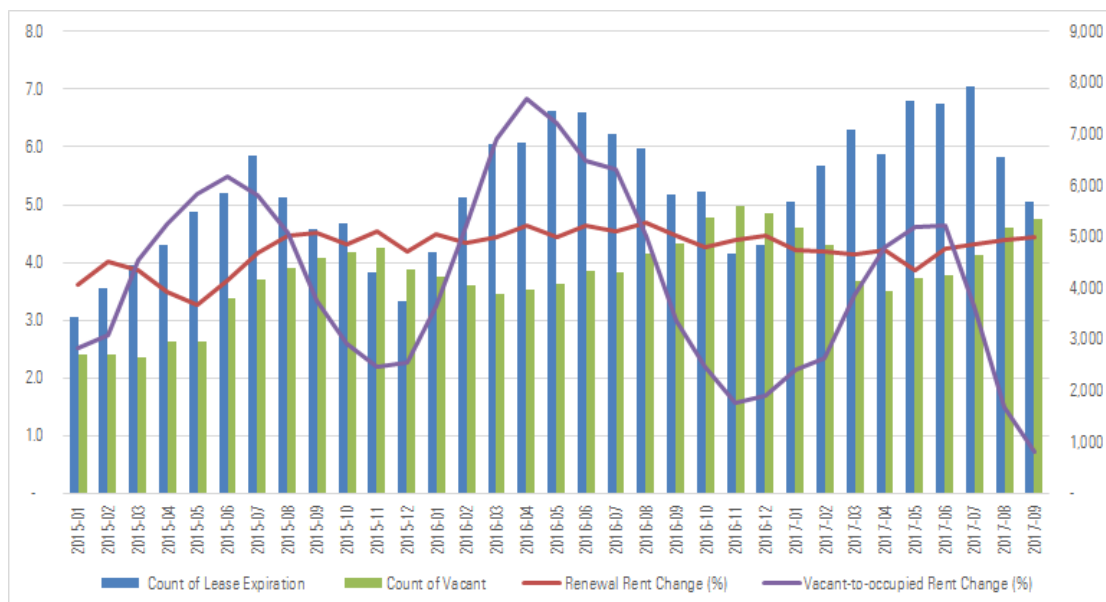
Source: Morningstar Credit Ratings, LLC

Chart 3 – October Average Contractual Rent Versus Property-Level RentRange Estimate by MSA
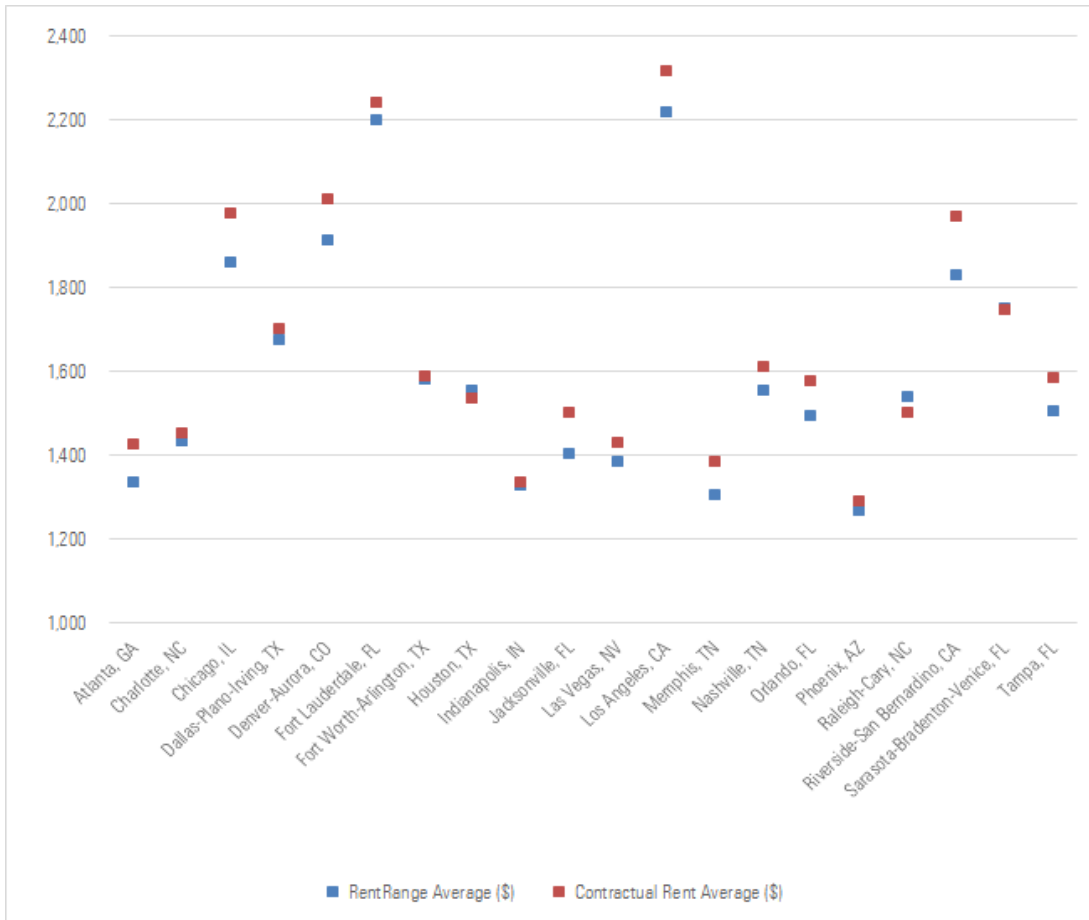
Sources: Morningstar Credit Ratings, LLC; RentRange

Chart 4 – MSA-Level Blended Rent Change*
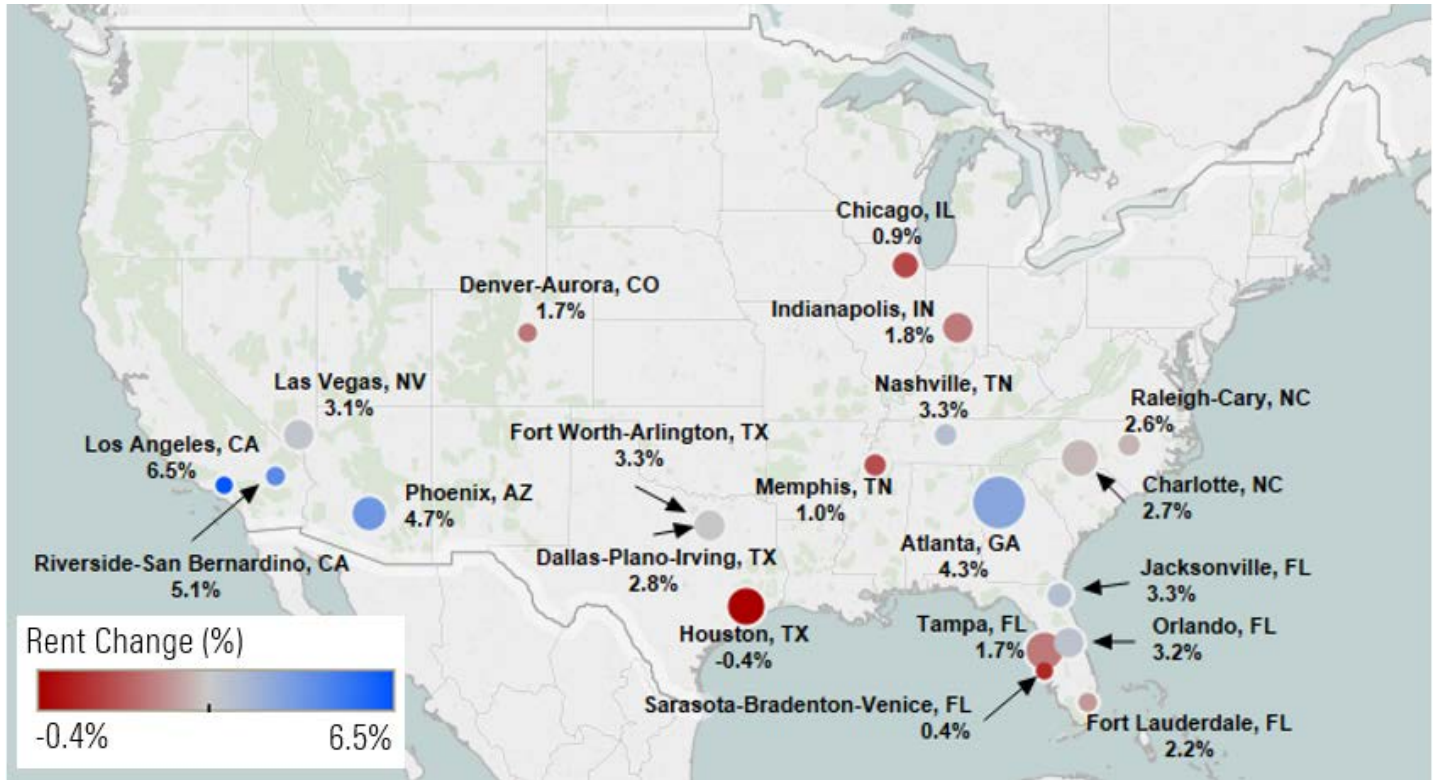
Sources: Morningstar Credit Ratings, LLC; Tableau Software
*The size of the circles represents the total percentage (by count) of properties in each MSA, ranging from 1.5% to 12.9%. Because of their proximity, the Fort Worth-Arlington, Texas, MSA is hidden behind the Dallas-Plano-Irving, Texas, MSA.

Table 1 – Blended Rent Change (by Percentage) - Top MSAs

		Year 2016		Year 2017									
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Atlanta, GA		4.3	3.7	3.8	3.9	3.9	4.5	4.6	5.0	4.9	4.6	4.4	4.3
Charlotte, NC		3.4	3.2	2.2	2.7	2.9	4.1	4.1	4.3	4.1	3.2	3.0	2.7
Chicago, IL		0.4	0.4	0.8	1.4	1.9	1.7	2.7	2.7	2.2	2.1	0.8	0.9
Dallas-Plano-Irving, TX		3.7	2.9	2.7	3.6	3.8	4.4	4.9	5.2	5.2	4.3	4.1	2.8
Denver-Aurora, CO		6.5	4.1	6.3	5.4	6.3	6.7	5.9	7.0	6.2	6.2	4.2	1.7
Fort Lauderdale, FL		3.3	2.6	3.6	2.8	2.8	3.9	3.6	2.4	2.5	1.8	2.2	2.2
Fort Worth-Arlington, TX		3.9	3.0	3.4	3.8	4.1	4.5	4.3	4.7	4.6	4.5	4.4	3.3
Houston, TX		-0.3	-0.1	0.7	-0.1	0.5	1.9	1.7	1.1	1.5	1.6	-0.8	-0.4
Indianapolis, IN		-0.2	-1.0	-2.8	0.4	0.7	1.6	2.4	3.4	3.0	3.1	2.0	1.8
Jacksonville, FL		2.2	1.9	1.5	2.0	1.7	2.2	2.9	3.6	4.3	3.5	3.7	3.3
Las Vegas, NV		4.4	4.2	4.4	4.4	4.6	4.8	5.4	5.6	5.4	5.9	5.1	3.1
Los Angeles, CA		7.0	7.0	6.1	8.2	7.1	7.3	7.2	8.2	8.0	7.5	6.3	6.5
Memphis, TN		3.2	2.2	1.9	0.5	0.2	0.5	0.8	2.1	2.3	2.7	2.4	1.0
Nashville, TN		3.9	3.0	3.0	2.4	2.5	4.1	4.0	4.9	4.8	4.0	3.7	3.3
Orlando, FL		3.9	3.7	4.1	4.1	4.1	4.8	4.9	4.9	5.2	4.7	4.1	3.2
Phoenix, AZ		5.5	5.2	5.9	6.1	5.7	6.4	6.6	6.4	6.8	6.1	5.5	4.7
Raleigh-Cary, NC		2.9	2.5	2.0	3.0	3.1	4.2	3.5	3.7	3.7	3.3	3.4	2.6
Riverside-San Bernardino, CA		4.5	5.1	4.6	5.1	4.8	5.0	5.5	5.5	5.9	5.2	5.1	5.1
Sarasota-Bradenton-Venice, FL		3.8	2.0	2.9	1.8	2.3	2.3	2.7	2.9	2.1	1.4	1.0	0.4
Tampa, FL		3.6	3.5	2.9	2.7	2.7	3.4	3.1	3.7	3.6	3.2	2.6	1.7

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Table 2a – Month-End Vacancy (by Count)

		Year 2016 Nov	Dec	Year 2017 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total Count
AH4R 2014-SFR2		201	179	162	193	164	165	194	209	209	230	251	248	4,482
AH4R 2014-SFR3		248	215	206	236	223	219	194	223	234	310	298	317	4,499
AH4R 2015-SFR1		268	264	258	239	198	183	175	197	198	243	282	311	4,659
AH4R 2015-SFR2		167	156	182	198	195	226	232	256	267	253	268	275	4,124
AMSR 2016-SFR1		345	306	291	288	251	230	237	297	355	335	350	339	4,262
CAH 2014-1		193	182	155	125	125	140	180	216	210	207	202	190	3,254
CAH 2014-2		185	171	160	152	152	164	190	220	194	200	199	196	3,608
CAH 2015-1		195	194	184	164	160	194	224	249	239	261	225	214	3,804
CSH 2016-1		190	180	161	153	155	183	176	176	194	215	207	214	3,560
CSH 2016-2			177	193	168	173	186	184	189	241	266	241	230	3,993
HPA 2016-1		79	65	59	52	46	48	53	62	75	91	120	123	2,014
HPA 2016-2		17	18	22	20	29	37	48	62	80	63	48	36	1,338
HPA 2017-1										19	26	36	50	1,372
IH 2015-SFR1		146	142	151	153	124	118	104	103	128	142	139	140	2,996
IH 2015-SFR2		213	186	183	155	145	138	161	157	171	187	161	166	3,505
IH 2015-SFR3		397	384	389	346	315	298	270	287	315	317	352	325	6,969
PRD 2015-SFR2		234	274	255	201	140	139	155	132	130	149	180	197	3,292
PRD 2015-SFR3		226	206	191	149	86	93	133	190	222	269	259	245	3,152
PRD 2016-SFR1		364	397	414	346	232	238	229	239	279	314	311	304	5,558
PRD 2016-SFR2			195	186	140	84	101	108	144	181	282	265	238	3,744
PRD 2017-SFR1											131	187	203	2,711
TAH 2016-SFR1		157	184	175	188	183	164	178	188	187	169	199	186	3,439
TAH 2017-SFR1												173	162	3,480
Overall SFR		3,825	4,075	3,977	3,666	3,180	3,264	3,425	3,796	4,128	4,660	4,953	4,909	83,815

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Table 2b – Month-End Vacancy (by Percentage)

		Year 2016		Year 2017									
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
AH4R 2014-SFR2		4.5	4.0	3.6	4.3	3.7	3.7	4.3	4.7	4.7	5.1	5.6	5.5
AH4R 2014-SFR3		5.5	4.8	4.6	5.2	5.0	4.9	4.3	5.0	5.2	6.9	6.6	7.0
AH4R 2015-SFR1		5.8	5.7	5.5	5.1	4.2	3.9	3.8	4.2	4.2	5.2	6.1	6.7
AH4R 2015-SFR2		4.0	3.8	4.4	4.8	4.7	5.5	5.6	6.2	6.5	6.1	6.5	6.7
AMSR 2016-SFR1		8.1	7.2	6.8	6.8	5.9	5.4	5.6	7.0	8.3	7.9	8.2	8.0
CAH 2014-1		5.8	5.4	4.6	3.7	3.7	4.2	5.4	6.5	6.4	6.3	6.2	5.8
CAH 2014-2		5.0	4.6	4.3	4.1	4.1	4.5	5.2	6.0	5.4	5.5	5.5	5.4
CAH 2015-1		5.0	5.0	4.8	4.2	4.1	5.0	5.8	6.5	6.2	6.8	5.9	5.6
CSH 2016-1		5.3	5.1	4.5	4.3	4.4	5.1	4.9	4.9	5.4	6.0	5.8	6.0
CSH 2016-2			4.4	4.8	4.2	4.3	4.7	4.6	4.7	6.0	6.7	6.0	5.8
HPA 2016-1		3.7	3.1	2.8	2.5	2.2	2.3	2.6	3.0	3.7	4.5	5.9	6.1
HPA 2016-2		1.2	1.3	1.6	1.4	2.1	2.7	3.5	4.6	6.0	4.7	3.6	2.7
HPA 2017-1										1.4	1.9	2.6	3.6
IH 2015-SFR1		4.8	4.7	5.0	5.1	4.1	3.9	3.4	3.4	4.3	4.7	4.6	4.7
IH 2015-SFR2		6.1	5.3	5.2	4.4	4.1	3.9	4.6	4.5	4.9	5.3	4.6	4.7
IH 2015-SFR3		5.5	5.3	5.4	4.8	4.4	4.2	3.8	4.1	4.5	4.5	5.0	4.7
PRD 2015-SFR2		7.1	8.3	7.7	6.1	4.2	4.2	4.7	4.0	3.9	4.5	5.5	6.0
PRD 2015-SFR3		7.1	6.5	6.0	4.7	2.7	2.9	4.2	6.0	7.0	8.5	8.2	7.8
PRD 2016-SFR1		6.5	7.1	7.4	6.2	4.2	4.3	4.1	4.3	5.0	5.6	5.6	5.5
PRD 2016-SFR2			5.2	5.0	3.7	2.2	2.7	2.9	3.8	4.8	7.5	7.1	6.4
PRD 2017-SFR1											4.8	6.9	7.5
TAH 2016-SFR1		4.6	5.4	5.1	5.5	5.3	4.8	5.2	5.5	5.4	4.9	5.8	5.4
TAH 2017-SFR1												5.0	4.7
Overall SFR		5.5	5.3	5.2	4.8	4.1	4.3	4.5	5.0	5.3	5.8	5.9	5.9

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Table 2c – Month-End Vacancy (by Percentage) – Top MSAs

		Year 2016		Year 2017									
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Atlanta, GA		4.8	4.6	5.1	4.5	4.1	4.1	5.6	5.1	4.4	4.9	4.8	5.0
Charlotte, NC		6.0	5.6	5.2	4.6	3.7	4.2	4.4	4.4	5.2	5.8	6.6	6.6
Chicago, IL		5.5	5.4	4.7	4.5	4.3	4.3	4.0	4.5	4.8	5.0	5.0	5.8
Dallas-Plano-Irving, TX		5.3	4.4	4.2	3.9	3.5	4.0	5.1	4.8	5.0	5.6	5.5	5.5
Denver-Aurora, CO		6.8	5.7	5.4	4.2	5.3	5.2	4.4	4.5	5.8	6.5	5.4	4.9
Fort Lauderdale, FL		6.6	6.0	6.6	6.7	5.8	6.7	5.9	6.0	6.3	6.3	6.7	6.8
Fort Worth-Arlington, TX		4.6	5.0	5.1	4.5	4.1	3.7	4.8	5.5	5.2	5.0	4.8	4.9
Houston, TX		7.7	7.1	6.2	6.2	6.0	5.8	6.2	6.9	7.9	9.2	9.8	10.0
Indianapolis, IN		8.1	6.8	6.2	5.2	4.3	4.8	4.1	5.1	6.3	6.7	6.7	6.2
Jacksonville, FL		7.3	7.6	6.6	4.8	3.5	4.1	4.1	3.7	4.4	5.1	6.4	5.9
Las Vegas, NV		3.7	4.3	3.4	3.3	3.0	4.1	3.6	4.3	4.3	4.4	4.5	3.8
Los Angeles, CA		3.0	2.9	2.4	2.7	3.2	3.9	4.4	5.1	5.1	4.6	4.6	4.9
Memphis, TN		8.7	8.8	8.1	7.8	5.0	4.1	4.5	5.5	6.3	6.7	7.3	7.3
Nashville, TN		5.8	5.5	5.5	5.9	4.3	3.6	4.1	5.3	6.2	7.1	7.1	7.6
Orlando, FL		5.0	4.5	4.0	3.8	3.3	3.4	3.8	3.9	4.5	4.8	4.8	4.5
Phoenix, AZ		4.6	4.2	3.6	3.0	2.9	3.3	3.6	4.4	5.2	5.5	4.5	4.8
Raleigh-Cary, NC		4.8	5.0	5.1	5.8	4.6	5.2	5.1	5.5	4.9	6.1	7.1	7.1
Riverside-San Bernardino, CA		4.0	3.6	4.0	4.5	4.3	4.3	3.3	4.2	3.3	3.6	3.4	4.0
Sarasota-Bradenton-Venice, FL		7.2	6.6	7.4	6.1	5.1	6.6	7.1	6.7	7.0	7.7	7.7	7.0
Tampa, FL		5.0	5.2	5.3	4.4	4.0	4.1	3.9	4.2	5.1	6.3	6.7	6.3
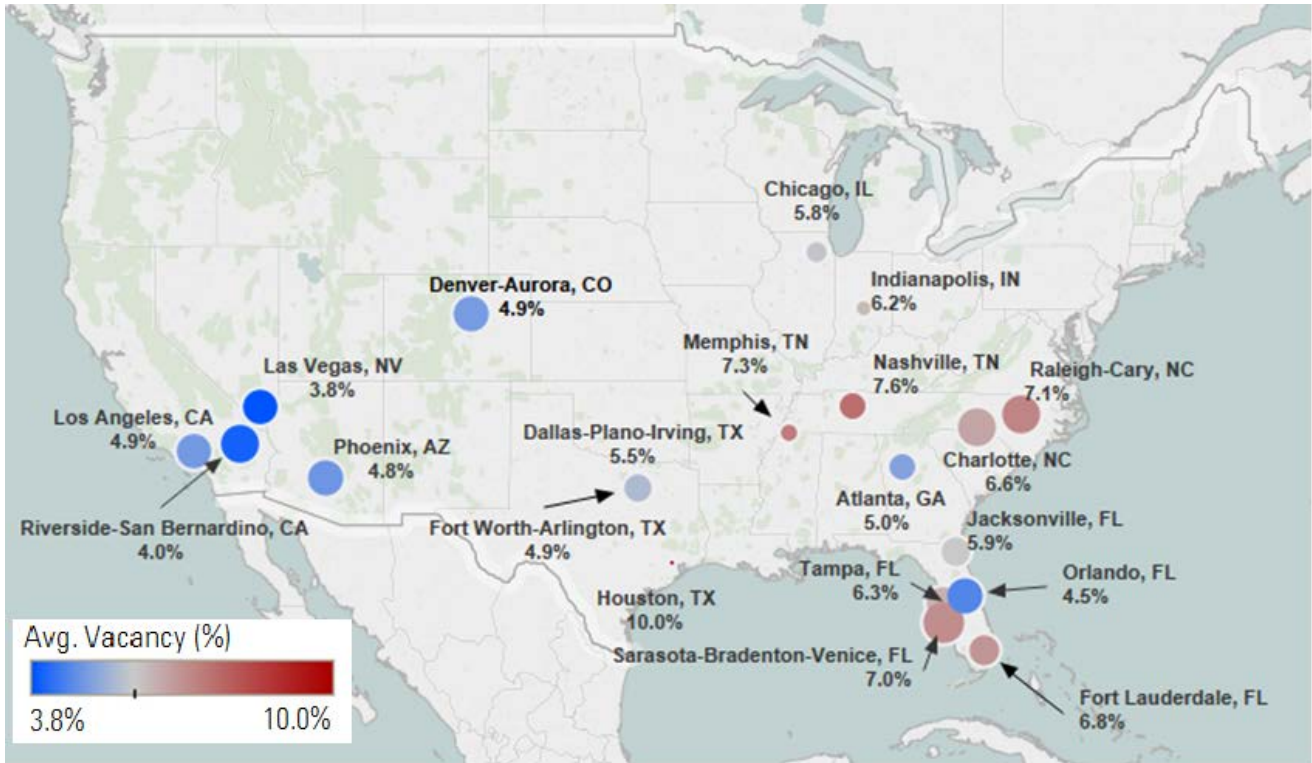
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Chart 5 – MSA-Level Vacancy and Lease Expiration Percentage (by Count)*

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 19.0% to 25.4%. Because of their proximity, the Fort Worth-Arlington, Texas, MSA is hidden behind Dallas-Plano-Irving, Texas, MSA.

Table 3a – Lease Expiration (by Count)

		Year 2016		Year 2017										Total Count
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
AH4R 2014-SFR2		195	150	290	334	362	387	518	399	371	331	264	201	4,482
AH4R 2014-SFR3		146	169	295	287	306	273	398	474	448	416	265	241	4,499
AH4R 2015-SFR1		293	266	319	272	242	215	249	382	488	423	336	313	4,659
AH4R 2015-SFR2		122	124	245	355	466	407	516	464	355	214	159	132	4,124
AMSR 2016-SFR1		174	156	200	294	314	355	382	439	281	225	186	193	4,262
CAH 2014-1		210	154	175	189	190	214	216	269	338	342	307	244	3,254
CAH 2014-2		221	222	269	286	322	328	303	263	273	243	255	251	3,608
CAH 2015-1		241	210	220	178	200	268	294	368	393	378	298	287	3,804
CSH 2016-1		182	184	174	253	294	331	282	337	340	273	264	234	3,560
CSH 2016-2			217	242	266	308	324	389	335	300	287	230	243	3,993
HPA 2016-1		62	48	64	71	116	165	168	221	249	228	212	142	2,014
HPA 2016-2		10	5	6	2	139	212	276	386	179	11	5	6	1,338
HPA 2017-1										87	141	118	186	1,372
IH 2015-SFR1		207	196	255	213	192	166	138	164	209	191	162	220	2,996
IH 2015-SFR2		270	219	221	247	258	192	184	199	232	227	211	245	3,505
IH 2015-SFR3		480	445	522	530	520	395	368	405	446	499	388	537	6,969
PRD 2015-SFR2		165	149	179	217	266	215	391	186	192	118	179	221	3,292
PRD 2015-SFR3		27	27	42	55	68	164	345	353	525	284	216	157	3,152
PRD 2016-SFR1		242	312	353	358	502	470	448	394	358	176	216	322	5,558
PRD 2016-SFR2			115	70	79	87	101	318	402	639	426	270	209	3,744
PRD 2017-SFR1											112	279	381	2,711
TAH 2016-SFR1		93	85	122	218	190	309	296	280	301	238	171	221	3,439
TAH 2017-SFR1												276	261	3,480
Overall SFR		3,340	3,453	4,263	4,704	5,342	5,491	6,479	6,720	7,004	5,783	5,267	5,447	83,815

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Table 3b – Lease Expiration (by Percentage)

		Year 2016		Year 2017									
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
AH4R 2014-SFR2		4.3	3.3	6.5	7.4	8.1	8.6	11.6	8.9	8.3	7.4	5.9	4.5
AH4R 2014-SFR3		3.2	3.8	6.6	6.4	6.8	6.1	8.8	10.5	10.0	9.2	5.9	5.4
AH4R 2015-SFR1		6.3	5.7	6.8	5.8	5.2	4.6	5.3	8.2	10.5	9.1	7.2	6.7
AH4R 2015-SFR2		3.0	3.0	5.9	8.6	11.3	9.9	12.5	11.3	8.6	5.2	3.9	3.2
AMSR 2016-SFR1		4.1	3.7	4.7	6.9	7.4	8.3	9.0	10.3	6.6	5.3	4.4	4.5
CAH 2014-1		6.3	4.6	5.2	5.7	5.7	6.4	6.5	8.1	10.3	10.5	9.4	7.5
CAH 2014-2		6.0	6.0	7.3	7.8	8.8	8.9	8.3	7.2	7.5	6.7	7.1	7.0
CAH 2015-1		6.2	5.4	5.7	4.6	5.2	6.9	7.6	9.6	10.3	9.9	7.8	7.5
CSH 2016-1		5.1	5.2	4.9	7.1	8.3	9.3	7.9	9.5	9.5	7.7	7.4	6.6
CSH 2016-2			5.4	6.1	6.7	7.7	8.1	9.7	8.4	7.5	7.2	5.8	6.1
HPA 2016-1		2.9	2.3	3.1	3.4	5.6	8.0	8.2	10.8	12.2	11.2	10.5	7.1
HPA 2016-2		0.7	0.4	0.4	0.1	10.0	15.5	20.2	28.6	13.3	0.8	0.4	0.4
HPA 2017-1										6.3	10.2	8.6	13.6
IH 2015-SFR1		6.9	6.5	8.4	7.1	6.4	5.5	4.6	5.5	7.0	6.4	5.4	7.3
IH 2015-SFR2		7.7	6.2	6.3	7.0	7.3	5.5	5.2	5.7	6.6	6.5	6.0	7.0
IH 2015-SFR3		6.7	6.2	7.3	7.4	7.3	5.5	5.1	5.8	6.4	7.2	5.6	7.7
PRD 2015-SFR2		5.0	4.5	5.4	6.6	8.1	6.5	11.9	5.6	5.8	3.6	5.4	6.7
PRD 2015-SFR3		0.9	0.9	1.3	1.7	2.2	5.2	10.9	11.2	16.6	9.0	6.9	5.0
PRD 2016-SFR1		4.3	5.6	6.3	6.4	9.0	8.4	8.0	7.1	6.4	3.2	3.9	5.8
PRD 2016-SFR2			3.1	1.9	2.1	2.3	2.7	8.5	10.7	17.1	11.4	7.2	5.6
PRD 2017-SFR1											4.1	10.3	14.1
TAH 2016-SFR1		2.7	2.5	3.5	6.3	5.5	9.0	8.6	8.1	8.8	6.9	5.0	6.4
TAH 2017-SFR1												7.9	7.5
Overall SFR		4.8	4.5	5.5	6.1	7.0	7.2	8.4	8.8	9.0	7.2	6.3	6.5

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Table 3c – Lease Expiration (by Percentage) – Top MSAs

		Year 2016		Year 2017									
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Atlanta, GA		4.5	5.0	5.5	5.9	6.8	7.2	8.4	8.9	8.8	6.7	6.3	6.0
Charlotte, NC		4.9	4.0	4.6	4.8	6.0	6.9	7.7	8.5	9.2	7.7	7.4	7.2
Chicago, IL		3.4	3.3	5.6	6.2	7.5	7.6	9.3	8.3	9.1	7.4	5.9	5.0
Dallas-Plano-Irving, TX		4.0	4.6	5.1	5.7	6.9	7.2	9.0	10.4	9.7	7.0	5.8	6.7
Denver-Aurora, CO		5.5	3.4	4.7	5.0	7.6	9.8	7.7	10.0	10.0	8.3	7.2	6.2
Fort Lauderdale, FL		4.8	4.6	7.9	6.4	8.8	8.5	6.6	7.7	6.8	6.0	6.2	7.9
Fort Worth-Arlington, TX		3.7	3.7	4.7	5.2	7.6	8.0	9.6	11.5	8.7	6.5	6.0	6.4
Houston, TX		3.6	4.4	4.2	6.4	6.5	6.9	7.6	8.6	9.1	6.1	5.5	5.2
Indianapolis, IN		1.4	1.1	4.9	4.5	6.3	9.1	10.5	9.6	11.6	7.4	5.1	5.0
Jacksonville, FL		6.3	5.0	5.7	5.9	6.3	5.9	8.0	7.0	9.2	5.6	5.6	8.6
Las Vegas, NV		4.2	4.9	5.7	6.3	6.5	7.8	8.4	9.4	9.9	7.7	6.4	6.8
Los Angeles, CA		4.4	4.1	4.9	5.0	7.1	7.9	6.9	7.3	7.1	7.3	6.8	7.0
Memphis, TN		3.3	4.2	4.7	5.2	7.0	6.3	11.0	8.7	8.5	6.4	5.4	6.0
Nashville, TN		5.7	4.2	4.7	5.3	7.2	7.9	9.8	10.3	8.5	6.4	5.4	7.4
Orlando, FL		4.4	4.7	5.0	6.0	6.5	6.9	9.8	9.1	9.8	8.0	6.4	7.1
Phoenix, AZ		4.8	5.2	6.4	6.9	7.1	5.8	7.8	7.5	8.9	7.4	5.9	8.0
Raleigh-Cary, NC		4.2	3.6	4.4	7.1	6.5	6.1	10.7	9.8	10.0	7.7	6.8	7.6
Riverside-San Bernardino, CA		5.7	4.9	6.0	6.4	7.9	6.7	6.7	6.9	7.5	7.0	6.8	8.2
Sarasota-Bradenton-Venice, FL		4.9	4.6	5.2	5.0	7.4	6.5	6.6	7.8	8.7	7.7	7.2	8.0
Tampa, FL		4.7	5.3	5.3	5.9	6.2	7.1	7.8	8.4	9.8	7.8	6.7	6.1

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Table 4a – Historical Months of Vacancy for October Vacancies (by Count)

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		44	46	52	44	34	13	9	2	2	2	0	0	248
AH4R 2014-SFR3		52	63	68	51	38	18	11	12	3	0	0	1	317
AH4R 2015-SFR1		58	70	67	51	28	17	7	9	4	0	0	0	311
AH4R 2015-SFR2		51	77	63	38	22	14	5	4	1	0	0	0	275
AMSR 2016-SFR1		57	85	63	67	36	14	11	3	2	1	0	0	339
CAH 2014-1		23	34	41	37	19	12	10	2	5	1	2	4	190
CAH 2014-2		28	39	28	34	25	15	16	5	3	0	0	3	196
CAH 2015-1		47	35	52	36	20	15	5	1	0	0	1	2	214
CSH 2016-1		53	71	44	19	5	7	4	5	2	1	0	3	214
CSH 2016-2		88	63	42	20	11	4	0	1	0	0	1	0	230
HPA 2016-1		46	33	28	11	2	3	0	0	0	0	0	0	123
HPA 2016-2		7	13	1	11	2	1	0	0	0	0	0	1	36
HPA 2017-1		27	19	4	0	0								50
IH 2015-SFR1		32	27	32	21	14	7	2	1	1	1	0	2	140
IH 2015-SFR2		47	27	40	23	13	6	5	2	0	0	1	2	166
IH 2015-SFR3		77	78	75	37	24	15	6	6	2	1	0	4	325
PRD 2015-SFR2		45	42	48	31	17	9	2	0	1	2	0	0	197
PRD 2015-SFR3		50	61	55	38	18	8	12	2	1	0	0	0	245
PRD 2016-SFR1		87	94	68	27	9	12	4	2	1	0	0	0	304
PRD 2016-SFR2		75	87	50	22	3	1	0	0	0	0	0	0	238
PRD 2017-SFR1		96	79	26	2									203
TAH 2016-SFR1		60	75	19	22	3	1	3	0	1	0	2	0	186
TAH 2017-SFR1		97	64	1										162
Overall SFR		1,247	1,282	967	642	343	192	112	57	29	9	7	22	4,909

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Table 4b – Historical Months of Vacancy for October Vacancies (by Percentage)

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		17.7	18.5	21.0	17.7	13.7	5.2	3.6	0.8	0.8	0.8	0.0	0.0	100.0
AH4R 2014-SFR3		16.4	19.9	21.5	16.1	12.0	5.7	3.5	3.8	0.9	0.0	0.0	0.3	100.0
AH4R 2015-SFR1		18.6	22.5	21.5	16.4	9.0	5.5	2.3	2.9	1.3	0.0	0.0	0.0	100.0
AH4R 2015-SFR2		18.5	28.0	22.9	13.8	8.0	5.1	1.8	1.5	0.4	0.0	0.0	0.0	100.0
AMSR 2016-SFR1		16.8	25.1	18.6	19.8	10.6	4.1	3.2	0.9	0.6	0.3	0.0	0.0	100.0
CAH 2014-1		12.1	17.9	21.6	19.5	10.0	6.3	5.3	1.1	2.6	0.5	1.1	2.1	100.0
CAH 2014-2		14.3	19.9	14.3	17.3	12.8	7.7	8.2	2.6	1.5	0.0	0.0	1.5	100.0
CAH 2015-1		22.0	16.4	24.3	16.8	9.3	7.0	2.3	0.5	0.0	0.0	0.5	0.9	100.0
CSH 2016-1		24.8	33.2	20.6	8.9	2.3	3.3	1.9	2.3	0.9	0.5	0.0	1.4	100.0
CSH 2016-2		38.3	27.4	18.3	8.7	4.8	1.7	0.0	0.4	0.0	0.0	0.4	0.0	100.0
HPA 2016-1		37.4	26.8	22.8	8.9	1.6	2.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0
HPA 2016-2		19.4	36.1	2.8	30.6	5.6	2.8	0.0	0.0	0.0	0.0	0.0	2.8	100.0
HPA 2017-1		54.0	38.0	8.0	0.0	0.0								100.0
IH 2015-SFR1		22.9	19.3	22.9	15.0	10.0	5.0	1.4	0.7	0.7	0.7	0.0	1.4	100.0
IH 2015-SFR2		28.3	16.3	24.1	13.9	7.8	3.6	3.0	1.2	0.0	0.0	0.6	1.2	100.0
IH 2015-SFR3		23.7	24.0	23.1	11.4	7.4	4.6	1.8	1.8	0.6	0.3	0.0	1.2	100.0
PRD 2015-SFR2		22.8	21.3	24.4	15.7	8.6	4.6	1.0	0.0	0.5	1.0	0.0	0.0	100.0
PRD 2015-SFR3		20.4	24.9	22.4	15.5	7.3	3.3	4.9	0.8	0.4	0.0	0.0	0.0	100.0
PRD 2016-SFR1		28.6	30.9	22.4	8.9	3.0	3.9	1.3	0.7	0.3	0.0	0.0	0.0	100.0
PRD 2016-SFR2		31.5	36.6	21.0	9.2	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0
PRD 2017-SFR1		47.3	38.9	12.8	1.0									100.0
TAH 2016-SFR1		32.3	40.3	10.2	11.8	1.6	0.5	1.6	0.0	0.5	0.0	1.1	0.0	100.0
TAH 2017-SFR1		59.9	39.5	0.6										100.0
Overall SFR		25.4	26.1	19.7	13.1	7.0	3.9	2.3	1.2	0.6	0.2	0.1	0.4	100.0

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Table 5 – 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	Past due one calendar month or more (not dependent on day count) and owing $200 or more
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[1]
Tricon American Homes	Past due 30 days or more (not dependent on calendar month) and owing $500 or more[2]

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

Table 6a – Month-End Delinquency (by Count)

		Year 2016	Year 2017											Total Count
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
AH4R 2014-SFR2		23	27	16	28	21	14	12	10	13	15	9	21	4,482
AH4R 2014-SFR3		18	10	15	15	12	11	8	9	7	11	7	21	4,499
AH4R 2015-SFR1		24	17	16	12	20	12	10	10	12	14	21	26	4,659
AH4R 2015-SFR2		19	18	19	15	12	3	6	7	7	6	10	17	4,124
AMSR 2016-SFR1		99	109	106	94	56	67	78	114	171	78	66	97	4,262
CAH 2014-1		26	23	39	28	17	18	22	15	22	20	28	31	3,254
CAH 2014-2		32	41	44	47	37	27	31	21	26	29	37	31	3,608
CAH 2015-1		23	28	40	27	23	17	17	18	17	22	30	28	3,804
CSH 2016-1		22	32	35	29	22	17	20	15	24	21	29	28	3,560
CSH 2016-2			43	33	42	40	21	17	30	27	23	43	34	3,993
HPA 2016-1		21	24	19	16	12	12	7	16	9	13	19	21	2,014
HPA 2016-2		10	14	20	20	11	8	6	6	9	12	19	17	1,338
HPA 2017-1										9	13	17	12	1,372
IH 2015-SFR1		18	25	23	28	25	22	21	36	33	36	29	45	2,996
IH 2015-SFR2		35	37	22	25	33	38	28	33	42	32	45	37	3,505
IH 2015-SFR3		64	65	74	82	63	75	71	80	99	115	89	94	6,969
PRD 2015-SFR2		26	22	19	20	13	18	15	14	19	14	26	25	3,292
PRD 2015-SFR3		17	10	15	17	4	8	9	8	16	19	22	23	3,152
PRD 2016-SFR1		38	44	40	42	24	26	20	24	28	29	27	43	5,558
PRD 2016-SFR2			26	27	16	11	10	14	18	20	16	24	23	3,744
PRD 2017-SFR1											14	20	19	2,711
TAH 2016-SFR1		20	67	68	59	31	29	26	15	9	5	3	2	3,439
TAH 2017-SFR1												25	19	3,480
Overall SFR		535	682	690	662	487	453	438	499	619	557	645	714	83,815

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Table 6b – Month-End Delinquency (by Percentage)

		Year 2016		Year 2017										
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
AH4R 2014-SFR2		0.5	0.6	0.4	0.6	0.5	0.3	0.3	0.2	0.3	0.3	0.2	0.5
AH4R 2014-SFR3		0.4	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5
AH4R 2015-SFR1		0.5	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.3	0.5	0.6
AH4R 2015-SFR2		0.5	0.4	0.5	0.4	0.3	0.1	0.1	0.2	0.2	0.1	0.2	0.4
AMSR 2016-SFR1		2.3	2.6	2.5	2.2	1.3	1.6	1.8	2.7	4.0	1.8	1.5	2.3
CAH 2014-1		0.8	0.7	1.2	0.8	0.5	0.5	0.7	0.5	0.7	0.6	0.9	1.0
CAH 2014-2		0.9	1.1	1.2	1.3	1.0	0.7	0.8	0.6	0.7	0.8	1.0	0.9
CAH 2015-1		0.6	0.7	1.0	0.7	0.6	0.4	0.4	0.5	0.4	0.6	0.8	0.7
CSH 2016-1		0.6	0.9	1.0	0.8	0.6	0.5	0.6	0.4	0.7	0.6	0.8	0.8
CSH 2016-2			1.1	0.8	1.1	1.0	0.5	0.4	0.8	0.7	0.6	1.1	0.9
HPA 2016-1		1.0	1.1	0.9	0.8	0.6	0.6	0.3	0.8	0.4	0.6	0.9	1.0
HPA 2016-2		0.7	1.0	1.4	1.4	0.8	0.6	0.4	0.4	0.7	0.9	1.4	1.3
HPA 2017-1										0.6	0.9	1.2	0.9
IH 2015-SFR1		0.6	0.8	0.8	0.9	0.8	0.7	0.7	1.2	1.1	1.2	1.0	1.5
IH 2015-SFR2		1.0	1.1	0.6	0.7	0.9	1.1	0.8	0.9	1.2	0.9	1.3	1.1
IH 2015-SFR3		0.9	0.9	1.0	1.1	0.9	1.0	1.0	1.1	1.4	1.6	1.3	1.3
PRD 2015-SFR2		0.8	0.7	0.6	0.6	0.4	0.5	0.5	0.4	0.6	0.4	0.8	0.8
PRD 2015-SFR3		0.5	0.3	0.5	0.5	0.1	0.3	0.3	0.3	0.5	0.6	0.7	0.7
PRD 2016-SFR1		0.7	0.8	0.7	0.8	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.8
PRD 2016-SFR2			0.7	0.7	0.4	0.3	0.3	0.4	0.5	0.5	0.4	0.6	0.6
PRD 2017-SFR1											0.5	0.7	0.7
TAH 2016-SFR1		0.6	1.9	2.0	1.7	0.9	0.8	0.8	0.4	0.3	0.1	0.1	0.1
TAH 2017-SFR1												0.7	0.5
Overall SFR		0.8	0.9	0.9	0.9	0.6	0.6	0.6	0.7	0.8	0.7	0.8	0.9

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Table 7 – Monthly Retention Rate of Expiring Leases

		Year 2016	Year 2017										
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
AH4R 2014-SFR2		80.5	74.7	74.8	78.4	84.8	75.2	74.1	73.2	76.0	73.1	74.6	TBD
AH4R 2014-SFR3		72.6	74.6	78.0	78.7	73.9	83.2	71.1	75.5	71.4	72.6	73.6	TBD
AH4R 2015-SFR1		81.9	77.1	77.4	76.1	75.6	72.1	69.1	73.0	74.8	74.9	75.9	TBD
AH4R 2015-SFR2		69.7	69.4	78.8	74.1	77.9	75.4	73.6	69.2	72.7	67.3	62.9	TBD
AMSR 2016-SFR1		81.6	81.4	79.5	83.0	83.8	82.3	80.1	77.2	83.3	79.6	87.1	TBD
CAH 2014-1		77.6	76.0	80.6	77.2	80.0	79.4	74.5	72.9	71.6	81.9	78.2	TBD
CAH 2014-2		76.9	81.5	80.7	79.7	82.9	82.9	78.5	74.1	80.2	76.5	81.2	TBD
CAH 2015-1		82.2	76.7	80.5	80.3	80.0	76.1	75.2	72.8	76.1	73.5	80.2	TBD
CSH 2016-1		73.1	78.3	85.1	78.3	82.0	78.5	77.7	76.0	76.2	75.5	76.1	TBD
CSH 2016-2			76.0	75.2	79.3	75.6	80.2	76.6	75.8	68.0	68.3	73.0	TBD
HPA 2016-1		80.6	70.8	82.8	88.7	78.4	80.0	82.1	78.7	76.7	72.8	77.8	TBD
HPA 2016-2		70.0	100.0	100.0	100.0	88.5	85.8	81.9	76.2	84.4	63.6	100.0	TBD
HPA 2017-1										81.6	85.1	80.5	TBD
IH 2015-SFR1		80.2	77.6	78.4	80.3	82.3	80.7	81.9	76.2	77.0	75.4	85.8	TBD
IH 2015-SFR2		77.4	79.9	78.3	84.6	79.8	77.6	71.2	70.4	73.3	82.8	76.8	TBD
IH 2015-SFR3		75.0	80.4	77.6	81.3	79.4	75.4	78.0	80.2	75.1	78.6	78.6	TBD
PRD 2015-SFR2		77.6	79.2	78.8	77.4	77.8	74.9	77.7	72.0	75.5	70.3	72.1	TBD
PRD 2015-SFR3		70.4	81.5	69.0	72.7	73.5	73.8	73.3	71.4	71.4	66.9	67.1	TBD
PRD 2016-SFR1		76.9	72.8	76.5	77.9	81.9	77.4	81.0	76.6	69.8	65.9	68.5	TBD
PRD 2016-SFR2			66.1	75.7	78.5	72.4	77.2	81.1	80.8	75.6	70.4	77.0	TBD
PRD 2017-SFR1											69.6	73.1	TBD
TAH 2016-SFR1		86.0	80.0	86.9	80.7	78.9	81.2	81.8	77.9	82.7	85.3	81.3	TBD
TAH 2017-SFR1												77.2	TBD
Overall SFR		77.8	77.0	78.5	79.3	79.9	78.5	76.8	75.1	75.1	74.6	76.3	TBD

TBD – To Be Determined

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Table 8 – Monthly Retention Rate of MTM Leases

		Year 2016		Year 2017									
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
AH4R 2014-SFR2		86.0	82.6	89.9	86.3	85.9	87.2	81.3	78.5	78.9	80.4	82.4	TBD
AH4R 2014-SFR3		84.1	87.5	83.6	79.6	88.2	83.0	84.3	77.7	78.6	81.9	86.0	TBD
AH4R 2015-SFR1		80.6	80.9	89.5	86.3	82.5	82.5	79.0	80.8	81.4	81.3	81.8	TBD
AH4R 2015-SFR2		76.6	84.5	85.9	84.8	81.4	82.1	77.5	75.9	79.3	81.1	81.2	TBD
AMSR 2016-SFR1		95.3	93.1	96.0	93.6	94.8	96.7	94.7	90.6	94.2	92.4	96.7	TBD
CAH 2014-1		81.5	75.4	84.2	66.1	79.5	83.8	74.4	68.4	63.9	68.6	74.3	TBD
CAH 2014-2		79.5	65.8	88.9	72.9	53.7	84.6	72.9	69.1	58.5	68.4	70.6	TBD
CAH 2015-1		82.6	81.1	77.3	71.1	80.0	61.9	67.5	62.5	77.8	81.1	72.5	TBD
CSH 2016-1		76.7	77.4	76.7	67.9	68.8	76.9	65.9	73.2	66.0	75.6	78.9	TBD
CSH 2016-2			69.2	70.5	64.4	72.7	73.0	81.1	62.9	70.2	78.4	57.5	TBD
HPA 2016-1											100.0	50.0	TBD
HPA 2016-2									100.0	100.0	100.0	100.0	TBD
HPA 2017-1													TBD
IH 2015-SFR1		81.3	88.9	78.3	81.3	68.5	92.7	77.8	74.5	78.6	80.4	87.8	TBD
IH 2015-SFR2		87.8	81.1	85.4	89.1	86.7	79.1	77.8	85.7	70.7	93.3	87.2	TBD
IH 2015-SFR3		78.0	82.7	83.3	74.4	86.7	78.6	73.9	80.3	83.5	82.1	83.5	TBD
PRD 2015-SFR2		76.3	74.6	80.7	77.8	73.8	83.6	80.3	73.3	72.6	72.7	82.6	TBD
PRD 2015-SFR3		76.3	84.1	92.7	90.9	75.5	82.5	78.3	65.0	75.9	73.7	78.6	TBD
PRD 2016-SFR1		76.4	84.0	80.2	82.1	79.3	79.7	81.5	73.6	79.5	80.0	80.7	TBD
PRD 2016-SFR2			78.8	91.1	84.0	82.2	81.4	81.4	74.6	78.3	73.9	77.2	TBD
PRD 2017-SFR1											81.3	73.5	TBD
TAH 2016-SFR1		92.6	96.9	90.6	92.9	95.3	93.1	92.7	92.7	92.2	91.3	93.6	TBD
TAH 2017-SFR1												88.1	TBD
Overall SFR		85.0	85.7	87.8	84.7	85.4	86.1	83.6	80.7	82.9	84.1	86.5	TBD

TBD – To Be Determined

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Table 9a – MTM Tenants (by Count)

		Year 2016		Year 2017											Total Count
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
AH4R 2014-SFR2		178	170	140	159	176	216	256	273	251	245	217	185	4,482
AH4R 2014-SFR3		185	164	159	174	174	190	210	222	227	216	199	180	4,499
AH4R 2015-SFR1		202	199	181	206	208	202	202	189	221	229	227	199	4,659
AH4R 2015-SFR2		132	114	111	133	171	186	238	239	215	207	179	147	4,124
AMSR 2016-SFR1		383	402	393	421	433	479	514	576	574	600	605	648	4,262
CAH 2014-1		65	65	57	56	44	37	39	38	36	35	35	37	3,254
CAH 2014-2		39	38	36	48	41	39	48	55	53	38	34	29	3,608
CAH 2015-1		46	53	44	45	45	42	40	40	36	37	40	40	3,804
CSH 2016-1		30	31	30	28	32	39	41	41	47	41	38	40	3,560
CSH 2016-2			39	44	45	44	37	53	62	47	37	40	35	3,993
HPA 2016-1		0	0	0	0	0	0	0	0	0	1	4	1	2,014
HPA 2016-2		0	0	0	0	0	0	0	1	1	1	1	0	1,338
HPA 2017-1										0	0	0	0	1,372
IH 2015-SFR1		74	61	76	67	66	64	64	68	67	54	57	61	2,996
IH 2015-SFR2		69	72	61	64	86	90	81	77	79	51	68	64	3,505
IH 2015-SFR3		175	159	164	173	169	162	163	146	149	137	131	147	6,969
PRD 2015-SFR2		79	75	85	94	96	97	119	96	76	71	63	66	3,292
PRD 2015-SFR3		61	50	51	55	60	67	91	96	112	115	110	87	3,152
PRD 2016-SFR1		109	111	142	163	182	203	187	170	151	125	116	122	5,558
PRD 2016-SFR2			65	58	61	54	58	95	103	122	137	123	99	3,744
PRD 2017-SFR1											47	62	76	2,711
TAH 2016-SFR1		237	231	249	258	278	287	298	311	348	371	379	360	3,439
TAH 2017-SFR1												207	197	3,480
Overall SFR		2,064	2,099	2,081	2,250	2,359	2,495	2,739	2,803	2,812	2,795	2,935	2,820	83,815

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Table 9b – MTM Tenants (by Percentage)

		Year 2016		Year 2017										
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
AH4R 2014-SFR2		4.0	3.8	3.1	3.5	3.9	4.8	5.7	6.1	5.6	5.5	4.8	4.1
AH4R 2014-SFR3		4.1	3.6	3.5	3.9	3.9	4.2	4.7	4.9	5.0	4.8	4.4	4.0
AH4R 2015-SFR1		4.3	4.3	3.9	4.4	4.5	4.3	4.3	4.1	4.7	4.9	4.9	4.3
AH4R 2015-SFR2		3.2	2.8	2.7	3.2	4.1	4.5	5.8	5.8	5.2	5.0	4.3	3.6
AMSR 2016-SFR1		9.0	9.4	9.2	9.9	10.2	11.2	12.1	13.5	13.5	14.1	14.2	15.2
CAH 2014-1		1.9	1.9	1.7	1.7	1.3	1.1	1.2	1.1	1.1	1.1	1.1	1.1
CAH 2014-2		1.1	1.0	1.0	1.3	1.1	1.1	1.3	1.5	1.5	1.1	0.9	0.8
CAH 2015-1		1.2	1.4	1.1	1.2	1.2	1.1	1.0	1.0	0.9	1.0	1.0	1.1
CSH 2016-1		0.8	0.9	0.8	0.8	0.9	1.1	1.2	1.2	1.3	1.2	1.1	1.1
CSH 2016-2			1.0	1.1	1.1	1.1	0.9	1.3	1.6	1.2	0.9	1.0	0.9
HPA 2016-1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
HPA 2016-2		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
HPA 2017-1										0.0	0.0	0.0	0.0
IH 2015-SFR1		2.4	2.0	2.5	2.2	2.2	2.1	2.1	2.3	2.2	1.8	1.9	2.0
IH 2015-SFR2		2.0	2.0	1.7	1.8	2.4	2.6	2.3	2.2	2.3	1.5	1.9	1.8
IH 2015-SFR3		2.4	2.2	2.3	2.4	2.4	2.3	2.3	2.1	2.1	2.0	1.9	2.1
PRD 2015-SFR2		2.4	2.3	2.6	2.9	2.9	2.9	3.6	2.9	2.3	2.2	1.9	2.0
PRD 2015-SFR3		1.9	1.6	1.6	1.7	1.9	2.1	2.9	3.0	3.5	3.6	3.5	2.8
PRD 2016-SFR1		2.0	2.0	2.5	2.9	3.3	3.6	3.4	3.1	2.7	2.2	2.1	2.2
PRD 2016-SFR2			1.7	1.5	1.6	1.4	1.5	2.5	2.8	3.3	3.7	3.3	2.6
PRD 2017-SFR1											1.7	2.3	2.8
TAH 2016-SFR1		6.9	6.7	7.2	7.5	8.1	8.3	8.7	9.0	10.1	10.8	11.0	10.5
TAH 2017-SFR1												5.9	5.7
Overall SFR		3.0	2.7	2.7	2.9	3.1	3.2	3.6	3.7	3.6	3.5	3.5	3.4

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Table 10 – Monthly Turnover Rate

		Year 2016		Year 2017									
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
AH4R 2014-SFR2		2.5	2.3	2.5	3.0	2.5	3.5	4.9	4.6	3.9	3.9	2.9	TBD
AH4R 2014-SFR3		2.6	2.2	2.9	2.9	3.2	2.5	3.9	4.3	5.1	4.3	3.4	TBD
AH4R 2015-SFR1		2.9	3.0	3.1	2.6	2.9	2.9	3.9	4.2	4.2	4.1	3.9	TBD
AH4R 2015-SFR2		2.4	3.0	2.5	3.3	4.3	3.9	5.0	5.8	4.4	3.7	3.3	TBD
AMSR 2016-SFR1		2.4	1.7	2.6	2.5	2.7	2.3	2.8	3.5	3.3	2.5	2.1	TBD
CAH 2014-1		3.3	2.3	2.5	2.3	2.7	2.3	4.7	3.9	4.2	3.7	3.2	TBD
CAH 2014-2		2.4	2.1	2.4	2.9	3.0	3.1	4.0	3.9	3.2	3.5	2.9	TBD
CAH 2015-1		2.6	2.3	2.3	2.2	2.3	3.1	4.0	4.6	3.8	4.1	2.7	TBD
CSH 2016-1		2.6	2.2	2.0	3.0	2.8	3.5	3.4	3.9	3.4	3.6	2.9	TBD
CSH 2016-2			3.5	3.1	2.5	3.5	3.1	4.1	3.4	4.3	4.5	3.0	TBD
HPA 2016-1		1.6	1.8	1.7	1.4	2.2	3.0	2.6	3.3	3.5	5.1	3.4	TBD
HPA 2016-2		0.7	0.9	0.8	1.0	2.1	2.8	4.4	7.5	3.6	1.9	1.0	TBD
HPA 2017-1										2.2	2.5	2.3	TBD
IH 2015-SFR1		2.6	2.7	2.9	2.8	2.7	2.7	2.3	2.6	3.6	3.6	2.2	TBD
IH 2015-SFR2		3.5	2.4	2.7	2.0	2.9	2.4	3.2	3.6	3.4	3.8	2.1	TBD
IH 2015-SFR3		3.0	2.6	2.7	2.7	3.1	2.4	2.7	3.0	3.0	3.4	2.8	TBD
PRD 2015-SFR2		2.8	2.9	2.6	2.5	3.6	3.2	4.2	3.7	3.0	3.2	3.1	TBD
PRD 2015-SFR3		1.6	1.5	1.6	1.4	2.4	2.1	4.1	5.5	7.1	4.6	4.2	TBD
PRD 2016-SFR1		2.8	2.7	3.0	2.5	3.6	3.4	3.6	4.0	3.5	3.2	3.2	TBD
PRD 2016-SFR2			5.5	1.8	1.3	2.1	2.2	2.9	4.2	5.2	5.3	3.2	TBD
PRD 2017-SFR1											7.5	4.3	TBD
TAH 2016-SFR1			1.9	1.5	2.4	2.8	2.4	3.1	3.4	3.1	2.8	3.5	TBD
TAH 2017-SFR1												6.6	TBD
Overall SFR		2.5	2.6	2.5	2.5	2.9	2.8	3.7	4.0	3.9	3.9	3.2	TBD

TBD – To Be Determined

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Appendix I – Vacancy Versus Lease Expiration

IH 2015-SFR3

PRD 2015-SFR2

PRD 2015-SFR3

PRD 2016-SFR1

PRD 2016-SFR2

PRD 2017-SFR1

TAH 2016-SFR1

TAH 2017-SFR1

Vacancy

Lease Expiration
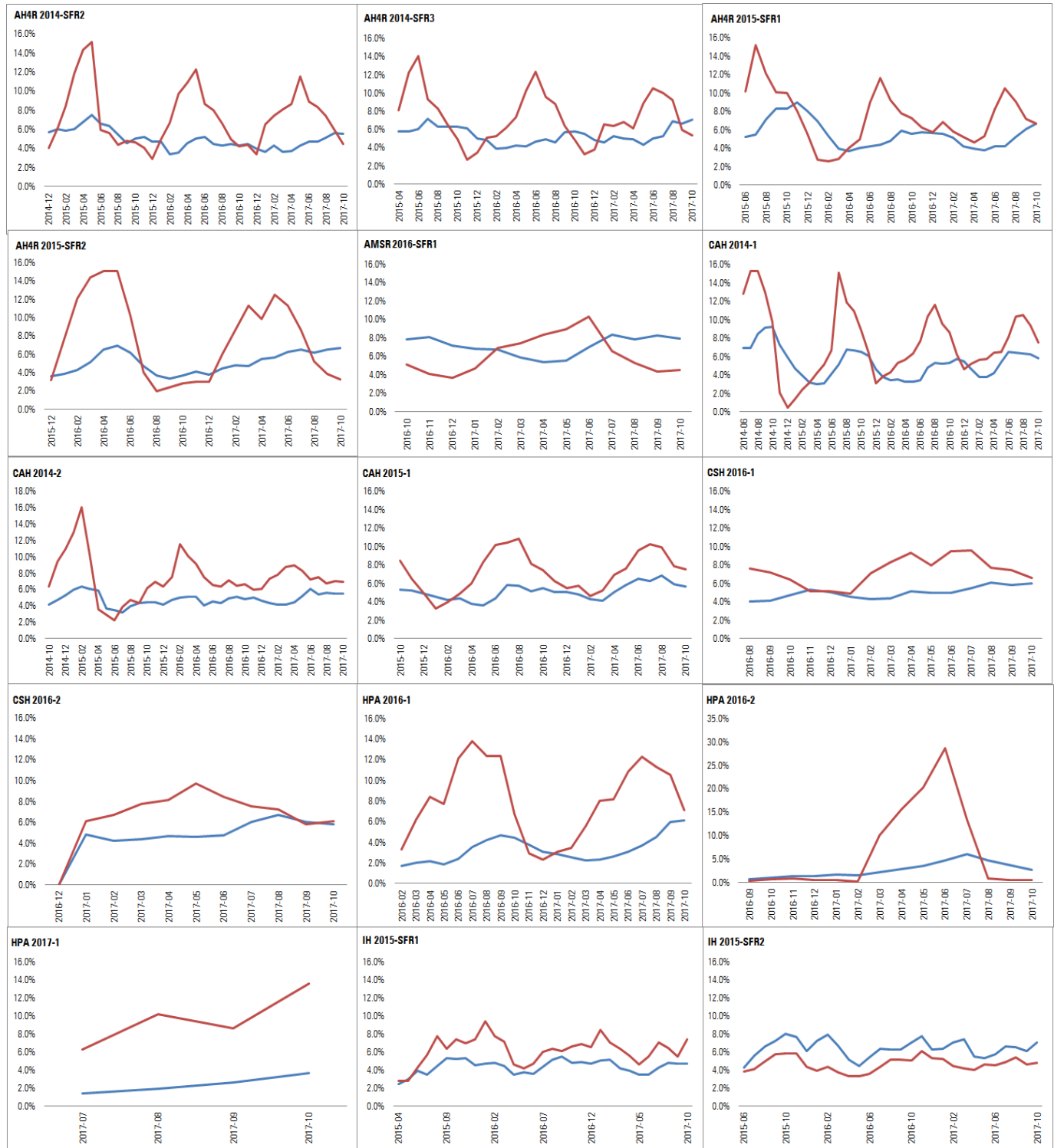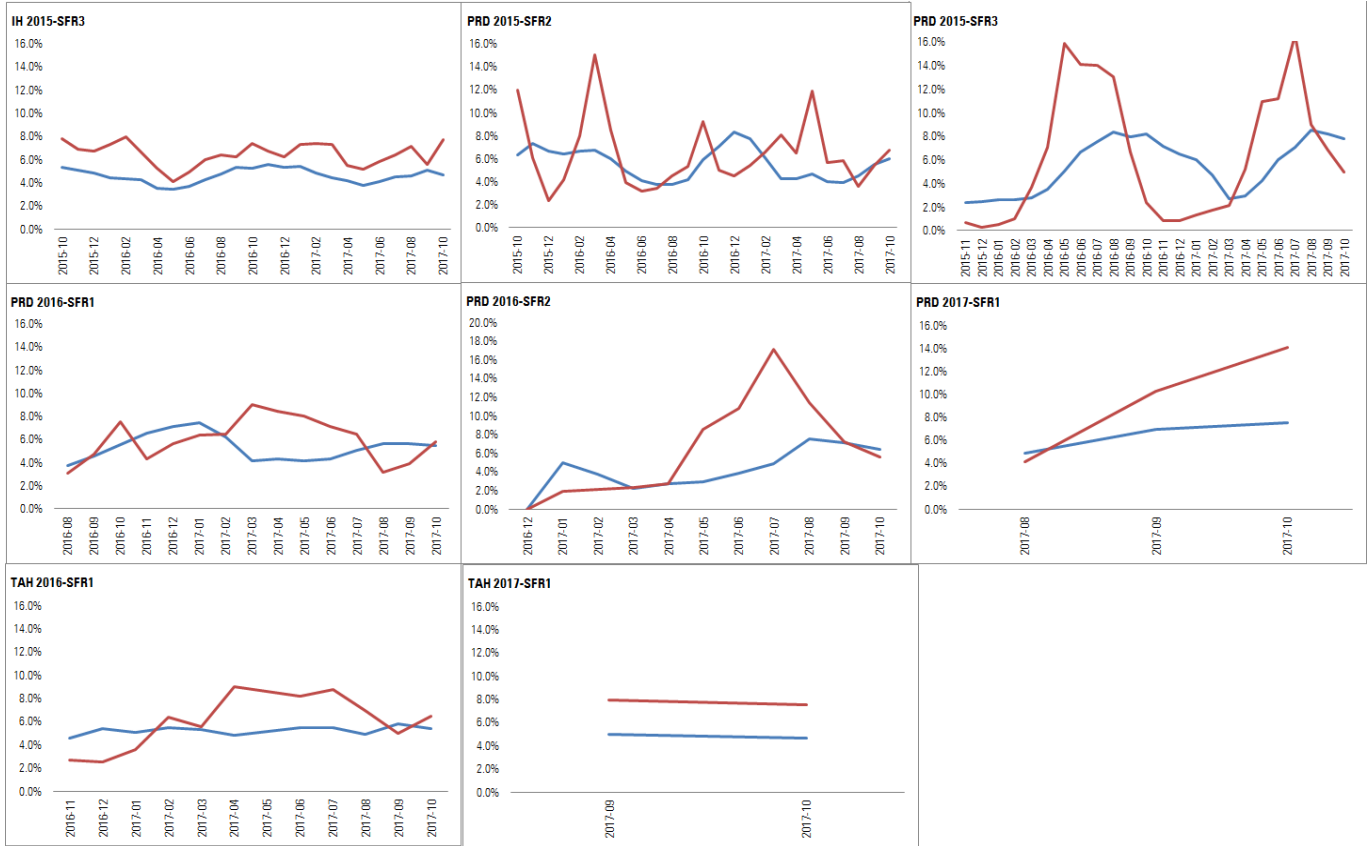
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Appendix II – Description of Analysis

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

Multiborrower deals are similar to single-borrower transactions in that the underlying collateral is generally single-family rental properties. They differ, though, in that single-borrower deals are backed by one loan, while multiborrower deals have many loans. B2R 2015-1 is secured by 136 loans; B2R 2015-2, 202 loans; B2R 2016-1, 161 loans; FKL 2015-SFR1, 16 loans; CAF 2015-1, 69 loans; CAF 2016-1, 85 loans; and CAF 2016-2, 71 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 6a and 6b 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.

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 section, Tables 3a, 3b, and 3c – Lease Expiration. 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 – October 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 October 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 1 – Blended Rent Change (by Percentage) – Top MSAs

Table 1 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 2a, 2b, and 2c – Month-End Vacancy

Table 2a displays deal-level vacancy by the month-end count of empty properties. Table 2b shows the deal-level vacancy as a percentage of the total properties in each pool. Table 2c 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 3a, 3b, and 3c 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 3a, 3b, and 3c – 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

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date. To determine October lease expirations, Morningstar looks for all October lease expirations in the August 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 7. In the current example, properties that become vacant or that have move out dates in either August or September are removed from the October lease expiration count.

Tables 4a and 4b – Historical Months of Vacancy

Tables 4a and 4b show the number of months of vacancy the October unoccupied properties have experienced. In other words, if a property is unoccupied as of the October 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 4a shows historical months of vacancy by count, and Table 4b is as a percentage of the October vacancies.

Table 5 – 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 5 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 6a and 6b – Month-End Delinquency

Table 6a shows the month-end count of delinquencies based on the definition in Table 5, and Table 6b 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 5.

Table 7 – 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 3a 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 7 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 October property tape to determine the lease status for June 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 8 – Monthly Retention Rate of MTM Leases

In Table 8, 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 September 2017 retention rates are the October statuses of September MTM tenants.

Tables 9a and 9b – MTM Tenants

In Tables 9a and 9b, 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.

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Table 10 – 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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