

Single-Family Rental Research

Performance Summary Covering All Morningstar-Rated Securitizations

September 2019

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Introduction

The blended rent change for single-borrower, single-family rental securitizations rated by Morningstar Credit Ratings, LLC (DBRS Morningstar) increased by 4.4% in August, down from a 4.8% increase in July. The average vacancy rate increased 20 basis points to 4.7% in August from 4.5% in July. The average retention rate for expiring leases increased to 78.5% in July, the latest month for which data is available, from a revised 77.2% in June. Among the top 20 metropolitan statistical areas, the Denver-Aurora MSA continued to have the highest vacancy rate at 8.9%, followed by the Fort Lauderdale MSA with a 6.4% vacancy rate. The Phoenix MSA experienced the highest blended rent growth at 7.3% and has been at or over 7.0% for the past eight months, followed by the Sacramento MSA at 7.0%. The Fort Lauderdale and Houston MSAs experienced the lowest blended rent growth at 2.1% and 2.2%, respectively. Rents for properties included in single-family rental securitizations are generally within 5.0% of the RentRange rents for properties located in the same MSAs with the exception of the Tampa MSA, which is approximately 6.6% less than the RentRange rents. With PRD 2015-SFR3 paying down and HPA 2019-1 starting to report its monthly property schedule from this month, the September Single-Family Rental Performance Summary has 23 single-borrower deals with close to 78,000 properties.

The September Single-Family Rental Performance Summary has added three tables, including a new Table 3, which reflects the difference between Contractual Rent average versus Property Level RentRange rent by Top MSAs, Table 7c showing the consecutive months of vacancy since the property was last occupied, and Table 7d, which shows the numbers in percentage format.

DBRS Morningstar publishes its performance summary to provide market participants detailed property-level information on each single-family rental securitization that DBRS Morningstar has rated. The data below summarizes issuer-reported property-level information through August. Page 6 includes a summary of the multiborrower transactions. For deals seasoned at least one year, we provide DBRS Morningstar Surveillance Analysis reports, available on our website, www.morningstarcreditratings.com.

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Single-Borrower Performance

Lease expirations declined to 7.6% in August, down from a revised 8.7% in July. PRD 2019-SFR2 had the highest lease expirations at 9.9%, followed by AH4R 2014-SFR3 at 9.6%. PRD 2018-SFR2 had the lowest percentage of lease expirations for seasoned transactions at 1.8%, while the newly added HPA 2019-1 had no reported expirations in August. The decrease in lease expirations on single-family rental properties continues to follow seasonal trends of increasing in the spring and summer months before starting to decline going into the fall season.

The average retention rate on full-term leases increased to 78.5% in July, the latest month for which data is available, from a revised 77.2% in June. The overall monthly turnover rate increased to 3.7% in July, the latest month available, from 3.5% in June, and is the highest it has been in the past year. The average delinquency rate increased to 0.7%. HPA 2019-1 and HPA 2018-1 transactions both reported a delinquency rate of 1.6%. Please note that any review of delinquency should be viewed within the context of the delinquency definitions in Table 8.

Chart 1 shows that the rent gains for securitized properties in August trailed rent gains for three- and four-bedroom properties; the RentRange rent change for three-bedroom properties was 5.9%, up from 5.7% in July, and the RentRange rent change for four-bedroom properties was 5.0%, up from 4.9% in July. 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 DBRS Morningstar database.

Chart 2 shows the rental change of renewals versus vacant-to-occupied properties. For July, the latest month for which data is available, the rent change for renewal properties increased by 4.5%, down from 4.7% in June. Rent growth for vacant-to-occupied properties increased by 4.1%. Chart 4 shows the MSA-level blended rent change. MSAs with rent changes above the 4.4% average are in blue, while those below are in red. The size of the circle indicates the percentage of properties by count from a given MSA in DBRS Morningstar's database. Table 4 exhibits the MSA-level blended rent change for the past 12 months.



Multiborrower Performance

In August, the number of loans decreased to 940. The number of loans 30-59 days delinquent increased to 21 from 19, the number of loans 60-89 days delinquent increased to seven from four, and loans at least 90 days delinquent decreased to 27 from 30. Loans in foreclosure decreased to seven, and loans in special servicing increased to 39 from 38.

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	2.40	0.52	0.09	0.02	0.00	1.57
FKL 2015-SFR1	0.00	0.00	0.00	0.00	0.00	0.00
CAF 2015-1	0.00	0.00	2.88	0.00	0.00	11.08
B2R 2015-2	0.38	0.40	2.10	0.86	0.00	2.35
CAF 2016-1	0.73	0.00	2.02	0.00	0.00	2.06
B2R 2016-1	0.65	0.91	2.48	0.78	0.00	2.74
CAF 2016-2	1.84	0.00	1.38	3.17	0.00	4.58
CAF 2017-1	4.32	0.00	1.01	0.00	0.38	5.73
CAF 2018-1	2.86	0.63	0.93	0.00	0.93	1.58
CAF 2018-2	1.29	0.69	0.84	0.00	0.00	0.84
CAF 2019-1	1.63	0.00	0.00	0.00	0.00	0.00

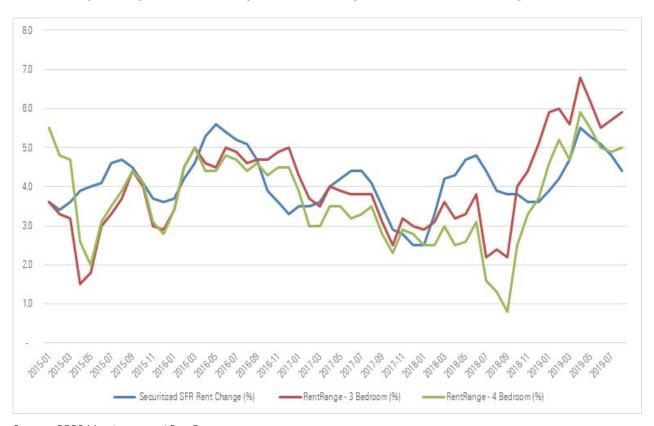
Table 2 - Multiborrower Loan Performance by Loan Count

		30-59	60-89	90+		Real Estate	Special
	Total Loans	Delinquent	Delinquent	Delinquent	Foreclosure	Owned	Servicing
B2R 2015-1	97	2	1	2	1	0	5
FKL 2015-SFR1	2	0	0	0	0	0	0
CAF 2015-1	36	0	0	2	0	0	3
B2R 2015-2	165	2	1	7	3	0	8
CAF 2016-1	60	1	0	1	0	0	1
B2R 2016-1	145	2	3	7	1	0	8
CAF 2016-2	57	2	0	2	2	0	4
CAF 2017-1	74	2	0	2	0	1	5
CAF 2018-1	115	4	1	2	0	2	3
CAF 2018-2	115	4	1	2	0	0	2
CAF 2019-1	74	2	0	0	0	0	0
Overall	940	21	7	27	7	3	39



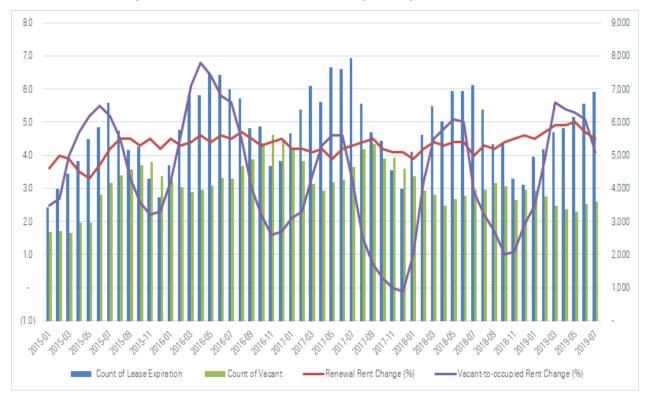
Single-Borrower Charts and Tables

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



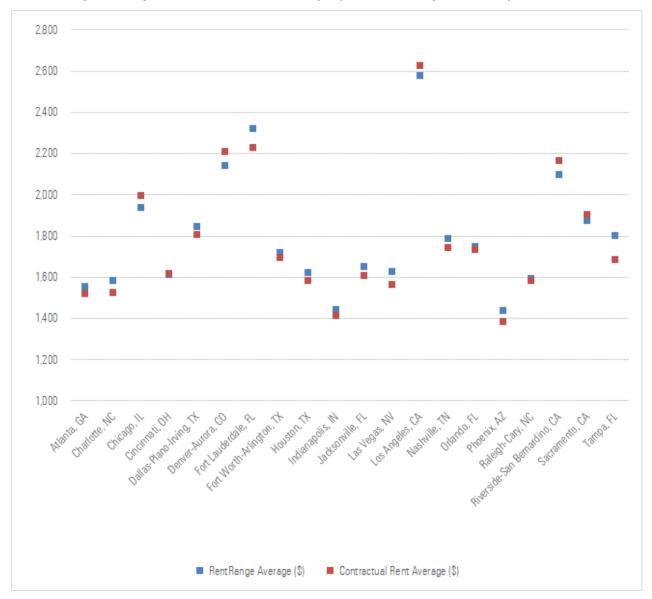
Sources: DBRS Morningstar and RentRange

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



Source: DBRS Morningstar

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

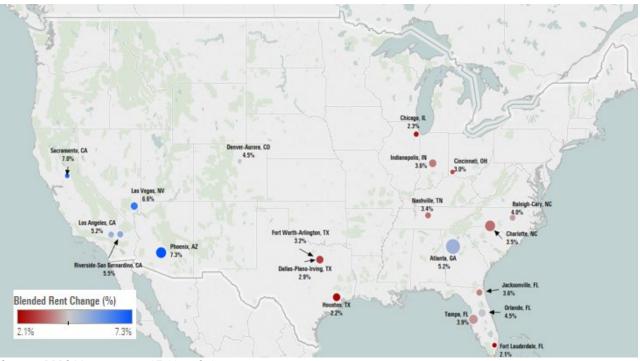


Sources: DBRS Morningstar and RentRange

Table 3 - Difference between Average Contractual Rent and Property-Level RentRange Rent (by Percentage) - Top MSAs

		Year 2018			Ye	ear 2019							
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Atlanta, GA	~	1.6	2.7	-0.3	0.2	1.3	2.0	1.6	1.6	-2.4	-3.3	-2.9	-2.2
Charlotte, NC	~	0.2	2.3	-0.1	0.3	0.6	1.6	1.2	0.9	-2.8	-4.4	-4.0	-3.7
Chicago, IL		10.2	10.1	11.3	10.7	13.7	11.2	11.3	12.0	4.3	2.5	2.7	3.0
Cincinnati, OH		8.3	8.4	10.0	11.8	12.4	14.8	13.2	10.6	2.6	2.2	4.5	0.1
Dallas-Plano-Irving, TX		0.9	0.8	0.3	0.2	0.0	0.4	0.5	0.8	-1.6	-2.7	-2.6	-2.3
Denver-Aurora, CO		34.3	3.8	3.5	2.1	2.0	2.1	2.2	2.7	2.7	1.3	2.0	3.1
Fort Lauderdale, FL		-6.1	0.4	-3.7	-3.3	-0.2	-0.2	0.0	0.2	-4.1	-4.9	-4.3	-4.0
Fort Worth-Arlington, TX		-0.3	1.7	1.0	1.2	0.9	1.5	1.3	1.5	-0.3	-1.5	-1.4	-1.3
Houston, TX		-1.2	-1.0	-1.7	-2.0	-3.7	-1.6	-1.6	-1.9	-2.2	-2.9	-2.8	-2.4
Indianapolis, IN		3.0	2.7	2.3	1.0	1.7	2.2	2.3	2.6	-0.6	-2.1	-1.8	-1.9
Jacksonville, FL	~~_	-2.1	1.6	-1.0	-0.4	1.2	1.4	1.1	1.0	-2.3	-3.4	-2.7	-2.8
Las Vegas, NV		-5.2	-0.4	-0.8	0.1	-1.1	-0.4	-0.8	-0.3	-3.4	-4.6	-4.0	-3.8
Los Angeles, CA		-20.7	1.9	0.8	0.8	1.9	1.7	1.8	2.0	1.4	0.2	1.0	1.8
Nashville, TN	~~_	-1.4	1.3	1.8	1.7	0.2	1.7	1.6	1.8	-0.6	-1.6	-1.4	-2.6
Orlando, FL		4.0	2.6	1.9	1.5	2.2	2.3	2.4	2.7	-0.7	-2.1	-1.5	-1.0
Phoenix, AZ		0.3	-0.7	-1.5	-1.7	-1.4	-1.0	-1.2	-1.0	-3.3	-4.9	-4.5	-3.8
Raleigh-Cary, NC		2.9	3.8	3.1	3.9	3.8	3.3	3.1	3.1	-0.1	-1.3	-1.1	-0.7
Riverside-San Bernardino, CA		15.3	5.4	5.2	5.0	5.6	5.9	6.6	6.7	2.7	2.0	2.7	3.4
Sacramento, CA	~	3.4	5.4	4.1	3.9	4.9	6.6	7.5	7.6	-0.3	0.2	0.6	1.5
Tampa, FL		0.6	2.7	1.3	1.2	1.9	2.3	1.9	1.8	-6.3	-7.4	-7.1	-6.6

Chart 4 - MSA-Level Blended Rent Change*



Sources: DBRS Morningstar and Tableau Software

^{*}The size of the circles represents the total percentage (by count) of properties in each MSA, ranging from 1.39% to 14.72%. Because of their proximity, the Fort Worth-Arlington, Texas, MSA is hidden behind the Dallas-Plano-Irving, Texas, MSA.

Table 4 - Blended Rent Change (by Percentage) - Top MSAs



		Year 2018			Ye	ar 2019							
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Atlanta, GA		4.1	4.4	4.5	4.6	4.1	4.1	4.7	6.0	6.3	6.3	5.1	5.2
Charlotte, NC		3.4	3.0	2.5	2.8	3.2	3.5	3.9	4.8	4.3	4.0	4.6	3.5
Chicago, IL		2.5	2.3	2.0	1.1	-1.8	0.7	2.7	3.1	3.3	3.5	3.6	2.3
Cincinnati, OH		2.5	2.6	3.1	1.9	2.9	4.4	3.4	3.5	3.9	4.9	3.3	3.0
Dallas-Plano-Irving, TX		4.7	3.5	1.8	2.0	2.5	3.2	3.7	4.2	4.1	3.2	3.1	2.9
Denver-Aurora, CO		2.5	2.4	2.2	2.8	3.6	3.8	4.3	6.9	5.6	4.9	5.1	4.5
Fort Lauderdale, FL	~~~	2.6	2.9	2.4	3.5	4.0	2.5	3.2	3.1	2.6	2.5	3.3	2.1
Fort Worth-Arlington, TX		3.9	2.2	2.4	2.7	3.3	3.8	4.7	4.5	4.2	4.8	4.1	3.2
Houston, TX		2.5	1.4	1.7	1.4	1.8	1.8	2.9	3.4	3.4	2.6	2.3	2.2
Indianapolis, IN		2.7	2.6	2.5	0.7	1.5	4.1	3.3	5.4	4.1	4.7	4.4	3.6
Jacksonville, FL		4.6	4.2	3.2	3.0	3.8	4.4	4.3	5.7	4.5	5.7	4.9	3.6
Las Vegas, NV		6.4	5.6	5.5	5.6	6.8	6.2	7.1	8.5	7.3	7.0	7.2	6.6
Los Angeles, CA		5.1	6.1	5.3	4.9	6.2	5.5	7.1	7.2	7.2	5.8	5.5	5.2
Nashville, TN	~~	3.6	3.1	1.7	2.4	3.4	3.1	3.6	4.1	4.2	3.8	3.8	3.4
Orlando, FL		4.7	4.9	5.0	4.6	4.8	4.9	5.8	5.7	6.1	5.6	5.5	4.5
Phoenix, AZ		6.0	5.9	5.4	5.9	7.0	7.2	7.4	8.2	8.6	7.9	8.1	7.3
Raleigh-Cary, NC		2.7	2.3	2.4	3.4	3.6	3.1	3.1	4.3	4.3	4.0	3.7	4.0
Riverside-San Bernardino, CA		4.6	5.1	5.5	4.5	5.7	5.5	6.6	7.0	7.4	6.6	5.8	5.5
Sacramento, CA		7.4	7.3	6.0	6.2	7.7	10.0	7.6	8.4	9.2	6.5	7.0	7.0
Tampa, FL		2.7	3.0	3.1	4.0	3.3	3.5	4.1	4.7	4.1	4.5	4.2	3.9

Table 5a - Month-End Vacancy (by Count)



		Year 2018			<u>Y</u>	/ear 2019								Count
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
AH4R 2014-SFR2		195	185	172	184	197	184	158	138	145	198	192	185	4,544
AH4R 2014-SFR3		247	249	252	239	230	202	169	171	144	152	189	201	4,587
AH4R 2015-SFR1		211	240	236	236	228	221	172	176	140	167	160	183	4,696
AH4R 2015-SFR2		190	214	191	187	173	147	143	157	149	174	169	180	4,175
HPA 2016-2		76	78	74	69	73	67	52	63	80	108	108	109	1,243
HPA 2017-1		84	93	94	92	95	88	75	69	56	59	69	81	1,295
HPA 2018-1		141	149	145	126	106	84	91	89	87	95	106	119	1,699
HPA 2019-1													8	1,187
IH 2017-SFR2		189	183	171	164	161	167	157	159	166	192	194	210	4,304
IH 2018-SFR1		210	188	187	192	196	192	207	198	200	226	255	292	4, 205
IH 2018-SFR2		231	233	269	241	233	219	228	237	200	255	261	249	5,373
IH 2018-SFR3			279	284	281	291	295	259	279	274	290	297	298	6,548
IH 2018-SFR4					253	271	290	260	272	280	328	330	340	5,314
PRD 2015-SFR3		182	158	132	141	134	118	104	109	129	161	150	149	3,144
PRD 2017-SFR1		102	121	130	131	129	117	105	93	101	96	107	124	2,707
PRD 2018-SFR1		107	123	132	115	85	53	42	50	56	67	62	82	2,111
PRD 2018-SFR2		38	50	56	99	116	110	87	82	97	86	62	60	2,116
PRD 2019-SFR2	_									106	102	113	119	2,459
SWH 2017-1		237	206	179	171	195	243	219	248	240	252	263	258	4,332
TAH 2016-SFR1		186	181	163	180	156	146	151	164	174	142	142	155	3,403
TAH 2017-SFR1		100	96	110	160	162	149	129	107	110	71	96	86	3,478
TAH 2017-SFR2		95	110	98	114	87	90	83	68	106	80	86	95	2,619
TAH 2018-SFR1		72	98	99	109	125	88	77	83	86	66	68	92	2,509
Overall SFR		2,893	3,234	3,174	3,484	3,443	3,270	2,968	3,012	3,126	3,367	3,479	3,675	78,048

Year 2019

Table 5b – Month-End Vacancy (by Percentage)



		Year 2018				Yea	r 2019							
			Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
AH4R 2014-SFR2			4.4	4.1	3.8	4.0	4.3	4.0	3.5	3.0	3.2	4.4	4.2	4.1
AH4R 2014-SFR3			5.5	5.5	5.5	5.2	5.0	4.4	3.7	3.7	3.1	3.3	4.1	4.4
AH4R 2015-SFR1			4.6	5.2	5.0	5.0	4.9	4.7	3.7	3.7	3.0	3.6	3.4	3.9
AH4R 2015-SFR2			4.6	5.2	4.6	4.5	4.1	3.5	3.4	3.8	3.6	4.2	4.0	4.3
HPA 2016-2			5.9	6.0	5.7	5.4	5.7	5.2	4.1	4.9	6.3	8.6	8.6	8.8
HPA 2017-1			6.3	7.0	7.1	6.9	7.2	6.6	5.7	5.3	4.3	4.5	5.3	6.3
HPA 2018-1			8.0	8.5	8.2	7.2	6.0	4.8	5.2	5.1	5.0	5.5	6.2	7.0
HPA 2019-1														0.7
IH 2017-SFR2			4.3	4.2	3.9	3.8	3.7	3.8	3.6	3.7	3.8	4.4	4.5	4.9
IH 2018-SFR1			4.9	4.4	4.4	4.5	4.6	4.5	4.9	4.7	4.7	5.4	6.1	6.9
IH 2018-SFR2			4.1	4.2	4.9	4.4	4.3	4.0	4.2	4.4	3.7	4.7	4.8	4.6
IH 2018-SFR3				4.2	4.3	4.2	4.4	4.5	3.9	4.2	4.2	4.4	4.5	4.6
IH 2018-SFR4						4.7	5.0	5.4	4.8	5.1	5.2	6.1	6.2	6.4
PRD 2015-SFR3			5.8	5.0	4.2	4.5	4.3	3.7	3.3	3.5	4.1	5.1	4.8	4.7
PRD 2017-SFR1			3.8	4.5	4.8	4.8	4.8	4.3	3.9	3.4	3.7	3.5	4.0	4.6
PRD 2018-SFR1			5.1	5.8	6.2	5.4	4.0	2.5	2.0	2.4	2.7	3.2	2.9	3.9
PRD 2018-SFR2			1.8	2.4	2.6	4.7	5.5	5.2	4.1	3.9	4.6	4.1	2.9	2.8
PRD 2019-SFR2											4.3	4.1	4.6	4.8
SWH 2017-1			5.4	4.7	4.1	3.9	4.4	5.5	5.0	5.7	5.5	5.8	6.1	6.0
TAH 2016-SFR1			5.4	5.3	4.7	5.2	4.5	4.3	4.4	4.8	5.1	4.2	4.2	4.6
TAH 2017-SFR1	-		2.9	2.8	3.2	4.6	4.7	4.3	3.7	3.1	3.2	2.0	2.8	2.5
TAH 2017-SFR2			3.6	4.2	3.7	4.4	3.3	3.4	3.2	2.6	4.0	3.1	3.3	3.6
TAH 2018-SFR1			2.9	3.9	3.9	4.3	5.0	3.5	3.1	3.3	3.4	2.6	2.7	3.7
Overall SFR			4.6	4.7	4.6	4.6	4.6	4.4	4.0	4.0	4.1	4.4	4.5	4.7

Table 5c - Month-End Vacancy (by Percentage) - Top MSAs



Vear 2019

	<u>Year 2018</u> <u>Year 2019</u>													
			Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Atlanta, GA			4.5	5.0	4.8	4.7	4.8	4.7	4.4	4.1	4.4	4.4	4.1	4.3
Charlotte, NC			4.9	5.1	4.2	4.5	4.3	4.3	4.2	4.7	4.7	4.1	4.5	4.8
Chicago, IL	~		5.3	6.0	5.7	5.6	4.1	3.7	3.0	2.4	2.3	3.5	4.2	4.3
Cincinneti, OH	~~~~		3.6	3.4	3.7	4.7	4.3	4.2	3.2	3.9	2.9	3.5	3.1	4.3
Dallas-Plano-Irving, TX			5.9	5.6	5.8	5.5	5.3	4.9	4.7	4.6	4.7	5.4	5.2	5.8
Denver-Aurora, CO			7.0	6.5	6.0	5.7	5.8	5.8	5.6	5.2	5.5	7.6	8.1	8.9
Fort Lauderdale, FL			4.4	4.5	3.9	4.9	6.1	5.2	5.8	6.5	7.2	6.4	7.0	6.4
Fort Worth-Arlington, TX			6.1	5.1	4.9	4.6	4.0	3.5	4.1	4.5	4.2	4.1	4.7	5.4
Houston, TX			6.8	6.6	6.8	6.5	6.4	5.8	5.2	5.4	4.2	4.7	4.9	4.9
Indianapolis, IN			5.9	5.4	6.0	5.8	5.0	5.1	3.8	3.3	3.4	3.5	3.4	4.0
Jacksonville, FL			4.5	4.7	4.7	4.5	4.4	4.5	3.7	4.3	3.9	4.5	4.5	3.8
Las Vegas, NV			3.7	3.5	3.2	2.8	3.4	3.5	3.1	2.6	3.0	3.3	4.0	4.6
Los Angeles, CA			5.0	4.9	4.7	4.5	4.0	4.2	4.4	4.1	4.7	5.1	5.5	4.8
Nashville, TN			5.3	5.4	4.6	4.5	5.0	4.2	4.1	4.1	4.7	4.4	4.3	4.4
Orlando, FL			3.4	3.4	3.9	4.1	4.4	4.5	4.3	3.4	3.6	3.8	4.0	5.0
Phoenix, AZ			3.6	2.7	2.9	3.1	2.9	2.8	2.7	2.7	2.8	3.3	3.4	3.8
Raleigh-Cary, NC			5.1	5.1	4.8	4.7	4.5	3.6	3.1	4.5	4.7	4.6	4.6	5.2
Riverside-San Bernardino, CA			4.3	4.3	3.8	2.8	3.9	4.5	4.6	4.9	5.2	4.9	4.6	5.2
Sacramento, CA	~~~		3.8	4.0	2.9	3.2	3.7	3.3	2.9	3.0	2.8	4.3	4.5	3.6
Tampa, FL			5.0	4.9	4.3	4.6	4.7	4.3	3.9	3.8	4.3	4.3	4.1	4.4



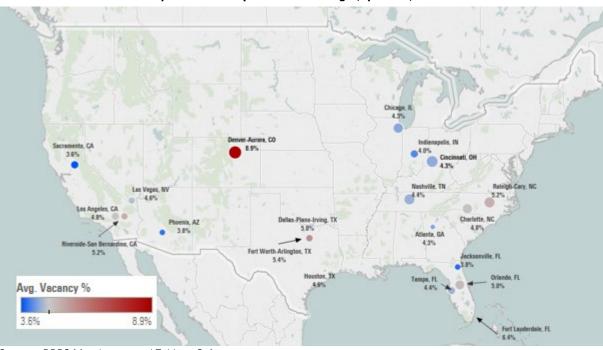


Chart 5 - MSA-Level Vacancy and Lease Expiration Percentage (by Count)*

Sources: DBRS Morningstar and Tableau Software

^{*}The size of the circles represents the past three months of lease expirations by count as a percentage of each MSA, ranging from 20.48% to 31.69%. Because of their proximity, the Fort Worth-Arlington, Texas, MSA is hidden behind the Dallas-Plano-Irving, Texas, MSA.

Table 6a – Lease Expiration (by Count)



		Year 2018			γ	ear 2019								Count
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
AH4R 2014-SFR2		265	215	200	172	245	306	345	405	491	459	445	415	4,544
AH4R 2014-SFR3		280	240	198	161	263	275	297	381	419	454	536	441	4,587
AH4R 2015-SFR1		279	276	252	231	341	359	391	298	352	406	425	416	4,696
AH4R 2015-SFR2		181	155	173	153	198	250	296	349	455	504	463	380	4, 175
HPA 2016-2		27	24	24	20	26	34	85	124	158	232	171	75	1,243
HPA 2017-1	~~	98	144	139	99	101	78	94	96	76	47	73	88	1,295
HPA 2018-1		172	122	73	71	69	71	105	113	133	171	186	145	1,699
HPA 2019-1													0	1,187
IH 2017-SFR2		235	243	197	183	218	256	275	273	302	372	377	338	4,304
IH 2018-SFR1		375	324	251	206	260	285	293	292	357	355	396	324	4,205
IH 2018-SFR2		330	346	306	276	320	353	395	338	335	342	384	355	5,373
IH 2018-SFR3			416	401	324	428	410	452	441	387	416	458	467	6,548
IH 2018-SFR4					250	292	363	345	379	457	514	526	430	5,314
PRD 2015-SFR3		224	223	140	149	126	142	139	203	214	282	359	259	3,144
PRD 2017-SFR1	~	203	310	232	231	179	152	146	147	122	154	215	158	2,707
PRD 2018-SFR1	\sim	249	423	379	85	21	29	56	81	67	88	165	170	2,111
PRD 2018-SFR2		6	7	8	279	345	258	160	181	220	202	78	38	2,116
PRD 2019-SFR2										147	202	259	243	2,459
SWH 2017-1		268	217	195	164	285	307	336	418	459	390	398	338	4,332
TAH 2016-SFR1		181	203	135	137	122	154	174	245	215	208	255	228	3,403
TAH 2017-SFR1	~~	209	244	168	162	225	229	263	192	191	195	205	243	3,478
TAH 2017-SFR2		145	156	111	113	155	153	182	135	174	170	170	201	2,619
TAH 2018-SFR1		150	172	112	119	151	125	156	135	137	148	144	188	2,509
Overall SFR		3,877	4,460	3,694	3,585	4,370	4,589	4,985	5,226	5,868	6,311	6,688	5,940	78,048

Total

Table 6b – Lease Expiration (by Percentage)



		Year 2018			Ye	ar 2019							
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
AH4R 2014-SFR2		5.9	4.8	4.4	3.8	5.4	6.7	7.6	8.9	10.8	10.1	9.8	9.1
AH4R 2014-SFR3		6.2	5.3	4.3	3.5	5.7	6.0	6.5	8.3	9.1	9.9	11.7	9.6
AH4R 2015-SFR1		6.0	6.0	5.4	4.9	7.3	7.6	8.3	6.3	7.5	8.6	9.0	8.9
AH4R 2015-SFR2		4.4	3.8	4.1	3.7	4.7	6.0	7.1	8.4	10.9	12.1	11.1	9.1
HPA 2016-2		2.1	1.9	1.9	1.6	2.0	2.7	6.6	9.7	12.5	18.5	13.7	6.0
HPA 2017-1	~~~	7.3	10.8	10.4	7.4	7.6	5.9	7.1	7.3	5.8	3.6	5.6	6.8
HPA 2018-1		9.7	6.9	4.1	4.0	3.9	4.0	6.0	6.5	7.7	9.9	10.9	8.5
HPA 2019-1													0.0
IH 2017-SFR2		5.3	5.6	4.5	4.2	5.0	5.9	6.3	6.3	7.0	8.6	8.7	7.9
IH 2018-SFR1		8.7	7.6	5.9	4.8	6.1	6.7	6.9	6.9	8.4	8.4	9.4	7.7
IH 2018-SFR2		5.9	6.3	5.6	5.0	5.9	6.5	7.3	6.2	6.2	6.3	7.1	6.6
IH 2018-SFR3			6.3	6.0	4.9	6.5	6.2	6.8	6.7	5.9	6.3	7.0	7.1
IH 2018-SFR4					4.6	5.4	6.7	6.4	7.1	8.5	9.6	9.9	8.1
PRD 2015-SFR3		7.1	7.1	4.4	4.7	4.0	4.5	4.4	6.4	6.8	9.0	11.4	8.2
PRD 2017-SFR1	^	7.5	11.4	8.6	8.5	6.6	5.6	5.4	5.4	4.5	5.7	7.9	5.8
PRD 2018-SFR1		11.8	20.0	17.9	4.0	1.0	1.4	2.7	3.8	3.2	4.2	7.8	8.1
PRD 2018-SFR2	\sim	0.3	0.3	0.4	13.2	16.3	12.2	7.6	8.6	10.4	9.5	3.7	1.8
PRD 2019-SFR2										6.0	8.2	10.5	9.9
SWH 2017-1		6.1	4.9	4.4	3.7	6.5	7.0	7.7	9.5	10.5	8.9	9.2	7.8
TAH 2016-SFR1	~~~	5.3	5.9	3.9	4.0	3.6	4.5	5.1	7.2	6.3	6.1	7.5	6.7
TAH 2017-SFR1	~~	6.0	7.0	4.8	4.7	6.5	6.6	7.6	5.5	5.5	5.6	5.9	7.0
TAH 2017-SFR2		5.5	6.0	4.2	4.3	5.9	5.8	6.9	5.2	6.6	6.5	6.5	7.7
TAH 2018-SFR1	~	6.0	6.9	4.5	4.7	6.0	5.0	6.2	5.4	5.5	5.9	5.7	7.5
Overall SFR		6.2	6.4	5.3	4.8	5.8	6.1	6.7	7.0	7.6	8.2	8.7	7.6

Table 6c - Lease Expiration (by Percentage) - Top MSAs



		Year 2018			Ye	ar 2019							
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Atlanta, GA		6.2	6.4	5.0	4.8	5.5	5.8	6.4	7.4	6.9	7.7	7.3	7.0
Charlotte, NC		6.2	6.2	4.7	4.0	5.2	5.2	6.2	7.5	7.8	8.5	10.0	9.0
Chicago, IL		7.6	3.7	3.1	3.9	5.3	5.5	7.5	10.1	11.1	10.6	8.6	7.9
Cincinnati, OH		4.7	5.3	5.3	2.6	7.4	6.0	7.8	9.2	8.8	8.5	10.5	10.5
Dallas-Plano-Irving, TX	~~~	5.7	6.8	5.4	5.0	5.3	6.8	6.3	7.0	7.3	8.3	8.5	7.0
Denver-Aurora, CO	~~	7.3	6.3	4.8	4.5	7.9	5.6	5.7	5.8	7.9	11.9	11.0	8.8
Fort Lauderdale, FL	~~~	5.1	6.5	5.1	5.5	8.0	5.8	6.1	8.1	6.0	6.4	7.0	7.0
Fort Worth-Arlington, TX		6.3	5.8	5.3	5.5	5.6	5.8	7.3	7.2	8.1	7.6	8.5	7.3
Houston, TX		6.2	5.7	5.8	5.0	5.4	6.7	6.9	7.0	6.0	6.4	8.4	6.0
Indianapolis, IN		6.0	6.3	4.6	3.9	5.6	5.5	6.5	8.5	10.1	8.2	9.4	7.5
Jacksonville, FL	~	5.6	6.6	6.0	5.3	5.8	5.7	6.4	6.9	8.5	8.3	8.2	6.7
Las Vegas, NV	~~	7.1	7.9	5.0	5.0	5.8	8.8	7.0	6.1	6.6	7.6	7.4	8.6
Los Angeles, CA		6.7	6.2	5.0	3.5	4.6	5.2	6.8	5.4	9.6	8.4	8.7	7.7
Nashville, TN	~	4.8	6.5	4.1	5.2	6.1	5.6	6.0	8.0	8.5	9.8	10.5	7.3
Orlando, FL	~~	6.0	6.6	5.6	4.9	5.9	5.6	6.0	6.4	7.6	8.5	9.4	8.6
Phoenix, AZ		5.9	6.2	5.9	5.5	6.6	7.2	7.1	7.4	7.2	7.4	7.9	7.5
Raleigh-Cary, NC		6.3	6.6	7.3	5.1	4.9	5.5	5.4	8.0	9.0	10.0	10.1	8.3
Riverside-San Bernardino, CA	\\\\	8.2	6.5	6.1	3.9	6.4	5.3	6.5	7.8	8.5	7.1	9.3	7.1
Sacramento, CA		6.9	5.0	4.7	3.4	5.0	6.6	7.1	6.3	7.0	7.8	8.5	8.3
Tampa, FL		6.4	7.4	5.5	5.2	6.0	5.7	6.6	6.4	6.5	8.2	8.1	8.0

Table 7a – Historical Total Months of Vacancy for August Vacancies (by Count)

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		43	37	38	25	18	9	6	1	3	3	1	1	185
AH4R 2014-SFR3		40	47	26	24	19	15	11	8	7	3	0	1	201
AH4R 2015-SFR1		36	44	26	28	22	16	2	3	1	3	0	2	183
AH4R 2015-SFR2		35	34	35	27	23	12	5	4	1	1	1	2	180
HPA 2016-2		4	37	22	18	16	4	3	3	0	0	0	2	109
HPA 2017-1		22	23	13	11	2	3	2	4	1	0	0	0	81
HPA 2018-1		51	32	20	8	1	5	1	0	0	0	0	1	119
HPA 2019-1		6	2											8
IH 2017-SFR2	h	85	51	38	17	8	3	2	1	2	1	0	2	210
IH 2018-SFR1	lu	91	62	62	27	13	11	7	7	3	4	0	5	292
IH 2018-SFR2	lu	105	72	40	12	5	9	3	1	0	0	1	1	249
IH 2018-SFR3	lı	136	73	30	16	16	9	4	4	1	2	6	1	298
IH 2018-SFR4	11	140	110	32	23	8	8	9	2	6	2			340
PRD 2015-SFR3		39	37	24	18	8	10	1	4	5	0	2	1	149
PRD 2017-SFR1		52	31	19	15	6	0	0	0	0	0	1	0	124
PRD 2018-SFR1		51	23	6	0	2	0	0	0	0	0	0	0	82
PRD 2018-SFR2		32	15	9	3	0	0	0	0	0	0	1	0	60
PRD 2019-SFR2	l	76	23	11	7	2								119
SWH 2017-1		58	65	54	36	17	10	10	3	2	1	0	2	258
TAH 2016-SFR1		33	39	34	14	14	11	6	2	0	1	1	0	155
TAH 2017-SFR1		34	31	7	7	3	2	0	0	0	0	0	2	86
TAH 2017-SFR2		39	27	10	12	2	0	1	2	0	0	2	0	95
TAH 2018-SFR1		35	29	15	6	1	1	1	0	0	2	1	1	92
Overall SFR	li	1,243	944	571	354	206	138	74	49	32	23	17	24	3,675

Table 7b – Historical Total Months of Vacancy for August Vacancies (by Percentage)

Г	47
	7

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2		23.2	20.0	20.5	13.5	9.7	4.9	3.2	0.5	1.6	1.6	0.5	0.5	100.0
AH4R 2014-SFR3	Шин	19.9	23.4	12.9	11.9	9.5	7.5	5.5	4.0	3.5	1.5	0.0	0.5	100.0
AH4R 2015-SFR1		19.7	24.0	14.2	15.3	12.0	8.7	1.1	1.6	0.5	1.6	0.0	1.1	100.0
AH4R 2015-SFR2		19.4	18.9	19.4	15.0	12.8	6.7	2.8	2.2	0.6	0.6	0.6	1.1	100.0
HPA 2016-2	Jun	3.7	33.9	20.2	16.5	14.7	3.7	2.8	2.8	0.0	0.0	0.0	1.8	100.0
HPA 2017-1		27.2	28.4	16.0	13.6	2.5	3.7	2.5	4.9	1.2	0.0	0.0	0.0	100.0
HPA 2018-1	li	42.9	26.9	16.8	6.7	0.8	4.2	0.8	0.0	0.0	0.0	0.0	0.8	100.0
HPA 2019-1	L	75.0	25.0											100.0
IH 2017-SFR2	l	40.5	24.3	18.1	8.1	3.8	1.4	1.0	0.5	1.0	0.5	0.0	1.0	100.0
IH 2018-SFR1	l	31.2	21.2	21.2	9.2	4.5	3.8	2.4	2.4	1.0	1.4	0.0	1.7	100.0
IH 2018-SFR2	li	42.2	28.9	16.1	4.8	2.0	3.6	1.2	0.4	0.0	0.0	0.4	0.4	100.0
IH 2018-SFR3	h	45.6	24.5	10.1	5.4	5.4	3.0	1.3	1.3	0.3	0.7	2.0	0.3	100.0
IH 2018-SFR4	ш	41.2	32.4	9.4	6.8	2.4	2.4	2.6	0.6	1.8	0.6			100.0
PRD 2015-SFR3	Ш	26.2	24.8	16.1	12.1	5.4	6.7	0.7	2.7	3.4	0.0	1.3	0.7	100.0
PRD 2017-SFR1	lin.	41.9	25.0	15.3	12.1	4.8	0.0	0.0	0.0	0.0	0.0	0.8	0.0	100.0
PRD 2018-SFR1	h	62.2	28.0	7.3	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
PRD 2018-SFR2	In.	53.3	25.0	15.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	100.0
PRD 2019-SFR2	l	63.9	19.3	9.2	5.9	1.7								100.0
SWH 2017-1		22.5	25.2	20.9	14.0	6.6	3.9	3.9	1.2	0.8	0.4	0.0	0.8	100.0
TAH 2016-SFR1		21.3	25.2	21.9	9.0	9.0	7.1	3.9	1.3	0.0	0.6	0.6	0.0	100.0
TAH 2017-SFR1	ш	39.5	36.0	8.1	8.1	3.5	2.3	0.0	0.0	0.0	0.0	0.0	2.3	100.0
TAH 2017-SFR2	h	41.1	28.4	10.5	12.6	2.1	0.0	1.1	2.1	0.0	0.0	2.1	0.0	100.0
TAH 2018-SFR1		38.0	31.5	16.3	6.5	1.1	1.1	1.1	0.0	0.0	2.2	1.1	1.1	100.0
Overall SFR		33.8	25.7	15.5	9.6	5.6	3.8	2.0	1.3	0.9	0.6	0.5	0.7	100.0

Table 7c – Consecutive Months of Vacancy for August Vacancies (by Count)

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2	L	116	48	16	1	1	0	0	2	0	0	0	1	185
AH4R 2014-SFR3	h	122	55	14	8	1	0	0	0	0	0	0	1	201
AH4R 2015-SFR1	h.	118	53	12										183
AH4R 2015-SFR2	L	112	49	13	3	0	1	0	0	0	0	1	1	180
HPA 2016-2		38	39	22	6	2	1	0	0	0	0	1		109
HPA 2017-1		36	24	9	6	3	2	0	1	0				81
HPA 2018-1	L	66	27	17	4	2	2	0	0	0	0	0	1	119
HPA 2019-1		8												8
IH 2017-SFR2	h	120	51	21	6	3	1	2	1	2	1	0	2	210
IH 2018-SFR1	l	140	56	37	20	13	5	7	3	2	4	0	5	292
IH 2018-SFR2	h	133	69	20	10	6	6	2	1	0	0	1	1	249
IH 2018-SFR3	lı	154	66	26	12	13	9	4	4	2	1	7		298
IH 2018-SFR4	lı	152	103	32	20	6	8	9	3	7				340
PRD 2015-SFR3	L	93	38	11	4	1	2							149
PRD 2017-SFR1	l	89	23	6	4	1	0	0	0	0	0	1		124
PRD 2018-SFR1		66	15	0	0	1								82
PRD 2018-SFR2		37	15	5	2	0	0	0	0	0	0	1		60
PRD 2019-SFR2	I	78	22	10	9									119
SWH 2017-1	h	118	64	29	19	9	8	7	2	0	0	0	2	258
TAH 2016-SFR1	h	79	53	6	6	4	5	1	1	0	0	0		155
TAH 2017-SFR1		50	27	5	2	0	0	0	0	0	0	0	2	86
TAH 2017-SFR2		51	28	3	9	0	0	1	1	0	0	2		95
TAH 2018-SFR1		54	24	5	5	0	1	0	0	0	1	1	1	92
Overall SFR	L	2,030	949	319	156	66	51	33	19	13	7	15	17	3,675

Table 7d – Consecutive Months of Vacancy for August Vacancies (by Percentage)

		1	2	3	4	5	6	7	8	9	10	11	12+	Total
AH4R 2014-SFR2	h	62.7	25.9	8.6	0.5	0.5	0.0	0.0	1.1	0.0	0.0	0.0	0.5	100.0
AH4R 2014-SFR3	h	60.7	27.4	7.0	4.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	100.0
AH4R 2015-SFR1	h.	64.5	29.0	6.6										100.0
AH4R 2015-SFR2	h	62.2	27.2	7.2	1.7	0.0	0.6	0.0	0.0	0.0	0.0	0.6	0.6	100.0
HPA 2016-2	Ш	34.9	35.8	20.2	5.5	1.8	0.9	0.0	0.0	0.0	0.0	0.9		100.0
HPA 2017-1	h	44.4	29.6	11.1	7.4	3.7	2.5	0.0	1.2	0.0				100.0
HPA 2018-1	l	55.5	22.7	14.3	3.4	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.8	100.0
HPA 2019-1		100.0												100.0
IH 2017-SFR2	h	57.1	24.3	10.0	2.9	1.4	0.5	1.0	0.5	1.0	0.5	0.0	1.0	100.0
IH 2018-SFR1	l	47.9	19.2	12.7	6.8	4.5	1.7	2.4	1.0	0.7	1.4	0.0	1.7	100.0
IH 2018-SFR2	h	53.4	27.7	8.0	4.0	2.4	2.4	0.8	0.4	0.0	0.0	0.4	0.4	100.0
IH 2018-SFR3	h	51.7	22.1	8.7	4.0	4.4	3.0	1.3	1.3	0.7	0.3	2.3		100.0
IH 2018-SFR4	h	44.7	30.3	9.4	5.9	1.8	2.4	2.6	0.9	2.1				100.0
PRD 2015-SFR3	h	62.4	25.5	7.4	2.7	0.7	1.3							100.0
PRD 2017-SFR1	L	71.8	18.5	4.8	3.2	0.8	0.0	0.0	0.0	0.0	0.0	0.8		100.0
PRD 2018-SFR1	L	80.5	18.3	0.0	0.0	1.2								100.0
PRD 2018-SFR2	l	61.7	25.0	8.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	1.7		100.0
PRD 2019-SFR2	l	65.5	18.5	8.4	7.6									100.0
SWH 2017-1		45.7	24.8	11.2	7.4	3.5	3.1	2.7	0.8	0.0	0.0	0.0	0.8	100.0
TAH 2016-SFR1	lı	51.0	34.2	3.9	3.9	2.6	3.2	0.6	0.6	0.0	0.0	0.0		100.0
TAH 2017-SFR1	h	58.1	31.4	5.8	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	100.0
TAH 2017-SFR2	h	53.7	29.5	3.2	9.5	0.0	0.0	1.1	1.1	0.0	0.0	2.1		100.0
TAH 2018-SFR1		58.7	26.1	5.4	5.4	0.0	1.1	0.0	0.0	0.0	1.1	1.1	1.1	100.0
Overall SFR	11	33.8	25.7	15.5	9.6	5.6	3.8	2.0	1.3	0.9	0.6	0.5	0.7	100.0



Table 8 – Delinquency Definition



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

¹Includes Section 8 rent, pet fees, and MTM fees, but excludes late fees and damage fees.

² Based on total receivables.

Table 9a – Month-End Delinquency (by Count)



		Year 2018			γ	ear 2019								Count
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
AH4R 2014-SFR2		16	16	21	22	18	17	18	8	17	26	21	19	4,544
AH4R 2014-SFR3	~	12	13	7	15	13	8	9	8	11	15	19	16	4,587
AH4R 2015-SFR1		17	14	17	26	21	25	16	13	13	21	22	23	4,696
AH4R 2015-SFR2		9	11	13	12	15	23	15	8	9	18	25	26	4, 175
HPA 2016-2		22	22	16	18	15	11	11	12	16	10	10	15	1,243
HPA 2017-1		22	22	21	20	20	14	11	12	11	16	19	18	1,295
HPA 2018-1	~~~	25	28	17	24	23	22	10	19	19	18	21	28	1,699
HPA 2019-1													19	1, 187
IH 2017-SFR2	<u> </u>	35	30	40	65	52	23	31	40	42	30	31	38	4,304
IH 2018-SFR1		20	20	41	65	22	28	22	17	21	26	31	26	4, 205
IH 2018-SFR2		50	53	48	92	58	61	44	37	48	45	41	41	5,373
IH 2018-SFR3	^		67	87	134	70	48	73	59	65	62	66	69	6,548
IH 2018-SFR4					65	42	38	33	28	28	39	33	36	5,314
PRD 2015-SFR3	~~	21	25	25	19	16	36	27	21	22	18	20	23	3, 144
PRD 2017-SFR1		12	17	22	18	23	19	11	16	12	14	17	19	2,707
PRD 2018-SFR1		9	9	7	4	10	13	15	10	16	14	19	14	2,111
PRD 2018-SFR2	~~~	0	17	15	7	10	14	10	12	9	16	23	29	2,116
PRD 2019-SFR2										12	19	16	20	2,459
SWH 2017-1		36	34	29	87	29	20	20	14	19	19	15	20	4,332
TAH 2016-SFR1	W/V	15	6	7	1	18	1	3	7	14	2	9	13	3,403
TAH 2017-SFR1	~\\\	11	8	9	0	9	1	2	6	14	0	7	2	3,478
TAH 2017-SFR2	~~~	4	2	5	2	11	1	3	6	9	0	4	5	2,619
TAH 2018-SFR1	\\\\	6	1	7	0	8	0	6	4	7	1	3	3	2,509
Overall SFR		342	415	454	696	503	423	390	357	434	429	472	522	78,048

Table 9b – Month-End Delinquency (by Percentage)



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



Table 10 - Monthly Retention Rate of Expiring Leases (by Percentage)

		Year 2018			Ye	ar 2019							
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
AH4R 2014-SFR2		77.7	74.9	79.0	69.8	82.9	78.4	83.5	82.2	74.7	73.9	75.7	TBD
AH4R 2014-SFR3		75.4	72.1	71.7	78.3	78.7	79.3	76.4	77.7	76.8	76.2	74.1	TBD
AH4R 2015-SFR1	<u></u>	78.9	71.0	81.3	79.7	78.0	79.4	79.8	78.5	75.0	70.0	73.2	TBD
AH4R 2015-SFR2	~~	68.5	79.4	76.3	68.0	80.8	78.8	74.0	76.8	75.4	75.6	72.8	TBD
HPA 2016-2		77.8	66.7	75.0	80.0	73.1	82.4	80.0	77.4	75.3	73.7	78.4	TBD
HPA 2017-1		89.8	84.7	79.1	83.8	84.2	82.1	76.6	76.0	75.0	80.9	71.2	TBD
HPA 2018-1		75.0	82.0	79.5	85.9	79.7	77.5	80.0	78.8	75.9	73.1	74.7	TBD
HPA 2019-1													TBD
IH 2017-SFR2		81.7	76.5	81.7	88.5	81.2	80.9	86.5	78.8	76.8	79.0	80.9	TBD
IH 2018-SFR1	~~~	82.1	84.6	78.9	81.6	84.2	78.6	80.5	83.9	82.9	80.0	84.6	TBD
IH 2018-SFR2		79.4	80.1	77.5	83.7	80.6	78.2	75.9	78.1	78.8	77.5	78.9	TBD
IH 2018-SFR3			78.6	81.5	80.9	78.5	78.3	80.8	75.3	76.0	74.8	79.9	TBD
IH 2018-SFR4	~				78.0	83.6	81.8	77.7	80.5	78.1	75.3	78.1	TBD
PRD 2015-SFR3	~~~	75.4	76.7	71.4	70.5	71.4	75.4	81.3	76.8	72.9	76.6	76.3	TBD
PRD 2017-SFR1		74.9	74.8	78.4	77.1	79.3	71.1	72.6	73.5	73.8	79.2	77.7	TBD
PRD 2018-SFR1	~~~	80.7	78.5	74.4	76.5	81.0	72.4	73.2	80.2	77.6	71.6	78.8	TBD
PRD 2018-SFR2	~	83.3	100.0	50.0	78.5	81.7	76.4	80.6	76.8	78.6	81.2	74.4	TBD
PRD 2019-SFR2										76.9	79.2	78.8	TBD
SWH 2017-1		79.1	80.2	76.9	81.7	82.1	74.9	80.4	78.0	80.0	74.4	78.6	TBD
TAH 2016-SFR1		85.1	83.7	78.5	81.8	85.2	87.7	83.9	80.8	83.7	87.0	84.3	TBD
TAH 2017-SFR1		82.3	82.8	82.1	78.4	79.6	81.7	87.1	87.5	84.3	91.8	84.9	TBD
TAH 2017-SFR2		80.7	85.9	81.1	81.4	83.9	85.6	87.9	87.4	88.5	86.5	92.4	TBD
TAH 2018-SFR1		78.0	82.6	83.9	82.4	79.5	93.6	87.8	83.7	90.5	85.1	89.6	TBD
Overall SFR		78.9	78.9	78.3	79.3	80.7	79.4	80.4	79.2	78.2	77.2	78.5	TBD

TBD - To Be Determined









		Year 2018			Y	ear 2019							
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
AH4R 2014-SFR2		82.6	85.8	85.6	86.1	85.9	89.1	86.8	83.2	78.2	82.3	82.7	TBD
AH4R 2014-SFR3		82.5	82.7	88.1	92.0	92.7	88.5	85.1	86.7	83.8	80.4	85.6	TBD
AH4R 2015-SFR1		80.1	85.6	80.9	84.1	91.6	88.2	80.9	87.9	78.5	83.3	81.0	TBD
AH4R 2015-SFR2		81.5	81.7	78.9	83.3	88.3	84.9	84.2	83.0	83.9	79.8	74.4	TBD
HPA 2016-2													TBD
HPA 2017-1													TBD
HPA 2018-1													TBD
HPA 2019-1													TBD
IH 2017-SFR2		74.7	88.2	76.8	85.7	89.8	88.5	86.4	80.0	77.6	74.5	80.0	TBD
IH 2018-SFR1		86.2	86.4	83.6	86.6	88.9	81.4	85.2	89.1	80.3	81.2	81.2	TBD
IH 2018-SFR2	~~~	90.7	84.3	94.0	87.5	83.5	89.5	83.7	82.5	81.3	78.8	83.0	TBD
IH 2018-SFR3			86.8	87.3	81.9	84.2	82.6	82.6	87.4	81.6	82.0	80.5	TBD
IH 2018-SFR4					82.1	87.2	89.8	86.2	78.0	82.6	82.1	74.5	TBD
PRD 2015-SFR3		70.5	80.6	67.6	80.0	84.0	75.9	74.2	78.6	75.0	82.6	58.6	TBD
PRD 2017-SFR1		88.6	72.7	92.1	80.5	83.3	71.8	90.6	84.8	90.3	72.7	80.6	TBD
PRD 2018-SFR1		56.3	76.0	66.7	66.7	78.9	85.7	69.2	77.8	71.4	55.6	80.0	TBD
PRD 2018-SFR2		100.0	100.0	88.9	100.0	64.3	71.4	76.7	67.9	80.0	73.1	95.5	TBD
PRD 2019-SFR2	_									66.7	63.2	82.4	TBD
SWH 2017-1		87.5	84.1	78.3	74.1	85.5	87.2	78.3	80.9	76.6	69.0	76.2	TBD
TAH 2016-SFR1		91.8	95.7	93.2	95.3	92.8	95.9	92.5	91.6	97.4	89.5	90.5	TBD
TAH 2017-SFR1		91.6	93.1	84.8	88.9	93.2	87.3	89.9	90.0	95.6	83.8	95.5	TBD
TAH 2017-SFR2		88.0	96.0	86.4	87.8	94.3	90.8	89.7	70.9	95.2	90.8	89.5	TBD
TAH 2018-SFR1		89.2	91.3	97.4	81.2	93.7	90.9	90.0	76.5	96.8	91.3	92.6	TBD
Overall SFR		84.7	87.4	85.7	86.0	89.0	87.6	85.6	83.8	83.7	81.5	82.5	TBD

TBD - To Be Determined



Table 12a – MTM Tenants (by Count)



	Year 2018			Y	ear 2019								Count
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
AH4R 2014-SFR2	185	172	157	164	152	163	174	190	218	212	204	195	4,544
AH4R 2014-SFR3	203	185	168	155	159	172	192	189	209	231	218	212	4,587
AH4R 2015-SFR1	176	167	160	148	145	174	203	213	214	213	213	210	4,696
AH4R 2015-SFR2	163	151	141	141	125	146	169	179	197	233	237	202	4,175
HPA 2016-2	0	0	0	0	0	0	0	0	0	0	0	0	1,243
HPA 2017-1	0	0	0	0	0	0	0	0	0	0	0	0	1,295
HPA 2018-1	0	0	0	0	0	0	0	0	0	0	0	0	1,699
HPA 2019-1												0	1,187
IH 2017-SFR2	84	68	69	63	59	61	119	140	136	146	134	134	4,304
IH 2018-SFR1	65	66	67	67	63	86	85	89	118	125	122	117	4,205
IH 2018-SFR2	76	89	84	96	85	86	148	158	169	158	126	124	5,373
IH 2018-SFR3		115	118	116	101	109	179	193	202	190	167	166	6,548
IH 2018-SFR4				84	86	108	129	131	147	169	145	129	5,314
PRD 2015-SFR3	61	53	48	40	43	43	42	45	48	51	55	46	3,144
PRD 2017-SFR1	 58	68	57	54	52	54	46	50	41	50	43	43	2,707
PRD 2018-SFR1	40	59	74	38	21	18	17	14	15	11	21	26	2,111
PRD 2018-SFR2	11	9	9	23	43	53	41	45	41	39	28	25	2,116
PRD 2019-SFR2									32	31	33	36	2,459
SWH 2017-1	 72	69	60	54	55	86	71	86	114	115	111	95	4,332
TAH 2016-SFR1	232	233	232	205	194	179	184	187	168	182	173	162	3,403
TAH 2017-SFR1	107	118	111	100	83	81	92	98	81	92	76	73	3,478
TAH 2017-SFR2	 116	108	112	101	95	91	92	95	68	92	87	84	2,619
TAH 2018-SFR1	95	89	88	90	88	85	88	92	64	78	70	75	2,509
Overall SFR	1,744	1,819	1,755	1,739	1,649	1,795	2,071	2,194	2,282	2,418	2,263	2,154	78,048

Total

Year 2019

Table 12b - MTM Tenants (by Percentage)



	Year 2018			Y	ear 2019	2019						
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
AH4R 2014-SFR2	4.1	3.8	3.5	3.6	3.3	3.6	3.8	4.2	4.8	4.7	4.5	4.3
AH4R 2014-SFR3	4.5	4.1	3.7	3.4	3.5	3.7	4.2	4.1	4.6	5.0	4.8	4.6
AH4R 2015-SFR1	3.8	3.6	3.4	3.2	3.1	3.7	4.3	4.5	4.6	4.5	4.5	4.5
AH4R 2015-SFR2	4.0	3.7	3.4	3.4	3.0	3.5	4.0	4.3	4.7	5.6	5.7	4.8
HPA 2016-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HPA 2017-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HPA 2018-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HPA 2019-1												0.0
IH 2017-SFR2	1.9	1.6	1.6	1.4	1.4	1.4	2.7	3.2	3.1	3.4	3.1	3.1
IH 2018-SFR1	1.5	1.5	1.6	1.6	1.5	2.0	2.0	2.1	2.8	3.0	2.9	2.8
IH 2018-SFR2	1.4	1.6	1.5	1.8	1.6	1.6	2.7	2.9	3.1	2.9	2.3	2.3
IH 2018-SFR3		1.7	1.8	1.7	1.5	1.6	2.7	2.9	3.1	2.9	2.5	2.5
IH 2018-SFR4				1.6	1.6	2.0	2.4	2.4	2.7	3.2	2.7	2.4
PRD 2015-SFR3	1.9	1.7	1.5	1.3	1.4	1.4	1.3	1.4	1.5	1.6	1.7	1.5
PRD 2017-SFR1	 2.1	2.5	2.1	2.0	1.9	2.0	1.7	1.8	1.5	1.8	1.6	1.6
PRD 2018-SFR1	1.9	2.8	3.5	1.8	1.0	0.9	0.8	0.7	0.7	0.5	1.0	1.2
PRD 2018-SFR2	0.5	0.4	0.4	1.1	2.0	2.5	1.9	2.1	1.9	1.8	1.3	1.2
PRD 2019-SFR2									1.3	1.3	1.3	1.5
SWH 2017-1	1.6	1.6	1.4	1.2	1.3	2.0	1.6	2.0	2.6	2.6	2.6	2.2
TAH 2016-SFR1	6.8	6.8	6.8	6.0	5.7	5.2	5.4	5.5	4.9	5.3	5.1	4.8
TAH 2017-SFR1	3.1	3.4	3.2	2.9	2.4	2.3	2.6	2.8	2.3	2.6	2.2	2.1
TAH 2017-SFR2	4.4	4.1	4.3	3.9	3.6	3.5	3.5	3.6	2.6	3.5	3.3	3.2
TAH 2018-SFR1	3.8	3.5	3.5	3.6	3.5	3.4	3.5	3.7	2.6	3.1	2.8	3.0
Overall SFR	2.8	2.6	2.5	2.3	2.2	2.4	2.8	2.9	3.0	3.1	2.9	2.8





		<u>Year 2018</u> <u>Year 2019</u>											
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
AH4R 2014-SFR2		2.8	2.8	2.0	2.3	2.2	2.4	2.5	2.9	4.1	4.4	4.2	TBD
AH4R 2014-SFR3		3.0	2.9	2.6	2.1	2.2	2.0	2.9	2.9	3.8	3.6	4.2	TBD
AH4R 2015-SFR1		3.0	3.2	2.3	2.6	2.7	2.4	3.1	2.7	3.6	4.4	3.9	TBD
AH4R 2015-SFR2		3.0	2.9	2.3	2.4	1.9	2.3	3.0	3.5	4.4	4.8	5.1	TBD
HPA 2016-2		1.7	1.9	2.1	1.6	2.3	1.5	2.7	3.3	5.5	6.9	5.0	TBD
HPA 2017-1	~~~	2.8	2.3	3.1	2.0	2.9	2.5	2.4	3.1	2.8	2.3	3.5	TBD
HPA 2018-1		4.1	2.4	2.4	1.5	1.5	1.8	2.8	2.5	3.4	4.6	4.0	TBD
HPA 2019-1													TBD
IH 2017-SFR2		2.2	2.8	1.7	1.7	1.9	2.1	2.0	2.2	2.8	3.5	3.7	TBD
IH 2018-SFR1		2.7	2.6	2.5	2.0	2.5	1.9	3.0	2.4	2.4	2.9	3.2	TBD
IH 2018-SFR2		2.9	2.5	2.6	2.1	2.1	2.0	3.0	2.8	2.6	3.2	3.5	TBD
IH 2018-SFR3			2.4	2.6	2.2	2.4	2.3	2.6	2.7	2.7	3.1	3.2	TBD
IH 2018-SFR4					2.1	2.2	2.3	2.8	2.7	3.1	3.5	3.7	TBD
PRD 2015-SFR3		3.6	3.7	2.6	2.7	2.6	2.4	2.3	2.8	3.5	3.9	5.0	TBD
PRD 2017-SFR1	~	3.4	4.9	3.9	3.5	3.0	2.7	3.1	2.4	2.8	3.1	3.9	TBD
PRD 2018-SFR1		4.2	5.9	6.5	3.7	1.3	1.5	2.3	2.5	2.4	2.9	3.6	TBD
PRD 2018-SFR2		3.1	1.9	1.9	4.8	4.3	4.2	3.6	3.6	4.5	4.0	3.3	TBD
PRD 2019-SFR2										7.3	3.8	4.4	TBD
SWH 2017-1		3.1	2.8	2.0	1.7	2.4	2.8	2.7	3.3	2.8	3.6	3.6	TBD
TAH 2016-SFR1	~~~	1.0	2.7	2.0	1.8	1.8	1.8	3.0	2.2	2.8	1.5	3.3	TBD
TAH 2017-SFR1		1.0	2.3	2.2	3.0	2.0	2.5	3.3	1.5	2.1	1.6	2.6	TBD
TAH 2017-SFR2		1.1	3.4	2.2	2.2	1.4	2.1	3.4	1.6	2.5	5.0	1.3	TBD
TAH 2018-SFR1		0.8	3.2	1.9	2.1	2.1	2.4	2.7	1.8	2.4	2.1	2.2	TBD
Overall SFR		2.6	2.9	2.5	2.3	2.2	2.3	2.8	2.6	3.2	3.5	3.7	TBD
TRD — To Be Determined													

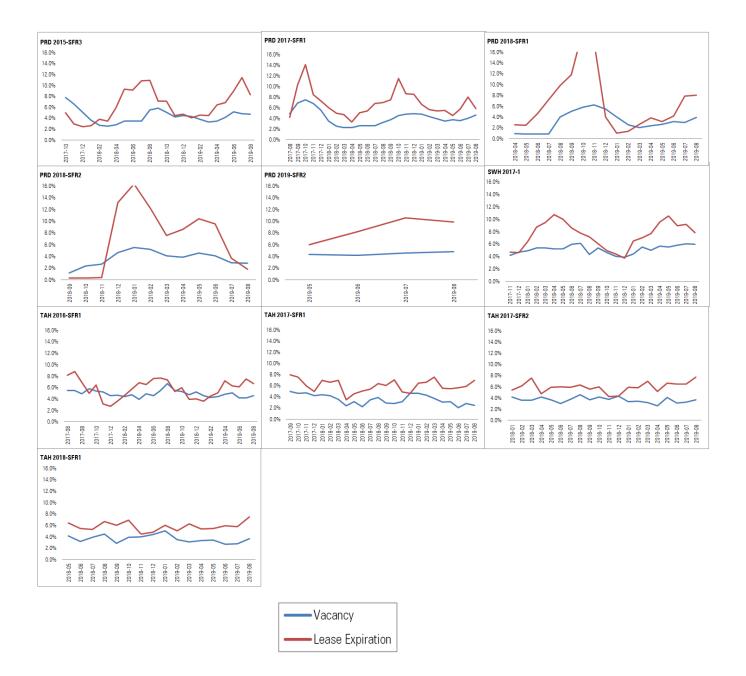
 $\mathsf{TBD}-\mathsf{To}\;\mathsf{Be}\;\mathsf{Determined}$



Appendix I – Vacancy Versus Lease Expiration







Appendix II – Description of Analysis

DBRS Morningstar tracks key metrics to gauge the performance of single-borrower, single-family rental transactions that DBRS 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, DBRS 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, DBRS Morningstar takes the respective balance divided by the current deal balance.

Table 2 - Multiborrower Loan Performance by Loan Count

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

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

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

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

DBRS 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, DBRS Morningstar used the logic outlined in the Tables 6a, 6b, and



6c — Lease Expiration section. DBRS 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, DBRS 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 – August Average Contractual Rent Versus Property-Level RentRange Estimate by MSA

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

Table 3 - Difference between Average Contractual Rent Versus Property-Level RentRange

Table 3 shows the percentage difference between contractual rents in the DBRS Morningstar single-family rental database and the property-specific estimated rents from RentRange. DBRS Morningstar calculated the percentage difference by subtracting the RentRange estimated rent from the contractual rent and dividing that figure by the estimated RentRange rent.

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 DBRS Morningstar's database. MSAs in red are below the overall average rent change for the month, while those in blue are above.

Table 4 – Blended Rent Change (by Percentage) – Top MSAs

Table 4 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 5a, 5b, and 5c – Month-End Vacancy

Table 5a displays deal-level vacancy by the month-end count of empty properties. Table 5b shows the deal-level vacancy as a percentage of the total properties in each pool. Table 5c 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 6a, 6b, and 6c 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 6a, 6b, and 6c – Lease Expiration

Because lease expiration profiles change over time as tenants renew or new tenants occupy vacant properties, DBRS 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 August lease expirations, DBRS Morningstar looks for all August lease expirations in the June property tape. DBRS 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 DBRS Morningstar is looking three months back to determine its sample, there are instances when tenants vacate properties between the time DBRS Morningstar determines its sample and the month in which the tenant must make a decision to stay in the property. DBRS Morningstar excludes those vacated properties from its lease expiration sample and its retention rate calculation in Table 10. In the current example, properties that become vacant or that have move out dates in either June or July are removed from the August lease expiration count.

Tables 7a and 7b – Total Historical Months of Vacancy

Tables 7a and 7b show the number of months of vacancy the June unoccupied properties have experienced. In other words, if a property is unoccupied as of the August 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 7a shows historical months of vacancy by count, and Table 7b is as a percentage of the August vacancies.

Tables 7c and 7d - Consecutive Months of Vacancy

Table 7c and 7d show the consecutive number of months an unoccupied property has been vacant since it was last occupied. For example, if a property is unoccupied as of August property tape, these tables reflect the number of consecutive months the property has been vacant and does not consider the number of vacant months prior to the most recent occupancy. Table 7c shows consecutive months of vacancy by count and Table 7d is as a percentage of the August vacancies.

Table 8 – Delinquency Definition

DBRS 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 8 summarizes the delinquency definition for each issuer and contains details on the length of time that must pass from a tenant's due date to be considered delinquent. The length of time is either based on a count of 30 days or is based on the calendar month. The slight distinction, for example, either results in a property with payment due on May 1 considered as delinquent after 30 days or as delinquent on June 1. None of the issuers factor a grace period into their delinquency definition, meaning their respective measures of past due begin if payment has not been received by the stated due date. In addition to timing, these conditions can also differ by the total dollar threshold an issuer uses to classify a tenant as delinquent and by the types of overdue payments that the issuer uses to count toward that threshold. For example, most issuers use only base rent to determine the dollar amount of delinquency. However, Tricon American Homes counts total receivables to determine the past due amount. Progress Residential includes certain fees above base rent but not total receivables.

Tables 9a and 9b – Month-End Delinguency

Table 9a shows the month-end count of delinquencies based on the definition in Table 8, and Table 9b 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 8.

Table 10 – Monthly Retention Rate of Expiring Leases

When evaluating an issuer's ability to keep tenants in a property, DBRS Morningstar considers a retention rate. Once again, differences in monthly reporting affect the calculation that DBRS 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, DBRS 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 6a 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, DBRS Morningstar relies on the cutoff tape lease expiration profile. As a result, the first three months of retention rate reported in Table 10 will use the cutoff tape to find the sample of lease expirations. After isolating the applicable lease expiration sample, DBRS Morningstar looks at the most recent property tape to determine the lease status of the properties. In this report, DBRS Morningstar uses the August property tape to determine the lease status for July expirations. DBRS 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 11 - Monthly Retention Rate of MTM Leases

In Table 11, DBRS 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, DBRS 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 July 2019 retention rates are the July statuses of June MTM tenants.

Tables 12a and 12b - MTM Tenants

In Tables 12a and 12b, DBRS 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 13 – Monthly Turnover Rate

In evaluating how effective an issuer is at retaining tenants, DBRS Morningstar considers the monthly turnover rate. For this metric, DBRS Morningstar strives to apply a consistent calculation given the differences in issuers' reporting. DBRS 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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