

CWCapital Markets Update

Second Quarter 2019

IN THIS ISSUE:

- **Economy:** remains positive amid slowing in both growth and job creation.
- **Concerns** as yield curve inverts. Record budget deficits, trade wars, price volatility. Q2 2019 construction deliveries down 30% year over year.
- **Feature** – CMBS hotel exposure – cyclical, front, and center in a recession. And Houston has a problem.
- **Three trends** we are watching

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In this issue of the CWCapital Markets Update, we focus on the fundamentals and trends affecting national commercial real estate debt markets. Our feature reviews risks associated with hotels as an asset class. We synthesize and present information gathered from various industry research, public resources, and our own research.

THE ECONOMY

- **The July jobs report** noted that the economy continues to grow but at the slower pace of 164,000 jobs created. Employment in the professional and business services category again led with 300,000 jobs created year-over-year, which is down from over 500,000 jobs created in the April 2019 year-over-year time frame. Manufacturing and mining jobs remained relatively flat to slightly declining on a year-over-year basis.
- **The unemployment rate** was unchanged at 3.7%, among the lowest levels since 1969. The participation rate was 63%. Average hourly earnings remained on growth track of 3.2% year-over-year. As of July 2019, El Centro CA, Yuma AZ, have reported the highest unemployment in the nation with both over 20%. Portland ME and Burlington VT report the lowest with rates less than 2.0% each.
- **The 10-year US Treasury** was 1.51% as of this writing, declining over 100bps from last year end. Much of the decline reflects overall concerns about global trade agreements, or the lack thereof, geopolitical issues, and other uncertainty. As we have warned for months, the 2/10 spread is now inverted at -1bp. Bloomberg News reports that the US posted a \$738.6bn budget deficit for the first 8 months in May, the largest ever on record. The current deficit is nearly 40% larger than just a year ago. Corporate and individual income taxes decline, trade uncertainties abound. We remain concerned about long term debt levels, and real estate price weakness on the horizon.

PROPERTY MARKETS

- **Effective rent growth** – National average shows a 2.88% one-year growth rate, slowing from over 3%. Multi-family rents grew 4.6% for the year, while retail growth continues to lag at 1.85%, continuing to slow.
- **Vacancy rates** – For the trailing 1-yr period, vacancy rates improved in multi-family and retail properties, but declined in office and industrial properties. Deliveries slowed by 25%-30% across multifamily, office, retail, and industrial properties year over year as of July. Absorption was positively impacted, but we feel this is related more to slowing construction pipelines. We generally expect continued vacancy increases across all categories as heavy construction pipelines are completed.
- **National property prices** for multi-family increased by 8.3% on a rolling 3-year basis, while hotel properties showed a 4th consecutive month of declines year-over-year. Continuing its macro-decline, retail has lost value per unit (3yr basis) nearly every month for the past 2 yrs.

DEBT CAPITAL MARKETS

- **Credit spreads** generally tighten in 2019 with CMBS BBB- coming in approximately 128bps year to date. YTD19 CMBS conduit issuance of \$26.5bn is slightly ahead of last year's levels by \$200m. This periodic increase reverses what has been a continuously declining year-over-year market share decline on the part of CMBS. Competing products such as FHLMC, SASB, CRE-CLO, and balance sheet lenders have taken market share.
- **CMBS risk retention pricing** for horizontal subordinates is in the 14% range, L-shaped subordinates are in the 18-20% range.
- **Conduit delinquency rates** dropped to 1.57% this month, reflecting continued improvement.

THREE TRENDS WE ARE WATCHING

- **Cyclical highs in property prices** – all property types experiencing price volatility at national level. Multifamily, hotel, and industrial building at a very robust pace. Over-building a concern. Over-levered properties finding their way into rated securitizations.
- **Slowing construction deliveries** – of note, property deliveries across asset classes appear to have finally started to slow in 1H 2019 relative to same period last year. Although this helps absorption figures, we remain concerned about the amount of inventory delivered across asset classes and in certain markets.
- **Economic uncertainty** – global trade uncertainty, the impact of tariffs, ballooning deficits, and the potential for negative real interest rates (the current 10yr real rate is negative at -.08%) provides the basis for general concern over asset prices and performance across the CRE asset classes.

FEATURE – CMBS hotel exposure – cyclical, front and center in a recession. And Houston has a problem.

Commercial real estate continues to hit cyclical highs, and the inverting curve recession warnings have been clear for months. So what are some of the first things to happen to commercial real estate during such periods?

Reviewing 15 years of national average price information can reveal some interesting clues. One should be obvious to investors though, and that is the volatility of hotel values.

On a fundamental basis, hotels have the shortest “lease” periods, reset their rates daily, require continuous capital investment, and are subject to intense competition in the form of newer construction. In addition to changing customer preferences, hotels can be quite cyclical and hit very hard when businesses and leisure travelers curtail travel during recessionary times.

Based on our review of over 2,300 hotels currently active in CMBS securitizations, price information (sourced from RCA) and other data, we have concerns about near to medium-term performance for this asset class.

Volatility: For context, national average hotel values declined by over 56% during the financial crisis, from 2006’s peak to the trough in late 2009. That was by far the largest drop with the average for other asset types closer to the mid 30% area.

- Over a 15-yr period, hotel price volatility is nearly 2x that of office properties, and nearly 3x industrial and multi-family per unit volatility.

National Average \$price / unit					
Year End	MF	Retail	Hotel	Office	Indust
Peak Date	Jul-19	Aug-16	Apr-15	Jul-19	Jul-19
Trough Date	Sep-09	Jun-10	Dec-09	Mar-10	Apr-10
Peak Valuation	174,746.8	248.1	201,238.3	330.2	101.5
Trough Valuation	73,804.9	128.0	59,012.2	132.0	44.7
% Decline from 2006	34.93%	26.55%	56.77%	43.20%	33.07%
Current vs '06	54.1%	17.0%	-0.1%	42.1%	52.1%
Current vs Peak	0.0%	-17.8%	-32.2%	0.0%	0.0%
Current vs Trough	2.37	1.59	2.31	2.50	2.27
5yr Growth Rate	7.7%	-0.8%	2.4%	3.0%	6.3%
10yr Growth Rate	7.1%	-0.6%	5.0%	3.0%	3.4%
Volatility	11.7%	13.7%	29.7%	17.2%	10.8%

As a Leading Indicator: Entering into the financial crisis in 2007, hotel values began a steady and consistent year-over-year price decline almost 18 months before other property types began to turn sharply negative (year-over-year) in early 2009. Aside from the recent macro-trend decline in retail property prices, national average hotel prices have now declined for the 4th consecutive month on a year-over-year basis. Although other property types have experienced occasional declines, the hotel trend appears more consistent. National hotel per unit prices are now roughly equal to where they stood in 2006 prior to the crisis. Of all property types, hotel is also off its most recent peak values by nearly 30%.

CMBS HOTEL CYCLICALITY – What Are The Drivers?

- **Decelerating Demand** – Slowing consumer spending, uncertainty around global trade, and the perception of approaching recession are several of the factors highlighted by PWC in its August 2019 outlook. Current expected ADR and RevPar are anticipated to increase by only 1% for the coming year. These levels are by far the lowest in the past 10 years, which averaged 5%.
- **Overbuilding** – A recent publication by Lodging Econometrics indicates that the US has 5,530 hotel projects under construction (670,000 rooms). The current pipeline is only approximately 17% short of the historical peak in 2008. As of late 2018, ConstructionDrive News reported that major pipelines in New York, Dallas, Los Angeles, Houston, and Nashville combined with Miami, Detroit, Seattle, Denver, and Boston, all had building pipelines greater than 15% of current local inventory.
- **Performance** – Existing performance issues across the top 25 MSAs are presented below. Houston leads the nation with 13 defaulted or previously defaulted hotels. That is nearly a 24% default rate, nearly 5x the national average. Correspondingly, it also has the highest cap rate of 10.2%. Oil price volatility, energy corridor relocation, distorted demand as a result of hurricane events, and corporate right-sizing all contribute to the problems. Notably, Houston also reports the nation's 3rd largest construction pipeline with over 5,500 rooms under construction, 6,000 more scheduled to start within 12 months, and 5,000 in planning. That is an increase of nearly 20% of current inventory. While Houston may be more reflective of local economic sensitivities, an overall economic slowdown is likely to only add to the distress.

Rank	MSA	Props	Rooms	\$ Balance	Defaulted	Deflt Rate	Cap Rt
1	New York, NY	103	25,832	4,502.1	6	5.8%	7.01%
2	Los Angeles	91	32,049	4,189.5	2	2.2%	7.08%
3	Chicago	54	27,067	2,772.8	4	7.4%	9.57%
4	Dallas-Ft. Worth	59	25,676	2,462.1	2	3.4%	8.94%
5	Houston	55	13,015	980.1	13	23.6%	10.19%
6	Washington DC	41	6,890	1,207.7	4	9.8%	8.43%
7	Miami-Ft. Lauderdale	59	13,888	2,604.9	1	1.7%	6.56%
8	Philadelphia	33	9,071	733.1	2	6.1%	8.10%
9	Atlanta	64	15,853	1,672.6	2	3.1%	8.76%
10	Boston	12	2,888	498.5	-	0.0%	7.40%
11	Phoenix	24	4,881	813.6	-	0.0%	7.09%
12	San Francisco	38	37,008	3,529.8	-	0.0%	5.58%
13	Riverside CA	23	4,925	399.5	-	0.0%	9.94%
14	Detroit	41	10,465	713.8	1	2.4%	7.97%
15	Seattle	33	15,978	1,268.8	-	0.0%	7.70%
16	Minneapolis-St. Paul	6	1,812	335.9	-	0.0%	8.30%
17	San Diego	41	20,230	2,190.5	1	2.4%	7.35%
18	Tampa-St. Petersburg	24	4,067	430.6	1	4.2%	7.47%
19	Denver	22	26,456	1,252.0	1	4.5%	7.47%
20	St. Louis	12	8,693	446.5	-	0.0%	9.11%
21	Baltimore	22	5,037	458.6	2	9.1%	8.61%
22	Orlando	45	19,734	2,290.7	0	0.0%	9.05%
23	Charlotte	43	6,950	577.5	-	0.0%	8.86%
24	San Antonio	12	41,585	1,140.7	-	0.0%	7.49%
25	Portland OR	19	11,566	1,645.3	-	0.0%	8.03%
	Other MSAs	1,340	577,108	35,737.5	76	5.7%	5.30%
		2,316	968,724	74,854.8	118	5.1%	

SELECTED MARKET DATA – Economic and Real Estate Fundamentals and Trends

	2009	2014	2016	2017	2018	Current	1yr	5yr	10yr
Economic									
UNEMP	9.90	5.60	4.70	4.10	3.90	3.70	-0.30%	-2.40%	-5.80%
PART	64.60	62.70	62.70	62.70	63.10	63.00	0.10%	0.20%	-2.70%
GDP	14,567	17,616	18,869	19,831	20,898	21,339	4.54%	5.13%	4.84%
CPI-TTM	2.28%	-0.05%	1.91%	2.09%	1.40%	1.75%	-1.19%	-0.28%	3.70%
UST IMPL INF	2.37%	1.68%	1.95%	1.96%	1.71%	1.59%	-0.52%	-0.67%	-0.16%
Interest Rate									
1M LIBOR	0.32%	0.17%	0.77%	1.56%	2.50%	2.12%	0.02%	1.96%	1.47%
Eff Fed Funds	0.12%	0.12%	0.50%	1.31%	2.40%	2.11%	0.21%	2.01%	1.90%
Prime	3.25%	3.25%	3.75%	4.50%	5.50%	5.25%	0.25%	2.00%	2.00%
UST2	1.14%	0.67%	1.20%	1.89%	2.49%	1.52%	-1.00%	1.05%	0.41%
UST10	3.85%	2.17%	2.45%	2.40%	2.69%	1.51%	-1.34%	-1.02%	-2.02%
2/10 Spread	2.71%	1.50%	1.25%	0.51%	0.20%	-0.01%	-0.34%	-2.07%	-2.43%
Real10	1.48%	0.49%	0.50%	0.44%	0.98%	-0.08%	-0.82%	-0.35%	-1.86%
Vacancy (REIS)									
Multi	8.00%	4.20%	4.20%	4.50%	4.80%	4.70%	-0.10%	0.50%	-3.30%
Retail	10.60%	10.20%	9.90%	10.00%	10.20%	10.10%	-0.20%	-0.30%	-0.50%
Office	17.00%	16.70%	15.80%	16.40%	16.70%	16.80%	0.20%	-0.10%	-0.20%
Industrial	n/a	11.20%	10.30%	8.90%	10.20%	10.10%	0.80%	-1.20%	n/a
Hotel									
Rents (REIS Effective)									
Multi	964	1,124	1,252	1,305	1,356	1,400	4.63%	5.34%	4.52%
Retail	16.75	17.16	17.89	18.24	18.53	18.73	1.85%	2.05%	1.18%
Office	22.43	24.19	25.93	26.43	27.04	27.43	2.24%	3.02%	2.23%
Industrial	n/a	4.46	4.66	4.96	5.08	\$5.16	2.79%	3.51%	n/a
Hotel									
National \$PSF (RCA)									
Multi	81,953	132,159	152,206	153,656	168,075	174,747	12.82%	10.77%	10.59%
Retail	144	198	200	177	171	204	16.82%	0.19%	4.56%
Office	152	223	235	241	268	330	22.66%	7.34%	13.65%
Industrial	47	69	78	79	88	101	16.97%	10.60%	6.60%
Hotel	59,012	134,398	153,841	143,596	146,341	136,409	-1.54%	0.45%	11.59%
National Cap Rate (RCA)									
MF	6.84%	6.05%	5.70%	5.62%	5.53%	5.48%	-0.09%	-0.71%	-1.27%
Ret	7.96%	6.63%	6.52%	6.60%	6.51%	6.70%	0.16%	-0.19%	-0.60%
Office	8.75%	6.75%	6.59%	6.73%	6.57%	6.86%	0.23%	-0.09%	-0.78%
Ind	8.37%	6.99%	6.80%	6.74%	6.48%	6.40%	0.05%	-0.82%	-1.80%
Hotel	9.55%	8.14%	8.50%	8.51%	8.39%	8.70%	-0.16%	0.50%	-0.65%
Risk Premium									
MF	2.99%	3.88%	3.25%	3.22%	2.85%	3.97%	1.25%	0.31%	0.75%
Ret	4.11%	4.46%	4.07%	4.20%	3.83%	5.19%	1.50%	0.84%	1.42%
Office	4.90%	4.58%	4.14%	4.33%	3.89%	5.35%	1.57%	0.93%	1.25%
Ind	4.52%	4.82%	4.35%	4.34%	3.80%	4.89%	1.39%	0.20%	0.22%
Hotel	5.70%	5.97%	6.05%	6.11%	5.71%	7.19%	1.18%	1.52%	1.38%

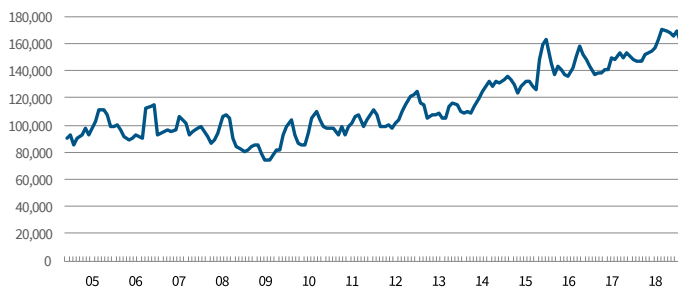
CRE FUNDAMENTALS – Property Price and Vacancy

National Average \$price / unit					
Year End	MF	Retail	Hotel	Ofc	Ind
Peak	174,746.8	248.1	201,238.3	330.2	101.5
Trough	73,804.9	128.0	59,012.2	132.0	44.7
Fall fr '06	34.93%	26.55%	56.77%	43.20%	33.07%
Peak Date	Jul-19	Aug-16	Apr-15	Jul-19	Jul-19
Trough Date	Sep-09	Jun-10	Dec-09	Mar-10	Apr-10
Curr vs '06	54.1%	17.0%	-0.1%	42.1%	52.1%
Curr vs Pk	0.0%	-17.8%	-32.2%	0.0%	0.0%
Curr vs Tr	2.37	1.59	2.31	2.50	2.27

5yr GR	7.7%	-0.8%	2.4%	3.0%	6.3%
10yr GR	7.1%	-0.6%	5.0%	3.0%	3.4%
Volatility	11.7%	13.7%	29.7%	17.2%	10.8%

Vacancy Trend					
Year End	MF	Retail	Hotel	Ofc	Ind
2005	2.89	3.23	-	3.19	-
2006	4.38	3.37	-	8.93	-
2007	4.73	2.39	-	10.54	-
2008	1.95	(1.02)	-	0.24	-
2009	(2.92)	(3.68)	-	(8.86)	-
2010	2.39	(1.43)	-	(1.52)	-
2011	2.43	(0.06)	-	2.04	(0.48)
2012	3.86	0.48	-	1.95	1.91
2013	3.33	1.51	-	2.22	1.64
2014	3.69	1.96	-	3.02	2.76
2015	5.16	2.21	-	3.18	2.02
2016	5.83	2.00	-	3.84	2.42
2017	4.23	1.96	-	1.93	6.44
2018	5.21	1.81	-	2.65	4.03
Curr	4.63	1.85	-	2.24	2.79

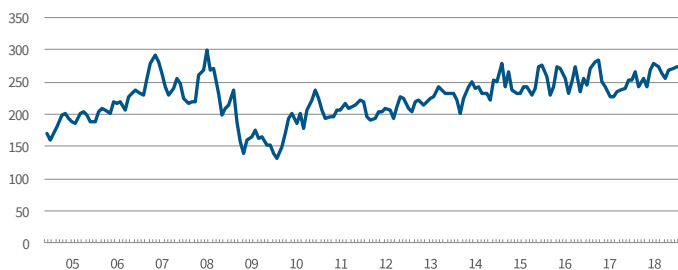
Multifamily



Retail



Office



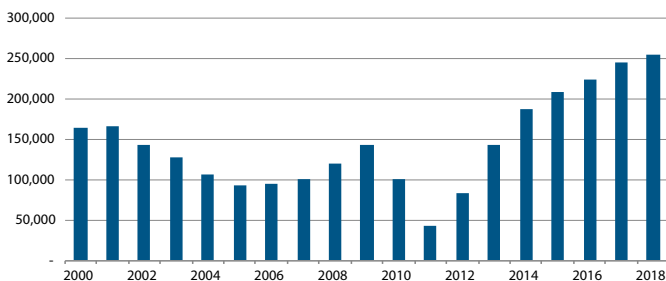
Hotel



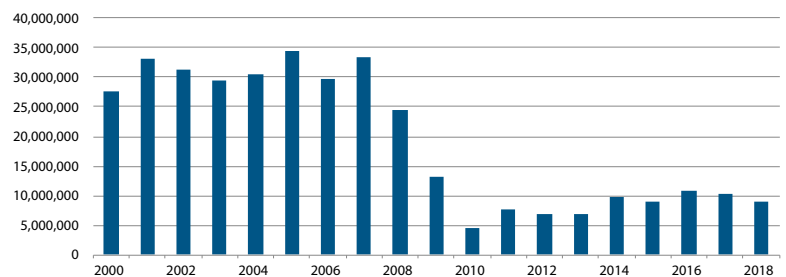
CRE FUNDAMENTALS – Commercial Property Deliveries and Absorption

Year	Deliveries				Net Absorption				Notes
	Multi	Retail	Office	Ind / Whse	Multi	Retail	Office	Ind / Whse	
1999	206,040	25,126,000	120,280,000	-					Multifamily - Mid-yr deliveries slowing. • Mid-year deliv 30% lower than 2018 • Net absorption approx 1.03x, first • at or above 1.0x in 5yrs.
2000	164,674	27,727,000	111,061,000	-	1.34x	1.42x	(1.02)		
2001	166,124	33,013,000	134,904,000	-	0.12x	0.59x	(0.28)		
2002	143,957	31,369,000	81,422,000	-	(0.04)	0.87x	(0.15)		Retail deliveries continue to decline. • Mid-year deliv 25% lower than 2018 • Net absorption now positive
2003	127,591	29,416,000	41,016,000	-	0.35x	0.97x	0.99x		
2004	106,144	30,596,000	35,475,000	-	0.48x	1.06x	1.91x		
2005	93,699	34,438,000	39,792,000	-	0.35x	1.03x	1.43x		Office - deliveries fall by half vs 1H 2018. • Net absorption <1.0x for 4 years • Slow, steady ~2% rent growth
2006	95,205	29,627,000	49,879,000	-	(0.03)	0.75x	1.08x		
2007	100,630	33,254,000	59,902,000	-	0.99x	0.71x	(0.69)		
2008	119,630	24,545,000	65,450,000	-	0.10x	(0.27)	(1.18)		Industr/Whse deliveries slow by 30% vs 2018 • Trend of record high deliveries • Net absorption still below 1.0x
2009	143,130	13,142,000	50,548,000	-	0.02x	(1.64)	(0.42)		
2010	101,268	4,499,000	23,375,000	10,017,000	2.27x	(0.71)	0.71x	(3.51)	
2011	42,606	7,625,000	15,440,000	13,388,000	4.03x	0.83x	1.01x	4.83x	
2012	82,679	6,778,000	12,443,000	22,585,000	1.67x	1.67x	1.86x	3.82x	
2013	143,227	6,883,000	25,959,000	38,740,000	1.14x	1.84x	1.08x	1.73x	
2014	188,125	9,776,000	28,287,000	76,678,000	0.95x	1.36x	1.36x	1.27x	
2015	209,409	9,088,000	36,642,000	78,848,000	0.96x	1.36x	0.79x	1.46x	
2016	223,840	10,815,000	36,659,000	95,459,000	0.96x	1.07x	0.63x	1.42x	
2017	246,140	10,318,000	39,048,000	137,428,000	0.76x	0.68x	0.74x	1.15x	
2018	254,733	8,986,000	47,426,000	140,190,000	0.87x	0.14x	0.53x	0.73x	
Curr	81,666	2,927,000	13,191,000	43,893,000	1.03x	1.25x	0.62x	0.43x	

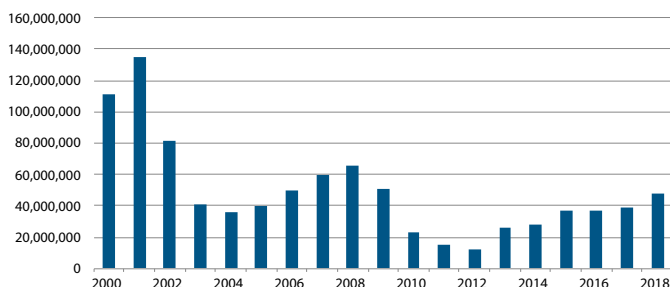
Multifamily



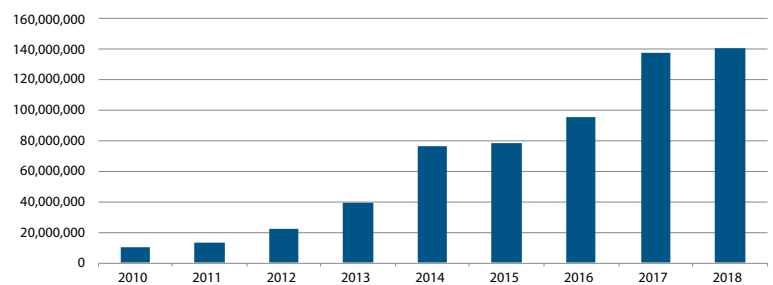
Retail



Office



Industrial/Warehouse



SECURITIZED MARKETS – 2019 Conduit and SASB Issuance

Type	Conduit	SERIES	Pricing	AMOUNT	SERVICER	SPSERV	B-PIECE	#PROP	#LOAN	RR Type	RR Yld
CMBS		RCMT 2019-5	01/28/19	399.21	KeyBank	KeyBank	Ready Capital	127	95	HRZ	-
		BMARK 2019-B9	02/01/19	883.52	Wells Fargo	LNR Partners	Prime / LNR	88	50	VERT	-
		BANK 2019-BNK16	02/01/19	974.84	Wells Fargo	KeyBank	Prime / Ellington	115	69	VERT	-
		GSMS 2019-GC38	02/13/19	756.44	Wells Fargo	Midland	KKR	53	36	HRZ	13.84
		JPMCC 2019-COR4	02/15/19	774.09	Midland	Midland	LoanCore	56	38	HRZ	13.50
		WFCM 2019-C49	02/21/19	774.23	Wells Fargo	Midland	KKR	71	64	HRZ	15.15
		CSAIL 2019-C15	02/28/19	829.25	Midland	Midland	3650 REIT	83	36	HRZ	14.50
		MSC 2019-L2	03/01/19	934.87	Midland	Rialto Capital	Rialto Capital	68	50	L	16.75
		BANK 2019-BNK17	03/21/19	833.03	Wells Fargo	Midland	Ellington / Prime	239	49	VERT	-
		BMARK 2019-B10	03/21/19	1,256.00	KeyBank	LNR Partners	Eightfold	98	46	VERT	-
		UBSCM 2019-C16	03/27/19	682.67	Midland	Midland	KKR	488	54	HRZ	14.00
		CF 2019-CF1	04/17/19	757.97	KeyBank	LNR Partners	LNR Partners	60	37	L	20.34
		WFCM 2019-C50	04/29/19	937.97	Wells Fargo	Rialto Capital	Rialto Capital	346	64	VERT	-
		GSMS 2019-GC39	05/09/19	802.54	Midland	KeyBank	Prime Finance	64	36	L	20.25
		BBCMS 2019-C3	05/17/19	936.65	Midland	Midland	KKR	517	50	HRZ	14.06
		BANK 2019-BNK18	05/21/19	1,036.78	Wells Fargo	Rialto Capital	Rialto Capital	242	56	VERT	-
		BMARK 2019-B11	05/22/19	1,099.05	Midland	Rialto Capital	Rialto Capital	424	40	VERT	-
		MSC 2019-H6	06/05/19	686.83	Midland	Midland	KKR	255	46	HRZ	13.95
		JPMCC 2019-COR5	06/12/19	698.64	Midland	Midland	LoanCore	135	46	HRZ	13.50
		CSAIL 2019-C16	06/18/19	787.51	Midland	LNR Partners	Prime Finance	96	47	HRZ	13.95
		WFCM 2019-C51	06/21/19	729.48	Wells Fargo	C-III	Prime Finance	105	54	HRZ	14.20
		GSMS 2019-GC40	06/26/19	1,035.43	Midland	Midland	Eightfold	44	35	L	19.13
		MSC 2019-H7	07/15/19	746.99	Midland	LNR Partners	Argentica	81	53	HRZ	13.75
		BMARK 2019-B12	07/19/19	1,429.27	Midland	Midland	KKR	117	47	L	16.69
		BANK 2019-BNK19	07/23/19	1,302.47	Wells Fargo	LNR Partners	Seer / LNR	76	73	VERT	-
		CGCMT 2019-GC41	08/05/19	1,276.64	Midland	Rialto Capital	Rialto Capital	100	43	L	17.71
		WFCM 2019-C52	08/05/19	900.24	Wells Fargo	LNR Partners	Argentica	126	67	HRZ	14.07
		BBCMS 2019-C4	08/09/19	937.34	Wells Fargo	Rialto Capital	Rialto Capital	377	73	L	26.25
		CD 2019-CD8	08/09/19	811.12	Midland	Midland	Eightfold	58	33	L	18.05
				26,011.06							

Type	SASB	SERIES	Pricing	AMOUNT	SELLER	SPSERV	Risk Retention	Asset	RR Type	RR Yld
CMBS		CGCMT 2019-SMRT	01/10/19	644.10	Kroenke, StorageMart	Midland	Oaktree	101 Storage Marts	HRZ	4.76
		NYT 2019-NYT	01/11/19	515.00	Brookfield	Trimont	DB, BOA, BARCL	NY Times Building	VERT	-
		CAMB 2019-LIFE	01/25/19	1,170.00	Brookfield	Trimont	DB, BOA	8 Life Sci Ofc, Cambridge	VERT	-
		SGCMS 2019-787E	02/01/19	187.50	Georgetown / Ackman	Aegon	SocGen	787 Eleventh Ave	VERT	-
		WBHT 2019-WBM	02/04/19	336.50	Atrium Holding	CWCAM	Oaktree	Waikiki Beach Hotel	HRZ	L+588
		CSMC 2019-SKLZ	02/04/19	335.00	Rubin Schron	KeyBank	Apollo Real Estate	322 Health/Rehab Ctrs	HRZ	L+700
		CFK 2019-FAX	02/13/19	82.00	Hampshire Properties	KeyBank	Keybank	3 Multifamily - Fairfax Va	VERT	-
		BBCMS 2019-CLP	02/14/19	290.40	Blackstone	Trimont	Barclays	112 Calif Logistics / Ind	VERT	-
		MTRO 2019-TECH	02/14/19	200.00	Brookfield	Trimont	BB, DB, Citi	One MetroTech Brooklyn	VERT	-
		CGCMT 2019-SST2	02/21/19	180.00	SmartStop Asset Mgt	KeyBank	CREFI, Keybank	29 Self Storage	VERT	-
		ILPT 2019-SURF	03/01/19	390.00	Industrial Logistics	Rialto Capital	Prima Capital	186 Honolulu Grnd Lease	HRZ	5.75
		BCORE 2019-CORE	03/01/19	402.80	Brookfield	Trimont	CREFI, BOA, DB, BB	7 office - NY, Balt, Pit, Phila	VERT	-
		CALI 2019-101C	03/07/19	515.00	GIC, Hong Kong, Hines	Midland	CPPIB Canada	101 California St. San Fran	HRZ	6.25
		CCST 2019-CHL2	03/15/19	530.00	Cloverleaf Cold Stg	KeyBank	Goldman	18 dairy / cold stg whse	VERT	-
		MSC 2019-AGLN	03/20/19	321.00	El-Ad Group	KeyBank	Morgan Stanley	42 industrial / office	VERT	-
		RETL 2019-RVP	03/21/19	900.00	Retail Value Inc.	KeyBank	WAMCO	36 mall (PR), power ctr	HRZ	L+850
		NCMS 2019-NEMA	03/22/19	199.00	Crescent Heights	KeyBank	Natixis	NEMA San Francisco - Apts	VERT	-
		BAMLL 2019-AHT	03/29/19	240.00	Ashford Hospitality	KeyBank	BOA	Renaissance Nashville	VERT	-
		DBGS 2019-1735	04/03/19	311.38	Silverstein, Arden, Migdal	Situs	DB, Goldman	1735 Market - Phila	VERT	-
		NCMS 2019-LVL	04/12/19	206.00	Douglaston, AIG, MacFarlane	KeyBank	Natixis	2 North 6th Pl. Brooklyn	VERT	-
		JPMCC 2019-ICON	04/15/19	144.70	Icon Realty	Situs	Shelter Growth	36 NYC Multifamily/Mixed	HRZ	12.00
		NOHT 2019-HNLA	04/17/19	325.00	AllianceBernstein, Berger	Trimont	Shelter Growth	Hyatt Regency New Orleans	HRZ	L+935
		MSC 2019-BPR	04/24/19	310.53	Brookfield	KeyBank	Morgan Stanley	3 Malls - VaBeach, NM, Fla	VERT	-
		JPMCC 2019-ICON UES	04/29/19	65.70	Icon Realty	CWCAM	JPMorgan	19 NYC Multifamily	VERT	-
		BX 2019-IMC	05/02/19	1,150.00	Blackstone, Fireside	LNR Partners	Oaktree	16 showroom properties	HRZ	L+650
		MSC 2019-PLND	05/10/19	240.00	Brookfield	CWCAM	DoubleLine Capital	2 Hiltons - Portland OR	HRZ	L+950
		KNDL 2019-KNSQ	05/10/19	628.00	BioMed (Blackstone)	Situs	DB, GS, Citi	BioMed bldg-Cambridge MA	VERT	-
		BAMLL 2019-RLJ	05/14/19	200.00	RLJ Lodging Trust	KeyBank	BOA	7 Hotels	VERT	-
		HHT 2019-MAUI	05/16/19	650.00	MSD Capital	Midland	KKR	Four Seasons - Maui	HRZ	L+460
		HPLY 2019-HIT	05/16/19	870.00	Hospitality Inv Trust	KeyBank	MS, Citi, DB, GS, JPM	92 Hotels	VERT	-
		JPMCC 2019-MARG	05/21/19	161.50	KSL Capital Partners	Situs	Prima Capital	Margaritaville Resort - Fla	HRZ	L+475
		CSMC 2019-ICE4	05/28/19	2,350.00	Lineage Logistics	Situs	Prima Capital	64 Cold Storage Facilities	HRZ	L+495
		JPMCC 2019-OSB	05/29/19	395.00	Hrsn Street, MIT, Bulfinch Cos.	Situs	Prima Capital	Osborn Triangle Lab - Cambr	HRZ	L+575
		NCMS 2019-10K	05/30/19	230.00	Crescent Heights	KeyBank	Natixis	Ten Thousand Apt - LA	VERT	-
		GSMS 2019-SOHO	05/31/19	730.00	Stellar, Imperium	Midland	KKR	One SoHo Sq - NYC Office	HRZ	L+320
		COMM 2019-521F	06/05/19	242.00	Savanna	Situs	DB	521 Fifth Ave NYC	VERT	-
		GSMS 2019-BOCA	06/11/19	600.00	MSD Capital	CWCAM	Blackstone	Waldorf Astoria - Boca	HRZ	L+445
		HY 2019-30HY	06/24/19	1,008.00	Related Cos., AZ State, Allianz	Situs	DB, WF, GS	30 Hudson Yards - NYC	VERT	-
		BX 2019-RP	06/26/19	230.00	Blackstone, SITE Ctrs	Aegon	SocGen	12 Retail Properties	VERT	-
		CHC 2019-CHC	06/26/19	1,024.48	Colony Capital	Midland	Apollo Real Estate	156 Medical Ofc Props	HRZ	L+525
	MFTII 2019-B3B4	06/27/19	160.00	Jay Paul Co.	Situs	Barclays, DB, GS	Moffett Place - Sunnyvale CA	VERT	-	
	JPMCC 2019-MFP	06/27/19	481.00	Chetrit Group	Situs	Shelter Growth	43 B/C Multifamily Props	HRZ	L+257	
	CGCMT 2019-PRM	07/11/19	278.00	Prime Group Holdings	Midland	Citi	2 Self Storage Facilities	VERT	-	
	JPMCC 2019-BOLT	07/16/19	202.39	Occidental Mgt	KeyBank	JPMorgan	Sprint HQ Bldg - Kansas Cty	VERT	-	
	OBP 2019-OBP	08/07/19	950.00	Durst, BOA	Wells Fargo	NYState Teachers	One Bryant Park - BOA	HRZ	~L+233	
	CF 2019-MF1	08/08/19	167.35	Arbor Realty	CWCAM	-	34 Multifamily props	HRZ	-	
	BX 2019-MMP	08/15/19	271.70	Blackstone, Fairstead	Trimont	Morgan Stanley	11 NYC apt bldgs	VERT	-	
	BHPT 2019-BXHP	08/16/19	415.00	Blackstone	Midland	-	Pentagon City Marriott	HRZ	L+432	
				22,436.02						

Subordinate Buyer	Conduit	SASB	Total	Special Servicers	Conduit	SASB	Total	Type	Balance	Deals
Rialto Capital	6,222.65	-	6,222.65	Midland	10,247.65	4,256.58	14,504.23			
KKR	5,266.10	1,380.00	6,646.10	LNR Partners	6,634.69	1,150.00	7,784.69			
Prime Finance	2,319.53	-	2,319.53	Keybank	2,176.60	4,805.91	6,982.51			
Prime / LNR	883.52	-	883.52	Rialto Capital	6,222.65	390.00	6,612.65	Conduit	8,323.66	8
Prime / Ellington	974.84	-	974.84	Situs	-	5,881.58	5,881.58	VERT	9,702.23	13
Ellington / Prime	833.03	-	833.03	Trimont	-	3,174.90	3,174.90	HRZ	7,985.17	8
Eightfold	3,102.55	-	3,102.55	CWCAM	-	1,409.55	1,409.55	L	26,011.06	29
Argentica	1,647.23	-	1,647.23	CBRE	-	-	-			
LoanCore	1,472.73	-	1,472.73	Wells Fargo	-	950.00	950.00	SASB		
LNR Partners	757.97	-	757.97	C-III	729.48	-	729.48	VERT	9,531.39	27
Seer / LNR	1,302.47	-	1,302.47	Aegon	-	417.50	417.50	HRZ	12,904.63	21
3650 REIT	829.25	-	829.25	-	-	-	-	L	-	-
Ready Capital	399.21	-	399.21	-	-	-	-		22,436.02	48
RR Holders>	-	22,436.02	22,436.02	-	-	-	-			
Total	26,011.06	22,436.02	48,447.08		26,011.06	22,436.02	48,447.08		48,447.08	

SECURITIZED MARKETS – CLO Issuance

Year	ISSUER	SERIES	DATE	AMOUNT	SELLER	SERVICER	COLMGR
2018	VMC Finance LLC	2018-FL1	01/26/18	368.09	Varde Partners	Trimont	Varde Partners
2018	TPG Real Estate Finance	2018-FL1	02/05/18	932.38	TPG	Wells Fargo	TPG
2018	Bridge Debt Strategies	2018-FL1	02/13/18	510.23	Bridge	Wells Fargo	Bridge
2018	AREIT Trust	2018-CRE1	02/14/18	480.38	Silverpeak	Wells Fargo	Silverpeak
2018	Bancorp Commercial Mortgage Trust	2018-CRE3	03/13/18	304.27	Bancorp Bank	Wells Fargo	Bancorp Bank
2018	BSPRT Ltd.	2018-FL3	03/23/18	610.00	Benefit Street	Situs	Benefit Street
2018	GPMT Ltd.	2018-FL1	04/26/18	826.57	Granite Point	Wells Fargo	Granite Point Mtg
2018	LoanCore Ltd.	2018-CRE1	05/18/18	1,052.91	LoanCore Capital	Situs	LoanCore Capital
2018	Arbor Realty Commercial Ltd.	2018-FL1	05/23/18	560.00	Arbor Realty	Arbor	Arbor Realty
2018	Exantas Capital Corp.	2018-RSO6	06/07/18	514.23	RCC Real Estate	C-III	Exantas Capital
2018	Ready Capital Mortgage Financing LLC	2018-FL2	06/15/18	278.28	ReadyCap	KeyBank	ReadyCap
2018	Marathon CRE Ltd	2018-FL1	06/22/18	470.00	Marathon Asset Mgt	KeyBank	Marathon Asset Mgt
2018	M360 Ltd.	2018-CRE1	07/18/18	329.74	M360 Advisors	Wells Fargo	M360 Advisors
2018	Shelter Growth CRE Ltd.	2018-FL1	07/20/18	415.13	Shelter Growth Cap	Wells Fargo	Shelter Growth
2018	BDS Ltd.	2018-FL2	07/25/18	420.02	Bridge Investment	Wells Fargo	Bridge Investment
2018	Hunt CRE Ltd.	2018-FL2	08/03/18	285.00	Hunt Mortgage	KeyBank	Hunt Mortgage
2018	Greystone Commercial Ltd	2018-HC1	09/11/18	300.00	Greystone	Greystone	Greystone
2018	Bancorp Commercial Mortgage Trust	2018-CRE4	09/17/18	341.00	Bancorp Bank	Wells Fargo	Bancorp Bank
2018	BSPRT Ltd.	2018-FL4	09/27/18	868.40	Benefit Street	Situs	Benefit Street
2018	VMC Finance LLC	2018-FL2	10/19/18	462.30	VMC Lender	Trimont	Varde Partners
2018	AREIT Trust	2018-CRE2	10/30/18	596.31	Silverpeak	Wells Fargo	Silverpeak
2018	KREF Ltd.	2018-FL1	11/07/18	1,000.00	KKR	Midland	KKR
2018	TRTX Ltd.	2018-FL2	11/15/18	1,000.17	TPG Real Estate	Situs	TPG Real Estate
2018	OREC Ltd.	2018-CRE1	11/20/18	350.00	ORIX	RED Mtg Capital	ORIX
2018	FORT CRE LLC	2018-1	11/28/18	600.00	Fortress	Wells Fargo	Fortress
2018 - Year to Date				13,875.40			
2019	BDS Ltd.	2019-FL3	01/28/19	600.00	Bridge Investment	Wells Fargo	Bridge Investment
2019	GPMT Ltd.	2019-FL2	02/14/19	825.00	Granite Point	Wells Fargo	Granite Point
2019	NLY Ltd.	2019-FL2	02/15/19	857.30	Annaly	Trimont	Annaly
2019	Bancorp Commercial Mortgage Trust	2019-CRE5	03/08/19	518.30	Bancorp Bank	KeyBank	Bancorp Bank
2019	LMREC LLC	2019-CRE3	03/26/19	500.00	LaSalle Mtg Real Est	Northmarq	LaSalle Mtg Real Est
2019	Ready Capital Mortgage Financing LLC	2019-FL3	03/29/19	320.80	ReadyCap	KeyBank	ReadyCap
2019	Exantas Capital Corp.	2019-RSO7	04/04/19	687.20	Exantas	C-III	Exantas
2019	PFP Ltd.	2019-5	04/11/19	764.20	Prime Finance	Wells Fargo	Prime Finance
2019	LoanCore Ltd.	2019-CRE2	05/07/19	1,057.23	LoanCore Capital	Situs	LoanCore Capital
2019	Arbor Realty Commercial Real Estate Notes Ltd.	2019-FL1	05/14/19	650.00	Arbor Realty	Arbor Multifamily	Arbor Realty
2019	Grand Avenue CRE Ltd.	2019-FL1	05/16/19	625.00	DoubleLine Capital	Wells Fargo	DoubleLine Capital
2019	BSPRT Ltd.	2019-FL5	05/20/19	810.00	Benefit Street	Situs	Benefit Street
2019	Shelter Growth CRE Ltd.	2019-FL2	05/21/19	453.70	Shelter Growth	Situs	Shelter Growth
2019	LoanCore Ltd.	2019-CRE3	05/23/19	415.85	LoanCore Capital	Situs	LoanCore Capital
2019	BDS Ltd.	2019-FL4	07/17/19	525.00	Bridge Investment	Wells Fargo	Bridge Investment
2019	STWD Ltd.	2019-FL1	07/26/19	1,100.00	Starwood Property	Wells Fargo	Starwood Property
2019	A10 Bridge Asset Financing LLC	2019-B	07/29/19	320.00	A10 Capital	A10 Capital	A10 Capital
2019	AREIT Trust	2019-CRE3	08/09/19	717.92	Argentic	Wells Fargo	Argentic
2019	M360 Ltd.	2019-CRE2	08/14/19	360.00	M360 Advisors	Wells Fargo	M360 Advisors
2019	Greystone CRE Notes Ltd.	2019-FL2	08/14/19	600.00	Greystone	Greystone Servicing	Greystone
2019 - Year to Date				12,707.49			

SOURCES

The third-party Information set forth herein is derived from the following sources:

- Bloomberg
- CBRE Capital Markets
- Citibank Research
- Commercial Mortgage Alert
- CRE Direct
- FHLMC
- Intex Solutions
- Maximus Ten-X
- Morningstar Research
- Moody's / RCA CPPI
- National Center for Education Statistics
- National Real Estate Investor
- Real Capital Analytics
- REIS
- Trepp Information Systems
- US Bureau of Labor Statistics
- US Census Bureau
- US Federal Reserve
- US Treasury
- Wells Fargo Research

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