

CWCapital Markets Update

First Quarter 2019

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- Economy: Continued positive employment and economic trends, but deficits growing at historic rates. Are trade war tariffs intended to fund the shortfall?
- Cyclical highs in property prices, volatility, and negative fundamentals
- Feature – Leverage versus Employment Fundamentals
- 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 correlation between leverage and market fundamentals. We synthesize and present information gathered from various industry research, public resources, and our own research.

THE ECONOMY

- **The April jobs report** noted that the economy continues to grow with 263,000 jobs created. Employment in the professional and business services category again led with 535,000 jobs created over the past year, leading both healthcare (404,000), and manufacturing (264,000) with retail continuing to decline as a source of jobs.
- **The unemployment rate** declined to 3.6%, the lowest level since 1969. The participation rate declined slightly to 62.8%. Average hourly earnings rose 3.2% year over year. As of year-end 2018, El Centro CA, Yuma AZ, and Ocean City NJ have reported the highest unemployment with all three over 10%.
- **The 10-year US Treasury** yield at 2.40% has tightened 28bps this year. Much of the tightening was related to overall concerns about global trade agreements, or the lack thereof, geopolitical issues, and other uncertainty. The 2/10 spread is 20bps, slightly higher than year-end, but continuing in its long-term flattening trend. Bloomberg news reports that the US posted a \$544bn budget deficit for the first 5 months in February, the largest ever on record. Corporate and individual income taxes decline, as tariff revenue increased. Unless tariffs permanently make up the shortfall in taxes, we remain concerned about long term debt levels, rising rates and real estate price weakness on the horizon.

PROPERTY MARKETS

- **Effective rent growth** – National average shows a 3.10% one-year growth rate, in line with the 5-year average. Multi-family rents grew 4.5% for the year, while retail growth continues to lag at 1.63%, continuing to slow.
- **Vacancy rates** – For the trailing 1-yr period, vacancy rates increased for all property types, (10 to 110bp). Although deliveries grew in all categories (except retail) over 2017's pace, absorption for all asset classes was less than 1.0x. This is the first time that all categories were negative in the past 15 years. We expect continued vacancy increases across all categories as heavy construction pipelines in multi-family and warehouse property types are delivered.
- **National property prices** for multi-family increased by 5.6% on a rolling 3-year basis, while retail properties have lost value per unit nearly every month for the past 2 years.

DEBT CAPITAL MARKETS

- **Credit spreads** generally tighten in Q1 with CMBS BBB- coming in approximately 100bps. YTD19 CMBS conduit issuance of \$10.8bn is off last year's levels by over 17%, continuing the long-term decline in issuance. Competing products such as FHLMC (\$16bn), SASB (\$10bn), CRE-CLO (\$5bn), and balance sheet lenders continue to take market share.
- **CMBS risk retention pricing** – Horizontal subordinates in the 14% area, L-shaped subordinates in the 16-17% area.
- **Conduit delinquency rates** dropped to 1.76% this month, reflecting continued improvement.

THREE TRENDS WE ARE WATCHING

- **Cyclical highs in property prices** – all property types experiencing price volatility at national level. Negative absorption and heavy delivery pipelines. Multifamily and industrial building on a very robust pace. Over-levered properties finding their way into rated securitizations.
- **Rising Interest Rates** – absent panic flights to quality, we believe the growing deficit, tax policy, trade tensions and tariffs may balloon deficits, spike rates, impact values.
- **CMBS Conduit deal size** – smaller deal sizes (now \$830mm, a decline of over 8% vs 2018) may reflect both market share issues as well as less willingness for banks to hold loans on their books in current market.

FEATURE – Leverage versus Fundamentals

This quarter, we feature a look at the correlation between leverage and market fundamentals. Most commercial real estate investors will agree that the economy and jobs are probably first among many important factors influence the success of any property. From a lending point of view, we would therefore expect loans to be more conservatively underwritten in areas of high unemployment and volatility, along with more aggressive lending in areas of stability and low unemployment.

To test our theory, we gathered the past 4 years of employment information from for the top 388 Metropolitan Statistical Areas (MSAs) in the US, as well as information on over 4,600 CMBS conduit loans originated and securitized between 2017 and 2018. We rank the MSAs by most recent unemployment and volatility, match loans to each MSA, and then calculate the average debt yield for each bucket. In a simplistic way, in regard to employment fundamentals, this analysis could help investors identify both over and under leveraged properties.

Table 1

Unemp Rate	Props	Average Debt Yield at Origination							
		MF	MH	OF	RT	HT	IN	SS	OT
<=3	815	9.41	9.98	9.37	10.55	14.67	10.70	10.98	10.55
4	2,696	8.68	10.38	9.87	9.67	14.20	10.31	9.37	9.51
5	818	10.17	10.35	9.60	9.95	13.91	10.97	10.02	9.09
6	85	10.36	8.22	11.81	11.22	14.63	11.82	10.61	11.22
>6	57	10.74	10.24	10.65	9.83	14.92	10.54	9.61	8.27
No MSA	192	10.74	9.60	9.66	9.95	15.28	13.50	9.92	10.34
Total / Av	4,663	10.02	9.80	10.16	10.20	14.60	11.31	10.09	9.83

Table 1 provides the categorized information and allows for a few observations:

- Multi-family housing follows a generally smooth and predictable pattern with low debt yields in MSAs with strong employment and less leverage in those with weaker economic conditions.
- Office properties follow a similar pattern.
- Hotel and Industrial property both appear to have consistent leverage regardless of MSA employment and economic condition.
- Higher than average debt yields in strong MSAs could also be a function of local overbuilding.
- Outliers identified in Manufactured Housing and Retail, with debt yields both higher and lower than expected.

While many factors influence lending decisions, we believe this simple process of comparing local fundamentals to leverage highlights loans which may require additional underwriting and analysis.

FEATURE – Leverage versus Fundamentals

MSAs with unemployment at 2x national average vs CMBS loans made

Metropolitan area	State	Unemployment				2017-2018 CMBS Loans
		12/01/15	12/01/16	12/01/17	12/01/18	
El Centro, CA	CA	24.10	23.60	17.00	17.30	2
Yuma, AZ	AZ	21.70	18.80	14.40	15.40	8
Ocean City, NJ	NJ	11.10	9.80	12.20	10.00	0
Visalia-Porterville, CA	CA	11.50	11.20	10.20	9.60	3
Yakima, WA	WA	8.10	7.50	8.10	8.30	0
Hanford-Corcoran, CA	CA	10.50	10.00	8.40	8.20	0
Merced, CA	CA	11.40	10.60	8.80	8.20	2
Salinas, CA	CA	8.10	7.70	8.50	8.10	2
Bakersfield, CA	CA	10.20	10.40	8.40	7.60	8
Fresno, CA	CA	10.20	9.50	8.10	7.50	4
Yuba City, CA	CA	10.20	9.40	7.70	7.50	1
Madera, CA	CA	10.50	9.20	7.50	7.10	1

SELECTED MARKET DATA – Economic and Real Estate Fundamentals and Trends

	2009	2014	2016	2017	2018	Q1-19	1yr	5yr	10yr
Economic									
UNEMP	9.90	5.60	4.70	4.10	3.90	3.80	-0.30%	-2.90%	-4.90%
PART	64.60	62.70	62.70	62.70	63.10	63.00	0.10%	-0.20%	-2.60%
GDP	14,567	17,616	18,869	19,831	20,865	21,063	5.10%	4.80%	4.64%
CPI-TTM	2.28%	-0.05%	1.91%	2.09%	1.40%	1.65%	-0.37%	0.32%	2.64%
UST IMPL INF	2.37%	1.68%	1.95%	1.96%	1.71%	1.88%	-0.17%	-0.25%	0.60%
Interest Rate									
1M LIBOR	0.32%	0.17%	0.77%	1.56%	2.50%	2.49%	0.61%	2.34%	1.51%
Eff Fed Funds	0.12%	0.12%	0.50%	1.31%	2.40%	2.41%	0.74%	2.35%	2.23%
Prime	3.25%	3.25%	3.75%	4.50%	5.50%	5.50%	0.75%	2.25%	2.25%
UST2	1.14%	0.67%	1.20%	1.89%	2.49%	2.26%	-0.01%	1.82%	1.45%
UST10	3.85%	2.17%	2.45%	2.40%	2.69%	2.41%	-0.33%	-0.32%	-0.30%
2/10 Spread	2.71%	1.50%	1.25%	0.51%	0.20%	0.14%	-0.33%	-2.15%	-1.76%
Real10	1.48%	0.49%	0.50%	0.44%	0.98%	0.53%	-0.16%	-0.07%	-0.90%
Vacancy (REIS)									
Multi	8.00%	4.20%	4.20%	4.50%	4.80%	4.80%	0.10%	0.70%	-3.20%
Retail	10.60%	10.20%	9.90%	10.00%	10.20%	10.20%	0.00%	-0.20%	-0.40%
Office	17.00%	16.70%	15.80%	16.40%	16.70%	16.60%	0.10%	-0.30%	-0.40%
Industrial	n/a	11.20%	10.30%	8.90%	10.20%	10.20%	1.10%	-1.30%	n/a
Hotel									
Rents (REIS Effective)									
Multi	964	1,124	1,252	1,305	1,356	1,380	4.47%	5.25%	4.32%
Retail	16.75	17.16	17.89	18.24	18.53	18.65	1.63%	2.07%	1.13%
Office	22.43	24.19	25.93	26.43	27.04	27.26	2.29%	3.04%	2.15%
Industrial	n/a	4.46	4.66	4.96	5.08	5.19	4.01%	3.75%	n/a
Hotel									
National \$PSF (RCA)									
Multi	81,953	132,159	152,206	153,656	168,075	162,052	9.86%	9.86%	9.96%
Retail	144	198	200	177	171	217	12.28%	1.48%	4.58%
Office	152	223	235	241	268	272	2.96%	4.71%	1.53%
Industrial	47	69	78	79	88	88	1.85%	7.52%	3.85%
Hotel	59,012	134,398	153,841	143,596	146,341	165,036	14.34%	4.58%	7.74%
National Cap Rate (RCA)									
MF	6.84%	6.05%	5.70%	5.62%	5.53%	5.47%	-0.14%	-0.75%	-1.17%
Ret	7.96%	6.63%	6.52%	6.60%	6.51%	6.56%	0.03%	-0.24%	-0.67%
Office	8.75%	6.75%	6.59%	6.73%	6.57%	6.78%	0.20%	-0.10%	-0.92%
Ind	8.37%	6.99%	6.80%	6.74%	6.48%	6.41%	0.03%	-0.81%	-1.49%
Hotel	9.55%	8.14%	8.50%	8.51%	8.39%	8.23%	-0.31%	0.01%	-0.71%
Risk Premium									
MF	2.99%	3.88%	3.25%	3.22%	2.85%	3.06%	0.19%	-0.43%	-0.87%
Ret	4.11%	4.46%	4.07%	4.20%	3.83%	4.15%	0.36%	0.08%	-0.36%
Office	4.90%	4.58%	4.14%	4.33%	3.89%	4.37%	0.53%	0.23%	-0.62%
Ind	4.52%	4.82%	4.35%	4.34%	3.80%	4.00%	0.36%	-0.49%	-1.18%
Hotel	5.70%	5.97%	6.05%	6.11%	5.71%	5.82%	0.02%	0.33%	-0.40%

CRE FUNDAMENTALS – Property Price, Vacancy, and Rent Growth Trends

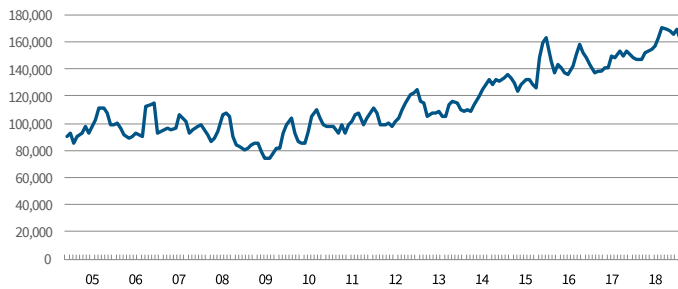
National Average \$price / unit					
Year End	MF	Retail	Hotel	Ofc	Ind
	90,527.7	154.4	108,200.0	169.5	63.0
2005	107,027.7	158.3	133,060.5	197.5	62.1
2006	113,416.2	174.3	136,504.5	232.4	66.7
2007	95,251.4	168.9	117,311.2	255.0	68.6
2008	84,671.0	181.3	89,940.8	199.7	63.1
2009	81,953.2	144.0	59,012.2	151.5	47.3
2010	99,502.6	152.1	138,350.5	222.2	51.3
2011	103,329.8	174.8	98,186.8	213.3	60.1
2012	120,788.9	228.0	121,202.3	225.8	62.1
2013	115,918.7	178.3	129,720.0	230.7	64.8
2014	132,159.3	198.4	134,397.7	222.6	69.3
2015	148,228.2	212.7	138,162.4	239.0	72.7
2016	152,206.0	199.6	153,841.0	234.9	77.7
2017	153,656.0	177.4	143,596.4	241.0	79.5
2018	168,075.2	171.4	146,340.9	268.0	88.0
2019Q1	162,051.9	217.4	165,035.9	272.4	87.6

Peak	170,070.0	248.1	201,238.3	298.5	95.4
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	Oct-18	Aug-16	Apr-15	Aug-08	Sep-18
Trough Date	Sep-09	Jun-10	Dec-09	Mar-10	Apr-10
Curr vs '06	35.5%	1.8%	5.2%	3.7%	19.1%
Curr vs Pk	-9.7%	-28.5%	-28.6%	-19.3%	-16.7%
Curr vs Tr	108.2%	38.5%	143.3%	82.6%	77.9%
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	11.3%	13.8%	29.7%	17.0%	10.4%

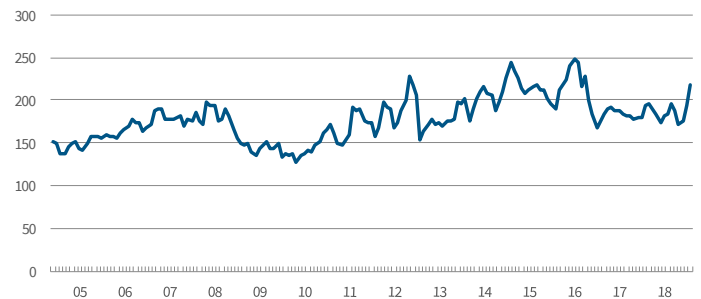
Vacancy Trend					
Year End	MF	Retail	Hotel	Ofc	Ind
2005	5.70	6.80	-	14.70	-
2006	5.80	7.10	-	13.40	-
2007	5.70	7.50	-	12.60	-
2008	6.70	8.90	-	14.50	-
2009	8.00	10.60	-	17.00	-
2010	6.60	11.00	-	17.60	14.00
2011	5.30	11.00	-	17.40	13.20
2012	4.60	10.70	-	17.10	12.10
2013	4.30	10.40	-	16.90	11.60
2014	4.20	10.20	-	16.70	11.20
2015	4.40	10.00	-	16.20	10.60
2016	4.20	9.90	-	15.80	10.30
2017	4.50	10.00	-	16.40	8.90
2018	4.80	10.20	-	16.70	9.40
2019Q1	4.80	10.20	-	16.60	9.40

Rent Growth 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
2019Q1	4.47	1.63	-	2.29	4.01

Multifamily



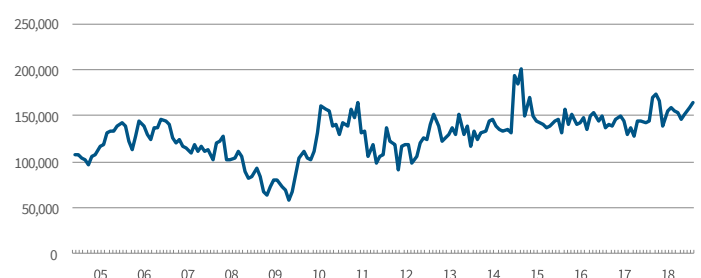
Retail



Office



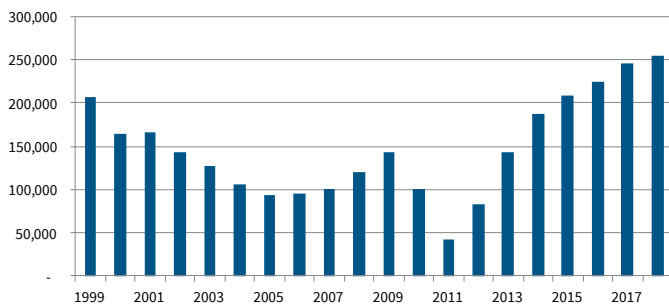
Hotel



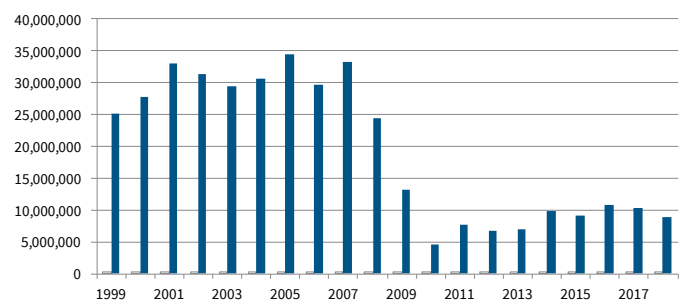
CRE FUNDAMENTALS – Commercial Property Deliveries and Absorption

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 - Record deliveries. - Continues to grow at all-time highs - Net absorption approx 0.87x, and - less than 1.0x for past 5 years
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 decline significantly. - Past 5 years at 9-10mm sqft - Net absorption almost zero
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 highest in past 10 years. - 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)		Industrial and Whse near LY record of 32%. - Record high deliveries - Second strongest rent growth at 4% - Net absorption falls 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	

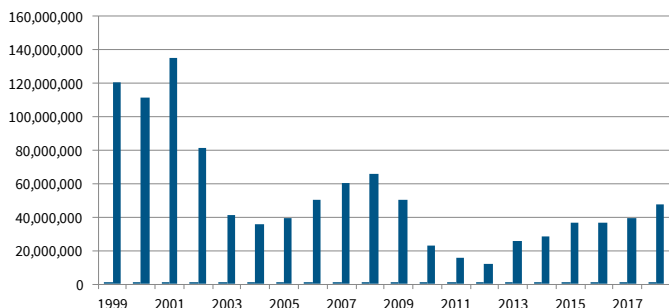
Multifamily



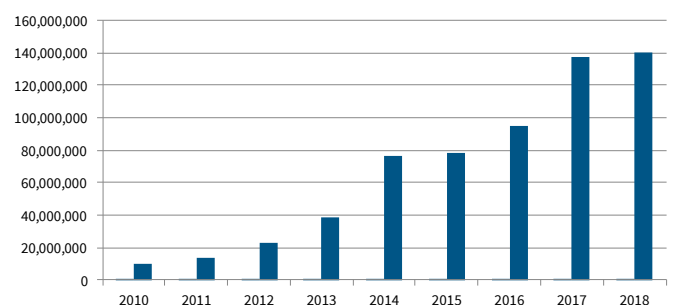
Retail



Office



Industrial/Warehouse



SECURITIZED MARKETS – 2019 Conduit and SASB Issuance

Type		SERIES	Pricing	AMOUNT	SERVICER	SPSERV	B-PIECE	#PROP	#LOAN	RR Type	RR Yld
CMBS	Conduit	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	-
10,794.08											

Type	SERIES	Pricing	AMOUNT	SELLER	SPSERV	Risk Retention	Asset	RR Type	RR Yld	
CMBS	SASB	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
9,951.60										

Subordinate Buyer	Conduit	SASB	Total	Special Servicers	Conduit	SASB	Total	Type	Balance	Deals
KKR	2,213.35	-	2,213.35	Midland	4,649.71	1,159.10	5,808.81	Conduit		
Rialto Capital	1,872.84	-	1,872.84	Keybank	1,374.05	3,303.53	4,677.58			
Eightfold	1,256.00	-	1,256.00	LNR Partners	2,897.48	1,150.00	4,047.48		4,885.35	5
Ellington / Prime	833.03	-	833.03	Trimont	-	2,903.20	2,903.20		4,215.90	6
Prime / LNR	883.52	-	883.52	Rialto Capital	1,872.84	390.00	2,262.84		1,692.84	2
Prime / Ellington	974.84	-	974.84	CWCAM	-	402.20	402.20		10,794.08	13
3650 REIT	829.25	-	829.25	Situs	-	456.08	456.08	SASB		
Ready Capital	399.21	-	399.21	Aegon	-	187.50	187.50			
LoanCore	774.09	-	774.09						5,211.30	16
LNR Partners	757.97	-	757.97						4,740.30	9
									-	-
									9,951.60	25
RR Holders>	-	9,951.60	9,951.60							
Total	10,794.08	9,951.60	20,745.69		10,794.08	9,951.60	20,745.69		20,745.69	

SECURITIZED MARKETS – 2019 FHLMC Issuance

Type		SERIES	Pricing	AMOUNT	SERVICER	SPSERV	B-PIECE	#PROP	#LOAN
FREMF	10-Year	FREMF 2019-K87	01/23/19	1,298.34	Wells Fargo	Wells Fargo	Bridge	65	65
		FREMF 2019-K88	03/01/19	1,444.26	Midland	CWCAM	Morgan Prop	64	64
		FREMF 2019-K89	03/12/19	1,488.68	Wells Fargo	Wells Fargo	NYMT	61	61
	15-Year	FREMF 2019-K1510	02/20/19	814.10	Wells Fargo	Wells Fargo	NYMT	45	45
	Floater	FREMF 2019-KF57	02/06/19	1,122.64	KeyBank	CWCAM	Kayne Anderson	42	42
FREMF 2019-KF58		02/20/19	1,088.32	Midland	CWCAM	Kayne Anderson	41	41	
FREMF 2019-KF59		03/06/19	930.56	KeyBank	CWCAM	Blackstone	40	40	
	Jr Lien	FREMF 2017-KJ19	03/15/18	290.98	Freddie Mac	Wells Fargo	Waterton	60	60
FREMF 2018-KJ20		08/01/18	314.79	Freddie Mac	Midland	Related Cos.	58	58	
FREMF 2018-KJ21		09/07/18	310.81	Freddie Mac	KeyBank	Harbor	69	76	
FREMF 2018-KJ22		11/08/18	446.94	Freddie Mac	CWCAM	Kayne Anderson	84	86	
FREMF 2018-KJ23		12/07/18	202.40	Freddie Mac	Wells Fargo	Berkshire Group	31	31	
	Small Bal	FRESB 2019-SB58	01/10/19	622.47	Freddie Mac	KeyBank	Tilden Park	238	238
FRESB 2019-SB59		02/13/19	625.27	Freddie Mac	LNR Partners	Axonic Capital	244	244	
FRESB 2019-SB60		03/14/19	624.67	Freddie Mac	Situs	Sabal Financial	226	226	
	Wkforce	FREMF 2018-KW04	03/23/18	631.50	Midland	KeyBank	NexPoint Advisors	44	42
FREMF 2018-KW05		06/05/18	637.67	Midland	Wells Fargo	Bridge	51	38	
FREMF 2018-KW06		08/01/18	666.04	Midland	Wells Fargo	Morgan Prop	45	45	
FREMF 2018-KW07		11/13/18	682.70	Wells Fargo	Wells Fargo	Morgan Prop	36	36	
	SASB	FREMF 2019-KBF3	01/23/19	745.86	Wells Fargo	Wells Fargo	Bridge	23	23
	Large	FREMF 2019-KL04	01/17/19	702.38	Wells Fargo	Keybank	Connor / Ares	22	22
	Prepay	FREMF 2019-KC03	01/24/19	774.50	KeyBank	KeyBank	RREEF America	24	24
			22	16,465.85					

Subordinate Buyer	Deals	Deal Balance
Morgan Prop	3	2,792.99
Bridge	3	2,681.87
Kayne Anderson	3	2,657.89
NYMT	2	2,302.77
Blackstone	1	930.56
RREEF America	1	774.50
Connor / Ares	1	702.38
NexPoint Advisors	1	631.50
Axonic Capital	1	625.27
Sabal Financial	1	624.67
Tilden Park	1	622.47
Related Cos.	1	314.79
Harbor	1	310.81
Waterton	1	290.98
Berkshire Group	1	202.40
Total	22	16,465.85

Spec Svc	Deals	Deal Balance
Wells Fargo	9	6,826.75
KeyBank	5	3,041.66
CWCAM	5	5,032.71
Situs	1	624.67
LNR Partners	1	625.27
Total	22	16,465.85

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 Growthl
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 - Year to Date				5,072.80			

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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