

CWC Capital Markets Update

First Quarter 2017

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In this issue of the Capital Markets update, we focus on the fundamentals and trends affecting national commercial real estate debt markets and feature a look at asset NOI growth relative to published valuations. We synthesize and present information gathered from various industry research, public resources, and our own research.

The Economy

- The March jobs report noted that only 98,000 jobs were added to the economy, with the unemployment rate falling to 4.5%, the lowest level since 2008. The participation rate improved slightly to 63.0%. The Bureau of Economic Analysis reported GDP growth at 0.7%, the lowest level in 3 years. Possible signs of an economic slow-down.
- The Bureau of Labor Statistics notes continued job growth in financial and professional services, healthcare and now mining. Average hourly earnings rose by 2.7% year over year, which represents a growing trend. The BLS notes the decline in retail trade jobs with employment in general merchandise stores declining by 89,000 jobs since October 2016. This trend could continue as internet shopping continues to grow. WTI crude oil back to just under \$50/bbl.
- The 10-year US Treasury yield has fallen to 2.32%, testing post election lows. Our measure of GDP growth over the trailing 1, 3, and 5 year periods at 2-3% on average. Forward trade policy, potential deficits associated with tax reform, and geopolitical events bear watching and could influence currency and interest rate trends.

Property Markets

- Effective rent growth - National average of 2.91%. Multi-family leads at 5.39%, retail lags at 1.42%.
- Vacancy rates – For the trailing 1 and 5 year periods, vacancy rates have improved across all broad categories. Of course, individual properties will vary, and sectors may experience increases with building. The multifamily sector has seen the highest deliveries in over 18 years. We expect vacancy increases are likely in selected areas.
- National property prices report decreases and some volatility in multi-family prices, along with retail and hotel prices as previously reported.

Debt Capital Markets

- Q1-17 CMBS conduit issuance of \$8.3bn lagged Q1-16 by 15%, and lagged 2015's \$13.4bn by over 37%. We expect further comparative lags in 2017 as risk retention and increased capital requirements now apply.
- CMBS risk retention pricing - Horizontal subordinates in the 14% area, L-shaped subordinates in the 18% area.
- Current conduit delinquency is reported at 3.79% according to Trepp. Although this level varies, maturity wave and conduit market contraction are driving the reversal of several years of declining delinquency.

Three trends we are watching

- *Cyclical highs in property prices* - national average hotel, retail, and office property prices experiencing volatility. Risk premiums have widened out in all sectors except multifamily. As property values increase we see property re-levering with less and less sponsor equity. Multifamily valuations relative to cyclical highs, construction. Property levels of concern.
- *Transformation of the lending and investing base* - as conduit lenders and securitized markets withdraw, balance sheet and agency lenders increasing share. Subordinate investor base evolving to a new set of investors, including insurance, funds, and others with long term funding (in addition to traditional b-piece/ special servicer firms).
- *Maturity wave and risk retention* - increased loan defaults as maturities meet the securitized markets. Receding liquidity, risk retention, bank capital rules, and regulatory requirements. Overall maturity defaults (later than 90 days past maturity) at 13.7% down from a 22% peak in July 2016, according to Morningstar data.

Feature – Conduit Collateral – Rich or Cheap vs Fundamentals?

- Given recent market focus on property valuations, we offer a fundamentals based review of valuations across the CMBS sector. Our analysis is based on the following methodology:
 - Our review included 430 conduit transactions issued since 2005.
 - We located 1,170 properties whose loans were securitized at least twice (generally 10 yrs apart)
 - We compare NOI and Appraisal/Unit for each property at initial and most recent securitization.
 - We calculate implied long-term growth rates for both NOI and Appraisal, then develop a multiple which compares the two. Our analysis makes appropriate adjustments for outliers, then compares the average multiple for each class.
- Allows for easy comparison across asset types relative to cap rate analysis.
- Multiples of 1.0x imply comparable growth rates between fundamental cashflow and property values. Multiples above or below 1.0x can be driven by sector cap rate compression, low interest rates, macro factors such as the growth in on-line shopping, or basic mis-pricing.
- Although most sectors are at cyclical highs, we see some concern in multi-family garden apartments, limited service hotels, and self-storage facilities, all appearing to have priced in multiples ahead of underlying fundamentals for the past 3 years. Multi-family deliveries could present additional challenges to that sector’s ongoing pricing. Conversely, pricing pressure is particularly evident in the office sector, as prior overbuilding and macro driven declines continue.**
- More important than ever, asset level underwriting may reveal not only overvalued assets, but undervalued assets and opportunities in an oversold sector.

Type	Subtype	Props	Long-Term Multiples		
			2014	2015	2016
Multi-Family	Garden	177	1.87x	2.51x	1.63x
	Mfg Housing	37	1.36x	2.17x	1.25x
Office	CBD	73	0.17x	1.02x	0.38x
	Suburban	87	0.28x	0.13x	0.21x
Retail	Anchored	348	2.41x	1.85x	1.46x
	Shadow Anchored	78	2.13x	2.11x	0.40x
	Single Tenant	21	4.10x	4.20x	1.27x
	Unanchored	153	1.59x	1.58x	2.03x
Hotel	Full Service	29	0.79x	1.90x	0.77x
	Limited Service	36	3.27x	2.60x	3.28x
Industrial	All	38	0.14x	2.50x	1.22x
Self-Storage	All	75	2.23x	1.48x	2.47x

Selected Market Data – Economic and Real Estate Fundamentals and Trends

	2006	2010	2011	2015	2016	Q1-17	1yr	5yr	10yr
Economic									
UNEMP	4.40	9.30	8.50	5.00	4.70	4.50	-0.50%	-3.70%	0.10%
PART	66.40	64.30	64.00	62.60	62.70	63.00	0.00%	-0.80%	-3.20%
GDP	14,066	15,230	15,785	18,223	18,869	18,869	3.22%	3.65%	3.26%
CPI-TTM	1.77%	1.15%	2.47%	1.44%	1.91%	1.90%	0.99%	-0.10%	-0.01%
UST IMPL INF	2.30%	2.30%	1.96%	1.54%	1.95%	1.96%	0.34%	-0.36%	-0.48%
Interest Rate									
1M LIBOR	5.35%	0.32%	0.35%	0.43%	0.77%	0.98%	0.55%	0.64%	-4.34%
Eff Fed Funds	5.24%	0.18%	0.07%	0.24%	0.50%	0.81%	0.56%	0.68%	-4.45%
Prime	8.25%	3.25%	3.25%	3.37%	3.75%	4.00%	0.50%	0.75%	-4.25%
UST2	4.82%	0.61%	0.25%	1.06%	1.20%	1.26%	0.53%	0.93%	-3.32%
UST10	4.71%	3.30%	1.89%	2.27%	2.45%	2.39%	0.61%	0.16%	-2.26%
2/10 Spread	-0.11%	2.69%	1.64%	1.21%	1.25%	1.13%	0.08%	-0.77%	1.06%
Real10	2.41%	1.00%	-0.07%	0.73%	0.50%	0.43%	0.27%	0.52%	-1.78%
Vacancy (REIS)									
Multi	5.80%	6.60%	5.30%	4.40%	4.20%	4.20%	-0.30%	-0.80%	-2.50%
Retail	7.10%	11.00%	11.00%	10.00%	9.90%	9.90%	-0.10%	-1.00%	1.00%
Office	13.40%	17.60%	17.40%	16.20%	15.80%	15.80%	-0.30%	-1.50%	1.30%
Industrial	n/a	14.00%	13.20%	10.60%	10.30%	10.30%	-0.30%	-2.70%	n/a
Hotel									
Rents (REIS Effective)									
Multi	930	987	1,010	1,183	1,252	1,252	5.39%	4.55%	2.61%
Retail	17.16	16.51	16.50	17.54	17.89	17.89	1.42%	1.67%	0.29%
Office	22.21	22.09	22.54	24.97	25.93	25.93	2.86%	2.88%	0.54%
Industrial	n/a	4.21	4.19	4.55	4.66	4.66	1.97%	2.19%	n/a
Hotel									
National \$PSF (RCA)									
Multi	113,416	99,503	103,330	148,228	152,206	137,586	-5.31%	5.72%	4.69%
Retail	174	152	175	213	200	179	-6.37%	2.55%	0.43%
Office	232	222	213	239	235	262	1.76%	6.72%	1.46%
Industrial	67	51	60	73	78	81	3.70%	6.27%	1.88%
Hotel	136,505	138,350	98,187	138,162	153,841	134,141	1.81%	-0.40%	-0.46%
National Cap Rate (RCA)									
MF	6.23%	6.55%	6.26%	5.91%	5.70%	5.40%	-0.31%	-0.95%	-0.93%
Ret	6.66%	7.61%	7.41%	6.48%	6.52%	6.56%	-0.04%	-0.72%	-0.02%
Office	6.69%	7.57%	7.32%	6.70%	6.59%	6.74%	0.14%	-0.54%	0.18%
Ind	7.14%	8.23%	7.69%	6.61%	6.80%	6.99%	0.19%	-0.56%	0.14%
Hotel	8.92%	8.21%	7.94%	8.38%	8.50%	8.50%	0.00%	0.54%	-0.49%
Risk Premium									
MF	1.52%	3.25%	4.37%	3.64%	3.25%	3.01%	-0.92%	-1.10%	1.33%
Ret	1.95%	4.31%	5.52%	4.21%	4.07%	4.17%	-0.64%	-0.88%	2.24%
Office	1.98%	4.27%	5.43%	4.43%	4.14%	4.35%	-0.47%	-0.70%	2.44%
Ind	2.43%	4.93%	5.80%	4.34%	4.35%	4.60%	-0.42%	-0.72%	2.40%
Hotel	4.21%	4.91%	6.05%	6.11%	6.05%	6.11%	-0.61%	0.38%	1.77%



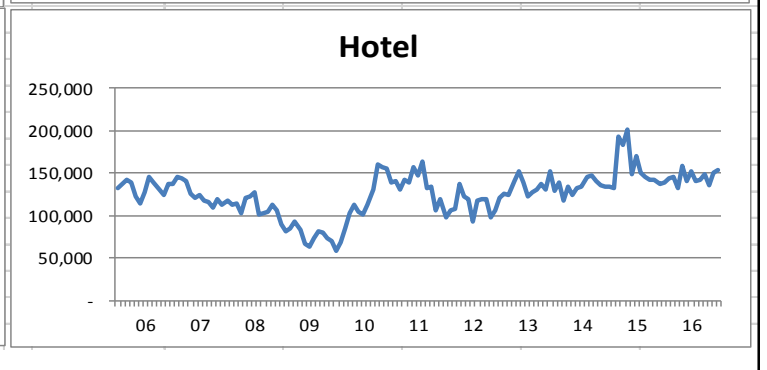
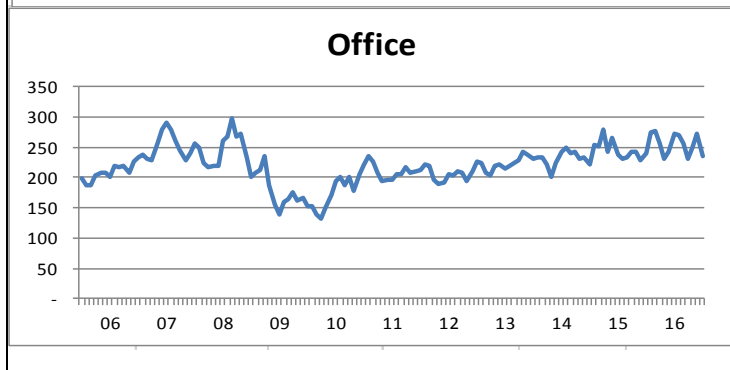
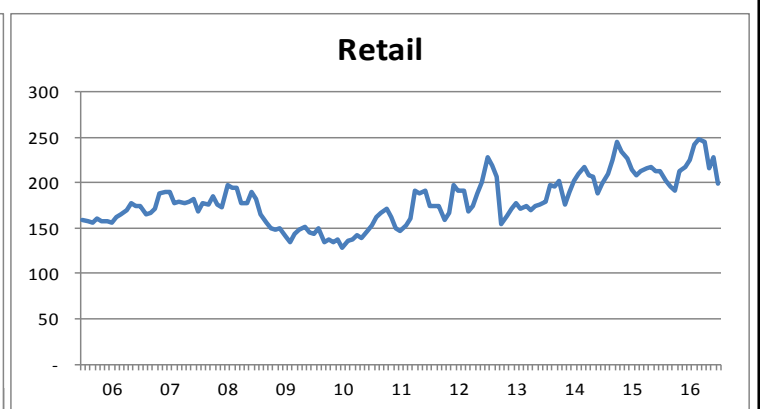
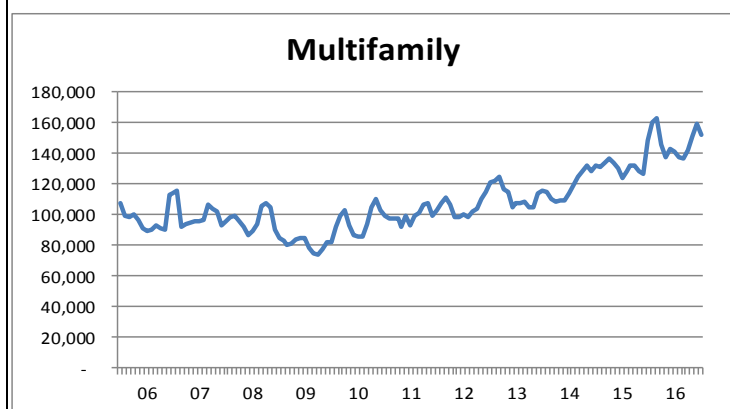
CRE Fundamentals – Property Price, Fundamentals, and Trends

Year End	National Average \$price / unit				
	MF	Retail	Hotel	Ofc	Ind
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
Peak	163,281.9	248.1	201,238.3	298.5	88.0
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	Feb-16	Aug-16	Apr-15	Aug-08	Nov-16
Trough Date	Sep-09	Jun-10	Dec-09	Mar-10	Apr-10
Curr vs '06	34.2%	14.5%	12.7%	1.1%	16.5%
Curr vs Pk	-6.8%	-19.6%	-23.6%	-21.3%	-11.6%
Curr vs Tr	106.2%	55.9%	160.7%	77.9%	74.1%

Year End	Vacancy Trend				
	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

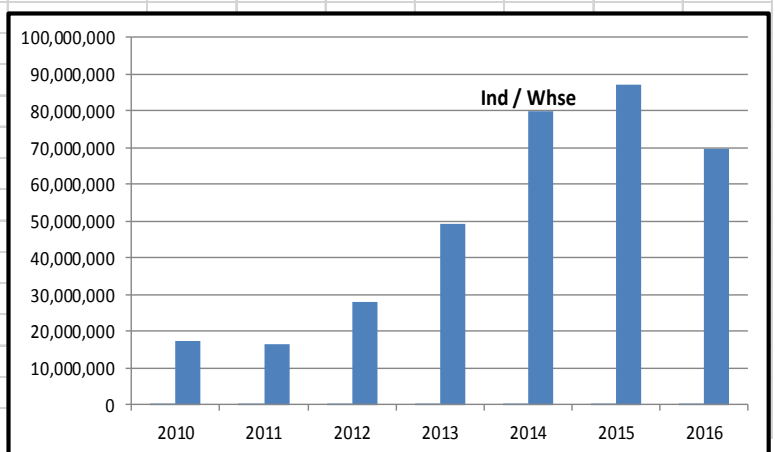
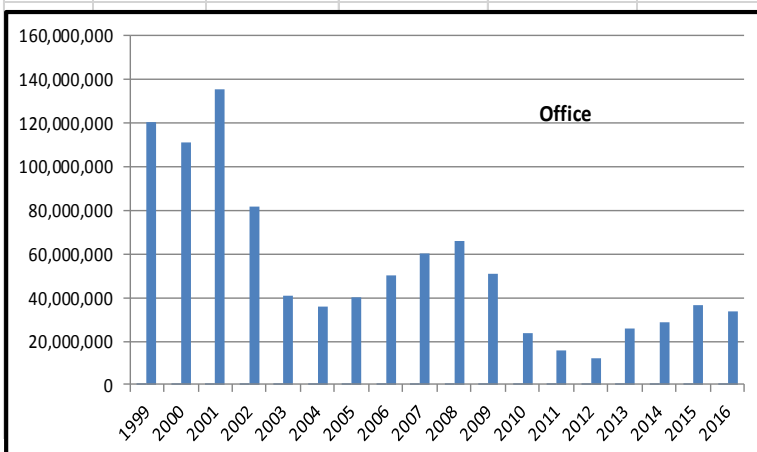
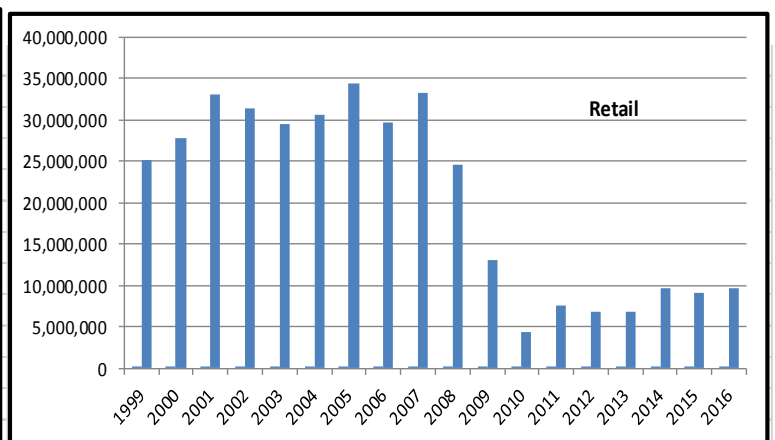
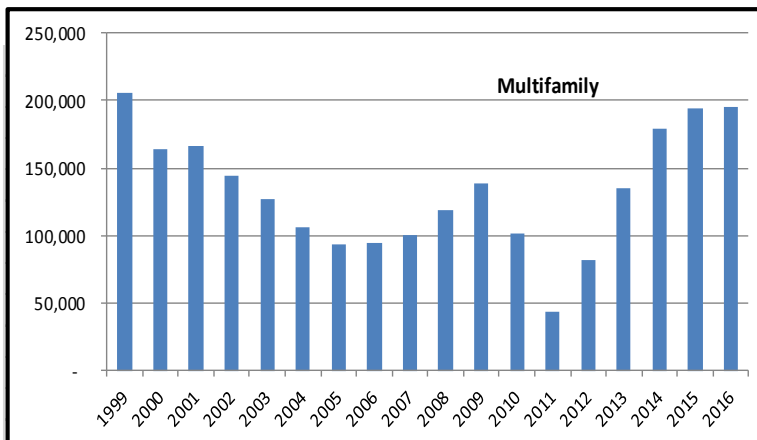
Year End	Rent Growth Trend				
	MF	Retail	Hotel	Ofc	Ind
2005	2.89	3.23	-	3.19	-
2006	4.38	3.37	-	8.93	-
2007	4.73	2.39	-	10.54	-
2008	1.95	(1.02)	-	0.24	-
2009	(2.92)	(3.68)	-	(8.86)	-
2010	2.39	(1.43)	-	(1.52)	-
2011	2.43	(0.06)	-	2.04	(0.48)
2012	3.86	0.48	-	1.95	1.91
2013	3.33	1.51	-	2.22	1.64
2014	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

5yr GR	8.1%	2.7%	9.4%	1.9%	5.3%
10yr GR	3.0%	1.4%	1.2%	0.1%	1.5%
Volatility	12.5%	13.7%	32.5%	18.2%	11.4%



CRE Fundamentals – New Construction and Delivery Trends

Year	Multi	Retail	Office	Ind / Whse	Notes
1999	205,818	25,126,000	120,280,000	-	
2000	164,674	27,727,000	111,061,000	-	
2001	166,124	33,013,000	134,904,000	-	* Multifamily deliveries and supply continued growth
2002	143,957	31,369,000	81,422,000	-	
2003	127,591	29,416,000	41,016,000	-	* Steady retail deliveries in the last 3 years (approx 9mm sqft), office deliveries down 8%
2004	106,144	30,596,000	35,475,000	-	
2005	93,227	34,438,000	39,792,000	-	
2006	95,205	29,627,000	49,879,000	-	* Year 2016 vs 2015
2007	100,630	33,254,000	59,902,000	-	
2008	119,330	24,545,000	65,450,000	-	-New retail deliveries up 6% relative to 2015. This follows a 7% decline between 2014 and 2015
2009	138,775	13,142,000	50,548,000	-	
2010	101,691	4,499,000	23,375,000	17,234,000	
2011	43,489	7,625,000	15,440,000	16,598,000	-Industrial deliveries trending lower by 20% relative to 2015's high of 87mm sqft
2012	81,399	6,778,000	12,443,000	28,002,000	
2013	135,614	6,883,000	25,959,000	49,178,000	
2014	179,358	9,776,000	28,287,000	80,009,000	-Multifamily almost flat relative to 2015's level of 194,459 units. As supply has ramped up significantly, deliveries are the highest in 18 years.
2015	194,459	9,088,000	36,642,000	86,962,000	
2016	195,734	9,640,000	33,500,000	69,789,000	





Securitized Markets - 2017

Type		SERIES	Pricing	AMOUNT	SERVICER	SPSERV	B-PIECE	#PROP	#LOAN	RR Type
CMBS	Conduit	CD 2017-CD3	01/27/17	1,327.48	Midland	Midland	KKR	59	52	L
		BACM 2017-BNK3	02/02/17	977.09	Wells Fargo	Midland	BlackRock	94	63	VERT
		BBCMS 2017-C1	02/16/17	855.75	Wells Fargo	Rialto Capital	Rialto Capital	75	58	VERT
		WFCM 2017-RC1	02/28/17	624.91	Wells Fargo	LNR Partners	Silverpeak	77	60	VERT
		GSMS 2017-GS5	03/07/17	1,061.94	Midland	Rialto Capital	Rialto Capital	72	32	L
		JPMCC 2017-JP5	03/07/17	1,092.98	Midland	LNR Partners	LNR Partners	59	43	HRZ
		JPMDB 2017-C5	03/17/17	1,043.45	Wells Fargo	CWCAM	MassMutual	50	35	HRZ
		WFCM 2017-RB1	03/22/17	637.56	Wells Fargo	C-III	C-III	72	37	VERT
		LSTAR 2017-5	03/24/17	758.77	Wells Fargo	Hudson	Lone Star Funds	32	29	HRZ
		CGCMT 2017-P7	03/31/17	1,025.32	Wells Fargo	Rialto Capital	Rialto Capital	58	46	L
		BANK 2017-BNK4	04/05/17	1,008.19	Wells Fargo	Rialto Capital	Rialto Capital	64	48	VERT

10,413.45

CMBS	SASB	MSC 2017-PRME	01/26/17	365.00	KeyBank	KeyBank	-	5	1	VERT
		OMPT 2017-1MKT	02/15/17	975.00	Wells Fargo	Wells Fargo	-	1	1	HORZ
		GSMS 2017-485L	02/03/17	350.00	Midland	Aegon	-	1	1	HORZ
		CST 2017-SKY	03/16/17	1,020.00	Wells Fargo	Wells Fargo	-	1	1	HORZ
		CSMC 2017-HD	03/17/17	218.60	KeyBank	Aegon	-	2	1	HORZ
		COLD 2017-ICE3	04/20/17	1,295.00	Wells Fargo	Trimont	-	54	1	HORZ

4,223.60

FREMF	7-Year	FREMF 2017-K724	01/13/17	1,172.94	Midland	Midland	Related Cos.	58	58	-
		FREMF 2017-K725	04/12/17	1,181.40	Midland	Wells Fargo	Ares Management	52	52	-
	10-Year	FREMF 2017-K61	01/19/17	1,261.09	Wells Fargo	Wells Fargo	Berkshire Group	69	69	-
		FREMF 2017-K62	02/17/17	1,444.06	KeyBank	Midland	Cyrus Capital	67	67	-
		FREMF 2017-K63	03/07/17	1,520.16	KeyBank	Wells Fargo	New York Mtg Tru:	46	46	-
	15-Year	FREMF 2017-K1503	04/19/17	878.08	KeyBank	CWCAM	Ang Grdn, McDowe	44	44	-
	Floater	FREMF 2017-KF27	02/07/17	1,401.99	Wells Fargo	Wells Fargo	Bridge	55	55	-
		FREMF 2017-KF28	03/02/17	1,311.50	Wells Fargo	CWCAM	Kayne Anderson	61	61	-
		FREMF 2017-KF29	04/04/17	1,460.76	Midland	KeyBank	Priderock	54	54	-
	Jr Lien	FREMF 2017-KJ11	01/31/17	265.16	Freddie Mac	Wells Fargo	Waterton	62	66	-
		FREMF 2017-KJ12	02/28/17	302.23	Freddie Mac	CWCAM	Kayne Anderson	65	65	-
		FREMF 2017-KJ13	04/05/17	345.32	Freddie Mac	Wells Fargo	Berkshire Group	60	61	-
	Work-Force	FREMF 2017-KW02	03/22/17	501.96	Wells Fargo	Wells Fargo	Bridge	52	52	-
	Small Bal	FRESB 2017-SB26	01/18/17	220.57	Freddie Mac	Sabal Financial	Sabal Financial	84	84	-
		FRESB 2017-SB27	02/15/17	246.33	Freddie Mac	Arbor	Axon Capital	93	93	-
		FRESB 2017-SB28	03/15/17	322.96	Freddie Mac	Trimont	Garrison	151	151	-
		FRESB 2017-SB29	04/06/17	217.19	Freddie Mac	Hunt Mortgage	Hunt Mortgage	100	100	-

14,053.69

Subordinate Buyer	Conduit	SASB	FREMF	Total	Special Servicers	Conduit	SASB	FREMF	Total
Rialto Capital	3,951.20	-	-	3,951.20	Midland	2,304.58	-	2,617.00	4,921.57
KKR	1,327.48	-	-	1,327.48	Rialto Capital	3,951.20	-	-	3,951.20
LNR Partners	1,092.98	-	-	1,092.98	CWCAM	1,043.45	-	2,491.81	3,535.26
MassMutual	1,043.45	-	-	1,043.45	LNR Partners	1,717.90	-	-	1,717.90
Blackrock	977.09	-	-	977.09	C-III	637.56	-	-	637.56
Lone Star Funds	758.77	-	-	758.77	Hudson	758.77	-	-	758.77
C-III	637.56	-	-	637.56	Wells Fargo	-	1,995.00	6,477.08	8,472.08
Silverpeak	624.91	-	-	624.91	Trimont	-	1,295.00	322.96	1,617.96
-	-	4,223.60	-	4,223.60	Keybank	-	365.00	1,460.76	1,825.76
Bridge	-	-	1,903.95	1,903.95	Aegon	-	568.60	-	568.60
Kayne Anderson	-	-	1,613.73	1,613.73	Sabal Financial	-	-	220.57	220.57
Berkshire Group	-	-	1,606.41	1,606.41	Arbor	-	-	246.33	246.33
New York Mtg Trust	-	-	1,520.16	1,520.16	Hunt Mortgage	-	-	217.19	217.19
Priderock	-	-	1,460.76	1,460.76					
Cyrus Capital	-	-	1,444.06	1,444.06					
Ares Management	-	-	1,181.40	1,181.40					
Related Cos.	-	-	1,172.94	1,172.94					
Ang Grdn, McDowell	-	-	878.08	878.08					
Garrison	-	-	322.96	322.96					
Waterton	-	-	265.16	265.16					
Axon Capital	-	-	246.33	246.33					
Sabal Financial	-	-	220.57	220.57					
Hunt Mortgage	-	-	217.19	217.19					
	10,413.45	4,223.60	14,053.69	28,690.73		10,413.45	4,223.60	14,053.69	28,690.73



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
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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