CWCapital Markets Update

Year-End 2017

<u>In this Issue:</u>

- Economy: Positive year-end employment and economic trends. Rising short rates, a flattening yield curve, and tightening spreads.
- Cyclical highs and volatility in property prices
- Feature – Our year-end assessment of multi-family fundamentals

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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 includes our annual assessment of the multi-family fundamentals. We synthesize and present information gathered from various industry research, public resources, and our own research.

The Economy

- The December 2017 jobs report noted that the economy added 148,000 jobs this month. The majority of jobs were created in healthcare (31,000), construction (30,000), and manufacturing (25,000). Retail jobs declined by some 20,000 workers, reflecting the longer-term trends in this sector.
- The unemployment rate declined for the year to 4.1%, from 4.7%. The current rate is the lowest since 2003. The participation rate was relatively steady at 62.7%. BLS also notes that average hourly earnings increased year over year by some 2.50% to $26.63/hour.
- The 10-year US Treasury yield finished at 2.40%, essentially flat from the prior year end of 2.45%. We have seen noticeable 2/10 flattening in 2017 of 74bps YTD, with the current level at a low of 51bps. Historically, inverted yield curves can signal an economic slowdown. Among the many factors that could influence interest rates in the near to medium term are the Federal Reserve's continued tightening cycle on the short end, the "unwinding" of its quantitative easing balance sheet, increased global growth and recovery, and increased deficits as a result of tax reform. The Federal Reserve Bank of Atlanta estimated 4Q17 GDP growth in the 3.3% range.

Property Markets

- Effective rent growth - National average of 3.64% year over year, showing some sings of slowing. Industrial growth now leads multi-family growth, reporting 6.44% versus 4.23%. Retail and Office lag in the 1.95% area.
- Vacancy rates – For the trailing 1-yr period, vacancy rates increased slightly for all property types, (10 to 60bp). Higher deliveries in all property types except retail, with multi-family absorption below 1.0x deliveries for first time since 2009. We expect continued vacancy increases as construction pipeline is delivered.
- National property prices report declines and volatility in all sectors this year, although we remain near peak levels.

Debt Capital Markets

- Credit spread tightening beginning to show across all sectors as investors compete for product. 2017 CMBS conduit issuance of $48.5bn was relatively flat compared to 2016's $48.0bn. Issuance may have slowed as investors dealt with new risk retention structures and the maturity wave. FHLMC issuance of $62bn grew 20% year over year, single asset issuance topped $36bn (almost double the prior year), and $7.6bn of CRE-CLO's were issued as well.
- CMBS risk retention pricing - Horizontal subordinates in the 16% area, L-shaped subordinates in the 18% area.
- Conduit delinquency rates dropped to 3.00% this month. Estimated 80% of delinquencies in the 06/07 vintages.

Three trends we are watching

- *Cyclical highs in property prices* - national average hotel, retail, and office property prices experiencing volatility. Hotel risk premiums have widened out appreciably year to date. As property values increase, we see certain sponsors re-levering and extracting equity. Multifamily valuations and construction a concern.
- *CMBS conduit market share* – in our July 2016 update, we noted the decline in market share of conduit CMBS. Only 62% of maturing loan volume was being replenished to the sector. Overall issuance appears flat with Agency, SASB, and CLO issuance all gaining share.
- *Increasing interest rates -* 2017 saw several rate hikes on the short end with 80bps in 1m LIBOR year over year. Significant flattening of the 2/10 yield curve from 125bps to 51bps at year end.

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CW Financial Services – 2017 Year-end Assessment of Multi-family Fundamentals

The year 2017 represented a continuation of the bull market in multi-family fundamentals, per unit prices, and in financing, however, several clear warning signals associated with a late-cycle asset class have now appeared. This year represented the eighth year of growth in national price per-unit (other than 2014), the eighth year of effective rent growth (other than 2009), and continued stability in the risk premiums offered relative to US Treasuries.

Additionally, the strong US economy has begun to exhibit signs that could be traditionally associated with slow-downs. Tax policy, immigration, and interest rates may all influence market conditions.

Overall, our outlook for multi-family fundamentals includes moderating rent, NCF, and price growth. We expect elevated vacancy rates, and possibly a slowing economy late in 2018 into 2019. Falling asset prices could slow property sales, lending, and pressure borrowers seeking to refinance. The rapid rate of prepayment in certain multi-family pools could slow, and loans could potentially extend if enough pressures mount. As home prices potentially become more affordable in the long term, risks to the multi-family asset class may result.

Multi-family Market Fundamentals - Where are we?

•***Effective rents*** **-** on a national basis reached $1,304/mo, representing a 3.57% increase over 2016's level, still above the long-term average of 2.96%, but now growing at the slowest rate in 6 years.

•***Vacancy*** – current vacancy levels reached 4.80%, the highest level in the past 6 years. Even though demand for apartments remains strong, building and deliveries have reached 15 year highs.

•***Delivery and Absorption*** **-** lack of building post financial crisis, falling home-ownership rates, and demographics have fueled one of the most robust building growth cycles in over 15 years. The estimated 258,000 units delivered in 2017 is the highest annual total in over 15 years, represents the 7th year of expansion, and is almost 2x the average for the same period. Absorption remains strong to match the building cycle, however, at 188,000 units in 2017, it also now represents the slowest rate in 3 years, and marks the first decline in the past 6 years.

•***Cap Rates / Risk Premium***- ending average cap rates were 5.53%, the richest nominal level in over 15 years. On a risk-adjusted basis, however, the premium to 10yr UST was 315bps, which also represents the historical average. The premium today is 2x what it was in 2006. A primary driver of current low cap rates (and higher prices) is the underlying interest rate.

•***Value and Price per Unit*** – given the historically low cap rates, national average price per unit reached $161,625, again a cyclical high, surpassing 2006's level by 42%. This level also represents the 8th consecutive year of price growth.

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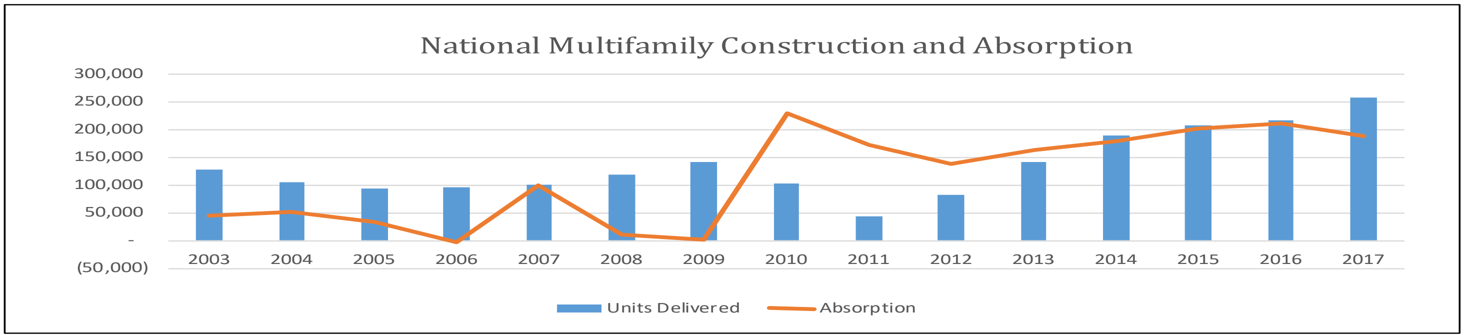
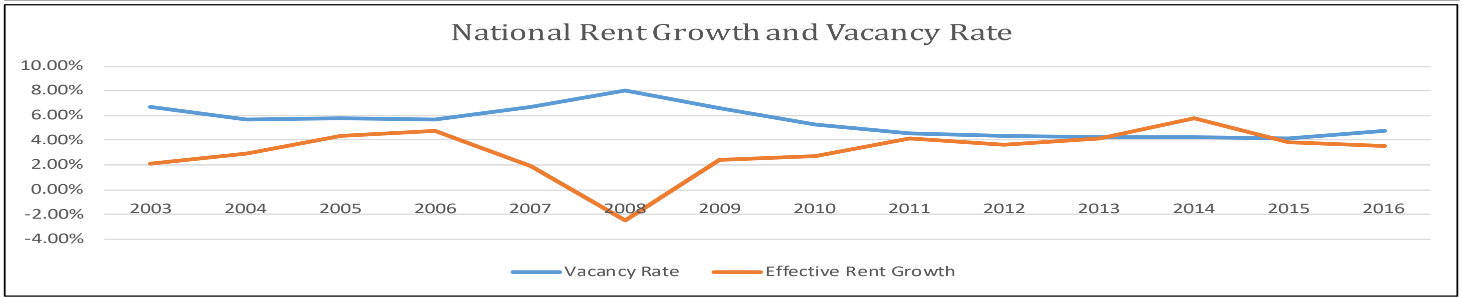
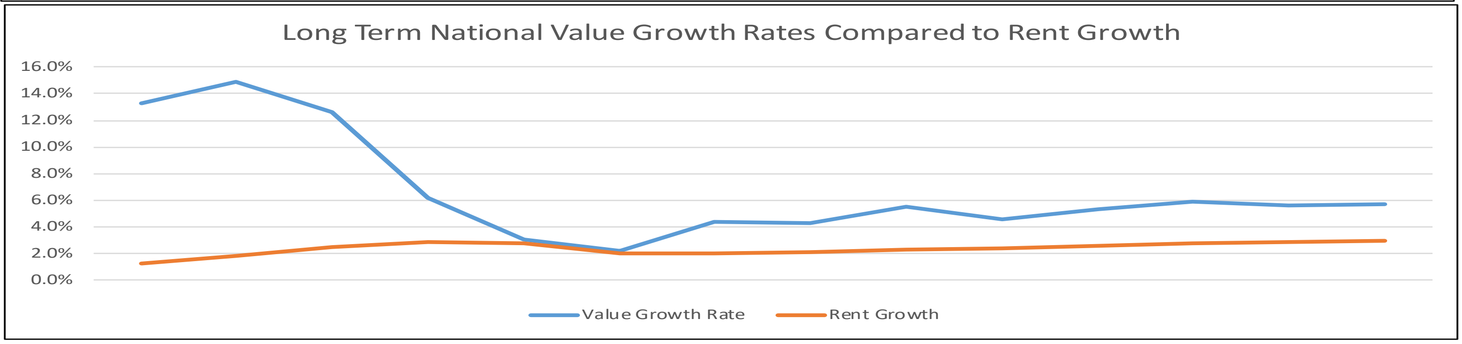
Charts 1 – 4 Multi-family Market Fundamentals – Where are we?

Year	Delivery	Absorbed	% Vacant	Effective Rent	Rent Growth	National $ / Unit	Cap Rate	1-Yr Value	LT Value Growth	LT Rent Growth	Risk Premium
2003	127,591	44,401	6.90%	848	0.47%	76,036	7.40%	7.9%	7.9%	0.5%	3.1%
2004	106,144	51,439	6.70%	866	2.12%	90,528	6.58%	19.1%	13.3%	1.3%	2.3%
2005	93,699	33,260	5.70%	891	2.89%	107,028	6.22%	18.2%	14.9%	1.8%	1.8%
2006	95,205	(3,168)	5.80%	930	4.38%	113,416	6.23%	6.0%	12.6%	2.5%	1.5%
2007	100,630	99,227	5.70%	974	4.73%	95,251	6.23%	-16.0%	6.2%	2.9%	2.2%
2008	119,630	11,536	6.70%	993	1.95%	84,671	6.58%	-11.1%	3.1%	2.7%	4.3%
2009	142,636	2,624	8.00%	969	-2.42%	81,953	6.84%	-3.2%	2.2%	2.0%	3.0%
2010	101,985	230,192	6.60%	992	2.37%	99,503	6.55%	21.4%	4.4%	2.0%	3.3%
2011	43,163	171,743	5.30%	1,019	2.72%	103,330	6.26%	3.8%	4.3%	2.1%	4.4%
2012	83,303	137,931	4.60%	1,061	4.12%	120,789	6.12%	16.9%	5.5%	2.3%	4.3%
2013	142,647	163,682	4.40%	1,100	3.68%	115,919	6.21%	-4.0%	4.6%	2.4%	3.2%
2014	189,023	179,583	4.30%	1,146	4.18%	132,159	6.05%	14.0%	5.4%	2.6%	3.9%
2015	208,614	201,037	4.30%	1,212	5.76%	148,228	5.91%	12.2%	5.9%	2.8%	3.6%
2016	216,899	210,980	4.20%	1,259	3.88%	152,206	5.70%	2.7%	5.7%	2.9%	3.3%
2017	258,282	188,049	4.80%	1,304	3.57%	161,625	5.53%	6.2%	5.7%	2.9%	3.2%
15yr Average / Growth					2.96%			6.3%	6.8%	2.3%	3.2%







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Multi-family Market Fundamentals - What is driving it?

Several factors have contributed to the continued bull market in multi-family properties.

- *Demographics and Household Formation* – the most likely tenants in a multi-family complex are young adults in the 18-34 age group. However, a recent Pew Research Center study quoted by the Chicago Tribune noted that while the number of households grew by 7.6 million over the past decade, home ownership remained largely flat. Demand for rental units obviously benefit. Renters in the 35-44 age group also grew by 36%. According to the study, 2/3 of that group say they rent as a result of circumstances as opposed to by choice. Younger renters, however, seem to prefer an urban setting, and enjoy the flexibility of renting. The US Census Bureau forecasts relative stability in the percentage of 18-44 age group and overall growth over the foreseeable future:

US Bureau of the Census Forecast				
	2014	2020	2030	2040
Total Population	318,748	334,503	359,402	380,402
Age 18-44 All	115,426	120,073	126,588	128,669
Native	95,441	99,369	105,145	106,053
Immigrant	19,984	20,704	21,443	22,616
Age 18-44 Pct	36.2%	35.9%	35.2%	33.8%
Native	82.7%	82.8%	83.1%	82.4%
Immigrant	17.3%	17.2%	16.9%	17.6%

- *Home Price Affordability* – as home prices become less affordable, potential homeowners turn to multi-family as a rental alternative. With interest rates and mortgage rates at near all-time lows, financing a home is cheap by historical standards. Those with quality credit and enough cash are able to make a down payment, and pay more to acquire a home. By historical standards, the inventory of available homes to be sold has been relatively low. For example, the US Bureau of the Census currently indicates a 4.9 month supply, relative to a 15 year average of 6.1 months, and a high of 12.2 months reached in 2009 at the height of the financial crisis. Taken together with a recovering economy, these factors place upward pressure on home prices.

  The S&P Case-Shiller Home Price Index published in November 2017 indicates that home prices on a national level are now some 5.9% above 2006's pre-crisis peak as the trend continues. This includes recovering the nearly 30% lost during the crisis.

  The National Association of Realtors measures affordability via their Housing Affordability Index. This index compares median incomes relative to median home prices and current mortgage rates. At the national level, affordability reached a 5-year low this year in June and July. Year-end levels have moderated somewhat, but continue to reflect housing moving further out of reach, in particular on the west coast of the US, south Florida, and in New York.

- *Home Ownership Rates* – the US Census bureau, in its October 2017 report, quoted the current home ownership rate at 63.9%, *close to the lowest rate in over 20 years*. At its peak in the Census release, ownership reached 69.0% in 2005. The experience of homeownership leading into and through the financial crisis have left many short of capital, credit, or simply desiring less fixed financial responsibility.

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- *Stability and performance of asset class vs others* – multi-family properties are generally less volatile and have performed better than other commercial real estate asset types. Riskier commercial property types such as hotels, retail, and office buildings have experienced higher default rates and are subject to economic forces such as e-commerce, changing travel patterns, more efficient space use, and corporate downsizing, whereas people always need a place to live. As of December 2017, data from Trepp indicates that multi-family was the largest asset type in the commercial securitized loan market and exhibited virtually the lowest current delinquency rate.

Type	Balance	Loans	30	60	90	Matured	FCL / REO	% Delinq
Retail	132,023.1	7,751	0.05%	0.03%	0.08%	0.50%	5.26%	**5.92%**
Office	127,850.4	3,758	0.05%	0.02%	0.08%	0.71%	4.97%	**5.82%**
Industrial	21,310.2	1,204	0.03%	0.02%	0.09%	0.74%	4.49%	**5.37%**
Lodging	73,732.4	2,784	0.05%	0.01%	0.17%	1.17%	1.75%	**3.16%**
Mixed Use	45,560.3	1,615	0.03%	0.02%	0.02%	0.57%	2.23%	**2.87%**
Mobile Home	9,911.9	1,151	0.00%	0.00%	0.00%	0.00%	1.43%	**1.43%**
Health Care	1,303.0	20	0.02%	0.00%	0.00%	0.00%	0.89%	**0.91%**
Other	24,828.2	1,078	0.01%	0.00%	0.16%	0.04%	0.62%	**0.84%**
Multi-Family	242,520.2	14,973	0.27%	0.00%	0.06%	0.01%	0.28%	**0.62%**
Self Storage	12,524.6	1,514	0.00%	0.00%	0.00%	0.00%	0.05%	**0.05%**
Co-op Housing	2,871.0	620	0.00%	0.00%	0.00%	0.00%	0.00%	**0.00%**
Total	694,435.4	36,468	0.12%	0.01%	0.08%	0.41%	2.52%	**3.14%**

- *GSE sponsored financing*- one of the notable developments during the financial crisis was the support and liquidity that FHLMC and FNMA provided to multi-family borrowers as the capital markets nearly ceased functioning. Since that time, the GSE's have dominated such financing. In 2016, FHLMC purchased $56.8bn of volume which is nearly 3.5x its 2009 volume. In the past 3 years, FHLMC has purchased over $150bn of multi-family loans. Market perception of GSE product is very positive given higher underwriting standards, quality property types, and actual performance. According to FHLMC, they issued 192 K-Deal transactions through October 2017, aggregating $217.2bn. Some 10% of the loans paid on or prior to maturity date, 99.99% are current, and only $11.94mm in total losses have been recorded to date (<0.01% of total issuance). Past performance is no guaranty of current or future performance however.

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Multi-family Market Fundamentals – What are the risks?

When thinking of the risks facing multi-family properties, any change in the primary drivers could cause performance and value to deteriorate. In addition, several other factors could also have an impact.

- *Affordability* – One of the biggest risks to multi-family is the affordability of single family housing as an alternative. As local markets cheapen, the rent-to-own ratio may cause young adults and the 2/3 of renters who say they would like to own a home to do so.

- *Continued Construction* – As covered previously, this year's construction and deliveries at 258,000 are at historical highs, and the trend continues. REIS forecasts that 2018 deliveries will nearly match 2017's levels, with slowing not until 2019 and thereafter, and net absorption continuing to fall.

- *Risk of Recession and Interest Rates* – fixed income capital markets often signal changes in economic conditions in advance of actual slow-downs. Leading into the last two significant recessions, the US Treasury yield curve relationship between the 2yr and 10yr rates became inverted. Many times, curve flattening or inversion can signal such a slow-down. As of December 2017, the 2-10 relationship flattened to the 60bp area. Not inverted, but a notable flattening that has continued this year.

  With thousands of multi-family properties financed in a historically low interest rate environment, significant increases in interest rates could cause both the values of properties to fall (assuming stable risk premiums) and refinancing to be much more difficult. Although many economists have expected interest rates to "normalize" over the past several years, the 10 year rate has remained below 2.50% for over 3 years.

US Treasury Curve Steepness 2yr - 10yr Relationship

	Dot-com Bubble	Financial Crisis	2yrs ago	1yr ago	Current
Term	06/30/00	06/30/06	06/30/15	12/31/16	12/19/17
US 2yr	6.36	5.15	0.64	1.19	1.85
US 10yr	6.03	5.14	2.35	2.44	2.45
Steepness	(0.33)	(0.01)	1.71	1.26	0.60

- *Property Value Growth versus Fundamental Rent Growth* - since 2008, national per-unit prices have grown by a compounded rate of 4.7% while national rents have grown by only 2.5% for the same period. Since risk premiums remained relatively stable, this 2.2% differential each year is mostly due to interest rates. The accumulated difference between the value and the slow growing cashflow could present significant risk should interest rates rise.

- *Demographics and Immigration* – although the 18-44 demographic group remains relatively stable, a Pew Research paper published in April 2017 points out that immigrants are driving overall work-force growth in the US. As the nation ages, this group becomes more important. Pew forecasts that without immigration, rather than growing, the workforce would actually decline by 17 million (9%) by 2035. Significant changes in immigration policy could decrease demand and the economic activity overall.

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Selected Market Data – Economic and Real Estate Fundamentals and Trends

	2007	2012	2015	2016	2017	1yr	5yr	10yr
Economic								
UNEMP	5.00	7.80	5.00	4.70	**4.10**	-0.60%	-3.70%	-0.90%
PART	66.00	63.60	62.60	62.70	**62.70**	0.00%	-0.90%	-3.30%
GDP	14,685	16,333	18,223	18,869	**19,754**	4.69%	4.19%	3.45%
CPI-TTM	3.76%	1.30%	1.44%	1.91%	**2.09%**	0.18%	0.79%	-1.68%
UST IMPL INF	2.31%	2.45%	1.54%	1.95%	**1.96%**	0.01%	-0.49%	-0.35%
Interest Rate								
1M LIBOR	5.23%	0.27%	0.43%	0.77%	**1.56%**	0.79%	1.29%	-3.67%
Eff Fed Funds	4.24%	0.16%	0.24%	0.50%	**1.31%**	0.81%	1.15%	-2.93%
Prime	7.33%	3.25%	3.37%	3.75%	**4.50%**	0.75%	1.25%	-2.83%
UST2	3.05%	0.25%	1.06%	1.20%	**1.89%**	0.69%	1.64%	-1.16%
UST10	4.04%	1.78%	2.27%	2.45%	**2.40%**	-0.05%	0.62%	-1.64%
2/10 Spread	0.99%	1.53%	1.21%	1.25%	**0.51%**	-0.74%	-1.02%	-0.48%
Real10	1.73%	-0.67%	0.73%	0.50%	**0.44%**	-0.06%	1.11%	-1.29%
Vacancy (REIS)								
Multi	5.70%	4.60%	4.40%	4.20%	**4.50%**	0.30%	-0.10%	-1.20%
Retail	7.50%	10.70%	10.00%	9.90%	**10.00%**	0.10%	-0.70%	2.50%
Office	12.60%	17.10%	16.20%	15.80%	**16.40%**	0.60%	-0.70%	3.80%
Industrial	n/a	12.10%	10.60%	10.30%	**8.90%**	-1.40%	-3.20%	n/a
Hotel								
Rents (REIS Effective)								
Multi	974	1,049	1,183	1,252	**1,305**	4.23%	4.86%	3.40%
Retail	17.57	16.58	17.54	17.89	**18.24**	1.96%	2.00%	0.38%
Office	24.55	22.98	24.97	25.93	**26.43**	1.93%	2.99%	0.77%
Industrial	n/a	4.27	4.55	4.66	**4.96**	6.44%	3.23%	n/a
Hotel								
National $PSF (RCA)								
Multi	95,251	120,789	148,228	152,206	**153,656**	0.95%	5.44%	6.13%
Retail	169	228	213	200	**177**	-11.12%	-4.44%	0.50%
Office	255	226	239	235	**241**	2.60%	1.35%	-0.55%
Industrial	69	62	73	78	**79**	2.20%	5.57%	1.58%
Hotel	117,311	121,202	138,162	153,841	**143,596**	-6.66%	3.70%	2.24%
National Cap Rate (RCA)								
MF	6.23%	6.12%	5.91%	5.70%	**5.62%**	-0.08%	-0.50%	-0.61%
Ret	6.68%	7.22%	6.48%	6.52%	**6.60%**	0.07%	-0.62%	-0.08%
Office	6.63%	7.10%	6.70%	6.59%	**6.73%**	0.14%	-0.37%	0.10%
Ind	7.12%	7.49%	6.61%	6.80%	**6.74%**	-0.06%	-0.75%	-0.38%
Hotel	8.85%	8.14%	8.38%	8.50%	**8.51%**	0.01%	0.37%	-0.34%
Risk Premium								
MF	2.19%	4.34%	3.64%	3.25%	**3.22%**	-0.03%	-1.12%	1.03%
Ret	2.64%	5.44%	4.21%	4.07%	**4.20%**	0.12%	-1.24%	1.56%
Office	2.59%	5.32%	4.43%	4.14%	**4.33%**	0.19%	-0.99%	1.74%
Ind	3.08%	5.71%	4.34%	4.35%	**4.34%**	-0.01%	-1.37%	1.26%
Hotel	4.81%	6.36%	6.11%	6.05%	**6.11%**	0.06%	-0.25%	1.30%

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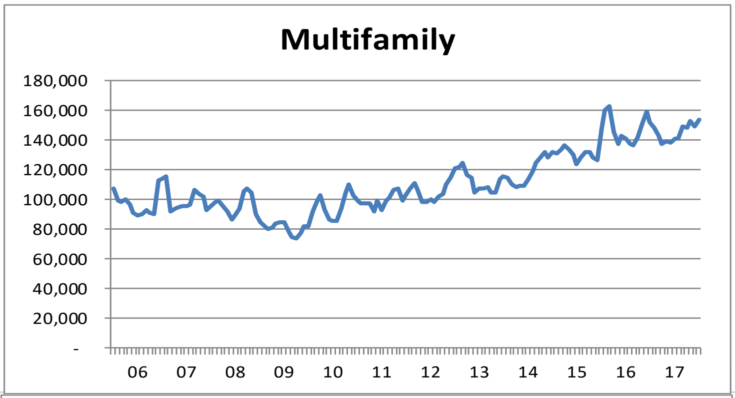
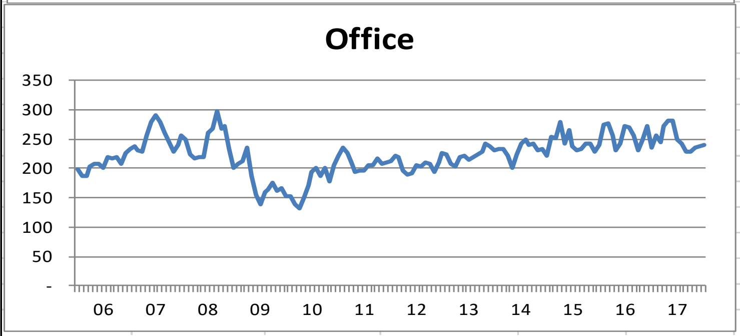
CRE Fundamentals – Property Price, Vacancy, and Rent Growth Trends

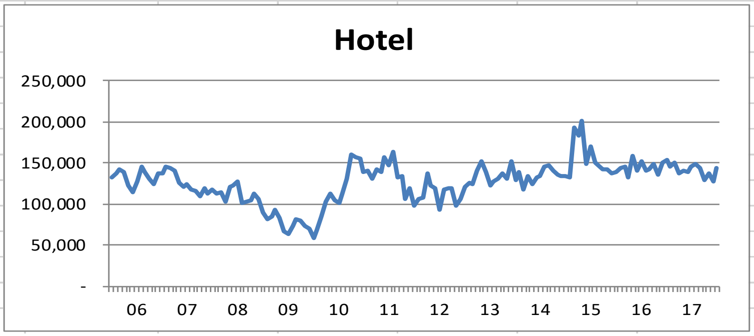
	National Average $price / unit				
Year End	MF	Retail	Hotel	Ofc	Ind
2005	107,027.7	158.3	133,060.5	197.5	62.1
2006	113,416.2	174.3	136,504.5	232.4	66.7
2007	95,251.4	168.9	117,311.2	255.0	68.6
2008	84,671.0	181.3	89,940.8	199.7	63.1
2009	81,953.2	144.0	59,012.2	151.5	47.3
2010	99,502.6	152.1	138,350.5	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
2017	153,656.0	177.4	143,596.4	241.0	79.5
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	**35.5%**	**1.8%**	**5.2%**	**3.7%**	**19.1%**
Curr vs Pk	-5.9%	-28.5%	-28.6%	-19.3%	-9.7%
Curr vs Tr	**108.2%**	**38.5%**	**143.3%**	**82.6%**	**77.9%**
5yr GR	4.9%	-4.9%	3.4%	1.3%	5.0%
10yr GR	4.9%	0.5%	2.0%	-0.6%	1.5%
Volatility	12.2%	14.3%	31.3%	17.8%	11.1%

	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

	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







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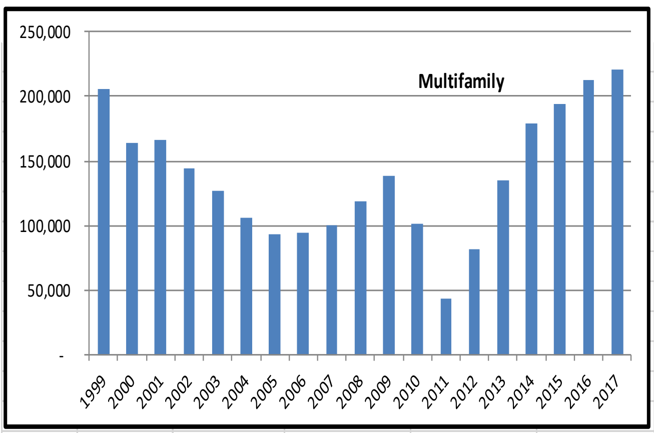
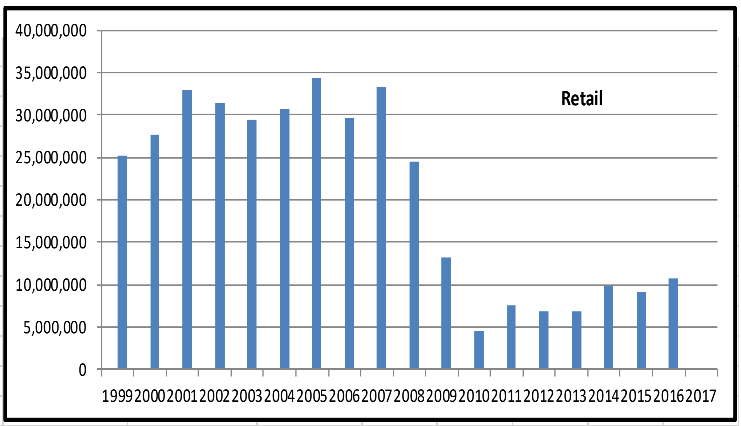
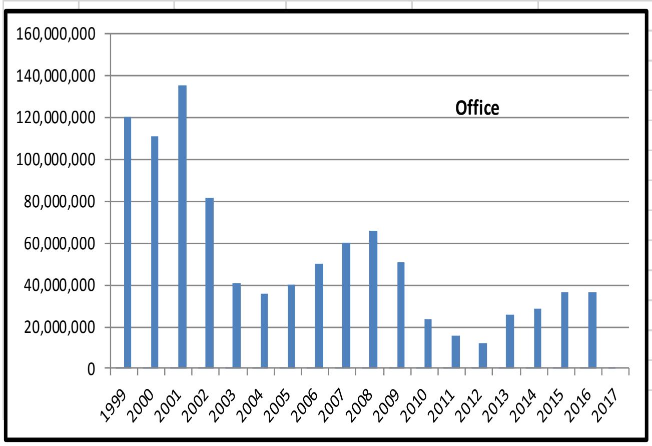
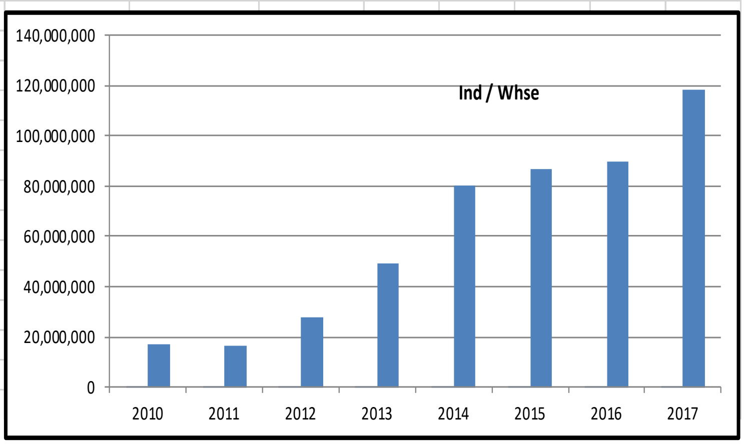
CRE Fundamentals – New Construction and Delivery Trends

	Deliveries				Net Absorption				
Year	Multi	Retail	Office	Ind / Whse	Multi	Retail	Office	Ind / Whse	Notes
1999	205,818	25,126,000	120,280,000	-					
2000	164,674	27,727,000	111,061,000	-	1.34x	1.42x	(1.02)		* Record Multifamily deliveries.
2001	166,124	33,013,000	134,904,000	-	0.12x	0.59x	(0.28)		Growth rate slowing to 3%
2002	143,957	31,369,000	81,422,000	-	(0.04)	0.87x	(0.15)		Net absorption slowed considerably
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	93,227	34,438,000	39,792,000	-	0.36x	1.03x	1.43x		* Retail deliveries down by 5%.
2006	95,205	29,627,000	49,879,000	-	(0.03)	0.75x	1.08x		Relatively stable at 9-10mm sqft
2007	100,630	33,254,000	59,902,000	-	0.99x	0.71x	(0.69)		Net absorption slowed considerably
2008	119,330	24,545,000	65,450,000	-	0.10x	(0.27)	(1.18)		
2009	138,775	13,142,000	50,548,000	-	0.02x	(1.64)	(0.42)		* Industrial and Warehouse up 32%
2010	101,691	4,499,000	23,375,000	17,234,000	2.26x	(0.71)	0.71x	(2.04)	Record high deliveries
2011	43,489	7,625,000	15,440,000	16,598,000	3.95x	0.83x	1.01x	3.89x	Rents relatively stable
2012	81,399	6,778,000	12,443,000	28,002,000	1.69x	1.67x	1.86x	3.07x	Net absorption - multiple of deliveries
2013	135,614	6,883,000	25,959,000	49,178,000	1.21x	1.84x	1.08x	1.36x	
2014	179,358	9,776,000	28,287,000	80,009,000	1.00x	1.36x	1.36x	1.22x	
2015	194,459	9,088,000	36,642,000	86,962,000	1.04x	1.36x	0.79x	1.33x	
2016	213,243	10,815,000	36,659,000	89,732,000	1.00x	1.07x	0.63x	1.49x	
2017	221,133	10,318,000	39,048,000	118,593,000	0.76x	0.68x	0.74x	1.24x	









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Type		SERIES	Pricing	AMOUNT	SERVICER	SPSERV	B-PIECE	#PROP	#LOAN	RR Type	RR Yld
CMBS	**Conduit**										
			Q1-2017	9,405.26	Various	Various	Various	648	455		
			Q2-2017	12,077.53	Various	Various	Various	1,363	675		
			Q3-2017	12,333.90	Various	Various	Various	1,472	643		
		WFCM 2017-C40	10/05/17	705.38	Wells Fargo	C-III	Resource Capital	150	65	VERT	
		MSBAM 2017-C34	10/06/17	1,048.62	Wells Fargo	LNR Partners	LNR Partners	179	50	VERT	
		JPMDB 2017-C7	10/13/17	1,105.33	Midland	Midland	KKR	201	41	L	
		CGCMT 2017-C4	10/19/17	977.06	Midland	Midland	KKR	95	57	HRZ	
		BANK 2017-BNK8	10/27/17	1,130.81	Wells Fargo	Midland	Eightfold	111	71	VERT	
		UBSCM 2017-C5	11/01/17	743.40	Midland	Midland	KKR	83	50	VERT	
		CD 2017-CD6	11/13/17	1,061.93	Wells Fargo	LNR Partners	Silverpeak	131	49	HRZ	
		GSMS 2017-GS8	11/14/17	1,020.39	Wells Fargo	Midland	KKR	125	58	HRZ	
		WFCM 2017-C41	11/17/17	785.92	Wells Fargo	LNR Partners	Silverpeak	200	36	HRZ	
		CSAIL 2017-CX10	11/17/17	1,113.70	KeyBank	CWCAM	Eightfold	97	52	HRZ	
		CCUBS 2017-C1	11/21/17	696.75	Midland	Midland	KKR	76	31	L	
		UBSCM 2017-C6	12/01/17	684.71	Wells Fargo	Rialto Capital	Rialto Capital	98	37	HRZ	
		BANK 2017-BNK9	12/05/17	1,053.73	Wells Fargo	Rialto Capital	Rialto Capital	124	39	VERT	
		WFCM 2017-C42	12/12/17	744.81	Wells Fargo	LNR Partners	Prime Group	89	45	VERT	
		MSC 2017-HR2	12/12/17	942.74	Wells Fargo	LNR Partners	Silverpeak	66	37	VERT	
		UBSCM 2017-C7	12/20/17	890.96	Wells Fargo	KeyBank	Prime Group	82	42	HRZ	
								109	48	HRZ	
				48,522.91							
							Seller				
	SASB		**Q1-2017**	2,928.60	Various	Various	Various	10	5		
			Q2-2017	9,419.00	Various	Various	Various	303	17		
			Q3-2017	13,012.26	Various	Various	Various	889	23		
		HYATT 2017-HYT2	10/19/17	410.00	KeyBank	KeyBank	Lone Star Funds, Aimbric	38	1	VERT	
		DBUBS 2017-BRBK	10/25/17	530.00	Wells Fargo	Aegon	Blackstone, Worthe Real	4	1	HRZ	
		BX 2017-IMC	10/27/17	955.00	KeyBank	LNR Partners	Blackstone, Fireside Inve	15	1	HRZ	
		CSMC 2017-CALI	11/21/17	250.00	KeyBank	Cohen Financial	Colony NorthStar, Rising	1	1	HRZ	
		BBCMS 2017-GLKS	11/29/17	540.00	Wells Fargo	KeyBank	Blackstone	2	1	VERT	
		BX 2017-CQHP	11/30/17	273.70	Wells Fargo	Aegon	Blackstone	4	1	VERT	
		MSC 2017-CLS	12/18/17	700.00	KeyBank	KeyBank	Blackstone	1	1	HRZ	
		CHT 2017-COSMO	12/15/17	1,380.00	Wells Fargo	Wells Fargo	Blackstone	1	1	VERT	
		MSC 2017-JWDR	12/19/17	365.00	KeyBank	KeyBank	Blackstone	1	1	HRZ	
		CSMC 2017-PFHP	12/19/17	240.00	Wells Fargo	Trimont	Pimco, Fulcrum Hospital	20	1	HRZ	
		AHPT 2017-ATRM	12/29/17	600.00	Wells Fargo	Wells Fargo	Atrium Holding	29	1	VERT	
		GSMS 2017-FARM	12/29/17	264.00	KeyBank	Aegon	JDM Partners, Transwest	1	1	HRZ	
				31,867.56							

Subordinate Buyer	Conduit	SASB	Total
Rialto Capital	12,925.69	-	12,925.69
KKR	10,897.49	-	10,897.49
Eightfold	4,358.85	-	4,358.85
Prime Group	4,810.79	-	4,810.79
MassMutual	1,854.46	-	1,854.46
Silverpeak	5,638.20	-	5,638.20
LNR Partners	2,141.60	-	2,141.60
Blackrock	977.09	-	977.09
Colony Northstar	958.99	-	958.99
Elliott Mgt	941.58	-	941.58
Jefferies LoanCore	916.48	-	916.48
Lone Star Funds	758.77	-	758.77
Resource Capital	705.38	-	705.38
C-III	637.56	-	637.56
	-	31,867.56	31,867.56
Total	48,522.91	31,867.56	80,390.47

Special Servicers	Conduit	SASB	Total
Midland	15,738.17	2,045.00	17,783.17
Rialto Capital	12,925.69	-	12,925.69
Aegon	-	9,493.60	9,493.60
Keybank	3,132.73	8,025.50	11,158.23
Wells Fargo	-	7,633.46	7,633.46
LNR Partners	9,466.20	955.00	10,421.20
CWCAM	5,158.43	-	5,158.43
Trimont	-	2,035.00	2,035.00
C-III	1,342.94	-	1,342.94
Strategic Asset	-	805.00	805.00
Hudson	758.77	-	758.77
Cohen Financial	-	875.00	875.00
	48,522.91	31,867.56	80,390.47

Type	Balance	Deals
Conduit		
L	12,464.81	13
VERT	18,243.49	20
HRZ	17,814.61	20
	48,522.91	53
SASB		
VERT	16,798.86	26
HRZ	15,068.70	29
L	-	-
	31,867.56	55
	80,390.47	

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Type		SERIES	Pricing	AMOUNT	SERVICER	SPSERV	B-PIECE	#PROP	#LOAN
FREMF	**7-Year Q4**	FREMF 2017-K728	10/31/17	1,169.48	Midland	KeyBank	Berkshire Group	43	43
		FREMF 2017-K729	12/15/17	1,394.80	Wells Fargo	Midland	Related Cos.	49	45
	10-Year Q4	FREMF 2017-K68	10/18/17	1,310.43	KeyBank	Wells Fargo	New York Mtg Tru	75	75
		FREMF 2017-K69	11/08/17	1,471.50	Wells Fargo	CWCAM	Ang Grdn, McDowe	68	68
		FREMF 2017-K70	11/30/17	1,322.56	KeyBank	CWCAM	Kayne Anderson	74	74
		FREMF 2017-K71	12/13/17	1,516.24	Midland	Midland	Pimco	65	65
	15-Year	FREMF 2017-K1503	04/19/17	878.08	KeyBank	CWCAM	Ang Grdn, McDowe	44	44
	Seasoned	FREMF 2017-KP04	11/16/17	1,000.00	Freddie Mac	Freddie Mac	Freddie Mac	21	21
	Floater Q4	FREMF 2017-KF35	10/03/17	1,467.94	Midland	Wells Fargo	Bridge	54	54
		FREMF 2017-KF36	10/11/17	1,315.25	Wells Fargo	CWCAM	Kayne Anderson	50	50
		FREMF 2017-KF37	10/20/17	1,122.14	Wells Fargo	KeyBank	Axonic Capital	41	41
		FREMF 2017-KF38	11/09/17	1,273.59	Midland	CWCAM	Berkshire Group	49	49
		FREMF 2017-KF39	12/06/17	1,312.84	KeyBank	KeyBank	Harbor Group	42	42
		FREMF 2017-KF40	12/19/17	1,064.74	Wells Fargo	Wells Fargo	Bridge	46	46
		FREMF 2017-KF41	12/20/17	651.30	KeyBank	KeyBank	Harbor Group	23	23
	Jr Lien Q4	FREMF 2017-KJ17	11/03/17	319.79	Freddie Mac	Midland	Related Cos.	74	75
		FREMF 2017-KJ18	12/19/17	227.88	Freddie Mac	KeyBank	Berkshire Group	46	46
	Small Bal Q4	FRESB 2017-SB39	10/05/17	263.81	Freddie Mac	Arbor	Prime	95	95
		FRESB 2017-SB40	10/12/17	293.15	Freddie Mac	KeyBank	Axonic Capital	119	119
		FRESB 2017-SB41	11/08/17	311.39	Freddie Mac	Sabal Financial	Sabal Financial	110	110
		FRESB 2017-SB42	11/15/17	287.06	Freddie Mac	LNR Partners	Garrison	119	119
		FRESB 2017-SB43	12/06/17	325.37	Freddie Mac	Sabal Financial	Sabal Financial	111	111
		FRESB 2017-SB44	12/13/17	320.28	Freddie Mac	KeyBank	Axonic Capital	109	109
	SASB Q4	FREMF 2017-KIR3	10/05/17	1,483.09	Midland	Freddie Mac	Irvine Co.	11	11
		FREMF 2017-KGS1	12/05/17	1,768.25	Wells Fargo	Wells Fargo	Greystar	34	34
	Wkforce	FREMF 2017-KW02	03/22/17	501.96	Wells Fargo	Wells Fargo	Bridge	52	52
		FREMF 2017-KW03	09/11/17	542.02	KeyBank	KeyBank	Harbor Group	75	75
	Senior	FREMF 2017-KS08	05/16/17	734.99	Wells Fargo	CWCAM	Kayne Anderson	36	36
		FREMF 2017-KS09	12/01/17	708.79	Midland	CWCAM	Kayne Anderson	25	25
	Large	FREMF 2017-KL01	05/26/17	511.56	Wells Fargo	Wells Fargo	Bridge	2	2
	Tax Exempt	FRETE 2017-ML01	06/29/17	318.81	Freddie Mac	Midland	Fundamental	22	22
		FRETE 2017-ML02	06/14/17	20.57	Freddie Mac	Midland	Fundamental	3	3
		FRETE 2017-ML02	11/28/17	310.56	Freddie Mac	Midland	Related Cos.	12	12
				62,863.25					

Subordinate Buyer	Deals	Deal Balance	Special Servicers	Deals	Deal Balance
Kayne Anderson	10	9,739.12	Wells Fargo	19	19,172.98
Bridge	9	9,616.75	KeyBank	17	13,426.09
Berkshire Group	7	6,706.85	CWCAM	13	13,362.28
Harbor Group	6	5,568.78	Midland	9	7,805.04
Related Cos.	5	4,505.37	Freddie Mac	4	3,383.58
Ares Management	3	2,947.08	Sabal Financial	5	1,481.23
Axonic Capital	7	2,923.55	Situs	1	1,436.11
New York Mtg Trust	2	2,830.59	Arbor	3	837.51
Ang Grdn, McDowell	2	2,349.58	Trimont	2	645.17
Irvine Co.	2	1,867.10	Greystone	1	550.00
Greystar	1	1,768.25	Hunt Mortgage	2	476.21
Freddie Mac	2	1,550.00	LNR Partners	1	287.06
Pimco	1	1,516.24			
Sabal Financial	5	1,481.23			
Priderock	1	1,460.76			
Cyrus Capital	1	1,444.06			
Pensam	1	1,436.11			
Garrison	3	932.22			
Morgan Properties	1	516.48			
Hunt Mortgage	2	476.21			
Waterton	2	403.89			
Fundamental	2	339.38			
Prime	1	263.81			
Sutherland	1	219.85			
	77	**62,863.25**		**77**	**62,863.25**

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Securitized Markets - 2017 - CLO Issuance

Year	ISSUER	SERIES	DATE	AMOUNT	SELLER	SERVICER	COLMGR
2017	PFP Ltd.	2017-3	03/06/17	567.40	Prime Finance	Wells Fargo	Prime Finance
2017	Arbor Realty Commercial Real Estate Notes Ltd.	2017-FL1	03/28/17	360.00	Arbor Realty	Arbor Realty	Arbor Realty
2017	BSPRT Ltd.	2017-FL1	06/12/17	418.06	Benefit Street	Situs	Benefit Street
2017	RAIT Trust	2017-FL7	06/13/17	342.37	RAIT Financial	RAIT Financial	RAIT Financial
2017	Resource Capital Corp.	2017-CRE5	06/26/17	376.70	Resource Capital	C-III	Resource Capital
2017	Hunt CRE Ltd.	2017-FL1	08/01/17	349.23	Hunt Mortgage	KeyBank	Hunt Mortgage
2017	Ready Capital Mortgage Financing LLC	2017-FL1	08/02/17	243.80	ReadyCap	KeyBank	ReadyCap
2017	Arbor Realty Commercial Real Estate Notes Ltd.	2017-FL2	08/07/17	365.00	Arbor Realty	Arbor Realty	Arbor Realty
2017	A10 Term Asset Financing LLC	2017-1	08/08/17	350.97	A10 Capital	A10 Capital	A10 Capital
2017	Bancorp Commercial Mortgage Trust	2017-CRE2	08/11/17	314.36	Bancorp Bank	Wells Fargo	Bancorp Bank
2017	PFP Ltd.	2017-4	09/18/17	652.15	Prime Finance	Wells Fargo	Prime Finance
2017	LCCM CRE Trust	2017-FL1	10/03/17	456.85	Ladder Capital	Wells Fargo	Ladder Capital
2017	BSPRT Ltd.	2017-FL2	11/15/17	440.69	Benefit Street	Situs	Benefit Street
2017	RAIT Trust	2017-FL8	11/17/17	259.78	RAIT Financial	RAIT Financial	RAIT Financial
2017	Arbor Realty Commercial Real Estate Notes Ltd.	2017-FL3	12/06/17	480.00	Arbor Realty	Arbor Realty	Arbor Realty
2017	BXMT Ltd.	2017-FL1	12/08/17	1,000.00	Blackstone	Midland	Blackstone
2018	VMC Finance LLC	2018-FL1	01/26/18	368.09	Varde Partners	Trimont	Varde Partners
2017				**6,977.36**			

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Sources

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

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CBRE Capital Markets
Citibank Research
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Commercial Mortgage Alert
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