

CRE

FINANCE WORLD

The Voice
of Commercial
Real Estate Finance

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No. **2**

HIGHLIGHTS

**Ten Years of Economic Growth:
The Good, The Bad, The Future**

**The New Retail:
From Apocalypse to Evolution**

**CRE CLO Experiencing
Sizeable Prepayments**

**Restoring an Obligation
to Repurchase Defective
CMBS Loans**

PLUS

**But My Dispensary Tenant is
Cash Flow Positive, Why Can't
I Get a Loan?**

**CMBS Subordination Levels:
Whatever Happened to
30%, 20%, 10%?**



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A Letter From the Editor

I'm not terribly nostalgic, and memory is not one of my better qualities, but if I try to recall 25 years ago it seems like the life of another person. I was living in a different town, had only one toddler (now my three boys are adults) and I probably wrote more than anything else about murders (which frankly is a lot more interesting to people at dinner parties than mortgages).

I never could have imagined a career involving CMBS because the concept had never crossed my consciousness. But in 1996 I found myself in this fledgling part of the securities market writing for CMA, akin to being thrown in the deep end of the pool without a lifejacket. Thankfully, I had the good fortune of getting "schooled" in a roundabout way by industry pioneers such as Tad Philipp, Jack Taylor, Schecky Schechner, John Scheurer, Jon Vaccaro, Lisa Pendergast and Mike Mazzei (to name but a few).

This comes to mind because in this issue of CRE Finance World we are celebrating the 25th anniversary of the organization, which got its start as a CMBS trade group called Commercial Real Estate Secondary Market and Securitization Association before branching into the entire commercial real estate finance industry. CREFC has grown to represent more than 300 companies and 9,000 professionals and has been publishing this magazine for 20 years, for which I've had the honor of editing since 2011.

CMBS developed as a financing alternative when traditional balance sheet lenders were sidelined by the S&L crisis and real estate market crash. It provided a financing tool that helped commercial real estate to emerge from a period of crisis, and it's hard to imagine what would have become of the industry if debt remained difficult to obtain for an extended period.

As important as it was to create a new source of debt, though, I think that is only a small portion of the real significance of CREFC, which provided a base of support for the new structures and technologies and was instrumental in developing the rules, and the evolution of the CMBS market. More importantly, a small group of individuals and companies helped usher in new ways of thinking about, producing and consuming real estate debt.

Over the years, the commercial mortgage capital markets have become much more complex, with a steady stream of new structures that target a wide variety of investor demands and borrower needs. And those types of innovations are not

limited to securities such as CMBS, GSE agency debt and CLOs. Portfolio lenders have embraced a wider variety of loan products, while in recent years debt funds have grown to fill even more market niches. None of that would have or could have happened without the creative mindset ushered in the early 1990s.

Why is that so significant? Advances in structuring have been a critical part of making commercial real estate functional, accessible and liquid. That in turn has enabled the CRE industry to not only survive the roller coaster of market fluctuations, such as the financial crisis, but to thrive relative to competing financial segments.

We have for years talked about the "Wall of Capital" that has boosted the industry in the wake of the Great Recession. Investors of all stripes – foreign and domestic, institutional and small – have come into the industry and pushed prices to all-time highs. There is a record amount of dry powder of funds that want to buy but can't find the right deals or the right prices.

There's a lesson in there somewhere about market peaks and cycles, but for my purpose today I want to point out that the strong demand that fueled the strong recovery would not have been possible without the plethora of structures invented by the creative people who developed and continue to develop this industry.

So please enjoy our anniversary edition. We have some articles by esteemed market veterans Darrell Wheeler and Victor Calanog that look back on the industry and its growth; an update on the Community Reinvestment Act by CREFC's insightful staff; and our regular variety of pieces about current issues of import written by members of the community.

Enjoy, and here's to another 25 years,

Paul Fiorilla | Editor-in-Chief

Victor Calanog PhD | Moody's Analytics | Reis
Shan Ahmed | Moody's Analytics | Reis
Keegan Kelly | Moody's Analytics | Reis

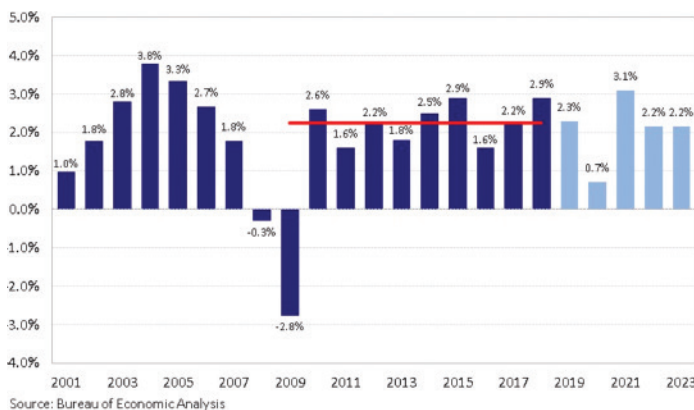


Ten Years of Economic Growth: The Good, The Bad, The Future

The Real Economy: A Record Period for Economic Expansion, But What Does It Mean for Commercial Real Estate?

June 2019 marks the tenth year of economic expansion, following the end of the Great Recession. By July 2019, the current cycle will topple the previous record held by the March 1991 to March 2001 period as the longest expansionary period of the postwar era. One explanation for the current expansion's longevity is that more moderate GDP growth, albeit perceived by many as 'slow,' has been an unexpected boon.

FIGURE 1
US GDP Growth



This report provides an overview of the economy's performance over the last ten years, and assesses how commercial real estate fundamentals and financing have performed over the period. We will discuss how changing trends in demographics, preferences for the use of space, and the widespread adoption of new technology have affected different property types. We will present evidence that the lending environment, as a whole, has not succumbed to a systematic deterioration in underwriting standards – commonly found during the latter stages of credit and business cycles. Because of all this, we will argue that if and when we do lapse into a recession, default rates might not spike as much as in the previous cycle – except for a handful of property types and markets.

Historically, US postwar expansions have burned high and then burned out, with annual GDP growth reaching upward of 3% but lasting only around half the length of

the current period. The compound annual growth rate of the US economy from June 2009 to June 2019 is barely 2.2%, despite predictions that the measure would pass 3% to 4%. Yet, it is perhaps because of this moderate pace that the expansionary period has been able to last this long. Various economic sectors grew, without overheating.

Will The Recent Tax Cut-Fueled Boom Lead to a Bust?

In 2018, the US experienced stronger economic growth, with GDP finishing at 2.9%. Though still not passing the 3% mark, the economy did experience a relative surge in growth similar to what was seen in 2014. For reference, GDP growth peaked in 2004 at 3.8%, driven by the brunt of the housing market boom, before falling to 3.3% in 2005 and then again to 2.7% in 2006. By contrast, the growth observed in 2018 was sparked by fiscal policy, as the Trump administration's tax cuts came into effect. The new tax code stimulated business spending; in particular, spurring the business investment component of GDP to reach a lofty 15.2% in Q3. However, the fiscal boost in GDP has been expectedly short term, and growth is predicted to fall once again to the low 2's in 2019. It is important to note that moderation is not contraction – the economy has persisted with annual growth rates often hovering slightly above 2% since the end of the recession.

Lower growth rates do indicate that the US economy is more vulnerable to exogenous shocks or a rapid change in sentiment. Consumer sentiment showed slight weakness in 2018 due to instability in equity markets, but has returned to a positive trend as of February of this year. Though it is of course subject to change, consumer sentiment does not appear to be in hot water just yet; it is challenging to predict exogenous shocks like geopolitical events, but there have not been consistent flashing lights that should worry us. While we are 100% sure there will be another recession in the future, predicting its timing is always a challenge.

The Ups and Downs of the Financial Economy

Since the Great Recession, stock indices have risen steadily and interest rates continue to remain relatively low. The 10-year treasury rate, commonly used as the risk-free benchmark for commercial real estate investments, has been around 2%, (and certainly below 3%) for most of the period since the second half of 2011. As the Fed began implementing a countercyclical monetary policy – ending their QE program and raising the overnight borrowing rate – 10-year treasury rates started to rise steadily by the middle of 2016 and even started to nudge above 3% at the end of 2018. Investors and economists (some of who had been forecasting rate hikes for almost a decade – see the dotted lines on figure 2 below for 10-year treasury forecasts made at the end of past years by the Federal Reserve Bank of Philadelphia) had fully expected more rate hikes throughout 2019.

FIGURE 2

Dow Jones Industrial Average & 10-Year US Treasury Rates



Recent Fed policy offered a slight surprise: The Fed chose to be “patient” about hikes and did not raise rates in its March policy announcement. Critics of the Fed point to its susceptibility to equity market volatility, suggesting that they reversed course because the stock market suffered its worst fourth quarter in seven years at the end of 2018. But with this shift in policy outlook, interest rates predictably fell again; the 10-year treasury dropped below 2.5%, its lowest rate in the last 12 months. Two days later, concerns loomed as the 3-month versus the 10-year component of the yield curve inverted, a situation that is commonly believed to be a leading indicator of recessions.

Is Sentiment Shifting? How Soon Will the Next Recession Come?

Pessimists point to how some indicators are suggesting an imminent economic slowdown. For example, the University of Michigan consumer sentiment survey has been showing slight weakness, and new permits issued for private housing units moderated. Is the expansion ending? Given how long the expansion has run, it is natural that we characterize it as “late stage.”

However, the truth of the situation is likely more complex. Market reactions to the recent Fed policy announcements could be extreme – distorted by the effects of a government shutdown, recent trade tensions, as well as drop offs in fiscal stimulus. Additionally, markets are still adapting to new leadership at the Fed, and this policy pivot may have inadvertently induced a negative feedback loop in business confidence. Lastly, policy measures used in the last recession such as quantitative easing may have created structural shifts that interfere with treasury prices and the yield curve’s purported predictive power.

From a more fundamental and tangible standpoint, a number of important measures of economic health do not confirm the yield curve’s signals. Labor markets in 2018 were stronger relative to the previous three years. Institutional commercial lending activity was strong in the final quarter of 2018 and this strength is expected to continue throughout 2019. Currency and commodity prices are also indicative of positive economic conditions.

The Fed’s pause on rate hikes and the subsequent inversion of the yield curve are not strictly indicative of an incoming recession. In fact, short-term 3-month yields have once again fallen below longer-term 10-year yields, reversing the yield curve inversion. A moderation in growth, with low 2% annualized GDP growth, is not a contraction.

Underlying Demand for Property Markets: A Recent History of the Labor Market

According to the National Bureau of Economic Research’s estimates, the Great Recession officially began in December of 2007 and ended in June of 2009. The US

labor market continued to see large-scale contractions up until the end of 2009, when the unemployment rate began its slow descent to today’s rate of 3.9%. Nonfarm payrolls fell by nearly 8.4 million employees from December of 2007 to October of 2009, a drop of approximately 6%. The unemployment rate, which sat at 4.7% in late 2007, reached its cyclical peak of 10% in October of 2009. More than 15 million people were unemployed by this time, with just over 6 million receiving unemployment benefits.

In early 2010, the US labor market began to show signs of a recovery. Payrolls increased at an average of 86,000 employees per month over the year, with the largest proportion of the gains coming in the spring and late-fall. Employment gains accelerated in the following years, reaching a peak of 250,000 payrolls per month in 2014. The unemployment rate had fallen to 5.6% by this time, approaching the supposed “natural rate” of 5%.

From 2015 to 2016, the labor market showed a slight moderation from its previous gains. The unemployment rate fell below 5% by February of 2016, where it held steady throughout the remainder of the year. Strong payroll gains in 2017 and 2018, the latter of which saw a rate of nearly 225,000 jobs per month, saw the unemployment rate fall further to the low-fours and high-threes. Today’s rate, a striking 3.8%, is the lowest since the early 1970s.

The Labor Market Is Tight, But There Remain Structural Issues

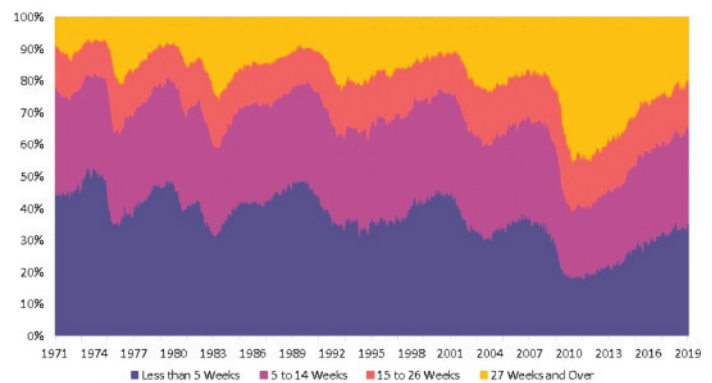
While the unemployment rate has fallen well below its prerecession levels, the average duration for which job seekers remain unemployed has remained historically high. Prior to the Great Recession, job-seekers spent an average of 16 weeks unemployed. That figure rose to an all-time high of 41 weeks in July of 2011, from which it has slowly descended to its current value of 21 weeks.

Currently, the average duration of unemployment is at its highest level for any economic expansion in the postwar era. More interestingly, however, is that the median duration of unemployment is markedly lower at just over 9 weeks. The vast disparity between the mean and median duration of unemployment points to a looming issue – the sizeable proportion of job seekers who are long-term unemployed.

Figure 3 below shows the percentage breakout of the unemployed according to the length of their unemployment. In recent years, the number of unemployed whose job search spanned 26 weeks or fewer has returned to prerecession levels. The number of jobseekers who have been unemployed for 27 weeks or more, however, has remained persistently high. In the beginning of 2007, approximately 16% of people were long-term unemployed. As of February of 2019, that figure stands at 20.4%.

FIGURE 3

US Unemployment Rate by Duration



Regardless of work experience or credentials, those who were laid off at the very onset of the recession were unlikely to find new jobs until the recovery began. The probability of reemployment for workers who are long-term unemployed is significantly lower than average, which results in a vicious cycle of even longer-term unemployment. Some who lost their jobs in the early days of the recession are still looking for a job, or may have left the labor force altogether. This places downward pressure on the labor force participation rate, which is already hindered by the aging of the population.

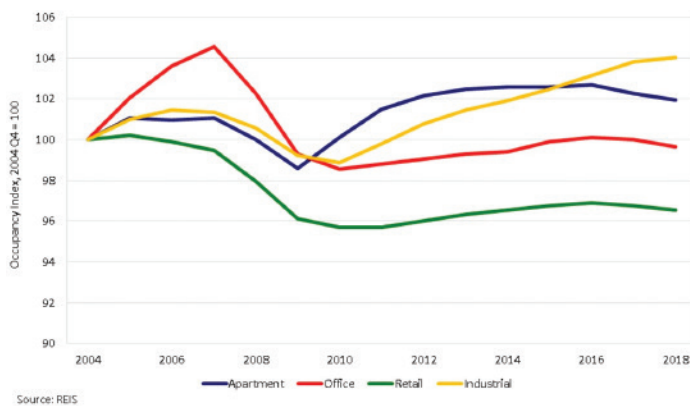
Despite these pressures, the labor market stands as the jewel in the economy's crown, with consistently strong job reports bolstering equity markets, consumer sentiment, and wage growth. The labor market has shown robustness too – the last government shutdown appears to have had little to no effect on recent employment reports. While overall structural changes brought on by the Great Recession present challenges for the future, we remain cautiously optimistic about the labor market.

Property Markets: A World of Have and Have Not's

The tide has not lifted every boat equally across multifamily and commercial property sectors. Multifamily and rental housing-related property types – including Self-Storage – were the first sectors to benefit from the economic recovery. As early as 2010, multifamily vacancies began falling from record highs. By 2015, annual asking and effective rent growth peaked at close to 6%, with vacancies falling to as low as 4.1% before ticking upwards. Prompted by strong fundamentals, developers began building apartment units at a pace unseen in most markets since the late 1980s. For major markets like New York, construction activity for multifamily units has set record highs. Vacancies have therefore drifted upwards and rent growth has moderated. With that said, demand remains strong, and forecasts suggest that a pullback in construction lending will lead to less apartment deliveries as soon as 2020.

FIGURE 4

Commercial Property Occupancy Index



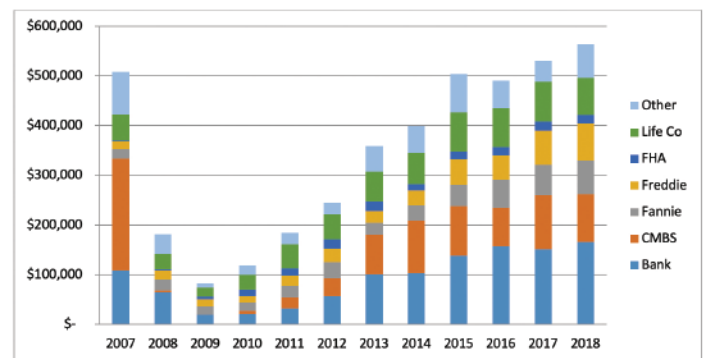
Office properties and retail properties have not fared as well, with vacancies falling by only around 100 basis points since each sector reached its cyclical peak in late 2010 and 2011, respectively. Annual rent growth, while positive, hovered only from 1.8% to 2.8% for both sectors for the last seven to eight years. Both sectors are struggling with longer term trends. For the office sector, employers are still figuring out their optimal use of office space; the rise of tech companies, espousing collaborative work environments amidst smaller cubicle-type arrangements, and improvements in mobile technology, allowing more people to work from home or while on the road, all contribute to this dampened demand for traditional office space. Retail is suffering from the continuing rise of online commerce; as retailers struggle with their omni-channel strategy, some retail property types like freestanding centers, or

neighborhood and community centers with groceries and pharmacies as anchors, are doing relatively well. Malls that had large tenants like Macy's, Sears, or JC Penney close shop are struggling. The industrial sector – particularly the warehouse/distribution subsector – is benefiting from what ails retail, as Amazon and other online retailers snap up space (particularly close to urban centers) to store their goods.

The CRE Lending Environment

After the massive decline in issuance that marked the recession years of 2008 and 2009, CRE lending volumes grew and finally surpassed 2007's figure of \$507.8 billion in 2017, when debt origination totals for banks, GSEs, Life Cos, and other lenders hit \$530.1 billion. Having origination regain its previous highs slowly, over a period of ten years, almost in lockstep with relatively moderate economic growth, appears indicative of the relative caution that lenders have taken given the lessons of the recent past.

FIGURE 5
CRE Lending Volumes



Source: Mortgage Bankers Association; dollar figures in millions

Data from the Mortgage Bankers Association shows that delinquency rates for stabilized loans hover close to zero for many large lenders. Data from institutions that participate in the Moody's Analytics Data Alliance consortium, which include ten CCAR banks, show that default rates for construction loans have dropped to close to zero as well. Despite worries about overbuilding in a sector like multifamily, loan performance has not soured, and there is evidence that lenders started self-regulating and pulling back on multifamily construction loans as early as late 2014 or 2015. Multifamily projects that were delivered during the period of 2016 to 2018 have leased up less quickly, but in general achieved market stabilized vacancy levels within a year or so. By later this year, and certainly by 2020, multifamily deliveries will begin to slow and any worries about oversupply will likely dissipate.

As such, given the relative dearth of excess that usually characterizes late stages of a credit and economic cycle – with underwriting standards remaining relatively strict and little systematic evidence of slippage – there is reason to expect that defaults may not spike as much if we do run into a recession in the near future.

Near-Term Predictions, Longer-Term Concerns

Most forecasters suggest that if the economy runs into a recession sometime soon – perhaps in 2020 – that it won't be as prolonged or severe. Moderate growth has nurtured few large asset bubbles that might delay an economic rebound. With much talk of how long the expansion has gone on, market participants now battle test their property portfolios to see how they might withstand a downturn. Some banks, still subject to stress testing rules, do this systematically; other lender types or equity investors cut NOI by 10% to 20% or simulate value drops of anywhere from 20% to

30% to see how their positions fare. Few seem worried, and most seem confident that “they have not gone overboard” with their investments. Lending standards do not appear to have slipped in any major, systematic way.

Questions about bigger, deeper long term trends remain. Will US demographics run aground against shifts towards stricter immigration policies, given that households are having less children? What will US politics look like after the Presidential election of 2020? Will the 2000s truly be the “Asian century,” or will the US maintain its dominance and leadership in world affairs? Will Millennials remain in their rental units or shift to homeownership, and if so, when will that happen? Servicing interest burdens on US federal debt is projected to exceed most other spending categories by 2030, including defense – are we doing anything to get that under control? Which of the new buzzwords in technological change – AI, ML, autonomous vehicles, co-working, blockchain, and more – will truly be disruptive as markets and sectors adapt and change? And which ones will be relegated to the buzzword trash bin five years from now?

It has been an eventful, often tumultuous decade for the US and most of the world. Property types across the spectrum – some more than others – have benefited from ten years of economic expansion. Moderate growth, criticized by some, may be one key to the longevity of the current cycle, and may well be one main reason why the next recession might not be as severe or prolonged.



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- Integrated with Trepp and INTExcalc
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Darrell Wheeler | CCRE



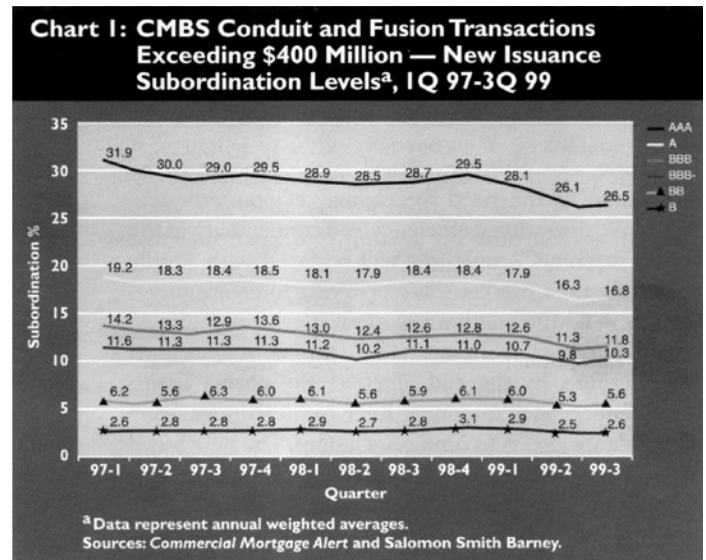
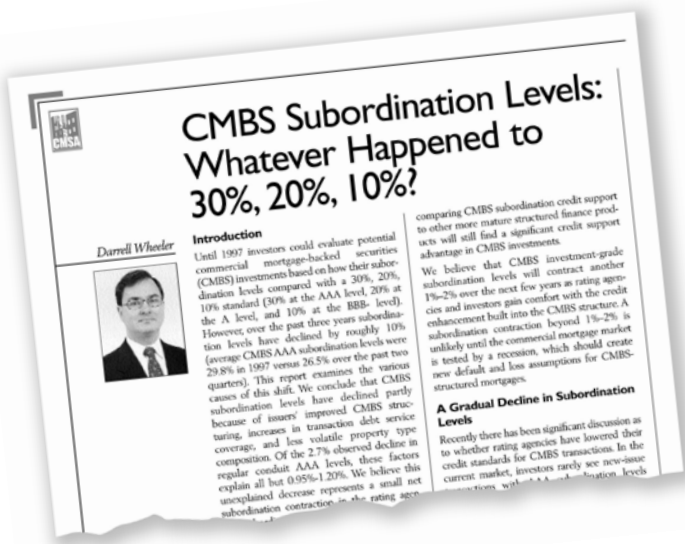
CMBS Subordination Levels: Whatever Happened to 30%, 20%, 10%?

For the 25th Anniversary issue CREFC sent me a copy of an article I wrote on subordination levels that was published in the Spring 2000 *CMBS World* (see below). Beyond causing giggles over the author's youthful photo, the article highlighted how credit enhancement levels severely contracted more than 30% between the first quarter of 1997 and 2000 early.

bond class, the CMBS market would not be able to sell new bond pools. This was particularly true early in the market's development when I published that subordination article highlighting the ongoing and steady subordination decrease (see Exhibit 1). The screen shot is grainy, but shows how the AAA level coming in from 31.9% in the first quarter of 1997 to be 26.5% by the third quarter of 1999. This was a significant decrease which we parsed and analyzed in that "Whatever happened to 30%, 20%, 10%" article.

EXHIBIT 1

Original 1999 Screenshot of CMBS Subordination Level Chart



Source: CMBS World Q1 2000

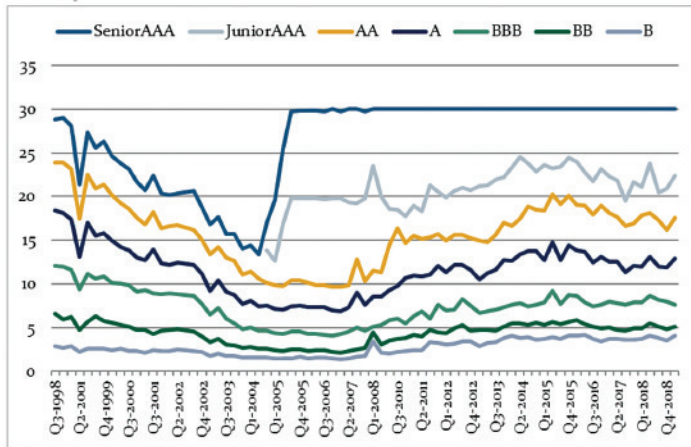
In revisiting that publication¹, it was not too surprising that the market developed artificial 30% credit enhanced triple-A classes in 2005, which continues today. Then the 2007 recession created downgrades and losses that caused rating agencies to increase credit enhancement levels. Yet in reviewing recent issuance, we find that low rates have created high DSCRs to an extent that properties would have to lose more than 25% of their revenues to be in a position to default. Rating agency models were calibrated in the mid 1990s and so use interest obligations and cap rates from a much higher rates era. This high rate bias in the historical data makes it difficult for the rating agencies to adjust their models. So while it is impossible to know how recent vintage credit enhancement will perform in the next recession, the excess DSCRs and low coupon carry obligations suggest term default experience should be better than expected.

But looking at Exhibit 2, credit enhancement levels kept falling to the point where triple-A levels were 12 to 15%. The decrease we see in the figure is fairly steady after 2000 and by 2004 caused investors to lobby for a structured 30% super senior triple-A class in 2005. Unfortunately, naturally rated triple-A, single-A and triple-B levels continued to decrease all the way up to the 2007 recession, when single-A credit enhancement was well inside 10% and the BBB level was commonly below 5%.

Credit enhancement levels are a key feature of CMBS, as they provide loss protection and are the basis for the investment viability of each bond class within a transaction. If investors feel subordination levels are inappropriate for any

EXHIBIT 2

Fixed-Rate Multi-Loan Pool Subordination Levels



Source: Trepp

“

If all loans incur a 45% loss severity, then 67% of the pool needs to default to cause a 30% super-senior loss.

”

Our original article also calculated the level of defaults that would be required to create a loss at each rating level by dividing the original credit enhancement level by a 40% loss severity. In Exhibit 3, we repeat that analysis on the various classes from a recent 2019 transaction, but now with hindsight use a higher 45% loss rate to estimate the cumulative default rate that would create principal loss for each class.

The first A1 to A4 classes that have the 30% artificial credit enhancement are all time tranching, so that simple loss division calculation really applies to only the last cash flow “LCF” A4 bond. The other shorter weighted-average life bonds are scheduled to be repaid by specific groupings of shorter term loans, or in the case of the A1, from loan amortization. Because of prepayments, the pool default rate required to create losses on these shorter classes is higher than the 67% that would hit the longer A4 class. The class listing now shows a single VRR risk retention class and multiple subordinate RR classes, which would not have existed back in 1999.

EXHIBIT 3

CMBS Loss Protection – A Generic 2018 Deal with L Risk Retention

Class	Rating	Orig (\$000)	Cpn %	WAL (yrs)	Credit Enhancement	Potential Loan Loss	Simple Breakeven Default*	Breakeven CDR**
A1	AAA/AAA	16,200	3.013	3.03	30.00%	/ 45% =	>67%	100.00%
A2	AAA/AAA	17,100	3.960	4.93	30.00%	/ 45% =	>67%	99.99%
ASB	AAA/AAA	28,400	3.906	7.38	30.00%	/ 45% =	>67%	13.82%
A3	AAA/AAA	218,300	3.806	9.78	30.00%	/ 45% =	>67%	99.87%
A4	AAA/AAA	361,191	4.071	9.89	30.00%	/ 45% =	66.67%	10.94%
XA	AAA/AAA	641,191	1.199	9.14	NA			
XB	AA-/AAA	127,093	0.792	9.68	NA			
AS	AAA/AA/AAA	82,438	4.272	9.93	21.00%	/ 45% =	46.67%	6.35%
B	AA-/AA	44,655	4.494	9.93	16.13%	/ 45% =	35.83%	4.54%
C	A-/A	41,219	5.142	9.94	11.63%	/ 45% =	25.83%	3.07%
XC	BBB-/AAA	40,533	2.142	9.74	NA			
D	BBB-/A-	25,190	3.000	10.01	8.88%	/ 45% =	19.72%	2.27%
E	BBB-/BBB	15,343	3.000	10.01	7.20%	/ 45% =	16.00%	1.80%

*Simple Breakeven Default is just credit enhancement divided by a 45% loss rate.

**Breakeven Constant Default Rate “CDR” is the annual default rate required at 45% loss rate and with 24 month liquidation period.

Source: Cantor Fitzgerald, Bloomberg SYT

The 30% credit enhanced classes requiring a 67% cumulative default rate suggest that a diverse pool should withstand any potential recession experienced by commercial real estate markets. This assertion is supported by Fitch Rating records showing that every super-senior triple-A bond issued since 2005 has either paid off in full or is currently rated AAA.

Moving down the credit structure to the naturally triple-A rated AS (“junior AAA”) bonds within Exhibit 2, the average 21% support would require average pool defaults of 46%. In the last recession, several naturally rated AAA AJ bonds would have had less than 15% credit support, and many incurred interest shortfalls and losses. This negative AAA rating experience caused the rating agencies to adjust their rating methodologies to account for the 2007 recession. Thus most CMBS 2.0 transactions have natural AAA credit support of 15 - 22%.

Moving down the credit stack, timing of losses becomes important, as not all defaults are liquidated immediately. To consider the impact of timing, our updated Exhibit 3 now shows the constant default rate (CDR) that would actually pierce a credit class’ principal. The table shows that a 6.35% annual constant default rate (CDR) would be required to impair the AS; 4.5% annual CDR would hurt the double-A; and 3% CDR would ding the single-A bonds. However many recent fixed-rate conduit pools have large single loans comprising 5-18% of the pool; defaults on any of those individual loans could immediately pierce the pool’s investment grade classes. This risk is particularly concerning to D and E class credit investors as it is not out of the question that recession might cause 20% or 16% of the pool to default.

Pool Underwriting and Leverage

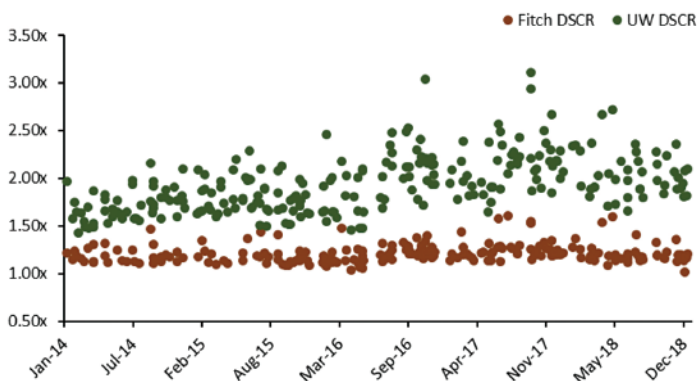
That previous paper looked at pool underwriting and leverage and found it had remained relatively constant over the period in which credit enhancement decreased. However, in our recent research we have noted that late 2018/early 2019 rating agency cashflow haircuts frequently exceed 10%. Offsetting this cashflow over statement is the fact that rating agencies seem to be diligently adjusting for it and recently low loan to values, which were only 58% in 2018.

However, the most interesting difference between today's market and that early 2000 market is overall interest rates, which have been historically low since 2010. These low rates create large differences between underwritten figures and the rating agency stressed property values and stressed DSCRs. Rating agencies use these stressed DSCR and LTV leverage measures for each loan, to create a probability of default and potential loss severity for each loan based upon previous historical defaults, assuming the underlying collateral pool is consistent with loans originated in the late 1980s and early 1990s.

In Exhibit 4 we compare underwritten DSCR to Fitch's stressed DSCR to show how low rates have pushed the rating's gap. We highlight Fitch's DSCR as it has been consistency referenced in its rating methodology since 2000 and they have most frequently rated recent vintage subordinate bond classes.

EXHIBIT 4

CMBS Conduit Cash flow DSCR vs. Fitch Stressed DSCR



Source: Commercial Mortgage Alert, Bloomberg, Rating Agency Presales, Cantor Fitzgerald

“
Rating models are based on historical portfolios that carried higher coupons.
”

Looking at Exhibit 4, Fitch's average stressed DSCR for 2018 was only 1.22 times, as Fitch blends a portion of the current debt obligation with a higher future distressed debt constant (that is usually >9% and frequently >10%). Overall most agencies are using stressed cap rates or debt constants that were created in the mid-1990s when overall rates were higher, and when underlying mortgage pools also had much higher mortgage coupons than in CMBS 2.0 levels. This disconnect between historic and recent rate levels becomes clear when we consider actual borrower debt obligations (represented by underwritten DSCR in Exhibit 4). While issuers may overstate property NOI by 10.5% on a property, the underwritten data suggest that these mortgages are starting with an average cash flow DSCR ratio that is still near 2 times.

Comparing back to the credit enhancement in the old article, we find today's subordination levels are still significantly lower. The only exception being the artificially enhanced 30% class, which has delivered performance stability and liquidity to the CMBS market. That creates the question of whether today's natural triple-A levels in the low 20's or single-A bonds in the 12 to 15% range are truly safe bonds and correctly rated? Limited defaults and a relatively liquid market would suggest these levels are currently satisfying investors, but we will not truly know outcomes until these transactions are tested in a recession. In that potential future stressed environment, we expect that some loan concentrations could still create some specific loan defaults and potential investment grade losses. However, given recently high DSCR and the low mortgage pool coupons, we also expect that the resulting term defaults will be less than we saw in the previous recession and may justify recent rating levels. In fact, if there is a full recession it could provide new low coupon DSCR and LTV recession benchmarks, that allows rating agencies to make what hopefully will be a small adjustment to their ratings models.

¹http://www.crefc.org/magazine/cmbs_world_spring_2000/index.html#/18/



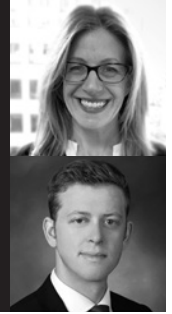
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Christina Zausner | CREFC
David McCarthy | CREFC



Community Reinvestment Act & CRE

“All politics are local,” or so the saying goes, so it’s unsurprising that Congress wants to take action to revise a framework requiring banks to serve their local communities. With housing affordability and economic inequality as key issues for many voters, the Community Reinvestment Act (CRA) has taken center stage in the effort to address these persistent issues. Legislative interest is strong, but the likely path to change will be through the regulators.

While the CRA essentially mandates that banks provide financial services to underserved communities, it can have broad effects on lending and investment strategies for commercial and multifamily properties in low- and moderate-income areas. As of this writing, it is clear that the CRA assessment process needs a refresh and that both sides of the aisle agree that fundamental aspects of the rule need to be revised. Federal regulators also have broad authority to reshape the rule, and they intend to do so later this year.

The question for us in this article is: Will issues near and dear to the multifamily sector be addressed in revisions to the CRA? We expect a proposed rule from the Federal Reserve (Fed), the Federal Deposit Insurance Corporation (FDIC), and the Office of the Comptroller of the Currency (OCC) in the second half of 2019. No clear plans for legislative changes have been telegraphed as of this writing, though most of the issues CREFC members care about can be accomplished administratively by the banking regulators.

What are the issues that CREFC members care about?

The CRA is in many ways inherently friendly to multifamily development. Passed by Congress in 1977 to ensure banks address credit and service needs of the communities where they are located, the act is part of a framework of other fair lending and credit laws aimed at combating discriminatory redlining practices. At its core, the CRA evaluates bank performance on fulfilling banking and credit needs of low- and moderate-income populations. Without going into the various failings and challenges of the CRA, we will focus on areas of reform that could be of benefit to multifamily lenders and investors.

1. Allowing more flexibility in assessment areas.

One of the most common industry criticisms of the CRA is the strictness of the assessment areas. The CRA currently assesses a bank’s performance based on the areas around its main physical branch locations and ATMs. Two things stand out as hardships for lenders with respect to hard-coded assessment areas and they are 1) competition; and 2) and mobile banking. As to competition, lenders must compete for participation in transactions that serve particular assessment zones; the most popular zones (and CRA credits) enjoy outsized demand, affecting development costs and financing pricing, and the unpopular zones (typically in secondary cities and rural markets) suffer from lack of demand. As to mobile banking, technology-enabled financial inclusion tools have made the idea of rigid borders associated with branch banking an outmoded concept. As such, a bank may have a business presence in a community despite having no branch, but the CRA would not assess – or incentivize – qualifying activities in those area.

A more flexible assessment zone would better reflect the realities of banking in the mobile age. A rethinking could also lead to better outcome for underserved areas, as banks would be able to receive credit for qualifying activities in a wider swath. One solution floated would expand assessment areas to include an entire state where a bank has a physical presence.

2. Allowing loans to qualify for credit after the first year.

The CRA treats equity investments differently than loans. At this time, banks are only allowed to count qualifying loans in the year they are made, but they receive credit for equity investments as long as they hold them. That means that to fully take advantage of the potential CRA credit a financing transaction offers, the bank could be forced to sell the loan and then invest in another form of community development. A change allowing banks that keep these loans on their books to count them as credit for the life of the asset would allow depository institutions more choice in how they meet their compliance requirements.

At the same time, some smaller proportion of CREFC investors that raise and manage affordable housing funds may be relatively disadvantaged by this additional flexibility. Other regulatory capital and liquidity requirements are relevant to this equation as well, but CREFC has not assessed these factors.

3. Alignment with other existing related policies and programs.

Numerous government programs aim to target public and private resources toward low-income areas, housing affordability, and economic revitalization. Aligning the CRA assessment areas with other economic development and tax oriented programs could be another way to create a positive feedback loop for the fund managers, lenders, and investors.

The Opportunity Zones program established under the Tax Cuts and Jobs Act of 2017 serves as a newer example of the potential for mutually beneficial alignment. As part of the program's aim to direct investment into underserved or economically depressed areas, state and local officials designated 8,700 Opportunity Zones across all US states and territories. Any CRA revisions could take into account these areas as ready-made for CRA credit.

Shekar Narasimhan, CEO of Beekman Advisors, says that, "Alignment of CRE assessment areas with low-income census tracts that have been disinvested would be catalytic. One simple way would be to connect CRA eligibility to Opportunity Zones. This could attract bank investment, branches/ATMs and financing for these areas."

Others programs exist as well, including the New Market Tax Credits program that was enacted in 2000 and incentivizes business and real estate investment in low-income communities of the United States via a federal tax credit that is administered by the US Treasury Department's Community Development Financial Institutions Fund.

How does CRA relate to other policies?

In addition to the CRA itself, related policies targeting affordability and inclusivity are also in play at this time. See below for a quick primer on how the CRA relates to several other important pieces of legislation and regulation.

1. Home Mortgage Disclosure Act (HMDA)

HMDA was enacted by Congress in 1975 to provide home mortgage data from financial institutions to the public, in part to detect and identify redlining and other illegal activities. The law and implementing regulations apply broadly to financial institutions – including depository and non-depository lenders – that make home loans (single and multifamily) above certain origination thresholds (currently 25 loans). Lenders are required to collect and report numerous data points on borrower and loan characteristics for mortgage applications, approvals, and rejections. HMDA reporting includes loans on multifamily properties, even if the loans are made to a business entity.

While these data inform the public and regulators about an institution's mortgage business and the availability of housing finance, the HMDA regime is distinct from CRA requirements. Whereas HMDA merely focuses on collecting and reporting lending information, the CRA is an evaluation that requires banks to take action to serve their communities. HMDA data can inform a bank's CRA evaluation, but it is not the only input as CRA looks at other types of lending and services (small business, consumer credit, basic banking, etc.) beyond home mortgages.

CREFC and other industry members have made the case to the Consumer Financial Protection Bureau (CFPB), which oversees compliance with HMDA, that the reporting regime is not suited to collecting multifamily loan data. For one, the data points are largely geared toward single-family or natural person borrowers. Additionally, some lenders have criticized the low threshold for multifamily originations as it will add a significant compliance burden to smaller lenders without a corresponding benefit. The overarching concern is that the new rules will slow the liquidity provided by private financial institutions to the multifamily sector. The CFPB has since issued an advanced notice of proposed rulemaking on May 2, 2019, asking for input on whether multifamily loans should be subject to HMDA reporting. The Bureau is also separately proposing to raise the origination threshold from 25 loans to 50 or 100. CREFC intends to respond to the Bureau's requests.

2. Low Income Housing Tax Credits (LIHTC)

As part of the 1986 tax reforms, investors can qualify for federal income tax credits if they invest in the development, acquisition, and rehabilitation of affordable rental housing (subject to the program's requirements). Builders or other investors in low income housing often subsidize their returns by selling their LIHTCs to banks. As noted above, LIHTC investments qualify for CRA credit through the term of the investment, as opposed to loans. As such, LIHTCs have been an attractive option for banks, and which can also lead to inspirationally high prices for the credits in the cases where they are associated with assessment areas driving significant demand.

3. Opportunity Zones

The Opportunity Zones (OZ) program is a tax incentive program that aims to direct investment in low-income and historically disadvantaged communities by providing favorable tax incentives to capital gains invested in predesignated areas. Essentially, taxpayers with a capital gain can receive deferral and reduction of a gain through an investment in an OZ business or real estate. Furthermore, investors may be eligible for tax-free gain on the actual OZ investment. A possible reform to CRA could automatically credit banks for lending or investments in OZs. This alignment could incentivize institutions to originate loans in the zones and invest in qualified Opportunity Zone funds as part of their CRA-compliance strategy.

What is CREFC doing and how can you get involved?

CREFC will respond to the CFPB's May 2019 proposals on HMDA and on the banking agencies' expected CRA proposal due out later this year. In addition, CREFC staff are monitoring the regulatory roll-out related to Opportunity Zones and are supportive of all requirements that facilitate flexibility in investing and in divesting of commercial real estate. For more information on these activities and more, please contact David McCarthy at dmccarthy@crefc.org.

How does the CRA relate to other policies and programs?

	What is it?	How it Relates to CRA	CREFC Position on This Policy	CRA Revisions Effects on Programs
Home Mortgage Disclosure Act (HMDA)	Statute and rules requiring bank and non-bank lenders to report/disclose information about single and multifamily lending.	Distinct. HMDA is a reporting requirement that covers home mortgage applications, denials, and originations.	HMDA should not apply to business-to-business lending (including multifamily) because incentive structure different than with single family lending.	No effects likely, though there is some discussion of expanding public release of HMDA data for multifamily.
Low Income Housing Tax Credits (LIHTC)	Federal program that provides tax credits for investment development, acquisition, and rehabilitation of affordable housing. Also allows sale of these tax credits to institutions interested in their value as deferred tax credits.	LIHTC activities can count toward CRA credits.	CREFC does not have an explicit LIHTC stance at this time, though it generally supports programs that increase the demand for CRE financing.	More flexibility in assessment areas could allow for a better distribution of development geographically and also demand for LIHTC credits in less popular areas; it could also marginally hurt LIHTC demand in the case that loans become more valuable if given credit status after 1 year.
Opportunity Zones (OZ)	Program established by the Tax Cuts and Jobs Act of 2017 to bring new capital, jobs and services to under-served areas.	The 8,700 OZ were designated with the intent to overlap with low-income economic areas, similar to the principle behind CRA.	CREFC supports more flexibility in investing in OZs.	Revisions could benefit the OZ program if the CRA revisions were to allow that OZ credits could automatically also count as CRA credits.

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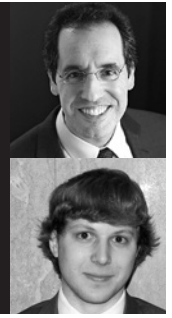
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Jake Mooney | S&P Global Market Intelligence
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Green Bond Market Growing More Popular with REITs

Several large real estate investment trusts have tapped the green bond market over the past year, drawing new, sustainability-focused investors to commercial real estate debt and raising money to finance LEED-certified development projects.

REITs issued \$4.33 billion in green bonds – a bond offering in which the proceeds are earmarked for environmentally sustainable projects – in the second half of 2018 and the first half of 2019, according to S&P Global Market Intelligence data, reopening a market that had seen no activity in three years. The first REIT green bond offerings took place in 2014, with one additional offering in 2015.

Executives at some issuers said their offerings attracted investors, focused on environmental sustainability, who traditionally have not purchased REIT corporate debt. The executives stopped short of identifying a pricing benefit from the increased demand, but argued that issuing green bonds benefits companies in other ways, including by demonstrating a broader commitment to sustainability.

“I think the goal for us is to expand our investor base, so the ability to attract a broader base of investors, to either our equity or our debt, is helpful to us, and we happen to have a very, very strong green story,” Boston Properties CFO Mike LaBelle, whose company completed a \$1 billion green bond offering in November 2018, said in an interview.

“We’re very highly rated, so we are attempting to continue to get that word out and attract these type of investors,” he added. “This type of security is another way for us to try to do that, and capture more demand for not only this security but future securities that we have.”

Alignment of Interests

Market participants say the real estate sector is a natural fit for green bonds, because proceeds from offerings can be earmarked for specific development projects, and because established, third-party certifications, including LEED – Leadership in Energy and Environmental Design, developed by the US Green Building Council – can give investors assurance that offering proceeds are used properly.

Ana Lai, a senior director at S&P Global Ratings covering REITs, said in an interview that the pool of investors for green bonds has grown in recent years. Besides newly established green investors eyeing the asset class, more traditional bond investors also have adopted more stringent guidelines related to environmental, social and governance concerns.

Recent Green Bond Issuances by US REITs

Company (ticker)	Property Focus	Offering Completion Date	Gross Proceeds (\$M)	Coupon Rate (%)	Treasury Spread ¹ (pps)
Alexandria Real Estate Equities Inc. (ARE)	Office	03/12/19	200.0	4.00	1.1
Digital Realty Trust Inc. (DLR) ²	Data center	02/27/19	255.9	2.50	NA
Digital Realty Trust Inc. (DLR) ³	Data center	01/11/19	975.1	2.50	NA
Equity Residential (EQR)	Multifamily	11/28/18	400.0	4.15	1.1
Kilroy Realty Corp. (KRC)	Office	11/14/18	400.0	4.75	1.7
Boston Properties Inc. (BXP)	Office	11/13/18	1,000.0	4.50	1.4
Alexandria Real Estate Equities Inc. (ARE)	Office	06/12/18	450.0	4.00	1.2
Digital Realty Trust Inc. (DLR)	Data center	06/18/15	500.0	3.95	2.0
Vornado Realty Trust (VNO)	Office	06/09/14	450.0	2.50	0.9
Regency Centers Corp. (REG)	Shopping center	05/13/14	250.0	3.75	1.2

Data compiled May 16, 2019.

NA = not available; pps = percentage points

Includes senior debt issuances by publicly traded US equity REITs completed between Jan. 1, 2010, and May 15, 2019, with an intended use of proceeds related primarily to green projects.

¹ Represents the difference in yield between the underlying debt security and a US Treasury note with the same maturity date at the time of issuance.

² Digital Realty Trust completed its €225 million EUROPEAN senior debt offering Feb. 27, 2019, with a maturity date of Jan. 16, 2026. On the same date, the seven-year US Treasury note traded at a 2.6% annual yield.

³ Digital Realty Trust completed its €850 million EUROPEAN private placement Jan. 11, 2019, with a maturity date of Jan. 16, 2026. On the same date, the seven-year US Treasury note traded at a 2.6% annual yield.

Source: S&P Global Market Intelligence

LaBelle said large equity investors are hiring specialists in sustainability and are asking more detailed questions to understand REITs' environmental strategies. While bond investors have been less vocal, he said, they too are focused whether companies' sustainability efforts have a direct link to performance. In advance of its green bond offering, he said, Boston Properties held a series of calls to tell its story to roughly 70 debt investors who might have been unfamiliar with the company.

Of particular note, he said, is the company's \$2.3 billion development pipeline, all of which is composed of green-certified projects. The proceeds of the November offering were earmarked for the company's LEED-certified Salesforce Tower, in San Francisco.

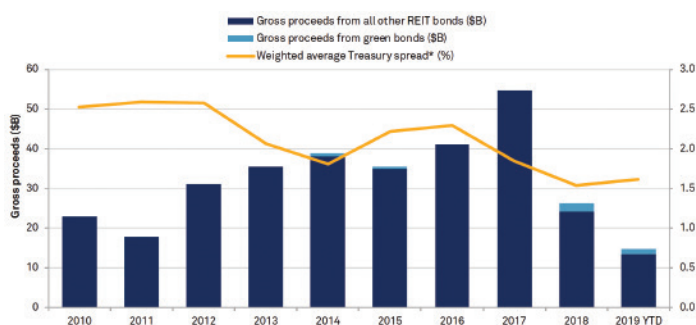
Ultimately, Boston Properties said, 23% of the offering was purchased by investors with sustainability-oriented strategies. Apartment REIT Equity Residential, which launched a \$400 million green bond offering the same month, said green investors purchased 15% to 20% of the securities in its transaction. Equity Residential CFO Robert Garechana said on a conference call that demand from non-traditional investors helped the company navigate a choppy year-end debt market.

Benefits Beyond Pricing

So far, the presence of additional investors does not appear to be helping REITs secure lower pricing on green bond offerings than on their conventional debt deals. Garechana called the pricing spread between green and non-green bond offerings "hard to quantify," and LaBelle said it was unclear whether the green bond market has evolved enough to serve as a source of cheaper capital.

Attracting green debt investors "allowed us to have a larger book that gave us more confidence to try to push the pricing," LaBelle said. Yet, he added, most green investors are relatively small, and among traditional bond buyers, "there's a handful of very large investors that if you lose, because you priced it too tight, your deal kind of goes sideways. You don't want that to happen, so it's a balancing act, that you're dancing to try to find the right place."

Total US REIT Bond Issuance by Year



Data compiled May 16, 2019.

Includes senior debt bond issuances by S&P Global Market Intelligence-covered equity REITs completed between Jan. 1, 2010, and May 15, 2019.

*Represents the difference in yield between the underlying debt security and a US Treasury note with the same maturity date at the time of issuance.

Source: S&P Global Market Intelligence

Stephen Boyd, a senior director at Fitch Ratings, said in an interview that REITs likely are not expecting much of a pricing benefit from green bond issuances, but view the transactions as a way to meet broader Environmental, Social and Governance (ESG) goals, such as improving their portfolios' carbon footprints.

"It is really just so topical and timely," he added. "A lot of the capital sources, if it's pension fund money or foundation money, they're very focused on ESG at this point, so the investors are kind of demanding it."

Despite the lack of apparent pricing benefit, S&P Global Ratings' Lai said these offerings serve to broaden REITs' investor base.

"Anything that helps sustainability, or promotes their portfolio in front of those types of investors, is good," she added.

Potential Market Size Unclear

Even as REIT green bonds gain market traction, it is uncertain how many new issuers will emerge.

"The ones that have tapped the green bond market are the larger ones that have meaningful development projects going on," Lai said, adding that smaller REITs that have not previously issued conventional unsecured debt might face a more difficult reception from investors. Moreover, smaller companies may have trouble generating enough new development on which to spend offering proceeds.

Even among REITs that do tap the market, Boyd said, green bonds will likely never account for more than a fraction of companies' balance sheets because of strict rules around the allocation of proceeds.

Finally, Lai said, the natural fit between real estate development and green bonds has a downside: If construction slows, bond issuance may slow, too.

"We are in a later stage of the real estate cycle here," she said. "There isn't a lot of development going on, aside from maybe in the office space and the data center and industrial property types. . . . I really think that because of where we are in the cycle, and the limited amount of development, there might not be much need to fund with green bonds."

Still, for REITs that have projects to fund and the balance sheet to borrow large sums, green bonds tick several boxes, even beyond capital raising.

"It's not only important to our shareholders and our bondholders, but it's important to our communities and our tenants, and our other clients and our employees," Boston Properties' LaBelle said. "And we are focused on continuing to improve, and demonstrate the importance that sustainability has to our organization."

Underwriters of Recent US REIT Green Bonds

Company	Deal credit (\$M)
Merrill Lynch Pierce Fenner & Smith Inc.	606.8
J.P. Morgan Securities LLC	466.8
Citigroup Global Markets Inc.	306.6
Deutsche Bank Securities Inc.	242.5
Wells Fargo Securities LLC	216.2
US Bancorp Investments Inc.	182.2
Morgan Stanley & Co. LLC	175.0
RBC Capital Markets LLC	155.5
Goldman Sachs & Co. LLC	127.5
SMBC Nikko Securities America Inc.	126.3
Scotia Capital (USA) Inc.	96.2
SunTrust Robinson Humphrey Inc.	93.2
Jefferies LLC	91.7
TD Securities (USA) LLC	67.7
UBS Securities LLC	67.5
Barclays Capital Inc.	67.0
BNY Mellon Capital Markets LLC	65.2
MUFG Securities Americas Inc.	61.0
BBVA Securities Inc.	56.0
Mizuho Securities USA LLC	48.3
PNC Capital Markets LLC	43.3
Regions Securities LLC	43.0
BB&T Capital Markets	32.5
NatWest Markets Securities Inc.	31.5
BNP Paribas Securities Corp.	23.5
Fifth Third Securities Inc.	21.2
KeyBanc Capital Markets Inc.	20.0
Capital One Securities Inc.	20.0
Samuel A. Ramirez & Co. Inc.	16.2
Evercore Group LLC	15.5
Crédit Agricole Corporate and Investment Bank SA	13.5
Credit Suisse Securities (USA) LLC	13.5
Comerica Securities Inc.	13.0
BTIG LLC	11.3
Drexel Hamilton LLC	4.5
HSBC Securities (USA) Inc.	4.5
Santander Investment Securities Inc.	4.5
Total	3,650.0

Data compiled May 16, 2019.

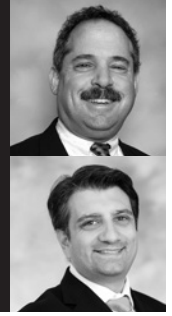
Includes underwriters of senior debt issuances by publicly traded US equity REITs completed between Jan. 1, 2010, and May 15, 2019, with an intended use of proceeds related primarily to green projects.

Excludes Digital Realty Trust's two European bonds of €850 million and €225 million. Source: S&P Global Market Intelligence

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But My Dispensary Tenant is Cash Flow Positive, Why Can't I Get a Loan?

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*“Make the most you can of
the Indian Hemp Seed and
sow it everywhere.”*

– George Washington

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Marijuana is a \$10 billion industry, legal in some form in 33 states plus the District of Columbia, Puerto Rico and Guam. Yet some banks and other commercial real estate lenders are sitting on the sidelines. Why? This article explains some of the why, as well as who are among those filling in the lending void and what the future holds for commercial real estate lenders and the marijuana industry.

Why Are Lenders Not Lending to the Marijuana Industry?

Despite the shift in state legalization, the possession, sale, processing and use of marijuana has remained illegal under Federal law since Congress passed the Controlled Substances Act (CSA) in 1970. The CSA classifies substances into five schedules, with Schedule I signifying the class of drugs with no potential medical value and the highest potential for abuse. Marijuana, along with heroin, LSD and certain other drugs are considered Schedule I substances.

Marijuana related businesses (MRBs) are also impacted by other federal laws relating to commercial real estate. The same year that Congress passed the CSA, it passed what is known as The Crack House Statute which makes it a felony to knowingly open, lease, rent, use or maintain any place for the purpose of manufacturing, distributing or using any controlled substance...like marijuana. The Federal Government uses this law to seize properties tied to the drug trade; however, with one exception, a failed attempt to evict a dispensary in Oakland in 2012, it has never used the law to seize a property housing an MRB that is complying with state law.

In addition to laws aimed primarily at the drug trade, there are other federal laws and rules relating to MRBs that impact financial institutions. In early 2014, in spite of marijuana being illegal under federal law, US Treasury's Financial Crimes Enforcement Network (FinCEN) issued a series of non-binding guidelines for financial institutions intending to do business with MRBs. These guidelines imposed a significant administrative burden on financial institutions dealing with MRBs, and, coupled with the potential for severe penalties, have discouraged most financial institution from dealing with MRBs. In the same year that Congress passed the CSA, it passed the Bank Secrecy Act aimed at preventing money laundering. Under the Bank Secrecy Act, a financial institution is required to file a Suspicious Activity Report (SAR) within thirty days of a suspicious transaction. This includes any transaction involving an MRB. As of early 2019, over 500 financial institutions have filed SARs dealing with marijuana transactions. Most of the financial institutions dealing with MRBs are community banks and credit unions who know their employees, know their customer base, and can therefore better monitor and keep track of marijuana related transactions. This constitutes only a small percentage of financial institutions and these SARs pertain almost exclusively to depositary relationships, rather than full-service banking relationships. Very few financial institutions are lending against commercial real estate used by MRBs.

Who is Filling the Void?

Commercial real estate is critical for growing, processing, storing, manufacturing, and selling marijuana and marijuana products. With very few financial institutions lending against commercial real estate used by MRBs, a substantial void is left to fill for this rapidly growing industry – so who will step up to the plate?

The answer, in brief, is alternative financing sources. While some commercial real estate used by MRBs is financed solely with equity, sources such as some private equity funds, family offices, private lenders, and even entrepreneurial opportunity zone lenders are lending to MRBs and their landlords. Because conventional sources of financing are unavailable, alternative financing sources are able to lend to the industry in exchange for higher returns, and therefore are willing to look past the banking challenges, and the potential for the unavailability of title insurance. (Major title insurance companies are concerned about insuring title for property used by MRBs for the same reasons that banks are reluctant to serve MRBs.)

Some of the alternative lending sources are willing to engage in sale leaseback transactions and, in lending transactions, are willing, and sometimes eager, to take equity in an MRB borrower as compensation for the risk of lending to an MRB.

A possible new and interesting player in investing in commercial real estate used by MRBs may be opportunity zone funds. While some question how a creature of federal law can provide funding to an industry that operates in violation of federal law, some opportunity zone fund promoters argue that the legislation that created opportunity zones did not expressly prohibit opportunity zone funds from investing in MRBs.

So what are market terms for MRB lending? It is very hard to say what is market in the Wild West. Very few market standards currently exist, although higher interest returns appear to be typical. A number of alternative financing sources also charge points and/or receive equity in the MRBs.

What Is Next for Commercial Real Estate Lending to MRBs?

It may be some time before the dichotomy between federal and many states' laws is resolved, despite the plethora of bills introduced or reintroduced for consideration by the House and Senate. Until then, most traditional commercial real estate lenders may refrain from lending to real estate used by an MRB and the cost of funds for such businesses will continue to remain high, all of which may leave a clear field for opportunistic alternative lenders.

Some of the most notable bills pending before Congress would, if enacted into law, either legalize marijuana or provide a safe harbor to enable banks to provide financial services to MRBs operating legally under state law, even while marijuana remains illegal under Federal law. These bills include:

The Secure and Fair Enforcement Banking Act

The Secure and Fair Enforcement Banking Act (SAFE Act) was co-sponsored by 152 lawmakers, and was approved by the House Financial Services Committee in March 2019 in a 45-15 vote. The SAFE Act, the first piece of major marijuana reform legislation to pass committee at the federal level, would allow banks and credit unions to provide financial services to state-legal marijuana companies by offering a legal safe harbor for such financial institutions if they comply with a set of reporting requirements. As the first piece of marijuana reform legislation to pass a House committee vote, it has garnered a lot of publicity. However, in testimony before the House Financial Services Committee, those opposed to the passage of the SAFE Act testified that the bill had it backwards – Congress should first decide on legalization of marijuana before tackling the question of banking the marijuana industry. This testimony foreshadows a difficult time in the Senate, if the Senate even considers the bill, assuming it passes the full House.

The Marijuana Justice Act of 2019

New Jersey Senator Cory Booker reintroduced the Marijuana Justice Act. The Marijuana Justice Act would remove marijuana from the list of controlled substances, expunge existing marijuana-related criminal records at the federal level, and withhold certain federal funding from states that disproportionately enforce marijuana criminalization laws against people of color and low-income individuals.

The Strengthening the Tenth Amendment Through Entrusting States Act of 2019

The Strengthening the Tenth Amendment Through Entrusting States Act of 2019 (STATES Act) was reintroduced in both the House and the Senate on April 4, 2019. The STATES Act would amend the CSA to protect people complying with state-legal marijuana laws from federal intervention. The 2019 STATES Act is largely identical to a previous version introduced in Congress with two major exceptions: a previous exemption for hemp from the definition of marijuana has

been removed (hemp was legalized at the federal level by the 2018 Farm Bill), and it now requires the Government Accountability Office to conduct a study on the effects of marijuana legalization on traffic (driving while impaired).

Respect States' and Citizens' Rights Act

Similar to the STATES Act, the Respect States' and Citizens' Rights Act, reintroduced in the current session of Congress, would amend the CSA to exempt states which have legalized marijuana from federal intervention and prevent federal preemption of states' marijuana laws. The Act would prevent the Federal Government from enforcing its prohibition on marijuana in states where it is legal for residents to possess and use marijuana.

Conclusion

The market for financing commercial real estate used by MRBs remains very fluid. Most institutional lenders will likely refrain from lending on such commercial real estate until federal law either legalizes marijuana or provides a safe harbor to allow lenders to provide such financing. Until that time, the market will be dominated by alternative financing sources seeking yields appropriate to assuming what is usually perceived as a higher risk.



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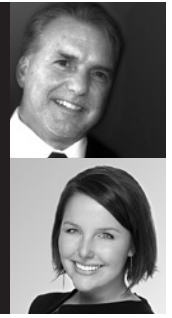
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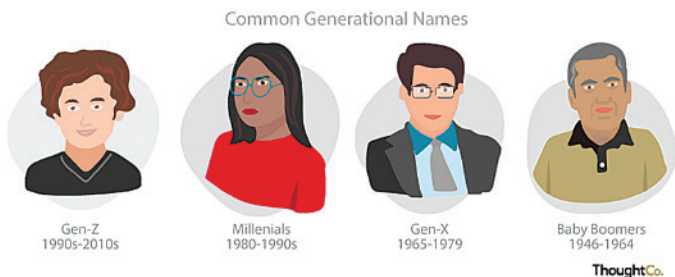
The New Retail: From Apocalypse to Evolution

Retail is not facing extinction, but evolution. The retailers who survive will be those who adapt to changing consumer preferences and technological advancements. With so many options available to consumers, the pressure is on retailers to hone in on their customer base, understand expectations, and deliver an experience that inspires loyalty. Leveraging technology and data, providing engagement that connects with customers, and tailoring store formats for their unique locations will be standard in the new world of retail survivors. Fortunately, researchers have been following this evolution, and the statistics reveal a lot about consumer preferences.

Generational Spectrum: The Key Is in Our Commonalities

Reports attempting to pin down generational shopping preferences to the tee are becoming more like monthly horoscopes than commonsense research. It's obvious that there are some differences between the shopping habits of a 60-year old Baby Boomer and a 20-year old Gen-Zer, but the commonalities across generations reveal the sweet spot: strategies that appeal to an expansive customer base.

FIGURE 1

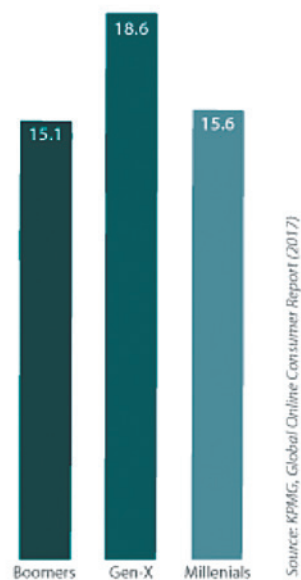


E-Commerce: The Big Bad Wolf

While the destruction of traditional brick and mortar shopping has been attributed to Millennials and Gen-Zers, it turns out they aren't the only ones shopping online. In fact, every generation – including supposed 'technophobic' seniors – are shopping online. A report by KPMG analyzing online consumers found Baby Boomers are just as likely to shop online as Millennials, and Gen-X surpasses Millennials' online purchases by 20%.ⁱ Does that mean that Millennials aren't as tech-inclined as reported?

FIGURE 2

Average Number of Online Transactions
(per person, per year)



Yes and no. When comparing the numbers, there isn't a substantial difference between any generation regarding online versus in-store shopping preferences. The older generations are shopping online more than expected, and younger people less than expected, the outcome being very similar shopping activities across all. That said, income levels and life stages also play a big role, and as those factors shift, so will their shopping habits.

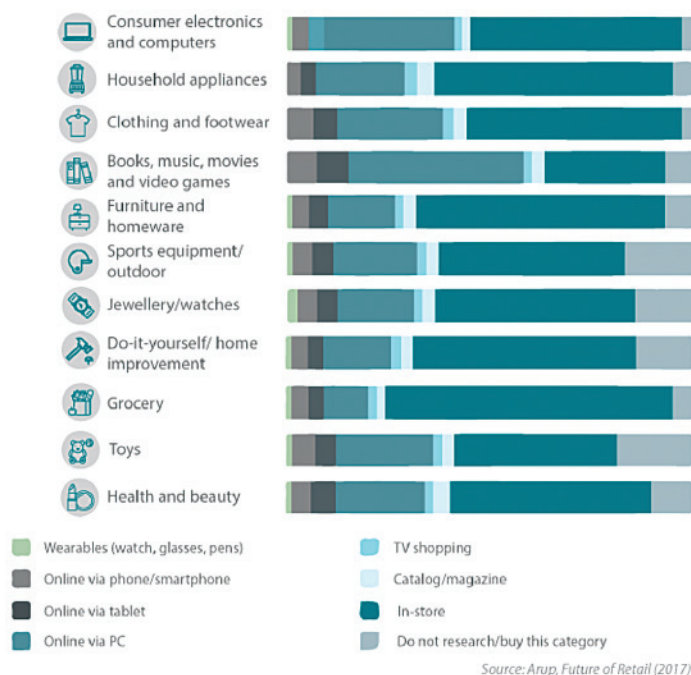
Baby Boomers have more cash to spend than younger generations, and they are spending it. Boomers spend approximately 15% more per transaction and control 70% of all disposable income in the USⁱⁱ Meanwhile, Millennials earn 20% less than Boomersⁱⁱⁱ did at the same stage of life, and have half the net worth of Boomers. As for expectations for the future? As Baby Boomers age, the convenience of online shopping and delivery should only increase in appeal. Similarly, many expect that as Millennials and Gen-Zers become increasingly established in their careers and start or grow their families, their shopping habits will align more closely with those of Gen-X: spending more and, presumably, more often online.

Brick and Mortar: Where E-commerce Can't Compete

While e-commerce seems like an unstoppable force indiscriminately pulling customers from every corner of the globe, traditional brick and mortar sales still blow e-commerce sales out of the water. Even if total e-commerce sales are projected to reach 15% of all sales, a whopping 85% of purchases will still be made in physical stores. And there's a huge gap between how much customers are spending online versus in-store. A recent survey by Bigcommerce revealed respondents still spend 69% of their discretionary income each month in-store.^{iv} And if you ask consumers, the majority favor buying most things in-store.^v

FIGURE 3

Preferred Methods of Making Purchases

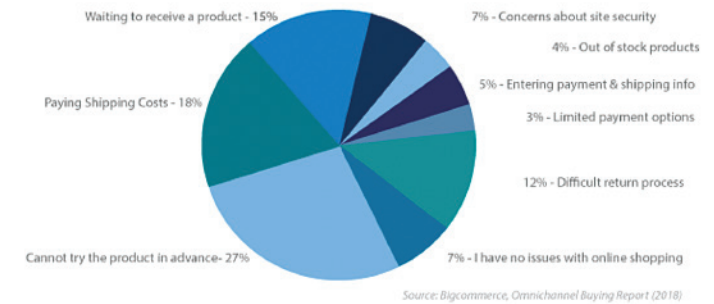


Shoppers overwhelmingly want to purchase items like groceries, furniture, and homeware in-store, correlating with their preference to research those products by physically touching and testing them.^{vi} The ability to touch product is a huge factor for customers that online retailers simply cannot replicate. In fact, in the Bigcommerce survey, respondents said their least favorite aspect of online shopping was the inability to try a product in advance, followed by shipping costs, and waiting to receive a product.^{vii} All three inconveniences are circumvented by shopping in-store.

These shopping habits and preferences don't vary too greatly between generations despite predictions. The biggest outlier is with shoppers of the youngest generation, Gen-Z, who spend 8% more of their discretionary income each month online than the global average.^{viii} However, when stage of life and income levels are considered, that number is hardly revolutionary.

FIGURE 4

Least Favorite Thing About Shopping Online



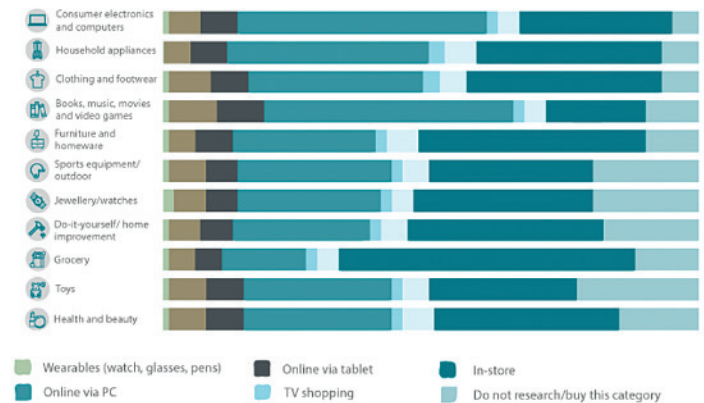
Evolutionary Retail Strategies

These statistics debunk many of the theories that brick and mortar stores are becoming relics of the pre-digital past. But they are evolving, and technology in its many forms – including e-commerce – is an essential part of an evolved retail strategy. Shoppers of every generation are spending, so we must ask, what is attracting them to some stores over others? Why are some retailers failing while others are thriving? The answer lies in understanding customers' expectations and meeting them.

Implementing strategies that meet the customer in the modern world and provide a reciprocal benefit to them (by meeting their expectations) and the retailer (by driving up sales) is key to unlocking customer loyalty. However, understanding customer expectations isn't a one-and-done job. As previously mentioned, consumer preferences change as cohorts age and enter different stages of life. Of course, this has always been the case, but there were never so many options available to consumers as there are today. To build the customer loyalty critical to survival, retailers need to be consistently vigilant of the products, experiences, and services their clientele are seeking.

FIGURE 5

Preferred Method to Research an Item Before Purchasing



By utilizing powerful emerging technologies, retailers have the capability to regularly monitor consumer trends and actions, whether the shopper is in a store or online. Every interaction, every click, every purchase can be harnessed to better understand the customer. That means developing a total retail strategy that provides multiple access points to the customer purchase journey from influence, to research, to final purchase, regardless of the channel used.

Part of adapting to the new retail landscape is the shift in perception of e-commerce from oppositional to synergistic. Research supports that, in this

new retail environment, one cannot exist without the other. Despite the numbers on e-commerce piling in comparison to offline purchases, digital still plays a significant role in the customer shopping journey. Look back to Figure 3, which illustrates the preferred purchase method, and compare it to Figure 6 illustrating the preferred method to research an item before buying it. Researching online dominates a majority of categories. Even if the customer then chooses to buy the item in-store, this is an opportunity to capture data to understand what drove the customer's next step in the purchase journey, whether that was to buy online or in-store, or to choose one retailer over another.

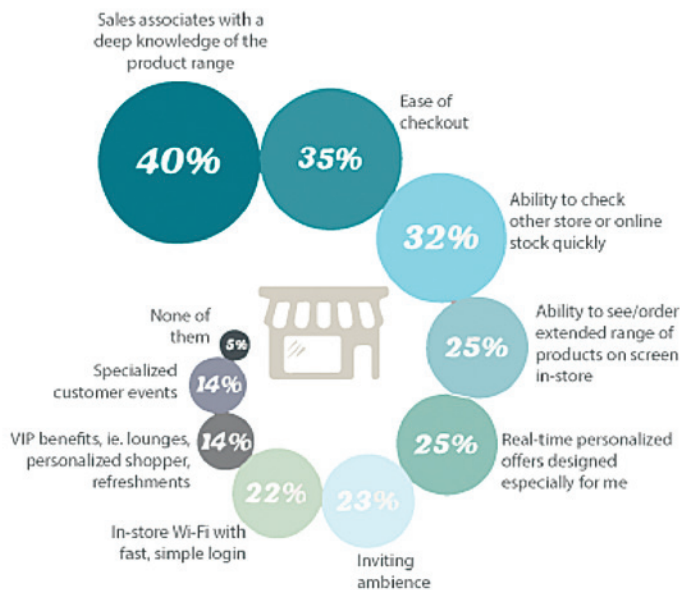
Leveraging already available data, researchers have begun to identify these trends in customer expectations and see them play out with some of the biggest retailers in the world. Advanced omnichannel technologies that merge the digital and physical stores, experiential concepts that go beyond the purchase, and unique prototype stores based on the preferences of shoppers in specific locales are some of the evolved retail strategies developed from this research.

Technology: Merging the Digital and Physical

Technology in its many forms is at the forefront of the retail evolution. And while there are many innovative new technologies out there, what customers ultimately want is technology that provides connectivity and convenience. Across multiple global retail surveys, US-based respondents bucked expectations by consistently naming convenience as the number one reason for shopping online, not price.^{ix}

FIGURE 6

Which of the following would improve your in-store shopping experience?



Source: PWC, Total Retail (2016)

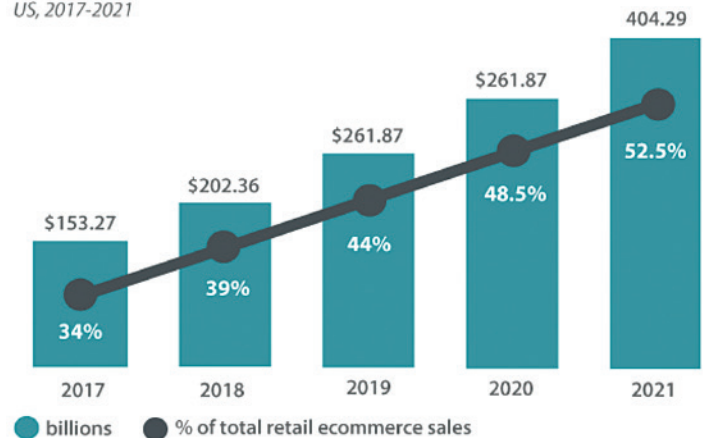
Whether retailers like it or not, Amazon is a dominating force in the e-commerce space for this very reason. Many brands have decided, "If you can't beat them, join them," and treat Amazon as an additional sales channel. But Amazon actually presents a unique opportunity to capture new customers in the research phase of buying a new product. According to Bigcommerce's Omnichannel Report, nearly a third of shoppers will research a product on Amazon before buying it through a brand's website or in-store.^x The driving force behind this? Amazon makes it easy to read customer reviews and compare products and prices.

Considering that mobile shopping drives one-third of e-commerce, at the most basic level, having an appealing, functional, and easy-to-use website across any device is obligatory.^{xi} The next level for retailers is creating opportunities to merge the online and in-store experience with mobile apps that make it convenient to search store inventories, view prices, and receive special discounts. In a survey by PwC, shoppers were asked what would improve in-store experiences; the majority of responses related to improved technology and mobile use in-store (Figure 6^{xii}). Another prerequisite is the use of mobile and contactless pay options (Figure 7^{xiii}).

FIGURE 7

Retail Mcommerce Sales

US, 2017-2021



Source: eMarketer (2017)

Quick-serve restaurants (QSRs) understand their customers' expectations for fast service and convenience, and as such they are leading the way in contactless service. Nearly all of the top performing QSRs are implementing mobile order and pay, in-store ordering kiosks, and even home delivery through partnerships with couriers such as UberEats and DoorDash. Chipotle is investing in new drive-thrus with special windows for picking up mobile orders, and Little Caesar's offers a heated, self-service mobile-order pick-up station.

But retailers would be remiss to believe all customers only seek the fastest, most convenient options with the least amount of human interaction. If that were the case, everyone would shop from the comfort of home and brick and mortar would be truly dead. The fact is, today's shoppers demand it all: options for convenience when they need it and impressive experiences when they want to engage in person.

Experience: Impressing Your Shoppers

Retailers continue to grapple with the impact online shopping may have on foot traffic at physical stores. Across all retailers there have been some decreases in foot traffic coinciding with higher e-commerce sales on days like Black Friday. However, the differences have been small (1% drop from 2017).^{xiv} Some retailers, such as Target, have boasted an increase in foot traffic and sales.^{xv} Looking deeper, there's a more complex relation between the two, as the rate of foot traffic is not necessarily reflected in the number of sales at the register. Often, customers come into the store to "showroom" items and purchase them later online, but not necessarily from the same retailer. So who do they end up buying from? Not always the cheapest or most convenient option. Shoppers say they choose to shop somewhere because they trust the brand (32%),^{xvi} and 61% of loyal customers will go out of their way to buy from trusted brands.^{xvii}

Gaining customer loyalty is the primary driver shifting the purpose of brick and mortar from places of acquiring items to places of acquiring the intangible, whether knowledge, services, or experiences. This can be a powerful technique for captivating the customer—and converting the sale. Physical stores provide an opportunity to create an experience that connects with customers emotionally, an essential component in building customer loyalty. Researchers find that shoppers place great importance on service and engagement.

Some department stores have taken note and begun to trial new floor plans and business models, taking them back to their historic roots as innovative shopping destinations where shoppers would spend many hours, if not the whole day. With the success of prototypes like Saks' "The Wellery" where one could shop, have a spa treatment, take a fitness class, and get a fresh juice in one space, Saks, along with Macy's and Nordstrom have partnered with spas and salons at several locations, joining the effort to become destinations for doing, not just buying.^{xviii} This segues into the final crucial retail strategy we will discuss: offering store formats that meet the customer at the local level.

Geographical: Integrating the Environment

It's more than a coincidence that the increased demand for convenient, experiential, and service-based models of retail has resulted in the resurgence of neighborhood retailers. Not only are customers more conscientious about supporting local businesses and entrepreneurs, they perceive neighborhood retailers to provide higher levels of service.

Paradoxically, big retailers are embracing the trend, indicating that the neighborhood feel may be enough to entice shoppers to drop by. Retailers have acknowledged decreasing mall traffic – some report as much as a 50% drop – mainly due to the excess of square footage and overbuilding.^{xix} Naturally, it is strategic for retailers to trim the fat and refocus efforts from quantity to quality, integrating the local environment and providing unique experiences. Take, for example, Target and Sephora: both have developed successful prototype stores whose formats correlate with the local environment and cater to the customers' expectations in those localities.

Target boasts such positive numbers largely because they understand customers' needs and that those needs differ depending on where the customer is. They have a variety of flexible format stores, from their largest, SuperTarget and Target Greatland, to their smallest, Target Express. They understand that in rural locations, they are the one-stop-shop for customers who may drive long distances once every couple of weeks to restock groceries or household supplies, buy furniture, clothing and more, and so a large format that meets all those needs makes sense. But in the city, customers are more likely walking or taking public transit, so not only will they stop at the most convenient location along their routes, they will also shop smaller, faster, and more frequently.

Sephora has locations in malls, within department stores, and, increasingly, single-tenant spaces in urban locations. But unlike Target, Sephora doesn't have just one urban-retail prototype. They see these locations as an opportunity to create hyper-local experiences that make them an area destination. Take, for example, their first Beauty TIP (Tech, Inspire, Play) store in Manhattan. At 11,300 square feet, it is their largest store, offering a selection of over 13,300 products and interactive technologies, Beauty TIP was designed to handle large crowds of customers looking for a cutting-edge experience.^{xx} However, that same concept in downtown Boston's luxury shopping destination, Newbury Street, wouldn't have the same success. To match the boutique environment and intimate level of service that these customers would expect, they developed the Sephora Studio. At 2,000 square feet, the Sephora Studio is an intimate space with only eight seats where customers receive one-on-one service from a highly trained beauty advisor.^{xxi}

By tailoring physical spaces, retailers provide a variety of experiences suited to the variety of customers they serve. Instead of resigning to the concept that

certain retailers only sell to certain clientele, retailers can approach and serve a variety of clientele without reimagining an entire company.

Final Takeaways

Technology has changed the way we live, and sometimes it feels like it has been a rapid transition from the days of dial-up to smartphones and driverless cars. Retailers have been slower to adapt, but now it is certain that to remain viable, adapting is not just a recommendation but a necessity. It is also certain that this evolution will be ongoing, and so retailers must have be constantly aware of trends, research, and innovation as part of their core strategy.

1. Step up the tech game: Retailers must, at a minimum, have an appealing, functional, and easy-to-use website across any device. Mobile-apps that make it convenient to search store inventories, view prices, and receive special discounts are in-demand and draw online shoppers into stores.
2. Connect with customers in-store: Physical stores provide an opportunity to create an experience that connects with customers emotionally, an essential component in building customer loyalty. This can be a powerful technique for captivating the customer – and converting the sale.
3. Meet customers at the local level: Understanding how customers shop in different geographies allows retailers to tailor their physical spaces according to the diverse customers they serve.

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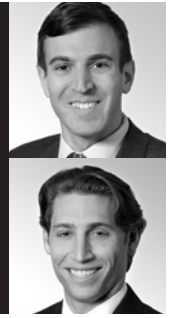
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AI Arbitrage in Purchases and Lending: Information-Driven Real Estate Deals

After much delay, artificial intelligence (AI) is finally emerging in commercial real estate (CRE). In the next few years, purchase and finance decisions will be increasingly influenced by AI. Initially, the most cutting-edge AI technology will be concentrated in the hands of sophisticated real estate investors and lenders that join forces with the technology developers.

This article examines the potential impact of new AI technology on acquisitions, loan originations and other CRE transactions. The use of AI will likely increase fluidity in the real estate market, though not necessarily transparency. With the caveat that it's too soon to speak of any clear trends, this article considers the role of new AI-driven investment firms and the tech companies that will serve as their AI investment managers.

AI will also create opportunities for a type of arbitrage in real estate deals. Arbitrage generally refers to the simultaneous purchase and sale of a security or asset in two different markets to take advantage of price differences. But for purposes of this article, arbitrage is used in a broader sense to refer to the purchase or finance of an asset on favorable terms as a result of having access to better, more complete information than competitors or an existing owner. The relevant markets here are not public exchanges but are instead information based. For example, an AI-equipped investor may discover hidden potential upside or value, such as prospects for increasing rents or repositioning a property for a higher and better use. By capitalizing on the special knowledge, an investor can significantly increase the potential returns or resale price.

1. A Notorious Laggard

The real estate industry has notoriously lagged in adopting new technologies. Many developers and lenders still make most investment decisions through a combination of Excel spreadsheet analysis and gut instincts. The slow progress in real estate to utilize new technologies is partly due to its granular and local nature. Each jurisdiction has its own laws, customs, practices and recordkeeping systems. Over the past few decades, real estate investment has become more corporatized. Still, the industry is perceived as old school and traditional, powered more by handshakes than data.

But even with this personal touch, sourcing and closing real estate transactions is often difficult and time consuming. In making real estate decisions, investors are unable to act with the level of speed that's prevalent for hedge funds and stock trading. Steve Weikal, the Head of Industry Relations at the MIT Real Estate Innovation Lab, described in an interview with us that there is a tremendous amount of friction and opacity in the real estate business, which has benefited the traditional players greatly. It's therefore not surprising that the old guard will mount resistance against any industry disruption caused by AI's deployment.

Yet, due to the decentralized and illiquid nature of real estate, fund managers have trouble finding suitable prospects on which to unload their dry powder, which refers to undrawn but committed investment cash. The amount is estimated by data firm Preqin to be nearly \$300 billion. The first movers in real estate AI with a demonstrated proof of concept will therefore have access to large reserves of capital. But given the sluggish history of progress in real estate, buy-in or acceptance by the industry at large will not happen overnight.

2. AI Technology

Although late to the game, excitement about innovation is starting to surface in the real estate industry, along with a fear of missing out. According to research by the Oxford Real Estate Initiative at the University of Oxford, investments in real estate technology or proptech have seen a marked increase in recent years. Somewhat of a catch-all term, proptech refers both to (a) smart real estate technology (such as the internet of things and virtual tours of space using augmented reality software), as well as (b) AI, predictive analytics, blockchain and other financial technology or fintech as applied to real estate. Popular applications, such as Zillow, assist brokers, owners and anyone with a smart phone or computer in purchasing and leasing individual residential properties. While still in the nascent stage, AI and other proptech have also been recently developed to facilitate commercial transactions.

On the more corporate end, asset management firms will use machine learning and big data to exploit market inefficiencies in buying and selling mortgage-backed securities and other indirect real estate investments. For example, Reuters recently reported that Pagaya Investments, an AI-driven asset manager that has focused on fixed income and consumer credit, has raised institutional money to expand into real estate and mortgages.

Closer to the dirt, or the ground floor, other tech startups are building and aggregating databases of records and key metrics for numerous individual properties. An example is Compound Asset Management, which uses an AI-based platform to locate and purchase condominium units and apartment buildings in New York City. Another example is Skyline AI, which has access to

an immense national database of property information and plans to focus initially on multifamily assets. Founder and CEO Guy Zipori explained in an interview with us that Skyline AI has developed a proprietary algorithm that generates key insights from the datasets as to both valuation and timing considerations.

By combining big data with predictive analytics, tech companies are able to predict the value of an asset and rent amounts. Perhaps more significantly, an owner can use AI to predict the optimal time to market for sale or seek financing for a property. AI-driven investment strategies can also be applied proactively by a prospective purchaser to make an unsolicited offer for an off-market asset. By reverse engineering existing data on the ownership and financing structure for a property, it can be determined whether the existing owner will likely be willing to sell a particular property. Similar to the targeting abilities of Google and Amazon, as explained by Weikal, real estate tech companies will be able to learn from people's behavior and uncover off-market sellers who don't even know they are sellers yet. An actual example of this occurred in June 2018 when Skyline AI and an undisclosed operating partner acquired two residential complexes in Philadelphia that were identified by a proprietary algorithm as being mismanaged.

The AI system doesn't need to know everything about an identifiable property, portfolio or submarket in order to maintain a competitive advantage. It's only necessary to have access to more data than is available to the typical real estate investor based on traditional sources, such as appraisals and public property records. Still, to have greater impact, a technology company must be able to create, or synthesize, a full picture based on incomplete information.

For instance, if the AI system has 95 percent of the relevant data with respect to an asset but is missing the remaining 5 percent, then the missing portion will be synthesized to create a complete picture. According to research on the human blind spot by V.S. Ramachandran, the Director for the Center for Brain and Cognition at the University of California San Diego, this is akin to how humans automatically fill in the missing gaps of images based on what they know or believe to be true in order to perceive a single, integrated image. But a key distinction is that humans, although they can strive to work around their blind spots, can't actually reduce them.

In contrast, AI can learn to narrow its own blind spots. As new information about a property or market becomes available, the information previously synthesized by the AI will be retested and validated or updated as needed. In theory, each successive sequence or image will be more accurate than that which preceded it. Although it will never be perfect, an AI system will become more proficient at plugging in missing pieces and resolving discrepancies in data through machine learning.

3. AI-Driven Investment Firms

A typical business model for AI technology is the licensing of technology to customers on a subscription or software-as-a-service basis. For example, Ross Intelligence, which uses IBM Watson, offers its services to any law firm willing to pay a monthly fee for a more efficient way to research cases and prepare for litigation. A volume-based approach has also been adopted for real estate transactions by tech companies such as Enodo, which maintains an automated underwriting platform for lenders of multifamily assets that is generally available to any paying customers.

Other tech companies are more selective in their clientele. For example, as described by Zipori, rather than having customers in the conventional sense, Skyline AI forms strategic partnerships with select equity and real estate investors and lenders. By offering the proprietary technology and substantial

know-how to any paying customers, the alpha or competitive edge would be lost, market prices would soon converge and there would be less opportunities for arbitrage.

AI tech companies with a more exclusive business model will become more direct and active players in the transactional world, compared to those with a subscription or service provider model. While we caution that we do not yet have sufficient examples from actual practice, an AI tech company could act as a real estate developer in its own right or form a joint venture with a local operator for the purchase of an individual property or portfolio.

But greater resources will be pooled to form equity or debt funds for which an AI tech company serves as the investment or asset manager. Within the next few years, it's anticipated that private funds will be formed through contributions by institutional investors and real estate operators and lenders. This is in addition to venture capital previously raised through several funding rounds. There will also be publicly listed funds. For example, as of publication of this article, Compound is preparing for an initial public offering with respect to its Manhattan Cityfund, which will purchase residential properties.

Properties, portfolios or loans that are acquired by an AI-driven investment vehicle will generally be regarded as assets under management. Much as an operating partner handles day-to-day management and administrative matters for a traditional real estate venture, a tech company will render AI-based investment advice for the project or portfolio. Presumably, the investment manager will have the right to initiate certain transactions that fall within pre-approved parameters.

Different investment vehicles will focus on different asset classes, such as multifamily, retail or office, and different equity or debt positions, such as senior or mezzanine debt or preferred equity. Each investment vehicle will also have a certain risk profile. The AI technology will take into account desired return and other financial terms in sourcing and underwriting deals.

Compared to traditional investment firms, an AI-driven debt fund could very well be better positioned to determine who needs a loan and when, using insights gleaned from existing databases and synthesized information. With a higher degree of accuracy, the AI-driven investment firm could also determine the most suitable type of financing, such as bridge financing versus permanent financing and interest-only versus amortization. Again, the above descriptions are based on potential developments, and there will not be an established record on the subject for some time.

4. Arbitrage Opportunities

In a form of arbitrage, AI-driven investment vehicles will use their technology to exploit differences in property valuation and information. For example, with a valuation based on AI, it can be quickly and accurately determined whether a particular property or portfolio is undervalued or overvalued by an owner or competitor that is utilizing traditional means of valuation. The AI-driven investment firm, acting as an arbitrageur, can then close the gap on the undervalued property through its purchase and subsequent sale or investment.

It will not be necessary for the transactions to be simultaneous in order to reap a profit. Due to high transaction costs, extensive paperwork, required approvals and other factors, the sale and resale of the same property or portfolio usually will not occur at the same time. A much shorter turnaround period, however, may apply in the case of publicly traded investments in real estate companies.

Some of the opportunities identified by these investment firms would otherwise go missed in the absence of AI. Whereas conventional financial modeling and underwriting for real estate deals takes days or weeks, sophisticated AI will reduce the time period to a matter of seconds. An AI-driven investment vehicle likewise can consider a much greater number of potential deals in a much shorter period of time.

At the same time, with increased predictive power, the investment vehicle will only need to consider a relatively small number of assets before finding a suitable prospect. This includes assets that an owner is willing to sell or refinance in the near future. In these ways, real estate transactions will begin to more closely resemble the trading of stock, though there will still be important differences.

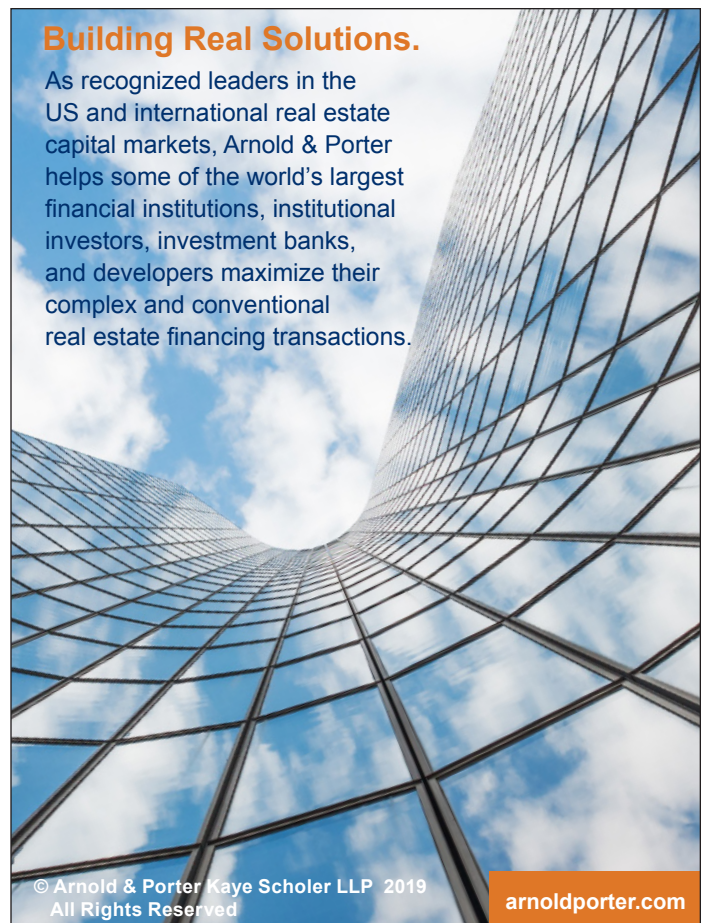
5. Changes to Come

AI will change how real estate transactions are sourced and negotiated. In some cases, the users of AI will not need or want to share the analysis or predictions. In other cases, it may be necessary or desirable to share certain segments of AI analysis in order to obtain more favorable terms. The most obvious example is showing the AI's predicted valuation to support a higher or lower purchase price. As another example, in underwriting a loan, predictions on rent or condominium unit sales will be relevant in determining interest rates and the scope of guaranty coverage.

It's not yet clear how excerpts of AI analysis will be shared. It's unlikely that counterparties will accept such results as conclusive without seeing reasonably detailed back-up. But AI firms will not want to disclose their trade secrets or reveal the methodology behind their proprietary technology. Eventually, the programs may become too complex to be fully understood even by their own data scientists. The AI algorithms will thus become a black box that humans are unable to unpack.

In contrast, a formal appraisal tells a story about a property in a format that is easily understood by owners and potential investors. Traditional third-party reports will therefore still remain relevant for underwriting and investment decisions, at least for the foreseeable future. Of course, the roles of appraisers, brokers and other consultants will need to evolve in response to new technologies.

It's a matter of great speculation whether, and when, a technological singularity will render human advice obsolete. The current consensus within the technology community is that AI and humans working together are better than either alone. Accordingly, decisions whether to buy, sell or finance a property are best made through a combination of AI input and human judgment. An AI program may propose a certain investment decision, but, for now, a human advisory board will have the final say.



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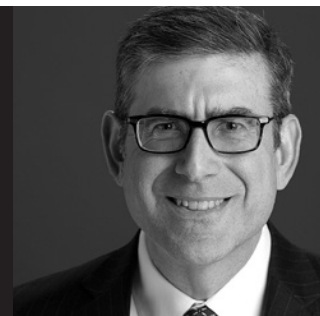
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The Midwest's Blue Wildcard



The Midwest has suffered from a loss of manufacturing jobs over the past several decades. Many of its urban cores are demographically and economically challenged. Despite its many setbacks, the Midwest has a key asset in abundance – freshwater. The Midwest, which borders on the Great Lakes, has more than 80% of the freshwater in the United States and 20% of the freshwater in the world.

This resource was used heavily in disparate industries ranging from auto manufacturing to beer production during the Midwest's industrial zenith. Chemicals, automotive, and food processing companies require an abundant water supply. In response to a significant portion of the region's water becoming polluted, the Great Lakes Restoration Initiative was introduced in 2010, and had as its stated goal the improvement of water quality, clean shorelines and the restoration of habitats and species. According to the Environmental Protection Agency (EPA) progress report dated July 28th, 2015, this initiative has been largely successful, as 148,000 acres of wetlands, islands and coastal habitat have been reinstated, phosphorus run-off from farms reduced and invasive species repulsed.

The Midwest can benefit from this abundant resource that is scarce in other parts of the US in several different ways; (1) as an innovation hub for water-intensive technologies, (2) as a region that can accommodate water-intensive industries (3) as a climate change refuge.

Innovation hub for water-intensive technologies

The Midwest has become a home for water-based technological innovations, research and development. The University of Wisconsin's Milwaukee School of Freshwater Sciences is the nation's only graduate school dedicated solely to the study of freshwater. The states of Michigan and Wisconsin, as well as their respective university systems, have focused on promoting and researching water-related industries. Grand Rapids, Michigan-based Cascade Engineering manufactures inexpensive water filters for developing countries. Michigan-based Whirlpool and Wisconsin-based Kohler have partnered to develop advanced methods of wastewater elimination. In Northeast Ohio, there is a focus on research and development involving hydraulic fracturing industrial water cleaning, water system corrosion protection and other water-related products.

The accommodation of water-intensive industries

The Midwest can grow by further accommodating water-intensive industries such as food processing and chemicals in the Great Lakes' states. Milwaukee took advantage of its lakeside location to become a world leader in the water industry. Commercial ventures that are water focused such as those involving sewage treatment, bathroom hardware, plumbing, pumps, purification, and global water health have proliferated in the largest city in Wisconsin. Milwaukee is home to more than 120 water technology companies including Badger Meter, Kohler, A.O. Smith, Siemens, Veolia, and Pentair. Evoqua Water Technologies Global Headquarters is located in Pittsburgh, PA and they have six other Midwest locations. Water-intensive industries such as chemicals, breweries, soft drinks, food processing, canning, and dairies are a natural fit for the Midwest.

Climate change refuge

Climate change may turn water scarcity into a higher priority and transform the Midwest into an attractive region for housing solutions and corporate relocation. The frequency of extended dry spells, droughts, arid conditions, water shortages, and wildfires in other parts of the nation are increased by climate change. Nine of the ten most destructive California wildfires – measured by destroyed structures including homes and commercial buildings – occurred within the last 15 years. Four of them occurred in the last two years. By acreage, nine of ten of the largest California wildfires occurred within the last 15 years, including three in the last two years. California has been experiencing chronic water shortages and companies that use significant amounts of water may be prompted to relocate.

Water shortages in many semi-arid, arid, and desert parts of the United States have already caused certain concerns to reevaluate their locational priorities. As an example, California droughts have inflated the cost of water, and water costs affect agricultural viability. An illustration is provided in the dairy industry, involving alfalfa¹ feed. Higher alfalfa irrigation costs combined with the use of new technology rendered the Midwest more attractive to dairy farmers. This has enabled farmers to achieve higher productivity levels despite colder weather in places like Michigan – currently No. 1 in the milk-production-per-cow ranking, up from 11th place in 1990 – as well as in Colorado, Wisconsin, Kansas and Iowa². In 2007, California produced 40.7 billion pounds of milk while Wisconsin produced 24.1 billion pounds of milk. However, by 2017, Wisconsin production increased 26% to 30.3 billion while California's declined 2% to 39.8 billion. California's population of dairy cows declined from 1.8 million to 1.7 million, while the number of dairy cows in the states of Iowa, Kansas, Nebraska and South Dakota increased from 478,000 to 547,000 during the same time period³.

Many farmers and municipal water systems in the West depend on groundwater. Water shortages in the West are likely to intensify because aquifers are being depleted over a few short decades, even though those aquifers will take thousands of years to recharge. Surface resources in the West, such as Lake Powell and Lake Meade, are also being drawn down over time faster than they can recharge. It is unclear how in certain parts of the West freshwater supplies can be better matched to burgeoning water demands.

California's multiyear drought recently eased, improving reservoir levels. However, while it persisted, tensions rose between residential populations and farmers about whose rights should be prioritized when there is not enough water to serve all that demand it. California is naturally arid, and in time, its water scarcity may intensify due to climate change, further stressing overtaxed aquifers. It is unlikely that a water pipeline can be built from the Great Lakes to the more arid regions of the US in the near term, since the Midwest is keen on protecting its advantage. The 2008 Great Lakes Compact between the eight Lakes states, plus Ontario and Quebec, requires unanimous approval for any diversion of water outside the Great Lakes watershed. There are non-science fiction scenarios in which the Midwest may emerge as a desirable location for demographic and corporate relocation due to severe climate changes.

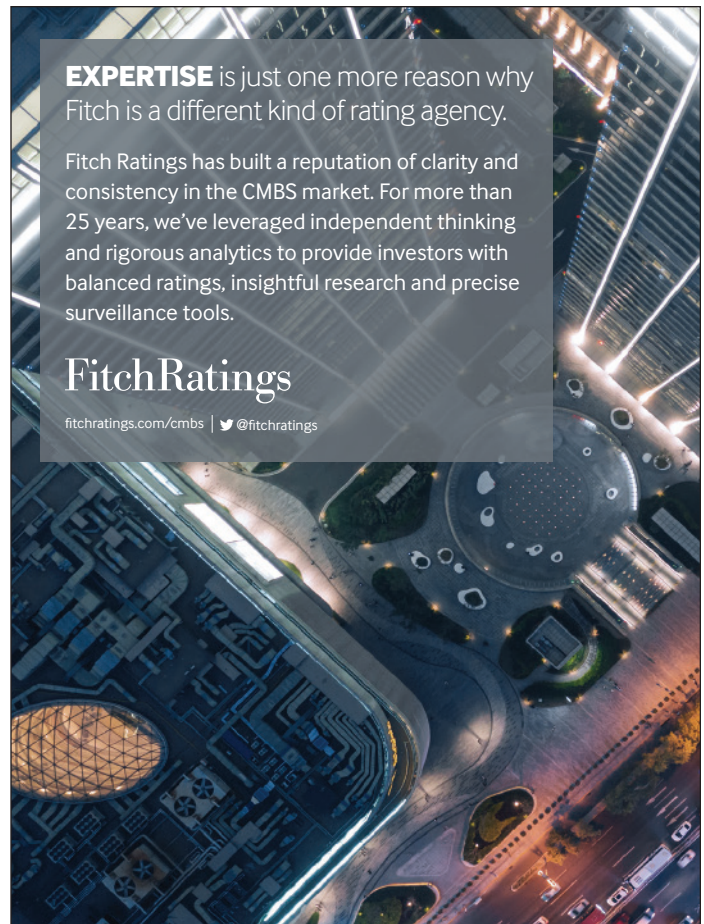
¹ The number of acres of alfalfa harvested in the state dropped from 1.1 million in 2006 to 700,000 in 2017. (US Department of Agriculture)

² Justin Fox "Devin Nunes Isn't the Only Dairy Farmer Sourcing on California, A tale of resource limitations, technological progress and cows. Millions of cows" Bloomberg, October 4, 2018

³ US Department of Agriculture and as reported in Justin Fox "Devin Nunes Isn't the Only Dairy Farmer Sourcing on California, A tale of resource limitations, technological progress and cows. Millions of cows" Bloomberg, October 4, 2018

Disclosures

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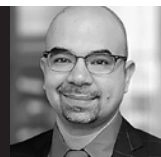


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Quantifying the Impact of Climate Change on Commercial Real Estate

Climate-related risks are a growing concern for property owners, lenders and CMBS bondholders. Office buildings, retail properties and lodging can have lifespans of several decades, subjecting them to climate risks that are set to intensify over time. Many properties are in regions that are vulnerable to the increasing incidence of severe storms. For example, New York, Houston and Miami, which are all subject to increased hurricane risk, made up one-fifth of CMBS properties by market value in the Bloomberg Barclays Aggregate Index, as of March 2019.

Yet investors find it hard to quantify the financial impact of climate change on their portfolios. Financial markets can be short-sighted and tend to underestimate risks that appear uncertain and distant. This may lead to a discounting of physical risks that are already biting. Also, a lack of tools and data may impede the analysis. Risk managers can often rely on outdated flood zone maps to assess risks to real estate. And the past is of limited use as a guide to the future when global temperatures and hurricane probability are rising over time. Consider that Houston has seen three “one-in-500-year” flooding events since 2015, according to Houston’s Harris County Flood Control District as reported in 2017.

To overcome these hurdles, we combined our asset-level expertise and cutting-edge climate data we purchased from the Rhodium Group to examine how the risks in CMBS look today and how they may evolve over time under different climate scenarios. See Rhodium’s paper “Clear, Present and Underpriced: The Physical Risks of Climate Change” for a summary of its approach.

Adding Rhodium’s projected climate change forecasts and the resulting metro-area GDP declines to our analysis causes predicted CMBS deal defaults to increase by up to 48% and losses to increase by up to 69%. For example, our original predicted default rate of 8.5% for one deal increases to 12.7% after incorporating climate forecasts.

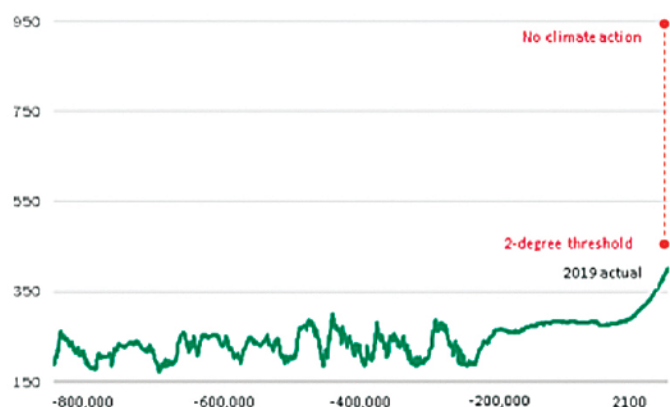
Climate Change Forecasts

Scientists have long cited a clear linear relationship between the level of carbon dioxide (CO₂) in the atmosphere and warmer temperatures. Temperatures over land and ocean have already gone up an average 1.2°C (2.2°F) since the mid-1800s, and significantly more at the Earth’s poles, according to data from the National Oceanic and Atmospheric Administration (NOAA). CO₂ concentrations in the atmosphere are at a higher level than they have been for the past 800,000 years. See Figure 1 – Hockey Stick.

Rhodium’s advanced climate modeling and data allow us to assess direct physical climate risks such as probabilities of flooding and hurricane force winds on a localized level across the US. This enables us to form estimates of the potential direct financial damages, as well as knock-on effects such as the impact of rising temperatures on crop yields or labor productivity.

FIGURE 1
Hockey Stick

Global atmospheric concentration of CO₂, 800,000 B.C.-2100



Sources: BlackRock Investment Institute, with data from the U.S. Environmental Protection Agency, March 2019. Notes: The chart shows the concentration of carbon dioxide in the atmosphere over time, measured in parts per million (ppm). The data until 1950 are from historical ice core studies from the European Project for Ice Coring in Antarctica project. Post-1959 numbers are direct measurements taken at Mauna Loa, Hawaii. The 2019 actual data point is as of January 31. The 2-degree threshold is the CO₂ concentration at which global average temperatures are predicted to rise by 2°C from pre-industrial levels by end-century, as estimated by the IPCC. The “no climate action” scenario assumes ongoing use of fossil fuels and a CO₂ concentration of 940 ppm by 2100.

Considering the Uncertainty

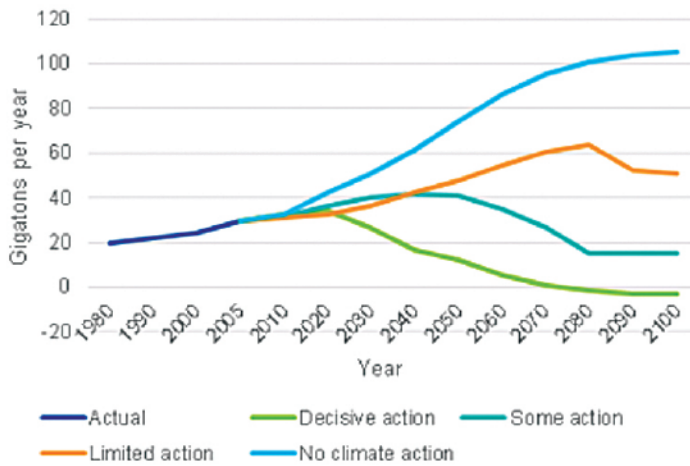
Global climate scenarios are central to our analysis. The climate modeling community has settled on several plausible pathways for future carbon emissions. To account for uncertainty around these future pathways, we consider multiple scenarios, reflected in Figure 2 – Plotting Pathways. These range from the “no climate action” scenario that assumes continued burning of fossil fuel to a “decisive action” scenario that assumes aggressive policy actions to curb emissions. The latter is the goal of the 2015 Paris Climate Agreement, which aims to keep the average increase in global temperatures to well below 2°C by the end of the 21st century. The actual trend rate of emissions growth has the world on a path to much greater potential warming.

For each of these emissions scenarios, Rhodium draws on 21 advanced global climate models to calculate probability-weighted indicators of physical climate changes, including temperature, rainfall and hurricane risk. See Rhodium’s article in the *Journal of Applied Meteorology and Climatology* (Oct 2016) for details.

Our analysis of physical risk in this exercise is based on the “no climate action” scenario (otherwise referred to in climate literature as RCP 8.5)

FIGURE 2
Plotting Pathways

Scenarios for fossil fuel-related CO2 emissions, 1980-2100



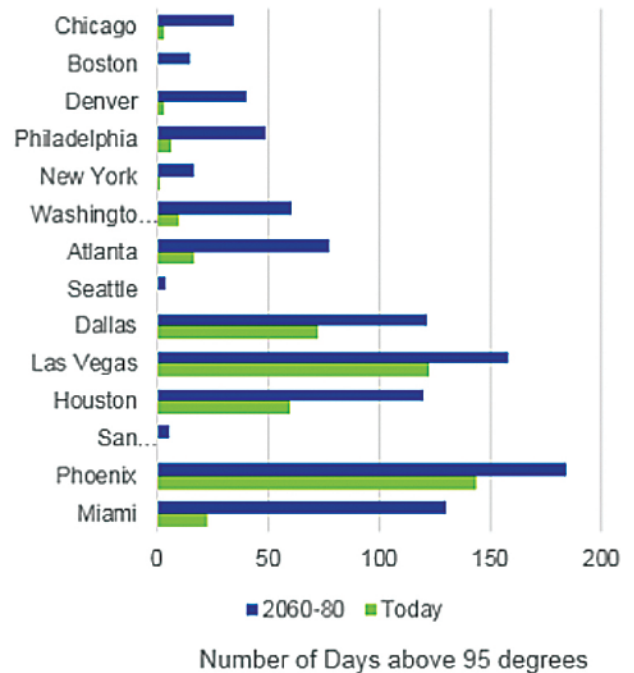
Sources: BlackRock Investment Institute, with data from Rhodium, March 2019. Notes: CO₂ emissions include fossil fuel combustion and cement production. The chart lays out the four representative concentration pathways (RCPs) commonly used as scenarios in climate modeling, as defined by the Intergovernmental Panel on Climate Change. “No climate action” (known as RCP 8.5) assumes ongoing fossil fuel use, with atmospheric CO₂ concentrations reaching 940 ppm by 2100. “Limited action” (RCP 6.0) sees CO₂ concentrations rising to around 670 parts per million by 2100. In “some action” (RCP 4.5), CO₂ concentrations stabilize at around 550 ppm. Decisive action (RCP 2.6) sees aggressive policy action resulting in negative net emissions by late in the century, with CO₂ concentration of 384 ppm by 2100.

Geographical Variability

The impact of these climate changes will likely be varied, and different locations may experience different levels of changes. For example, Phoenix currently experiences up to 144 days per year with the temperature above 95-degrees. By the 2060-2080 forecast period, the number of days will increase to 184 under a scenario in which the recent trend in carbon emissions growth continues. See Figure 3 – Rising Temperatures.

FIGURE 3
Rising Temperatures

Number of days in a year when the day temperature will be higher than 95 degrees

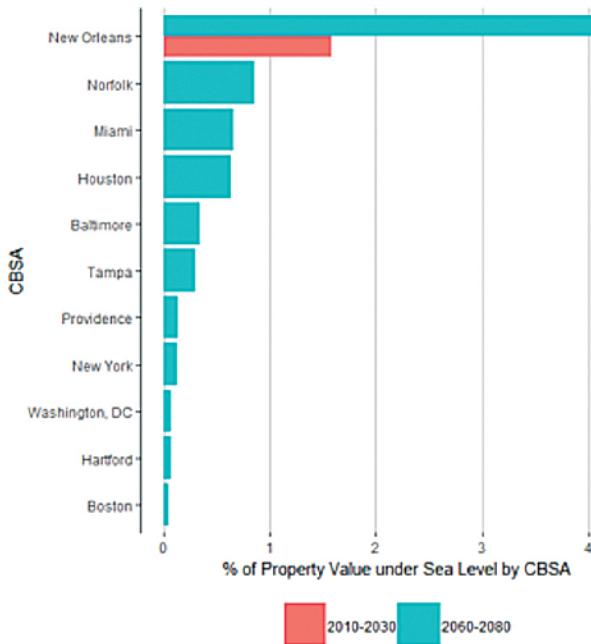


Sources: BlackRock Investment Institute, with data from Rhodium Group, 2019. Notes: The chart shows the average annual number of days when the temperature goes above 95 F/ “Today” is a 2010-2030 estimate. Estimates are from Rhodium and assume a “no climate action” scenario. We show the upper bound of the 66%, or “likely” range. Rhodium’s estimates draw on 21 general circulation models to assess probabilities of temperature, precipitation and other climate variables.

Sea levels have been slowly increasing over the last several years and are expected to rise further. Several cities in the southeastern US will be directly impacted. New Orleans is estimated to see more than 4% of properties by market value go below sea level by 2060, up from 1.5% today. See Figure 4 – Rising Levels.

FIGURE 4
Rising Levels

Value of the property value as of % of all properties in CBSA that will be under sea level by 2060-2080



Sources: BlackRock Investment Institute, with data from Rhodium Group, 2019. Notes: All estimates are from Rhodium Group and assume a "no climate action" scenario. We show the upper bound of the 66%, or "likely" range to illustrate a plausible risk scenario. For details on Rhodium's methodology see [Estimating economic damage from climate change in the United States](#), Science (June 2017).

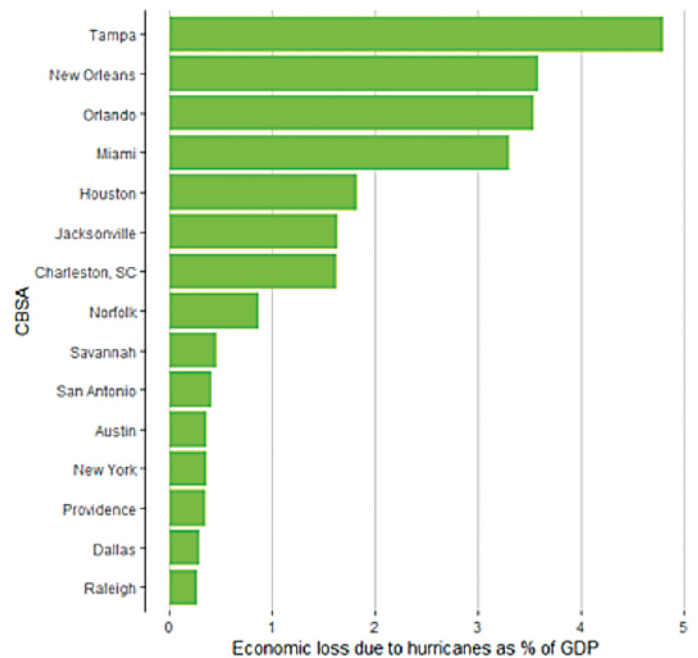
Rising sea levels would also come with an increase in hurricane risk, higher severity of hurricanes, and higher risk from storm-surge flooding. Several cities in Florida would likely be impacted, with Tampa seeing up to 5% estimated economic losses per year due to hurricane damages under the high emissions scenario. See Figure 5 – Hurricane Risk.

Hurricane Risk

Hurricanes pose big risks to commercial property in the form of extreme winds (from blown windows to structural damage) and flooding (damage to basements and electrical systems). Category 4 and 5 wind speeds can create outsized damage to properties. These risks are already a reality. To illustrate, we overlaid Rhodium's hurricane modeling onto the US CMBS market, as proxied by roughly 60,000 commercial properties in BlackRock's proprietary CMBS database. We found the median risk of one of these properties being hit by a Category 4 or 5 hurricane has risen by 137% since 1980. Within three decades, the risk of being hit by a Category 5 hurricane is projected to rise 275% under a "no climate action" scenario.

FIGURE 5
Hurricane Risk

Economic loss due to hurricane damages as % of the GDP by 2060-2080



Sources: BlackRock Investment Institute, with data from Rhodium Group, 2019. Notes: The chart shows projected GDP impact in 2060-2080 under a "no climate action" scenario. Climate changes are measured relative to a 1980 baseline. The analysis includes the effect of changes in crime and mortality rates, labor productivity, heating and cooling demand, agricultural productivity for bulk commodity crops, and expected annual losses from coastal storms. It accounts for correlations across these variables and through time – and excludes a number of difficult to measure variables such as migration and inland flooding.

Potential Impact on Commercial Real Estate and CMBS

The risks to the CMBS market posed by climate change are varied and go beyond the direct physical damages from storms and floods. They include:

- Higher insurance premiums or decreased insurance coverage
- Rising operational costs such as energy use for air cooling systems
- Greater capex needs to make buildings more resilient, such as backup generators, water-pumping systems and reinforcement of building exteriors
- Increased delinquencies as tenants' default on leases or walk away from properties relocate after extreme weather events
- Potential hits to valuations and declining liquidity of properties in vulnerable areas

Focus on Flooding and Insurance

Borrowers with loans contributed to CMBS deals are required to have wind insurance as part of their broader "hazard insurance." This does not cover flood risk. Flood insurance is required only if the commercial property is located within FEMA-designated flood zones. To estimate the official footprint of the flood hazard, we mapped 60,000 properties in our CMBS universe onto FEMA flood maps using an algorithm that sorted through 830,000 geospatial blocks across the US. See Figure 6 – FEMA Flood Maps.

FIGURE 6
FEMA Flood Maps

Location of a property in New York City within the FEMA flood maps



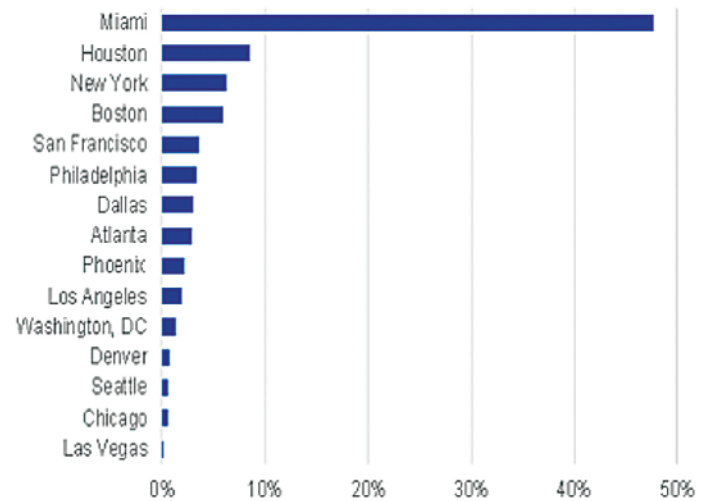
Sources: BlackRock Investment Institute, with data from BlackRock's CMBS database and FEMA, March 2019

Based on our analysis, around 6% of the properties in the CMBS market lie in FEMA flood zones. This percentage varies greatly by region. Miami has the highest exposure, with almost half of commercial properties situated in flood zones. See Figure 7 – Flood Water.

Recent hurricanes hitting cities such as Houston suggest FEMA flood maps understate true risks. Based on our mapping of the CMBS universe onto Rhodium's data, the number of properties subject to 1% or more storm surge risk per annum would increase 18 times by 2060–2080 under a "no climate action" scenario. To be sure, many commercial real estate sponsors take out flood insurance even when properties lie outside flood zones. Yet such insurance may not always be available, and "uninsured" flood exposure is set to rise.

FIGURE 7
Flood Water

U.S. CMBS market exposure to official flood zones



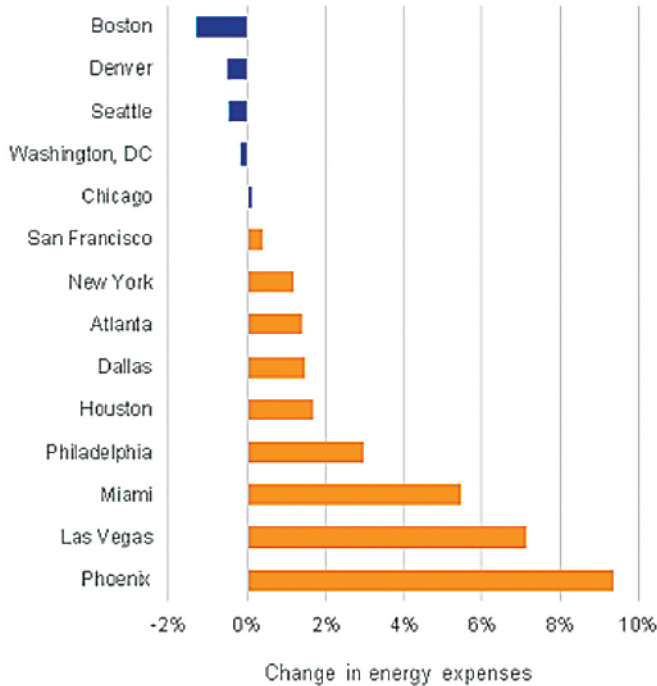
Sources: BlackRock Investment Institute, with data from FEMA and BlackRock's CMBS property database, March 2019. Notes: The chart shows the market value share of properties in the U.S. CMBS market that lie within FEMA-designated flood zones in selected U.S. urban centers. We use BlackRock's CMBS property database, containing around 60,000 underlying commercial properties, as a proxy for the CMBS market.

Operating Expenses

Energy or utility expenses make up around 15% of operating expenses for commercial buildings according to our analysis of 100,000 property financial records. Rising temperatures could inflate these bills. Based on Rhodium’s data, energy expenses would rise by up to 9% (Phoenix) under the “no climate action” scenario. These estimates likely underestimate the costs, as they do not account for electricity rate rises. See Figure 8 – Rising Bills.

FIGURE 8
Rising Bills

Impact of climate change on energy expenses, 2060-2080

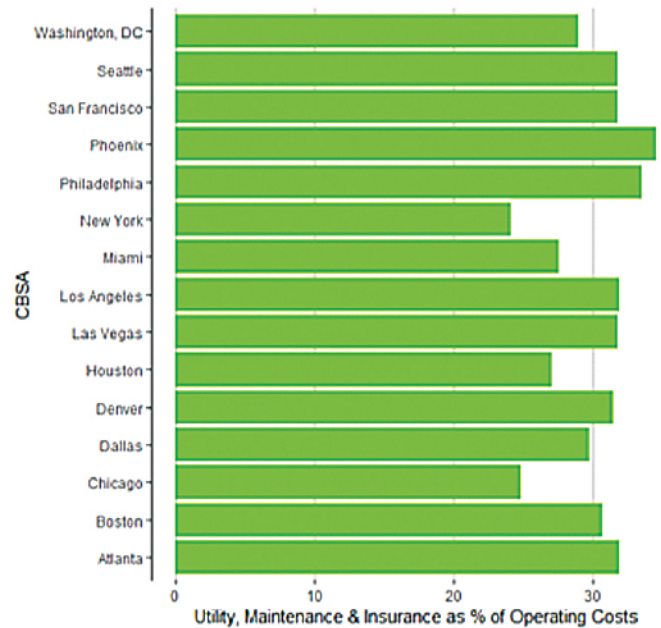


Sources: BlackRock Investment Institute, with data from Rhodium Group, 2019. Notes: The analysis assumes a “no climate action” scenario and takes the upper bound of the 66%, or “likely” range, to illustrate a plausible risk scenario.

Insurance and maintenance costs make up around 20% of the operating expense for commercial buildings based on our analysis of 100,000 property financial records. Combined with utility expense, they add up to 30-35% of the operating expenses. A rise in temperatures and more frequent extreme weather events could increase both costs. See Figure 9 – Running Costs.

FIGURE 9
Running Costs

Utility, maintenance and insurance costs as percent of the total operating costs for office, retail, and industrial properties



Sources: BlackRock Investment Institute, with data from FEMA and BlackRock’s CMBS property database, March 2019. Notes: The chart shows the utility, maintenance and insurance costs as % of total operating costs for properties in the U.S. CMBS. We used BlackRock’s CMBS property database, containing around 60,000 underlying commercial properties, for this analysis.

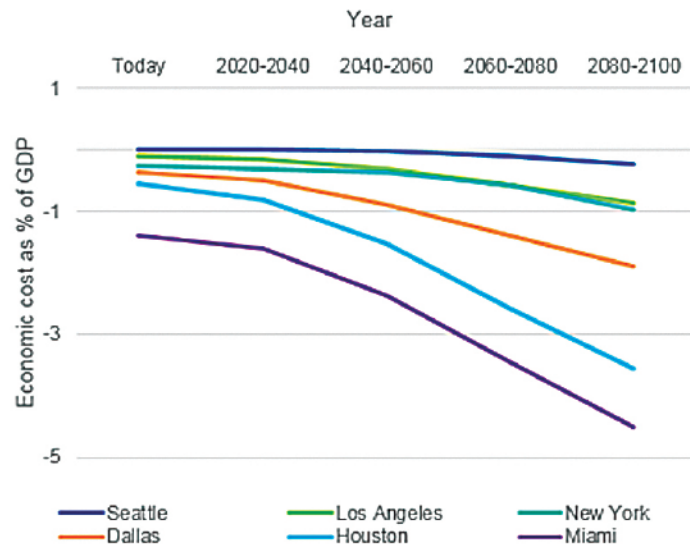
Potential Economic Costs

Climate change can impact economies for various metropolitan statistical areas (MSA) at several levels, including changes in the local GDP, changes in the employment levels, and changes in personal disposable income. Based on data from Rhodium, total economic cost of climate change can shave off several percentage points from GDP. Miami stands to lose more than 4% of GDP per year due to climate change by end of this century. See Figure 10 – What’s the Damage.

Macroeconomic shocks related to climate change can directly impact commercial real estate. These changes can result in lower demand for commercial real estate in certain locations, which in turn can result in an increase in vacancy rates or decrease in rents or both. The tenants in commercial buildings can also move to more suitable locations. Such moves by large tenants can have a potentially large tail event impact at the property and loan level.

FIGURE 10
What’s the Damage

Estimated climate impact on GDP of top-6 U.S. metropolitan statistical areas (MSA) by economic weight, 2018-2100



Sources: BlackRock Investment Institute, with data from Rhodium Group, March 2019. Notes: The cities shown represent the top-15 U.S. metropolitan statistical areas (MSAs) by GDP. The chart shows projected annualized GDP losses (upper bound of the 66%, or “likely,” range) due to cumulative changes in the climate since 1980 under a “no climate action” scenario. Today is represented by a 2010-2030 estimate. The table shows the GDP, total outstanding municipal bond issuance, and each MSA’s weight in the S&P National Municipal Bond Index. The MSAs shown are greater urban areas; for example, Los Angeles includes Long Beach and Anaheim, California.

Impact on Defaults and Losses

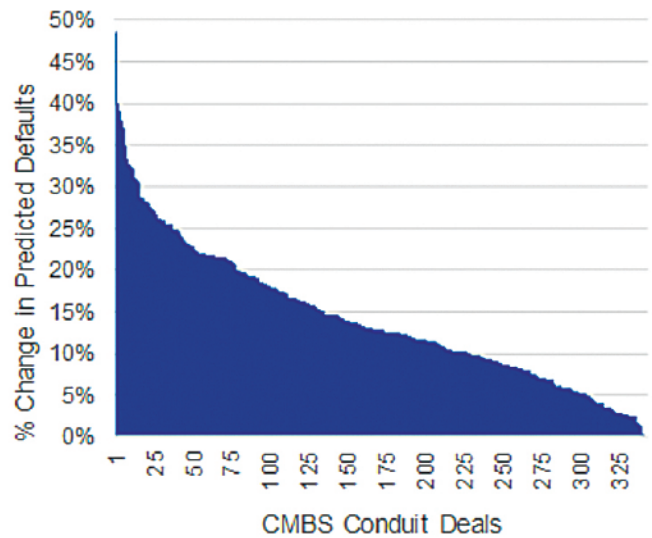
To estimate the impact of climate change, we used an illustrative CMBS model leveraging our proprietary database to estimate changes in default rates on commercial mortgages in the Bloomberg Barclays Aggregate Index. Our inputs included CMBS properties’ current financials and Rhodium’s estimated GDP

changes by MSA over 2060 – 2080 under the “no climate action” scenario. The model simulates the impact on key real estate metrics such as vacancies, rents and renewal probabilities, as well as expenses.

Our model shows that the average predicted losses on CMBS deals would rise by around 18% as compared to absent the climate shock. The impact on defaults and losses varies by CMBS deal due to exposure to various geographies and local real estate’s sensitivity to the economic factors. Five percent of deals may see an increase of 40% or more, while 80% will see only marginal changes no larger than 10%. See Figure 11 – Default Increase and Figure 12 – Loss Changes.

FIGURE 11
Default Increase

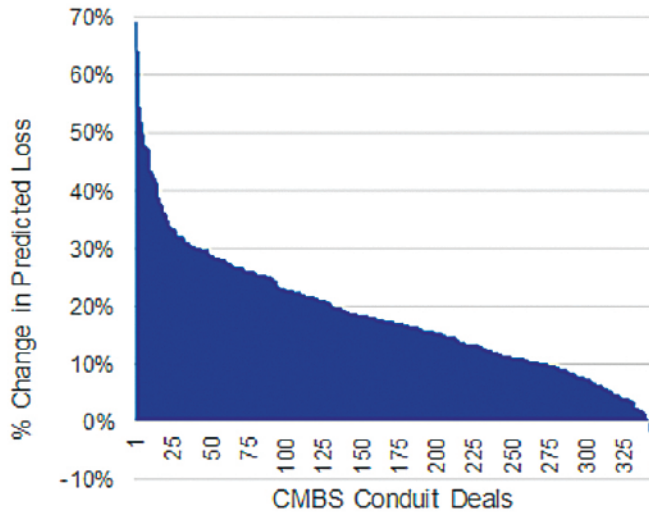
Estimated change in the CMBS conduit deals predicted default rate due to climate change from BRS model



Sources: BlackRock, with data from BlackRock’s CMBS database and Rhodium Group, March 2019. Note: % Change in Predicted Defaults calculated as ratio of BRS model predicted default rate with climate change over BRS model predicted default rate without climate change minus one. The model outputs detailed above are shown for illustrative purposes only. They are based on analysis and assumptions derived from BlackRock. Actual results may differ significantly from what is shown above.

FIGURE 12
Loss Changes

Estimated change in the CMBS conduit deals predicted loss projections due to climate change from BRS model



Sources: BlackRock, with data from BlackRock's CMBS database and Rhodium Group, March 2019. % Change in Predicted Loss calculated as ratio of BRS model predicted loss with climate change over BRS model predicted loss without climate change minus one. The model outputs detailed above are shown for illustrative purposes only. They are based on analysis and assumptions derived from BlackRock. Actual results may differ significantly from what is shown above.

Defaults and losses would be higher in areas of greatest impact. The estimates do not include the direct financial damages caused by storm hits. More frequent storms may also inflate building maintenance and insurance costs, which by our calculation average roughly 20% in CMBS properties. The bottom line is that climate risks are significant today, and we believe they are set to grow in the future.

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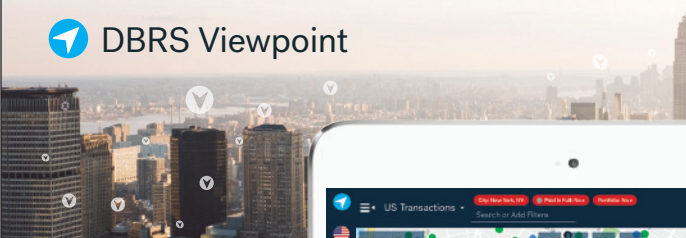
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# of Properties	100-250	251-500	501-750	751-1000	1000+
# of Occupants	1000	1000	1000	1000	1000
# of Units	1000	1000	1000	1000	1000
# of Floors	10-15	16-20	21-25	26-30	31-35
# of Stories	10-15	16-20	21-25	26-30	31-35
# of Units per Floor	10-15	16-20	21-25	26-30	31-35
Year Completed	1980-1989	1990-1999	2000-2009	2010-2019	2020+
Year Occupied	1980-1989	1990-1999	2000-2009	2010-2019	2020+
Year Rented	1980-1989	1990-1999	2000-2009	2010-2019	2020+
Year Sold	1980-1989	1990-1999	2000-2009	2010-2019	2020+
Year Leased	1980-1989	1990-1999	2000-2009	2010-2019	2020+
Year Occupied	1980-1989	1990-1999	2000-2009	2010-2019	2020+
Year Rented	1980-1989	1990-1999	2000-2009	2010-2019	2020+
Year Sold	1980-1989	1990-1999	2000-2009	2010-2019	2020+
Year Leased	1980-1989	1990-1999	2000-2009	2010-2019	2020+

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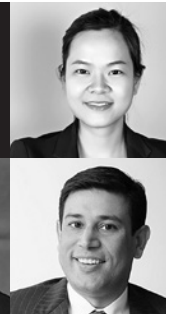
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CRE Finance World // Summer 2019 // 35

CRE CLO Experiencing Sizeable Prepayments

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 Roy Chun | KBRA
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The collateralized loan obligation (CLO) market – revived over the last two years by private lenders – has experienced a brisk pace of prepayments due to solid property performance and the spate of lenders willing to provide borrowers with more proceeds and/or lower coupons.

The early payments have had a positive impact on credit quality. At the same time, investors are getting principal returned more quickly than anticipated and issuers are incentivized to structure deals as revolving pools rather than static.

The CLO market 2.0 is still relatively young and has not experienced a full real estate cycle, so it is too early to come to any final conclusions. The key will be to keep a close watch on how borrowers exercise available extension options as loans come to the end of their initial term, particularly as the cycle progresses and/or if lending conditions deteriorate.

CRE CLO 2.0

The CRE CLO 2.0 market is generally used to provide first mortgage bridge financing for borrowers with transitional properties. Given the transitional nature of the properties, the loans come with a wide variety of prepayment options making it hard for investors and issuers to anticipate the weighted average life of the transactions which can impact investor returns and issuer costs.

A study by KBRA of 428 loans in 2017-18 vintage CLOs found that more than a quarter (29.7%) paid off, 86.6% in advance of their initial maturity date. This has had a positive impact on credit levels and contributed to the increase in rating upgrades. In 2018, and year-to-date 2019, KBRA has upgraded notes in over 25% of the 2017-18 rated transactions owing to deleveraging that occurred due to loan payoffs.

The prepayment terms are highly negotiated and would reflect, to some degree, the expected time frame to stabilize the property. To illustrate the variability that can occur in prepayment terms, one deal included in our study population had many different prepayment structures, even though they were issued by the same originator and most of the loans had similar initial terms of 36 months. A small handful had lock out periods, most had spread maintenance provisions that ranged from 9-18 months, a few had fixed prepayment premium periods, and all had open periods that ranged from 12 months to as long as 24 months. In addition, most, but not all, of the loans in the sample deal had one or two 12-month extension options.

To help illuminate this topic, we provide some insight into the notable prepayment characteristics taking shape in the CRE CLO deals we have rated. Readers should be mindful that it is still a young market and many loans have not yet gone through their full term – and none of the post-crisis CRE CLOs have yet experienced a downturn in the real estate cycle. However, we believe our findings are indicative of fundamental factors that influence prepayment behavior.

Key takeaways are as follows:

- Length of the initial loan term is a leading indicator of when prepayment may occur. Lenders and borrowers are aware of the extent and timing of business plans and will generally structure loan terms that meet those needs. In our observation, loans with 24-month initial terms have much faster prepayment speeds than those structured with 36-month initial terms.
- Factors that could influence the time it takes to achieve a business plan show up in a loan's propensity to prepay. For example, larger properties or assets with more extensive business plans show slower prepay speeds, as expected. Similarly, loans with a future funding component typically pay off slower versus loans which are fully funded at securitization. In addition, larger future funding commitments, as a percent of total committed balance, correlate with longer outstanding periods.
- There are observable differences in prepayment speeds based on property type: multifamily experiences the fastest prepayment speeds, while lodging and office are the slowest. Generally, many of the multifamily transitional projects included in CRE CLOs deals can realize their business plan and achieve faster revenue growth compared to office and lodging assets.
- There was no significant extension activity so far, although many of the loans have limited seasoning and have not reached their initial maturity date.

The Studied Population

In our case study, KBRA tracked prepayment performance up to March 2019 of all CRE CLO loans originated between July 1, 2016 and December 31, 2017. The sample size comprised 29 transactions that we rated in 2017 and 2018. For purposes of this report, we define prepayments to include loans that were paid off at or prior to their initial maturity or within an extension period.

	2H 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Total
Number of Loans	94	59	90	102	84	428
Total Loan Commitment (\$000s)	3,382,939	1,607,435	2,533,818	3,542,170	2,731,646	13,798,008
Paid Off % (by Loan Count)	54.3%	44.8%	28.9%	14.7%	10.7%	29.7%
Paid Off % (by \$ Loan Commitment)	41.0%	36.6%	20.1%	17.2%	11.5%	24.7%

Sources: KBRA, Trepp

The population amounted to 428 loans with a total committed balance of \$13.8 billion (see Table 1). The data shows that 29.7% (127 loans) paid off by loan count and 24.7% (\$3.4 billion) by total committed balance. In our analysis, we focus on prepayment as measured by loan count, rather than loan balance. This is because of the high variability among loan size and the presence of a relatively small dataset, balances can unduly influence prepayment metrics.

Table 2: Paid Off Loan Status (% by Loan Count)	
During Open Period	71.6%
With Prepayment Premium	15.0%
At Maturity	8.7%
Performing Matured Loan	3.1%
During Extension Period	1.6%

Sources: KBRA, Trepp

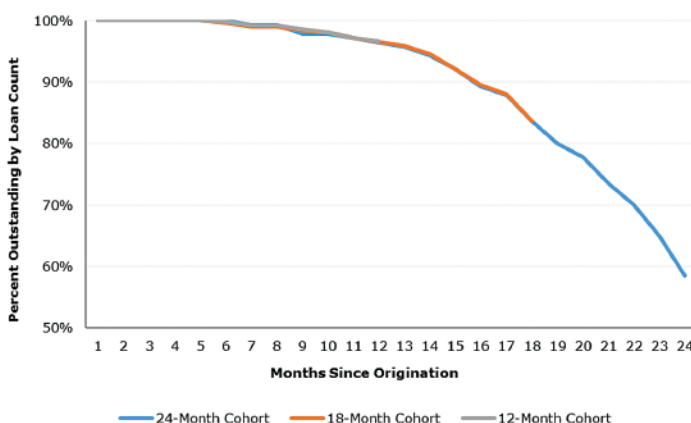
As shown in Table 2, of the 127 loans that were paid off, 86.6% of these occurred prior to the initial maturity date with about 15.0% subjected to a prepayment premium. The latter can take the form of yield or spread maintenance, fixed prepayment premium, or minimum interest requirements. Of the remaining loans, 8.7% paid off at initial loan maturity, 3.1% paid off as a performing matured loan or was granted a short-term extension and another 1.6% exercised their initial extension term and subsequently paid off. Given the healthy real estate markets and availability of financing, it is not surprising that a high percentage of borrowers can either meet their stabilization plans or refinance prior to maturity.

General Paydown Pattern

To better understand paydown patterns, we bucketed prepayment behavior into three overlapping groups. The first cohort – which includes all loans in our sample – consists of loans with up to 12 months of seasoning as measured from their origination date. The second cohort (249 loans) have up to 18 months of seasoning (July 2016 to June 2017 originations), while the third cohort (96 loans) have up to 24 months of seasoning (July 2016 to December 2016 originations). As shown in Figure 1, the first cohort was paid down by 3.3% in the first 12 months, the second cohort by 16.4% within 18 months and the third cohort by 41.4% within 24 months. At this stage in the sector’s life cycle, the overall curves generally do not exhibit much variability in the overlapping time period of each group. This partly reflects the relatively similar economic/real estate environment these cohorts have operated through.

FIGURE 1

Prepayments by Seasoning



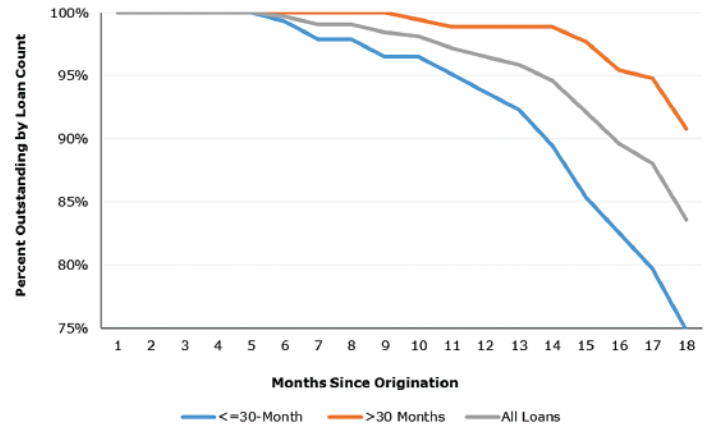
Factors Influencing Prepayment Speed

KBRA reviewed a number of factors that appeared to influence prepayment speed, namely (i) loan characteristics (initial term, loan balance and future funding); and (ii) collateral characteristics (property types and market tier). These factors were generally reviewed independently of each other given the limited loan population. We also limited the analysis to loans that were seasoned at least 18 months to get the broadest sample of loans and prepayment observations.

FIGURE 2

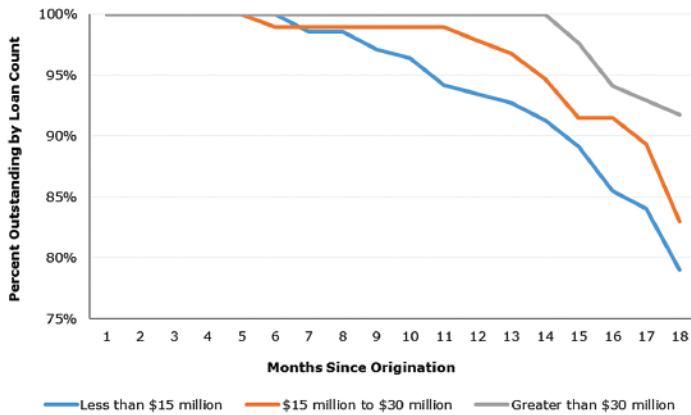
Prepayments by Initial Loan Term

The initial loan term had a strong correlation to prepayment speeds (see Figure 2). Loans with initial loan terms of less than or equal to 30 months typically have much faster prepayment speeds than loans with longer initial loan terms. In our



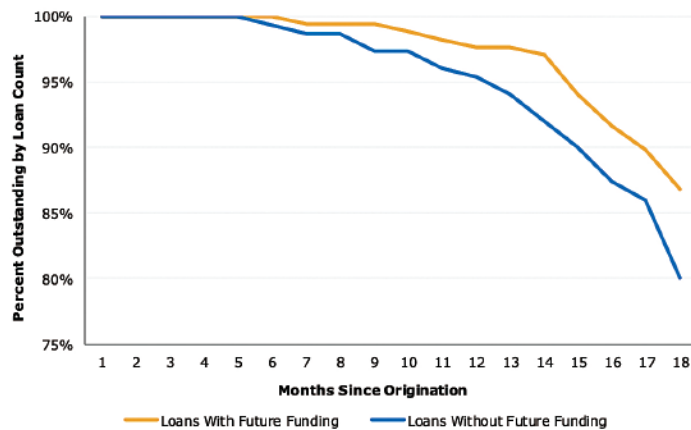
illustration, 82% of the loans either have terms of 24 or 36 months. Fewer than 3% are less than 24 months, so most of the payoffs are due to prepayments in advance of maturity. The faster prepayment of loans with initial loans terms of 24 months or less is expected as lenders and borrowers negotiate loan terms that meet business plan needs. The loans, whether 24 or 36 months or some other term, will typically have some open period. The open period is generally at least a few months prior to maturity, but as previously mentioned, the prepayment structures and open periods vary widely and it would be hard to generalize that longer term loans have longer lock out and prepayment premium periods.

FIGURE 3
Prepayments by Loan Balance



In addition, loan balances also showed to be a factor in the prepayment speeds. Here, we examine three different cohorts of loan balances: less than \$15 million; \$15 million to \$30 million; and greater than \$30 million (see Figure 3). This reinforces the notion that higher balance loans are more likely to be placed on larger properties with more extensive and complex business plans. While it may be stating the obvious, stabilization plans can take a longer period of time for larger, more complex assets.

FIGURE 4
Prepayment and Future Funding

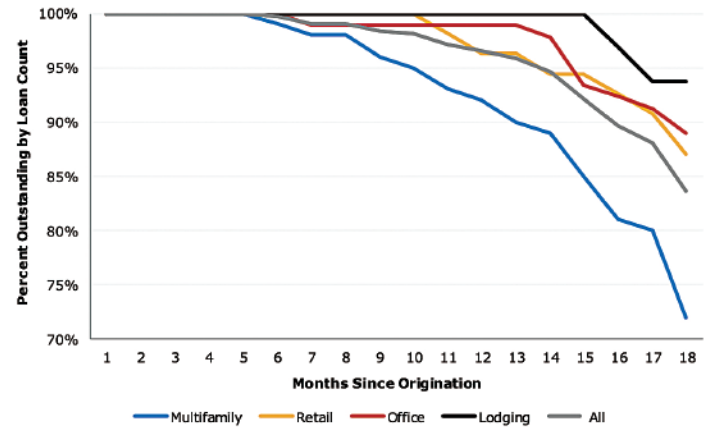


Sources: KBRA, Trepp

The presence of future funding at the time of securitization is a significant factor in whether the loan has a propensity to prepay. There was a discernable difference in the payoff percentage for loans which feature future funding – in fact, it was 27%, or 2.7 points below the average, and 5.8 points lower than loans with no future fund loans. Figure 4 shows the prepayment behavior of loans with and without future funding.

Generally, loans with future funding may have either more extensive business plans or potentially riskier plans, causing lenders to hold back loan proceeds subject to certain conditions. Note that KBRA only tracks future funding from the time of securitization. There are loans at origination that have future funding, but by the time the loan is securitized the funding is complete or substantially funded.

FIGURE 5
Prepayment by Property Type



Sources: KBRA, Trepp

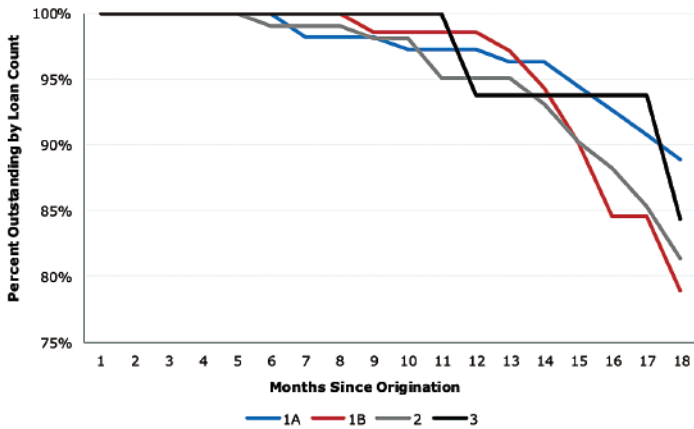
Multifamily loans have the fastest prepayment speeds, while lodging and office have the slowest (see Figure 5). Many of the multifamily loans are Class B and C properties, where the borrower plans to invest a modest amount of capital to improve units and common areas in anticipation of higher rents. KBRA has observed that upon renovations of individual units, borrowers can achieve more immediate rental rate increases without having to wait for the entire project to be completed. Conversely, office projects can take months to see meaningful rent growth owing to the time it takes to find and negotiate leases with new tenants. Furthermore, in certain instances landlords need to build out the leased space before the tenant starts paying rent. Transitional projects on lodging assets generally include a property improvement plan, which can negatively impact the overall operations during the renovations and, even on completion, it often takes time for the property to increase to market occupancy at higher room rates.

Loan size varied meaningfully by property type. The population of multifamily loans have an average loan balance of \$24.5 million while the comparable figure for lodging and office loans exceeded \$45.0 million. Average loan size is likely indicative of the size, scope, and complexity of transition plans, which all influence prepayment speed. With the combination of the market dynamic mentioned above and smaller balances, it is no surprise that multifamily typically has more prepayments.

In determining market tiers, KBRA stratified the population into primary, secondary and tertiary market categories. For the purposes of market classification, we determined the largest 100 metropolitan statistical areas (MSAs) by overall CMBS loan exposure. We then categorized them by market capitalization and identified 17 MSAs as Tier 1 (primary), 83 MSAs as Tier 2 (secondary) and consider all other markets as Tier 3 (tertiary). We further split Tier 1 to provide more granularity on prepayment behavior (see Figure 6). The Tier 1A include the six largest MSAs based on CMBS loan exposure and include Boston, Chicago, Los Angeles, New York, San Francisco and Washington-NoVA-MD. KBRA considers these MSAs to be core infill urban markets which offer CRE investors superior liquidity relative to the rest of the nation.

FIGURE 6

Prepayment by Market Tier



Tier 1A has one of the slowest prepayment speeds. Excluding Tier 1A, prepayment speed appeared to fall in line with market tier rankings, with 1B as the fastest, followed by Tier 2 and Tier 3. When considering other factors as to why this may be the case, Tier 1A loans have the largest average loan balances at \$41.7 million compared to Tier 1B and 2 loans, whose averages were more similar to one another at \$30.8 million and \$25.1 million, respectively. As discussed, larger loan balances can result in slower prepayment activity as they are likely to have larger and more extensive business plans.

Other Factors

In time, there will be other influential factors on prepayment behavior to warrant closer study as more data becomes available. These will likely include individual loan prepayment features and the level of stabilization at the time of refinancing. In regard to the former, analysis is challenging given the permutations of prepayment options and prepayment premiums applied.

It is also difficult to analyze payoffs based on stabilization status, given current reporting standards (or the lack thereof). There is not much consistency to measuring stabilization progress, and the data can be hard to come by, particularly at the time of loan payoff. In addition, one cannot assume that stabilization has occurred upon payoff, as we have observed instances where borrowers change their business plans and arrange a take-out loan with the same or another transitional lender. They may have also decided to sell the asset versus continuing with their business plan.

Another market factor to consider during the period studied is that loan spreads tightened significantly, which likely influenced prepayment behavior. CRE CLO securitizations done in the second half of 2017 had average spreads of 4.9% versus 4.2% for deals done in fourth-quarter 2018. This provided additional incentive for borrowers to refinance and prepay loans, even if they had not completed their business plans.

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CREFC has officially launched its Online Resource Center (www.creffc.org/library), which houses data and research on all facets of CRE and multifamily finance. With over 1,200 documents, this members-only Resource Center not only contains CREFC developed content, but also the highly valued and well sought after reports and thought leadership pieces published by our members.

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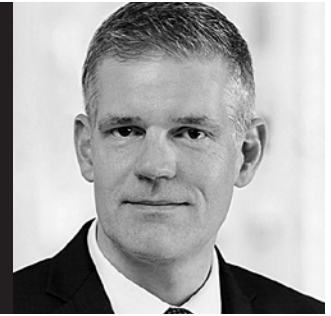
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CLO Loan Origination: Avoiding Pitfalls in Structuring Future Mezzanine Debt

An interesting aspect of practicing law in the capital markets space is the ability to see loans at different points in their life cycles. Representing servicers allows a good look back on what to do, and what not to do, when documenting a loan at origination. One thing is clear: not taking the time to consider the myriad life of loan issues can result in additional costs and headaches down the road.

One such issue is execution. We advise clients to assume that any floating rate loan originated by a CRE CLO (Commercial Real Estate Collateralized Loan Obligation) issuer could end up in a CLO pool. If that is the case, parties need to consider securitization standards (i.e., no grace periods for payment dates, eligible accounts, permitted transfers, special purpose entities, etc.) as well as items that need to be considered when dealing with transitional loans, the bread and butter of CRE CLOs.

Loans contributed into CRE CLOs require more attention throughout the term of the loan than conduit loans. Whereas the typical conduit loan is intended to have the initial advance, maybe a few reserves, and a relatively stable cash flow to make monthly payments of interest (and even occasionally, principal), loans originated for and deposited into CRE CLOs will require further infusions of capital to make interest payments and fund tenant improvements, leasing commissions and capital expenditures. Sometimes costs may be even greater than projected at issuance and require further infusions of cash to get the project to perform as intended.

An advantage of the CLO structure as opposed to the REMIC structure is the ability to do much of this in the future, eliminating the need for all funds to be in place at closing, held in reserves and accruing interest from the borrower.

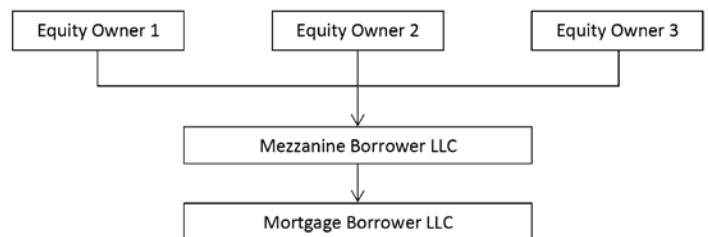
How do we negotiate and draft loan documents that acknowledge this future funding? First, we provide for future advances for capital expenditures, tenant improvements, leasing commissions and even liquidity. These future advances are usually held by a *pari passu* participation secured by the mortgage and held outside of the CLO trust. Once advanced, these participations may be purchased by the CLO either during a ramp-up period or more often to replace collateral that has paid off.

Sometimes the property needs even more liquidity, which means we allow for additional debt in the future given the right set of circumstances, i.e., improved debt service coverage or debt yield, accretive leasing, etc. Usually this additional debt is intended to be in the form of a mezzanine loan.

Why mezzanine debt? Simply put, future mezzanine debt will be looked upon more favorably by buyers of the CRE CLO notes and the rating agencies rating those notes than, say, an additional participation or a second mortgage secured by the property. One reason is that mezzanine debt is not debt of the mortgage borrower and is not secured, at least not technically, by the mortgaged property. Therefore, there is less risk of an additional creditor or an additional lien on the property in the case of a bankruptcy. Rating agencies take this into account and lenders should as well.

From the mezzanine lender's perspective, there is also the advantage of a cleaner path towards realization on the collateral and more useful and well-established cure rights, than would be available to a second mortgagee or the holder of a B-participation.

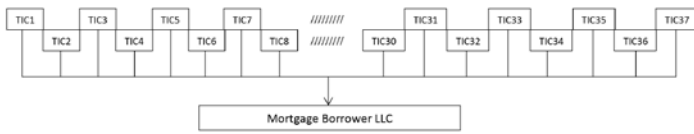
So how does mezzanine debt work? To put it simply, the owner of the mortgage borrower serves as the mezzanine borrower and pledges its equity interest in the mortgage borrower as collateral for the mezzanine loan. In the event of a default under the mezzanine loan, the mezzanine lender can foreclose on the equity interests of the mezzanine borrower and become the owner of the mortgage borrower, and, hence, the mortgaged property. This requires an organizational structure that allows for the mortgage borrower's owner to make such a pledge.



The simplest way to do this is to set up an organizational structure like the one above. The mortgage borrower is a single purpose entity owned 100% by the mezzanine borrower, which is also a single purpose entity. The mezzanine borrower can then pledge its membership interests in the mortgage borrower and should a foreclosure occur, the mezzanine lender can foreclose on those interests and become the 100% owner of the mortgage borrower.

Surprisingly often, even when mezzanine debt is envisioned in the loan documents and the loan documents give the lender the right to create mezzanine debt, the structure is not set up this way. Let's look at two examples, where things can go wrong and how we might be able to address them.

Tenancy-In-Common Structure



In this structure a mezzanine borrower was not put in place at the closing. The loan documents provided that mezzanine debt was allowed. To accomplish this would have required all 37 tenant-in-commons to transfer their interests to a new single purpose entity to act as the mezzanine borrower.

Due to the complexity of obtaining cooperation on 37 transfers, this was not a feasible solution. Not approving the additional capital infusion was not a good solution. The result would have likely been either the loss of the prospective tenant that the funds were to go towards. Alternatively, the loan may have refinanced outside of the CLO, costing the transaction a strong collateral interest, and the originator/issuer, a borrower and client.

Having the tenants-in-common pledge their interests directly as co-borrowers for the mezzanine loan was not a serious consideration. The tenants-in-common would not be single purpose entities and would open additional layers of organizational and bankruptcy risk for the mezzanine lender. For instance, the bankruptcy of even one tenant-in-common could prevent a foreclosure and the ability to gain control of the mortgage borrower.

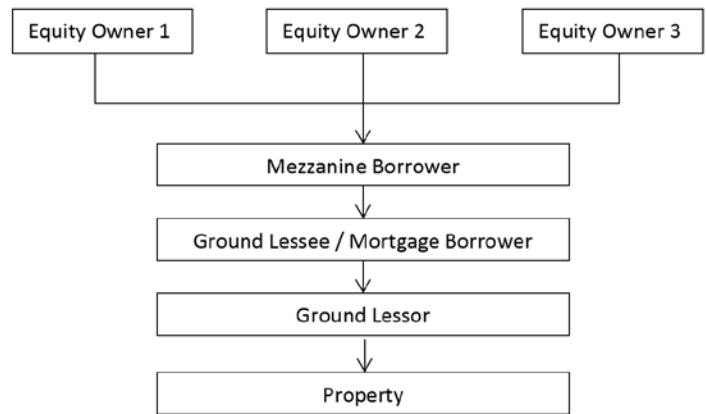
Adding an additional participation to the note already included in the trust was considered. However, the loan had an A-1/A-2 participation structure to enable future financing. An additional participation would have resulted in an A-1/A-2/B structure and required amendments to the participation agreement and an increase in the amount of the first mortgage (as in an A/B structure both the A and B participations are secured by the same mortgage).

Since the new B participation would have been secured by the first mortgage (which also secures the trust collateral), in addition to the complexity of the three-tiered participation, the additional debt would have raised the whole loan LTV and resulted in an increased probability of default under the mortgage.

For these reasons, it was decided to use a subordinate mortgage with an absolute standstill in place until the senior mortgage was repaid. While this approach is often treated negatively by the rating agencies, we used our role as counsel to explain why this was the best course of action for the trust and for all parties involved, even if not the typical or originally anticipated course of action.

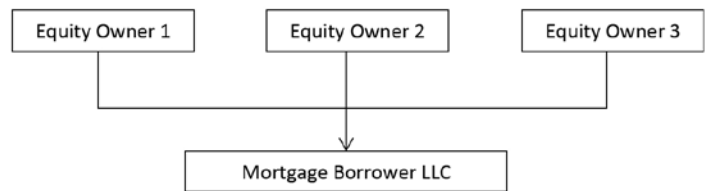
This advocacy and stringent documentation gained approval for the subordinate mortgage, along with the standstill agreement. The cost was higher than it needed to be, if an organizational structure conducive to mezzanine debt was implemented at closing.

Ground Lease Structure



A similar scenario presented itself shortly after the tenant-in-common scenario above. This time the issue was not due to a complex tax-driven organizational structure but instead due to the ownership of the land and the interactions of the legal documents and the ground lease conveying the leasehold interest to the borrower.

Again, the borrower was not set up with a mezzanine borrower in place at closing, despite having negotiated the ability to obtain mezzanine debt under the senior mortgage documents. In this instance, the equity owners would have had no issue internally creating a mezzanine borrower and inserting it into the structure as shown on the below chart.



The problem arose with the terms of the ground lease. Pursuant to the ground lease a transfer of equity in the ground lessee (the mortgage borrower) was considered an unpermitted transfer of the ground lease. It was arguable whether inserting a new single member limited liability company would be considered a transfer were it to be litigated. If it was though, an unpermitted transfer could be an event of default under the ground lease.

This highlights another common issue in loan originations. Failure to understand all of the interactions between various parties to a loan transaction and how those interactions may vary over the life of the loan.

Unfortunately, the ground lessor was unwilling to consider the request to permit this transfer. One could speculate on the reasoning why and perhaps a deal could have been negotiated at a steep price. Still, the likelihood was the mortgage borrower either being unable to obtain the additional financing or refinancing with a new lender, at the cost of a solidly performing loan and borrower.

Again, complexity and the increased probability of default led us to dismiss the option of restructuring the participation.

A similar approach, as above, was chosen with a subordinate mortgage, which was permissible under the ground lease. Again, it worked despite added costs, thanks to parties, other than the ground lessor, working together to find a solution. Although, terms of the subordinate mortgage were severely restricted and marketability was likely impacted.

How could this have been different? Consider if the structure was put in place when the ground lease was signed. The mortgage borrower/ground lessee would have been able to obtain the ground lessor consent upfront, when the mortgage borrower had leverage in their negotiations. In all likelihood, no objection would have been made had the ground lessee had one more limited liability company (the future mezzanine borrower) in its organizational structure.

Alternatively, a transfer to a mezzanine borrower could have been set forth as a permitted transfer under the ground lease. This may have been preferable if the mezzanine loan was less likely to occur and possibly would have saved some transactional costs upfront.

Summary

These are just two examples of issues to keep in mind when structuring loans that may be securitized in a CRE CLO. While CRE CLOs offer more flexibility than a CMBS loan, they are not balance sheet loans and future issues can become complicated with numerous parties at the table. Looking ahead to envision problems that may arise and addressing them prior to securitization can save both time and money.

One positive to consider, despite the sometimes negative view of the CMBS and CLO servicing market, while there are difficulties with securitized loans and it can be complex, the securitized model did work in both instances for the borrowers, despite not addressing concerns upfront. To that end, the alignment of interests for the parties and an incentive to make the transaction work enabled it to do so.

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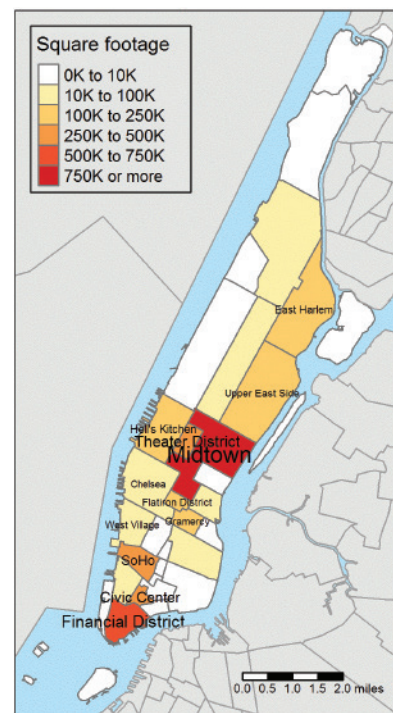


Co-working May Come With Risks for Office Landlords and CMBS Investors

The rising footprint for coworking, especially in larger markets, has led to many questions from commercial mortgage-backed securities (CMBS) investors, issuers, and others about how we account for co-working risk when we analyze securitized loans secured by properties occupied by co-working tenants. One of the main risks, as noted in S&P Global Ratings' corporate research on WeWork and other co-working firms, is the duration mismatch between the long-term leases and the monthly member contracts. The same research noted that the natural instability of the independent workforce presents a significant risk to the company's profitability between individual members or small businesses, whose viability can be sensitive to economic swings. We are acutely aware of this nuance during our review of securitized loans, where we attempt to value the commercial property through an economic cycle.

A growing number of companies, including WeWork, Knotel, Emerge, Convvene, and Regus, are offering space, or in some cases enterprise solutions, for their partners. WeWork in particular, the largest co-working space provider currently, has seen significant growth since its start in 2010. As of early 2019, the company boasted some 425 locations in 100 countries, compared with 207 locations in 65 countries in early 2018 and one location to start. In addition, in September 2018, the firm became the top occupier of office space in Manhattan based on square footage, at 5.3 million. For some perspective, that's just over 1% of total Manhattan office space, per CBRE-EA data compiled by S&P Global Ratings. In fact, based on CBRE fourth-quarter 2018 average gross rents of approximately \$79 per sq.-ft. in the Midtown submarket, WeWork's annual rent obligations for this submarket alone may range upwards of \$150 million, based on our estimate of 1.9 million sq. ft. leased.

FIGURE 1
 WeWork Commercial Real Estate Exposure

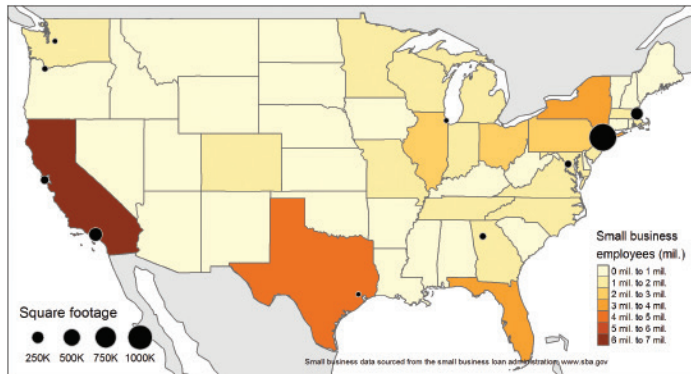


CMBS Exposure To WeWork

Based on our query of CMBS data, we found 31 properties – an allocated loan balance of approximately \$3.1 billion – with WeWork listed as a tenant (we focus on WeWork because it is by far the largest of the aforementioned firms). A quick glance at these 31 properties and their locations provides some insights. First, properties located in New York (13) and California (eight) make up roughly two-thirds of the total, with the remaining properties located in Washington D.C. (three); Massachusetts (two); and Illinois, Oregon, Washington, Georgia, and Texas (each having one). Second, WeWork is the largest tenant (by sq. ft.) at 24 of these properties. Third, WeWork's average footprint at these properties is about 75,000 sq. ft., ranging from a low of about 11,000 sq. ft. to a high of 175,000 sq. ft. Fourth, WeWork occupies, on average, 43% of the property, from a low of 5% to a high of 100%. Mapping the locations of the 31 properties (figure 2), we see that they are generally in states with a higher number of small business employees.

FIGURE 2

US CMBS Exposure by Square Footage vs. Number of Small Business Employees



How S&P Global Ratings Views Co-working Risk in CMBS Loans

As stated previously, co-working firms have considerably raised their profile in several primary markets and numerous secondary ones. In most cases, when we review property financials with co-working tenants, we see substantial improvement in the overall vacancy rate within a short period of time because of the sizable space co-working firms require at the property. Despite the lower vacancy and associated pick-up in overall rental income, our overall credit view of co-working tenants, all else equal, is negative relative to traditional ones. The main risks in our view are:

- A larger amount of upfront improvements are needed to customize the space while the future rental stream from the co-working tenant is subject to broader economic risks.
- A broader concern about the sustainability of the business in an economic downturn during which freelancers will likely stop their memberships; we apply this concern to the vacancy/rent assumptions.
- A potential conflict of interest between the property landlord and the co-working lessee, who is essentially another competing landlord; this also goes to the vacancy assumption.
- In recent times, a large amount of new entrants providing similar services, including some well-known real estate firms, such as the Blackstone-owned EQ Office, CBRE-owned Hana, and SL Green's Emerge212. Our concern is on the viability of a saturated co-working market as many essentially play a somewhat similar role to that of the property landlord.
- In Wework's case, the typical lessee is a subsidiary/affiliate of Wework structured as a non-recourse single-purpose vehicle.

How We Typically Analyze a Loan With a Co-Working Tenant

As might be expected, our typical approach to a property with a co-working tenant depends on the exposure of the tenant in terms of net rentable area and/or base rent. We consider whether the contractual rents paid by the co-working tenant are at market rates, if the term is typical of traditional long-term office leases (i.e., 10 years), and if the lease offers the co-working tenant any termination options.

As with any property, we then consider the property's vacancy rate as compared to the property's comparative set, submarket, and market. In this case, the review has an added goal of determining how the property's vacancy rate compares to those benchmarks without the co-working tenant. That is, does the property need the co-working tenant to be in-line with market and is it above or below market with the tenant?

In general, we increase our vacancy rate assumption to a rate higher than the property's in-place figure, the degree of which depends on the amount of space occupied by the co-working tenant, to account for the aforementioned risks. If we view the relevant portion of the space as less desirable (typically lower floors with less light and/or spaces that are less contiguous), then our vacancy adjustment would generally be less punitive.

In many cases, our increase will result in a vacancy assumption that is above market. Note, this is a departure from scenarios we've come across in the past when a property (without a co-working tenant) has demonstrated a consistent track record of below-market vacancies. In those instances, we still increase our vacancy assumption, but consider a midpoint between in-place figures and market vacancy rates. Finally, we may simply increase our vacancy rate assumption to a rate that either excludes the co-working tenant or gives some credit depending on asset-specific circumstances.

Other steps we might consider to address risks associated with co-working tenants at specific properties include, but are not limited to, increasing the cap rate by at least 25 basis points (bps) for the portion of rental income attributed to the co-working tenant and/or lowering our renewal probability for purposes of calculating tenant improvements and leasing commissions. Greater exposure to a co-working tenant results in relatively magnified adjustments and could lead us to increase the cap rate for the entire property, not just the co-working space.

The Big Picture – The Office Sector Has Performed Well, But Might be Headed for More Challenging Times

The office market regained its post-crisis positive momentum in 2018 on the back of strong net occupancy and demand, posting a 40 bps decline in the national vacancy rate to 12.6% and rent growth of 2.5% to just under \$34 per sq. ft. Indeed, since peaking in 2009 at 16.5%, the national vacancy rate has steadily declined (absent a modest increase in 2017) since 2011, while rents have been growing at a decent clip.

National Office and Rent Vacancy (1985-2018)

Year	Vacancy Rate (LHS)	TW Rent Index (RHS)
1985	18.3	20.75
1986	19.7	19.94
1987	19.3	19.94
1988	18.4	20.34
1989	18.6	19.94
1990	19	19.94
1991	19.2	18.97
1992	18.8	18.05
1993	17	18.24
1994	15.1	19.3
1995	13.8	20.12
1996	12	21.44
1997	9.7	23.43
1998	8.8	25.37
1999	9.4	27.11
2000	8.5	30.14
2001	14.1	28.83
2002	16.4	26.68
2003	16.7	24.72
2004	15.3	24.24
2005	13.6	25.65
2006	12.5	27.85
2007	12.5	30.65
2008	14.1	31.86
2009	16.5	27.85
2010	16.4	26.57
2011	16	27.44
2012	15.4	28.51
2013	14.8	29.27
2014	13.9	30.67
2015	13	31.96
2016	12.8	32.41
2017	13	33.08
2018	12.6	33.91

That said, the next few years may prove more challenging for the office sector to maintain its recent rate of improvement. As the current cycle ages, moderating economic growth and growing fears of a potential recession, coupled with expected supply growth in some large markets, could potentially pressure both vacancy and rent growth rates. Taken together, we believe office properties with co-working tenants may feel these impacts more strongly, hence our more conservative view when we analyze these office loans. We recognize that it may be too early to take a long-term view of co-working firms and their concepts. However, we believe the cautious view is warranted as some firms that utilized similar concepts have run into trouble in past downturns (Regus, for example, declared bankruptcy following the dot-com era).



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Flight to Quality Leaves Some Office Buildings Grounded



While lease rollover has always been a risk within commercial mortgage-backed securities, Morningstar Credit Ratings, LLC believes today's rapidly changing office market elevates the risk for collateral securitized in CMBS. Large office tenants are frequently opting not to renew their leases and instead are relocating to more competitive buildings with more modern amenities. The movement, often referred to as flight to quality, is the result of tenants seeking more amenity-rich spaces that include coffee bars, multiuse meeting lounges, fitness centers, cafes, outdoor green spaces, and multiple dining options. In addition, we believe there are several other factors influencing large tenants to move out. Tenants' space needs are shrinking for several reasons, including the growing popularity and efficiencies associated with telecommuting and more-efficient office layouts, forcing companies to perform cost/benefit analysis on their current leases. Further ripening the environment for tenant relocation, the annual rate of new office supply will increase over the next several years, per CoStar Group, Inc., compared with the prior five-year average, providing ample relocation options.

Large tenants moving out has become remarkably common over the past year, and the aftermath often leaves building owners in precarious financial conditions and creates noteworthy credit risk for investors. Since 2012, large-tenant concentration has risen in CMBS, suggesting that tenant diversification appears to have fallen in priority concerning credit. We believe negative credit events related to large tenants relocating will likely persist throughout 2019-20.

Legacy CMBS

In the case of precrisis, legacy deals, we're not surprised to see adversity for large- and single-tenant properties. As loans age and properties become exposed to changing market demands, nonrenewals are more likely. For example, single-tenant Toll Brothers, Inc. will not be renewing its lease at the October 2019 lease expiration for its headquarters in suburban Philadelphia, affecting a \$34.7 million loan in WBCMT 2007-C31. Home builder Toll Brothers had been at the property for 14 years, and the 203,000-square-foot building underwent minimal capital investment over that period. CBRE, which represented Toll Brothers

during the lease process, announced in January that the company will move its 900-employee headquarters four miles south to 1140 Virginia Drive in Fort Washington, Pennsylvania, a building that recently underwent \$10 million in renovations, converting from warehouse to loft office space, according to Philly.com. Additionally, Toll Brothers plans to hire design firm D2 to further design and renovate the interior portion of the new space. Morningstar projects a substantial loss for the loan.

Negative credit events, including large tenants moving out, are difficult to capture at initial underwriting but are not surprising given the amount of time that has elapsed since issuance and the weaker collateral left behind in legacy pools.

CMBS 2.0 High-Risk Examples

We're concerned with the frequency of major tenant departures within 2.0 deals, a trend that affects Class A and B assets alike. For example, Waste Management, Inc. announced that it would not renew its One City Centre lease in Houston at the December 2020 expiration. The tenant occupies 40.5% of the Class A building. Before this news, performance was weak, with occupancy at 67% and net cash flow 41% lower than underwriting. The building will be under significant stress without successful re-leasing efforts. We project the debt service coverage ratio to drop below 1.00x without Waste Management. The tenant is relocating into Capitol Tower, a state-of-the-art office tower that will open in downtown Houston by mid-2019. The new building will boast distinct restaurant concepts, including a chef-driven market, a skypark green roof, high-end fitness offerings, and tenant lounges. Waste Management will also vacate 101,000 square feet at First City Tower, a nonsecuritized building that's adjacent to the collateral with 619,750 square feet available (45% of the gross leasable area) as of April 2019, per CoStar. With submarket vacancy elevated at 22.8% as of fourth-quarter 2018, per CBRE Econometric Advisors, the borrower will face an uphill battle re-leasing space and will likely need to invest significant capital into the building. The One City Centre office tower backs \$100.0 million of pari passu debt in JPMBB 2015-C29 and JPMBB 2015-C30.

In another example, law firm Michael Best & Friedrich LLP plans to depart 100 E. Wisconsin Ave. in Milwaukee when its lease expires December 2019, according to Milwaukee Business Journal in 2016. The firm will move into BMO Tower, a new, 360,682-square-foot amenity-loaded building set to open in December 2019, while simultaneously reducing its footprint to 60,000 square feet. With a number of other smaller leases approaching expiration, cash flow risk at 100 E. Wisconsin Ave. is elevated. In fact, the Marcus Corp. (11% of the GLA) previously expressed interest in relocating its headquarters to a mixed-use development it is planning, according to a Jan. 4, 2017, article on Biztimes.com. Also, CoStar advertised 40% of the GLA as available for lease as of April 2019,

suggesting that the DSCR could fall below 1.00x if the borrower can't backfill future vacancies. The office tower backs two pari passu loans in JPMDB 2016-C4 and JPMCC 2016-JP3, with \$51.5 million in combined debt.

Low-Risk Examples

In many cases, large-tenant rollover and relocation remains prevalent but is not concerning given strong underlying market conditions. For example, Warner Music Group plans to vacate more than 425,000 square feet of combined space at Pinnacle I and Pinnacle II in Burbank, California, and upgrade to a state-of-the-art building in Los Angeles' downtown Arts District. The new property features artist lounges, custom-designed offices, coworking areas, and live performance space. While the DSCRs will fall below 1.00x for both collateral assets without new lease signings, we believe submarket fundamentals are strong and default risk is low. The properties collateralize \$213.0 million in combined pari passu debt found in GSMS 2012-GCJ9, WFCM 2016-BNK1, WFCM 2016-C35, and WFCM 2016-LC24.

In addition, the Guardian Life Insurance Company of America plans to depart 842,164 square feet at New York's 7 Hanover Square in September 2019; the company plans to relocate to 10 Hudson Yards. However, according to The Real Deal, the building owner already signed a lease with NYC Health + Hospitals for nearly 527,000 square feet. We anticipate further leasing success throughout the year. In fact, the building owner already has a \$250.0 million plan to modernize the collateral, including a food hall and several other major building upgrades. Therefore, we do not expect a loss or default on the \$129.1 million loan secured in DBUBS 2011-LC1A despite the recent turnover.

Evolving Market

The needs of office users today are rapidly evolving, forcing companies to explore their options more diligently as lease expiration nears. For example, telecommuting is growing in popularity, lessening office space needs compared with historical norms. According to a 2017 report by job search site FlexJobs.com, the number of telecommuters more than doubled in 2015 compared with a decade earlier. The report also indicated a significant amount of savings and efficiency results, suggesting that the trend continues today and will continue well into the future. The result is potentially less space per employee, further affecting lease renewal decisions. According to a May 2017 report by Reis, Inc. called "The Shrinking Office Footprint," the average employee used 125 square feet between 2004 and 2007 for metropolitan areas, but that usage has slipped to a 52-square-foot average during 2011-16. Per the report, Reis believes that "lower net absorption is likely a lasting trend" and a permanent shift in the way office space is used going forward.

Additionally, today's office user demands amenities, including modern fitness centers, extensive food and beverage options, lounges, rooftop decks, sophisticated conference centers, and shared recreational spaces. According to its 2019 Broker Sentiment Survey, real estate services company Transwestern found that access to transportation/parking and reliable Wi-Fi ranked high, along with walkability to other amenities. Evidence of these demands can also be found in the rapid expansion of coworking companies, which provide lease flexibility and strong amenity packages. WeWork, which rebranded as The We Company in January, has the fastest growth of its peers. The company's weekly growth rate, a proprietary signal from PitchBook that measures employee, web, mobile, and social media growth, averaged 5.68% as of April 16. This amount places it in the 100th percentile of all companies PitchBook tracks, suggesting that its popularity remains strong. With coworking companies and amenity-rich office properties standing to benefit from the evolving office market, the same cannot be said for buildings that have received little capital investment in recent years.

Market Supply

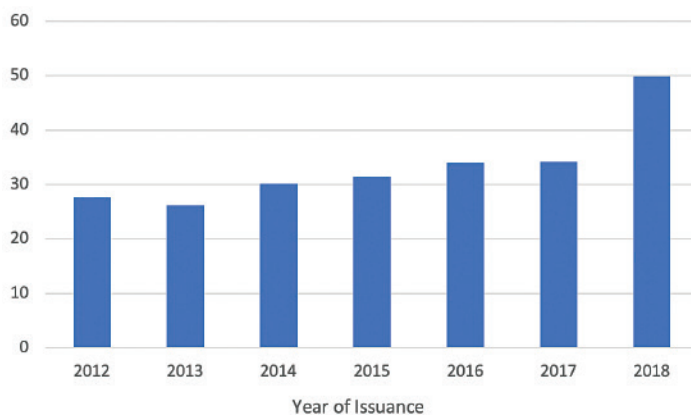
There is also evidence that new supply, particularly in rapidly growing markets, will support large-tenant movement over the next several years, as companies will have more options. While national office supply growth has been low in recent years, averaging just 0.6% per year since 2013, CoStar projects supply growth to average 1.0% per year from 2019 to 2023. In fact, new office inventory will likely average 73.7 million square feet per year from 2019 through 2023, up from the prior five-year average of 46.8 million square feet. CoStar's National Office Report, published Feb. 26, 2019, suggests that "the percentage of that space that remains available has been on the rise, heading toward 40% from around 25% in 2015-2016," and highlights markets like Nashville, Tennessee, where about 70% of new construction remains available for lease. Office leasing demand will likely remain strong, keeping national vacancy around 10% over the next five years. Nonetheless, an unforeseen slowdown in demand from greater market forces could drastically change fundamentals.

Increasing Large-Tenant Exposure

Since 2012, large- and single-tenant office properties are frequently becoming securitized in conduit CMBS, as seen in the chart below. We evaluated the percentage of securitized office properties with tenants occupying over 50% of the GLA by year.

CHART 1

Large-Tenant Exposure (% of Office Collateral)



Source: Trepp, LLC

More recently, we found large-tenant exposure persisting in early 2019 deals like RCMT 2019-5, where 75.8% of the office collateral has tenants occupying more than 50% of the GLA, per the issuance documents found on Trepp, LLC. In another deal, MSC 2018-H4, large-tenant exposure stands at 46% of all office collateral within the deal.

It's difficult to know exactly why large- and single-tenant office exposure has increased in recent years within CMBS, but we suspect that it's partially related to strong investor appetite, which is outweighing the positive credit feature of tenant diversification. Illustrating the strength of investor appetite are the high level of speculative new office construction, an uptick in sale-leaseback transactions, and robust sales activity for single-tenant properties. Speculative office construction, in which developers break ground on a new property without formal tenant commitments or leases, is symbolic of a risk-on market with bullish property investors. Citing CoStar, National Real Estate Investor reported on March 7, 2018, that speculative office construction accounted for 40% of all new projects in the pipeline, the highest level CoStar has seen in over 13 years. Additionally, sale-leaseback transactions, which typically include single-

tenant properties, have become more common in recent years. A sale-leaseback allows a building owner to unlock capital by selling the asset and concurrently signing a long-term lease. According to an April 5, 2018, article from National Real Estate Investor, research firm Real Capital Analytics found that corporate sales of single-tenant assets valued over \$2.5 million jumped 32.5% in 2017. This trend carried into 2018. Given today's stable office fundamentals and low capitalization rates, it's not surprising that investor confidence within the office market is strong. Compared with year-ago levels, the office sector's delinquent loan balance for February 2019 fell 37.1% to \$3.85 billion as legacy liquidations outpaced newly delinquent loans. While it's difficult to predict large- and single-tenant office exposure for future 2019 deals, we suspect that the levels will remain in line with 2018.

Impact on Risk

Large- and single-tenant exposure substantially increases risk, particularly as the lease nears its expiration date. Single-tenant lease expiration has only two possible outcomes: the building is either occupied or vacant after lease expiration. Compared with more diversified buildings, re-tenanting after the loss of a large tenant can take additional time. The risk is elevated in cases where capital investments were low and building upkeep has not kept up with the competition, a consideration that can only be analyzed on a property-by-property basis.

In some cases, triggers, cash traps, termination fees, and other reserves are structured to protect the trust if a large tenant leaves. These protections, which are common, vary in terms of strength. An example of a strong loan structure is the \$83.7 million Excelsior Crossings loan in COMM 2014-UBS2. Cargill, Incorporated's departure resulted in a \$9.5 million termination fee, helping to support the loan's current reserve balance of \$16.4 million, most of which falls into the tenant lease reserve. This reserve level, which amounts to \$33 per square foot, will contribute to re-leasing efforts and minimize the risk to CMBS investors.

To account for loan structures such as this, Morningstar's Credit Risk Services analysts give reserve credit where appropriate, either via reduced tenant improvement assumptions or straight dollar-for-dollar value credit. Other inputs that factor into our analysis are lease renewal probability and estimated tenant improvement costs, both of which affect the probability of default and our valuation. In cases where market vacancy is elevated and leasing demand is weak, we believe these structured loan protections could ultimately fall short, resulting in delinquency and default for properties at risk.

Future Risks

One near-term large lease expiration is company Noble Corp. PLC's January 2020 lease expiration at Sugar Creek I & II in WFRBS 2014-C20. The tenant accounts for 44% of the underwritten rent, and 29% of the property was available for lease as of February 2019, per CoStar. Adding to the risk, Houston's overall vacancy rate of 21.9% and volatility in oil prices amplifies the risk should the company fail to renew its lease. The company carries an extreme Uncertainty Rating, according to Morningstar Equity Research. Should the tenant not renew, we believe leverage would exceed 100.0%.

As of March 2019, we've identified 456 office leases associated with tenants occupying more than 25% of the GLA and leases expiring between January 2019 and December 2021. The results, which excluded loans less than \$5.0 million, totaled \$13.4 billion across 201 CMBS deals. The average large-tenant exposure was 4.4% of the outstanding deal balance, and we've included 10 deals below with elevated concentrations.

TABLE 1
Transactions With High Large-Tenant Exposure

Deal Name	Number of Properties	Cumulative Balance (\$ million)	% of Deal
COMM 2012-CR2	3	231.0	21.0
WFRBS 2014-C21	6	252.1	18.8
GSMS 2012-GCJ9	3	163.0	15.1
JPMBB 2014-C22	8	161.2	15.0
JPMCC 2017-JP5	3	158.1	14.6
JPMBB 2015-C29	3	129.7	14.4
JPMBB 2015-C27	5	101.3	12.6
LSTAR 2017-5	3	82.0	11.8
COMM 2014-UBS2	4	108.4	9.0
COMM 2014-UBS5	5	111.0	8.2

Source: Morningstar Credit Ratings, LLC

We believe that office operations are more mobile than ever within the national office market, and we expect large-tenant movements to continue garnering attention during 2019-20. The combination of increasing supply, changing office user demands, and rising large-tenant exposure within 2.0 deals mandates extra scrutiny for single- and large-tenant properties.



Delaware Division: A Dangerous Disruption to Debtholders

To maintain its national preeminence, the Delaware Legislature amended the State's Limited Liability Company Statute (the "Amendment") last year to grant LLCs organized under Delaware Law a right which should be of serious concern to lenders with respect to their borrowers and guarantors in, as well as the collateral security and credit support for, their loan transactions, regardless of whether the loan is recourse or non-recourse, secured or unsecured, or guaranteed. Although other states (Texas (2006), Pennsylvania (2015) and Arizona (2015)) also allow for division (or "divisive merger"), and in those states it is authorized for all of their domestic statutory entities not just LLCs, the Amendment is more problematic because Delaware LLCs are the most frequently used borrower and guarantor entities in lending transactions nationwide as a result of other attractive features of the Delaware LLC Law for loan parties.

The Amendment

The Amendment permits a Delaware LLC to divide into two or more Delaware LLCs, with the pre-existing LLC either (i) surviving as one of the two or more LLCs existing post-division or (ii) terminating pursuant to a plan of division (a "Plan"), in either case, resulting in the creation of multiple post-division LLCs and the allocation of the assets and liabilities of the original LLC among the two or more resulting LLCs under the Plan ("Division"). After the Plan is adopted, a short form certificate of division (a "Certificate") is required to be filed with the Delaware Secretary of State to effectuate the Division, together with certificates of formation for the new LLCs, all of which must have the same effective date. There is no requirement that the Plan, which contains all of the terms, conditions and allocations, be filed or made publicly available. The Certificate is only required to name an individual as the "Division Contact" responsible for maintaining a copy of the Plan available for inspection for six (6) year; and providing creditors, upon their written request, with the name and address of the resulting LLC to which a creditor's claim has been allocated. The Amendment was effective as of August 1, 2018.

The assets and liabilities of the original LLC in existence prior to the Plan continue unaffected and unimpaired as assets and liabilities of the resulting LLCs to which they are allocated pursuant to the Plan, so long as the Division does not constitute a fraudulent transfer under applicable law. Pursuant to

the Amendment, upon Division, all such assets and liabilities will without any further action be vested in, or become the obligation of, the LLC to which they are allocated pursuant to the Plan, and will not revert or be in any way impaired by the Division, and no other resulting LLC shall be liable therefor, so long as the Division does not constitute a fraudulent transfer under applicable law.

All liens upon any property of the original LLC shall be preserved unimpaired, and its debts, liabilities and duties shall remain the obligation of, and enforceable against, the resulting LLC to which they have been allocated in the Division. However, if not specifically allocated, liability becomes a joint and several obligation of all of the resulting LLCs.

Risk For Lenders

LLCs formed after July 31, 2018 can, without the lender's consent or any notice to the lender, take advantage of the Amendment by dividing and then allocating a lender's collateral security (or a portion thereof) to a newly created and potentially non-credit worthy LLC without violating the traditional covenants of the lender's loan documents. Without enforceable provisions in its loan documents protecting its collateral security against Division, the lender would have to challenge the Division as a fraudulent transfer.

However, for LLCs formed and party to a written loan agreement existing prior to August 1, 2018 that restricts, conditions or prohibits the LLC from dissolving, liquidating, consolidating, merging, selling, transferring, assigning, or distributing assets ("Prohibited Entity Acts"), such Division will be deemed to be a violation of such provisions in loan documents. That safe harbor would be lost if a pre-August 1, 2018 loan is extended or otherwise modified after July 31, 2018; and therefore the loan documents as well as the borrower/guarantor organizational documents should be amended to expressly prohibit a Division in connection with any such modification or extension. The Amendment intends this safe harbor to apply even to a Delaware LLC borrower or guarantor whose loan documents are not governed by Delaware Law.

The Amendment also expressly provides that a Division shall not be considered an assignment or transfer or a distribution of the assets of the original LLC under any contractual prohibitions on any transfer, assignment or distribution of any assets or liabilities, nor shall the termination of the original LLC be considered a dissolution with its attendant requirements, but simply a cessation of existence. That provision would allow the Division allocation to be a tax free transfer under Delaware law (if not necessarily in other states), but also may limit or impair a lender's rights and remedies under Prohibited Entity Acts provisions in the loan documents as it purports to vitiate the lender's contractual transfer, assignment or distribution prohibitions. This provision will inevitably lead to conflicting results under the law of the state where the collateral security for the loan is located and the Amendment, which is intended to govern the Delaware borrower or guarantor LLC.

Recommended Risk Mitigation

Given the ease of affecting a Division and a lender's limited remedy after a Division has been completed, lenders should be mindful of certain document provisions with respect to their existing and future extensions of credit, as well as any future modification of loans closed before August 1, 2018 to better preserve and protect their rights, liens, remedies and collateral security for their loans to Delaware LLC borrowers and guarantors. Specifically, lenders should:

Loan Documents

- Review form term sheets and loan commitments as well as form loan documents to determine whether they contain provisions regarding Division or need appropriate prophylactic modifications concerning Division.
- Review pre-August 1, 2018 loan documents, if a modification or extension of an existing loan is contemplated, for appropriate prophylactic modifications concerning Division.
- Expressly prohibit a borrower's exercise of the new Division power granted by the Amendment and add, where appropriate, the words "divide" and "division" to borrower and guarantor representations, SPE requirements, affirmative covenants, distribution, and transfer restrictions, and other provisions limiting or conditioning Prohibited Entity Acts, as well as add a negative covenant against adoption of a Plan or filing a Certificate. However, unlike other Prohibited Entity Acts, the prohibition against division should be absolute and exclude any reference of being conditioned on the lender's consent.
- Require that the loan documents expressly prohibit borrower and guarantor LLCs from having the right, power or authority to divide and include an affirmative covenant that the borrower and guarantor LLC agreements expressly prohibit borrower's and guarantor's right to divide and further prohibit any amendment of such prohibition.
- As a further disincentive, require a full recourse carveout guarantee should the borrower or guarantor adopt a Plan or file a Certificate or otherwise proceed with a Division in breach of the absolute prohibition of Division or amend in any way the LLC's organizational document's absolute division prohibition.

Borrower/Guarantor Organizational Documents

- As the Amendment expressly allows that a "limited liability company agreement may provide that a domestic limited liability company shall not have the power to divide" (see Section 18-217 (k)), the lender should require that the organizational documents of borrower and guarantor expressly provide that such entity:

shall have no right, power or authority, express or implied, to divide into multiple entities pursuant to any applicable law allowing an entity to divide or conduct a divisive merger. This provision shall not be amended, modified or otherwise changed to grant such right, power or authority, and any attempt to divide or to amend this absolute prohibition of division shall, to the fullest extent permitted by law, be void ab initio and of no force or effect whatsoever.

Unlike other Prohibited Entity Acts which are often conditioned on, or otherwise limited by, lender's consent, we recommend that Division be unconditionally prohibited in loan documents and organizational documents to avoid some of the unintended consequences of the Amendment more specifically discussed below.

Prohibition Of Division

If the absolute prohibition of Division is included in the LLC's organizational documents as well as the lender's loan documents, any attempted Division by

the LLC would be an ultra vires act which would allow the lender to sue to set aside the Division as void and ineffective. However, if the loan documents and/or organizational documents were to permit (or are amended to permit) an LLC the power to divide with the lender's consent, a court strictly construing Section 18-217(k) might interpret the statutory language narrowly and hold that allowing an LLC the power to divide with a lender's consent does not deprive the LLC of the power to divide as required by the statutory language, but rather only limits the LLC's ability to divide on the sole condition that the lender has consented to it. In this circumstance, if an LLC divides without the required consent of the lender, a court may well hold that the LLC has simply breached a consent condition which would constitute a non-monetary default under the loan documents, rather than having taken an ultra vires act. As a loan default, the lender's rights would be limited to the sole statutory remedy of challenging the division as a fraudulent transfer. The ability of a lender to have the Division deemed void ab initio as an ultra vires act, would be conclusive and clearly preferable in time, effort and expense to a lender having to prove a fraudulent transfer, which is a difficult and time consuming process, the result of which would be uncertain.

Other Considerations

While the Amendment was intended as a quick and efficient modern process for divisive mergers, the lack of any requirement for notices or publication poses a significant obstacle for those charged with administering or conducting continuing due diligence of loans made to, or guaranteed by, Delaware LLCs. For example, an attempt to identify the post-Division LLC borrower or guarantor of a loan may lead down a rabbit hole, with a significant cost and delay in the journey to discovery.

Whether the credit rating agencies may view the addition of "without the consent of lender" to a division prohibition in the loan documents and/or the organizational documents as "credit negative", is a question that credit rating agencies have not yet addressed.

And lawyers acting as counsel to LLC borrowers and guarantors must consider the affect of Division on a lender's rights and remedies when issuing a legal opinion on the enforceability of the lender's loan documents in a loan transaction.

Conclusion

For a lender to retain all of its rights and remedies against a borrower or guarantor in the event of a borrower or guarantor adopting a Plan, and filing a Certificate, loan document representations, affirmative and negative covenants, etc., regarding division, will be insufficient to preserve the lender's ability to exercise its rights and remedies under the loan documents to prevent, or unwind, a consummated division. It should be a condition to any loan that the LLC agreement of borrower and any guarantor must strictly conform to the language set forth in Section 18-217(k) of the Amendment expressly denying the LLC the power to divide which should assure that the lender can challenge any adoption of a Plan, filing of a Certificate, or consummation of a division, as an ultra vires act and have the attempted division deemed ineffective and to be of no force or effect.

Relying on anything less than the absolute prohibition of power to divide in the LLC agreement will clearly not be sufficient in any circumstance to prevent the lender from being confronted with a new, potentially uncreditworthy, borrower or guarantor resulting in potential loss of its collateral security and/or the credit support for its loan; and limited to the Amendment's sole statutory remedy of a claim for a fraudulent transfer, to the exclusion of all of its other legal rights and remedies, after the division occurs. This clearly unacceptable result will be the same for all lenders, regardless of whether their loans are recourse or non-recourse, secured or unsecured, or guaranteed.

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ASERs 2.0: Did We Choose a Big Enough Stick?

Four years ago, we published an article discussing a change made in CMBS 2.0 pooling and servicing agreements (PSAs) related to a shift in certain waterfall calculations and priority of the payment of Appraisal Subordinate Entitlement Reduction (ASER) amounts. At that point there were few examples of the practical application of these waterfall revisions to study. Now that loans in the 2.0 market are maturing and some of those loans have been transferred to special servicing, we have found that changes made to most 2.0 PSAs with respect to the application and impact of an Appraisal Reduction Amount (ARA) on the waterfall and ultimate distribution of funds to investors may have consequences that differ from the expectations of some market participants.

Much like the original article¹, this article is not intended to discuss the merits of the use of ARAs and ASERs in 2.0 PSAs, but rather to discuss how the language in many 2.0 PSAs is affecting the priority and distribution of cash flow to certain investors so that both issuers and investors can make informed decisions and models can be created or updated accordingly.

As a refresher, if a borrower does not pay monthly debt service, the master servicer will advance delinquent payments of principal and interest to maintain the expected cash flow to investors so long as the funds are deemed to be ultimately recoverable from proceeds of the underlying collateral. Once the delinquent funds are deemed to be nonrecoverable, the master servicer will stop advancing such funds. A concept was incorporated in 2.0 PSAs that allows for updated appraisals to be used to impact the amount a master servicer is obligated to advance prior to an ultimate determination of nonrecoverability.

Upon the occurrence of certain specified events (i.e. transfer of a loan to the special servicer, payment default, certain loan modifications and insolvency events), certain servicing obligations arise related to the valuation of the underlying collateral such as ordering and obtaining a new appraisal and calculation of an ARA. An ARA represents the portion of the principal balance for which the master servicer is not obligated to advance interest payments as a result of the triggering event and decline in appraised value of the underlying collateral. The resulting payment shortfall to the Trust is referred to as the ASER. Generally speaking, an ARA is calculated by deducting 90% of the appraised value of the collateral (plus the loan-level escrows) from the outstanding principal balance of the loan (plus unpaid advances made by the servicer and interest on those advances).

In addition to determining the existence and identity of the controlling class certificateholder, the calculation of an ARA will reduce the amount of interest a servicer is obligated to advance to investors due to an identified decline in the value of the underlying collateral. An ARA calculation will create an interest shortfall on the transaction equal to the difference between the aggregate amount of principal and interest due to the investors minus the actual amount advanced by the servicer. The actual ASER amount for a loan is generally calculated as $(ARA/Scheduled\ Principal\ Balance) * Net\ Scheduled\ Interest$.

In CMBS 1.0 deals, any ASER amount was generally paid prior to principal but in CMBS 2.0 deals, any ASER amount is generally paid after principal, thus impacting different classes of investors based on the change of payment priority in the waterfall. The intent of the application of the new ARA and ASER mechanics was to prevent subordinate classes of certificateholders from receiving payment of interest at the expense of the senior bondholders when the value of the collateral had diminished to a point where actual losses are anticipated and expected.

It is possible, however, to have an ARA yet no ASER amount in the following two circumstances: (1) a monthly payment advance ("P&I Advance") is deemed nonrecoverable and therefore the servicer does not advance any future monthly payments to the trust, or (2) a loan is transferred to the special servicer yet the monthly payments remain current and therefore the servicer does not advance any amounts to the trust. In both of these two circumstances, no P&I Advance is made and therefore there is no resulting ASER and no actual impact on the waterfall or priority of distributed cash flow notwithstanding the calculation of an ARA.

A typical waterfall in a CMBS 2.0 PSA provides for the following allocation of proceeds:

1. Advances, interest on advances (IOA), and additional trust fund expenses
2. Nonrecoverable advances and interest on advances (previous clawbacks) from principal
3. Excess of accrued and unpaid interest to but not including the due date in the collection period over ASERs
4. Principal up to full unpaid principal balance
5. ASERs
6. Yield maintenance charges or prepayment premiums due and owing
7. Late payment charges and default interest due and owing
8. Any assumption fees and modification fees due and owing
9. Any other amounts due and owing

Below is a discussion of the application of the waterfall in the two circumstances identified above.

I. Nonrecoverability Determination Eliminates P&I Advancing:

P&I Advancing:

When a master servicer, special servicer or trustee deems a P&I Advance nonrecoverable, the master servicer ceases making principal and interest payments to the trust for that loan. If a P&I Advance is not made by the master servicer, the investors must wait until the loan is liquidated before receiving any proceeds from such liquidation.

In most 2.0 PSAs, once a nonrecoverability determination is made, the full interest payment due but not yet received will then revert to falling in the general bucket in the waterfall for accrued and unpaid interest (priority three in the typical waterfall described above). Accrued and unpaid interest is paid prior to both principal and ASERs. Therefore, notwithstanding the calculation of an ARA, any interest that accrues and is unpaid after a nonrecoverability determination will be paid prior to principal.

Below is a hypothetical example of a simplified waterfall calculation showing the difference a nonrecoverability determination could have on a realized loss calculation on a \$75 million loan with available liquidation proceeds of \$12 million:

Scenario 1				
Typical 2.0 PSA waterfall treatment: accrued and unpaid interest due to nonrecoverability determination is paid PRIOR to principal				
Category / Priority	Description	Total Amount Accrued / Due	Amount Allocated	Proceeds Remaining
Total Liquidation Proceeds:				
1	Recovery of Advances, IOA, Fees (to servicers)	1,719,156.27	1,719,156.27	10,280,843.73
2	Recovery to trust of NR Advances and IOA previously taken from Pool Principal	1,041,585.39	1,041,585.39	9,239,258.34
3	Excess of accrued and unpaid interest to but not including the Due Date in the Collection Period over ASERs (includes accrued and unpaid interest resulting from a nonrecoverability determination)	2,995,666.62	2,995,666.62	6,243,591.72
4	Principal up to full UPB	75,000,000.00	6,243,591.72	0.00
5	ASERs	1,170,675.00	0.00	0.00
Realized Loss Amount		68,756,408.28		

Scenario 2				
Waterfall treatment if accrued and unpaid interest due to a nonrecoverability determination is paid in line with ASERs, AFTER principal				
Category / Priority	Description	Total Amount Accrued / Due	Amount Allocated	Proceeds Remaining
Total Liquidation Proceeds:				
1	Recovery of Advances, IOA, Fees (to servicers)	1,719,156.27	1,719,156.27	10,280,843.73
2	Recovery to trust of NR Advances and IOA previously taken from Pool Principal	1,041,585.39	1,041,585.39	9,239,258.34
3	Excess of accrued and unpaid interest to but not including the Due Date in the Collection Period over ASERs	2,096,966.62	2,096,966.62	7,142,291.72
4	Principal up to full UPB	75,000,000.00	7,142,291.72	0.00
5	ASERs PLUS accrued and unpaid interest resulting from a nonrecoverable determination	2,069,375.00	0.00	0.00
Realized Loss Amount		67,857,708.28		

As you can see, the nonrecoverability determination in current 2.0 PSAs causes the realized loss amount to increase as less money is allocated to principal.

II. Loan is Transferred to Special Servicer yet Remains Current:

After a loan is transferred to the special servicer, the special servicer often has an obligation to order an appraisal even if the monthly payments are current. If the appraisal indicates a material decline in the value of the collateral resulting in an ARA, so long as the loan is current, there will not be any change to the waterfall as a result of the event that triggered the ARA. Therefore, it is possible that subordinate investors will continue to be paid their full amount of interest notwithstanding the fact the special servicer expects the trust to incur a significant loss upon final liquidation of the collateral.

For example, if there is a loan secured by multiple properties, it is possible that the individual properties will be sold at different times during the liquidation process. In such a scenario, it is likely that the better properties are sold first thereby generating sufficient cash flow to keep the loan payments current for some period of time. During that period of time, subordinate investors will continue to receive proceeds notwithstanding the fact that the appraisal indicates the loss could extend beyond such subordinate investors' position in the capital stack.

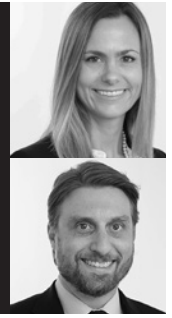
Interestingly, the repayment treatment of accrued and unpaid interest in the two circumstances above is consistent with the mechanics in CMBS 1.0, not CMBS 2.0. Subordinate classes of certificateholders will continue to receive payment of interest notwithstanding the fact that the value of the collateral diminished to a point where actual losses are expected to occur.

Both senior and subordinate investors should evaluate how the waterfall language in 2.0 PSAs could potentially affect their positions and distributions in CMBS 2.0 transactions. Did the parties intend that a nonrecoverability determination related to a proposed advance could increase the amount of interest being paid to subordinate classes? If it was not the intent, discussions on how to change future deals should begin.

Master servicers will continue to follow the prescribed waterfall mechanics and related calculations as defined in each individual PSA and are neutral as to establishment of the relevant payment priorities amongst the certificateholders. However, all market participants will benefit from an analysis of the practical implications of the definition of and payment priority of ASERs in 2.0 deals. As new concepts are put into place, it is not always easy to see the full consequences until transactions start flowing through these new models. By continuing to bring these issues to the attention of market participants, we hope to increase awareness of any potential inconsistencies with concepts, expectations and practical applications.

¹<http://www.crefc.org/crefc/crefw/Summer2015/files/assets/basic-html/page-32.html>

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Remedial Cost Estimates as a Critical Component of Securing CMBS Loans

Underwriting a commercial real estate loan is fundamentally a process of quantifying the risks associated with the loan. How much revenue does the property generate? How much does the property cost to operate? Is the sponsor experienced, and is the geographic area improving or getting worse? These questions and many additional metrics are used to create a model and ultimately each data point becomes a line item in that model. Physical building risk is quantified through Property Condition Assessments (PCAs), which provide an itemized breakdown of the remaining useful life of physical components of the asset and what the cost to replace that component will be at a specific time. The appraisal quantifies valuation risk in the same way by attributing a specific value to what someone will be willing to pay for the asset. Both lend themselves nicely to the underwriting model by assigning specific values to their respective underlying risks. Environmental risk is quantified through Phase I Environmental Site Assessments (ESAs). Most properties have little to no environmental risk. But when environmental issues are identified in a Phase I ESA report, they create consternation because they are usually identified late in the underwriting process, they are unexpected, and they are not easy to quantify with a specific value.

What if your consultant could quantify environmental risk by assigning a cost to the risk in the same way that a PCA assigns costs to physical condition risk or an appraisal assigns a value to valuation risk? This would increase the likelihood of a successful transaction for the lender and provide peace of mind to the borrower for down the line mitigation strategies depending on various scenarios. The due diligence product that is used to achieve this is a Remedial Cost Estimate.

A Remedial Cost Estimate is the process by which all the necessary steps that might be required to bring regulatory closure to an environmental issue are projected forward and each step is assigned a value. While there are many uses for Remedial Cost Estimates in commercial real estate, over 80% of the

Remedial Cost Estimates we have done in the last two years have been for the commercial mortgage-backed securities (CMBS) market. In this article we will explain why this product is so important to CMBS and lay out a framework for how a Remedial Cost Estimate should be conducted/completed.

Environmental Due Diligence for CMBS Loans

Environmental due diligence requirements for loans that will be securitized into CMBS do not differ much from those required by most other types of lenders. However, the large number of stakeholders in the CMBS structure require that all steps of the loan process be formalized into a mutually agreed upon framework. The representations and warranties (reps and warranties) made by the loan originator are an integral part of this framework and they outline how asset level environmental risk must be assessed. Minimal requirements consist of a Phase I ESA that meets the requirements of the American Society for Testing and Materials ("ASTM 1527-13") as well as the United States Environmental Protection Agency "All Appropriate Inquiries" guidelines, and that it is conducted by a reputable environmental consultant. In most cases, the report must be conducted within 12 months of loan securitization.

The Phase I ESA assessment for CMBS underwriting is the same as that required by almost all commercial real estate lenders. The difference is that CMBS prescribes what must be done if any of the following are identified: material noncompliance with environmental laws, the existence of a recognized environmental condition (REC) or the need for further environmental investigation. In CMBS underwriting, this is usually addressed by performing a Phase II Subsurface Investigation, which can identify and clarify if a release has occurred at the property and what next steps, if any, are needed.

There are approximately a half dozen prescriptions in the reps and warranties that can be used to remedy the identified environmental issue. These include: a hold back by the lender of 125% to 150% of the funds estimated by a reputable environmental consultant sufficient to cover the cost to cure the environmental issue; the implementation of an Operations and Maintenance Plan if the only environmental condition relates to the presence of asbestos; remediation of the environmental condition identified in the Phase I and issuance of a no further action or closure status by the relevant regulatory agency; an environmental policy or a lender's pollution legal liability insurance policy that covers the liability for the identified circumstance or condition was obtained; a party not related to the mortgagor was identified as the responsible party for such condition or circumstance and the loan seller has reasonably estimated that the responsible party has financial resources adequate to address the situation; or a party related to the mortgagor having financial resources reasonably estimated to be adequate to address the situation is required to take action.

Historically, if a REC was identified during a Phase I ESA, the next step was almost always to conduct a Phase II Subsurface Investigation for more risk clarity. If no contamination was identified, then the REC would be removed from the Phase I report and none of the above options would be needed. However, in the past two to three years there has been a significant increase in the number of deals where lenders and borrowers are forgoing a Phase II Subsurface Investigation altogether and opting for either a 125% - 150% hold back of the cost to cure or obtaining environmental insurance. The benefits of these options are that they are faster than conducting a Phase II Subsurface Investigation and they provide certainty of loan closure without having to do any additional investigation.

Rating agencies have noticed this increase in the use of these options, as well. A need for the Remedial Cost Estimate in the above instances is driven by one question that the rating agencies need the answer to ensure confidence in their valuation: Is the insurance policy or hold back enough to cover the risk and how did you get to that number? For example, if a Phase I ESA identifies a REC at a site because of historical dry-cleaning operations and the issuer obtains a \$1,000,000 environmental insurance policy to cover the risks, how do they know that \$1,000,000 is enough? The Remedial Cost Estimate provides a science-based process that outlines how the cost to remedy the environmental issue was derived.

Rating Agencies and Environmental Risk Uncertainty

When considering a valuation, rating agencies generally look at the worst possible hypothetical outcomes over the course of a 10-year loan. The rating agency is looking for a stressed version of what may happen in the event of default of these loans that would result in a bond loss. In other words, the higher the agency rating, the lower the assumed stress value of the asset. Therefore, to rate a security AAA, the agency has to be able to say with a high degree of confidence that there will be no likely loss.

This process gets more complicated when it comes to the possibility of environmental contamination on a site. How can a rating agency provide accurate and confident ratings when the borrower uses environmental insurance and/or a Remedial Cost Estimate in lieu of a more concrete Phase II Subsurface Investigation and/or mitigation? The amount of experience and level of qualification of the environmental consultant has a huge impact on the outcome of the Remedial Cost Estimate. Those differences as well as differences in the level of detail put into the estimate create variance between estimates – exactly the type of thing the rating agencies don't want. Since the rating agencies are not directly requesting the Remedial Cost Estimate, navigating these scenarios is outside of their direct purview. That is why a standardization of this product would help the entire CMBS process by giving the rating agencies piece of mind.

"We have seen a growing shift toward Remedial Cost Estimates and insurance policies as environmental risk mitigants," says a senior analyst at Moody's. "At this point, we review these situations on a case-by-case basis since the industry hasn't produced a consistent standard of depth and scope of RCEs and the underlying assumptions. We of course have a high degree of sensitivity around the very low risk tolerance of high investment grade bonds."

Remedial Cost Estimates for CMBS Deals

A consistent Remedial Cost Estimate standard would streamline the securitization process by creating a framework that reduces subjectivity around how to value environmental risk. Currently, there is no standard industry framework for Remedial Cost Estimate deliverables. Typically, it includes an itemized summary of all the data and documents reviewed and outlines the work that will be required to complete the remediation on a step-by-step basis. Each of these steps will have a cost range associated with it. If a large amount of information is available for review, then the cost range may be small but often there is very little previous data, perhaps just a Phase I ESA report. In this case the cost range

can be large, but it still is science-based and provides the end user with a useful estimate to plug into their underwriting model.

In our experience, Remedial Cost Estimates should be informed by a wide range of potential contamination issues and sites that are used in estimating percentage confidence for Remedial Cost Estimate line items. ASTM E2137-17 is an industry standard for estimating monetary costs and liabilities for environmental matters, and it provides the general framework for a more detailed Remedial Cost Estimate approach. The ASTM framework is too broad to be used in its entirety, but it provides the following essential principles:

- Uncertainty is not eliminated – Inherent uncertainty in estimates should not prevent an estimate from being made.
- Not Exhaustive – Estimation of costs and liabilities for environmental matters does not necessarily require an exhaustive evaluation of all possible outcomes. A point exists at which the cost of obtaining information or the time required to gather it outweighs improvement in the quality of the estimate.
- Assessment of Risk – The actual or potential risk to human health and the environment should be considered in assessing environmental matters.
- Estimator Selection – An appropriate estimator or group of estimators will consist of those individuals or groups who possess sufficient knowledge, training, and experience to develop appropriate estimates for the costs and liabilities being estimated.

Beyond these principles, the above ASTM standard puts forth several options for how the Remedial Cost Estimate is quantified. We propose that the Range of Values Approach, providing at least two values, is the most appropriate and useful for transactional real estate Remedial Cost Estimates. These two values represent a Probable Estimate (most likely or expected estimate) and the Probable High Estimate (or likely maximum estimate). Ultimately, it is the latter value that really matters and provides stakeholders with a single cost that quantifies the potential risk.

Where Do We Go from Here?

Currently there is a wide observable range of Remedial Cost Estimate deliverables, depending on the experience and/or depth of analysis of the consultant and the need of the client. For example, in situations where a high-level estimate is sufficient, a simple, likely worst-case cost estimate can be provided in an email or memo. This type of "back of the envelope" estimate can be useful if a potential buyer is in the very early stages of preparing a bid and they want to get an idea of their risk exposure. Another example pertinent to CMBS is where there is an environmental insurance policy that has a very high coverage figure. If there is a \$3MM policy and the consultant is confident that no likely scenario could produce a cost of more than \$1MM, then this type of estimate may be enough.

Ultimately, a quality Remedial Cost Estimate provides a tangible likely worst-case cost scenario that allows stakeholders to confidently quantify environmental risk in their real estate transaction. Environmental insurance and environmental holdbacks in CMBS loans are becoming more and more prevalent and therefore the need to quantify a dollar amount in a more transparent and standardized way is needed. A consistent approach for the Remedial Cost Estimate process would streamline the securitization process by creating a framework that reduces subjectivity around how to value environmental risk. This will allow the rating agencies and other stakeholders in the deal to have the type of confidence level surrounding this issue that is needed for them to accurately assess the environmental risk – much like they assess any other type of risk in the underwriting process.



Restoring an Obligation to Repurchase Defective CMBS Loans

Repurchase claims represent an important if infrequent part of the CMBS structure. Throughout the first 25 years of the CMBS industry, the repurchase obligation existed for the life of the CMBS loan with the Trust having the ability to compel a repurchase by filing suit at any time within six years of a repurchase demand having been made. This changed in 2015 when the New York Court of Appeals found in an RMBS case that a cause of action for breach of representations and warranties contained within a mortgage loan purchase agreement accrues when the agreement is executed. See *ACE Securities Corp. v. DB Structured Products, Inc.*, 25 N.Y.3d 581 (2015) (ACE). This past fall, the Court of Appeals found in a follow-on RMBS case that contractual efforts to change the date of accrual were unenforceable as a matter of public policy under New York law. See *Deutsche Bank Nat'l Tr. Co. Tr. for Harborview Mortg. Loan Tr. v. Flagstar Capital Markets Corp.*, 32 N.Y.3d 139 (2018) ("Flagstar"). The result of these two rulings for the CMBS industry is that there is currently no ability to bring a suit to enforce a repurchase obligation in New York courts more than six years after execution of the agreement.

So why should that change concern the industry? Most, if not all, representation and warranty defects, even those that materially affect a loan or mortgage pool, are not discovered until there is a default and the special servicer seeks to enforce loan document remedies. Typically this does not occur until many years after origination, prior to then there is simply nothing in the CMBS structure that can alert investors to a latent defect. Yet, these defects which many times prevent practical realization against the Trust's collateral are precisely the reason the representations and warranties are given in the first place. Investors are buying a loan and the issuers are asking investors to look to the underlying real estate if a borrower default occurs. Why then should all concerned not work together to restore the status quo? Having been involved with many CMBS repurchase claims over the past twenty years I can attest that when a breach of these representations occurs it can have a significant negative impact on the CMBS Trust. By way of illustration, losses of as much as \$100 million on a single loan have occurred due to the absence of missing collateral, improperly drafted loan documents that do not permit realization against collateral, single tenant ground leases that were erroneously allowed to terminate years before the mortgage loan maturity and the presence of known environmental contamination. In all

of these cases, breach claims were successfully pursued and/or settlements reached that would not be viable today because none of them were discovered until after the six year ACE limitations cut-off.

Fortunately, there are two easy options available to us to restore the status quo. First, New York contract law allows contracting parties to consent to jurisdiction in different states and to mutually agree to different choice of law provisions for different parts of a contract. Currently, mortgage loan purchase agreements (MLPAs) and pooling and servicing agreements (PSAs), typically elect New York law as the governing substantive law. By simply adding a sentence to the choice of law section of the PSA and the MLPA, the parties can agree that (i) a claim for cure or repurchase made pursuant to the applicable section of the PSA and MLPA will be governed by the law of another state and (ii) the parties can consent to exclusive jurisdiction over those claims in the courts of the selected state. Making this election will change nothing else in the agreement. It will not change the scope of the representations and warranties or the applicability of New York law to every other PSA or MLPA provision. While the industry could select any forum state, Delaware presents a convenient option. Three years ago Delaware adopted a new law allowing parties to any contract to agree to a limitations period of their choice up to a term of twenty years. Adopting Delaware's law for these claims will have no substantive effect on the nature of the claims themselves since there is no meaningful difference between New York and Delaware breach of contract law.¹

Alternatively, the obligations to repurchase can be broken out of the MLPA into a stand-alone document which functions like a "guaranty" of repurchase or cure by the mortgage loan seller in the event a material breach of the representation and warranties is discovered. Importantly, the obligation of the mortgage loan seller need not bear any more burden than already exists by giving this "guaranty". The scope of the repurchase obligation can be identical to that found in the applicable section of most PSAs and the companion section of the MLPA. There is language in both the ACE and Flagstar decisions which suggests that limitations would begin to run only from the date notice is served under the newly created guaranty. As with adopting Delaware law, this should mean no substantive change for any party other than reinstating the status quo as to the timing of the mortgage loan seller's repurchase obligation.

There was a system that worked well for twenty-four years. Let's work together to restore the status quo.

Mr. Cross has been the chair of Venable's CMBS and Bankruptcy practices for the past twenty years. He is also a member of Venable's senior management team. Mr. Cross can be reached at 410-244-7725.

¹By way of illustration, all that needs to be added to the Governing Law section of the PSA is a sentence that reads, "The parties to this agreement hereby agree to jurisdiction and venue by the courts of Delaware over claims brought pursuant to section 2.03 of this Agreement which claims shall be construed in accordance with the laws of Delaware and the obligations, rights and remedies of the parties hereunder pursuant to section 2.03 determined in accordance with Delaware law."

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