MKP | CAPITAL MANAGEMENT

Multi-Family, Multi-Problems

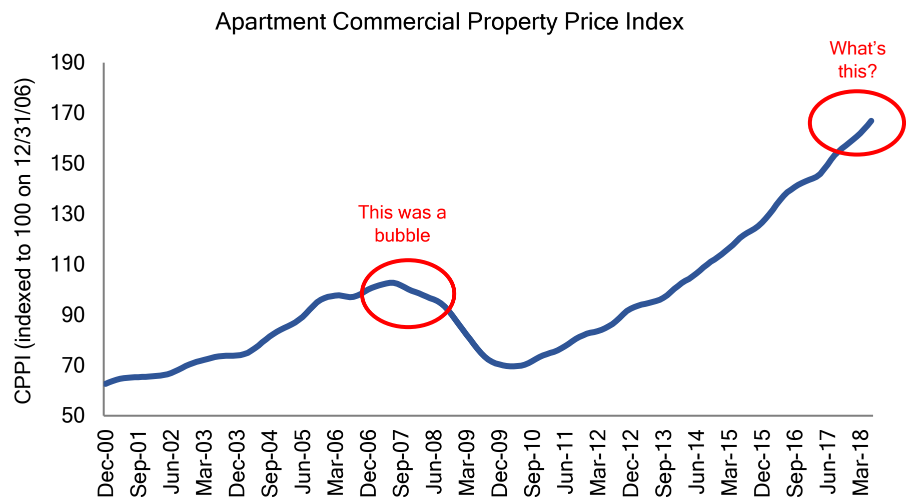
Is multi-family real estate in a bubble?

IN BRIEF

- **We believe multi-family real estate may be in a bubble, with the potential for prices to fall over 20%**
- **Demand is weakening as the homeownership rate climbs and demographics shift**
- **New apartment construction is at the highest level in over 30 years, with the prior run-up going back to the savings and loan crisis**
- **This has significant implications for the business cycle as multi-family, and commercial real estate broadly, has been one of the few places of investment activity**
- **The timing for when the story is expected to gain traction is fluid, but we think rising vacancies and declining rents should add fuel to the narrative**
- **We believe there are a number of implementations in both credit and equity to profit from declining commercial real estate, some of which provide significant leverage to lower prices**

The Case for Multi-Family Housing

It's ironic that we deflated one bubble only to create another one; it appears we don't learn very well. That may be overly provocative, but we believe multi-family real estate is suffering from a difficult mixture of poor demand and heavy supply in the context of elevated property prices. If our thesis is right, there's plenty of pain in store for the space and, as a result, apartment REITs and regional banks. That said, we believe there are significantly larger implications for the economy as a whole. If there was a protracted decline in private investment in commercial real estate (CRE), we believe it could help tip the economy into recession. It's unlikely that this would be similar to the financial crisis, as the banking system is in considerably better health, but it doesn't mean it can't hurt. We find the multi-family space interesting because it's generally been considered a safe haven in the post-crisis era; we believe it's developed into the opposite. With rates projected to continue rising, we believe investors should look for short opportunities in places where supply and demand imbalances exist. In the meantime, for you city dwellers, we'd encourage you to start counting cranes in your city and let us know what you think.



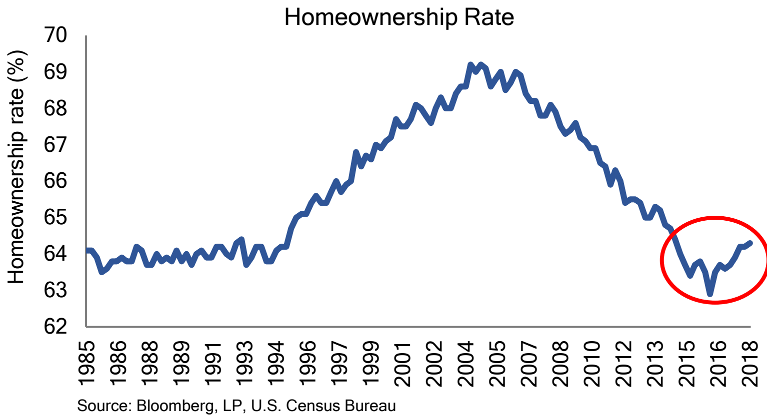
Source: Real Capital Analytics, Inc.

Risk Factors and Symptoms

Homeownership rate is climbing, reducing the demand for rentals

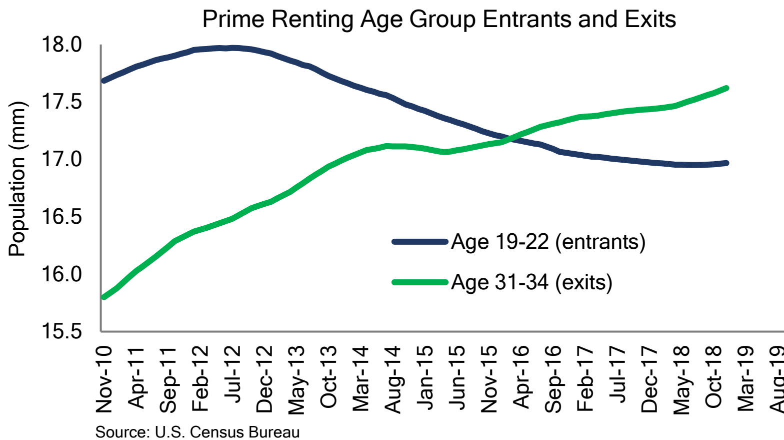
The paradigm has shifted. The homeownership rate bottomed in the second quarter of 2016 and has been steadily rising ever since. There's a lot that goes into the homeownership story, including lending standards, changing millennial attitudes towards owning, and the path of interest rates. A rising homeownership rate means

that there's naturally a smaller proportion of people demanding rental real estate to satisfy their shelter needs. Fewer renters means less pricing power for landlords.



Source: Bloomberg, LP, U.S. Census Bureau

Millennials are starting to age out of their prime renting years
The millennial generation is growing up. They are one of the largest generations in U.S. history (U.S. Census Bureau) and have a significantly different attitude towards owning real estate than prior generations. They favor renting, as they witnessed the housing collapse in 2008 firsthand and are wary of repeating the mistakes of their parents. The problem for apartment owners, however, is that millennials are finally starting to age out of their prime renting years. While millennials may not follow the same patterns as prior generations, it's natural to expect a greater preference for homeownership after marriage and kids. The generation behind them is also not large enough to fill millennial shoes.

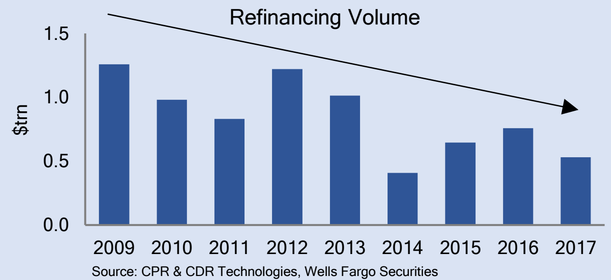


Source: U.S. Census Bureau

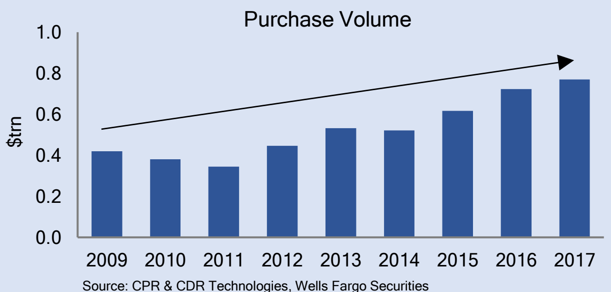
The other side of the equation: supply
Because multi-family was so hot post-crisis, borrowers were able to get financing to invest and build new projects. As a result, borrowers built. Building activity in multi-family hasn't been this high in 30 years; the prior occasion was followed, shortly thereafter, by the S&L crisis.

How did we get here?

- **The story goes back a decade** to the financial crisis when consumers defaulted in record numbers on their mortgages. The resulting conclusion for credit markets was that consumers were not trustworthy borrowers (lending standards have been tight to them ever since).
- **The homeownership rate plummeted** as consumers couldn't qualify for mortgages and were pushed into the rental market instead. That made life good for people who owned real estate and were willing to rent it out to others, namely, apartment owners.
- **The post-crisis beneficiaries** were the borrowers that performed better from a default perspective (namely corporations and institutions). As a result of this setup, there was huge demand for renting post-crisis.
- **Given the decline in interest rates**, mortgage originators did well post-crisis by refinancing borrowers (but that game is waning, and they're now chasing volume instead). As a result, mortgage originators have started to loosen underwriting standards to allow a wider swath of consumers to buy homes, thus collecting origination fees. It's probably the right move for consumers, since lending standards were likely too tight, but it's undesirable for post-crisis beneficiaries (apartment owners).



Source: CPR & CDR Technologies, Wells Fargo Securities

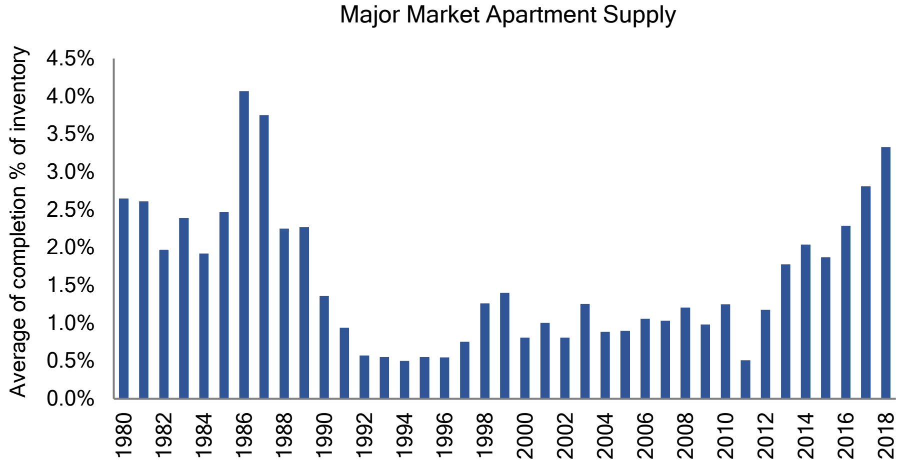


Source: CPR & CDR Technologies, Wells Fargo Securities

- **We've also seen this evidenced** by origination characteristics from the GSEs, Fannie and Freddie, where average FICOs are declining, debt-to-income ratios are increasing, and the tail of highest-risk loans is increasing.

An urban, major market problem

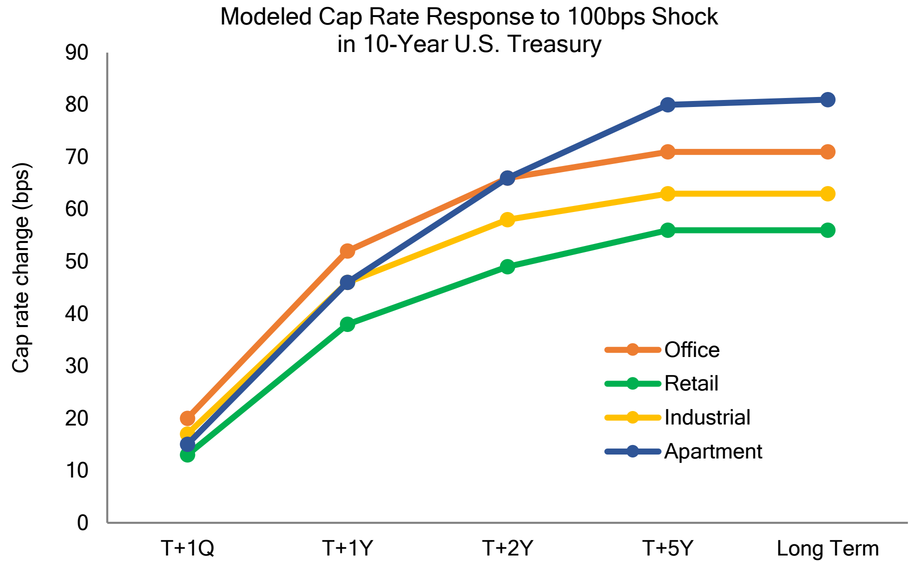
The supply story here largely is an urban, major market problem. The specific building activity picture we've observed is comprised of New York, Boston, Washington DC, Los Angeles, San Francisco, and Chicago. Lots of new supply, weakening demand, and rising interest rates, create a powerful elixir. With these factors in mind, its natural to question what real estate prices will do. We believe they have significant room to go down.



Source: REIS, Real Capital Analytics, Inc.
Definition of Major Markets (New York, Washington, DC, Los Angeles, San Francisco, Chicago, Boston)

Rates also are critical

Most real estate transactions are typically financed, such that higher funding costs should naturally lead to lower property prices. As rates continue to rise, there will be added pressure on a market that's suffering already from supply and demand problems. Our analysis concludes that changes in interest rates are reflected in cap rates, albeit with a delay. Given that the recent sell-off in rates was at the end of 2017 and during the first quarter of 2018, we would expect to see changes reflected in cap rates one to two years thereafter. Over a longer horizon, our analysis also suggests that apartment cap rates reflect a larger proportion of interest rate changes than other property types.



Source: MKP Credit Analytics

The level of rates matters too, not just the change

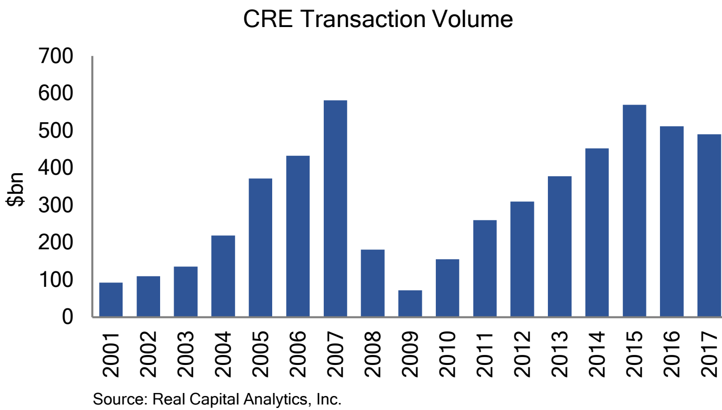
If cap rates increase 100bps, its more impactful if the starting point for the cap rate is 5% versus 10%. Going from a 5% to 6% cap rate results in a 17% decline in property prices (all else equal), while going from 10% to 11% results in a 9% decline. Large urban real estate markets are typically valued at lower cap rates than non-urban areas are valued, which means that increases in interest rates should have a larger impact on prices in the urban areas.

Initial Cap Rate Level	3%	4%	5%	6%	7%	8%	9%	10%
Property Price Change for 100bps Change in Cap Rate	-25%	-20%	-17%	-14%	-13%	-11%	-10%	-9%

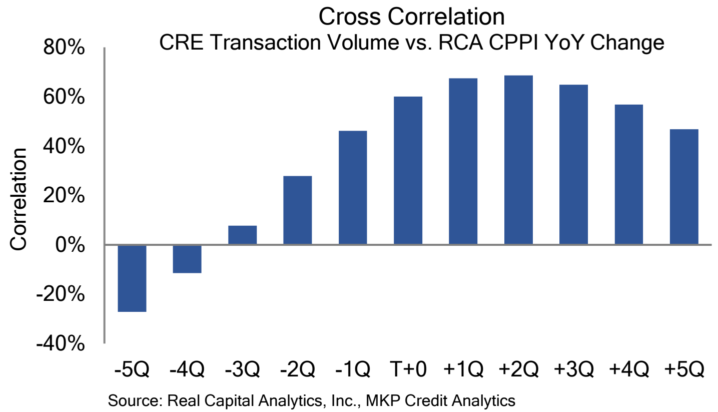
Source: MKP Credit Analytics

Transaction volumes are declining in property markets

Switching gears a bit, there's also declining demand for investors to own apartment complexes. This shows up in the real estate transaction volume data that we monitor. Now, declining real estate volumes can mean many things, but our research suggests that it typically leads to declining prices. The intuitive explanation relates to expanding bid/offer spreads. In a falling market, bids fall first, while sellers still expect to sell at the prices they've recently seen. Eventually, offers come down as some sellers are forced to capitulate, which then reprices the entire market. This isn't just conjecture on our part; it is supported by the fact that changes in transaction volumes have the highest correlation to prices that are two to three quarters in the future. The reality is that the true clearing price for CRE is likely already lower, and we just haven't seen the price data yet.



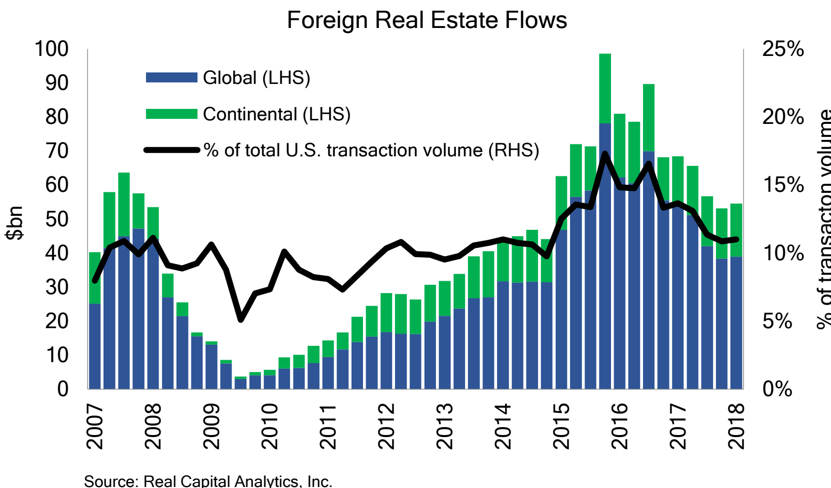
Source: Real Capital Analytics, Inc.



Source: Real Capital Analytics, Inc., MKP Credit Analytics

Cross-border transactions peaked in late 2015

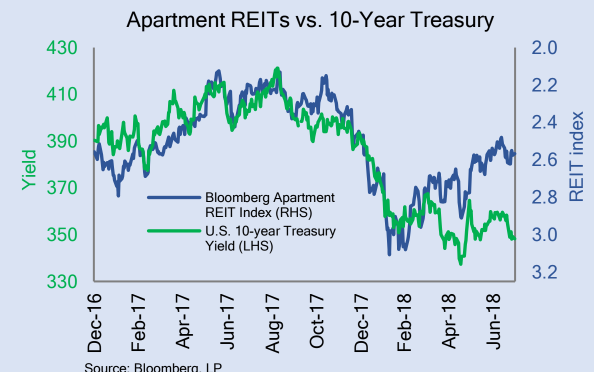
Another factor to consider is the influence of foreign flows into U.S. real estate. Our takeaway on this is that rate structures matter a good deal in dictating demand. As the rate curve has bear flattened in the U.S., it has made hedging expenses more onerous for those hedging back to local currency. The story is further muddled by some of the recent headlines around trade and tariffs, and the related uncertainty may cause some buyers to defer purchases until there's clarity on trade and investment frameworks.



Source: Real Capital Analytics, Inc.

Is the market paying attention?

One of the ways we infer this is through the drivers of valuations. Apartment REITs have shown a high degree of correlation to interest rates in recent years, which suggests to us that they're viewed simply as bond proxies. While that may have been appropriate in prior years, it suggests to us that the market doesn't really care about fundamentals right now (despite the variety of evidence to the contrary). We believe that the disconnect in how the market views fundamentals creates more asymmetry in the short multi-family theme. This contrasts with other areas of the market, like the retail and consumer space, where problems within legacy portions of the industry (brick and mortar retail) are well flagged. There, good asymmetry in shorts is unlikely, as there are fewer negative surprises left in store for investors.



Source: Bloomberg, LP

Derivation of Multi-Family Price Forecast

To formulate our forecast on multi-family price changes, we considered three separate components: cap rates, vacancies, and rent growth. As discussed, we have historically observed that changes in treasury yields are absorbed in cap rates with a one- to two-year lag. For multi-family specifically, 70% of the cap rate move is absorbed within two years of the rate move. Since January of 2017, we observed a 50bp sell-off in 10-year treasuries, which would thus imply a 35bp sell-off in cap rates. On vacancies, our view is specific to metro-areas and based on projections from REIS, Inc. REIS projections are driven by its forecasts for new multi-family completions, population growth, and employment growth. REIS -defined major markets' metro-areas with the largest incoming supply face the largest increases in vacancies, as shown in the chart below.

	New York	DC	Boston	San Francisco	Chicago	Los Angeles
2016 - 2019 Total Supply	21.6%	15.8%	8.1%	7.5%	5.9%	4.1%
2016 - 2019 Vacancy Increase	3.7%	2.7%	1.2%	-0.5%	1.4%	0.8%

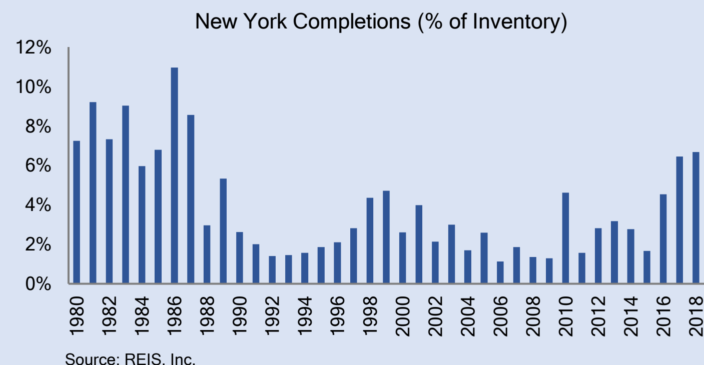
Source: REIS, Inc.

On rent growth, we are concerned by the current high levels of concessions. We have seen landlords increase concessions (e.g. free months of rent or gift cards) to fill vacancies without having to reduce prices. Despite these efforts, vacancies continue to rise. We find this behavior to be unsustainable and expect landlords to cede and pass through the lower cost in the form of rent reduction as a result. It's our estimate that the eventual rent reduction, combined with increased competition, will result in an average drop in rents of five-percent.

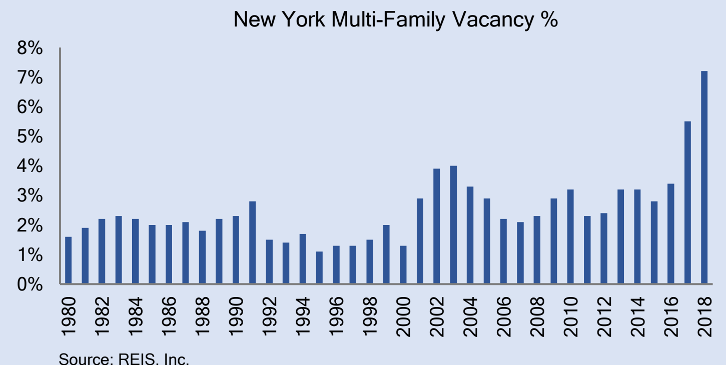
All-in-all, the forecast for these three components amounts to a 20% decline in multi-family prices. The potential also exists for further downside risk. For example, if cap rates were to widen by 100bps instead of 35bps, that price decline would jump to 30%. CRE price changes also exhibit a high degree of autocorrelation. This is one of the reasons why we observed a significant positive correlation between CPPI and transaction volumes for a series of lags between T-1Q and T+5Q. This momentum is an important factor to consider. When the time comes for a correction in multi-family prices, momentum will force prices to overshoot to the downside.

Case Study: New York

To further illustrate the pressure faced by the multi-family sector, we present a case study on the New York multi-family market. The New York metro is amidst a supply wave unseen since the 1980s, realizing completions of 4.5% and 6.4% of existing inventory in 2016 and 2017, respectively, and expected to take in another 6.7% in 2018. The multi-family market has already started to feel the effects of these new completions, with vacancies rising from a low of 2.8% in 2015 to 5.3% today, and expected to rise further to 7.2% by the end of this year.



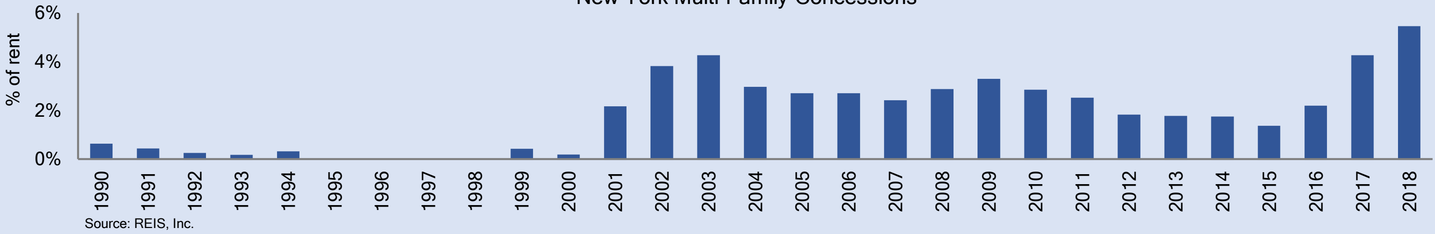
Source: REIS, Inc.



Source: REIS, Inc.

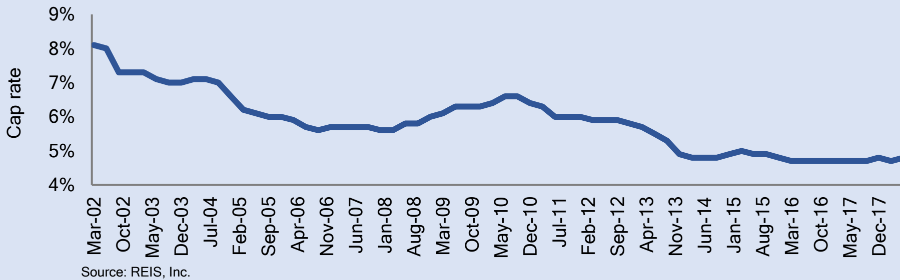
Landlords have been fighting the effects of higher vacancies by offering larger and larger concessions. These concessions have grown as a percentage of rent to the largest levels we have observed historically for New York at 5.1%.

Case study continued…



Source: REIS, Inc.

Additionally, cap rates have approached the all-time tights for the New York City metro. The current metro cap rate is 4.76% versus a pre-crisis low of 5.59%, and a post-crisis high of 6.63%.



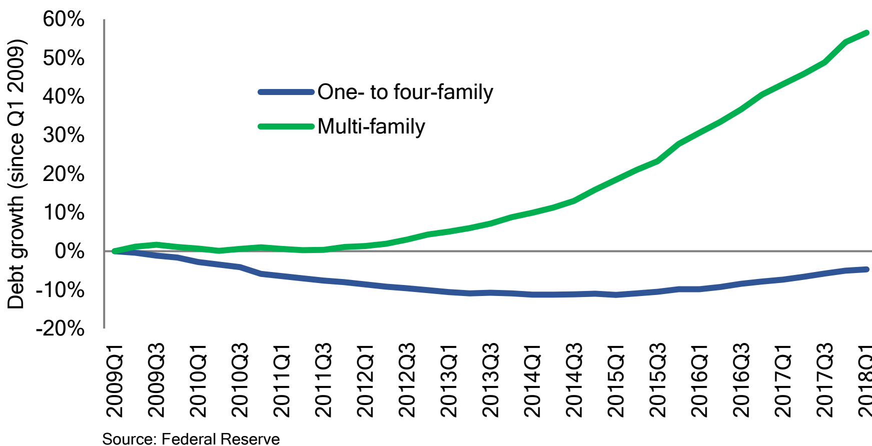
Source: REIS, Inc.

Our forecast for NYC

Our forecast for the NYC metro is for multi-family prices to decline by 23%. This is driven by our expectation for the underlying 3 components. We expect rents to decline by 4-5% as landlords capitulate and reduce rents instead of offering larger concessions, and vacancies to increase as further completions come to market. Additionally, we expect cap rates to widen by 35 basis points, with the potential for further widening as the market prices in additional CRE risk premium.

Funding Sources for Multi-Family Borrowers

If we look at the aggregate mortgage debt outstanding in the U.S. and dig deeper for the source of lending growth, it appears that the growth in multi-family debt outstanding far surpasses the growth in one- to four-family residences. This may be appropriate, given the loose financing markets for one- to four-family residences leading up to the crisis. The chart below shows disproportionate growth in lending to multi-family borrowers, while the aggregate size of mortgage debt following the crisis has actually declined. The significant growth in multi-family lending likely is driven by the perception that the space is a safe haven.



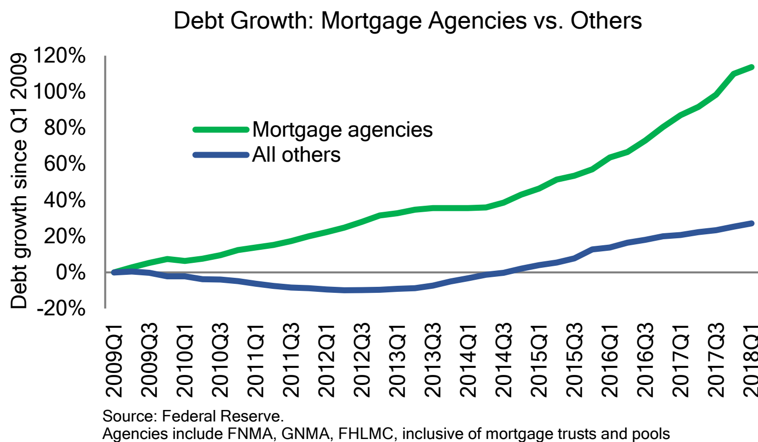
Source: Federal Reserve

Stories we're following: fraud

Another feature of the space is the potential for fraud in CRE. A recent story we've been tracking is that of federal agents raiding Morgan Communities from the upstate New York area. Now, we firmly believe that people are innocent until proven guilty. That said, if the allegations are true, we believe it's symptomatic of typical late-cycle behavior. When the tide goes out it's much easier to see who has a bathing suit on and who doesn't. Similar occurrences of fraud surfaced around the time of the 2001 recession with companies like Enron, Worldcom, and Tyco running into trouble; and similarly, mortgage fraud was rampant heading into the financial crisis. That's not to say that fraud is only discovered at the end of a cycle, but it adds to the mosaic of the negative multi-family theme.

If we look further into these numbers we find that the largest contributors to multi-family lending growth have been from the mortgage agencies: Ginnie Mae, Fannie Mae, and Freddie Mac. Since the first quarter of 2009,

the agencies have increased their holdings by an impressive 114%, while all others (banks, life insurance companies, etc.) have increased by a more measured 27% (Federal Reserve). Now, all of this doesn't simply reside on the agencies' balance sheets, as they distribute some of the risk through mortgage trusts (Freddie-K, for example). For those who remember the agencies' role leading up to the crisis, this may elicit anger, but we'll let the numbers speak for themselves. Are the GSEs contributing to a bubble while still under conservatorship? It sure looks like it.



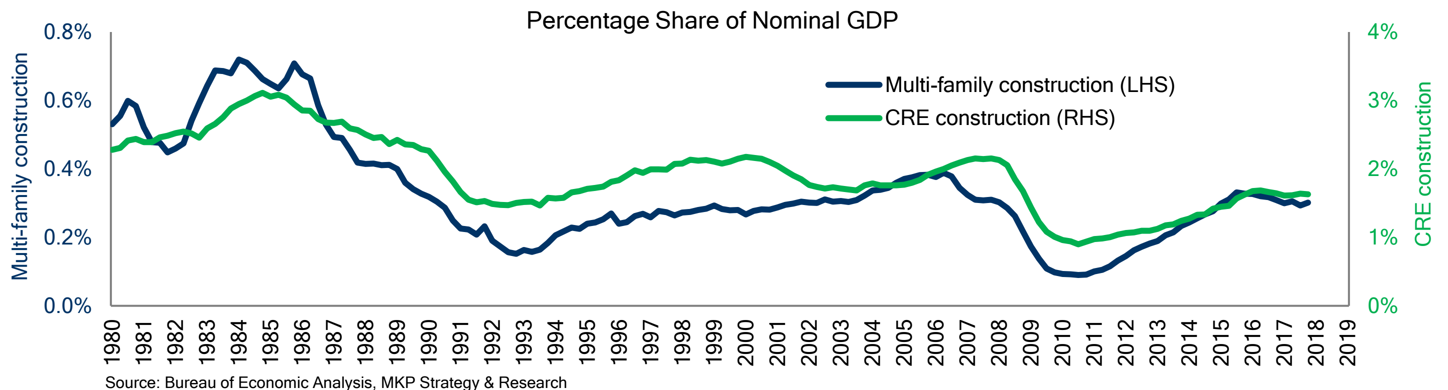
Source: Federal Reserve.
Agencies include FNMA, GNMA, FHLMC, inclusive of mortgage trusts and pools

Making sense of "all others"

Note that within the "other" category we include here, the banks have increased their loan exposures to multi-family by 63% over the same timeframe. It's a more pedestrian pace than the agencies, but it generally has generally been more concentrated within regional and smaller banks. The smaller banks have been crowded out of the credit card and residential mortgage spaces, which has driven them into CRE and C&I lending. The banks we focus on here have exposure to CRE anywhere from 50% to 90% of their total loan portfolios, as close to an all-in bet as we'd expect a bank to make.

Macroeconomic Considerations

When thinking about the multi-family theme, we believe it is important to evaluate both direct and indirect impacts from a turn in the investment cycle. For example, the 2015-16 energy downturn was not merely contained in the energy sector; the transportation and manufacturing sectors faced collateral damage that ultimately caught most U.S. economists flat-footed. On its own, multi-family fixed investment represents 0.3% of nominal GDP in the U.S. Even under highly aggressive assumptions about the speed of a multi-family contraction, the direct drag on real GDP growth would seem reasonably well-contained. It's also worth noting that while small, real estate typically punches above its own weight, as it can be highly positive or negative.

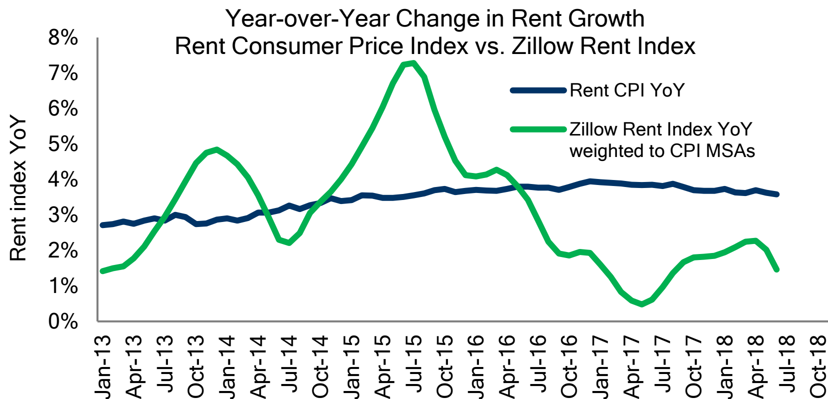


Source: Bureau of Economic Analysis, MKP Strategy & Research

With multi-family housing, the first set of potential spillovers to consider relates back to CRE. Even if the fundamentals of each segment of CRE do not carry much correlation with each other (which we find doubtful), the corresponding financing conditions likely do. Again, look to the 2015-16 experience, when even the most unrelated segments of the corporate bond market were left wounded from the fallout in the energy sector.

Depending on the definition, construction within CRE segments generally makes up 1.6% to 2.0% of nominal GDP. That might not sound like much, but it's not merely about the share of nominal GDP, but also corresponding cyclical volatility. Given the amount of nominal spending in CRE segments, the risk of over-investment goes beyond multi-family. In a downside risk scenario, CRE segments of private fixed-investment could easily subtract 50bps to 70bps from annualized real GDP growth. That's a sizable cyclical impulse to contend with given recent growth rates, even if it is not recessionary on its own. There is no requirement that recessions must stem from a singular cause, similar to the 2001 cycle.

Finally, the multi-family outlook does pose some downside risk to inflation over the coming quarters. Rent and owners' equivalent rent (OER) cumulatively represents 40% of core CPI and 18% of core PCE. The CPI housing survey used for measuring these indices tends to skew to multi-family over single-family in terms of the captured rent dynamics. More importantly, CPI tends to lag market rents for vacant units several quarters (roughly four to eight). While rent and OER CPI are currently realizing approximately 3.5% year-over-year growth, MKP's aggregation of Zillow rent indices to the CPI's respective regional weights shows less than 1.5% year-over-year growth (as of June 2018). Thus, rent CPI disinflation may prove to be yet another challenge in the Federal Reserve's quest to sustainably and symmetrically hit its 2% inflation target.



Source: Bureau of Labor Statistics, Zillow, MKP Strategy & Research

Real or Imagined?

All of this is an interesting thought exercise, but the real question is whether we're seeing evidence of our thesis show up.

This is a story that's happening now

We're seeing vacancy rates increasing, which supports the notion that either weak demand, heavy supply, or both is having an impact on fundamentals. With vacancies increasing, it's only natural that pricing power has diminished and, as a result, rent growth is slowing. Given our cautious outlook on the space we believe the correction in rent growth still has plenty of room to go.

Implementation

In our opinion, there are a variety of options. The narrow scope would involve shorts in apartment REITs in both credit and equity, and the broader scope would include regional banks.

CDS on apartment REITs

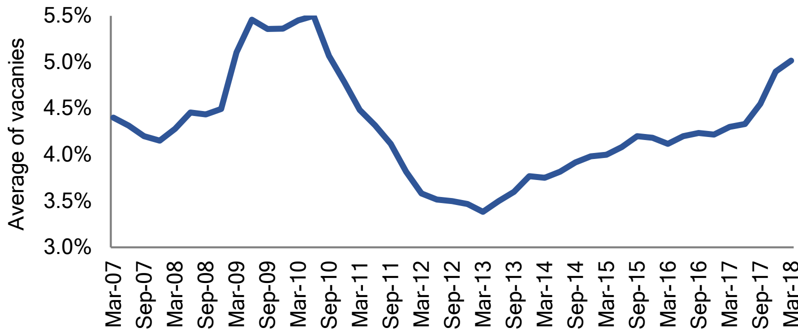
Credit default swaps on an apartment REIT, such as Equity Residential (EQR) look compelling. The benefit of using CDS is that the ongoing carry costs are relatively modest in our opinion. At the time of writing, the annual cost of credit protection stands at approximately 0.40% for a five-year contract. Combining something like this with front-end interest rate products allows for significant leverage to the view while being roughly carry neutral. An investor can buy two-year treasury notes and receive approximately 2.7% and be leveraged short six times (and still be roughly flat carry). We believe there are likely better longs than the two-year note, but this is illustrative of the opportunities the market allows, given that rates have meaningfully begun to increase. Now, we don't expect near-term defaults on apartment REITs but would expect risk premiums to expand as the narrative on the REITs begins to shift.

	One Year Forward	Two Years Forward
Annual Return to 2008 Wides	140%	54%
Annual Return to 2011 Wides	36%	12%
Annual Return to 2016 Wides	6%	1%

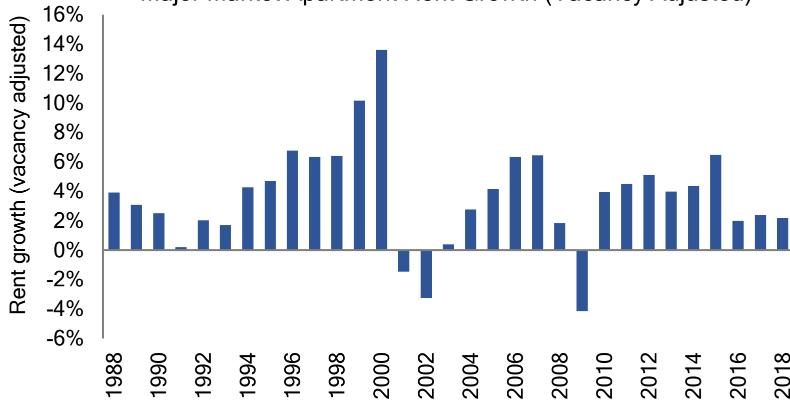
Source: Bloomberg, LP

Shorts in apartment REIT equities

Outright shorts make sense as the dividend yield is fairly modest (approximately 3.28% on Equity Residential) although there's also a duration component. Since REITs typically trade as bond proxies, shorts would benefit from rising interest rates and be hurt by declining interest rates. That said, the implicit duration exposure may be something people want, but it's an important risk to highlight. Given our view on the potential for rent and property price declines, we believe that could lead to significant downside in equity earnings and multiples.

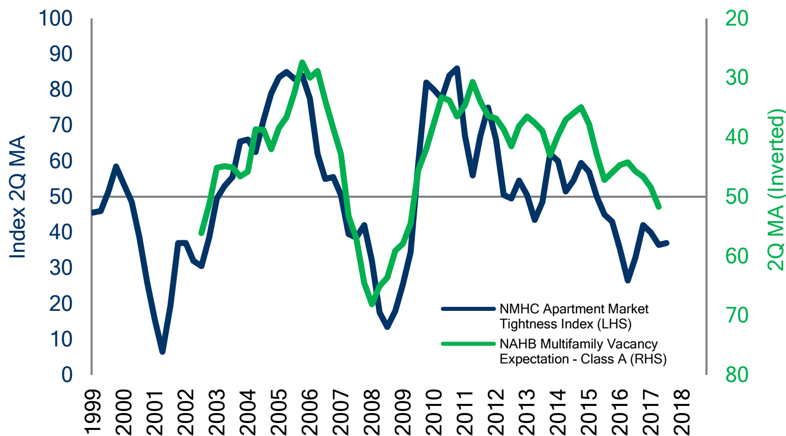


Source: REIS, Inc., Bloomberg, LP
Includes six major metros: New York, Washington, DC, Los Angeles, Boston, Chicago, San Francisco



Source: REIS, Inc.

Also, when looking at expectations from industry experts it's clear that there is room for vacancy rates to continue rising. The two surveys in the chart below indicate that stakeholders view the space negatively and this represents a trend that has persisted for a number of years.



Source: National Multi-Family Housing Council, National Association of Homebuilders

Implementation continued…

Short REITs: relative value construction

By shorting apartment REITs against other REITs, simply closing that premium could lead to healthy gains. In the post-crisis period, apartment REIT shares traded at almost 12% premium over other REITs, based on price-to-FFO multiples. This makes intuitive sense to us given the tailwinds from which apartments benefited, but, given our negative thesis on the space, we believe a premium at this point is unwarranted. The relative value construction also helps to defray the cost of the dividend.

Regional banks

In recent history, banks have traded with correlation to interest rates, albeit in the opposite direction. To that end, a portfolio that consists of apartment REIT shorts in addition to regional bank shorts could help mitigate some of the embedded duration correlation. Our focus within the regional bank space is on companies with high proportions of CRE exposure and a footprint in problematic geographies. Regional banks haven't seen proportional loan growth in single-family mortgages and credit cards (in fact, this is where the national brands have pushed smaller players out). Instead, regional banks have grown assets through C&I and CRE lending. The beauty of regional banks is that expressions can be fine-tuned to target whatever region, city, or lending activity is of most interest.

CMBX Indices

We find CMBX to be a more challenging option for the multi-family short. Seasoned multi-family loans have benefited from property price appreciation over the past five years, while more newly originated loans have actually had lower LTV's as the riskier lending has come from mezzanine loans. Additionally, CMBX tranches are collateralized by diversified property types, not just multi-family. As the contagion effect to other property types (hotel, office, retail) picks up, CMBX becomes a more attractive option.

Timing is still uncertain
The timing on when this story unfolds and becomes disruptive is highly uncertain. We believe, however, that the implementations we're focused on allow us to maintain the positions for significant periods of time without incurring significant costs in the meantime. In addition, we believe it's better to be early on a theme like this given the difficulty jumping onto a theme after prices have already moved. Investors often try to add to short themes after a correction has already occurred, which is what typically leads to bear market rallies as they add too late and are ultimately squeezed out. Our preferred strategy is to focus on implementations where costs are relatively modest for the time being. We will also look to increase the beta to the theme over time as the narrative takes hold and we become less concerned with carry costs.

Bottom line: Multi-family is overvalued and due for a correction
There's a number of triggers and pressure points on the market including diminishing demand, heavy supply, and rich valuations. As the Federal Reserve continues to normalize rates, that will only add pressure to the space, a space that's being fueled by a cast of characters similar to the subprime mortgage crisis in 2008. We believe the implementations we've identified allow for significant asymmetry and staying-power and that a theme such as shorting multi-family real estate has room in a variety of portfolios.

We also believe that multi-family may not fall in isolation, which could cause a cascade across other CRE areas. Retail is a well-flagged area of concern within CRE. We also have concerns about office real estate as that has suffered as geographic dislocations persist and companies use less space per employee. Hotels are also something that's on our radar. In addition to increased cap rates, hotels face structural challenges to their business model from companies such as Airbnb. It's not hard to imagine an outcome where CRE prices have a large correction and the knock-on effects from that type of correction. In our opinion, a correction in CRE also is not contingent on an economic slowdown or correction. While we believe that it can contribute to economic weakness, we think that the conditions are in place for a correction even without an exogenous shock. We don't believe the implications are as large as the financial crisis, but we do think that it can cause significant pain for stakeholders across a number of industries and investment pools.

Putting all the pieces together, CRE seems to be precariously perched at a time of tightening monetary conditions. We hope analysis like this is useful to our clients and highlights some of the areas of research we find interesting and actionable in markets.

Good luck investing.

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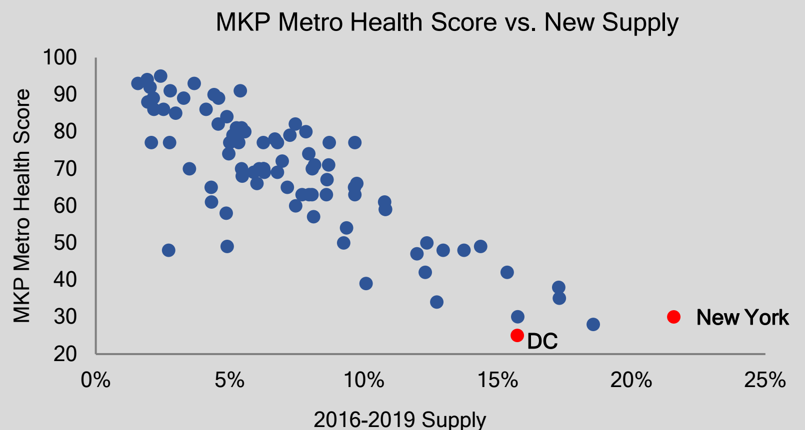
Sample Analysis: MKP Metro Health Score

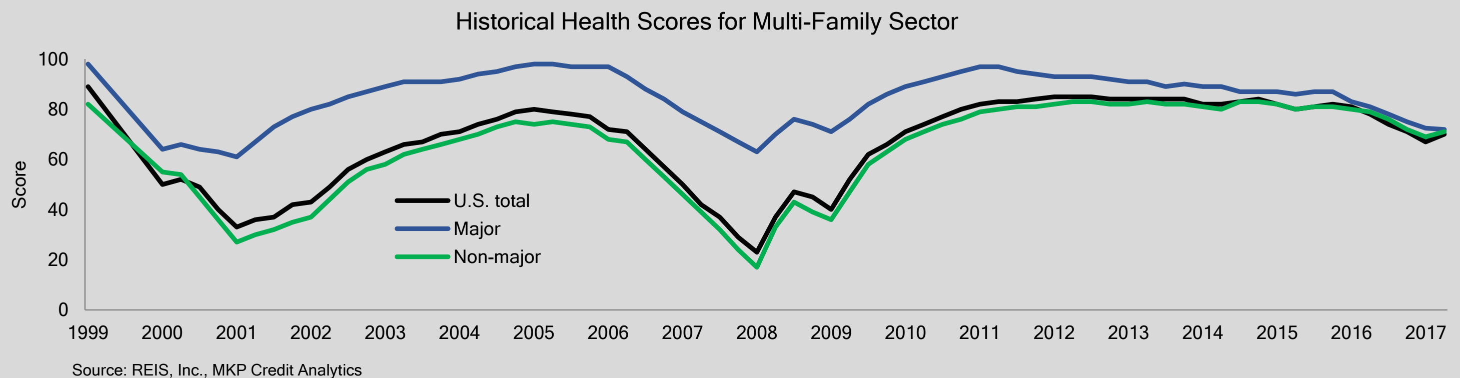
The MKP Metro Health Score is a proprietary tool used to assess the strength of the CRE market at the metro and property type level. There are three primary factors that drive the metro health score for each market:

1. Supply – measured by the volume of new completions
2. Demand – measured by the net absorption
3. Vacancies – measured by both the level of vacancies and the year-over-year change in vacancies

The scores for each of the factors is calculated as a percentile of its long-term history. Those scores are then aggregated at the metro level to formulate a singular health score for the metro between 0 and 100.

We believe the MKP Metro Health Score to be predictive of the one year forward change in NOI. The recent history has shown a decline in this score for multi-family, as we have reached the lowest levels since 2010. Additionally, we have seen a pickup in dispersion across metros, with the markets facing the largest volume of completions showing the weakest health. For example, New York and DC currently show scores of 30 and 25 respectively, which we classify as highly problematic.





Source: REIS, Inc., MKP Credit Analytics

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