

Multifamily Property Valuations

- Multifamily property values fell 40% from peak to trough. Since reaching a low in 2009Q3, values have recovered to 2004 levels but are still 25% lower than the peak in 2007Q1.
 - The multifamily cap rate in February 2012 was 6.5%, 34 basis points lower than the monthly average from 2000 to the present. The spread-to-Treasury was 454 basis points, 170 basis points higher than average.
 - Supply of new multifamily units is on the rise but is still well below historical levels.
 - Pro forma analyses used for valuation at acquisition can inform current cap rate levels, historical levels and differences across markets.
 - Looking forward, our baseline forecast is for the national average cap rate to be about 7% in 5 years. More stressful scenarios put cap rates back up to the range of 8% over the same 5-year period.
 - Investigation of the two recent Freddie Mac 7-year securitizations shows that the underlying collateral will continue to perform at balloon, if rent growth rates are consistent with historical apartment revenue growth.
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Current Multifamily Values & Cap Rates in Historical Context

The multifamily asset class has outperformed many sectors of the economy in the years following the “Great Recession.” Market fundamentals have been strong during this period, aided by increases in the renter population and decreases in the home owner population. Consistent with improving market conditions and lower interest rates, property values have been increasing since 2009. Market observers may have concerns about whether current multifamily property valuation is ahead of

market fundamentals and expectations. In this paper, we will review multifamily market conditions and present evidence that supports current industry market valuations.

Multifamily property valuation depends on many factors. One key consideration is the amount of capital flows into multifamily and commercial real estate investments. Investors allocate funds across asset classes based on relative returns of investment alternatives, including equities, bonds, real estate and other investment types. In addition, each investor also considers firm-specific portfolio management issues like target weightings across asset classes. At the transaction level, property-specific considerations are important too. Investors estimate pro forma cash flows they expect from the property over the life of their investment. Two properties with the same current net operating income (NOI) may be valued differently based on expectations for future cash flows. Those forecasted cash flows will differ based on property characteristics like location and amenities as well as on future rental market conditions. In our analysis, we are taking a market-level view and do not consider property-specific characteristics like differing amenities. Similarly, we do not consider individual firms' target asset allocations. We focus instead on economics and market drivers. We start by reviewing historical multifamily values.

Exhibit 1 – Multifamily Value Index & Cap Rates

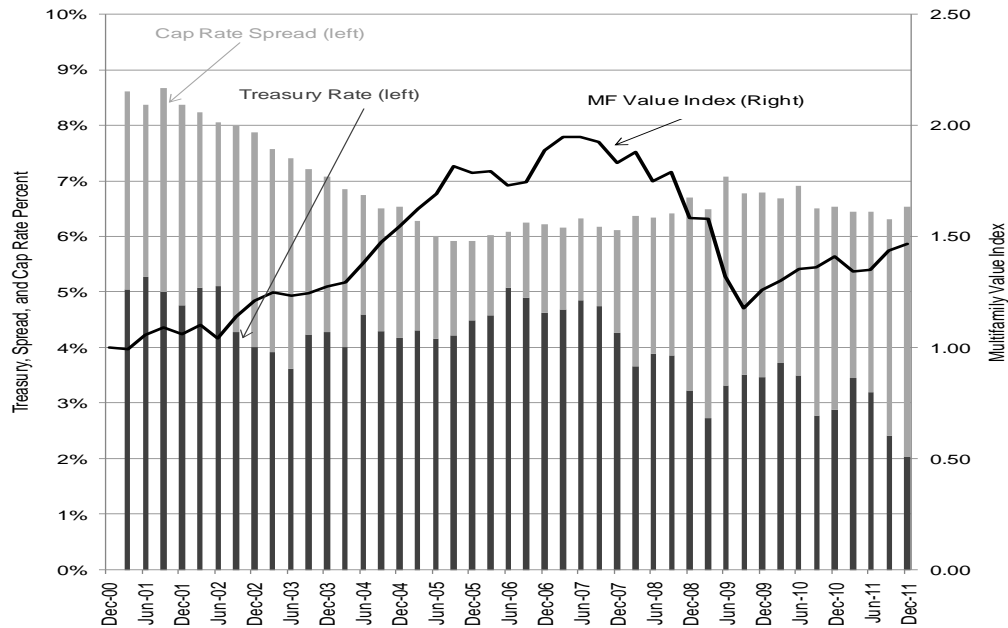


Exhibit 1 shows that during the recession of 2007 and 2008, multifamily values fell dramatically. From the peak in 2007Q1 to the low in 2009Q3, multifamily values fell

by 40% over just 2½ years, as measured by the apartment component of the Moody’s REAL Commercial Property Price Index (CPPI). Values have begun to pick up since then and have risen 25%. Cap rates, which are used to value properties, are relatively low compared with the historic records. According to Real Capital Analytics (RCA), the most recent multifamily cap rate available is 6.5% as of February 2012 with a 454 basis point spread over the Treasury rate. The lowest quarterly rate in RCA history (going back to 2001) is 5.84% in the 3rd quarter of 2005. The difference between that period and the present is that the cap rate spread to Treasury was much thinner 163 basis points. Exhibit 2 shows a summary of current cap rates and spreads across commercial real estate sectors and also provides a historical perspective.

Exhibit 2: Cap Rates & Spreads by Commercial Property Type

	Multifamily	Office	Industrial	Retail
Current				
Cap	6.3%	7.4%	7.8%	7.4%
Spread	424	536	577	537
Average				
Cap	6.8%	7.9%	8.2%	7.8%
Spread	280	387	415	372
Maximum				
Cap	8.6% (2001Q3)	9.8% (2001Q1)	9.8% (2001Q4)	9.9% (2001Q2)
Spread	424 (2011Q4)	538 (2009Q4)	577 (2011Q4)	537 (2011Q4)
Minimum				
Cap	5.8% (2005Q3)	6.5% (2007Q2)	7.0% (2007Q2)	6.7% (2007Q2)
Spread	104 (2006Q2)	166 (2007Q2)	215 (2007Q2)	183 (2007Q2)

Cap rate spreads on all commercial property types are 130-175 basis points wider than average.

Source: Real Capital Analytics, Federal Reserve

Across all asset types, current cap rates are generally within 75 basis points of historical minimums and 30-80 basis points lower than historical averages. Multifamily cap rates are consistently the lowest across asset classes because of more predictable lease turnover and cash flows that are generally less volatile. Most asset classes are at or near their highest spread levels in the historical data. Spreads for all asset classes are about 130 – 175 basis points wider than long run historical averages. As Treasury rates rise, we expect that cap rates will go up at a slower pace, partially based on the current wide spreads.

An alternative source for historical cap rates is the American Council of Life Insurers (ACLI), an industry group that has tracked members' commercial real estate investments going back to the mid 1960s. As reported by ACLI, cap rates on life insurers' investments in apartments are currently at a rate similar to the historical low of 5.6% in 2009Q4. Life insurers generally invest in the highest-quality properties, which explains the lower average rate than in the broader market. Based on ACLI data, the average spread-to-Treasury since 1965 is about 206 basis points.

Pro Forma Equity Investor View

Combining historical information on fundamental market conditions and data on historical cap rates, we can get perspective on relative valuations over time. This is due to the connection between property fundamentals and valuation. Investors prepare cash flow forecasts of property fundamentals including rent growth, expense growth, and property vacancy. Netting out debt payments, depreciation and taxes, one is able to determine after-tax cash flows. By performing an internal rate of return (IRR) calculation on those cash flows, the borrower determines its investment return for a given value. With this approach, investors calculate the price that will result in the target return on the investment.

This type of pro forma analysis can be done across properties, markets, and historically to inform property valuation trends. As described above, changes to the investment cash flows will lead to changes in property value. For example, when the mortgage rate falls, debt payments are lower and the lower cost of financing results in higher net cash flows available to the leveraged investor. The effect of this change increases the investor's return. In a competitive market, investors may need to make a more aggressive bid (higher value for the same cash flows, implying a lower cap rate) in order to purchase the property. An example is shown below.

Exhibit 3 – Pro Forma Example, Sensitivity to Mortgage Rate

	Scenario #1	Scenario #2	Scenario #3
Mortgage Rate	5.0%	4.5%	4.5%
Cap Rate	5.5%	5.5%	5.3%
Property Value	18,193,570	18,193,570	18,851,274
IRR	12.0%	12.6%	12.0%

Source: Freddie Mac

Changes in mortgage rates do not result in equal changes in cap rates, the changes are less than 1-for-1.

The property above has a \$1 million NOI and is leveraged to 80%. The table shows sensitivity to changing the mortgage rate – holding property cash flows constant. In the first scenario the mortgage rate is 5% and the property is valued at \$18.2 million (a 5.5% cap rate) based on its cash flows and target 12% return. In the second scenario, only the mortgage rate is changed – it is dropped to 4.5%. In this scenario,

the net cash flows to the investor are higher because of the lower debt payments, and the investment produces a 12.6% percent return, given the same value. However, the investor may bid more aggressively. With a value of \$18.85 million, the investor achieves the original 12% target return on equity (ROE). As we see, if the note rate falls by 50 basis points, the cap rate would be 20 basis points lower given the same ROE target. This same change in cap rates for changes in interest rates happens in reverse as rates rise, but still the changes to cap rate are less than the changes in mortgage rate.

Now, assuming a 12% target return, the analysis was performed across several markets as of 4Q2011. The mortgage rate will be the same in each analysis, but market level rent and vacancy information from REIS, one of the major sources for commercial real estate performance information, differ across markets. In New York the analysis produces a current theoretical cap rate of 4.4%, while in Las Vegas the calculated rate is 6.2%. A selection of results is shown below.

Exhibit 4 – Pro Forma Cap Rate by Metro

Metro	Cap Rate
New York	4.4%
San Jose	4.7%
Boston	4.9%
Los Angeles	5.2%
US-Top50	5.5%
Atlanta	5.7%
Phoenix	6.0%
Detroit	6.1%
Columbus	6.0%
Las Vegas	6.2%

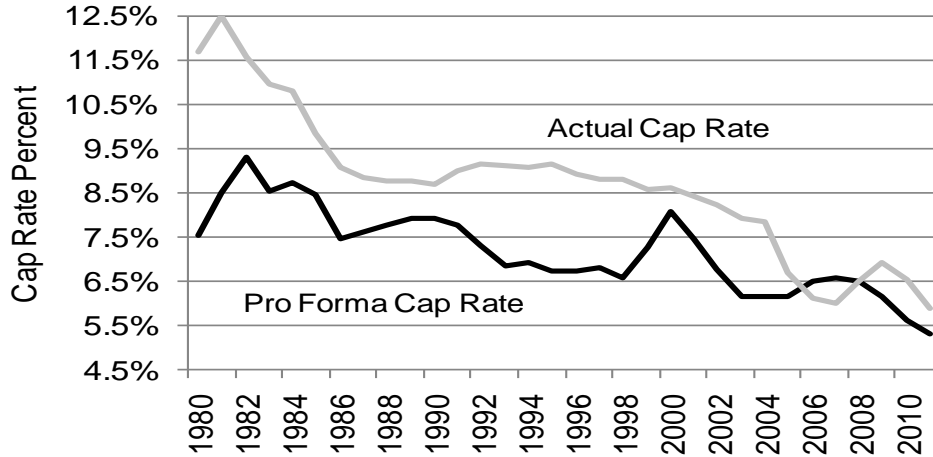
Source: REIS, Freddie Mac

As discussed above, there would be submarket and property-specific factors that would further move property-specific cap rates from the metro market averages, but this provides some insight into differences in market-level cap rates. The analysis is intuitive generally showing healthy high-growth markets with the lowest cap rates. Actual transaction cap rates vary more, based on the property-level differences.

Doing the same analysis across time, we can learn about implied cap rates historically. Here, we use period-specific mortgage rates, rental growth rate and

vacancy rates. It is interesting to compare the pro forma cap rate to the actual average cap rate in the market.

Exhibit 5 – Cap Rate History, Comparison to Pro Forma Cap Rate



Source: ACLI, REIS, Freddie Mac

Exhibit 5 shows that in general, the pro forma cap rate has been lower than the actual average cap rate from the ACLI. When cap rates go below the theoretical cap rate, it is an indicator that valuations are more aggressive. The only time that cap rates have been below the theoretical cap rate was 2006 and 2007. Performance of loans originated during those years was certainly weaker than most historical cap rates, especially as measured by CMBS loan performance. The ACLI cap rate at the end of 2011 was 5.9%, while the theoretical pro forma cap rate averaged 5.3%.

Current cap rates are above theoretical cap rates based on a leveraged investor pro forma valuation perspective.

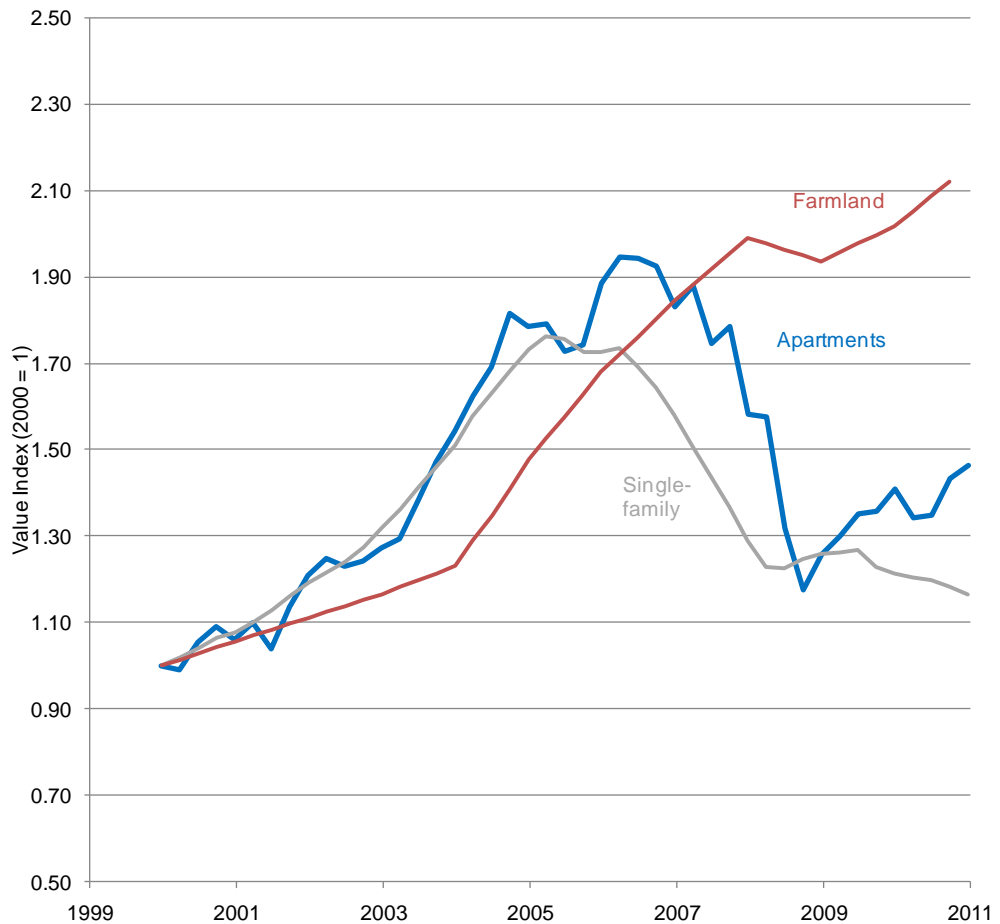
The equity return was held constant in this historical analysis at 12%. An alternative would be to add an equity risk premium to the Treasury bond rate, to get a target return that would vary with market conditions. Using a historical equity premium of about 7.25% over the Treasury bond, the required rate of return would be higher in the 1980s and lower today – implying that the difference between the theoretical cap rate and actual cap rate would be wider than presented in the chart. In fact, current target returns today plus the equity premium imply cap rates lower by 50-75 basis points than what is presented. With some confidence regarding current cap rate levels we now look to compare multifamily value to other assets.

Exploring Multifamily Values – Price Levels versus Other Assets

Exhibit 6 shows apartment values from the Moody’s/REAL Commercial Property Index (CPPI). As discussed above, cap rate levels are currently low but values have

not risen to unprecedented levels. In fact, as of 2011Q2, values were still down 25% from their peak in 2007Q1.

Exhibit 6 – Value Indices across Asset Classes



Source: Moody's CPPI, S&P/Case-Shiller® Home Price Index, Department of Agriculture

Multifamily valuation has not grown consistent with familiar bubbles and has grown less than 1 percent per year more than inflation.

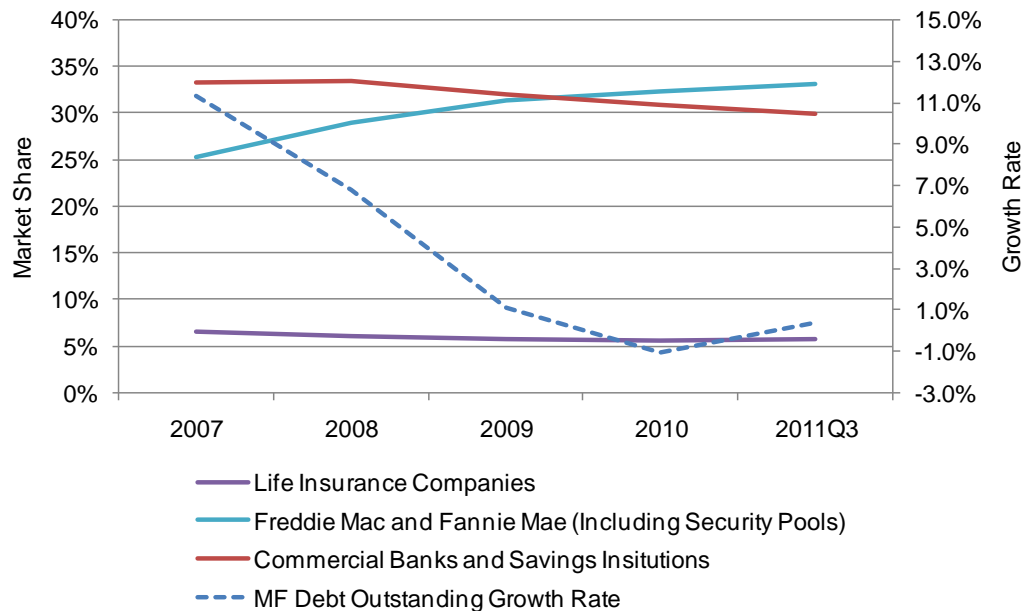
We can get further context for values by considering the long-term growth rates in value and compare that against other assets. The chart shows that apartment values fell during the same time that single family house prices fell. Apartment values have gone up 25% since their 2009 low. By comparison, the value of farmland has been steadily increasing and is now twice the level it was in 2000. While there are other drivers of values of farmland, it is another type of real estate asset that has risen significantly over the past decade. During the more than ten-year history shown, apartment values have risen 2.9% per year on average. Over this same period, inflation, as measured by the CPI, excluding food and energy, grew 2.0% per year. Looking at commodities over the same period is striking since the price of gold went up 17.6% per year, and gasoline went up just under 9% annually.

Considering asset bubbles of the past, in the five years leading up to the peak of single family house prices, as measured by the S&P/Case-Shiller Home Price Index, prices rose over 12% per year. In the last five years, however, multifamily housing prices, as measured by CPPI, have fallen 4.9% per year. Clearly, multifamily asset prices do not appear to be moving towards a bubble comparable to the single family housing bubble of 2005-2007.

Debt Flows to Multifamily

It is important to also look to the amount of capital flows into the multifamily sector to see if easy capital can be a source of imbalance in the markets. To review this, we look at debt outstanding since 2007. Exhibit 7 shows market shares of key market participants and overall growth in the debt market.

Exhibit 7 – Multifamily Mortgage Debt Outstanding



Source: Federal Reserve Board, Freddie Mac

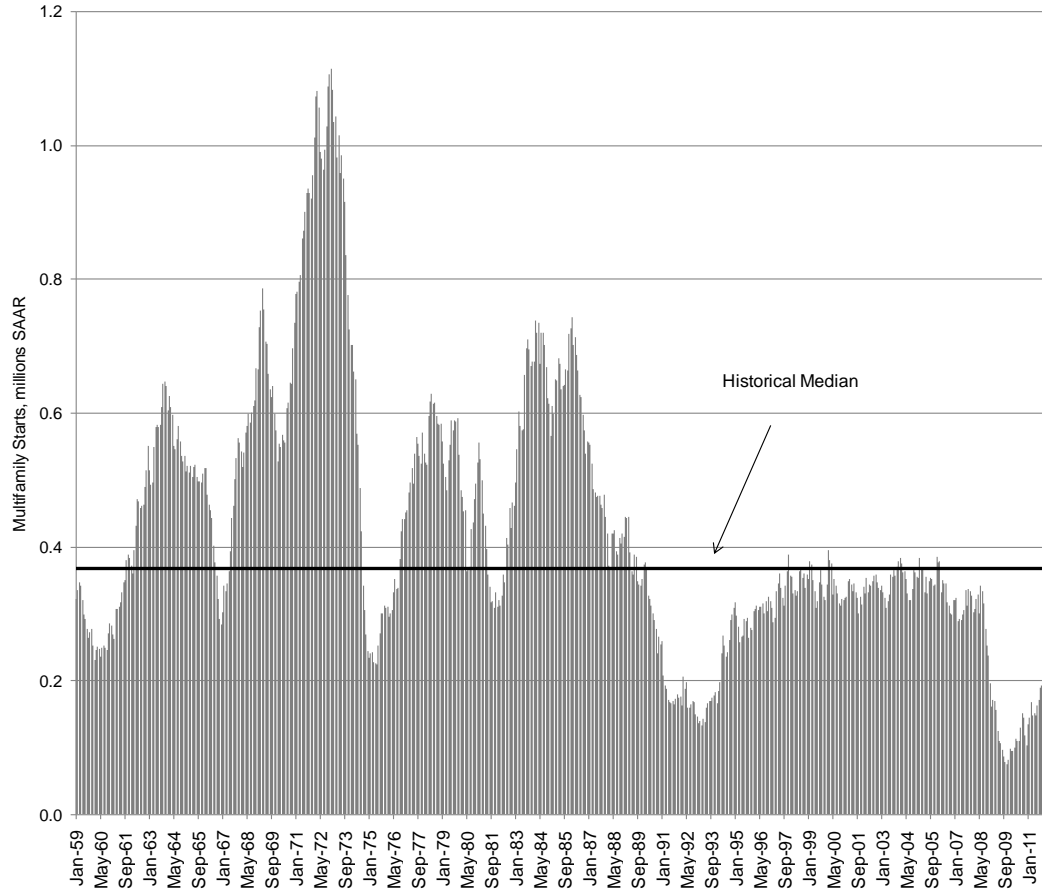
Multifamily mortgage debt outstanding is roughly flat at 2008 levels.

Exhibit 7 shows that growth in multifamily mortgage debt outstanding has slowed dramatically since the recent recession. The share of the market held by Freddie Mac and Fannie Mae increased during this period, which is consistent with the policy of maintaining liquidity and a stable flow of funds to the market throughout the cycle.

Similarly, another factor that can impact values is increases in supply that drive a market out of equilibrium. Economic reports are showing the beginning of a recovery in housing starts, with most of the pickup in starts on the multifamily side.

On the surface, this may raise some concerns, but it is worth noting that MF starts are still just a quarter of all new starts.

Exhibit 8 – Multifamily Starts, Up from Historical Lows



Source: U.S. Census Bureau

Multifamily starts are up, but are still low by historical standards.

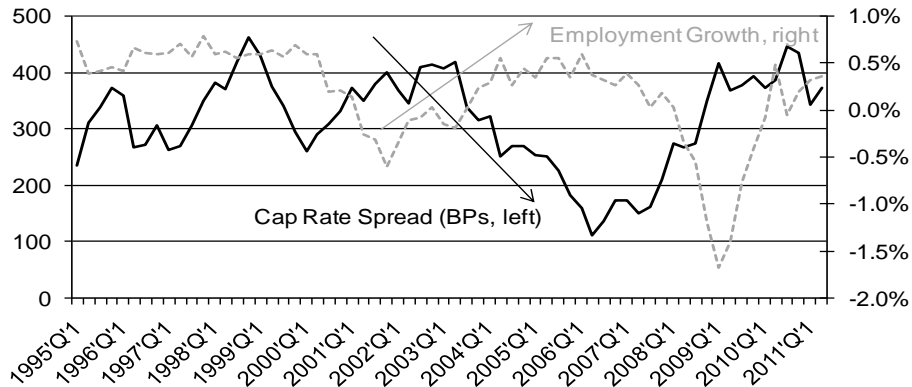
Exhibit 8 shows that multifamily construction starts are up. However, they are only up from historical lows. The number of starts is still half of the median historically and is still not approaching the normal levels of the last decade, let alone the peaks of the 1980s and 1970s that coincided with high rates of household formations.

Forecasting Future Cap Rates

With a better understanding of the current environment, we now move to consider a forecast of cap rates. The movement of cap rates is influenced by the overall economy, employment trends and demand for real estate. For example, an

improvement in the labor market, which generally leads to more household formation, tends to be negatively correlated with the cap rate spread. The negative correlation is evidenced in falling spreads as interest rates rise. Exhibit 9 shows that cap rate spreads respond negatively to employment growth.

Exhibit 9 – Cap Rate Spreads & Employment Growth



Source: Real Capital Analytics, Moody's Economy.com

During the past 15 years, the average cap rate spread over the 10-year Treasury rate has been around 300 basis points (bps), even though it has fluctuated over different business cycles. In the most recent recession (2007-2009), the multifamily cap rate spread rose from approximately 100 basis points to the current 424 basis points. The significant loss of jobs, less enthusiasm towards real estate investments, and tight credit market conditions played important roles in this rapid change.

In spite of the high spread, the cap rate is still low compared with the history. The Federal Reserve's low-rate policies supporting the struggling economy are the major reason for low interest rates in general. As a result of the low rates, the overall cap rate dropped in 2010 and 2011 to the current level around 6.3%. With improving market conditions – like improving labor markets, favorable demographics, and a shift from homeownership – we expect the cap rate spread will revert back towards its historic average level as Treasury rates rise from their historical lows.

Our internal analysis focuses on the current interest rate, yield curve and employment trend in order to forecast the future multifamily cap rate spread. Although many economists expect the interest rate will move up, the current flat yield curve and slow economic recovery imply a slow rise (rather than a quick surge) in interest rates. Meanwhile, employment is expected to grow reasonably, 2% to 3%

annually, in the next several years. As a result, we expect that the 10-year Treasury rate will increase 200 bps in the next five years, consistent with other market forecasts. Freddie Mac's base models forecast that the cap rate spread will decrease 150 bps over that same period. The overall multifamily cap rate level will likely be kept at a level around 7%, and possibly grow 50 to 100 bps from today's rate. Exhibit 10 shows a number of scenarios illustrating the sensitivities to forecasting interest rates and employment growth rates. If the overall economy grows strongly, it is possible that the current monetary policy would change quickly and dramatically. The additional scenarios capture this possibility.

Exhibit 10 – Cap Rate Forecast Scenarios

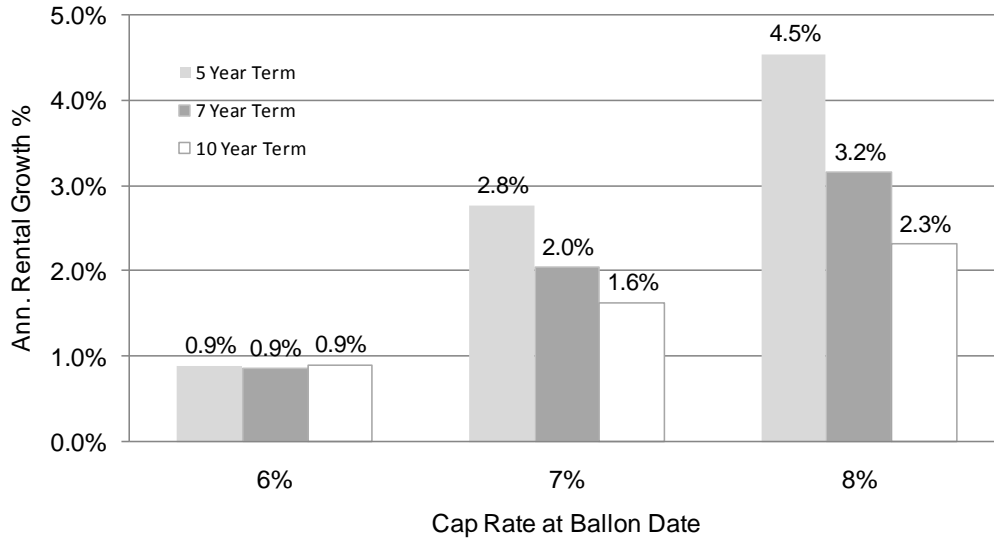
Scenario	10-year Treasury Rate in 5 years	Employment Growth	Cap Rate Spread	Cap Rate (Year 2016)
A	4.30%	1.0%	3.30%	7.60%
B	4.30%	2.5-3%	2.50%	6.80%
C	5.50%	1.0%	3.20%	8.70%
D	5.50%	2.5-3%	2.40%	7.90%

Source: Freddie Mac

Exploring Current Values – Required Rental Growth

We can look at how an increase in cap rate and rental growth will impact multifamily mortgages at balloon maturity. Exhibit 11 shows rental growth rates required for mortgages to maintain their origination LTV – testing sensitivities to increasing cap rates. Assume a starting cap rate of 6% on a loan with two years of interest-only payments before starting to amortize. The exhibit shows the rental growth rate – assuming a 3% expense growth rate – that will produce a maturity LTV equal to where the loan started.

Exhibit 11 -- Future Cap Rate Implications Forward Rental Growth



Source: Freddie Mac

For example, if cap rates go up to 7%, a mortgage with a 6% cap rate would need a revenue growth rate of 2.8% per year to maintain its LTV (say 75%) and qualify for a new mortgage similar to its current financing. Increases in cap rates during the term of a 5-year mortgage make required growth rates quite high. For example, if the starting cap rate on this property with a 5-year term mortgage increases 200 basis points to 8% at maturity, the property would have to grow at 4.5% per year to maintain its original LTV at the time it reaches maturity. It is for this reason that shorter-term mortgages often come with lower proceeds. The same situation for a 10-year mortgage requires only a 2.3% annualized growth rate.

Applying this same analysis on the collateral in our K-705 and K-706 issuances of multifamily bonds, as an example, the average annual revenue growth required of the loans in the portfolio is 1.8%, if the going-out cap rate is 8%. If the new cap rate is 9%, the necessary average growth rate is 2.8%. Similarly, making the going-out cap rate 200 basis points higher than the going-in cap rate, the implied revenue growth rate is 2.1% on average, and only 7 of the 133 loans require a growth rate greater than 3% per year.

With these required growth rates, we now turn to expectations for rent growth. Rental growth rates are expected to be quite strong in the near-term forecast. For example, REIS is predicting that rent growth will be between 3.6% and 3.8% for 4 of

the next 5 years. Axiometrics, an apartment research firm, is forecasting REIT effective rental growth rates to be above 5% in both 2012 and 2013. They also expect the vacancy rate to be near 3.5% in 2013. Further, we have also found empirically a possible relationship between rising interest rates and apartment rent growth, suggesting that strong rent growth is more likely with increases in Treasury Rates. In REIS data, the correlation is over 50% and in our own historic data it is higher. Hence, we feel confident that multifamily property valuation will maintain a healthy level at maturity, despite balloon risk concerns.

Conclusion

It is an unusual time for multifamily fundamentals and capital markets. With interest rates low and the stability of cash flows from rental properties attractive, the asset class is getting more attention than usual. On the surface, it is easy to raise red flags when looking narrowly at some factors, such as cap rate, impacting the market. Yet, with a more broad view, it becomes evident that current valuations in the multifamily market are not at the edge of a cliff. Interest rates will almost certainly rise in the medium and long term, which will have a downward affect on asset valuation. However, there are offsetting factors (e.g., rent growth and new multifamily supply) that will push values up. With the understanding that today's valuations are justified and forecasts of fundamentals are strong, market participants can be confident that the positive attention that the multifamily sector has drawn in recent years is not doomed to a rapid shift downward and that multifamily markets remain healthy.