

Cap Rates Demystified

Monday, August 26, 2019

By: *Tony D'Silva Kamath, MAI, MRICS and Robert J Meulmeester, MRICS*

Clients and students are always fascinated by capitalization rates, or “cap rates”: Why are they different from place to place, property type to property type, and overall building quality reflected by its construction and management. Moreover, what do those cap rates really mean? How should they be interpreted and utilized for investment decision-making or other purposes such as a refinance or tax assessments? In this article, we define and analyze cap rates. We then discuss what is driving cap rates to further explain the observed cap rate differences amongst properties.

What Are Cap Rates?

Typically, the cap rate is represented by the formula: $R_0 = \frac{NOI_1}{V_0}$ where R_0 is the overall going-in cap rate at the present time which equals forecasted first year net income from a property indicated as Net Operating Income for year 1, or NOI_1 divided by the value, or price paid for such a property at the beginning of year 1, indicated as V_0 . The consensus in the commercial real estate circles is that direct market extraction of sourcing cap rates from comparable sale transactions is the preferred method.

We note that NOI represents only the property specific income and expense items excluding items such as interest, income-taxes, depreciation, and amortization; it thereby manifests itself as an overall profitability ratio exhibiting the income producing capacity of a property irrespective of any financing or impact from accounting or the tax code resulting in items such as depreciation and amortization. In fact, NOI for real estate practitioners is what corporate finance practitioners use as Earnings Before Interest, Tax, Depreciation and Amortization, or EBITDA to evaluate a company's performance without having to factor in financing decisions, accounting decisions or tax environments. Notably, a common mistake is made when real estate practitioners assume that a cap rate is the inverse of the price to earnings (P/E) ratio used in stock analysis considering that earnings for stock analyses typically refer to after-tax net income whereas the cap rate considers income similar to EBITDA as explained above. Then again, conceptually, it is somewhat similar in nature and use.

Cap rates may also be found by applying alternative methods such as a mortgage-equity rate method, also known as the band of investments which essentially works like a Weighted Average Cost of Capital, or WACC. WACC is a calculation of the cost of capital in which each category of capital, i.e., equity and debt are proportionately weighted as used by corporate finance practitioners. Considering that most real estate transactions are financed by debt and equity, this method is a helpful alternative to derive a cap rate. The mortgage equity rate is defined as follows: $R_0 = \frac{M}{V_0} (R_m) + \frac{E}{V_0} (R_e)$ whereby M is the loan amount as a portion of the value of the property, or loan to value (LTV), multiplied by R_m which is the cost of the debt capital, and E represents the invested equity, or the balance of total invested capital as a portion of the value of the property multiplied by R_e which is the cost of the equity capital.

Cap Rates Demystified

Another alternative technique is the constant growth cap rate method which is similar to the Gordon Growth Model also known as the dividend discount model. The Gordon Growth Model represents a method for calculating the intrinsic value of a company's stock price independent of the current market conditions but considering its anticipated dividend cash flow capitalized by the investor's required rate of return minus the anticipated perpetual dividend growth rate. Similarly, for real estate practitioners, this method to find the cap rate represents a derivation from a yield or discount rate (Y_0) which is then adjusted for its anticipated perpetual change in cash flow (Δ) i.e., increase or decrease in future income, as follows: $R_0 = Y_0 - \Delta$.

Differences in Cap Rates

Cap rates between property types, location and building quality and management show considerable differences typically driven by the investor's perceived risk associated with its overall profitability. Generally, an investor desires, or requires a higher return when risk increases. Therefore, an overall similar property with similar income and quality of the building and its management, however, located within an inferior location based on its demographic and economic challenges, is likely to have a higher cap rate as compared to a similar, or comparable property within an area that exhibits continuous improvements in its demographics and economy.

To further analyze those differences in risk, we dissected the constant growth cap rate formula $R_0 = Y_0 - \Delta$, and defined the components of the discount rate, or required (expected) rate of return: $Y_0 = R_f + RP$. R_f is the long-term risk-free rate which is typically considered to be the 10-Year Treasury which drives overall mortgage interest rates, and RP which represents the property-specific risk premium. RP includes various components of risk associated with any property investment such as its location, building quality, tenant mix, management, and liquidity. When inserted into the constant growth cap rate technique, the cap rate is built up as follows: $R_0 = R_f + RP - \Delta$. Oftentimes, $RP - \Delta$ is referred to as the spread between cap rate and 10-Year Treasury.

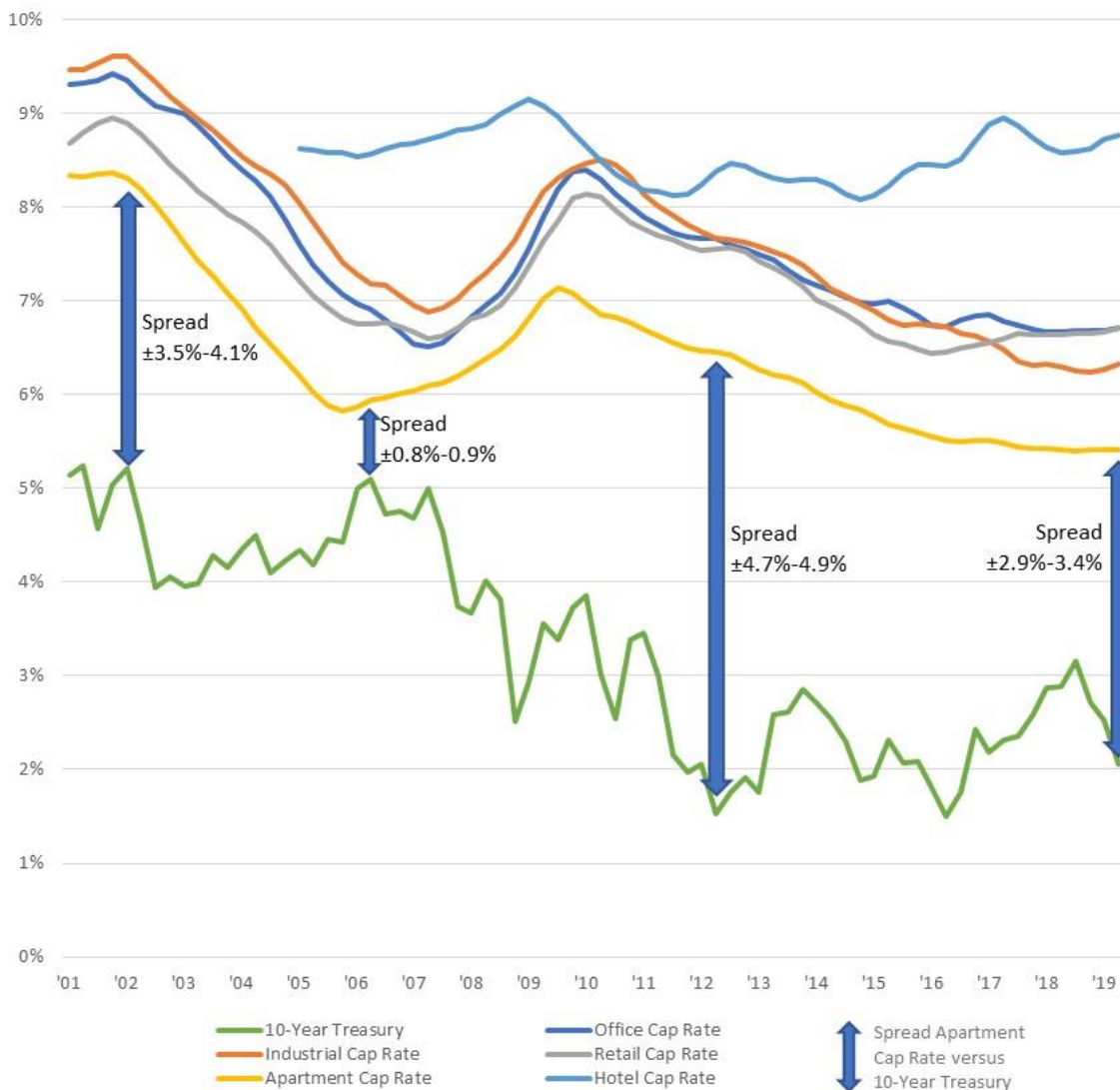
It is generally and popularly assumed that cap rates move in lockstep with 10-Year Treasury. However, recent empirical evidence indicates that 10-Year Treasury may only have a limited impact considering its historical rate increase during the time periods 2002 through 2006, 2013 through 2014, and 2016 through 2018 whereas cap rates actually decreased during those time periods. This is further illustrated on the following graph "Cap Rates versus 10-Year Treasury 2001 – 2019" compiled by the authors showing the 10-Year Treasury yield curve per data from the US Treasury and cap rates sourced by Real Capital Analytics for apartments, hotels, industrial, office and retail properties. For example, note the cap rate spread between apartment cap rates and 10-Year Treasury. In fact, its spread shrunk due to a lesser risk premium or higher cash flow growth, or both.

Moreover, the opposite was observed during the time periods 2007 through 2009 and most recently in 2018 and 2019 when 10-Year Treasury decreased whereas cap rates actually increased or remained constant. Hence, as spreads increased caused by higher risk premiums or lower (or zero, or even negative) cash flow growth, or both. Overall, it appears that cap rates for industrial,

Cap Rates Demystified

office and retail show similar trends whereas hotel cap rate show even less correlation with the 10-Year Treasury.

Cap Rates versus 10-Year Treasury 2001 - 2019



Source: Real Capital Analytics, US Treasury, International Valuation & Advisory and RJM Worldwide.

According to “Real estate: The impact of rising interest rates”, a research paper authored by Martha Peyton, Ph.D. and Edward F. Pierzak, Ph.D. from TIAA Global Real Assets Research in the Summer of 2016, correlation between the 10-Year Treasury and cap rates may only be a moderate 0.7; the authors concluded that changes in the 10-Year Treasury do not necessarily result in changes in cap rates and the cap rates are influenced by a wider network of variables, including real estate fundamentals, capital flows and investor risk-appetite.

A similar conclusion was reached in the research paper “What Really Drives Cap Rates?” by Dr. Peter Linneman, NAI Global Chief Economist. Both research papers indicated the driver to be

Cap Rates Demystified

changes in the spread, i.e., $RP - \Delta$. Dr. Linneman specifically concluded the driver to be mortgage flow which he captured as the liquidity premium, a component of RP. The liquidity premium is considered extremely counter cyclical as this risk aspect decreases in good economic times with expanding capital markets and increases in bad economic times with contracting capital markets.

The earlier referenced time periods of decreasing cap rates while 10-Year Treasury actually increased were indeed periods of softening lending standards exhibited by overall less strict requirements resulting in a greater mortgage flow, or lower liquidity risk premium further decreasing the spread. In contrast, the referenced time period of increasing cap rates while 10-Year Treasury actually decreased were characterized as periods of tightening exhibited by increasingly stricter lending requirements resulting in a lower mortgage flow, and hence, a higher liquidity risk premium further increasing the spread. Interestingly, hotel lending has always remained more restrictive which may explain the much larger spread and even lesser correlation with 10-Year Treasury as illustrated on the graph "Cap Rates versus 10-Year Treasury 2001 – 2019".

What Does It All Mean?

When analyzing properties, one should realize that a cap rate does not determine the value as it is merely a profitability ratio. In fact, it is a helpful short cut for purposes of comparison. The real value determination is the result of the components that make the cap rate which is the expected or required rate of return for an investor, i.e., $R_f + RP$ and its cash flow growth opportunity, i.e., Δ . Notably, the expected rate of return is highly dependent on the risk preferences of any investor.

Different investors have different risk bearing characteristics ranging from being risk seekers to those who are risk neutral, and further to those who are risk averse. The more risk is perceived to be taken, the higher the expected return. Although certain aspects of the cap rate are perceived to be quantifiable, the perceived risk is likely to be highly dependent on the investor's risk appetite further considering the fact that any real estate investment is heterogenous in nature as no two pieces of real estate are alike. In the end, it is not unreasonable to assume that determination of risk and therefore required return also includes thoughtful, individualized judgements that are hard to measure. As we all like to make this a rational process, we probably just have to accept that real estate investing is not a science and still more like an art.

About the Authors:

Tony D'Silva Kamath, MAI, MRICS

Mr. Kamath is the Principal and Managing Director of International Valuation & Advisory LLC. He has over 25 years of domestic and international professional consulting and executive experience, and over 15 years of commercial property valuation and litigation-support experience.

Robert J. Meulmeester, MRICS

Mr. Meulmeester is the Principal and Founder of RJM Worldwide LLC. He is an entrepreneur with twenty+ years of hands-on international experience in real estate investments, (re)development/repositioning, finance and capital-raising, site selection, valuation and market studies.