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What's it Worth? Deriving Your Capitalization Rate

by Ray Alcorn

How do you know what a commercial income property is worth? How do you know that you can get your desired return on your investment? Is there a way to calculate the maximum you can pay for an investment and still achieve your investment goals? This article will answer these questions and more about valuing income property.

Many real estate investors determine the value of an income property by using the capitalization rate, aka cap rate. It is probably the one most misused concept in real estate investing.

While brokers, sellers, and lenders are fond of quoting deals based on the cap rate, the way it is typically used, they really shortcut the true use of a valuable tool. A broker prices a property by taking the Net Operating Income (NOI), dividing it by the sales price, and voila!--there's the cap rate.

Example:

Say the property has an NOI of \$125,000, and the price is \$1,125,000.

$$\$125,000 / \$1,125,000 = 11.1\% \text{ cap rate}$$

But what does that number tell you? Does it tell you what your return will be if you use financing? No. Does it take into account the different finance terms available to different investors? No. Then just what does it show?

What the cap rate above represents is merely the projected return for one year as if the property were bought with all cash. Not many of us buy property for all cash, so we have to break the deal down, usually by trial and error, to find the cash on cash return on our actual investment using leverage (debt).

Then we calculate the debt service, subtract it from the NOI, and calculate our return. If the debt terms, loan-to-value, or our return requirement change, then the whole calculation must be performed again. That's not exactly an efficient use of time or

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knowledge.

Brokers are fond of quoting a "market cap rate." This is an effort to legitimize an assumption, but it is flawed in its source. As a comparison tool it is almost impossible by any means to find out what other properties have sold for on the basis of the cap rate.

In order to correctly [calculate a cap rate](#), and get an apples to apples comparison, you must know the correct income and expenses for the property, and that the calculations of each were done in the same way explained below.

This information is not part of any public record. The only way to access the information would be to contact a principal in the deal, and that just isn't done because the information is confidential.

A broker may have the details of several deals in the marketplace, and if there is enough information about enough deals, the information may rise to the level of a market cap rate. But few brokers are involved in enough deals in one market to have that much information.

So the conventional wisdom becomes a range of cap rates for property types, which may or may not apply to the property you are looking at, and certainly does not take into account your own return requirements. So what do you do when you've found a property that looks promising, and the broker tells you the cap rate is 11.1% and you better act fast? How do you know if it is worth pursuing?

For years, I immediately jumped in the car to take a look, and then started crunching numbers making assumption after assumption to arrive at some estimated value. The truth is I was guessing. I wasn't looking at the right numbers. There is a better way. It is not a magic bullet, but it is a powerful tool to use in gauging value.

What's it worth to you?

The real question is not how much I (or another investor, or even an appraiser) value a property at. Nor is it the value from a cap rate estimated in the market. It's the value at which YOU can attain YOUR investment goals, that is reflective of YOUR borrowing power, and gives you an intelligent starting point for the analysis.

I promise you if you learn how to do this, it will give you a leg up on 90% of the brokers and investors out there. Critical to this calculation is that the NOI is figured consistently with industry norms. The generally accepted definition of NOI is:

$$\text{Gross Income} - \text{Operating Expenses} = \text{NOI}$$

Please note that the operating expenses do not include debt service or the interest component of debt service. Obviously, the income and expenses must be verified, or all calculations that flow from them will be flawed. Verifying the income is usually easier than the expenses. Rent roll analysis and a contract contingency for tenant estoppel letters at closing can settle the

income stream conclusively.

On the expense side, normal due diligence includes verifying with third party suppliers as many of the expenses as possible. But take care evaluating the operating expenses to uncover any anomalies that exist under the present ownership.

Owners often take a management fee that may or may not be market based; maintenance expenses may or may not include labor charges; items such as "office expense," "professional fees," or "auto expense" (I love that one myself!) may or may not be property specific.

In short, before accepting the NOI presented, understand what is behind the numbers. This is known as "normalizing" the numbers. You can also tweak the numbers to reflect the way you will own and manage the property.

No two investors will own and operate a property the same way. It is entirely possible for two investors to look at the same property and come up with two different NOIs, and two widely divergent values, and both are right.

That's why appraisers use comparable sales, replacement value, and the income approach as part of a three-pronged method in estimating value. They make the appraisal representative of the market conditions and the typical requirements of investors and lenders active in the market.

The third method, the income approach, is usually given the most weight. That method is also known as the "band of investment" method of estimating the present value of future cash flows. It addresses the return required on both equity and debt, and leads to what can be called a derived capitalization rate.

Deriving your cap rate

The best way to get an initial value (after I am reasonably certain that the NOI is accurate) is the derivative capitalization rate. It requires two more pieces of information: You have to know the terms of financing available to you and the return you want on your investment.

We then use these terms for both debt and equity to indicate the value at one precise point in time--the instance of when the operating numbers are calculated--to derive the cap rate that reflects those terms. (The value in future years is another discussion.) Deriving a cap rate works like a weighted average, using the known required terms of debt and equity capital.

The bank's return: the loan constant

Let's start with the finance piece. We need to know the terms of the financing available. From that we can develop the loan constant, also called a mortgage constant. The loan's constant, when multiplied by the loan amount, gives the payment needed to fully repay the debt over the specified amortization period.

IT IS NOT AN INTEREST RATE, but a derivative of a specific interest rate AND amortization period. When developing a derivative cap rate, one must use the constant since it encompasses amortization and rate, rather than just the rate.

Using just the interest rate would indicate an interest only payment and distort the overall capitalization process. The formula for developing a constant is:

$$\text{Annual Debt Service/Loan Principal Amount} = \text{Loan Constant}$$

You can use ANY principal amount for the calculation, then calculate the debt service and complete the formula. The constant will be the same for any loan amount. For example, say your bank says they will generally make an acquisition loan at a two points over prime, with twenty-year amortization, with a maximum loan amount of 75% of the lower of cost or value.

Say prime is at its current 4.5%. That means the loan will have a 6.5% interest rate. Using a payment calculator or loan chart, find the payment for those terms. On a loan for \$10,000, the annual debt service required is \$894.72. Divide that by \$10,000 to find the constant.

$$894.72/10,000 = .08947$$

Using the terms given then, the loan constant for that loan would be .08947 (I usually round to four or five digits. Depending on the exactness desired, you can use as many as you like.)

The answer will be the same if you use \$100,000 or any other number as the principal amount. (One hint: do not use a principal number with less than five digits, because the rounding will affect the outcome.)

You might note here that the mortgage constant is basically the lender's cap rate on his piece of the investment. Both the mortgage constant and "cash-on-cash" rates for equity are "cap" rates in their basic forms. A cap rate is any rate that capitalizes a single year's income into value (as opposed to a yield rate).

Your return: cash-on-cash return

The next step is to provide for the return on the equity. Start with the return you want on your money: Say the cash-on-cash return you are seeking is 20%. The cash-on-cash rate is also known variously as the equity dividend rate, equity cap rate, and cash-throw-off rate.

It represents the cap rate to the equity position, and to keep things simple we will call it the equity constant. If an investor puts in \$30,000 and requires a 20% pre-tax return, then his annual cash in the pocket after paying the mortgage (but before income taxes) would have to be \$6,000. In this case, the equity constant is .20.

Put it all together: Weighted average

Each of these cap rates is then weighted based on the loan-to-value ratio of each of the debt and equity positions to build the

"overall cap rate." The formula looks like this:

$$(\text{LTV debt ratio} \times \text{mortgage constant}) + (\text{LTV equity ratio} \times \text{equity constant}) = \text{derived cap rate}$$

To finish the example, using the mortgage terms given above, and the desired 20% cash on cash return, the following would be the overall cap rate with a 75% loan-to-value on the debt component:

$$(.75 \times 0.08947) + (.25 \times 0.20) = .1171$$

or

$$.0671 + .05 = .1171$$

To convert to a percentage, move the decimal two places, and therefore, under the stated conditions, the required cap rate for the property (income stream) is 11.71%. Using the normalized NOI figure, then the indicated value is calculated with this formula:

$$\text{NOI/Cap Rate} = \text{Maximum Purchase Price}$$

For the original deal above, the value would be calculated thusly to attain the desired return:

$$\$125,000/11.71\% = \$1,067,464$$

The asking price of \$1,125,000 is very close to my target of \$1,067,464. This is a deal that would definitely be worth hurrying to take a look at. Had the deal been priced at a 10% cap rate, or \$1,250,000, then I might still take a run at it since my price is within ten to fifteen percent of the list price.

In a normal market, California aside, most sellers do not expect the property to sell for the asking price.

Not a magic bullet

Now please note that I said at the beginning that this is a starting point. It is not the end all and be all of valuation, nor should it be. That doesn't exist.

Many factors can influence the value of an income property both up and down. Some of the most important include deferred maintenance; security of the income stream (strength of the tenants and length of the leases); comparable sales in the area; general economic and market conditions; and local market conditions.

All these factors speak to the relative risk and effort involved in the continuance of the income stream, and must be investigated during the due diligence. As the instability or cost of any of those factors increases, I would increase the required return on my cash invested to offset the increased risk taken and the increased effort required to mitigate that risk.

Increase the required return and the cap rate changes, and so does the price. At this point you are writing your own paycheck. This is a powerful tool if understood and applied correctly. Play around with some alternative scenarios of returns, loan terms,

rates, etc. and you will see the effect of changing different parts of deal structure.

You should now see why it is so critical to verify EXISTING income and expense BEFORE establishing value. This little exercise also shows why I harp all the time on no two investors coming up with the same value for the same property. DO NOT use this as a "magic bullet" and stop your analysis after the calculation.

I cannot stress enough the importance of performing thorough due diligence in commercial income properties. That alone is what determines the difference between being a true "investor," and the next "don't-wanter" seller.

About the author...

Ray Alcorn is the Chief Operating Officer of Park Real Estate, Inc. in Blacksburg, Virginia. Park was founded in 1953 by his father as a development company to build mobile home parks.

Today, the firm owns and operates a diverse portfolio of commercial investment properties. With holdings in the retail, office, and hospitality sectors, the company specializes in acquiring and developing high-quality real estate assets in the southeast United States.

Ray generously hosts our Commercial Real Estate discussion forum, where he answers questions and participates in discussions with other commercial real estate investors.

In his home study courses, [The Dealmakers Guide to Commercial Real Estate](#) and [The Dealmakers Guide to Mobile Home Parks](#), Ray shares a lifetime of experience investing in commercial real estate. The books provide real-world information written by a true dealmaker, including how to identify opportunities, determine value, how to structure deals for maximum returns. These books are an invaluable resource for creating and building wealth in commercial properties of all types.

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