

# An Argument for Establishing a Standard Method of Capitalization Derivation

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**T**he capitalization rate is essential to any analysis through the income capitalization approach. It is part of the simple, three-part formula involving net income, capitalization rate, and value that allows calculation of the third when any two are known. The analyst who applies a capitalization rate that has been derived through well-founded methods is well on the way to an accurate valuation. The analyst who applies a capitalization rate that has been derived from incomplete data is on the way to an inaccurate, misleading valuation.

The purpose of this article is to point out inconsistencies that produce inaccuracy in the present methods of extracting a capitalization rate from the sale of a commercial property. This article argues for a standard method of capitalization rate derivation, and proposes that the Appraisal Institute serve as the agent to promote such a standard method, to benefit not only appraisers but brokers, lenders, investors, and all who require accuracy in valuation.

## The Capitalization Rate

The capitalization rate ( $R_o$ ) is the rate that converts net operating income ( $NOI$ ) into value ( $V$ ) through the formula  $V = NOI/R_o$ . The simplest and most direct method of capitalization rate derivation is to divide net income by selling price where both of these can be known, at the date of a property's sale. The selling price is a number that is typically not in dispute. In disclosure states, the selling price is stated in the deed. On occasion, adjustments for seller incentives are required, as in the case of a low-interest loan made by the seller. The net income, on the other hand, is subject to variation, depending on the methods employed by whoever makes the calculation. Inconsistency in the calculation of net income is the primary source of the variation and the resulting bad data

## ABSTRACT

A capitalization rate may be extracted from any sale of income-producing real estate for which the selling price and the net income are known. The accuracy of the capitalization rate calculation depends on the accuracy of the information used to derive the net income. Incomplete information produces inaccurate capitalization rates. The quality of the pool of information used by appraisers, lenders, brokers, and investors suffers from inaccurate data. The purpose of this article is to advocate for a standard method of capitalization rate derivation, as well as for the Appraisal Institute to serve as the agent to promote a standard method.

that contaminates the data pool used by appraisers in the analysis of commercial real estate.

### An Apartment with a Faulty Capitalization Rate

A source of bad data can be seen in a common example from the market.

Suppose that a six-unit apartment building has been sold. The broker who listed the property for sale compiled an income and expense pro forma to be given to prospective buyers. It listed the annual gross income from rents (\$60,000) and listed expenses, including the real estate taxes, insurance, utilities, trash removal, grounds maintenance, and painting (in all, \$25,000). The property sold for \$500,000. When an appraiser calls the broker to verify the sale, the broker provides the appraiser with the additional information that the capitalization rate was 7% (net income of \$35,000 divided by selling price of \$500,000 equals 7%). He is glad to be so obliging because she previously supplied him with data concerning comparable sales. She is glad to receive the information because good capitalization rate information is scarce, and this information has come to her by way of a highly informed source.

The appraiser is in the process of valuing a similar six-unit building. She uses the rent roll from this second property and its expense history, as well as published data for vacancy and expenses, to produce an income and expense statement for the property being appraised. The net income for this second property is \$28,000. Using the broker's 7% capitalization rate, the appraiser derives a value indication of \$400,000 (\$28,000 divided by 7% equals \$400,000). However, this conclusion is inconsistent with the \$500,000 value conclusion that she has obtained through an analysis using the sales comparison approach.

The appraiser is not satisfied to let the inconsistency stand. She rechecks her analysis of sales and then calls the broker to see whether she might have misunderstood his information. He sends her his listing sheet so that she can see for herself.

The appraiser puts the broker's listing sheet side by side with the income and expense statement that she has compiled for the building she is valuing. She finds that the buildings are remarkably alike in terms of rent and most expenses. She also finds that the broker's sheet lacks entries in several categories. The match-ups are as follows.

	Broker's Data	Appraiser's Data
Rent	\$60,000	\$60,000
Vacancy		<u>- 5,000</u>
	\$60,000	\$57,000
Real estate tax	- 7,000	- 7,000
Insurance	- 2,000	- 2,000
Heat	- 7,000	- 7,000
Water and sewer	- 2,000	- 2,000
Maintenance and repairs	- 4,000	- 5,000
Management		- 2,000
Administrative	- 1,000	- 1,000
Services (trash removal, etc.)	<u>- 2,000</u>	- 2,000
Replacement reserve		<u>- 1,000</u>
Net income	\$35,000	\$28,000

At this point, the source of the discrepancy is obvious. The broker's statement lacks a vacancy allowance, a cost for management, and a replacement reserve, and, by the appraiser's reading of industry standard maintenance and repair costs, it understates repairs. The appraiser has two choices: to make her own income and expense statement conform to the broker's or to beef up the expenses in the broker's statement to make it conform to her own. Since the appraiser is uncomfortable altering her own analysis, because it is realistic and well founded, her only choice is to alter the broker's. Doing that, she finds that the net income at the broker's building, by her own method, is really \$28,000, and the capitalization rate from the broker's building in fact is 5.6% (\$28,000 divided by \$500,000 = 5.6%). Applying this 5.6% rate to the building she is appraising produces a value of \$500,000—the same level of value she has found in the sales comparison approach. The appraiser can now be comfortable in the \$500,000 value conclusion. The discrepancy is erased.

From this experience, the appraiser comes to two important conclusions:

1. Devise your own method for developing the net income for a comparable sale and apply it consistently to all comparable sales.
2. Never use a capitalization rate that is reported to you by someone else unless you know that the source employed the same method of calculation of net income that you would use.

### A Net Leased Property Capitalization Rate

The potential for variation in methods of calculating the capitalization rate is most pronounced for gross-rent properties like apartments and office buildings, where multiple non-reimbursed expenses are subject to varied interpretation. The situation is less acute for net leased properties (*net leased properties* being properties at which the tenant(s) reimburse the lessor for all expenses or pay directly for some, such as for utilities), but nevertheless exists.

To a broker and to most sellers, the net rent that is stated in a lease of a net-leased building is its net income, and the capitalization rate is that net income divided by the selling price when the property sells. A chain drug store with a 20-year net lease at \$500,000 per year that sells at \$4,000,000 sold at a 7.5% capitalization rate. But most appraisers would differ.

An appraiser valuing a property of this kind would set up an income and expense statement with various expense categories and with an additional category for expense reimbursements. The seller's analysis and the appraiser's, side by side, might look as follows.

	Seller's Data	Appraiser's Data
Rent	\$500,000	\$500,000
Expense reimbursement		<u>50,000</u>
		\$350,000
Vacancy		- 5,500
		\$326,700
Real estate tax		- 25,000
Insurance		- 5,000
Management		- 5,000
Administrative		- 1,000
Miscellaneous		<u>- 500</u>
Net income	\$300,000	\$292,200
/ Price	/ <u>\$4,000,000</u>	/ <u>\$4,000,000</u>
Capitalization rate	7.5%	7.3%

In this example, the appraiser believes (consistent with Appraisal Institute teaching) that it is appropriate to apply a vacancy factor for the possibility, however remote, that the tenant will default at some point over a ten-year holding period. The appraiser notes that the lease calls for no reimbursement of

management costs. Management is minimal, but some party needs to collect the rent and assure that the property is maintained as required in the lease. Annual accounting is a non-reimbursed administrative cost. A miscellaneous allowance is required for heat and maintenance in the event of vacancy.

The difference in capitalization rates is not as pronounced as it is in the case of the apartment, but it is nevertheless significant. If the 7.5% capitalization rate is applied to a second, similar property with a net income derived by the appraiser's (and not the seller's) method, the property will be undervalued by 2.6% or, for the \$4,000,000 property, by \$104,000.

A larger problem in the extraction of the capitalization rate from sales of properties under long-term leases occurs when the property is about to experience a step rent increase. Assume that a property's rent increases by 15% every five years and that an increase is scheduled in 18 months. Does the analyst calculate the capitalization rate from the present rent, from the rent that is scheduled to apply in 18 months, or from some other number? Depending on the choice, the capitalization rate can vary, in this example, by 15%.

Many analysts would abandon direct capitalization altogether in the valuation of a property with a substantial step rent increase and make an analysis through a discounted cash flow model. There, it is necessary to choose an internal rate of return. The rate is typically derived from survey data. However, there are difficulties with interpretation of survey data, as will be discussed later in this article. The focus here is on establishing a common method to allow meaningful application of direct capitalization so that, when a capitalization rate is extracted from a property of this kind, the method of extraction can be known to have been a standard method, and the information can be useful to others.

In this case, an appropriate method might be to use the average income over the first five years of a projection from the sale date as the basis for rate derivation. A five-year average takes into account the step increase and weights the different rents appropriately. It produces a capitalization rate that is more realistic than the rate derived either from present rent or the rent at the step increase date.

### Survey Data

A discussion of surveys and how their results are produced is useful in examining the accuracy in capital-

ization rate data. Surveys provide an alternate source of capitalization rate data. They provide information on internal rates of return, terminal capitalization rates, and other important data, in addition to the going-in capitalization rates discussed previously. Appraisers turn to survey data to supplement capitalization rate data derived directly from transactions or use it as an alternative when no direct data is available. Surveys avoid some of the difficulties that are found with capitalization rates derived directly from individual property transfers. But surveys are hampered by difficulties of their own. As with the capitalization rate data, it is important that the appraiser know how the return-rate data reported in surveys were derived if the appraiser hopes to use the data to produce accurate results.

An example involving a survey is useful. The example concerns a survey of prices. But, it is analogous to any survey of capitalization rates or other numeric results from market activity, and it sheds light on the use of survey data in general.

Suppose that we have friends who have decided to market their house for sale. The friends will have an open house on a Sunday in April, accept offers, and sign an agreement with whoever makes the highest-price offer. We station ourselves outside the front door, and, as the prospective buyers leave, we ask them to answer anonymously what they would pay for the house, for which the friends are asking \$475,000. We receive responses from six potential buyers, ranging from \$400,000 to \$460,000. The average of the six is \$425,000.

What do we tell our friends about the price they are likely to achieve? Is it \$425,000, \$460,000, or neither of these? The argument for \$425,000 is that that number best reflects the responses of the entire group. The argument for \$460,000 is that all the offers below \$460,000 carry no weight and are little better than misinformation, in that they cloud the fact that the \$460,000 offer will overcome all the others. In addition, if our friends go back to the group of low-bid buyers seeking a second round of offers with the information that \$460,000 is the price to beat, there is the potential that the \$460,000 price will be overcome, and the final price will be higher. Most observers would agree that the \$425,000 average is irrelevant to the question of the eventual price, and the final price is likely to be \$460,000 or more.

### **An Apartment with a Survey-Based Capitalization Rate**

So, consider a survey that asks investors what capitalization rate they are willing to pay for small apartment buildings in suburban Tulsa. (Let's assume that the survey first defines for the respondents what it means by *net income*, so that the problems discussed previously in this article are not encountered.) The group of investors, like the group of potential buyers for the house, consists of parties who are in the market—in this case for investment properties. Suppose the question the researchers ask concerns capitalization rates rather than prices. The survey receives ten responses in a range from 6.75% to 7.75%, with an average of 7.25%. The survey publishes this information. The information is potentially useful to us.

We have been asked to appraise a Tulsa apartment and want to use the survey data. However, at this point, we are aware of the pitfalls of survey data. Accurate use of the data requires an additional piece of information. The information we need is whether any of the respondents have recently made acquisitions at the capitalization rates they have reported.

In the absence of that information, the best use we can make of the survey responses is that the low end of the capitalization rate range (and not the average) is the point at which acquisitions are made. The 6.75% respondent is the most likely buyer, who will outbid the others. For the solution to the question of most probable price for a Tulsa apartment, all the information about the average and the high end of the range is extraneous.

None of this poses a difficulty for the appraiser who considers how surveys are made (when surveys are made in the manner described here, with the survey mixing responses from parties who have successfully bid for investment properties by applying low capitalization rates together with responses from unsuccessful bidders at higher capitalization rates). It poses no problem for the appraiser who is provided with the low-end capitalization rate information.

The survey that provides transparency in revealing the questions it has asked respondents helps the appraisal community make the best use of the market data. The data user knows whether the respondents have actually made acquisitions at the capitalization rates they report.

“Appraisers’ single task is not to sell, to lend, or to invest but to be precise.”

## Results

The result of the lack of a standard method for capitalization rate extraction is that the pool of information on which appraisers draw to make analyses is contaminated by bad data. Good data and bad data mix, and if additional information concerning the method by which the data were derived is not available, the entire pool is less useful.

The data service that provides comparable sales information and indicates that “the broker stated that the capitalization rate was 7%” provides information of unknown usefulness—equivalent to the usefulness that a bag of white powder without a label might have for a baker. The bag might hold flour, and the result of using it in a recipe might be bread. But maybe not. The product is in doubt. The data service that shows the calculation that produced the statement “the capitalization rate was 7%” is giving the appraiser what the appraiser needs. The appraiser can see whether the information appears complete and decide on that basis whether or not to use the information. Similarly, a survey that shows the appraiser what questions were asked of respondents and what those responses were before they were aggregated into averages and ranges provides data that is more useful to appraisers.

In the absence of full information, the appraiser’s best alternative is to develop the capitalization rate for a given sale independently, from scratch—especially in the case of gross-rented properties like apartments and offices where the likelihood of incomplete expense information has the greatest contaminating effect. For apartments, extraction can be accomplished with relative ease, as apartment rents, vacancy rates, and expenses can be estimated from generally available information. For all properties, however, the situation is less than ideal, and it often puts appraisers in a difficult position. Some services are very useful and provide data that can generally be relied on. Others provide data that is best ignored.

## A Standard Method

The difficulty for appraisers, brokers, and investors is that there is no standard method of deriving net income and, so, no standard method of capitalization rate derivation.

A standard method does exist for another element crucial to accuracy in commercial property valuation: the measurement of building area. Trade organizations have promoted a method of measurement that calls for the use of specific building surfaces for dimensions and exclusion of mechanical spaces, unfinished basements, and elevator penetrations from the calculation. (See the ANSI/BOMA “Standard Method for Measuring Floor Area in Office Buildings” as an example.) The result is that, when a broker tells a buyer, “This is a 52,000-square-foot office building,” the investor need not consult a manual and recheck the calculation. A common language exists. Both the broker and the investor know what “52,000 square feet” means.

A common language for net income and capitalization rate calculation requires an agent to promote the common language. The agent most appropriate to promote a standard is the organization that represents those who will benefit most from the standard. A standard method for net income and capitalization rate calculation would benefit appraisers as the group more concerned than any other with precision in valuation. Imprecision reflects badly on appraisers more than on other market participants because appraisers’ single task is not to sell, to lend, or to invest but to be precise. The Appraisal Institute is the national representative of appraisers and is the best choice to take the lead in establishing a standard method.

A standard method for the extraction of capitalization rates should provide guidance at the level of specifics. A standard method should instruct, for instance, that gross income for apartments and for tenant-at-will properties should be the market rent and not the actual rent. It should instruct that it is necessary to apply a realistic vacancy factor. Expenses need to include a management cost even for small properties, which are frequently owner-managed, and they need to include a replacement reserve at those properties at which the market of investors typically applies a reserve.<sup>1</sup> The cost for

1. The *Korpacz Real Estate Investor Survey* here has taken the lead. It provides the information that the majority of investors in apartments require such a reserve, and for most other property types, they do not.

maintenance and repairs should be consistent with published costs in surveys and should not reflect understated amounts that may make a property more marketable, but do not reflect the costs likely to be experienced in a standard five- or ten-year holding period. A net income derived in this manner is a net income equivalent to the one most appraisers would produce in an analysis of an income-producing property. The capitalization rate derived from a net income produced by a standard method is a capitalization rate market participants can apply with confidence.

### **Conclusion**

The lack of a standard method for capitalization rate derivation from sales is an impediment to accurate valuation. A strong professional organization promotes practices that enhance the credibility of its members' work product. The Appraisal Institute can find few practices that would enhance the credibility

of commercial appraisers' work product more than standardization of the method for extracting the capitalization rate. The Appraisal Institute would benefit appraisers, and the investment community in general, if it were to promote a standard method for net income and capitalization rate derivation.

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