# The Art of the Cap Rate

By R. Christian Sonne

## Abysmal science or precious tool?

*Economics is sometimes called the "dismal science" because it can present bad news about money and the economy. In the economics of self-storage, the calculation of an overall capitalization rate, or "cap rate," might be called an abysmal science because there is much confusion around the topic and its relevance to property values.*

To begin, a cap rate is "An income rate for a total real property interest that reflects the relationship between a single year's net operating income expectancy and the total property price or value; used to convert net operating income into an indication of overall property value" (The Dictionary of Real Estate, page 255). When I began appraising nearly 20 years ago, I took courses in capitalization theory and techniques from The Appraisal Institute. Instructors simplified the cap rate by reminding us it is an overall return: to land and building and mortgage and equity. For now, just remember "IRV," income divided by rate equals value.

Still confused? A cap rate is to real estate is what a dividend is to stock. It is one measure of the performance of an asset. Now think about the implications. A low return usually implies a high value. Conversely, a high return implies a low value. The return on cap rates can be measured in a number of ways. Appraisers usually look at comparable market data with an alternate technique based on mathematics. This is illustrated by the following example.

## Overall Capitalization Rate

The cap rate is calculated by dividing the net operating income by the sales price. Ideally, it is selected from the market through sales of similar property types. The data is based on the rate considered by the parties involved in the sale to be the most relevant.

**Table 1: Market-Derived Cap Rates**

| Facility | Sale Date | Cap Rate |
|---|---|---|
| One | August 2004 | 8.50% |
| Two | July 2004 | 8.75% |
| Three | July 2004 | 9.00% |
| Four | March 2004 | 9.25% |
| Five | July 2003 | 9.50% |
| Average Cap Rate | | 9.00% |

The data indicates a range of 100 basis points (8.50 percent to 9.50 percent), suggesting further tools of analysis are warranted. To assist with understanding the motivations and expectations of market participants and to provide a foundation for yield analysis, more techniques are presented as follows.

## Simple Band of Investment

The simple band of investment is a comparison of financing and equity components. It considers the appropriate return to capital (usually considered interest on a mortgage) and return to equity dividend or on equity. In Table 2, the assumptions are market-based and concluded to be a 6.50 percent mortgage rate with a 25-year amortization at a 70 percent loan-to-value.

The equity component is based on the ratio of equity and forecast dividend, sometimes called cash-on-cash. Over the past several years, investors' demands regarding dividends have increased. They want an immediate return rather than relying primarily on appreciation for yield. In comparison, common stock dividends for the 500 index published by Standard & Poor's average around 1 percent. Alternatively, real estate investment trusts (REITs) for self-storage indicate an average annual equity dividend range from 2.70 percent to 6.58 percent.

REITs are considered less risky by some portfolio managers because they are more liquid and diversified than a single real estate asset. Conversely, some consider individual assets less risky because they are not as subject to wide, short-term yield swings due to fluctuating trading cycles. Historically, individual assets have been more stable. Under these parameters, the indicated simple band of investment is detailed in Table 2.

**Table 2: Simple Band of Investment**

| Component | Ratio | | Rate | | |
|---|---|---|---|---|---|
| Mortgage | .70 | x | .0810 | = | .0567 |
| Equity | .30 | x | .1100 | = | .0330 |
| Cap Rate | 100% | | | = | .0897 |

*The debt-coverage ratio is the ratio of net operating income to annual debt service.*

The weakness and strength of the band of investment is simplicity. It is easy to use, but does not dynamically account for changes over time. In this asset class, however, static or direct analysis is the preferred capitalization methodology.

## Debt-Coverage Ratio

The debt-coverage ratio is the ratio of net operating income to annual debt service. This method is a useful tool for lenders and other fiduciaries because it underscores the safety of the investment by analyzing the ability of the asset to cover debt service. In this regard, the debt coverage ratio generally indicates the lowest reasonable cap rate. However, cash flows are generally modified (such as the exclusion of prospective rent). Consequently, this is considered the least reliable methodology (without modification to the cash flow). The parameters used to analyze the subject under this criterion are derived from the other analyses of the overall capitalization rate such as the mortgage constant and loan to value ratio. The debt coverage ratio is generally linked to the loan to value ratio (indicating a ratio of .70 for the subject). Under these parameters, the debt coverage ratio is summarized in Table 3.

**Table 3: Debt-Coverage Ratio**

| DCR | | Mortgage Constant | | Loan to Value Ratio | | Cap Rate |
|---|---|---|---|---|---|---|
| 1.35 | X | .0810 | X | .70 | = | 7.65% |

It is important to note a downward trend of more than 50 basis points in cap rates over the past two years. This trend indicates investor interest in the self-storage asset class and a willingness in the market to pay a premium. The overall cap-rate analyses and conclusions are summarized in Table 4.

**Table 4: Cap-Rate Analyses**

| | |
|---|---|
| Market Derived Average | 9.00% |
| Debt Coverage Ratio | 8.97% |
| Simple Band of Investment | 7.65% |
| Average: | 8.54% |

## Cap-Rate Conclusion

Typically, market data is emphasized in the conclusion of the cap rate. In this regard, the lag effect common to economics is also common to real estate. In other words, the market (reflected in cap rates) is reacting more slowly than interest rates. Consequently, market data and mathematical techniques must be considered. The selection of the cap rate must be related to the local market conditions (i.e., is the market over-supplied, under-supplied or at equilibrium?) and the subject property's competitive position in the market area. For the purposes of illustration, a cap rate of 9.0 percent is used in Table 5.

**Table 5: Direct Capitalization (Stabilized Market Value)**

| | |
|---|---|
| Rental Income | $600,000 |
| Ancillary Income (4%) | $24,000 |
| Potential Gross Income | $624,000 |
| Less Vacancy (10%) | -$62,400 |
| Effective Gross Income | $561,600 |
| **Less Expenses:** | |
| Taxes | $42,000 |
| Insurance | $10,000 |
| Repairs and Maintenance | $15,000 |
| Administration | $17,500 |
| On-Site Management | $37,500 |
| Off-Site Management (4%) | $22,464 |
| Utilities | $15,000 |
| Advertising | $20,000 |
| Miscellaneous | $500 |
| **Total Expenses (32%)** | **$179,964** |
| **Net Operating Income** | **$381,636** |
| **Cap Rate** | **0.09** |
| **Market Value Indication** | **$4,240,400** |

## The One "True" Cap Rate

There is often much discussion about the "right" cap rate. Borrowers complain appraisers use cap rates that are too high, while banks complain they use cap rates that are too low. In fact, there is not one true cap rate. The data analyzed so far relates to properties operating on a stabilized basis in terms of physical and economic occupancy. However, properties often trade when occupancy is not ideal or stabilized. Watch what happens to our example in Table 5 when occupancy is reduced to 75 percent.

**Table 6: Direct Capitalization (Market Value 'As Is')**

| | |
|---|---|
| Rental Income | $600,000 |
| Ancillary Income (4%) | $24,000 |
| Potential Gross Income | $624,000 |
| Less Vacancy (25%) | -$156,000 |
| Effective Gross Income | $468,600 |
| **Less Expenses:** | |
| Taxes | $38,000 |
| Insurance | $10,000 |
| Repairs and Maintenance | $15,000 |
| Administration | $17,500 |
| On-Site Management | $37,500 |
| Off-Site Management (4%) | $18,720 |
| Utilities | $15,000 |
| Advertising | $20,000 |
| Miscellaneous | $500 |
| **Total Expenses (32%)** | **$172,220** |
| **Net Operating Income** | **$295,780** |
| **Cap Rate** | **0.0775** |
| **Market Value Indication** | **$3,816,516** |

*Cap rates are highly sensitive to interest rates. As interest rates rise, cap rates do, too. That is only part of the equation, however.*

The cap rate declined even as the value declined. It reflects the upside potential in the property because of the vacant area (sometimes this type of investment strategy is called "value added"). In other words, the buyer can expect a 7.75 percent return on the investment now, but hopes to get a 9 percent return when the property is stabilized. The difference in the value ($4,250,000 to $3,800,000, or $450,000) can be described as absorption costs. Notice, too, the expenses declined in terms of total dollars, but increased as a ratio of the income.

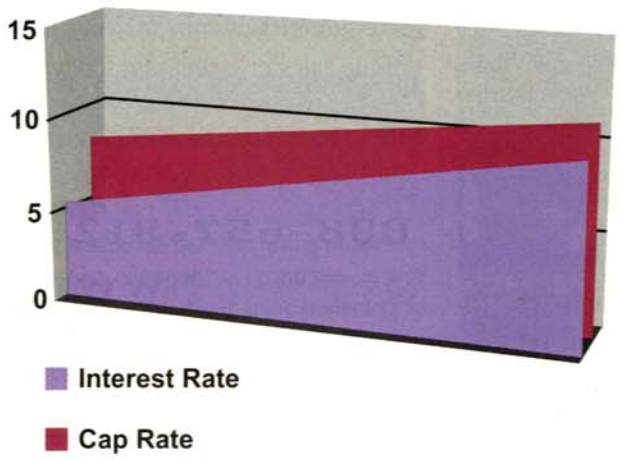
Such transactions are typical to the market. The challenge arises if a 7.75 percent cap rate derived from an "as is" scenario is inappropriately applied to a stabilized one. The result is a very inflated value scenario. The example illustrates that cap rates must be used reasonably and applied fairly. Citing one example of a cap rate and calling it "the market" or the "one true cap rate" for all self-storage properties is a big mistake! As a test of reasonableness, the cap rate is often analyzed in relation to the trailing income, usually in increments of a minimum of three months (latest quarter) and the past 12 months.

## Cap-Rate Trends

Interest rates will increase over the next 18 months. This will result in a rise in cap rates, or a decline in returns. As noted in June 19 issue of The Economist, inflationary pressures in the United States include a gross domestic product of 7 percent over the past year, with an inflation rate of approximately 3 percent, suggesting short-term interest rates near 4 percent. In reality, the short-term interest rates are around 1 percent. This gap suggests the supply of available money is too high (or monetary policy supports an inducement to borrowing and spending). Moreover, with a record budget deficit near half a trillion dollars, the fiscal policy means the government is competing with the private sector for the money supply. The tide is rising and interest rates will shortly follow.

Cap rates are highly sensitive to interest rates. As interest rates rise, cap rates do, too. That is only part of the equation, however. Over the past seven years, equity investors have been increasingly interested in self-storage, causing returns to equity to decline (see the band of investment) and putting downward pressure on cap rates.

**Chart 1: Rate Trends**




## Therefore, What?

Market conditions, such as oversupply, can cause tremendous upward pressure on cap rates. In this regard, great care must be considered when selecting them. Even in the same city or Metropolitan Statistical Areas, market conditions can vary widely. On the other hand, newer projects with state-of-the-art security and fire/life-safety features tend to trade for a premium, creating a downward pressure on cap rates. Overall, cap rates should be applied only after thorough research that uses several analytical techniques, including survey research, market data and mathematics.

By now, I hope you do not consider cap rates part of an abysmal science. They are an integral component of proper self-storage investment analysis. However, they must be understood correctly and applied properly. A cap rate is a tool and, as with all tasks, the appropriate tool must be used to do the job right.

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