

# Illinois Real Estate Letter

## “Cap” Rates in Commercial Appraisal: Chicago vs. National

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The following pages provide an analysis of the Chicago area commercial property market, and a comparison of Chicago to the broader US market. In this discussion, *commercial* represents numerous major categories of income producing real estate: office, shopping center, warehouse, and apartment. The discussion focuses on trends in capitalization rates for Chicago, with comparisons to the national market provided. The metro Chicago commercial real estate market’s economic growth and market potential are also examined. Data on sales prices, effective rents, growth rates, and capitalization rates by property type are also presented.

### The “Cap” Rate and Value

An appraisal is an estimate of market (or other specified) value under the property, market, and other conditions that prevail at a given date. The amount of income that a subject property is expected to generate over its expected holding period is a key element for estimating its market value. The same notion can be applied in security analysis: the value of a share of common stock can be estimated as the sum of the present values of all expected future dividends, while the value of a bond is the sum of all expected future interest payments plus a par value, with all these cash flows *discounted* by an appropriate required rate of return. The

reason for discounting is to capture the impact of time’s passage on the value of money: dollars that will be received soon contribute more to the property’s current measured value than do dollars that will not be received until distant dates. The *income approach* to appraisal is based on the idea that value is related to income through a *capitalization rate*:

$$\text{Value} = \text{Income} / \text{Rate.}$$

Alternatively, we find a capitalization, or “cap,” rate by algebraically rearranging the relationship shown above, dividing net income by value:

$$\text{Rate} = \text{Income} / \text{Value,}$$

such that if we have estimated net income and the appropriate “cap” rate we can compute value, whereas if we have estimated net income and know the value we can infer the accompanying “cap” rate.

Capitalization thus is the process of converting a property’s expected future income into an estimate of current market value by discounting expected future net cash receipts to their present values. In real estate analysis, expected *current* year income typically is treated as the first in a stream of *future* income flows. A capitalization rate embodies a return on investment (and a return *of* the dollars invested) that typical investors would require, on average, for taking the risks of providing debt or equity financing for the property

being analyzed. The relationship between a capitalization rate and value therefore is an inverse one, with a lower “cap” rate corresponding to a higher value per dollar of current net income. After all, if a buyer pays a higher (lower) price, then a given level of expected net income will represent a lower (higher) percentage return on, and of, the original investment.<sup>1</sup>

### Identifying Capitalization Rates

Selecting an appropriate “cap” rate is a critical step in income property appraisal. There are various ways to estimate the capitalization rate to apply to a property’s income estimate. In *direct capitalization*, the analyst derives the rate directly from data on recently sold similar properties, dividing net operating income (NOI) by sales price. Conceptually this “cap” rate is similar to the “E/P” (earnings to price) ratio used as a tool by Wall Street stock analysts. In other words, an overall capitalization rate (OAR) extracted from market transactions can be interpreted as a reciprocal of the “P/E” (price to earnings) ratio. For example, with a 10% “cap” rate, the property is expected to sell at 10 times the current-year NOI. An appraiser who finds a consistent relationship between selling price and current NOI, after viewing recent transactions involving many properties that are physically and locationally similar to the subject, can apply the indicated “cap” rate to the subject property’s NOI to estimate its value. Alternatively, value is the product of NOI and the appropriate Net Income Multiplier (the “cap” rate’s reciprocal).

If the appraiser can *not* find a consistent relationship between income and value that can be extrapolated to other

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similar properties, then it becomes necessary to construct a “cap” rate based on financial logic. In conventional *Ellwood* capitalization, the “cap” rate depends on the loan amount, interest rate, repayment term, required rate of return on equity invested, and expected changes in income and property value, among other factors. For example, the lower the interest rate sought by lenders, the lower the “cap” rate is, and the higher the indicated value. Also, the more that property value and income are expected to rise over the holding period, the lower is the capitalization rate and the higher is the indicated market value. Higher required returns raise the “cap” rate and reduce the value estimate.

Regardless of whether the “cap” rate is extracted from market transactions or constructed based on financial logic, its level must reflect, directly or implicitly, the concerns and expectations that typical investors hold: required returns on debt and equity, the property’s ability to generate future income net of expenses, and expected decline or appreciation in value. Any factor causing the capitalization rate to fall results in a higher value estimate, while any factor causing the “cap” rate to rise results in a lower value estimate, holding other things constant.

Because the risks that drive required returns, and the factors that affect growth in income and values, differ from property to property, we do not expect “cap” rates to remain uniform across property types. In a similar manner, we would not

expect “cap” rates to be uniform for the same type of property in different market areas. Indeed, they should vary by market area, since real estate market conditions are never uniform nationwide. Real estate markets are typically viewed as local, in that local economic conditions have such a major impact on property values. If a community’s economic activity is expected to grow at a rate above what other areas will realize, we can expect local property value to appreciate, and local rental income to increase, at above average rates because of the high demand for commercial property space. Thus, “cap” rates tend to be lower where high growth is expected. A buyer is willing to pay a higher price, relative to current-year NOI, in an area where property value is expected to appreciate. It is in this sense that the “cap” rate can capture future income and property value appreciation (or decline). The “cap” rate should vary by the property’s type, location, and age, because expected changes in income and value differ with these characteristics.

**Chicago Demographics and Economy**

*Illinois Real Estate Letter* readers may have a particular interest in Chicago’s commercial property market and the economic factors that affect it. The Chicago metropolitan area’s population was 7.8 million in 1997, representing about 3% of the US total. Like other Midwest cities, Chicago has experienced moderate growth in population; from

**Figure 1**



**Table 1**

	Effective Gross Rent / square foot (1985 - 1998)			
	Chicago		National	
	Mean	S.D.	Mean	S.D.
CBD OFFICE	27.87	3.65	22.69	2.03
SHOPPING CENTER	14.22	1.34	14.40	1.00
WAREHOUSE	5.12	0.45	4.54	0.32
APARTMENT	10.73	1.41	9.79	1.39

**Source:** Rent and capitalization rate data provided by the *National Real Estate Index*, (800) 922-7257. The index is part of CB Richard Ellis' Global Research and Consulting group.

**Table 2**

	Capitalization Rate (1985 - 1998)			
	Chicago		National	
	Mean	S.D.	Mean	S.D.
CBD OFFICE	8.17	0.68	8.65	0.45
SHOPPING CENTER	8.78	0.37	9.25	0.32
WAREHOUSE	9.20	0.44	9.29	0.24
APARTMENT	8.87	0.24	9.00	0.33

**Source:** Rent and capitalization rate data provided by the *National Real Estate Index*, (800) 922-7257. The index is part of CB Richard Ellis' Global Research and Consulting group.

1980 to 1990 the nine counties that make up the Chicago metropolitan area showed 2.3% population growth. Yet Chicago's growth was far below the 9.8% national average.<sup>2</sup> 1990-1997 population growth in Chicago was 4.9%, vs. a 7.3% national average. (Las Vegas, the fastest growing US city, had 48% population growth during the period.) In fact, the US Census Bureau projects an Illinois population growth rate below the national average.

It is not surprising that fast-growing Las Vegas has also ranked highest in terms of recent employment gains. The Chicago area, on the other hand, trailed even the national average, achieving a 1990-1998 gain in employment of only 11.7%, far below the 16.5% national figure. Most employment gains in Chicago, like in other areas, have been in service sectors. During 1970-1987 Chicago lost approximately 250,000 manufacturing jobs, according to the Federal Reserve Bank of Chicago.<sup>3</sup> However, the area ranks

high in terms of average home price and household income. In fourth quarter 1998 the median home price was \$162,600 for the Chicago metropolitan area, while the corresponding figure for the nation was \$131,000. On the other hand, Chicago's 1997 metropolitan median household income of \$44,276 far exceeded the \$34,618 US median. Also, Chicago has shown a higher retail sales growth rate than the national average; the area's 3.1% 1999 growth was more than double the 1.2% national figure, according to *Metro Market Facts*.<sup>4</sup> Chicagoland's overall economy thus shows some strength, even though a sharp increase in population is not expected. *Metro Market Facts* shows vacancy rates of 12.27% in Chicago for CBD (central business district) office space, 7.95% for industrial, and 9.8% for retail shops as of first quarter 1998.

**Property Type: Chicago vs. US**  
The *National Real Estate Index* (NREI)

data base contains commercial transactions from fourth quarter 1985 through second quarter 1998.<sup>5</sup> NREI's "Market History Reports" provide data on property transactions in 56 US markets, including Chicago. Reported data are based on actual property transactions, though in some cases estimates are made based on rent and NOI trends for prototype properties. Each reported "cap" rate is based on actual NOI, from either properties actually sold or comparable prototype properties. National data are based on a weighted average of the US property stock. The Chicago area is defined as the Chicago Primary Metropolitan Statistical Area (PMSA), which includes Cook, DeKalb, DuPage, Grundy, Kane, Kendall, Lake, McHenry, and Will Counties.

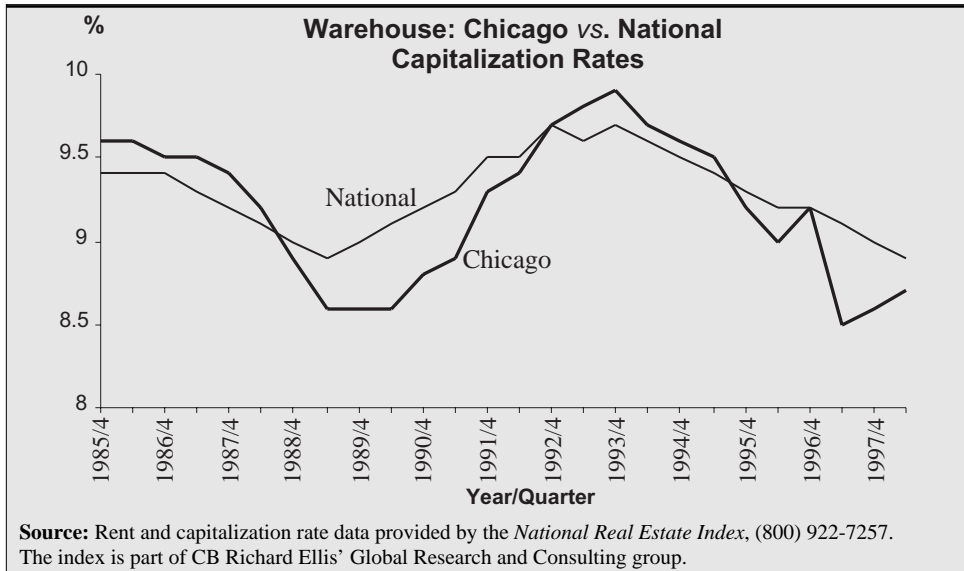
Table 1 reports the mean and standard deviation of effective gross rent per square foot of rental space for each property type. Effective gross rent reflects all occupancy costs, including rent concessions and operating cost chargebacks. During 1985-1998 rents were higher in Chicago than the national average, for all property types except for retail (shopping centers). The implication is either that Chicago's shopping center market was overbuilt during the period, or else that demand for retail space had not caught up with an increase in rental space in shopping malls. Also as shown in Table 1, rent volatility was substantially higher in Chicago than the US average, especially for CBD office property. Either the turnover rate was high, or else Chicago market conditions (especially for office) were unstable during the 13 years covered.

Table 2 shows the mean and its standard deviation for capitalization rate by property type. During the 1985-1998 period the Chicago PMSA market shows

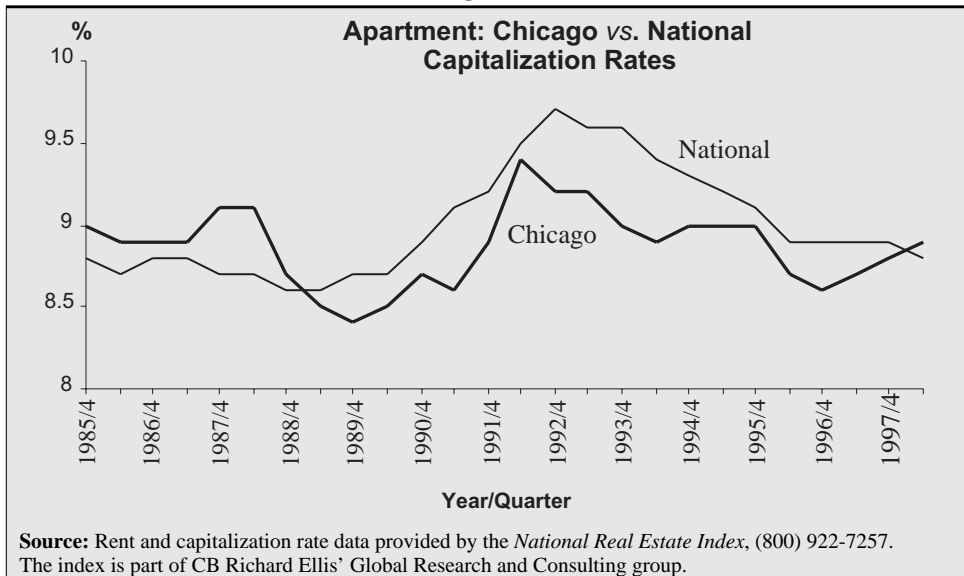
**Figure 2**



**Figure 3**



**Figure 4**



lower “cap” rates than the national average. As discussed earlier, a lower capitalization rate implies that value is a higher multiple of net operating income. Buyers had been paying a higher multiple of NOI in Chicago, meaning that an above average growth rate in either NOI or resale value was expected during a typical ownership period (especially for shopping center and CBD office property). But a comparison of standard deviations shows that Chicago’s “cap” rates were more *volatile* than the national average, except for apartments. One implication is that the Chicago apartment market had been more stable than other income property sectors in the area during that period.

### A Dose of Caution

The four accompanying graphs’ visual representation of capitalization rates may offer a somewhat broader perspective than the tables’ summary statistics provide. The graphs show a general movement toward more or less equal “cap” rates in the most recent years. Figure 1, for example, shows Chicago office “cap” rates far below the US average only until early 1993. Thus, while Chicago’s 8.17% “cap” rate (indicating an average selling price of 12.2 times NOI) might seem to imply higher expected value and income gains than those for other cities, the most recent data may suggest that Chicago investors are not extraordinarily optimistic.

Figure 2 shows a similar result for retail, though it was early 1995 before the very low shopping center “cap” rates that long characterized Chicago ceased to hold (though weakness was seen earlier in rents below the national average). Figures 3 and 4 show common “cap” rate trends for warehouse and apartment properties; Chicago’s more moderate longtime advantage over US rates also ultimately expired (with Chicago’s apartment “cap” rate actually *exceeding* the national figure for the most recent period shown). Because “cap” rates are now near or above national averages, we might use special caution in inferring that investors see strong potential for economic growth, with higher incomes and property values, for Chicago commercial properties.

### Conclusions

Average data over the past 13 years show Chicago “cap” rates below US averages, a result seeming to suggest that investors view Chicago’s market as offering strong potential for growth in NOI and resale prices. But Chicago’s averages are based on highly volatile underlying data, and indeed the most recent observations show Chicago “cap” rates converging with, and in one sector exceeding, national averages. While 1997’s *Regional Economic Growth Index* ranked Chicago 5th among 112 US metropolitan areas,<sup>6</sup> the most recent “cap” rate trends call for caution in predicting future market strength. ■

### Notes

1. A return of the original investment must be considered because the improved portion of real estate constitutes a wasting asset, whereas a bond holder, for example, gets regular interest payments (a return on investment) and then receives a full return of the original principal lent when the security matures.
2. “Metro Market Facts: Chicago,” *National Real Estate Index*, CB Richard Ellis, Vol. 20, Fourth Quarter 1998.
3. “Chicago’s Economy: Twenty Years of Structural Change,” *Economic Perspectives*, Federal Reserve Bank of Chicago, Jan/Feb 1990, pp. 15-23.
4. “Metro Market Facts: Chicago,” *National Real Estate Index*, CB Richard Ellis, Vol. 20, Fourth Quarter 1998, p. 59.
5. “Market History Reports: 1985 – 1994,” *National Real Estate Index*, KOLL Co.
6. “Real Estate Issues: Trends and Analysis,” *Market Watch Quarterly Report*, Second Quarter 1997, LaSalle Advisors, p.10. The *Report* is based on historical employment trends and four-year forecasts of employment, population, and income growth.

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