

Vacancy Management III: The Pitfalls of Ratios

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This is the third in a series of articles on the economic analysis of topics relating to property management.

Property managers encounter problems by relying too heavily on ratios or other “rules of thumb.” One such popular measure is the operating expense ratio (OER). A manager might strive to minimize that ratio, believing that doing so leads to maximum net operating income (NOI). However, it is inefficient to minimize the OER; a lower OER is not necessarily better than a higher one. In minimizing OER, the manager produces an occupancy rate that is too low (or, equivalently, a vacancy rate that is too high).

As noted earlier in this series, NOI, which is the measure that the manager should strive to maximize, may be highest at an occupancy rate somewhere below the 100% maximum. If one were able to find a way to minimize the operating expense ratio, that knowledge would not lead to maximizing NOI and optimizing the occupancy rate.

The accompanying figure utilizes a centrally-located vertical axis and a two-way horizontal axis that permits the simultaneous measurement of two other variables. The right side of this figure is essentially the same as the figure that appears in the prior article in this series (see “Vacancy Management II: An Agency Problem,” *ORER Letter*, Winter 1990). This right side shows that both effective gross income (EGI) and operating expense (OE) relate to the occupancy rate. However, operating expense continues to increase with occupancy throughout the range of possible values, while EGI begins to fall beyond a particular occupancy rate.

Movement farther to the left in the left side of the figure indicates higher levels of EGI. The straight lines on the left side of the figure therefore have positive slopes. The left side of the figure is derived from the right side. The left side, however, shows operating expenses as they relate to EGI, rather than to occupan-

cy. For this reason, the left-side OE curve is not simply the mirror image of the right-side OE curve.

A point on the left-side OE curve is derived by forming a rectangle. The rectangle begins on the 45° line above a specified EGI. Its length is the distance between that 45° line and the EGI curve in the right portion, and its height is the gap between the EGI and OE curves (the NOI) in the right portion. The connecting point on the left-side OE curve is the remaining vertex of the rectangle. The derivation of that point for a particular EGI level is labeled *a* in the figure.

The operating expense ratio measures the steepness of a line extending from the origin (where the vertical and horizontal axes intersect) to a point on the left-side OE curve. The lowest OER is defined by *t* in the figure; it is the point at which a line is tangent to (just barely touches) the OE curve. A line through *t* must be the minimum OER, because it is not possible to construct a line with less steepness that touches the OE curve.

It is important to note that line *F* is parallel to the 45° line; its slope equals one. Point *m*, at which line *F* is tangent to the OE curve, thus is located where the

curve’s slope is one. Point *m*, then, is the point of maximum NOI; a rectangle drawn with respect to point *m* corresponds to maximum distance between EGI and OE in the right side of the figure. Yet *m* is to the left of *t*, so it corresponds to a higher occupancy rate. Minimizing the OER (at point *t*), therefore, results in too low an occupancy rate. Both EGI and OE are too low at that point. More importantly, NOI is too low.

The OER that maximizes NOI is found by extending a line (not shown in the figure) from the origin through point *m*. Such a line would cut the OE curve at two points, one just to the left of *t* (at *m*) and one just to the right of *t*. The NOI-maximizing OER, then, relates to two occupancy rates, one that maximizes NOI and one that is lower. (The right-hand border of a constructed rectangle appears above the corresponding occupancy rate.) Also note that the NOI-maximizing OER exceeds the minimum OER.

The OER is not the only ratio commonly misused by managers. Problems exist with respect to cost/benefit ratios (primarily by managers of publicly owned property) and profitability ratios (primarily by corporate managers). ■

