Chapter 6: Capitalization rate equations

How to estimate capitalization rates – anywhere

Updated by John Lottering and Garth Johnson

This article provides the property professional with an easy tool to aid in the calculation of capitalization rates for nodes not reported on, or even to fine-tune capitalization rates for nodes that are surveyed, in *Rode's Report.*

As in the past, we applied the statistical technique of regression to produce equations that estimate capitalization rates based on a property's gross market rental rate. That is to say, the regression equations are based on the premise that the gross market rental that a property commands, is a crucial determinant of its capitalization rate. The postulated negative correlation between market-rental rate and capitalization rate is not such an outrageous proposition, considering that the market rental of a property reflects important value-determinants such as location, grade (quality of finishes and quality of facilities) and tenant mix (the latter in the case of shopping centres).

Readers should, however, not use the equations in isolation, but rather in conjunction with other evidence of the ruling market capitalization rate.

Office building equation

In our regression analysis of office buildings, we use the market capitalization rates (dependent variable) and market gross rental rates (predictors) of grades A, B and C buildings in the major surveyed areas.

The source of the data is this issue of *Rode's Report*. The regression is based on 38 observations in mainly decentralized nodes. With the decaying of some CBDs, we excluded the following outlier nodes in the construction of our model:

- Johannesburg CBD
- Braamfontein
- Pretoria CBD
- Durban CBD.

We also excluded two secondary cities with small capitalization-rate samples, viz. East London and Germiston.

The equation is:

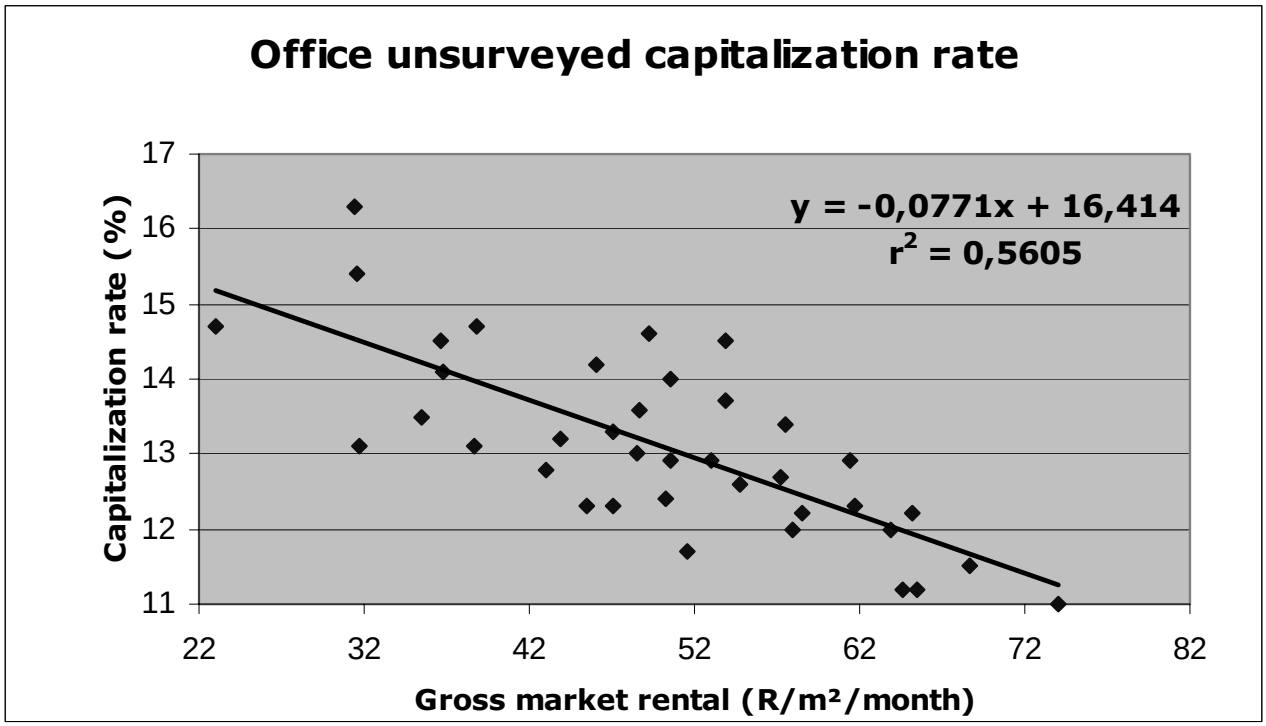
*office capitalization rate % = 16,414 – (0,0771*gross rental)*

where

gross rental = the gross market rental rate per rentable m^2 per month for grades A, B or C office buildings in quarter 2005:3.

The correlation coefficient r = -0,75. The standard error (SE) is 0,81 and n = 38.

Readers should note that it is not advisable to use this function for gross market rental rates that fall much outside the range of R20/m²/month to R75/m²/month.



Example:

If the gross office rental is R60 per rentable m² per month, then the capitalization rate is:

*office capitalization rate % = 16,414 – (0,0771*60) = 11,8%*

Warning:
To guard against volatility in the latest survey data, the reader is advised to *also* consult the regression equation in the previous issue of *RR*, and to use a two-quarter average capitalization rate (unsurveyed) if necessary.

Industrial property equation

This equation expresses the relationship between the capitalization rates and gross market rental rates of prime stand-alone non-leasebacks, secondary stand-alone industrial buildings, as well as industrial parks. The gross market rental rates are those applicable to 1.000m² units. The source of the data is this issue of *Rode's Report*.

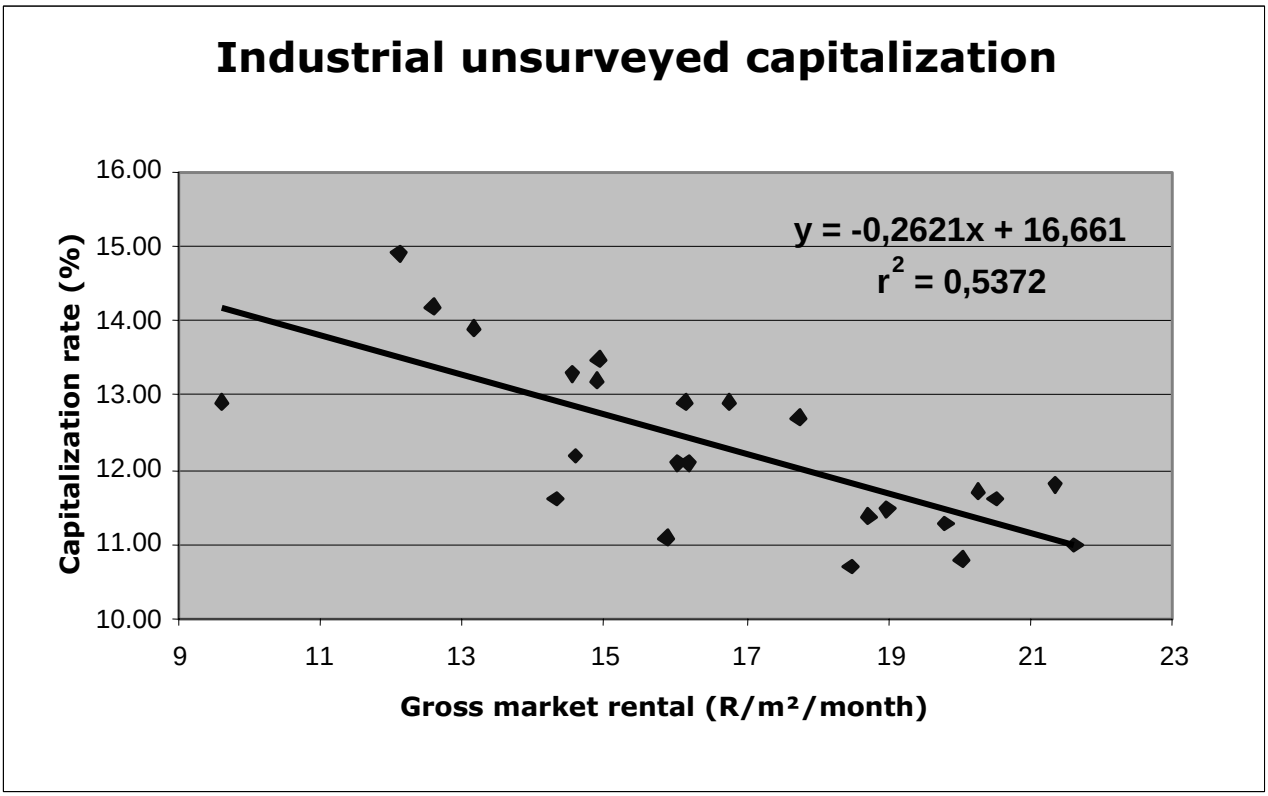
The **industrial regression equation**, which is based on 24 observations, includes all primary and secondary industrial cities, except Bloemfontein and East London.
The equation is:

*industrial capitalization rate % = 16,661 – (0,2621*gross rental)*

where:

gross rental = the gross market rental per rentable m² per month as in quarter 2005:3 for stand-alone prime non-leaseback or prime industrial parks or stand-alone secondary industrial space of 1.000m², located in primary and secondary industrial cities.

The correlation coefficient r = -0,73. The standard error (SE) is 0,79 and n = 24.



It is not advisable to use this function for gross market rental rates that fall much outside the range of R10m²/month to R22/m²/month. Also, remember to use the rental rate applicable to an area of 1.000m².

Example:

If the gross industrial rental for a 1.000m² building, located in a primary or secondary industrial city, is R18 per rentable m² per month, then the capitalization rate is:

*industrial cap rate % = 16,661 – (0,2621*18) = 11.9%*

Shopping-centre equation

Shopping-centre capitalization rates are inversely related to the size of a centre because the market rentals that a centre commands, are positively related to the size of the centre.

More specifically, the logic that connects centre size and capitalization rate is as follows: larger centres tend to attract more customer feet, which push up retailer turnovers, which push up the rentals the retailers can afford to pay, which push down the capitalization rate. However, this is a long logic chain, hence the relationship between centre size and capitalization rate tending to be an imperfect one. For instance, the foot count does differ enormously between, say, regional shopping centres, even of the same size. In addition, foot count is not the same as turnover because the average "basket" might differ significantly between centres. Thus, as in the case of office and industrial properties, market rentals would be a better determinant of capitalization rates.

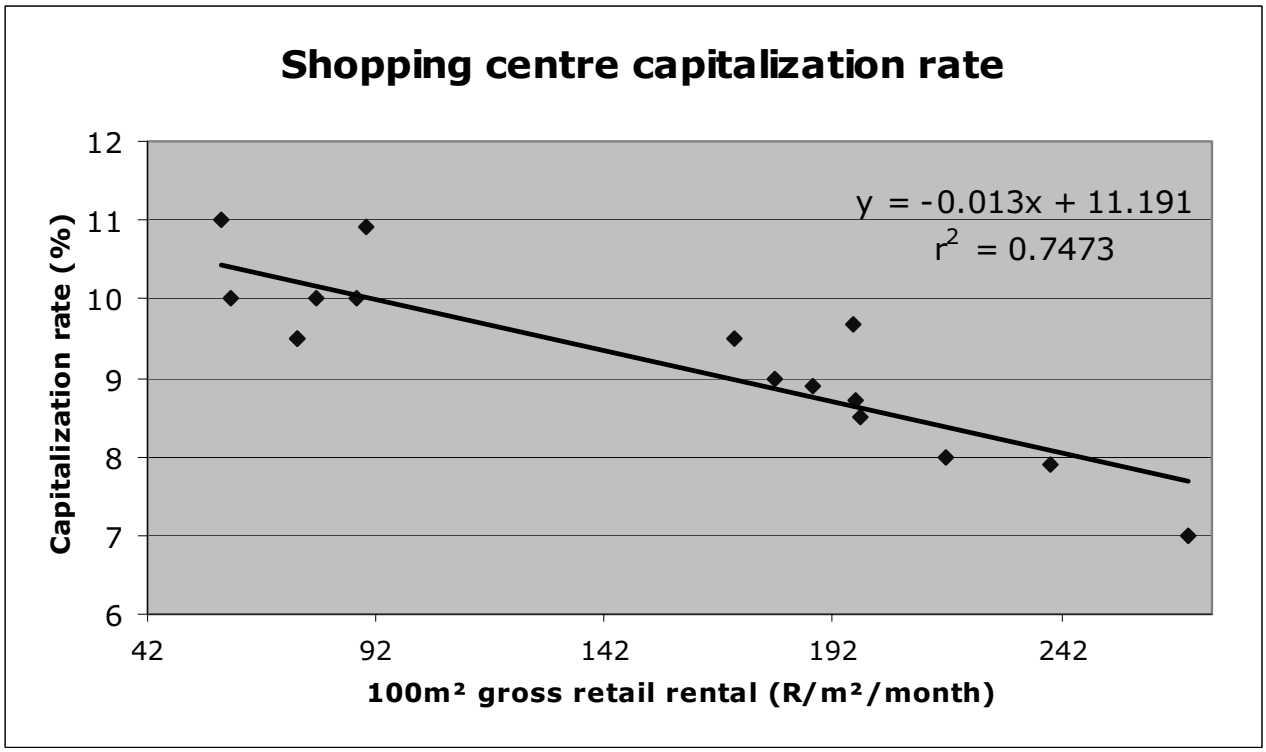
However, the problem has always been to establish the market rentals of individual centres, and then, more importantly, to link these rentals to the individual centres' capitalization rates. Why? Because we do not, and cannot, establish the capitalization rates of *individual* shopping centres

through regular surveys. Even establishing the market *rentals* of individual centres is a problem, because some landlords as a matter of policy are not prepared to divulge the ruling rental rates of their centres. Why landlords would have such a policy is unclear, because any competitor who seriously wanted to establish the market rental levels in a given centre can easily do so by making enquiries with the tenants — albeit at a cost. Also, a transparent policy of charging sustainable market rentals should improve landlord-tenant relations and should be good for long-term, sustainable profit maximisation. Hence, should tenants be aware of what the landlord considers to be market rentals, it should do no harm.

Despite these obstacles, we believe we have, at least partially, bridged this problem in the following way. *Rode* is a major valuer of shopping centres in SA, ranging from big to small and spread all over the country. In assigning capitalization rates to these properties, we consider, *inter alia*, the capitalization rates as per the *RR* surveys (i.e. the capitalization rates by type of centre/centre size) and, more importantly, the gross market rental rate the centres command for 100m² of space. In this way we ensure that our resulting capitalization rates are within the *RR* survey frame, and we ensure a consistent correlation between capitalization rates and market rental rates. This relationship between capitalization rate and market rental rate applicable to 100m² shops now allows one to build a regression equation to estimate capitalization rates of a centre given its market rental rate for space of 100m². One can argue that this approach is not 100% empirical, but at least it is internally consistent.

The equation that depicts the relationship between capitalization rates and market-rental rates as in 2005:3 is:

*Shopping centre capitalization rate % = 11,191 – (0,013 *gross rental)*



where:

- shopping centre capitalization rate % = the capitalization rate applicable to the third quarter of 2005.
- gross rental = gross market rental rate per m² per month in the third quarter of 2005 for a shop of 100m² with an average location within the centre.

The correlation coefficient r = –0,86; standard error = 0,56; n = 16 observations.

This equation should not be used for gross market rentals that are much beyond the range of R60 to R270/m²/month for space of 100m². Note too that this equation applies to the *third quarter of 2005.*

Example:

If the gross market rental rate is R200/m²/month for space of 100m² of rentable area, then the capitalization rate is:

*Shopping centre capitalization rate% = 11,191 - (0,013*200) = 8.6%.*■