Yield comparisons for AP office markets – standardising the cross-border metrics

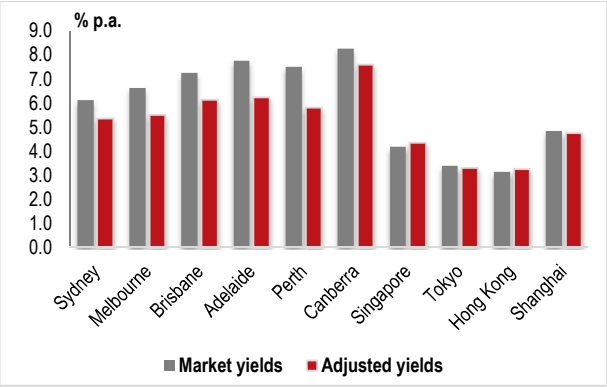
Summary

- Globalising real estate markets require robust and consistent cross-border valuation benchmarks.
- Yields, widely-used as a benchmark of value for comparisons between markets, can conceal a range of factors such as varying lease duration, escalation clauses and rent-free incentive periods that materially influence investment performance between markets and through time.
- Explicitly adjusting for these factors provides a more consistent basis for yield comparisons across some of the major Asia-Pacific office markets.

Introduction – a level playing field

In globalising real estate markets, investors require valuation benchmarks that are robust and consistent across market sectors and countries, as well as through market cycles. Yields are a widely used metric for inter-market and inter-temporal comparisons. They are widely used because they are a convenient and readily available summary indicator of relative market values. But these attributes come at a cost.

Figure 1: Market and Adjusted Prime Office Yields, 1Q 2015



Source: JLL Research

Benchmark statistics inevitably involve trade-offs between convenience and accuracy. Headline yield statistics often fail to capture differences in lease duration, rent-free incentive periods, underlying inflation and other factors that can materially alter the financial performance of individual assets and markets.

Some of these inter-market differences, such as lease duration, appear to be embedded in market structures and show little variation through time. Others, such as rents and rent-free incentives, vary though market cycles and therefore capture a snapshot in time. If current market conditions are atypical, as is likely the case in many markets at the present time, yields can be unreliable indicators of relative value. This is particularly the case in Australian markets at present, where rent-free incentive periods are generally well above long-term averages.

The challenge is to provide a meaningful and consistent basis for comparing markets, and for tracking markets as they change through time, without losing the convenience of simple headline statistics.

We have calculated yields across a range of Asia-Pacific office markets based on a formula that makes explicit adjustment for some of the factors that can distort market yield comparisons. Our calculation provides an adjusted yield metric that takes account of:

1. Lease duration
2. Rent-free incentive periods
3. Rent escalation clauses
4. Long term expected rental growth rates
5. Long term expected inflation rates

To illustrate: In the case of the Sydney CBD office market, JLL Research in Q1 2015 quotes a prime market yield range of 5.50% - 6.75% (midpoint 6.13%) and a rent-free incentive period of 38 months for a standard 10-year lease. However, the typical lease currently incorporates a 4.0% p.a. escalation clause which is at least a partial offset to the rent-free incentive period.

Table 1: Comparisons across Asia-Pacific office markets

Office markets	Market yield 1Q 2015	Lease Term	Rent Escalation (%pa)		Long-term Inflation	Incentives (Months' rent free)		Adjusted yield
	%	Years	Current lease	Future leases	% p.a.	Current lease	Future leases	%
Australian CBD markets								
Sydney	6.13	10	4.0	3.5	2.5	38	24	5.37
Melbourne	6.63	10	3.8	3.3	2.5	38	24	5.53
Brisbane	7.25	10	3.8	3.5	2.5	40	22	6.14
Adelaide	7.75	10	3.3	3.0	2.5	33	24	6.25
Perth	7.50	10	3.3	3.0	2.5	42	24	5.82
Canberra	8.25	10	3.3	3.8	2.5	25	18	7.59
Singapore	4.20	3	0.0	0.0	2.0	0	0	4.30
Tokyo	3.38	3	0.0	0.0	0.0	2	2	3.29
Hong Kong	3.14	3	0.0	0.0	2.0	0	0	3.24
Shanghai	4.85	3	0.0	0.0	2.0	2	2	4.78

Source: JLL Research

How does this this compare with the Singapore market: market yield 4.20%, lease term, 3 years; rent free incentive period, 0 months; annual rent escalation, 0%?

Evidently a direct comparison of market yields fails to capture the significant differences in underlying lease structures.

Analysis

The starting point is the market yield (y), which we define as the net annual rent (R) after non-recoverable outgoings received by the landlord in the current year (or that would be received in the absence of a rent free incentive period), divided by the capital value (CV) of the asset

$$y = R/CV \qquad \text{Eq (1)}$$

Evidently this formula fails to capture the complexity associated with cross border comparisons as well as variations over time in the same market[1]. Further, it might be argued that current market conditions are atypical and that for valuation purposes a reversion to long-term benchmarks should be assumed beyond the term of a current lease period. To address this possibility our calculations include the option to select rent-free incentive periods and rent escalation clauses for the "current leases" period, and a return to normal conditions for "future leases" after the expiration of the current lease.

Inputs into the adjusted yield calculations are:

1. Initial face rents net of recoverable outgoings (R)
2. Capital value (CV)
3. Lease duration (years)
4. Future long-term inflation rate (% p.a.)
5. Initial rent free incentive period in the current lease period, and rent free periods in all future leases if current market conditions are atypical
6. Rent escalation built into the current lease contract, and escalation built into all future leases if current market conditions are atypical
7. Underlying long-term growth in rents, to allow for a positive or negative reversion of rents on lease expiry.

[1] The widely-used text-book capitalisation (cap) rate formula

$$CV = R/\text{Cap Rate}$$

is strictly accurate only when rent is paid in arrears. Since real estate rents are typically paid in advance, the formula understates Value by the amount of the first year's rent or, alternatively, over-states the Cap Rate (CR). Expressed another way, in an annual rental model the cap rate formula embeds a twelve-month rent-free incentive period. CV calculations that apply a cap rate formula and then deduct a rent-free incentive period run the risk that the first year of the incentive will be double counted. Further, if the cap rate formula is applied to capitalise the rental income in the terminal year of a DCF calculation it also embeds a one-year rent free period into the capitalised value of every future lease in perpetuity.

Given these seven inputs we use a standard spreadsheet algorithm[2] to solve for the "adjusted yield" that aligns cash flows and CV. This can be interpreted as the annual real yield (in perpetuity, rent payable in advance) that would accrue to an investor if the distorting impacts arising from the factors identified in individual markets were eliminated. Alternatively, a financially "rational" investor would be indifferent between investing in an office building in each of these markets under current and future expected market conditions and receiving the adjusted yield as a regular cash flow.

Table 1 sets out the current quoted market yields and the yields adjusted to a common basis for the major Australian office markets and a selection of Asia-Pacific markets.

Discussion

In the case of the Sydney CBD, the 4.0% escalation that is built in to leases (currently exceeding the long-term inflation rate, assumed to be 2.5% p.a.) partially offsets the 38 months' rent-free incentive period. It is assumed that beyond the current lease term the market will revert to the long-term average of 24 months' rent free and a 3.5% p.a. escalation clause. We assume that, in line with past experience, long-term Sydney CBD office rents will grow at the rate of inflation, 2.5% p.a. Therefore on lease renewal face rents revert to the inflation adjusted face rent – in other words, zero real long-term rental growth.

Consider and compare the Singapore market: the market yield is 4.20% and there is no rent-free incentive period either in the current lease or anticipated in the future. The quoted yield (y) calculated as

$$y = R/CV$$

fails to capture the positive impact of the first year's rent if it is payable in advance. Adding back the first year's rent the yield becomes 4.38%[2]. But there is an offset. The rent is not indexed for inflation during the three year lease period, so that the real value of the rental payments is eroded by the assumed 2.0% per annum inflation. Netting out these two impacts, the adjusted yield is 4.28% In general, Asian markets show adjusted yields closer to market yields.

In these markets rent-free incentive periods are absent or of short duration, while escalation clauses are absent. The impact of these adjustments is to align Australian CBD prime office yields more closely with other office markets across the AP region, although the spread remains positive.

Application to DCF analysis

Discounted cash flow (DCF) models of course allows for a full range of local factors and alternative scenarios to be incorporated in a valuation analysis; and in the end any investment decision must rely on detailed asset-specific modelling of cash flows and investment hurdle rates. But DCF analyses typically close the model by capitalising rent at some future date.

In practice the terminal capitalisation term can account for a significant proportion of the Net Present Value, and unless rent-free incentives and escalation clauses are a temporary market feature, capitalising rents (using Eq (1)) runs the risk of obliterating important factors that influence market value. Adjustments can be made to allow for future incentives by, for example, adding 25 basis points to the terminal yield, but these are often arbitrary. The formula we have employed (see Appendix) has the advantage of transparency, allows for explicit assumptions for rent-free incentives and other market drivers and facilitates sensitivity analysis if required.

Conclusion

We make no claim that these adjusted statistics encompass all the factors that will influence investment performance. In common with industry practice, our yield calculations make no explicit adjustment for leasing up periods, management and transaction costs, and additional income from non-office sources or currency fluctuations. Our modest aim is to provide a more informed basis for inter-market benchmark yield comparisons, and also to contribute to increased transparency when capitalising income in the terminal year of DCF models.

[2] Adjusted yield (y ') = y/(1-y) = .0420/(1-.0420) = 4.38%

Appendix: Calculation of adjusted yields

The basic Cap Rate model is derived as follows:

Define
CV = Capital Value
R = Rent
z = 1/(1+c), where
c = capitalisation rate (which is equal to the discount rate in a zero inflation, zero real rent growth world)

$$CV = Rz + Rz^2 + Rz^3 + \ldots\ldots\ldots\ldots\infty \qquad \text{Eq (1)}$$

Then multiplying both sides of Eq(1) by z

$$zCV = Rz^2 + Rz^3 + \ldots\ldots\ldots\ldots\infty \qquad \text{Eq (2)}$$

Subtracting, Eq (1) minus Eq (2)

$$CV(1-z) = Rz$$

And

$$CV = Rz/(1-z) = R/c \qquad \text{Eq (3)}$$

And Eq (3), the familiar Cap Rate formula, is subject to several conditions:
Firstly, the first cash flow in Eq (1) occurs at the end of Year 1. If rent is payable in advance then Eq (3) understates CV by the first years' rent, R. Alternatively, if CV is an accurate reflection of the market and if rent is payable in advance then the adjusted value of c that will align V and R is c/(1-c) reflecting the under-statement of the yield accruing to investors.
Secondly, rent R is can grow as a result of inflation (f) or in real terms (g). Incorporating these possibilities, Eq (3) becomes

$$CV = R/(d-g) \qquad \text{Eq (4)}$$

where d, the discount rate, is calculated as

$$(1+d) = (1+c) \times (1+f)$$

Extending this analysis, we derive

$$CV = So + S1$$

where

$$So = (R^*(zb)^{A}*(1-zb^{(T-A)})/(1-zb)$$

$$S1 = (Rz^{(T+B)}k^{B}(1-(zk)^{(T-B)})/((1-z^{T})(1-zk))$$

z is defined as ((1+g) x (1+f))/(1+d) = (1+g)/(1+c)
and
T = duration of lease (say, 120 months)
A = current rent-free period (say, 36 months)
B = rent free period in future leases (say, 24 months)
b = escalation in current lease (say, 4.5% p.a.)
k = escalation in future leases (say, 4.0% p.a.)

This equation incorporates the alternative scenarios shown in Table 1. The variables A and b capture conditions prevailing in the current market. B and k are choices for long term (perpetuity) conditions, which may of course be different from, or identical to, current market conditions. If, as we assume, CV and R are both known, the Excel "Goal Seek" function solves for c, the "adjusted yield".

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