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Constructing an Effective Rental Value Index

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This Programme supports the IPF's wider goals of enhancing the understanding and efficiency of property as an investment. The initiative provides the UK property investment market with the ability to deliver substantial, objective and high-quality analysis on a structured basis. It encourages the whole industry to engage with other financial markets, the wider business community and government on a range of complementary issues.

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Constructing an Effective Rental Value Index

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Constructing an Effective Rental Value Index

Researchers

Neil Crosby, *University of Reading*
Steven Devaney, *University of Reading*

Project Steering Group

Peter Stoughton-Harris, *CBRE*
Claire Higgins, *BNP Paribas*
Alan Patterson, *AXA*
Malcolm Frodsham, *Real Estate Strategies*
Paul McNamara, *IPF*
Pam Craddock, *IPF*

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Introduction

The mission of the IPF is to enhance the understanding and efficiency of property as an investment. Central to this is the need for the property investment market to be provided with accurate data to value property assets, measure investment performance and develop better forecasts of future market performance.

Over the last 25 years, the UK property industry has developed and improved the supply and quality of its data. However, there remains a significant and problematic area of ambiguity relating to the consistency of the rental value data derived from the property valuation process and its use in rental growth indices. The issue is as follows.

In a typical 'investment method' valuation, an estimated rental value is required to calculate the expected future cash flows receivable beyond the next lease event (e.g. rent review or lease expiry). The comparable evidence normally used in the valuation can either be entered as a 'headline' rental figure or an 'effective' rental figure adjusted for incentives agreed at the letting. By applying a higher capitalisation rate where a 'headline' rent has been entered or by incorporating a specific rent free period with a reversion to headline rent into the cashflow, the valuer can produce a similar capital value to that calculated if an 'effective' rent had been used.

While these alternative approaches result in equivalent estimates of asset value, they cause problems for the creation of market rental indices which use changes in rental values from one period to the next to identify trends in occupier markets.

If only 'headline' rents are used to create such series then, by failing to account for the greater level of incentives typically offered in a market downturn, the true decline in occupier market conditions at that time is under-represented. Rental data series based on such figures will prove less volatile and misrepresent the real underlying changes in rental conditions. In turn, given their dependence on such data series, rental forecasting models will predict lower than true levels of volatility in future rents and risk predicting rental values erroneously.

Clearly, if a mixture of different types of rental values are used to construct rental indices, as is understood to be the case, then the underlying movement in rental values becomes even more opaque, especially as valuers change from one basis to another, depending on the next event within any particular lease or property.

The IPF believes this issue needs addressing and has commissioned expert research and analysis to identify a practical solution to this problem. This analysis will form the basis for an industry-wide consultation to establish the most sensible and pragmatic way to proceed. Assuming an industry consensus can be achieved, IPF will then liaise with the relevant market agencies to implement the changes necessary to deliver a more robust rental value index for the UK.

Background

Lease terms in the UK have become more varied since the early 1990s as its commercial property investment market has moved away from a relatively standard 25 year lease with five-yearly upwards-only rent reviews. With changes in lease length, the increasing importance of rent-free periods and landlord capital contributions to tenants, alongside a growing range of other forms of 'incentive', the actual rent levels negotiated between parties to a lease, whilst still very important, have become less dominant and only one of a number of dimensions in leasing negotiations. Naturally, the level of rent finally agreed will be influenced by the scale and range of other incentives agreed in the leasing deal.

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In a buoyant letting market the scale of incentives offered to occupiers may be low and, thus, the rental figure contracted should more closely reflect a pure economic rent. By contrast, in a weak market, more incentives may be offered and the level of the contracted or 'headline' rent can be substantially reduced by the worth of the incentives granted. By 'rentalising' the value of the incentives and treating them as a deduction to the rent paid, the resultant 'effective' rent may be significantly lower than the 'headline'.

Rental data issues

A key to gaining consistency in the registering of rental values is to find ways in which valuers, when evidencing rental values through the valuation process, can be encouraged to be more forthcoming in what they record.

First, there is a need to know for what type of lease event the recorded rental data relates to. RICS UK Guidance Note No. 6 is clear that valuers can use different rental values for different types of rental value determination. It suggests that market rent should specify the terms of the assumed letting including any lease incentives. However, at rent review, the valuer is required to have regard to the specific conditions pertaining in the lease, which over-ride any valuation standards.

Second, within the software valuers use, there is currently scope for them to adopt different approaches when recording rental data. Some valuers record a headline rent and, elsewhere in the system, record the incentives necessary for the reversionary valuation, while others might simply enter an effective rent and record nothing further with respect to incentives. In this case, it is impossible to work out what combination of incentives has been used without reverting to the original files.

Third, it has already been established (Crosby and Murdoch, 2001) that the rents being entered into valuation software (and thus incorporated eventually into published rental series) are sometimes recorded on a 'provable' basis (i.e. that which can be shown to have already occurred) and at other times on an 'achievable' basis (i.e. that which the valuer feels could be achieved). This inconsistency, which, again often relates to the next major lease event which forms the reversion in the asset valuation, introduces yet further ambiguity to the rental data recorded and subsequently incorporated into the data series.

A pragmatic methodology to determine effective rent

If the purest record of the condition of a particular rental market is effective rather than headline rent, then there is need for both a means to consistently record the incentives on which any estimate of headline rent is based and a generally accepted approach to converting headline rents to effective rents.

Believing that valuation software providers are able to deal with the first of these issues, the IPF Research Programme has commissioned Professor Neil Crosby and Dr Steven Devaney of the University of Reading to recommend a practical approach to converting headline rents to effective rents to resolve the latter issue.

In summary, their research draws a number of conclusions, upon which the IPF would welcome the views of the property industry. These include:

- a 'pure' series of effective rents is desirable as only this will inform market observers and investors about the true state of occupier markets at any given time;

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- to understand the rental data it is presented with, the property industry needs the basis for rental values to be explicitly stated and recorded;
- a generally accepted single methodology is needed to convert headline to effective rents that does not increase the valuer's workload or require them to make judgements about key variables (such as investor-specific discount rates);
- any approach should be capable of automatic application through being programmable into the valuation software valuers use; and
- whilst it is acknowledged that the best approach for converting headline to effective technical is an explicit discounted cash flow approach, utilising both a target return rate and a rental growth rate, this approach raises a number of practical issues around the need for subjective inputs from valuers.

On this basis, Crosby and Devaney make four specific recommendations, namely, that:

1. the rental valuations required for a performance measurement system be provided from within the valuation and measurement systems, not directly by valuers;
2. IPD amends its Index Guide to require valuers to implement Red Book guidelines for the provision of rental value data in the UK and to specify headline rental values;
3. IPD and other data providers/collectors should ensure that data collection processes enable the incentives and lease terms assumed for future leases to be collected rather than for just the current lease, as is the case now; and
4. in the context of index construction, the following calculation methodology for effective rent should be adopted universally within UK performance measurement systems:

> The effective rent should be calculated by first assessing the present value of the headline rent payments, less any capital contributions, over a time period half way between the lease expiry date and the first rent review point. This calculation uses the equivalent yield as the discount rate. The set of rent payments that, in the absence of incentives, would produce an identical present value over that period is then computed.

Crosby and Devaney acknowledge that this is not a perfect solution, but have shown empirically that it is the best approximation of the technically superior approach, while using few subjective inputs. Furthermore, it can be implemented straightforwardly within existing performance measurement systems using the data already held on equivalent yields and introducing some new fields on assumed lease term, rent review and incentives.

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Next steps

With the aim of developing an industry-wide consensus on how to resolve this important issue the IPF invites comments on Neil Crosby and Steven Devaney's findings from all interested parties. The consultation will run through the early part of 2013, with the last date for comments being **Friday, 15th March 2013**. You are invited to respond in writing to:

Paul McNamara
c/o the Investment Property Forum,
New Broad Street House
35 New Broad Street
London
EC2M 1NH,
or email him with responses at pmcnamara@ipf.org.uk

The implementation of Crosby and Devaney's recommendations will require a measure of practical support from three important stakeholders. First, valuers will need to record information which is a by-product of their valuation process. Second, valuation systems will need to be further developed to provide fields into which additional data can be entered and, possibly, provide some small extra calculation facilities. Third, performance measurement services will have to provide additional fields and carry out the analysis of rental values within their systems.

Assuming a consensus can be reached as to the way forward, the IPF proposes to resume and progress the positive dialogue it has already begun with these key stakeholders whose active support is required to make the necessary changes and, ultimately, to resolve the issue surrounding the basis of UK rental data series.

The Research Steering Group of the IPF hopes you will participate in this important review and looks forward to hearing from you.

EXECUTIVE SUMMARY

The aim of this short paper is to identify an objective approach to the provision and analysis of rental value data for performance measurement purposes in order to create time series for effective rental values.

Current rental value indices are subject to uncertainty surrounding the basis of valuations used in their construction. This uncertainty concerns whether the valuation inputs are effective or headline rental values, and the assumptions made about lease terms by the providers of these valuations. The paper sets out the arguments leading to four recommendations that would achieve the objective of more transparent and accurate measures of rental value change.

Recommendation 1 – The effective rental valuations required for a performance measurement system are provided from within the valuation and measurement systems, not directly by the valuers.

The option of insisting that valuers produce effective rental levels for performance measurement systems has been examined and found wanting. The primary task of valuers is to produce capital valuations, and the rental value assessments within these valuations are not tailored to the calculation of rental value indices. The strength of getting valuers to calculate effective rental values is that, in many cases, expert valuers will be undertaking the calculations in markets that they understand. However, inconsistent approaches may be adopted, the data may not be provided in all cases as effective rental values are not always needed for the capital valuation process and it is unlikely that any fees will be attached to any additional tasks. In addition, if valuers provide the effective rents, there will be a lack of transparency, as this approach will not reveal the basis of the valuations or the methods used.

Recommendation 2 – IPD amend their Index Guide to include the requirement to use the Red Book for provision of rental value data in the UK and to specify headline rental values.

The paper has identified the professional context within which valuations are produced. The RICS Red Book defines market rent and the guidelines to this definition clearly indicate that it should be a headline rental value, with the valuer making assumptions as to the lease terms and incentives underpinning the rental value assessment. Investment Property Databank (IPD) also has had in the past a clear instruction to its subscribers to use the Red Book when providing capital valuations to its performance measurement system; no such instruction exists for rental values. To ensure that both headline and effective rental value indices can be produced, it is essential that IPD consistently receives a headline rental level.

Recommendation 3 – The data collection process has to enable the incentives and lease terms underpinning valuations, not just those in the current lease, to be collected to ensure that both headline and effective rental value indices can be constructed.

If IPD is to collect headline rental values then the data collection process must also enable the associated assumptions, including assumed lease term, rent review pattern and incentives, to be identified in each case. This will mean some discussion between Argus and other valuation systems and IPD and may require that valuation software is developed to provide both headline rental value (including assumed terms of the lease including incentive packages) and the ability to specify an additional effective rental value where appropriate for the valuation function.

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Recommendation 4 – Method 2 should be adopted universally within UK performance measurement systems to determine effective rental values from data on headline rental values and incentives. These calculations can be undertaken within existing systems using existing capitalisation rate data and new fields on assumed lease term, rent review and incentives.

The paper has examined in detail the different methods available for the determination of effective rental values. If the determination is to be undertaken within valuation or performance measurement systems then it has to be capable of operating without subjective inputs and using available information. Although an explicit cash flow approach is technically superior, the approach utilising the least subjective inputs is that which is termed Method 2 in this paper. It is simple conventional valuation using capitalisation rates of the headline rent written off over a period equal to halfway between the lease term and the rent review period – i.e. in the case of a 15-year lease with five-year reviews, 10 years. This approach has been compared to other approaches using the more sophisticated cash flow approach as a benchmark and is found to be the most consistent and objective approach with the least variation from the cash flow model solutions.

Implementation of these recommendations requires a small contribution from each of the three main stakeholders. First, valuers will need to record information which is a by-product of their valuation process. Second, valuation systems will need to provide the fields for the additional data entry and may want to provide extra calculation facilities. Third, performance measurement services will have to provide additional fields and carry out the analysis of rental values within their systems. The result will be a significant improvement in the transparency and accuracy of two of the major indicators within the UK property market – rental values and equivalent yields.

1. INTRODUCTION

Rental value growth is a driver of capital growth and an important component of property performance measurement. Time series of rental values at the national, regional and local levels are used routinely in the forecasting of property market returns and prices.

In the period before the major commercial property crash in 1990, the assessment of rental value was relatively straightforward. Rental values are affected by location, building and lease characteristics – before 1990, the vast majority of institutional grade properties were let on 20 or 25 year terms, with upwards-only market rent reviews and Full Repairing and Insuring (FRI) clauses. For example, 86% by value of the IPD UK database was let on 20/25 year leases in 1990 (DETR, 2000: 70). Hence, defining and assessing rental values was relatively unproblematic, with a supply of comparable properties let on standard lease terms. Rental value variations were largely based on location and physical differences. However, even in this period, there were issues arising from the different types of rent determination; for example, quoting and agreeing market rents at new letting, negotiating renewals of leases to existing tenants and negotiating rent reviews. Differences in rental level arising from these different approaches were being monitored by market participants (for example, Hillier Parker) and, therefore, were already proving problematic for the relatively new role of performance measurement (Crosby and Murdoch, 2000).

The situation changed in the period after the 1990 crash. Successive reports by the University of Reading in relation to monitoring the Commercial Leases Code of Practice (DETR, 2000; ODPM, 2005), supported in the last 10 years by the BPF/IPD Annual Lease Review (e.g. BPF/IPD, 2012), detail the increasing variation in lease terms in the UK and the introduction of incentives such as rent-free periods and capital contributions by landlords within new lettings. These developments have created additional difficulties in interpreting rental levels. In essence, the inclusion of incentives within a letting means that the rent negotiated between the parties cannot be taken at face value as a signal of the rental value of the subject property. This, in turn, raises further issues for valuations, most notably in the arenas of asset valuation, rent review and property performance measurement.

Issues within rent review have been addressed by the RICS within their Practice Standards with the publication of a Valuation Information Paper that has been subsequently adapted for inclusion as a Guidance Note in the later editions of the Red Book (RICS, 2012, UKGN 6). This short paper concentrates on one of the other main applications indicated above – performance measurement – and, in particular, the generation of rental value indices.

Rental value indices require consistent inputs in order to produce a series that can be analysed by market participants. The easiest input to observe is typically the headline rent – the figure that was negotiated between the parties to a deal without any adjustments for the incentives that were part of the deal and which forms the rent stated in the lease. However, it is recognised within the property industry that indices based on headline rental values provide only a limited indicator of the state and strength of rental markets. As such, there is interest in tracking the growth of effective rental values over time, which are rental values that are adjusted for the incentives that were agreed and are therefore assessments of what the rent would have been had there been no incentives. There are a variety of approaches to such adjustments and there is no one accepted approach within the valuation profession. Thus, progress on the index issue to date has been limited.

1. INTRODUCTION

The aim of the present paper is to identify an objective approach to the provision and analysis of rental value data for performance measurement purposes. Its objectives are to review the available methods for assessing effective rental values and to see if they could form the basis of a working model for the provision and/or interpretation of rental value data – either by the index producers or the organisations that provide data to them – to enable construction of effective rental value indices. Section 2 of the paper examines the professional and market context to identify issues surrounding rental value indices. Section 3 then sets out alternative methods for computing effective rental values and discusses their application to the interpretation of rental transactions. Section 4 examines the criteria and process by which an effective rental value series could be delivered and summarises difficulties concerning the subjectivity of model choice and inputs. Section 5 tests the sensitivity of results from different models to variations in their inputs and Section 6 concludes this paper by setting out recommendations concerning the construction of an effective rental value index within the major performance measurement system in the UK – the IPD.

2. THE PROFESSIONAL AND MARKET CONTEXT

The property industry understands the concept of market rental value and the definition of Market Rent (MR) as set out in the RICS Red Book. Market rents are used within many valuations including valuations for acquisition and sale, performance measurement and landlord and tenant purposes, including rent review. However, although the basic concept is easy to understand, its application in practice and the nuances of the definition can be difficult. The level of market rent can be affected by a number of issues, not least the terms of the lease, and the Market Rent definition does not give very precise guidance as to how these differences should be addressed by valuers in reaching a market rent figure – apart from suggesting that the market rent should be assessed based "on appropriate lease terms".

However, the supporting text is more specific:

> "Valuers must therefore take care to set out clearly the principal lease terms that are assumed when providing market rent. If it is the market norm for lettings to include a payment or concession by one party to the other as an incentive to enter into a lease, and this is reflected in the general level of rents agreed, the market rent should also be expressed on this basis. The nature of the incentive assumed must be stated by the valuer, along with the assumed lease terms." (RICS, 2012, VS 3.3)

This suggests that where it is normal in a particular market environment to grant incentives to tenants, the market rent is subject to these incentives and so the market rent to be identified under the RICS definition is a headline or contract rental value.

Performance measurement systems based on valuation data normally require valuations to be undertaken under the Red Book guidelines. Therefore, valuers acting correctly under these instructions should be providing headline rental values and making assumptions about what incentives are necessary to underpin these rental levels. Yet it is interesting to note that while the IPD Index Guide explicitly mentions the Red Book principle for capital valuations it does not repeat this for market rental values in the very next paragraph (IPD, 2011, p.13). The Index Guide is international and so references to International Valuation Standards may be more appropriate than references to the Red Book. However, the Red Book Market Rent definition is very useful for the particular focus of this paper. References to and use of standards within the Index Guide need some attention. IPD (2012) have recently introduced the 8th Edition of their Index Guide and now refers to national standards in their international markets and reference to the Red Book is now an example of a national standard.

In the rent review arena, rental determinations are more complex. The Red Book specifically states that Market Rent is not suitable for rent review. Instead, the actual circumstances of the lease have to be used:

> "Market rent will normally be used to indicate the amount for which a vacant property may be let, or for which a let property may be re-let when the existing lease terminates. Market rent is not a suitable basis for settling the amount of rent payable under a rent review provision in a lease, where the actual definitions and assumptions have to be used." (RICS, 2012, VS 3.3)

In rent review determinations, the practice of determining the effective rental value from evidence of headline rents is normal because many rent review definitions of rent require a rent that is not subject to any incentives. Thus, a body of technique has been developed to identify the necessary adjustments. This body of technique is set out in the Red Book UK Guidance Note Number 6 (RICS, 2012, UKGN 6). The differences between headline and effective rental values can be significant and the Guidance Note indicates that there are several different techniques that can be used, producing a range of solutions.

2. THE PROFESSIONAL AND MARKET CONTEXT

Theoretically, given the IPD guidance and the definition of market rent, rental growth indices produced from performance measurement systems might be assumed to be based on headline rental value inputs. However, there is no evidence that valuation providers for such systems follow a particular set of rules even where the performance measurement system in question is clear in its guidance to information providers. Crosby and Murdoch (2001) surveyed the information providers to the UK IPD and found that a range of different interpretations of rental value were being provided including both effective and headline rental values and also provable and achievable rental values (the valuers' opinions of what they could prove at a third party determination versus what they felt they could achieve on the open market).

This variation in approach is not surprising. At present the rental value is extracted from a valuation system and such a system requires a rental value to value the reversion from the next rent change onwards. The basis of rent changes depending on the type of determination. If the next rent change is a rent review, the rental value required will often be a provable effective rental value assuming no voids or rent-free periods.[1] If the change is a lease expiry, the valuer may decide to enter a provable or achievable headline rental value with a set of rent-free and possibly void assumptions depending on whether they assume a lease renewal or new letting upon expiry. The primary function of the valuation system is not to provide a consistent rental value series for a performance measurement system. The valuation system does require void periods and rent-free periods[2] to be specified for the reversion, but the assumed new lease length and review pattern are not required.

Meanwhile, market indicators other than IPD are less than forthcoming about the basis of their rental value series. For example, the CBRE indicator of UK rental values and yield levels, in its technical appendix, defines its rental value series as based on "the open market rental value of a rack rented property of a standard specification at the relevant date" (CBRE, 2007). There is no indication of whether these rental values are headline or effective, provable or achievable, and what incentives are assumed. Again, the assumption must be that they are based on headline rental values.

It is evident that existing rental value series based on valuations are subject to uncertainty as to the basis of evidence on which they are computed. In addition, it is clear that even where there is little uncertainty, some systems are using a headline rental value series and yet there is no indication of the level of incentives underpinning those rental value estimates. It is also clear that the level of incentives changes in different market states (DETR, 2000; ODPM, 2005; BPF/IPD, 2012) and therefore markets can be misrepresented by indices that do not couple their rental value change with changes to the level of incentives.

One solution would be to construct both headline rental value and effective rental value series so that investors could track movements of both through different market states. This requires an objective approach to the methods of data collection, which would be based on headline rental values and the level of incentives including information on prospective lease length, breaks and rent reviews. Improvements in the basic criteria laid down for the provision of data for both headline and effective rental value indices would increase consistency across the various data providers. However, consistent analysis of that data would also be required for the construction of usable effective rental value indices. The next section identifies the issues involved in selecting a preferred approach for this purpose.

[1] At review, the basis of the rent is set out in the lease so theoretically it could be anything, but many leases do not allow the incentives to be replicated at each review so the parties would agree an effective rental value.

[2] Valuation systems can allow voids and rent-frees to be merged therefore no distinction between them would be specified.

3. METHODS OF INTERPRETING LETTING TRANSACTION DATA

This section reviews the available methods for assessing effective rental values and identifies the inputs necessary to form the basis of a working model for the provision and/or interpretation of rental value data.

The different kinds of incentives are set out in a RICS Guidance Note to the Red Book (RICS, 2012, UKGN 6) and include:

- rent-free periods;
- premiums and other capital payments;
- stepped rents, rent capping and fixed rents on reviews;
- lease surrenders or take backs;
- other incentives such as lease covenant concessions or service charge caps.

The two most common incentives are rent-free periods above those for normal fitting-out purposes and additional capital payments by landlords, sometimes to help pay for fitting-out, and it is these two that are addressed within this review of method.

RICS UK Guidance Note 6 sets out four methods ranging from a very crude rule of thumb to a more sophisticated cash flow approach. One of the methods (Method 3 in UKGN 6) is a fairly arbitrary approach based on subjective capitalisation rate adjustments between the rate applied to a headline rental value and the rate applied to an effective rental value. The subjective nature of this choice makes it inappropriate for a performance measurement system which will require the most objective and consistent method of analysis. Hence, this approach has been ignored in the following discussion.

Method 1 in UKGN 6 does not take into account the timing of cash flows and simply sets the total income and expenditure from the actual lease, including any incentives, against an equivalent lease that assumes no incentives had been granted. The method does not anticipate any change to the cash flow over time regardless of whether there are rent reviews in the lease. Method 2 adopts a similar 'conventional' approach to future rental value change during the lease but adopts a time value of money discounting approach to the problem. This requires a discount rate which may be some form of target return rate or a capitalisation rate/ equivalent yield. Method 4 in UKGN 6 is an explicit discounted cash flow approach requiring both a target return rate and a rental growth rate as inputs.

Appendix A of this paper sets out two examples to illustrate how these methods work; one with rent reviews within the lease and one without. Example 1 is a short lease with a rent-free period, no reviews and a small amount of capital payment. Example 2 is a longer lease with upwards-only rent review clauses, a longer rent-free period and a larger capital payment. All the examples and discussion assume that any rent reviews are upwards-only and that the lease term is assumed to be the end of the lease or the period to the first break clause, if one exists.

Break clauses are a major issue within this form of analysis. It is convenient to assume that any break date is equivalent to the lease expiry date as indicated above. This assumption is made because, although not all break clauses are exercised (Strutt and Parker/IPD, 2012), they are sometimes used to manufacture a downwards review (IPF, 2010). Given that most analyses of the write-off period within effective rental value calculations are dominated by the upwards-only rent review clause (discussed later in this section), it is the only reasonable assumption that can be made.

3. METHODS OF INTERPRETING LETTING TRANSACTION DATA

Method 1 is, in valuation practice terms, very crude as it does not take the time value of money into account. However, because of that, it does not require any choice of discount rate to be made. There is no subjectivity within its application to the short lease example. However, for the longer lease example, it does require a subjective choice in relation to the write-off period to be made (i.e. the length of time over which the impact of the incentive is assumed to last).

Method 2 is based in conventional valuation practice. It applies discounting to the current cash flows and is therefore identical to Method 1, but with the timing of the various payments taken into account. To put it another way, Method 1 is Method 2 if a discount rate of zero is assumed. Superior valuation practice is set off against the subjective necessity to identify the discount rate. As with the first method, Method 2 also has to determine the write-off period subjectively.

Method 4 in UKGN 6 (termed Method 3 for the remainder of this paper) is a cash flow approach and requires additional subjectivity in that not only does it take the time value of money into account, necessitating the choice of a discount rate, but it also requires a growth rate to be chosen for the rental value. However, the write off period is then selected objectively as the method calculates whether or not the impact of the incentive lasts for the length of the lease or ends at an earlier point. Method 3 will equate to the solution found by Method 2 in a no-growth scenario where Method 2 adopts a write-off period to the end of the lease.

The various outcomes to Examples 1 and 2 are set out in Table 3.1. Example 1 assumes a headline rent of £100,000 pa subject to a five-year lease with a one-year rent-free period, a three-month fitting-out period and a capital contribution of £50,000. The target rate is 8%, the capitalisation rate 6% and the rental value growth rate 2%. Example 2 is similar but has a longer 15 year lease with five-year upwards-only rent reviews, a rent-free period of 3 years and a capital contribution of £100,000. The various solutions using the different methods range between effective rental values of £64,632 and £73,684 for Example 1 and between £10,465 and £74,576 for Example 2. This demonstrates how different methods can produce very different answers and the need to examine the reasons for such variation in more depth prior to recommending a particular approach.

Table 3.1: Solutions to the calculation of effective rental value by the various methods

	Method 1	Method 2 Cap rate	Method 2 Target rate	Method 2 Target rate and Cap rate	Method 3 DCF
Example 1					
Write off to Lease End	£73,684	£69,724	£68,365	£64,632	£68,365
Example 2					
Write off to Rent Review	£21,053	£13,581	£11,070	£10,465	
Write off to Lease End	£74,576	£63,764	£59,875	£52,605	
Write off halfway between Review and Lease End	£61,538	£51,792	£48,409	£44,008	£55,304

To summarise, Methods 1 and 2 require an arbitrary decision on the write-off period where the lease extends beyond a review period without a break clause and rent reviews are upwards-only. Method 3 allows the

3. METHODS OF INTERPRETING LETTING TRANSACTION DATA

write-off period to be calculated accurately subject to the assumptions made concerning growth rates. Meanwhile, both Methods 2 and 3 require assumptions as to the discount rate to be used. These issues will now be considered in more detail.

3.1 Discount rates

UKGN 6 identifies three different possibilities for the discount rate; – a capitalisation rate, a borrowing rate and a target rate of return. It gives no indication of the reasons why it uses these three rates within the various methods. Discount rates are not borrowing rates, and borrowing rates should not be used for discounting cash flows unless the risk of the cash flow is identical to the risk taken by the lender. Therefore, this paper dismisses borrowing rates as a basis for any analysis of rental transactions.

Capitalisation rates are based on the target rate less the expected growth rate (including any depreciation impact) and so should only be used where the cash flow set out in the calculation is not the expected cash flow over the life of the investment, as in a conventional market valuation. Method 2 adopts the conventional assumption that the current rental value does not change over time, so it may be assumed that, where some changes to rent are expected, the capitalisation rate could be used in the calculations.

However, there are some interesting contradictions with this assumption that are related to the write-off period. Effective rental value could grow rapidly enough such that the headline rent is superseded at the first review, but it is also possible that it will not, with the result that the headline level of rent persists as the passing rent beyond the first review date.[3] In the latter case, it would be appropriate to discount the effective rental value within Method 2 at the capitalisation rate where the effective rental value is assumed to last beyond the review date. If the write-off period is to the first review only, the effective rental value is fixed for the duration of the calculation and so a target rate of return would be more appropriate.

Yet the headline rental value is a fixed rent so a growth-implicit capitalisation rate would not be appropriate to discount that income flow. Where the write-off period extends beyond the rent review, an assumption is being made that the headline rent, underpinned by an upwards-only clause, remains above the effective rental value at the review date. So, even where the write-off period extends beyond the first review, it is still appropriate to discount it at the target rate.

Method 3 has no such ambiguities. It is based on an explicit cash flow, so all cash flows are discounted at the target rate of return.

The level of the different rates is also not simple. Capitalisation rates can be different depending on whether they are analysed from market transactions based on headline rental values or effective rental values. There is a circular argument here. A capitalisation rate/equivalent yield may be based on analysis of a headline rental value and then used to determine an effective rental value. But this new rental level could then be used to determine a new capitalisation rate from the transaction, rendering the previous analysis erroneous. Theoretically, the whole process should start again. What is required is for the two measures to be assessed in tandem rather than a determination of the capitalisation rate first which is subsequently used to change the headline rental value to an effective rental value. A consistent series of equivalent yields requires a consistent series of rental values and vice versa. However, computer programs could solve for the two different measures iteratively, while later analysis in this paper illustrates that the choice of capitalisation rate is not very significant to the outcome.

[3] Assuming an upwards-only rent review clause.

3. METHODS OF INTERPRETING LETTING TRANSACTION DATA

Target rates of return are also not without difficulties. They are subjective. There is no widely accepted series of target rates for commercial real estate and so there is no real consensus as to their basis or level.

3.2 Write-off period

This is a major issue for Methods 1 and 2. UKGN 6 suggests that it is a much debated point and relates it to the rent review issue by suggesting it is debated between these two parties:

> "The time over which the incentive should be analysed is a much debated point. It will be recognised that the landlord will usually contend for the longest period, such as the full term of the lease, and the tenant for the shortest period, such as the first review. The valuer's decision has to be a judgment between these conflicting claims, having regard to the overall effect of all the incentives, anticipated rental growth, knowledge of the market, motivations of the parties and what, in reality, might be achieved in an open market letting on the hypothetical terms. Tenants will commonly seek to minimise the anticipated rental payments, and the occupier landlord will seek to mitigate the liability. Investor landlords will commonly seek to maximise capital value." (RICS, 2012, UKGN 6, Para 5.7).

Valuation practice within rent review has compromised between these two views on write-off period, choosing a period between the two extremes of rent review and lease end. It might be suggested that valuers could do nothing else given that failure to agree a rent review leads to a third-party determination. The arbitrator or independent expert is appointed by the RICS and either side can object to a particular appointment. If individual experts/arbitrators were thought (rightly or wrongly) to be siding with one party, they could be stopped from doing any future work by the objection process, so a compromise approach has to be adopted to participate in this particular line of work.

Landlord or tenant 'preferences' are not an objective method of determining the write-off period. The real question is whether the impact of the incentive lasts beyond the first review or any subsequent reviews. The larger the incentive and the lower the expected future rental growth, the more likely it is to last beyond the first review.

To illustrate the issue, consider the following example, where the headline rent is £100,000 p.a., the lease lasts for 15 years, rent reviews take place every five years on an upwards-only basis and a rent-free period of 12 months has been agreed. Assume no fitting-out period for ease of calculation and that rental growth is 3% p.a. Landlord argues for a write off over 15 years using Method 2 and a discount rate of 8%.

3. METHODS OF INTERPRETING LETTING TRANSACTION DATA

Table 3.2: Write off over 15 years using Method 2 and a discount rate of 8%

Headline rent		£100,000	
x YP @ discount rate for	14 yrs	8.2442	
x PV £1 @ discount rate for	1 yr	0.9259	
Capital value of headline rent		£763,355	
/ YP @ discount rate for	15 yrs	8.5595	
Effective rental value			£89,182

In this case, the effective rent suggested by this method grows to over £100,000 by the first review (assuming 3% growth p.a.), so on this basis, the tenant would be right to suggest that the landlord's valuation has proved the tenant's approach to be right. The incentive should be written off to the first review only.

However, if the write off is made to first review instead, then the answer for effective rental value changes dramatically. Adopting this write-off period generates an effective rental value of £76,810 which will not grow to £100,000 by the first review. At 3% p.a., it grows to £89,000 by the first review and only just manages £100,000 at the second review. The calculations are set out in Table 3.3.

Table 3.3: Write off over 5 years using Method 2 and a discount rate of 8%

Headline rent		£100,000	
x YP @ discount rate for	4 yrs	3.3121	
x PV £1 @ discount rate for	1 yr	0.9259	
Capital value of headline rent		£306,678	
/ YP @ discount rate for	5 yrs	3.9927	
Effective rental value			£76,810
Rental growth at 3% p.a.			
First review point after	5 yrs	1.1593	£89,043
Second review point after	10 yrs	1.3439	£103,226

3. METHODS OF INTERPRETING LETTING TRANSACTION DATA

Adopting a cash flow approach (Method 3) at the same discount rate and utilising the 3% p.a. growth rate explicitly within the calculations solves the write-off period, as set out in Table 3.3, and confirms that a ten-year write-off period would be appropriate. Method 3 values the headline rental value at the target rate of return over the write-off period and then suggests that any effective rental level would remain fixed for five years and then increase at the review from growth of 3% p.a. over the five year period. If the effective rental value is £x p.a., the review rent is £x multiplied by (1 + growth)^5. Both rents are discounted at the target rate of return. Different write-off periods can be tested until the right one emerges; in this case, it is ten years because the effective rental value grows above the headline rent before the last review in year 10. On that basis both leases would generate the same level of rent at the review in year 10 and it would make no difference as to which lease had been agreed. The incentive has been written off.

Table 3.4: Effective rent calculation using Method 3

Headline rent p.a.	£100,000 pa	
x YP 9 years x PV 1 yr @ 8%	5.7842	
Value of headline rent		£578,416
Value of effective rent	£x	
YP 5 years @ 8%	3.9927	
Value of first term		£3.9927x
Reversion to future rental value @ 3% p.a.	£1.1593x	
YP 5 years @ 8% x PV 5 years @8%	2.7174	
Value of reversionary rent		£3.1502x
Value of effective rent		£7.1429x

Effective rental value = value of HR divide by value of ER = £578,416/7.1429x

Effective rent (x) = £80,978 p.a.

Effective rental value at first review = £80,978 x (1.03)^5 = £93,875 p.a.

Effective rental value at second review = £93,875 x (1.03)^5 = £108,827 p.a. The headline rent would also be reviewed upwards at this point to £108,827 p.a.

Adopting Method 2 with a compromise period of ten years gives an effective rental value of £86,200 p.a., an 'error' of 6.4% when compared to the solution from Method 3.

3. METHODS OF INTERPRETING LETTING TRANSACTION DATA

To summarise, the write-off period is not about a trade-off between the respective positions of a landlord and a tenant. It is a more objective issue about whether the impact of the incentive carries forward beyond any rent reviews in the lease. The impact of the incentive will only last **at its initial level** over the whole term of the lease if rental values are static over the whole term of the lease and the rent reviews are upwards-only in nature. If rental values grow, the impact will diminish at each rent review over the term of the lease. The write-off period and its impact can only be modelled objectively within an explicit cash flow format, but that, in turn, requires subjective assumptions concerning growth rates and target rates of return.

Given the problem with assessing write-off period and its impact on the result, this review suggests that the best approach is the explicit cash flow. The advantage of this method is that the write-off period is fixed by the assumptions, but it requires subjective assumptions concerning the target rate of return and the growth rate. Given that growth can be obtained from market information by deducting the capitalisation rate from the target rate, growth could be a function of target rate and capitalisation rate assumptions. The practice-based approach that is Method 2 does not require assumptions of growth but still requires an assumption of discount rate which could be the capitalisation rate, the target rate or a combination of both. However, it does require an assumption concerning write-off period. Method 1 is not defensible as a method, but it does not require any assumptions concerning discount rates. Nonetheless, the write-off period is an issue.

4. CRITERIA FOR THE PRODUCTION OF AN EFFECTIVE RENTAL VALUE INDEX

The review of methods has identified two major issues regarding inputs to the model – discount rates and write-off periods. To produce an effective rental value index, any method ideally should be easily applied and the data for it sourced objectively. However, objectivity could be achieved through consistency given that the overall objective is to produce an index series.

Three possibilities concerning the process by which an index could be produced are considered in this paper.

First, IPD and other performance measurement providers could ask their data providers to calculate and supply effective rental values directly and these inputs could then be used to produce the index.

The strength of such an approach is that, in many cases, expert valuers will be undertaking the calculations in markets that they understand and operate in and different practices prevailing in different sub markets will be reflected in these assessments. However, the previous discussion reveals the variation in the methods and the data requirements for each method. Thus, the weaknesses are that not all data will be provided by these experts, that inconsistent approaches may be adopted, the data may not be provided in all cases and, in some cases, assessments may be superficial as no fees are attached to the task. Use of a performance measurement system requires some understanding of the underlying data. In the case of capital valuations, it is enough to know that they are market valuations following the Red Book definition. In the case of rental valuations, the terms of the assumed lease introduce major uncertainty into the basis of the data. This first approach will not help remove this uncertainty and so it is recommended that this approach is not followed.

If this approach is not adopted, it follows that the effective rent calculations will have to be undertaken within a system. Two systems exist; IPD itself and the major software packages used to produce valuations. Argus has been adopted by a large number of data providers, although there are alternative packages. Thus, the second and third possibilities are that the calculations are done within these systems.

The issues concerning method are identical to both of these possibilities and there is a fundamental question to resolve. That is, for the calculations to be embedded in the data measurement service, subjective choices on inputs are difficult, if not impossible, to manage. All of the methods require data decisions but many of them can be automated.

The analysis of methods has identified a possible approach which has some defensible properties – Method 3 (DCF). However, this model requires assumptions concerning discount rates, growth rates and/or capitalisation rates. Potentially, the choice of target rate could utilise published financial indicators and surveys of the risk premium from the IPF quarterly survey (IPF, 2012). Meanwhile, rental growth rates could be implied from combinations of target rate of return and capitalisation rate.

The other more simple methods also require subjective inputs. Method 1 requires a subjective decision on write-off period, but that could be based on a decision to use a factual source; lease length, review pattern or a calculated compromise. Method 2 also requires a decision as to the write-off period and a choice of a yield, a capitalisation rate, a target rate or both of these in one version of the method. However, it could be applied using inputs directly obtainable from the market. For example, the capitalisation rate could be the equivalent yield used in the valuation within Argus or the equivalent yield currently computed within the IPD UK database.

4. CRITERIA FOR THE PRODUCTION OF AN EFFECTIVE RENTAL VALUE INDEX

The main question is the impact of these assumptions on the outcome. A range of different analyses has been undertaken on the results to identify the sensitivity of outcomes (levels of and changes in effective rent) to ranges in write-off period, discount rate, growth rate and in rent-free period with these analyses set out in the next section. The analyses are undertaken using Method 3 as a benchmark, which is based on it being the most theoretically logical approach but the one that would require some major assumptions concerning target rates and growth rates were it to be used.

5. MODELLING THE IMPACT OF THE INPUTS ON EFFECTIVE RENTAL VALUES

Table 5.1 sets out a preliminary analysis of the difference between the various models for a range of rent-free periods, write-off periods and growth rates within the confines of a 15 year lease with five-year reviews and a capitalisation rate of 6%. This capitalisation rate is varied in subsequent simulations undertaken later in this section. Using the DCF approach (Method 3) as a control, the table reports the ratio of the answer for each method set against the DCF solution. The results demonstrate the general trend that for low growth rates and long rent-free periods the write off towards the end of the lease is more accurate while for high growth and short rent-free periods, the write off occurs during the first review period. However, on closer inspection, it is the compromise position that has the least differences in about half of the observations and in only one case is the closest answer the write off to the end of the lease. Method 2 using the compromise position on write-off period is the closest solution to the effective rental value determined by DCF in five of the nine examples. This preliminary analysis suggests that Method 2 with a compromise write-off period is the most promising simple method of determining effective rental values.

5. MODELLING THE IMPACT OF THE INPUTS ON EFFECTIVE RENTAL VALUES

Table 5.1: Comparison of effective rental values by Methods 1 and 2 with Method 3

Rent free one year	**1**	**2**	**3**	
Cap rate 6% growth 1%	First review	End lease	Compromise	Closest
Method 1/Method 3	95.15%	107.25%	104.30%	3
Method 2/Method 3	93.01%	104.62%	**101.85%**	**3**
Rent free two years				
Cap rate 6% growth 1%	First review	End lease	Compromise	
Method 1/Method 3	79.90%	111.51%	103.81%	3
Method 2/Method 3	75.79%	105.24%	**98.22%**	**3**
Rent free three years				
Cap rate 6% growth 1%	First review	End lease	Compromise	
Method 1/Method 3	59.98%	115.89%	**102.27%**	**3**
Method 2/Method 3	55.21%	105.87%	93.78%	2
Rent free one year				
Cap rate 6% growth 3%	First review	End lease	Compromise	
Method 1/Method 3	**100.80%**	113.61%	110.49%	1
Method 2/Method 3	98.53%	110.82%	107.89%	1
Rent free two years				
Cap rate 6% growth 3%	First review	End lease	Compromise	
Method 1/Method 3	88.11%	122.96%	114.47%	1
Method 2/Method 3	83.57%	116.06%	**108.31%**	**3**
Rent free three years				
Cap rate 6% growth 3%	First review	End lease	Compromise	
Method 1/Method 3	66.95%	129.35%	114.15%	3
Method 2/Method 3	61.63%	118.17%	**104.68%**	**3**
Rent free one year				
Cap rate 6% growth 5%	First review	End lease	Compromise	
Method 1/Method 3	104.30%	117.56%	114.33%	1
Method 2/Method 3	**101.95%**	114.67%	1 11.64%	**1**
Rent free two years				
Cap rate 6% growth 5%	First review	End lease	Compromise	
Method 1/Method 3	**94.68%**	132.12%	123.00%	**1**
Method 2/Method 3	89.80%	124.70%	116.37%	1
Rent free three years				
Cap rate 6% growth 5%	First review	End lease	Compromise	
Method 1/Method 3	74.34%	143.64%	126.76%	1
Method 2/Method 3	68.44%	131.22%	**116.24%**	**3**

5. MODELLING THE IMPACTS OF THE INPUTS ON THE VARIATION IN EFFECTIVE RENTAL VALUES

The comparison between the DCF solution and the other methods can be developed further and the following analysis identifies the mean values and variations in value using a Monte Carlo simulation within Crystal Ball across the following variables. Rent-free periods were ranged from 0.25 of a year (i.e. no incentive using 0.25 as a normal fitting-out period) to three years on a 15 year lease with five-year upwards-only rent reviews, with a range of capitalisation rates from 4% to 10% and target rates from 6% to 12%.

Growth rates were computed as target rate of return minus capitalisation rate (i.e. using a simple form of implied rental growth rate analysis). The only constraint placed on the random selection of these variables was that the target rate could not be less than the capitalisation rate. This produces a minimum growth rate of 0% p.a. In the event of negative growth, modelling produces a higher effective rental value than headline rental value which would not occur in reality because of the upwards-only rent review assumption. Therefore, the nil growth constraint maintains this relationship.

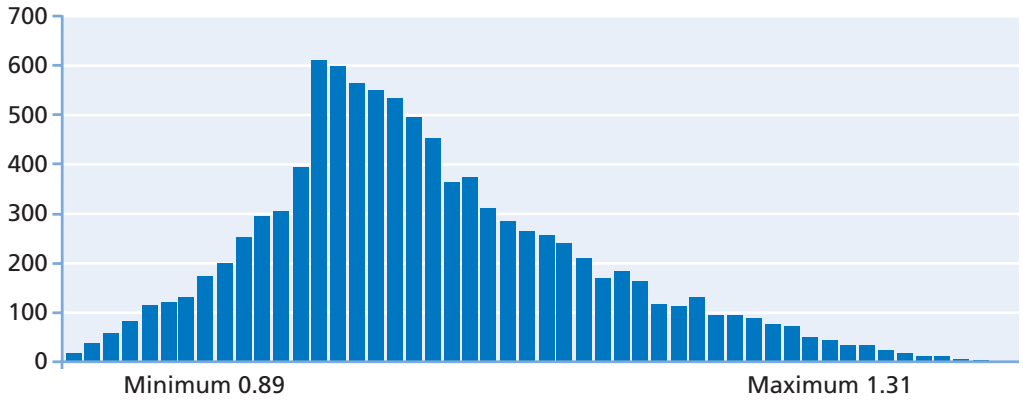
Table 5.2 and Figure 5.1 illustrate the comparison between the effective rental values from the DCF model and the effective rental values found from the Method 2 compromise approach.

Table 5.2: Comparison of DCF effective rental value with Method 2 using a compromise write-off period

Statistics	Forecast values	Percentiles	Forecast values
Trials	10,000	0%	0.8905
Mean	1.0507	10%	0.9672
Median	1.0391	20%	0.9946
Standard deviation	0.0720	30%	1.0094
Variance	0.0052	40%	1.0236
Skewness	0.6144	50%	1.0391
Kurtosis	3.20	60%	1.0558
Coeff. of variability	0.0685	70%	1.0787
Minimum	0.8908	80%	1.1087
Maximum	1.3079	90%	1.1531
Range width	0.4174	100%	1.3079
Mean std. error	0.0007		

5. MODELLING THE IMPACTS OF THE INPUTS ON THE VARIATION IN EFFECTIVE RENTAL VALUES

Figure 5.1: Distribution of simulation results comparing DCF effective rental values with Method 2 effective rental value assuming a compromise write-off period



The mean and median suggest that Method 2 produces effective rental values on average about 4% to 5% higher than the DCF approach and that the distribution is slightly skewed with a longer tail on the upside leading to a range that overvalues at the extremes by around 30% compared to undervaluation around 10% with an inter-quartile range of less than 10%.

Sensitivity analysis suggests that the main reason for the differences between the two models centres around the relationship between the capitalisation rate and target rate (i.e. the growth rate), rather than the extent of the rent-free period. This highlights that the compromise concerning the write-off period causes over estimation of the effective rental value when the write-off period should have been restricted to the first rent review date at high growth rates/low capitalisation rates. Thus, where Method 2 gives a low effective rental value compared to Method 3, it is a function of high capitalisation rates and low growth rates and where Method 2 gives a higher effective rental value, it is a function of low capitalisation rates and high growth rates. The correlation coefficients show a negative relationship between the Method2/Method 3 ratio and capitalisation rate (r^2 = -0.54) and a positive relationship between the ratio and the growth rate (r^2 = +0.86).

Appendix 2 sets out similar analyses for the other five methods which could be adopted. These are Method 1 adopting either the rent review period, the lease term or the compromise period and Method 2 using the rent review period or the lease term. These show less consistency with the DCF approach than the above comparison. The closest is Method 1 using the compromise period, but it is more highly skewed and has a lower level of accuracy with the DCF solution than Method 2. This comparison suggests that the preliminary analysis is confirmed – that Method 2 using a compromise write-off period is a more robust method for the construction of an effective rental value index compared with the other applications of Methods 1 and 2.

The final question to be addressed is the efficiency of the method in constructing an effective rental value index and, in order to examine that question, a set of hypothetical indices from 1999 to 2010 were constructed using all eight rental value bases and methods of analysis.[4] This has been produced for the main sectors of Retail, Office and Industrial and includes a headline rental value series based on the CBRE Rent and Yield Monitor, three indices each for Methods 1 and 2 using the three different write-off period possibilities, and a DCF-based solution.

[4] The time frame and the choice of an annual frequency analysis are based purely on the availability of lease lengths and rent-free periods from the BPF/IPD Annual Lease Review (BPF/IPD, 2012).

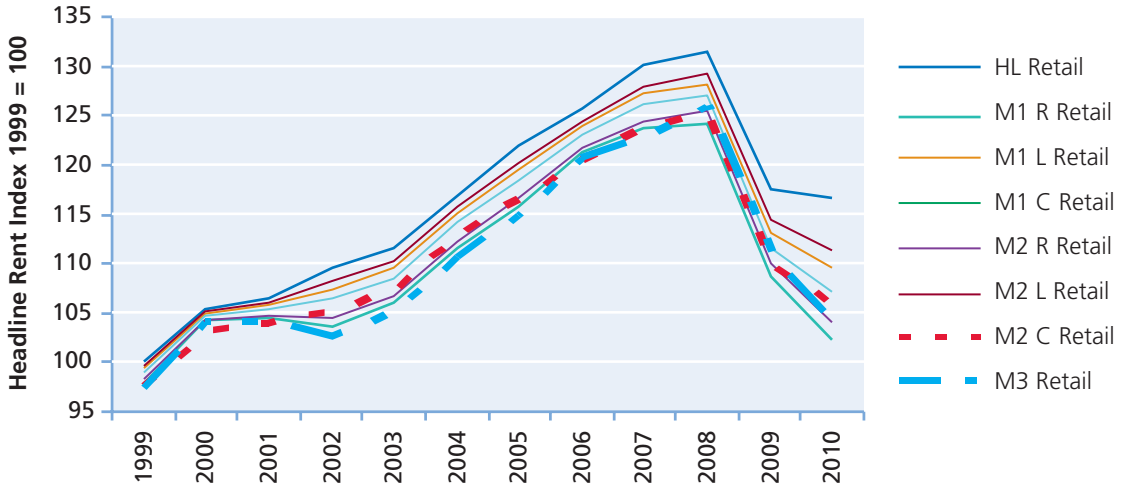
5. MODELLING THE IMPACTS OF THE INPUTS ON THE VARIATION IN EFFECTIVE RENTAL VALUES

The indices assume that target rates of return are based on a constant risk premium through the time period (retail 3.5%, offices 4% and industrial 4.5%) and so only vary on account of the use of a long-term (20-year) Government bond series as a risk-free rate benchmark. Capitalisation rates are based on the IPD equivalent yield series and growth rates for the DCF are based on the target rate of return minus the capitalisation rate. Lease lengths and rent-free periods are taken from the BPF/IPD Annual Lease Review (BPF/IPD, 2012).

The indices are constructed by taking the headline rental level for each year and calculating the effective rental level for the same year by each of the methods. The target rate, capitalisation rate, lease length and rent-free period used are those recorded for the year in question in each case. The valuations are linked together into an index and the eight different rental value indices for each main sector of the UK real estate market are set out in Appendix C.

Figures 5.2 to 5.4 illustrate the shape of the indices for the different sectors; retail, office and industrial. The thick line represents the headline rental value, the thick dashed line the DCF approach and the thick dotted line Method 2 using a compromise write-off period.

Figure 5.2: Rental value indices by the different methods – 1999 to 2010, Retail



5. MODELLING THE IMPACTS OF THE INPUTS ON THE VARIATION IN EFFECTIVE RENTAL VALUES

Figure 5.3: Rental value indices by the different methods – 1999 to 2010, Office

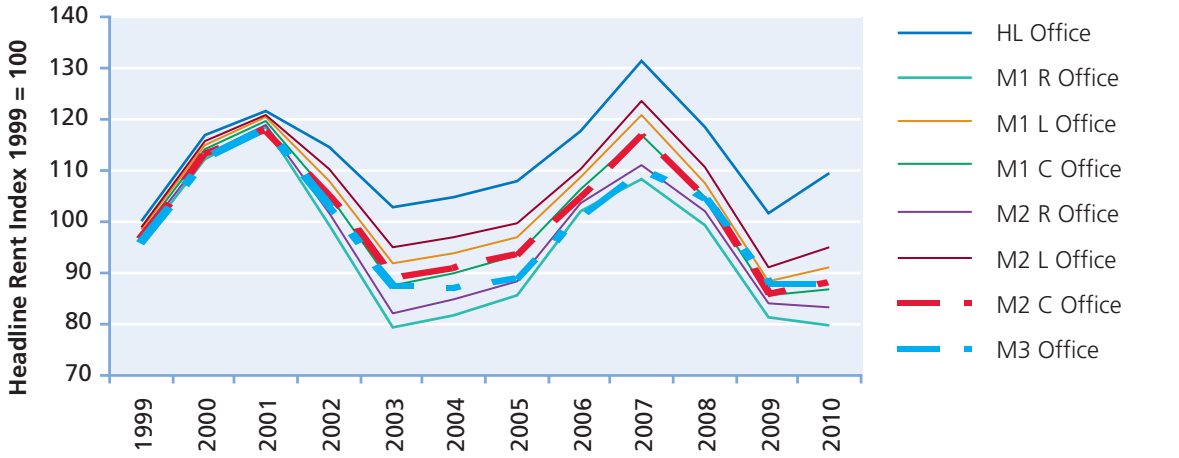
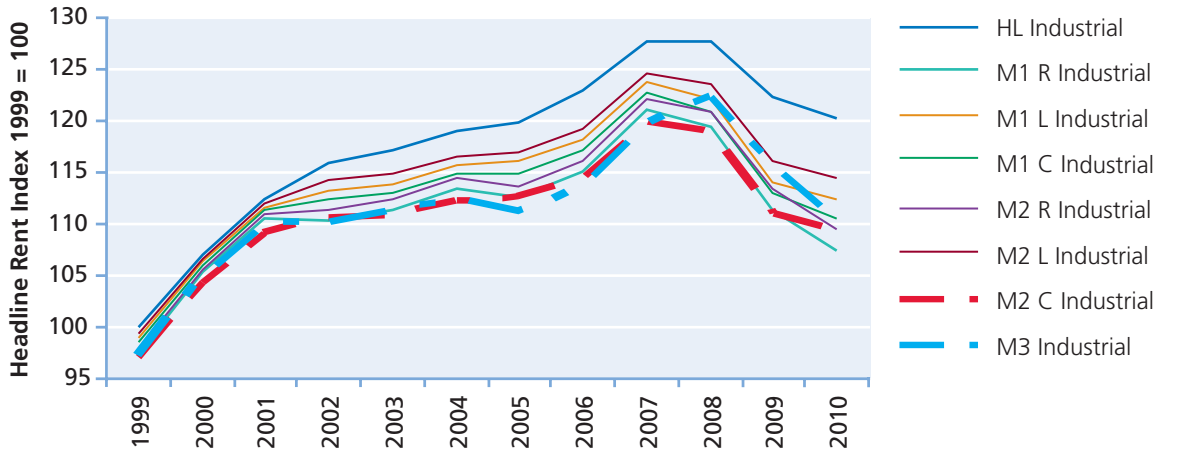


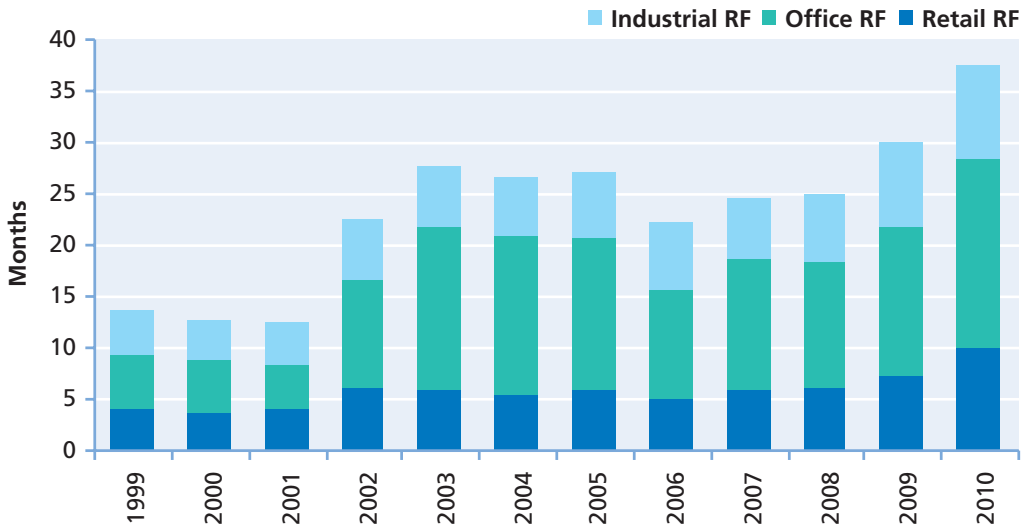
Figure 5.4: Rental value indices by the different methods – 1999 to 2010, Industrial



All three sectors exhibit a close relationship between Methods 2 and 3, where Method 2 uses the compromise period. They all show a widening of the gap between headline and effective rental values between 1999 and 2010, a product of increasing rent-free periods across time, as set out in Figure 5.5.

5. MODELLING THE IMPACTS OF THE INPUTS ON THE VARIATION IN EFFECTIVE RENTAL VALUES

Figure 5.5: Average rent free periods for UK property in months: 1999 to 2010



Source: BPF/IPD (2012).

The results are reinforced in Figures 5.6 to 5.8, which examine the average rental growth rates produced by the various indices set out in Appendix C. All three illustrate the extent to which headline rental values have overstated rental growth rates over the analysis period where rent-free periods have lengthened. Figure 5.7 for the office sector emphasises that, where the incentives are significant, Method 2 compromise and Method 3 have very similar outcomes whereas the other methods show more variation in average growth over time. Where incentives are fewer, the choice of method for the effective rent calculation becomes less important.

5. MODELLING THE IMPACTS OF THE INPUTS ON THE VARIATION IN EFFECTIVE RENTAL VALUES

Figure 5.6: Average rental value growth – 1999 to 2010, Retail

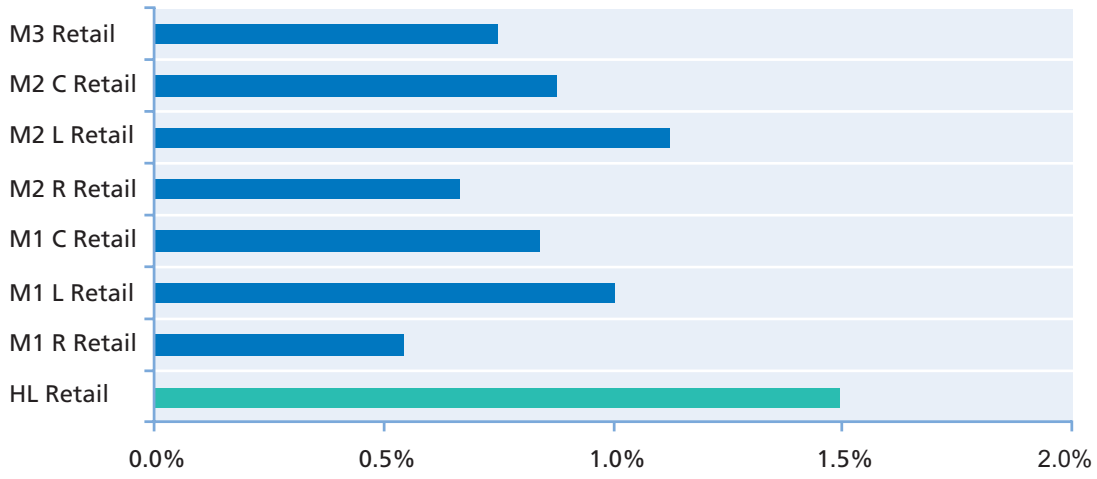
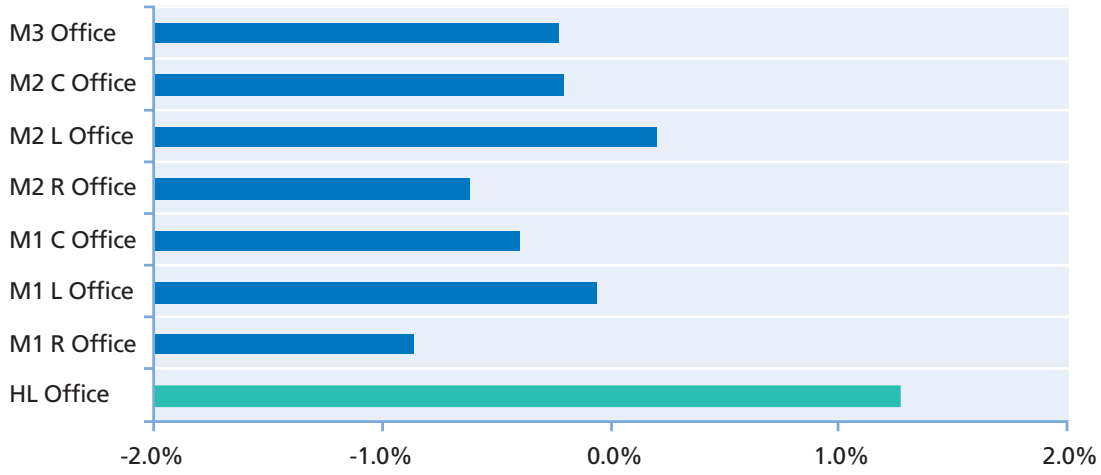
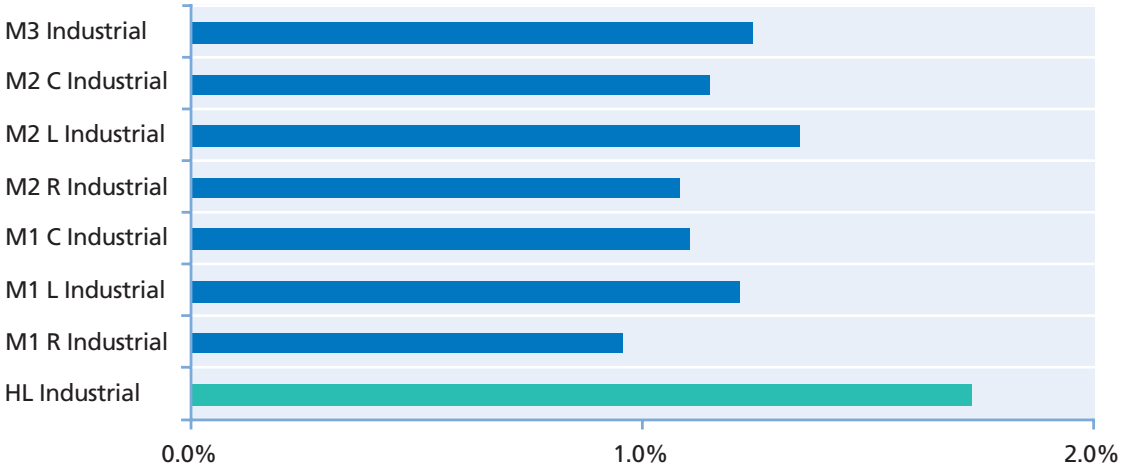


Figure 5.7: Average rental value growth – 1999 to 2010, Office



5. MODELLING THE IMPACTS OF THE INPUTS ON THE VARIATION IN EFFECTIVE RENTAL VALUES

Figure 5.8: Average rental value growth – 1999 to 2010, Industrial



The modelling of effective rental values through the recent past using aggregate data and all of the available methods set out in the RICS Guidance note suggests that the conventional model using a compromise write off period produces robust results for the creation of indices. This complements the earlier results from the Monte Carlo simulation showing the better fit between the most logical method and this approach. The analysis suggests that the use of write-off periods either to the lease end or to the first review date, although correct in some circumstances, provides less defensible results across a range of different market states.

6. DISCUSSION AND RECOMMENDATIONS

The discussion in Section 5 of this paper suggests that there is a strong case for considering the adoption of one of two methods for the determination of an effective rental value index. These are Method 2 with a compromise write-off period or Method 3, an explicit DCF approach. Method 2 using the compromise write-off period will create a bias for longer leases with lower incentive packages, especially in high-growth markets. It will write the incentive off over too long a period creating too high an effective rental value. However, the modelling suggests that the variations caused by this are not excessive. It would be possible to identify a level of incentives relative to headline rental value that could form a trigger for extending the write-off period beyond the first review. Without adopting the cash flow approach, though, the trigger would be very subjective and would imply a future growth rate even if it is not stating one.

Both Method 2 and 3 require the use of a capitalisation rate. The use of equivalent yield within the existing Argus or IPD systems is a possible option, but it does have a major circularity issue attached. For example, if, in order to calculate the effective rental value, the equivalent yield calculated within the IPD system is used, it will itself have been calculated by reference to the rental value already present in that system. The basis of the provision of this rental value to IPD was rather haphazard in the past (Crosby and Murdoch, 2001) but, even if the Red Book definition is now being applied much more consistently, it will still be using a headline-rental-value-based equivalent yield to identify an effective rental value. However, the capitalisation rate used within an effective rental value calculation was not the major input that caused variations in answers from the DCF model. Instead, it was the relationship between the target rate (a required input for the DCF model) and the capitalisation rate, i.e. the implied rental growth rate.

In Method 2 applied with the capitalisation rate, as there is both a capitalisation and a de-capitalisation, the impact of different rates on results will be small. The impact of different capitalisation rates has not been tested in detail and capital contributions will behave differently as there is no cancelling-out process. However, Appendix D illustrates an analysis of Example 2 from Appendix A using a large range of capitalisation rates from 4% to 10% and rent-free periods from 6 months to 3.5 years. At a rent-free period of 6 months, the range of effective rents is around +/-£2500, rising to around +/-£5,000 for the 3.5-year rent-free period. Removing the capital contribution reduces this variation to less than +/-£500 for the rent-free period of 6 months, rising to just over £3,000 for the rent-free period of 3.5 years.

In the cash flow approach, as well as in certain applications of Method 2, there is also a need for a target rate of return to be adopted. The cash flow model needs assumptions of both target rate and growth rate or, if it is to imply growth, target rate and capitalisation rate. Using surveys such as that by the IPF (IPF, 2012) is objective, but this assumes that all properties have the same discount rate and it also requires a risk-free rate to be chosen. In order to create the index using Method 3 in Figures 5.2 to 5.4, assumptions on target rate had to be made – it needs two of the capitalisation rate, growth rate and target rate inputs to be determined before it can imply the third. Use of external data is difficult – for example, at present the IPF survey asks for risk premium above a risk-free rate but does not define what the benchmark is for a risk-free rate. However, the IPF survey questions could be amended to include a question as to the risk-free rate benchmark used, so target rates of return could be computed.

6. DISCUSSION AND RECOMMENDATIONS

To summarise, the recommended the approach to the provision of data is to have effective rental values calculated within existing performance measurement or valuation systems rather than introduce a new question to data providers concerning effective rental values. The rental value should be based on the Red Book (headline rental value) and this will require new fields where valuers can identify the level of incentives underpinning their rental value assessment and assumptions as to lease term and review period. This will enable both headline and effective rental value indices to be calculated but it will require a change in the practices of both the data providers and the systems which capture the data. Dependent upon the next rent change in any valuation, different rental bases are identified by the valuers. Valuation systems therefore need to be flexible enough to enable valuers to record the headline rental level from comparable analysis, and the assumptions behind that assessment, as well as being able to enter an additional different rental value into the valuation if that is appropriate, and to be able to toggle between the two. It also raises the issue of whether the valuation system should be able to calculate the differences between headline rental value and effective rental value or whether that is left to the valuer for uses other than performance measurement. There will also be another benefit if headline rent and terms are collected – in that it will improve the transparency of the rental valuation process and that of the equivalent yield series which, at present, is calculated off the inconsistent set of rental values held within the performance measurement system.

This recommendation requires an objective method to be chosen to determine the effective rental value within the performance measurement system. However, all of the methods examined have flaws for this purpose. Method 1 is too simplistic and requires a write-off period. Method 2 requires a capitalisation rate and a write-off period and Method 3 requires a discount rate and a growth rate input.

The assumptions have been tested to create the recommendation that a conventional discounting model using a compromise period is adopted, despite its lack of technical sophistication compared to a cash flow approach. The difference in results between the two techniques has been identified and also the difference in shape of an effective rental value index over the past decade. It is thought that the differences are small enough to suggest that Method 2 is an acceptable compromise and that a robust effective rental value index could be formed with the advantage that it could utilise inputs already computed or easily made available within performance measurement systems. On that basis, it passes any test of transparency of computation and objectivity of inputs.

The authors conclude, therefore subject to further discussion and deliberation (and the addition of lease information), that a robust effective rental value index could be computed from data held within performance measurement systems without requiring valuers to determine this figure externally. They would need to provide the actual or assumed lease terms on which they have based their headline rental valuations including incentives from which the necessary calculations can be made to include both headline and effective rental values within Argus/IPD. This is no more than the basic requirement of using the Red Book concerning any provision of market valuation, so this principle should be extended to market rental values as well as capital values within the IPD Index Guide.

6. DISCUSSION AND RECOMMENDATIONS

The four specific recommendations are therefore:

- Recommendation 1 – The effective rental valuations required for a performance measurement system are provided from within the valuation and measurement systems, not directly by the valuers.
- Recommendation 2 – IPD amend their Index Guide to include the requirement to use the Red Book for provision of rental value data in the UK and to specify headline rental values.
- Recommendation 3 – The data collection process has to enable the incentives and lease terms underpinning valuations, not just those in the current lease, to be collected to ensure that both headline and effective rental value indices can be constructed.
- Recommendation 4 – Method 2 is adopted universally within UK performance measurement systems to determine effective rental values from data on headline rental values and incentives. These calculations can be undertaken within existing systems using existing capitalisation rate data and new fields on assumed lease term, rent review and incentives.

There are some valuation implications from the recommendations. Currently, valuers may enter into the system the rental valuation they require for the valuation of the reversion. Because this depends upon the type of determination at the next rent change, it may not be a headline rental value. In these circumstances they need to be asked to provide the headline rental value and the assumed terms for this rental value in addition to their preferred effective rental value. This may not then be the effective rental value calculated within the system as the system will be using an algorithm which may not reflect the individual circumstances of the asset and lease perfectly; the valuer should have the ability to determine the correct inputs for the primary task that is the valuation. Hopefully, the primary task also includes interpreting market transactions and these can also be recorded in the valuation system with little extra effort.

Implementation of these recommendations therefore requires a small contribution from each of the three main stakeholders. First, valuers will need to record information which is a by-product of their valuation process. Second, valuation systems will need to provide the fields for the additional data entry and may want to provide extra calculation facilities. Third, performance measurement services will have to provide additional fields and carry out the analysis of rental values within their systems. The result will be a significant improvement in the transparency and accuracy of two of the major indicators within the UK property market – rental values and equivalent yields.

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APPENDIX A – EXAMPLES OF EFFECTIVE RENTAL VALUE CALCULATIONS USING THE THREE METHODS

Example 1 – A short lease with a rent-free period, no reviews and an amount of capital expenditure. Headline rent £100,000 p.a., capital payment £50,000, lease five years, rent-free one year, of which fitting-out period is three months.

Example 1

Headline rent	£100,000 p.a.	
Lease length	5 years	
Capital expenditure	£50,000	
Capitalisation rate	6%	
Target rate	8%	
Assumed growth rate	2%	
Rent free period	1.00 year	
Fitting-out	0.25 year	

Method 1		
Headline rent	£100,000	
Received for (yrs)	4.00	
Capital value of headline rent	£400,000	
Less cap ex	£50,000	
Capital value of inducements	£350,000	
Spread over/divide by (yrs)	4.75	
Effective rental value		£73,684

Method 2 (target rate)		
Headline rent	£100,000	
YP @ target rate for 4.00 yrs	3.3121	
PV £1 @ target rate for 1.00 yr	0.9259	
Capital value of headline rent	£306,678	
Less cap ex	£50,000	
	£256,678	
Divide YP @ target rate for 4.75 yrs	3.8274	
PV £1 @ target rate for 0.25 yrs	0.9809	
Deferred YP	3.7545	
Effective rental value		£68,365

Method 2 (cap rate)		
Headline rent	£100,000	

APPENDIX A – EXAMPLES OF EFFECTIVE RENTAL VALUE CALCULATIONS USING THE THREE METHODS

Example 1

YP @ cap rate for 4.00 yrs	3.4651	
PV £1 @ cap rate for 1.00 yr	0.9434	
Capital value of headline rent	£326,897	
Less cap ex	£50,000	
	£276,897	
Divide YP @ cap rate for 4.75 yrs	4.0296	
PV £1 @ cap rate for 0.25 yrs	0.9855	
Deferred YP	3.9713	
Effective rental value		£69,724

Method 2 (Headline rent target rate, effective rental value capitalisation rate)		
Headline rent	£100,000	
YP @ target rate for 4.00 yrs	3.3121	
PV £1 @ target rate for 1.00 yr	0.9259	
Capital value of headline rent	£306,678	
Less cap ex	£50,000	
	£256,678	
Divide YP @ cap rate for 4.75 yrs	4.0296	
PV £1 @ cap rate for 0.25 yrs	0.9855	
Deferred YP	3.9713	
Effective rental value		£64,632

Method 3 (Method 4 in UKGN 6)		
Headline rent	£100,000	
YP @ discount rate for 4 yrs	3.3121	
PV £1 @ discount rate for 1 yr	0.9259	
Capital value of headline rent	£306,678	
Less cap ex	£50,000	
Capital value of inducements	£256,678	
Divide YP @ discount rate for 4.75 yrs	3.8274	
PV £1 @ discount rate for 0.25 yrs	0.9809	
Deferred YP	3.7545	
Effective rental value		£68,365

APPENDIX A – EXAMPLES OF EFFECTIVE RENTAL VALUE CALCULATIONS USING THE THREE METHODS

Example 2 – A longer lease with upwards-only rent reviews, a longer rent-free period and capital expenditure. Headline rent £100,000, rent-free three years, capital payment £100,000, lease 15 years with five-yearly upwards-only reviews.

Example 2

Headline rent	£100,000 p.a.	
Lease length	15 years	
Rent review	5 years	
Capital expenditure	£100,000	
Capitalisation rate	6%	
Target rate	8%	
Assumed growth rate	2%	
Rent free period	3.00 years	
Fitting-out period	0.25 years	

Method 1 (write off full lease period – 15 years)		
Headline rent	£100,000	
Received for (yrs)	12.00	
Capital value of headline rent	£1,200,000	
Less cap ex	£100,000	
Capital value of inducements	£1,100,000	
Spread over/divide by (yrs)	14.75	
Effective rental value		£74,576

Method 1 (write off to rent review – 5 years)		
Headline rent	£100,000	
Received for (yrs)	2.00	
Capital value of headline rent	£200,000	
Less cap ex	£100,000	
Capital value of inducements	£100,000	
Spread over/divide by (yrs)	4.75	
Effective rental value		£21,053

Method 1 (write off over compromise period – 10 years)		
Headline rent	£100,000	

APPENDIX A – EXAMPLES OF EFFECTIVE RENTAL VALUE CALCULATIONS USING THE THREE METHODS

Example 2

Received for (yrs)	7.00	
Capital value of headline rent	£700,000	
Less cap ex	£100,000	
Capital value of inducements	£600,000	
Spread over/divide by (yrs)	9.75	
Effective rental value		£61,538

Method 2 (cap rate write off full lease period – 15 years)		
Headline rent	£100,000 p.a.	
YP 12 years x PV 3 yrs @ 6%	7.0392	
Value of headline rent	£703,924	
Less cap payment	£100,000	
Value of headline lease	£603,924	
Divide by YP 14.75 yrs X PV .25 yrs @ 6%	9.4712	
Effective rental value		£63,764

Method 2 (cap rate write off over rent review period – 5 years)		
Headline rent	£100,000 p.a.	
YP 2 years x PV 3 yrs @ 6%	1.5394	
Value of headline rent	£153,935	
Less cap payment	£100,000	
Value of headline lease	£53,935	
Divide by YP 4.75 yrs X PV .25 yrs @ 6%	3.9713	
Effective rental value		£13,581

Method 2 (cap rate write off over compromise period – 10 years)		
Headline rent	£100,000 p.a.	
YP 7 years x PV 3 yrs @ 6%	4.6871	
Value of headline rent	£468,708	
Less cap payment	£100,000	
Value of headline lease	£368,708	
Divide by YP 9.75 yrs X PV .25 yrs @ 6%	7.1191	
Effective rental value		£51,792

APPENDIX A – EXAMPLES OF EFFECTIVE RENTAL VALUE CALCULATIONS USING THE THREE METHODS

Example 2

Method 2 (target rate – as above at 8%)		
Effective rental value over whole lease period	£59,875	
Effective rental value over rent review period	£11,070	
Effective rental value over compromise period	£48,409	

Method 2 (Headline rent target rate 8%, effective rent cap rate 6%)		
Effective rental value over whole lease period	£52,605	
Effective rental value over rent review period	£10,465	
Effective rental value over compromise period	£44,008	

Method 3 (Method 4 in UKGN 6)		
Headline rent	£100,000 p.a.	
YP 12 years x PV 3 yrs @ 8%	5.9824	
Value of headline rent	£598,238	
Less capital payment	£100,000	
Net value of headline lease		£498,238
Value of effective rental value	£x	
YP 5 years x PV .25 yrs @ 8%	3.7545	
Value of first term		£3.7545x
Reversion to future rental value @ 2%pa	£1.1041x	
YP 5 years @ 8% x PV 5 years @ 8%	2.7174	
Value of reversionary rent		£3.0002x
Reversion to future rental value @ 2%pa	£1.219x	
YP 5 years @ 8% x PV 10 years @ 8%	1.8494	
Value of reversionary rent		£2.2544x
Value of effective rental value		9.0091x
Effective rental value = value of HR divided by value of ER = £498,238/9.0091		
Effective rental value (x) = £55,304 pa		
Effective rental value at first review = £55,304 x $(1.02)^5$ = £61,060 pa		
Effective rental value at second review = £61,060 x $(1.02)^5$ = £67,415 pa		

The results illustrate that the impact of the incentive spreads through the whole of the lease term, but that the impact diminishes over time assuming positive growth.

APPENDIX B – MONTE CARLO SIMULATIONS OF DIFFERENT METHODS OF EFFECTIVE RENTAL VALUE ANALYSIS COMPARED TO A DCF SOLUTION

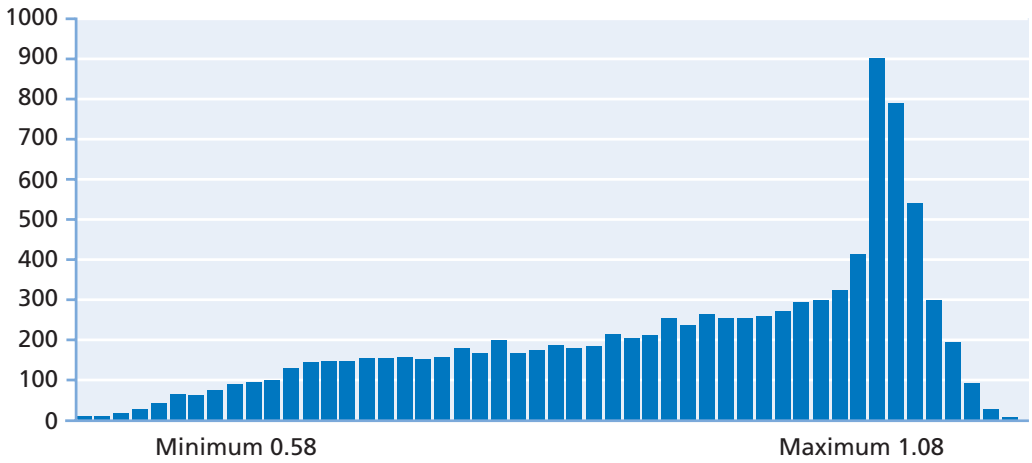
Headline rent £100,000, lease 15 years, with five-year upwards-only rent reviews, fitting-out period three months. Growth rate = target rate – capitalisation rate.

Capitalisation rate	4% to 10%
Target rate	6% to 12% (constrained to no lower than capitalisation rate)
Rent free period	3 months to 3 years

Method 1 – Write-off period to rent review

	Forecast values	Percentile	Forecast values
Trials	10,000	0%	0.5832
Base case	0.6341	10%	0.7198
Mean	0.8984	20%	0.7827
Median	0.9271	30%	0.8386
Mode	–	40%	0.8876
Standard deviation	0.1152	50%	0.9271
Variance	0.0133	60%	0.9643
Skewness	-0.6537	70%	0.9939
Kurtosis	2.28	80%	1.0065
Coeff. of variability	0.1283	90%	1.0194
Minimum	0.5832	100%	1.0760
Maximum	1.0760		
Range width	0.4928		
Mean std. error	0.0012		

Method 1 to rent review

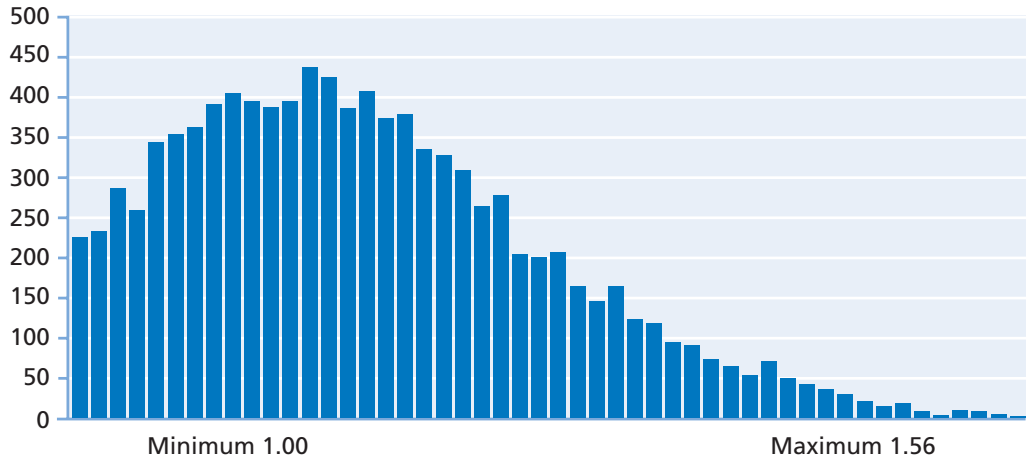


APPENDIX B – MONTE CARLO SIMULATIONS OF DIFFERENT METHODS OF EFFECTIVE RENTAL VALUE ANALYSIS COMPARED TO A DCF SOLUTION

Method 1 – Write off period to lease end

	Forecast values	Percentile	Forecast values
Trials	10,000	0%	1.0000
Base case	1.2252	10%	1.0446
Mean	1.1729	20%	1.0763
Median	1.1591	30%	1.1044
Mode	–	40%	1.1330
Standard deviation	0.1062	50%	1.1590
Variance	0.0113	60%	1.1883
Skewness	0.6470	70%	1.2201
Kurtosis	3.03	80%	1.2596
Coeff. of variability	0.0905	90%	1.3212
Minimum	1.0000	100%	1.5594
Maximum	1.5594		
Range width	0.5594		
Mean std. error	0.0011		

Method 1 to lease end

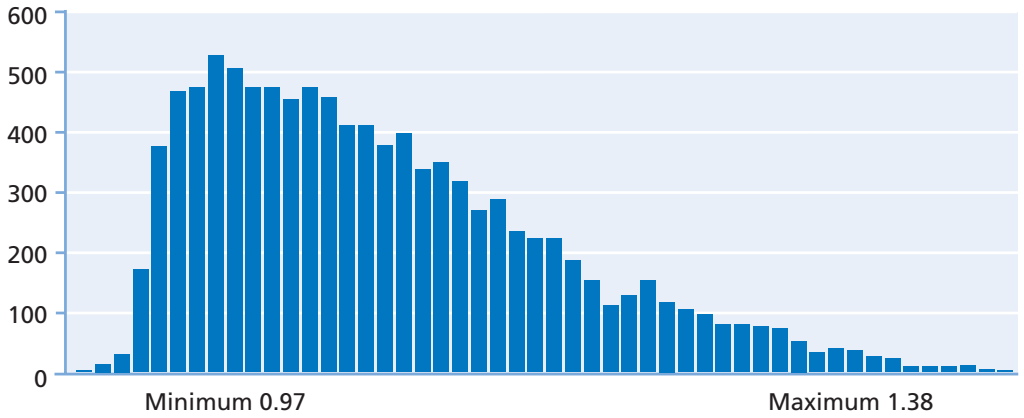


APPENDIX B – MONTE CARLO SIMULATIONS OF DIFFERENT METHODS OF EFFECTIVE RENTAL VALUE ANALYSIS COMPARED TO A DCF SOLUTION

Method 1 – Write-off period to halfway between rent review and lease end

	Forecast values	Percentile	Forecast values
Trials	10,000	10%	0.9709
Base case	1.0812	20%	1.0199
Mean	1.1060	30%	1.0369
Median	1.0919	40%	1.0544
Mode	–	50%	1.0725
Standard deviation	0.0757	60%	1.0919
Variance	0.0057	70%	1.1130
Skewness	0.8180	80%	1.1372
Kurtosis	3.15	90%	1.1680
Coeff. of variability	0.0684	100%	1.3833
Minimum	0.9709		
Maximum	1.3831		
Range width	0.4122		
Mean std. error	0.0008		

Method 1 to compromise period

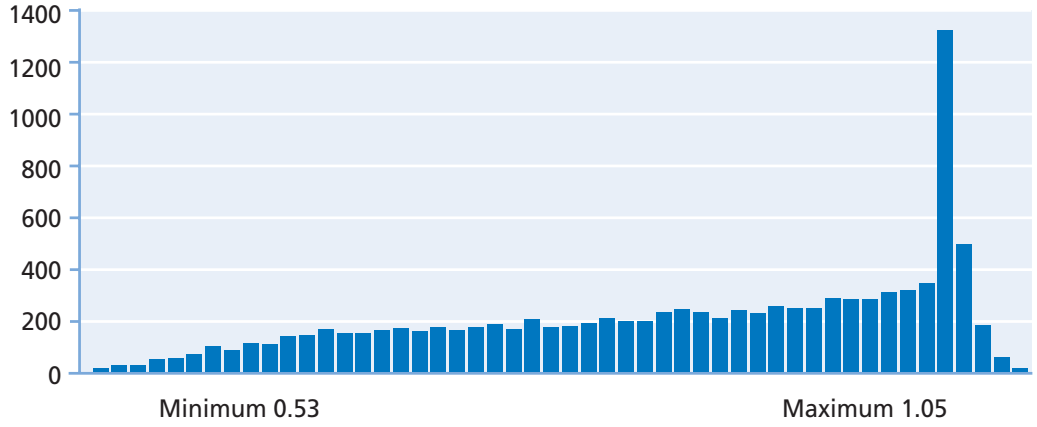


APPENDIX B – MONTE CARLO SIMULATIONS OF DIFFERENT METHODS OF EFFECTIVE RENTAL VALUE ANALYSIS COMPARED TO A DCF SOLUTION

Method 2 – Write-off period to rent review

	Forecast values	Percentile	Forecast values
Trials	10,000	0%	0.5258
Base case	0.5837	10%	0.6585
Mean	0.8591	20%	0.7239
Median	0.8857	30%	0.7838
Mode	–	40%	0.8395
Standard deviation	0.1319	50%	0.8857
Variance	0.0174	60%	0.9291
Skewness	-0.5340	70%	0.9674
Kurtosis	2.09	80%	1.9997
Coeff. of variability	0.1535	90%	1.0050
Minimum	0.5258	100%	1.0497
Maximum	1.04974		
Range width	0.5239		
Mean std. error	0.0013		

Method 2 to rent review

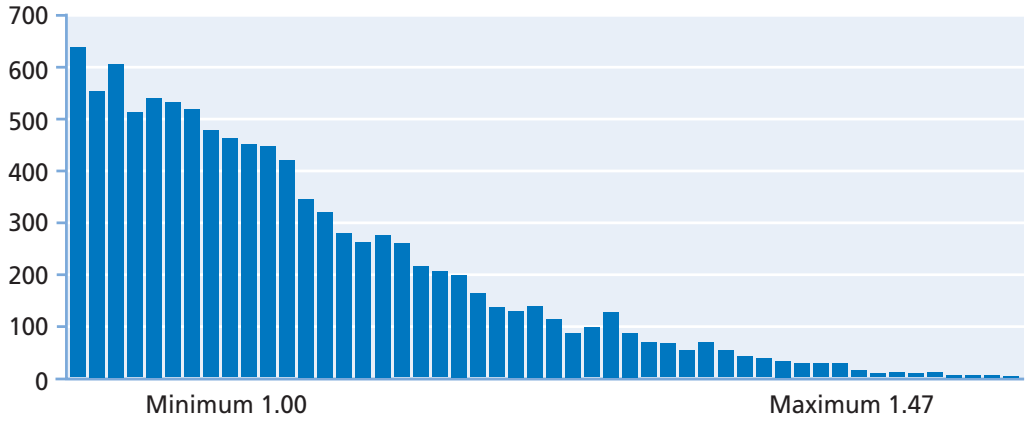


APPENDIX B – MONTE CARLO SIMULATIONS OF DIFFERENT METHODS OF EFFECTIVE RENTAL VALUE ANALYSIS COMPARED TO A DCF SOLUTION

Method 2 – Write-off period to lease end

	Forecast values	Percentile	Forecast values
Trials	10,000	0%	1.0000
Base case	1.1193	10%	1.0159
Mean	1.1101	20%	1.0321
Median	1.0893	30%	1.0501
Mode	–	40%	1.0687
Standard deviation	0.0878	50%	1.0893
Variance	0.0077	60%	1.1111
Skewness	1.06	70%	1.1408
Kurtosis	3.72	80%	1.1785
Coeff. of variability	0.0791	90%	1.2387
Minimum	1.0000	100%	1.4708
Maximum	1.4708		
Range width	0.4708		
Mean std. error	0.0009		

Method 2 to lease end



APPENDIX C – RETAIL, OFFICE AND INDUSTRIAL HEADLINE AND EFFECTIVE RENTAL VALUE INDICES: 1999–2010

Table C.1: Retail, Office and Industrial Headline and Effective Rental Value Indices: 1999–2010

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
HL Retail	100.0	105.3	106.4	109.6	111.5	116.8	121.9	125.8	130.1	131.4	117.6	116.6
HL Office	100.0	116.8	121.5	114.6	102.8	104.6	108.1	117.9	131.2	118.5	101.7	109.4
HL Industrial	100.0	106.9	112.5	116.0	117.2	118.9	119.9	122.9	127.6	127.6	122.4	120.2
M1 R Retail	97.9	104.2	104.5	103.6	106.0	111.6	115.9	121.4	123.7	124.3	108.7	102.2
M1 R Office	96.3	112.3	118.5	99.4	79.2	81.9	85.7	102.1	108.4	99.3	81.2	79.7
M1 R Industrial	97.5	105.3	110.5	110.3	111.4	113.5	112.6	115.2	121.2	119.4	111.4	107.3
M1 L Retail	99.4	104.9	105.7	107.4	109.5	115.1	119.5	123.8	127.3	128.2	113.1	109.5
M1 L Office	98.5	115.1	120.3	108.0	91.8	94.0	97.1	108.7	121.0	107.7	88.3	91.2
M1 L Industrial	99.0	106.3	111.6	113.3	113.9	115.6	116.0	118.2	123.8	122.1	114.1	112.3
M1 C Retail	99.0	104.7	105.4	106.4	108.6	114.3	118.5	123.1	126.2	126.9	111.6	107.1
M1 C Office	97.9	114.4	119.8	105.3	87.8	90.1	93.3	106.3	117.1	104.7	85.5	86.8
M1 C Industrial	98.6	106.0	111.3	112.3	113.0	114.8	114.8	117.1	122.8	121.0	112.9	110.4
M2 R Retail	98.2	104.4	104.8	104.5	106.8	112.3	116.6	121.8	124.5	125.4	110.1	104.1
M2 R Office	96.9	113.1	119.1	101.7	82.3	84.7	88.2	103.8	111.0	102.2	84.1	83.2
M2 R Industrial	98.0	105.6	110.9	111.3	112.4	114.4	113.6	116.2	122.1	120.9	113.4	109.5
M2 L Retail	99.6	105.1	106.0	108.2	110.2	115.7	120.2	124.3	128.0	129.2	114.4	111.4
M2 L Office	99.1	115.8	120.8	110.3	95.1	97.0	99.7	110.4	123.7	110.7	91.3	95.1
M2 L Industrial	99.4	106.6	111.9	114.3	114.9	116.5	117.0	119.2	124.7	123.6	116.0	114.5
M2 C Retail	97.6	103.1	103.7	105.1	107.1	112.8	116.5	120.4	123.8	125.0	110.0	106.1
M2 C Office	96.5	112.9	117.7	105.2	88.9	90.8	93.4	104.6	116.8	104.7	85.7	87.8
M2 C Industrial	97.0	104.3	109.1	110.6	110.8	112.2	112.6	114.4	119.9	118.7	111.0	109.3
M3 Retail	97.5	104.0	104.2	102.5	105.0	110.7	114.8	120.6	122.5	125.9	111.0	104.2
M3 Office	95.8	112.0	118.0	102.9	87.1	86.6	89.0	100.9	109.8	104.6	87.5	87.5
M3 Industrial	97.2	104.9	110.1	110.2	111.2	112.4	111.1	113.6	119.8	122.3	115.8	110.5

Assumptions and Sources – Headline rent (HL) based on CBRE Rent and Yield Monitor, target rates based on 20-year UK Government bonds plus a constant risk premium of 3.5% for Retail, 4% for Offices and 4.5% Industrial. Capitalisation Rate = IPD Equivalent yield series. Growth rates = Target rate – cap rate. Rent weighted rent free periods and average lease lengths from the BPF/IPD Annual Lease Review. Write off period R = rent review, L = lease term and C = compromise.

APPENDIX D – SENSITIVITY OF METHOD 2 USING COMPROMISE WRITE OFF PERIOD TO CAP RATE

Appendix A Example 2 – Headline rent £100,000, 15 year lease, five-year reviews, with no capital contribution

Rent-free period	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	Range
0.50	£96,930	£96,797	£96,663	£96,527	£96,390	£96,250	£96,109	£820
1.00	£90,878	£90,508	£90,134	£89,756	£89,374	£88,988	£88,600	£2,278
1.50	£84,944	£84,371	£83,792	£83,209	£82,623	£82,033	£81,441	£3,504
2.00	£79,126	£78,381	£77,632	£76,881	£76,127	£75,371	£74,614	£4,512
2.50	£73,420	£72,536	£71,649	£70,763	£69,876	£68,990	£68,105	£5,315
3.00	£67,825	£66,831	£65,838	£64,848	£63,861	£62,878	£61,900	£5,926
3.50	£62,339	£61,264	£60,194	£59,130	£58,073	£57,023	£55,983	£6,357

Rent free period 0.5 years to 3.5 years.
Cap rate 4% to 10%.

Appendix A Example 2 – Headline rent £100,000, 15 year lease, five-year reviews, with capital contribution of £100,000

Rent-free period	4.0%	5.0%	6.0%	7.0%	8.0%	9.0%	10.0%	Range
0.50	£84,218	£83,427	£82,617	£81,787	£80,938	£80,071	£79,186	£5,032
1.00	£78,167	£77,138	£76,087	£75,015	£73,922	£72,809	£71,677	£6,490
1.50	£72,233	£71,000	£69,745	£68,469	£67,171	£65,854	£64,518	£7,716
2.00	£66,414	£65,011	£63,586	£62,140	£60,675	£59,192	£57,691	£8,723
2.50	£60,709	£59,165	£57,603	£56,022	£54,424	£52,811	£51,182	£9,526
3.00	£55,114	£53,461	£51,792	£50,107	£48,409	£46,699	£44,977	£10,137
3.50	£49,628	£47,894	£46,147	£44,389	£42,621	£40,844	£39,060	£10,568

Rent free period 0.5 years to 3.5 years.
Cap rate 4% to 10%.

NOTES

Research Programme 2011–2015

Investment Property Forum
New Broad Street House
35 New Broad Street
London EC2M 1NH

Telephone: 020 7194 7920
Fax: 020 7194 7921
Email: ipfoffice@ipf.org.uk
Web: www.ipf.org.uk

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