

RICS Practice Standards, UK

# Discounted cash flow for commercial property investments

RICS guidance note



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This guidance note will feature as part of the *RICS Valuation Standards* (the 'Red Book'), 7th edition, due for publication in 2011. It is available here in digital format as a stand-alone guidance note until that time.

Please note that it will only be available in hard copy as part of the Red Book.



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# RICS Valuation Standards (the ‘Red Book’)

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RICS (Royal Institution of Chartered Surveyors) is the leading organisation of its kind in the world for professionals in property, land, construction and related environmental issues. As part of our role we help to set, maintain and regulate standards – as well as providing impartial advice to governments and policymakers.

To ensure that our members are able to provide the quality of advice and level of integrity required by the market, RICS qualifications are only awarded to individuals who meet the most rigorous requirements for both education and experience and who are prepared to maintain high standards in the public interest.

Members who qualify as valuers are entitled to use the designation ‘Chartered Valuation Surveyor’ and, in addition to compliance with the general rules of conduct applicable to all members, must also comply with the *RICS Valuation Standards*, generally referred to as the ‘Red Book’.

This guidance note describes the standard of work that is expected of a reasonable, competent valuer experienced in the subject to which this note relates.

RICS has in place a regulatory framework. Where a valuer undertakes work that has to comply with the Red Book that valuer is also required to register with RICS. Registration enables RICS to monitor compliance with the valuation standards and take appropriate action where breaches of those standards have been identified.



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# RICS guidance notes

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This is a guidance note. It provides advice to members of RICS on aspects of the profession. Where procedures are recommended for specific professional tasks, these are intended to embody 'best practice', that is, procedures which in the opinion of RICS meet a high standard of professional competence.

Members are not required to follow the advice and recommendations contained in guidance notes. They should, however, note the following points.

When an allegation of professional negligence is made against a surveyor, the court is likely to take account of the contents of any relevant guidance notes published by RICS in deciding whether or not the surveyor had acted with reasonable competence.

In the opinion of RICS, a member conforming to the practices recommended in this guidance note should have at least a partial defence to an allegation of negligence by virtue of having followed those practices. However, members have the responsibility of deciding when it is appropriate to follow the guidance. If it is followed in an appropriate case, the member will not be exonerated merely because the recommendations were found in a guidance note.

On the other hand, it does not follow that a member will be adjudged negligent if he or she has not followed the practices recommended in this guidance note. It is for each individual surveyor to decide on the appropriate procedure to follow in any professional task. However, where members depart from the good practice recommended in guidance notes, they should do so only for good reason. In the event of litigation, the court may require them to explain why they decided not to adopt the recommended practice.

In addition, guidance notes are relevant to professional competence in that each surveyor should be up to date and should have informed him or herself of guidance notes within a reasonable time of their promulgation.

# 1 Introduction

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**1.1** Traditionally, property investments have been valued by applying an all-risks yield (ARY) derived from the yield applicable to a market-rented investment – observed market rent divided by observed gross market price. The ARY subsumes assumptions about future cash flow that are not explicitly modelled in the cash flow, e.g. anticipated future rental value change, void periods and capital expenditure. Although some of these can be explicitly included in the cash flow (e.g. voids or capital expenditure) with suitable amendments to the ARY, the normal application of the ARY model is to capture rental value change and other anticipated future events implicitly within the yield. Growth (or change) in market rents is always implicit in the ARY that is applied against a rental cash flow assumed to either remain unchanged or revert to current market rent when appropriate.

**1.2** There remains a reticence within the real estate sector to adopting valuation approaches in which these factors are made more explicit. Nevertheless, since the price paid for an income-producing asset reflects the investor's expectations as to its potential cash flows and risks, there is a strong argument that all assumptions should be made explicit, especially when investment decisions are being taken on behalf of third parties.

**1.3** Any technique should be aligned to the nature or role of the valuation. Valuation techniques are most commonly used to arrive at an estimate of the price at which the property might be sold. This capital value, based on an exchange value concept, is known as Market Value (MV) which has a precise definition in International Valuation Standards (IVS). It is effectively a proxy for price and should be thought of as an estimate of the contract price, i.e. the amount the buyer pays the seller.

**1.4** Alternatively, the objective may be to estimate the value of the property to a particular investor. This entity-specific value is referred to as 'investment value', or 'worth'. All things being equal, an investor will buy a property investment if its investment value is considered to exceed its Market Value and will sell if the property's Market Value exceeds that opinion of its investment value. An individual's opinion of the latter will almost invariably differ from the Market Value because everyone has different income requirements, expectations, attitudes to risk, tax position, etc. It is those differences of opinion that create a market in which investments are bought and sold.

**1.5** The explicit discounted cash flow (DCF) valuation method is of greatest application in the assessment of investment value to assist in buy/sell decisions or selection between alternative available investments. However, it can also be used to estimate Market Value by adopting a set of tenable assumptions that are consistent with observed market prices, and then applying those assumptions, with appropriate adjustments, to the valuation of the subject property. Where there are no transactions, the explicit DCF model provides a rational framework for the estimation of Market Value not present in the ARY (capitalisation rate) approach, which relies on comparables for the identification of the ARY.

**1.6** There is a school of thought that more weight should be given to such concepts as long-term economic value, mortgage lending value or sustainable value. These measures attempt to provide an assessment of a stable or mid-market



value, smoothing short-term market volatility and adopting longer-term trends that obscure the short-term fluctuations. They are neither a Market Value nor a personal opinion of investment value, but may represent a useful measure of underlying security for a long-term lender. A DCF approach provides for the use of explicit assumptions and therefore is ideally suited for this purpose.

**1.7** More detailed examination of these different concepts and definitions of value, as well as the different applications of the method to the appraisal of investment properties, can be found in many valuation textbooks. This guidance note is designed to be informative rather than prescriptive. Valuation techniques are continually evolving, and there is no absolute consensus within the practical or academic arenas on the best or correct approach to the use of DCFs to arrive at an investment value or an estimate of Market Value. Valuers should use their balanced judgment on the most appropriate method. The rest of this guidance note concentrates on the explicit DCF approach.

## **2 Fundamentals of the discounted cash flow approach**

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**2.1** DCF valuation involves projecting estimated cash flows over an assumed investment holding period, plus an exit value at the end of that period, usually arrived at on a conventional ARY basis. The cash flow is then discounted back to the present day at a discount rate (also known as desired rate of return) that reflects the perceived level of risk.

**2.2** The discount rate will reflect market and property-specific risks. Care has to be taken not to reflect risk factors in both the cash flow and the discount rate.

**2.3** To arrive at the estimated revenue cash flow, it is necessary to reflect the investment's specific leasing pattern including rent reviews, lease renewals or re-lettings on lease expiry, void costs while parts of the property are vacant, non-recoverable outgoings and anticipated capital outlays on refurbishment or upgrade.

**2.4** The exit valuation will reflect anticipated rental growth, the reversionary nature and unexpired terms of the leases at the exit date, and the application of an appropriate ARY. Depending on the holding period this may be forecast or based on equilibrium market conditions.

**2.5** These components of the DCF calculation will now be examined in detail.

## **3 Estimating the cash flow**

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**3.1** Cash flows should be prepared carefully to capture explicitly all information relating to income and expenditure and should reflect, as and when appropriate, rental growth, taxation, external financing and all costs. Table 1 outlines these parameters.

**3.2** Care is needed when considering depreciation to ensure double counting does not occur. Where allowance has been made for refurbishment and upgrading in the cash flow during the holding period, the exit yield should reflect the anticipated state of the property reflecting the completion of the refurbishment programme. This is particularly relevant in multi-tenanted buildings, such as shopping centres, where the landlord can control physical and, to a certain extent, functional obsolescence.

**Table 1: Information needed for preparation of DCF**

Type of information	Current data	Forecasts
Tenure	<ul style="list-style-type: none"> <li>Title, including headlease details (if applicable)</li> <li>Outgoings</li> <li>Head rents</li> <li>Unfulfilled statutory obligations</li> </ul>	
Physical attributes	<ul style="list-style-type: none"> <li>Floor areas (net and gross)</li> <li>Ancillary areas and car parking</li> <li>Building specifications</li> <li>Tenants' improvements</li> </ul>	<ul style="list-style-type: none"> <li>Planned or possible changes in areas/ parking provision</li> </ul>
Lease/sublease and occupational interests	<ul style="list-style-type: none"> <li>Tenancy details</li> <li>Lease expiry dates</li> <li>Break clauses</li> <li>Rent review dates</li> <li>Rent review terms</li> </ul>	<ul style="list-style-type: none"> <li>Lease events forecasts, including probability of breaks being operated and leases renewed</li> <li>Duration of future voids</li> <li>Perpetual void allowance</li> </ul>
Rental value	<ul style="list-style-type: none"> <li>Rents passing (including stepped rents)</li> <li>Estimated rental values</li> </ul>	<ul style="list-style-type: none"> <li>Growth in rental value for the location to model refurbishment/ redevelopment options</li> <li>Growth in actual property rents</li> </ul>
Costs of property ownership and holding costs	<ul style="list-style-type: none"> <li>Vacancy/void costs</li> <li>Unrecoverable service costs</li> <li>Unrecoverable management costs</li> <li>Letting and review costs</li> <li>Purchase and sale costs</li> </ul>	<ul style="list-style-type: none"> <li>Inflation in maintenance and running costs</li> <li>Future periods on lease expiry and periods of refurbishment</li> </ul>
Redevelopment/ refurbishment	<ul style="list-style-type: none"> <li>Costs of redevelopment/ refurbishment</li> <li>Dilapidations</li> </ul>	<ul style="list-style-type: none"> <li>Inflation in building costs</li> </ul>
Finance	<ul style="list-style-type: none"> <li>Loan details</li> <li>Break costs</li> </ul>	<ul style="list-style-type: none"> <li>Changes in interest rates</li> </ul>
Gearing	<ul style="list-style-type: none"> <li>Level of debt</li> <li>Return on equity employed</li> </ul>	
Taxation	<ul style="list-style-type: none"> <li>Income and capital gains</li> <li>VAT election</li> <li>Capital allowances</li> </ul>	

**3.3** In assessing investment value, the valuer should have regard to the investor's judgment on the inputs to be adopted, other than the current factual matrix of data (i.e. tenure, physical attributes and lease terms). However, the client may seek the valuer's opinions on the inputs. If so requested, the valuer should adopt market-based forecasts for rental and yield movements and should advise on appropriate discount rates having regard to sector and property-specific factors.

**3.4** Cash flows can cover any time horizon but are normally undertaken for 5, 10 or 15 year periods. However, the shorter the time horizon, the greater the impact of the exit value will be upon the present value (Market Value or investment value). Transaction costs will also have a greater impact since they will have to be written off over a shorter period.

**3.5** The characteristics of the specific asset should be taken into account when fixing the time horizon. An appropriate exit date may be influenced by material events in relation to the property itself, such as break clauses or lease expiries, which can lead to substantial refurbishment expenditure or voids. However, care should be exercised if the assessment of investment value for different properties is used to compare the advantage of buying one particular property over another. Internal rates of return (IRR) used over different time periods do not always make it possible to determine automatically which is the superior investment from the prospective owner's point of view.

**3.6** For an assessment of investment value, the time horizon adopted should reflect the investor's anticipated investment holding period (which will normally be determined having regard to the factors mentioned earlier).

**3.7** In assessing Market Value and analysing price, tax is not usually explicitly factored into the calculation, as comparison-based evidence is generally analysed on rentals and expenditures gross of tax. The use of DCF techniques allows tax to be factored into a calculation of investment value. The valuer may feel it appropriate to assess investment value both with and without tax implications.

**3.8** A key factor that will affect both the revenue cash flow and the exit value is anticipated rental growth. Econometric forecasting involves the construction of models of the property market derived from insight into the drivers of that market, and utilises fundamentals derived from wider economic and financial market models. The models identify relationships that have occurred in the past and use leading indicators, or forecasts, to produce an estimate of each variable in the future. Such econometric modelling is not normally within the skill-set of valuers, so it may need to be outsourced.

**3.9** It is important to identify whether any future growth rate in rental value used in the valuation has been determined by forecasting growth rates before or after rental value depreciation. Forecasting rental values is often underpinned by analysing the relationship between past economic factors and rental value change. Some indicators of past rental value change are based on hypothetical prime property, while some are based on value change in a portfolio of real properties. Where a property is assumed to be subject to future refurbishment or redevelopment, two rental forecasts will be required: one reflecting depreciation to be applied to rent reviews in the existing/unimproved building; and another to forecast the rental value of the improved or replacement property.

**3.10** The situation is complicated because forecasting at the local level is not usually as well-developed as forecasting at the national or regional levels due to the poor quality and quantity of local data, coupled with the increased importance of the supply side.

**3.11** Therefore, often rental forecasts will need to be made subjectively based on market expectation. Market prices can be analysed to determine a set of growth assumptions that, together with a selected discount rate and other assumptions, is consistent with market pricing. An investor making an assessment of investment value can consider whether that expectation is believed to be credible. Sensitivity analysis can be undertaken by the valuer by varying rental growth rates above and below perceived market sentiment.

**3.12** Valuers who do not have access to formal forecasts should still be able to make informed comments on prospects for an individual property. However, the basis and background to any assumptions made about future changes in rental values, yields and costs should be made clear to the client.

## 4 Estimating the exit value

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**4.1** The exit value should reflect the anticipated state of the property, physically and in tenure/leasing terms, at the exit date. This should be overlaid with forecast movements in general interest rates and property yields. These forecasts should follow anticipated trend lines and should normally not try to catch volatile market movements in property yields. The tools of analysis will be looking to hone the exit yield into a long-run equilibrium yield that provides a measure of longer stability by absorbing shorter-term volatility and uncertainty.

**4.2** The exit value may revert to site value where demolition of the building(s) is anticipated. In the case of leaseholds where the cash flow duration coincides with the lease expiry, the exit value will be zero, or may even be negative if dilapidations are expected to arise.

## 5 The discounting process

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**5.1** The DCF approach is a method of valuing an asset using the concepts of the time value of money. It is an explicit approach where all future cash flows are estimated and discounted to their present value. The discount rate reflects the time value of money and a risk premium, representing compensation for the risk inherent in future cash flows that are uncertain.

**5.2** In simple terms, the time value of money can be considered to represent interest foregone. If currency unit (CU) 1 could be placed on deposit for a year to earn 5 per cent interest then, broadly, CU1.00 receivable in a year's time has a present value of CU1 divided by 1.05, which equals 0.952. This is because the CU0.952 could be deposited to earn 5 per cent, i.e. 0.048 interest, so that it would accumulate to CU1.00 after a year.

**5.3** This presupposes that the CU1.00 in a year's time is certain, but it might not be. If the amount of the receipt is uncertain, the investor will not be willing to pay as much, maybe only CU0.90 instead. If so, the potential receipt of (approximately)

CU1.00 has been 'discounted' not by 5 per cent, but by 10 per cent. So the discount rate will always reflect the investor's perception of risk. In this case, the 10 per cent discount rate reflects 5 per cent for the time value of money, plus a 5 per cent risk premium.

**5.4** This discount rate is then used to discount the anticipated cash flows:

CU100 receivable in 1 year's time is worth  $\left(\frac{100}{1.10}\right) = 90.91$ ;

CU100 receivable in 2 years' time is worth  $\frac{\left(\frac{100}{1.10}\right)}{1.10}$  or  $\left(\frac{100}{1.10^2}\right) = 82.64$ ; and

CU100 receivable in 3 years' time is worth  $(100/1.10/1.10/1.10)$  or  $\left(\frac{100}{1.10^3}\right) = 75.13$ .

**5.5** The result of this calculation is the net present value (NPV), defined as the present value of all future expected income and capital flows, discounted at the investor's target or required rate of return.

**5.6** Although an ARY valuation conventionally treats all rent payments as received annually in arrears, an explicit DCF valuation should always reflect the actual cash flow frequency. To discount (e.g.) a quarterly cash flow, a quarterly discount rate must be applied. The quarterly equivalent of an annual discount rate is derived by the formula  $(1 + i)^{0.25} - 1$ . So for example, to discount at 10 per cent per annum, the quarterly cash flow must be discounted at  $1.10^{0.25} - 1 = 2.411$  per cent per period.

**5.7** If cash flows are receivable in advance, for example rents receivable quarterly in advance, the first period's receipt is not discounted and the second period's receipt is discounted by one period. The Microsoft Excel function for NPV assumes cash flows at the end of each period, so to reflect rents received in advance the NPV should be multiplied by  $(1 + i/100)$  where (*i*) is the discount rate per period.

**5.8** IRR is the discount rate which, when applied to all future expected income and capital flows, equates the price with the present value of these discounted income flows. The NPV is therefore zero. IRR can be used to compare potential returns from alternative investments whose purchase prices are known.

**5.9** IRR can be derived only by an iterative trial and error process, which is the method used by spreadsheet IRR formulae. In Excel, an educated guess can be provided to speed up the calculation. In some instances, where the calculated cash flows move from positive to negative and back again (or vice versa), there may not be a unique IRR, but this is a mathematical aberration. Normally, the differing answers will be far apart, but it would be prudent to test the 'most likely' figure by checking that, at the IRR rate adopted, the NPV does equal to zero.

**5.10** IRR is used to calculate annual property performance of a property fund and, in that context, is sometimes described as the money weighted rate of return (MWRR). However, such a measure fails to recognise the significance of the timing and magnitude of capital inflows and outflows throughout the measurement period.

If one fund experiences a large inflow of investment capital just before a bull market, whereas a competing fund suffers a capital outflow at the same time, the former might superficially appear to have performed better than the latter.

**5.11** Using time weighted rate of return (TWRR) neutralises the effect of cash flow timings so that the relative skill of an individual fund manager can be assessed over a given time period. TWRR is simply the geometric mean rate of return, calculated by taking the  $n$ th root of a series of intermediate returns over  $n$  periods. For instance, if the returns over four successive periods are say 1, 2, 3 and 4 per cent, the TWRR is given by:  $TWRR = ((1.01) \times (1.02) \times (1.03) \times (1.04)) - 1 = 0.024939$  (or 2.4939 per cent). If there are no intermediate cash flows over the period of analysis, the MWRR and TWRR measures will be identical.

## 6 Selecting the discount rate

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**6.1** Assessments of investment value should take into account the client's return on equity employed where required. When instructed by the client, the costs of finance (i.e. interest payments, arrangement fees) can also be factored into the cash flow. Further adjustment may be necessary to the discount rate adopted to reflect the additional risk incurred by undertaking a geared position, as opposed to an investment that is 100 per cent equity financed.

**6.2** Care should be taken to avoid double counting of risks by reflecting them both in the cash flows and in the discount rate. For example, if the cash flow assumes the exercise of all lease breaks and consequent voids, then the discount rate can be lower since the risk (the downside) has already been reflected in the cash flow.

**6.3** The appropriate discount rate will be the rate of return that adequately compensates the investor for the risks taken. As risk rises, the required compensation for the level of risk should also rise, reflected in a rise in the discount rate. The discount rate (the target rate of return) is usually derived by reference to the return on an alternative form of perceived low-risk or riskless asset (frequently the benchmark is the gross redemption yield on government gilts or cash), plus appropriate additions for risk.

**6.4** In the finance literature, the capital asset pricing model (CAPM) draws a distinction between market risk and specific risk. Market risk, also known as systemic risk, affects all assets and cannot be eliminated through diversification. Specific risk, however, is unique to each asset and is therefore uncorrelated with the market.

**6.5** The dominant theme of modern finance is that only market risk is rewarded; as specific risk can be diversified away, investors cannot expect to be compensated for it. Data on the actual performance of property assets, however, demonstrate huge variation in risk/return in a way that CAPM would not predict, driven in large part by the heterogeneity of the asset class; no two properties are the same. So for commercial real estate, in many cases specific risk matters.

**6.6** The desired rate of return (also referred to as the discount rate or target rate) is conventionally constructed from a risk-free rate and market risk premium; for real estate, investors may also choose to add specific risk premiums. While this may seem to be a relatively straightforward process, actually determining the risk premium is more complex. Although some areas can be estimated quantitatively

from historic data, a number of factors, e.g. the potential impact of carbon pricing on the appropriate discount rate, resist that kind of analysis. As a result, investors are required to make subjective or qualitative adjustments to discount rates. The positive interpretation of this is that being aware of a risk, even if one cannot quantify it exactly, is the first step in controlling it.

**6.7** What, then, are the salient factors in deriving a property risk premium?

- 1 Risk-free rate of investment
- 2 Market risks
  - Illiquidity upon sale (e.g. lot size, transaction times, availability of finance)
  - Failure to meet market rental expectations (forecast rental growth)
  - Failure to meet market yield expectations (forecast yield shift)
  - Risk of locational, economic, physical and functional depreciation through structural change
  - Risks associated with legislative change (e.g. planning/privity of contract, changes in fiscal policy)
- 3 Specific risks
  - Tenant default on rental payment (covenant risk)
  - Risk of failure to re-let (void risks)
  - Costs of ownership and management
  - Differing lease structures (e.g. rent review structure, lease breaks).

**6.8** The risk-free return is normally taken to be the gross redemption yield on a medium-dated government gilt, preferably of the same duration as the assumed holding period of the investment. (Alternatively it is possible to adopt the real return of index-linked gilts, in which case this needs to be applied to cash flows expressed in real terms.) Equally, geared investors or property companies frequently have reference to debt costs or weighted average cost of capital (WACC) as the core metric against which assets are assessed.

**6.9** The second group – risks of structural change or market failure – are those that may affect the market as a whole, particular subsectors or groups of property. The structural impacts on the in-town retail market brought about by the introduction of out-of-town retailing and changes to property taxation such as value added tax (VAT) are good examples of this. As such, these risks could be called market or systemic risks.

**6.10** The third group – property, non-market or ‘unsystemic’ risk factors – are, broadly speaking, risks associated with individual assets.

**6.11** These definitions (market/non-market) are relatively broad as none of the factors are entirely separable or mutually exclusive. For example, the risk of failure to meet market yield expectations could be a function of any one factor or a combination thereof. Quite clearly then, the degree of separation of the various risk factors and their incorporation into a DCF are of key importance in the validity of an appraisal.

**6.12** Alternative approaches to determining the target rate of return might be to adopt:

- (a) A single discount rate for all property investments
- (b) A discount rate for each class of property – either by use (offices, shops, etc.), subtype (unit shops, shopping centres, etc.) and/or location
- (c) A discount rate reflecting the risks of a specific property cash flow
- (d) Different discount rates applied to different components of the cash flow according to their risk – for example the passing contractual rent until lease expiry (risk dependent on known tenant covenant), reversionary rent at future rent reviews (risk dependent on known tenant covenant and market rental change) and rental income beyond lease expiry (risk dependent on unknown tenant covenant and market rental change).

**6.13** Determining separate risk premiums for each risk factor using method (c) given in 6.12 is a difficult and time-consuming process requiring specific research, which in most cases may be either impossible (given the poor quality of individual property data and secrecy attached to it) or impractical, given the scope and size of the various investment markets.

**6.14** In addition, there is some degree of overlap between risk factors and hence difficulty in eliminating double counting of risk in some form. In any event, it is commonly regarded as more appropriate to incorporate property-specific risks into the cash flow, for example reflecting the risk of increased void levels in a property by adjusting the length of the void period. Therefore, while market risks are customarily incorporated in the discount rate, non-market property risks are, where possible, built into the cash flow.

**6.15** At the other extreme, method (a) adopts a single discount rate for all property investments, reflecting that different classes of assets (equities, property, etc.) involve different levels of risk. For example, it is recognised that investment held in property is generally less liquid than that held in shares. Hence, a premium can be derived to account for the return required to compensate an investor in a single market (e.g. property as opposed to gilts or equities) for the risks (of market failure or liquidity).

**6.16** Such an approach assumes that all sector-specific risks can be reflected in the cash flow – including the exit yield. This is unlikely to be possible, as the differences in submarkets will affect the cash flow during the holding period as well as the exit yield. In this connection, different submarkets (offices versus shops, or City of London versus provincial offices) exhibit different degrees of volatility and hence different degrees of risk. Adopting a single property market discount rate and property-specific cash flow risks (voids, outgoings, etc.) would disregard these sector-specific (and/or location-specific) risks.

**6.17** Although each approach has advantages and disadvantages, this guidance note commends the use of method (b), possibly in combination with method (d), which distinguishes between covenant risk and market risk.

**6.18** In many circumstances, investors will have already set appropriate discount rates (target rates) for an assessment of investment value. However, it is not uncommon for valuers to be asked to contribute to setting these figures. At the very



least, valuers should be conversant with their clients' thinking in determining the discount rate, as this may affect the valuers' treatment of other elements of the cash flow.

**6.19** Although method (b) relies on the principle of grouping risks, particular risk factors specific to an individual asset may occasionally be reflected in the discount rate. (For example, it would not be unusual for a valuer to adjust a discount rate for a shopping centre to reflect the risk of direct competition from a nearby scheme under construction.)

**6.20** There are two broad approaches to calculating risk premiums: *ex post* and *ex ante*. *Ex post* approach generally focuses on a historic review of relative property returns (be it at all property, sector or individual asset levels) to the selected risk-free rate over as long a time period as possible. The downside to this approach is that while it can inform what the risk premium has been historically, this may be different from what it *should* have been, or indeed what it may be in the future. Equally, all the various risks to property are wrapped up in one calculation, so it is not possible to determine what has driven the risk premium to a particular level.

**6.21** Hence many investors have attempted to construct *ex ante* estimates of the risk premiums. Several of the market risks in section 6.7 can be estimated quantitatively with reference to historic experience; for example, information on transaction times and valuation versus sale price differences can be used to estimate liquidity premiums. However, the risks of structural change will almost always come down to a subjective/qualitative assessment.

**6.22** Estimating premiums for specific risks is particularly challenging. Whilst a number of investors have attempted to use data to quantify these estimates, it is felt to be more usual practice for most investors to make basis points adjustment to hurdle rates based on experience. For instance, a 25 basis points (a quarter of 1 per cent) increase could be applied for a Central London office investment that suffers from being slightly off core, or a 25 basis points reduction could be given for an industrial property that benefits from an unusually long lease. These adjustments are likely to vary across the property types, reflecting the particular factors that are key to driving value.

**6.23** Note that investors' perception of risk premiums is not stable over time. As an example, this has been reflected in very little allowance being made for the illiquidity of property relative to equities and bonds. Equally in less positive market conditions, overly bearish assumptions are made about the ability to sell down. Secondly, the increasing role of multinational investors across property markets places emphasis on a wider range of factors than has been the case in the past. Most important amongst these are market transparency and governance, political and currency risk.

## 7 Reporting

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**7.1** At the time of writing, reports must comply with Practice Statement (PS) 6, Valuation reports, in *RICS Valuation Standards*, 6th edition.

**7.2** Clarity regarding sources of information, any assumptions or special assumptions made, and identification of areas of potential value or cost that have

been excluded is crucial and represents good practice. Where a DCF method has been used the cash flow projections should be disclosed, along with the rationale for the discount rate.

**7.3** If the investment value is materially different from Market Value, a statement to that effect must be made.

**7.4** As the investment value is specific to the client in question, the valuer should confirm to the client that the valuation is to be used solely by the client and its professional advisers. It is not intended to be available or suitable for use by third parties.

# Appendix:

## Discounted cash flow valuation – worked example

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The task is to calculate the investment value (or Market Value) of an office building as at December 2009. There are three tenancies:

- The 300m<sup>2</sup> ground floor is let at CU35,000 per annum on a lease expiring in June 2011, following which there is expected to be a 12 months void. Outgoings will be incurred during the void period at the rate of CU60/m<sup>2</sup> plus, after three months, property tax of CU90/m<sup>2</sup>. It is estimated that CU500/m<sup>2</sup> will need to be spent on refurbishment, before achieving a re-letting subject to a 12 months rent-free period. The current headline rental value is considered to be CU40,000 per annum, expected to increase to approximately CU50,000 per annum by the June 2012 re-letting date.
- The lease of the first floor (400m<sup>2</sup>) at CU40,000 per annum expires in December 2013. Assuming six months void, six months rent-free, there will be void outgoings of CU60/m<sup>2</sup>, property tax of CU90/m<sup>2</sup> after three months and CU400/m<sup>2</sup> in refurbishment cost. Current headline estimated rental value (ERV) of CU60,000 per annum will be expected to increase to approximately CU69,000 per annum by the June 2014 re-letting date.
- The lease of the second to fifth floors (1,600m<sup>2</sup>) at CU190,000 per annum runs until September 2017, subject to a rent review in September 2012. The current headline rental value is estimated to be CU240,000 per annum, expected to increase to CU262,000 per annum by September 2012 when a 5 per cent effective rent discount is expected to be applicable at rent review.

A five-year holding period is assumed. At that exit date, the first floor will have just become income-producing again. At the exit date, the investment will be reversionary with passing rents totalling CU368,400 per annum against ERVs totalling CU403,500 per annum. The expiry of the lease of the second to fifth floors will be two and three-quarter years away, so the void, void costs, refurbishment cost and re-letting at ERV need to be factored in to the ARV exit valuation. Having regard to the risk profile of the investment at the exit date and anticipated market conditions, an equivalent yield of 7.25 per cent is considered appropriate, producing an exit value, net of purchaser's costs, of CU4.48 million.

The cash flows can then be totalled and discounted back at a discount rate reflecting the perceived risk profile of the investment. At a 10 per cent discount rate the value is CU3.56 million or CU3.37 million net of 5 per cent purchase costs.

## Discounted cash flow valuation – worked example

Tenancies		Void assumptions at lease expiry																		
Area	Rent	ERV	Rent review	Effective rent discount	Expiry	Void mths	Rent free mths	Void S/chg /M2 p.a.	Void taxes /M2 p.a.	Refurb cost										
M2	CU p.a.	CU p.a.				mths	mths	/M2 p.a.	/M2 p.a.	/M2										
Ground	300	36,000	45,000		Jun 2011	12	12	CU60	CU90	CU500										
1st	400	40,000	60,000		Dec 2013	6	6	CU60	CU90	CU400										
2nd-5th	1,600	190,000	240,000	Sep 2012	5.0%	6	6	CU60	CU90	CU400										

### Growth assumptions

	Dec 2009	Mar 2010	Jun 2010	Sep 2010	Dec 2010	Mar 2011	Jun 2011	Sep 2011	Dec 2011	Mar 2012	Jun 2012	Sep 2012	Dec 2012	Mar 2013	Jun 2013	Sep 2013	Dec 2013	Mar 2014	Jun 2014	Sep 2014	Dec 2014	
<b>Assumed growth</b>																						
Rental values	0.0%	0.0%	0.0%	0.0%	6.0%	6.0%	6.0%	6.0%	6.0%	4.0%	4.0%	4.0%	4.0%	4.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Expenses	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
<b>Index</b>																						
Rental values	1,000	1,000	1,000	1,000	1,000	1,015	1,030	1,045	1,060	1,070	1,081	1,092	1,102	1,111	1,119	1,127	1,135	1,144	1,152	1,161	1,170	1,179
Expenses	1,000	1,007	1,015	1,022	1,030	1,038	1,045	1,053	1,061	1,069	1,077	1,085	1,093	1,101	1,109	1,117	1,126	1,134	1,142	1,151	1,159	1,167

## Discounted cash flow valuation – worked example (continued)

	Cash flow (CU000s) over a 5-year hold period												Exit									
	Dec 2009	Mar 2010	Jun 2010	Sep 2010	Dec 2010	Mar 2011	Jun 2011	Sep 2011	Dec 2011	Mar 2012	Jun 2012	Sep 2012	Dec 2012	Mar 2013	Jun 2013	Sep 2013	Dec 2013	Mar 2014	Jun 2014	Sep 2014	Dec 2014	
Ground Rent	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Refrurb cost							(156.8)															
S/chg+taxes							(4.7)	(11.8)	(11.9)	(12.0)												
Letting fee											(5.0)											
1st Rent	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Refrurb cost																	(180.1)					
S/chg+taxes																	(6.8)	(17.0)				
Letting fee																						
2nd-5th Rent	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
Net exit proceeds (see calculations below)																						4477.2
<b>Overall cash flow</b>	66.5	66.5	66.5	66.5	66.5	66.5	(104.0)	45.7	45.6	45.5	52.5	72.2	72.2	72.2	84.8	84.8	(112.0)	57.8	67.9	74.8	4477.2	

Net present value (NPV) at 10.00% quarterly 3557.1

Less purchaser's cost 5.50% (185.4)

**Investment value, net of purchase cost 3,372 CU000s**

Note: Costs inflated to Dec 2014 level for table below

2nd-5th floor void costs, as at exit date			
	Total	Dec 2017	Mar 2018
Refrurb cost	(185.5)	(185.5)	—
Rates+S/chg	(389.5)	(111.3)	(278.2)
Letting fee	(28.1)		(28.1)
Total void costs	(603.1)	(296.8)	(28.1)
Yrs deferred		2.75	3.00
PV @ 7.25%	(492.7)	(244.8)	(225.5)
		3.25	(22.4)

### Exit valuation at Dec 2014 (CU000s) reflecting reversions to market rent and imminent void in 2nd-5th floors

	Passing rent	ERV at exit	Rev'n def'd	Notes	Cap rate	Value
	CU000 p.a.	CU000 p.a.	Yrs			CU000
Ground	50.3	52.6	2.50	(1)	7.25%	720.9
1st	89.1	70.2	4.50	(2)	7.25%	964.1
2nd-5th	248.9			(3)	7.25%	601.1
Present value (PV) of 2nd-5th floor void costs, as left		280.7	3.75	(4)	7.25%	2977.8
		368.4	403.5	(5)		4771.1
	Less purchaser's costs				5.50%	(248.7)
	Less sale costs					4522.4
	Less purchaser's costs					(45.2)
	Less sale costs				1.00%	(45.2)
	Net exit proceeds (CU000s)					4477.2

#### Notes

- (1) Re-let Jun 2012, so next rent review Jun 2017 = 2.50 yrs def'd
- (2) Re-let Jun 2014, so next rent review Jun 2019 = 4.50 yrs def'd
- (3) Expires Sept 2017, so 2.75 yrs income
- (4) Re-let Mar 2018, rent commences Sep 2018 = 3.75 yrs def'd
- (5) see PV of void costs, calculated as left

