UCEM Institutional Research Repository

Title	DISCOUNTED CASHFLOWSMAKING THEM MAINSTREAM IN REAL ESTATE
Author(s)	David Hourihan, David Hourihan, David Hourihan and David Hourihan
ORCID	https://orcid.org/0000-0003-1405-3130; https://orcid.org/0000-0003-1405-3130; https://orcid.org/0000-0003-1405-3130; https://orcid.org/0000-0003-1405-3130
Type	Conference or Workshop Item
Publication title	
Publisher	
ISSN/ ISBN	
Publication Date	31 January 2025
Version	
DOI	
Repository link	https://ube.repository.guildhe.ac.uk/id/eprint/203/
Link to publication	

DISCOUNTED CASHFLOWS
MAKING THEM MAINSTREAM IN REAL ESTATE

PART 1 (SECTIONS I – J)

31 January 2025

Agenda (10.00am – 1.30pm)

A. Introduction.

B. Scenario.

C. Basis of Appraisal.

D. Property & Market assessment using SWOT analysis.

E. Investment Categorisation.

Comfort Break   (30 minutes)

F. The DCF Model.

G. Measuring Returns (NPV and IRR).

H. Analysing the 5 key variables:

   1   ERV - Hierarchy of Rental Comparisons.

   2   Hurdle Rate.

   3   Exit Yield.

   4   Rental growth rate.

   5   Purchase Price.

Comfort Break   (15 minutes)

I. **Stress Testing Key Variables.**

J. **Conclusions / Recommendation.**

DISCOUNTED CASHFLOWS – MAKING THEM MAINSTREAM IN REAL ESTATE

H. Stress Testing Key Variables

In our DCF model a complex set of variables have been reduced to a single investment value (NPV / IRR).

In reality, investments are subject to much more complexity and uncertainty in terms of the underlying variables examined. It is generally felt that it is therefore dangerous to only focus on a single outcome when in reality the NPV and the corresponding IRR may be subject to variations dependent upon potential changes in the main variables.

For this reason, many spreadsheets and proprietary software include functionality that allows the appraiser to examine 'what if' scenarios and to perform sensitivity testing on the key variables to test the sensitivity of an investment to change and to establish the tolerance of the investment to 'stress' if market conditions deteriorate.

The three main forms of stress testing we can use are:

- **Scenarios**

- **Sensitivity Analysis**

- **Probability Analysis**

H. Stress Testing Key Variables

- **Scenarios**

  Scenarios simply require the appraiser to examine a number of key aspects of the appraisal using 'what if' type questions. So, in the above example scenarios could examine what would happen if the exit capitalisation factor was not based on say 4.25% **(Expected/Most Likely)** but on 3.50% **(Optimistic/Best Case)** or 5.00% **(Pessimistic/Worst Case).**

- **Sensitivity Analysis**

  The above scenario/example demonstrated that the appraisal is sensitive to changes in the exit capitalisation factor. Spreadsheets and proprietary software can undertake multiple calculations using a variety of inputs and calculate the relative sensitivity of the appraisal to changes in the variables. Complex investments may be sensitive to changes in different variables, not only the exit yield.

  Sensitivity analysis can be used to plot the impact of change in two or three variables on the investment value.

- **Probability Analysis**

  Application of statistical analysis to the occurrence of the rents and yields within market transactions could be used to establish the mean and standard deviation of the results. Standard deviation is an accepted measure of risk in investment analysis and so if the underlying occurrence data is reliable this could be used to refine the sensitivity analysis further.

  To apply this kind of analysis the frequency of observed rents (and yields) could be analysed to derive the more probable rents and yields to apply. An illustrative probability analysis of the rents is presented below the sensitivity tables in the spreadsheet.

I. Conclusions / Recommendations

So far we have completed:

1. Our DCF model.

2. Sense checked our key variables.

3. Carried out our stress tests.

Now our options are:

A. Buy at the quoted price,

B. Reject the proposal, or

C. try to negotiate the price

What would you recommend and why?

I. Conclusions / Recommendations

Recommendations:

If we go for option 3 then we need to be clear on:

1. **Maximum bid price**

2. **Opening bid**

DISCOUNTED CASHFLOWS
MAKING THEM MAINSTREAM IN REAL ESTATE

31 January 2025