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Title	Lectures (20 hours) to international students in 2023 for Ecole Supérieure des Professions Immobilières, Paris Campus.
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Type	Conference or Workshop Item
Publication title	
Publisher	
ISSN/ISBN	
Date	6 November 2023
Version	
DOI	
Repository link	https://ube.repository.guildhe.ac.uk/id/eprint/198/
Link to publication	
Notes	This publication version may differ from the final version

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PROPERTY VALUATION

(BG3 ALT S6)

Section 20 –

Methods of Valuation (DCF) Pt 4

- Stress Testing & Conclusions

Real Estate Business Management Program

Year 3 – Work study program

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10 November 2023

Methods of Valuation – Investment Method (DCF)

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**

Methods of Valuation – Investment Method (DCF)

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 7.25% (Expected) but on 5.75% (Optimistic) or 8.75% (Pessimistic).

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.

Methods of Valuation – Investment Method (DCF)

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.

C. Try to negotiate the price.

What would you recommend and why?

Methods of Valuation – Investment Method (DCF)

Conclusions / Recommendations

Conclusions:

1. Buy

2. Reject

3. Negotiate

4. Review again later

What would you recommend and why?

Recommendations:

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

1. Maximum bid price

2. Opening bid

End

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