Commercial Property Valuation

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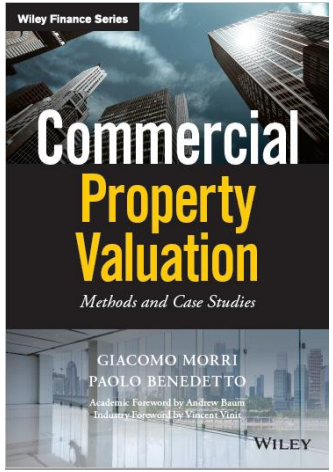
WILEY, 2019



Property Return Rates

Chapter 7

THINK BEFORE YOU PRINT

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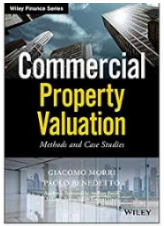

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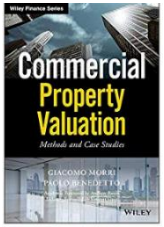
Introduction



The calculus of the property return rates remains one of the most critical elements of the Income Capitalisation Methods, which are based on two different types of rates:

- **Direct Capitalisation Approach** → Cap Rate
- **Discounted Cash Flow Approach** → Discount Rate

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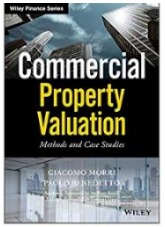
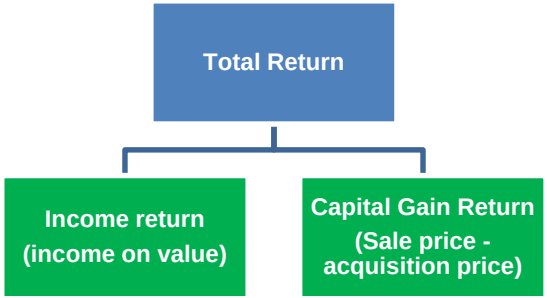
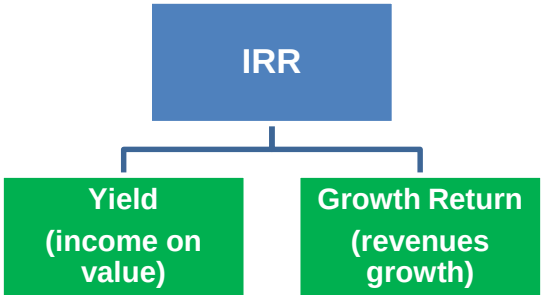
Measuring the return of a property investment







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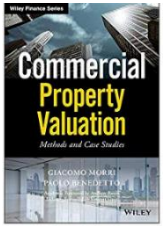
Measuring the return of a property investment



- An investment can generate two types of return:
  1. **Yield**: the ratio between the income and the value/price of the asset
  2. **Capital gain return**: the ratio between the increase in value during the period and the value of the asset at the beginning of the period

- Depending on the real estate transactions, different income components will prevail:
  - In a **Development project** there will be only (or mainly) capital gain
  - In a **Income-producing Property** there will be only (or mainly) an income yield component

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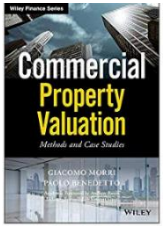
Measuring the return of a property investment



- The IRR is typically used as a proxy of the rate of return of the investment
- From a mathematical point of view, the IRR is the discount rate that makes the sum of discounted cash flows equal to zero:

$$0 = \sum_{t=1}^{n} \frac{CF_t}{(1 + IRR)^t}$$

- The IRR represents the maximum cost of capital an investment can sustain (if IRR>WACC, the investment is profitable)

- Typically, the **discount rate corresponds to the IRR** (expected total return) while the **cap rate corresponds to the yield** (expected current return)

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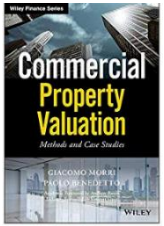
Risk Free Rate



- Both cap rates and discount rates are based on the following formula:

$$\boldsymbol{Property\ Return\ Rate = Risk\ Free\ Rate + Property\ Risk\ Premium}$$

- The risk-free rate is the return required by investors to reliably defer their consumption over time and it is derives from the sum of two risks:
  1. Default risk
  2. Uncertainty regarding investment rates
- There are various alternatives for estimating the risk-free component, always considering the consistency between the life of the security and the time horizon of the valuation;
  - The return on a risk free government bond (it can include also the country risk factor)
  - The return on a government bond of the country where the property is located
  - An average weighted return on a basket of government bonds
  - The interest rate swap

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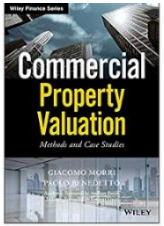
Property Risk Premium



- The property risk premium is the additional return required to invest in risky activities as opposed to risk-free activities
- It has to consider several factors and it can be estimated in two ways:
  1. **Ex-Post:** The risk premium can be measured as the difference between the average historical return on the activity and the risk-free rate (typical used for securities)
  2. **Ex-Ante**: The risk premium can be measured as the difference between the future expected return (based on experience and adjustments) on the activity and the risk-free rate

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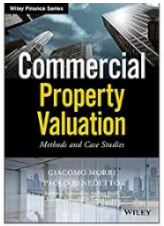
Cap Rate definition



The definition of cap rate provided by the Appraisal Institute (2002) is: '*an income rate for a total real property interest that reflects the relationship between a single year's net operating income expectancy and the total property price or value; used to convert operating income into an indication of overall property value*.'

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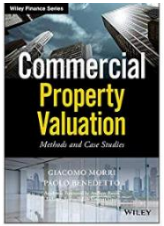
Going-In and Going-Out Cap Rate



- The cap rate can be calculated by extracting the yield based on income and prices of transaction actually completed
- As described in the previous section, the Direct Capitalisation Approach is not often the final method for estimating the value of an asset, but it is used in the DCFA to determine the Terminal Value
- Consequently, depending on the moment to which the estimate relates along the time horizon, two definitions of cap rate can be identified:
  1. **Going-in cap rate (GICR)**: the relationship, at the valuation date, between the initial income and the value/price of the asset
  2. **Going-out cap rate (GOCR)**: the rate used in order to convert the final income into the expected value of the asset at the end of the time horizon of the valuation (Terminal Value). This rate can only estimated but not extracted form the market.

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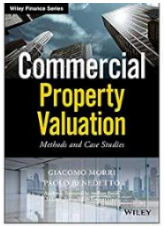
Going-In and Going-Out Cap Rate



- In valuation practice, the GOCR is often higher than the GICR, due to:
  - Uncertainty about the future
  - The obsolesce of the building
- The GICR can be estimated as a property return rate while the GOCR is based on expected rates in the future (or the GICR +/- a spread)
- However, during the estimation of the GOCR, it is advisable to consider at least the following elements:
  - The length of the valuation time horizon
  - The conditions of the building
  - The expected investments need to maintain or redevelop the building
  - Expected changes in market rates

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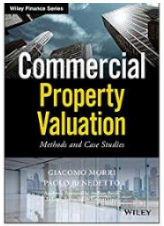
Going-In and Going-Out Cap Rate: example



- **Going-In Cap Rate (Initial Cap Rate):**

$$\text{Entry Yield (Going - In Cap Rate)} = \frac{\text{Initial Revenues}}{\text{Entry Value/Price}}$$

- **Going-Out Cap Rate (Terminal Cap Rate): [theoretical/expected]**

$$\text{Going - Out Cap rate} = \frac{\text{Final Revenues}}{\text{Theoretic Exit Value}}$$

$$\textit{Going-Out Cap Rate} = \textit{Going-In Cap Rate} + \textit{spread}$$

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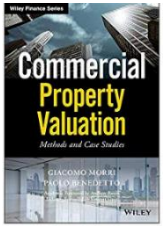
Going-In and Going-Out Cap Rate: example



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$$\text{Entry Yield} \Rightarrow \text{Going in cap rate} = \frac{€\,75}{€\,1{,}000} = 7.50\%$$

Terminal Value Estimation

- Assumption on revenues in 2023: € 95
- Assumption on Going-Out Cap Rate spread = +0.75%

2023

$$\text{Terminal Value} = \frac{\text{ERV 2023}}{\text{Going out cap rate}} = \frac{€\,95}{8.25\%} = €\,1{,}150$$

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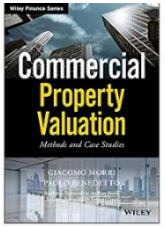
Going-In and Going-Out Cap Rate: relationship



The cap rate is used to make assumptions about:

- Market expectations of risk (requested Yield)
- Growth
- Depreciation

Their relation is expressed as follows:

- The higher the expected risk, the higher the cap rate ↑
- The higher the expected income growth, the lower the cap rate ↓
- The higher the expected depreciation, the higher the cap rate ↑

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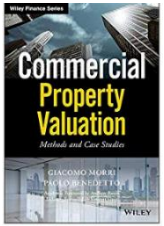
Discount Rate Definition



- It represents the interest rate to be used to transfer to the present day a financial capital (or more generally a cash flow) obtainable on a future date
- It can be considered as an opportunity cost associated with the total return offered by alternative investments that are comparable in terms of risk profile
- In practise, it assumed equal to the IRR

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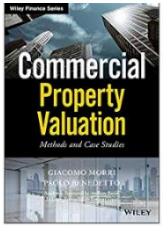
Consistency Between Discount Rate and Cash Flow



Before discounting cash flows, it is fundamental to consider three key aspects:

- **Financing and Tax Status**:
  - FCFO or FCFE in case of investment value
  - Operating cash flows net of tax and financial charges in case of market value

- **Rental Situation:** During the valuation time horizon, the same property might include some units which are leased and others which are vacant. Theoretically, two different discount rates should be used but, in practise, a blended IRR (an average return) is used

- **Yield Curve**: Theoretically, different discount rates should be used to discount cash flows with different maturity dates, but in practice, however, as in the previous case, a single (blended) discount rate is commonly used for all the maturities of the cash flows of the asset

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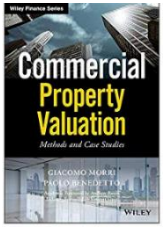
Components of the Discount Rate



- For discounting FCFO, a discount rate, which is representative of the total expected return, should be used. This discount rate can be identified as the WACC

$$\boldsymbol{WACC = K_d * D\% + K_e * E\%}$$

- When estimating the Market Value of an asset, figures for the expected return on equity and debt and the financial structure are used (therefore no tax benefits are considered), unlike in a Investment Value estimation, which, on the contrary, is based on subjective measures

- The discount rate can be broken down into three components (financial structure, cost of debt, and cost of equity), each of which can be estimated independently

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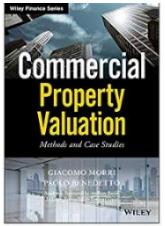
Components of the Discount Rate: Financial Structure



- The market returns on debt and equity must be weighted using the financial structure available on the market for the subject property.
- The financial structure, is assumed as the typical capital financing available on the market at a given time for the subject property in the period of analysis:
  - The **availability of credit** for real estate investments varies over time and space
  - Different **types of properties** have different risks and different creditworthiness
    - Income-producing Properties: debt financing is more readily available since their cash flows are more stable over time and more predictable
    - Development Projects: are riskier and therefore mainly financed through equity
  - The financial structure will depend on all the characteristics of the specific property (i.e. the creditworthiness of the tenants)

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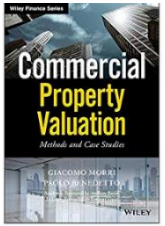
Components of the Discount Rate: Debt



- The cost of debt (Kd) expresses the current cost required by the financial market, mainly banks, to finance a **property similar to the one being valued**

- The loan amount to be considered is only the amount that banks would grant by offering as **collateral the subject property**, without external guarantees that may reduce the cost and increase the debt amount granted

- The cost of debt (which has to be fixed in order to avoid exogenous risks) can be subdivided into **two components**:
  - the base rate (risk free rate)
  - the margin required by the banks (risk premium)

- The **maturity** must be consistent with the time horizon used to discount the cash flows

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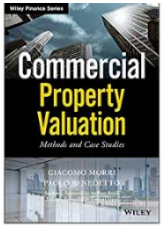
Components of the Discount Rate: Equity



- The cost of equity (Ke) expresses the total return currently required by the market participants to invest in a property similar, in terms of overall risk, to the one being valued

- Furthermore, the cost of equity is based on the overall risk of the investment, therefore it considers:
  - the operational risk (property)
  - the financial risk (the financial structure, i.e. the debt/equity ratio)

- The cost of equity also requires two components to be estimated:
  - risk-free rate
  - risk premium

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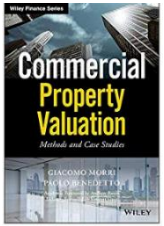
How to estimate Property Return Rates



- The real estate market characteristics make it hard to determine or estimate the total return (IRR) of a property as there are no historical series with all the characteristics of the investment: the only return that is easy to determine, through the **yield**, is the cap rate
- To determine the discount rate, it is necessary to make assumptions regarding the Terminal Value and the investment period. Therefore, other methods must be used to estimate the discount rate

- There are various methods depending on the data available, the most relevant ones are:
  1. Market Extraction
  2. Determining the Discount Rate from the Cap Rate
  3. Build-Up Approach
  4. Analysing the Opinions of Market Players on the Expected Return

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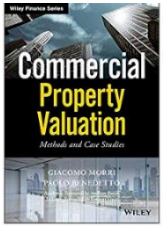
How to estimate Property Return Rates: Market Extraction



- The Market Extraction method involves extracting the cap rates, corresponding to the current returns on the property (yield), directly from the market

- The advantage of direct extraction from the market is that a rate, that includes all the property's risk components, can be obtained

- The formula for the cap rate is:

$$\boldsymbol{Cap\ Rate = Yield = \frac{Income}{Price}}$$

- In order to obtain a reliable rate, there must be:
  - A sufficient number of comparable transactions
  - The possibility of determining the historical series of income and expenditures for each comparable transaction, or the availability of sufficient data to estimate the income, expenditures and occupation rate at the time of the transaction

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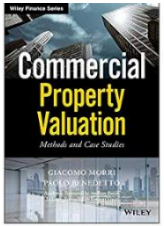
How to estimate Property Return Rates: Market Extraction



The property under analysis and the Comparables for which the information is available, must have the same features in terms of:

- Highest and Best Use
- Location
- Physical condition of the Building
- Residual life
- Current situation and future expectation of income: duration and type of lease agreements, quality of tenants, occupation rate
- Potential financial structure
- ***Overall risk***

- If there are differences in the characteristics of an asset, corrections will have to be made to the rate identified in order to **account for the differences** between the properties

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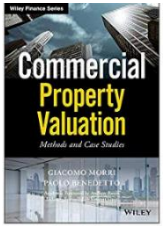
Determining the Discount Rate from the Cap Rate



- It is **not possible** to extrapolate the discount rate **directly from the market**
- However, from a cap rate calculated for similar assets, it is possible to calculate the discount rate by estimating an addendum which considers expectations regarding **future cash flows growth** (the Capital Gain expected). In other words, it is the reverse procedure to the method based on the Gordon model:

$$Value = \frac{Income}{K - g}$$

- Where k represents the discount rate, a figure that can be calculated by adding the cap rate i to a coefficient g which represents the **future income growth rate expected**, which means that k = i + g

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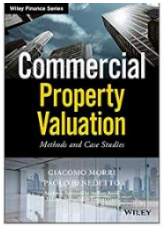
Determining the Discount Rate from the Cap Rate



- Cap rate and discount rate must be **consistent** therefore they must be calculated at the same profit and loss account level

- In practice, the expected inflation is often used as an approximation to the **growth rate** of future income

- It is also important to understand that the **current yield is a summary rate**, not necessarily an accepted current return rate

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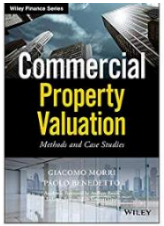
How to estimate Property Return Rates: Build-Up Approach



$$\textbf{\textit{Property Return Rate} = \textit{Risk Free Rate} + \textit{Property Risk Premium}}$$

- In order to obtain the rate, **all the specific risk components** (specific risk premium) affecting a particular asset must be identified, adding them to the risk-free rate required by the market to defer consumption over time
- After the identification of all risks of the investments, each element needs to be **weighted** in order to obtain a single number representative of the intensity of the risk considered
- The main merit of method is that it force to focus attention on the various risk components and their varying degrees of importance. However, the main drawback of its application is specifically the need to choose and, above all, to **quantify the risk factors** and their **weighting**.

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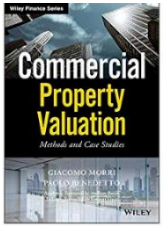
Analysing the Opinions of Market Players on the Expected Return



- In the more transparent and sophisticated markets, some consultancy companies periodically publish **reports based on the opinion of market players**:
  - The limitation of this method is that it is based on opinions connected with the past
  - However it can be a useful starting point to build the rate for the subject property based on the Build-Up Approach

- In markets where no systematic surveys are done, it is possible to achieve the same result by carrying out a direct **survey among investors** operating in the specific market:
  - In this case, attention must be paid to how the survey is carried out in order to ensuring that the data is justifiable

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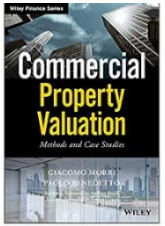

How to estimate Property Return Rates: summary

Method	Cap Rate	Discount Rate
Extraction from the market	This involves extracting yields directly from the market	*Not Directly Applicable*
Determining the discount rate from the cap rate	-	It is based on the relationship between the total return (IRR) and the income yield
Build-Up Approach	it can also be used in order to determine a cap rate	It expresses the discount rate as a function of the specific risk components (WACC).
Analysing the Opinions of Market Players on the Expected Return	It is based on the opinion of operators	It can be useful as a benchmark

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Property Finance
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http://www.propertyfinance.it/it/home-english/

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