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RESEARCH

Operational Real Estate: Risk And Reward

MAJOR REPORT

COMMISSIONED BY THE IPF RESEARCH PROGRAMME

Operational Real Estate: Risk And Reward

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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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Operational Real Estate: Risk And Reward

Report

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Operational Real Estate: Risk And Reward

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Operational Real Estate: Risk And Reward

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Operational Real Estate: Risk And Reward

GLOSSARY OF TERMS

Beta:	The beta (β) of a share or sector is a measurement of its volatility of returns relative to the entire stock market. It is used as a measure of risk and is an integral part of the Capital Asset Pricing Model (CAPM)
Business risk:	Any threat to the company's ability to achieve its financial goals. Includes but is not limited to compliance risk, financial risk, operational risk, reputational risk and strategic risk
CAPM:	Capital asset pricing model describes the relationship between systemic risk and the expected return for assets
Credit risk:	The level of uncertainty in the ability of a counterparty to meet its obligations such as the payment of rent
EBITDA:	Earnings before interest expenses, taxes, depreciation and amortisation
NOI:	Net operating income, calculated as operating revenue minus operating expenses
Operational risk:	A type of business risk arising from a breakdown in a core operating, manufacturing or processing capability
Operating leverage:	Fixed cost as a percentage of total (i.e. fixed and variable) cost. The degree of operating leverage measures how much a company's profit changes in response to a change in sales
PBSA:	Purpose built student accommodation
RevPAR:	Revenue per available room, calculated by dividing a hotel's total guestroom revenue by the room count

EXECUTIVE SUMMARY

This research examines the pricing of risk and its real-world application in the market for operational real estate assets.

Operational real estate (ORE) is currently most associated with alternative real estate types and, historically, has been seen as complex, illiquid and opportunistic. However, deal volumes and allocations are increasing, as more specialist and core style funds add this type of investment to their portfolios, attracted by the opportunity it offers to capture the extra upside associated with a well-run business or a newly emerging business model.

There is a lack of clarity and consistency on how to approach the issue of risk when pricing operational assets.

Over the last decade there has been a steady increase in allocations by UK investors to “non-traditional real estate” sectors such as specialist residential, leisure, hotels, self-storage, educational and medical facilities. The volume of UK investment turnover in the market for non-traditional real estate assets increased from just £1bn in 2009 to over £17bn in 2018.

Investor demand for high quality, recurring, long-term income coupled with a relatively attractive yield profile and the ability to actively manage the assets have been cited as contributing factors to this surge in demand.

A 2016 study described alternative assets as “a broad definition of a segment, which broadly includes types of properties characterised by lower transaction volumes, less liquidity, limited market information and therefore less transparency. In some cases, they have counter-cyclical characteristics, or they are driven by macro trends in the economy and demographics.”

ORE cuts across traditional and alternative types of real estate but defining it is more complex than simply describing a physical property type. The key distinguishing feature of ORE relates to the predictability and security of the underlying revenue stream when compared with the income streams derived from traditional real estate.

For the purposes of this research, ORE is defined as a real estate investment where the return is directly and deliberately linked to the revenues and profits of the business conducted on or from the premises.

This report identifies four distinct operating models associated with ORE investments: hybrid lease, franchise, management contract and owner/operator.

Given that ORE assets are defined by the operational model rather than their physical characteristics, and can have multiple operating models, a wide range of traditional and alternative real estate sectors may be defined as being potentially operational in nature.

A key feature of ORE is that an asset can move between the categories of traditional and operational real estate during its lifetime: for example, a hotel could be leased (traditional) and subsequently operated under a franchise (operational) at different stages in its investment lifecycle. At each transition, investors need to reappraise the risk and return characteristics of the investment.

Academic theory supports the use of Net Present Values with an appropriate discount rate when appraising an ORE investment opportunity. In practice, however, IRRs are the most popular metric adopted by investors because it is relatively quick to undertake, familiar and allows easy comparison with other asset classes.

In the UK commercial real estate investment market various measures of risk are used in the investment decision-making process, such as probability of tenant default, liquidity and financial risks. Some of these are heuristic while others are more sophisticated. When pricing operational assets, there is a lack of clarity and consistency in approaching the issue of risk.

EXECUTIVE SUMMARY

A survey of market participants listed the top three key risks to consider in an appraisal of ORE as:

- Economic risk, including supply, demand and economic growth;
- Business risk, such as tenant credit, tenant mix and lease duration; and
- Cashflow volatility, being the uncertainty around the operator's earnings, costs or revenues.

The five main methods/approaches used by investors when quantifying ORE investment risk are:

1. Adjusting the yield/risk premium;
2. Stress testing/due diligence on operator;
3. Scenario analysis;
4. Sensitivity analysis; and
5. Simulation.

Investors identified scenario/sensitivity analysis and operator due diligence as their main area of focus when undertaking an investment appraisal.

Gaps between theory and industry practice when conducting an appraisal of risk in the ORE market were identified as:

- Under-analysis of the variability of cashflows;
- Over-reliance on modifying a traditional discount rate to reflect risk;
- Insufficient emphasis on NPV as the preferred method of appraisal;
- A tendency by industry participants to apply the concepts of tenant, tenancy and rent inappropriately during the appraisal process; and
- A lack, or poor utilisation, of financial modelling skills.

The research concluded with a number of recommendations, including:

1. When undertaking an ORE investment appraisal, the risks associated with the physical asset need to be separated from those attached to the skill of the operator and their ability to generate secure and sustainable cashflow;
2. A forensic examination of the tenant operator's revenues, costs and profits should be undertaken to understand the business model, the sector operated in and track record in delivering cashflow;
3. Data sources beyond the traditional real estate market should be sought to provide greater insights into the creditworthiness and operational skills of companies and individuals;
4. The Net Present Value approach is best suited to appraise ORE opportunities; and
5. A comprehensive discount rate should be constructed that reflects traditional property risks, business risks and the creditworthiness of the operator/tenant.

These recommendations require a broadening of the skill base and financial knowledge of investment teams and may require, where appropriate, the adaptation of risk modelling techniques used in the equity and fixed income markets, thus bringing the underwriting of real estate assets into line with other asset classes. This will allow multi asset investors to compare the risks and returns from investing in ORE with traditional real estate, equities, bonds and other alternative assets.

1. INTRODUCTION

Operational real estate (ORE) is currently most associated with alternative real estate types, such as filling stations, GP practices, hotels, PRS, pub chains, self-storage and student housing, as opposed to more traditional sectors, such as office, industrial or retail property.

For many investors, ORE has been viewed as complex, illiquid and opportunistic; however, deal volumes and allocations are increasing¹ as more specialist and core style funds add this type of investment to their portfolios. According to Cushman & Wakefield/Real Capital Analytics, the volume of UK investment turnover in the market for non-traditional real estate assets increased from just £1bn in 2009 to over £17bn in 2018. This trend was also well documented in a 2015 IPF study of alternative assets and these non-traditional asset types have become broadly categorised over time as alternative real estate.

In both reports, demand for high quality, recurring, long-term income coupled with a relatively attractive yield profile and the ability to actively manage the assets were cited as contributing factors to this surge in demand.

Investors are also attracted to this type of investment as it offers an opportunity to capture the extra upside associated with a well-run business or a newly emerging business model.

Change is also occurring in the traditional investment types of retail, office and industrial property. Flexible office leasing models may enable investors to have a direct relationship with an operator. Structural change in the retail sector has provoked a greater consideration of direct relationships with brands. There is increasing discussion of the industrial sector offering a more managed approach.

In the UK commercial real estate investment market there are various measures of risk used in the investment decision-making process, such as probability of tenant default, liquidity and financial risks. Some of these are heuristic while others are more sophisticated.

Research Question

Overall, there is a lack of clarity in how to address the issue of risk when pricing operational assets. Therefore, there is an inconsistency in approach, exacerbated by the use of non-standard models to make real estate investment decisions more generally. This was explored in the IPF's hurdle rates paper of 2017 ("the 2017 IPF study"), which found:

1. It was common practice among commercial real estate investors in the UK to use non-cashflow decision-making tools (e.g. profit-on-cost) in the investment process;
2. There was significant evidence of discretionary behaviour being exhibited by real estate investors in the appraisal process, which resulted in inconsistencies in the use of key metrics in the decision-making process; and
3. There was also a reluctance to adopt more sophisticated quantitative modelling applications.

There are many attributes important to assessing risk in operational real estate that may be unfamiliar to real estate professionals, for example understanding the key components of corporate accounts relevant to the property owner's investment performance and the beta (see Glossary of Terms) sensitivities of these. The uncertainty and inconsistency that such a skills gap may engender may affect the liquidity of such assets and, therefore, price transparency.

¹ Current allocations within funds is 11.8% according to INREV. Savills believes that residential ORE in the UK will grow from £223 billion today to £880 billion at full maturity (The Sky's the Limit? 2019)

1. INTRODUCTION

Research Objectives

The objectives of this study are:

1. To provide a clear definition of what constitutes operational real estate, how it differs from traditional real estate investment and why it should not be treated as a subset of the real estate “alternatives” universe;
2. To identify how real estate investors assess and quantify risk when underwriting an ORE investment opportunity, starting with a review of which theoretical investment modelling techniques may be used in this process;
3. To examine what investment modelling techniques are currently adopted by investors when underwriting an ORE investment. Is there one predominant approach or are there many in use and why? This examination draws on the findings of the authors’ survey of active pan-European ORE market participants, including fund managers, advisers, lenders and operators, and their experience of working in this sector;
4. To identify and examine any differences between the theoretical approach to underwriting ORE investments and compare those with current market practices in the sector; and
5. To identify potential gaps between theory and practice in assessing and quantifying risk in the ORE sector and recommend what should constitute best practice for investors and real estate practitioners.

2. DEFINING AND DIFFERENTIATING OPERATIONAL REAL ESTATE

2.1 Background

Real estate has long been recognised as a hybrid investment asset class that can deliver a stable source of long-term income along with capital appreciation. Historically institutional investors in the UK have focused their attention on the traditional real estate sectors of retail, office and industrial.

However, over the last decade there has been a steady increase in allocations by UK investors to non-traditional real estate, such as specialist residential, leisure, hotels, self-storage, educational and medical facilities. This trend was well documented in a 2015 IPF study of alternative assets and these non-traditional asset types have become broadly categorised over time as “alternative real estate”.

A 2016 study by Savills described alternative real estate assets as follows:

“Alternative assets are a broad definition of a segment, which broadly includes types of properties characterised by lower transaction volumes, less liquidity, limited market information and therefore less transparency. In some cases, they have counter-cyclical characteristics, or they are driven by macro trends in the economy and demographics.”

Table 2.1: Categories of Real Estate

Traditional real estate	Alternative real estate
Industrial	Car parks
Office	Care homes
Residential	Data centres
Retail	Hospitals
	Leisure (cinemas, pubs, marinas)
	Medical practices
	Schools and colleges
	Self-storage
	Serviced / co-working offices
	Student accommodation

Source: Didobi 2020

The growing demand for alternative real estate has been driven by a complex range of push and pull factors.

2. DEFINING AND DIFFERENTIATING OPERATIONAL REAL ESTATE

Pull factors towards alternative real estate include:

- Enhanced yield compared to core traditional real estate;
- Growth in the economic importance of the leisure and hospitality sector;
- Greater social mobility and the need for real estate to match flexible careers and lifestyles;
- Diversification of income streams, lease structures and property types;
- A shift from public sector to private sector funding models for non-traditional property; and
- Increased occupier demand for specialist real estate facilities.

Push factors away from traditional real estate comprise:

- Reduced demand for retail space, driven by structural changes in the consumer market. The retail sector has seen a profound shift in operational business models, with many retailers reducing their requirement for “real presence” (space) and investing heavily in expanding their “virtual presence” (online);
- Technical innovation that has enabled remote working and given rise to a demand for short lease/flexible office space; and
- Limited availability of core-type investments in a competitive investment market.

2.2 Defining Operational Real Estate

Operational real estate (ORE) is a relatively new concept for many investors, although the basic business model for many property types (e.g. hotels) is well-established.

ORE cuts across traditional and alternative types of real estate but defining it is more complex than simply describing a physical property type. The key distinguishing feature of ORE relates to the predictability and security of the underlying revenue stream when compared with the income streams derived from traditional real estate.

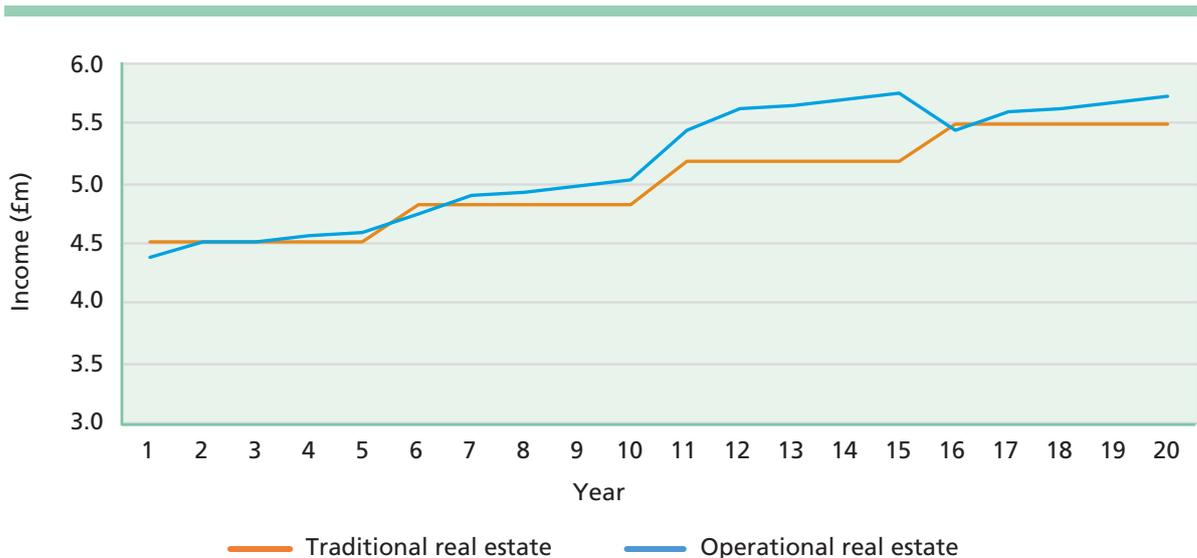
2.2.1 Income Streams from Traditional Real Estate

The value of traditional real estate assets is fundamentally dependent on the current and future income streams linked to the performance of a property sector and specific location. There is a degree of contractual certainty given by leases and rent reviews, although specific risks remain around tenant (business) failure and temporary voids.

2. DEFINING AND DIFFERENTIATING OPERATIONAL REAL ESTATE

The income stream from an asset worth £100m and held for over 20 years might look like this:

Figure 2.1: Sample Income Streams – UK Traditional Real Estate versus ORE



Source: Didobi 2020

2.2.2 Income Streams from ORE

For ORE, returns are more directly dependent on the operation of the business carried out within the building. Investors' expected returns from a hotel, say, may be based on the operator's performance through a management contract and, therefore, the business component of the future income flows is critical. However, in choosing to invest, due regard will be given to the covenant and skill of the operator, as well as the investment characteristics of the property and its location. The income stream over 20 years might look like the more variable line in Figure 1.

In ORE, there may be several sources of income in the business. For example, in addition to letting rooms, a hotel will generate income from other sources such as:

- i. Food and beverage;
- ii. Meeting and banqueting facilities, such as a board room or ballroom;
- iii. Leisure amenities (spa, gym, etc.); and
- iv. Miscellaneous other sources, such as car parking and gift shops.

Reflecting these differences, ORE may be defined as:

A real estate investment where the return is directly and deliberately linked to the revenues and profits of the business conducted on or from the premises

2. DEFINING AND DIFFERENTIATING OPERATIONAL REAL ESTATE

Having established that the definition of ORE owes more to the operational model of the occupier than the physical characteristics of the building, the principal operating models most commonly associated with ORE are examined.

2.3 Investor Operating Models and Asset Types

During this research, four distinct operating models associated with ORE investments were identified, comprising:

(i) Hybrid Lease

These leases vary considerably but their common feature is that all or part of the rent is based on an agreed percentage of turnover or EBITDA. With such leases, the investor's return is intentionally linked to the underlying business. These leases, commonly known as hybrid or turnover leases, are used increasingly within the retail sector.

(ii) Franchise

Under this scenario, a franchisor can license its know-how, procedures, intellectual property, brand, and rights to sell its branded products and services to a franchisee. This model is widely used in the automotive, hospitality², leisure, professional services and retail sectors.

(iii) Management Contract

The investor engages the operator to operate and manage the property on the investor's behalf. As with the franchise, the investor is responsible for all operating costs and repairing liabilities and, therefore, carries the operational risk for the property.

(iv) Owner/Operator

Under this fully integrated model, the owner is the operator.

An investor's exposure to upside and downside risks and rewards increases as it moves up the scale from hybrid lease to owner/operator.

Overview of ORE Asset Types

Given that ORE assets are defined by the operational model rather than physical characteristics and given that there are multiple operating models associated with ORE, it comes as no surprise that a wide range of both traditional and alternative real estate sectors can be defined as being potentially operational in nature. A key feature of ORE is that an asset can move between the two categories during its lifetime: for example, a hotel could be leased (i.e. traditional) and subsequently operated under a franchise (i.e. operational) at different stages in its investment lifecycle.

² Marriott is a well-known franchisor in the hotel sector.

2. DEFINING AND DIFFERENTIATING OPERATIONAL REAL ESTATE

The main ORE assets types and their associated operating models are summarised in Table 2.

Table 2.2: Sample Income Streams – UK Traditional Real Estate versus ORE

Asset Type	Investment Characteristics	Typical ORE Operating Model(s)
Care and nursing homes	Operators collect fees and care of residents and are also responsible for regular expenditure on refurbishment or improvement. Standards of care are regulated by a government body.	<ul style="list-style-type: none"> • Management contract • Owner/operator
Cinemas	In addition to ticket revenues, the scope for increasing profit lies primarily in the associated retail and leisure offerings on site.	<ul style="list-style-type: none"> • Hybrid lease • Franchise
Filling stations	With little requirement to refurbish, and profits per litre very low, as reliant on high sales volumes, the scope for increasing profits lies primarily in the associated retail offerings on site and dependent on the expertise of management to develop non-fuel retail activities.	<ul style="list-style-type: none"> • Hybrid lease • Franchise • Management contract • Owner/operator
Hotels	Locational risk is high because local competition can affect occupancy rates and the revenue per room, dependent on market segment (executive, tourist, budget, etc.). Hotel cash flow is generated from a range of sources and depend on location, brand and quality of the building, as well as the operator's efficiency. Regular upgrading of the physical internal and external environment will also be required although some may not be predictable.	<ul style="list-style-type: none"> • Hybrid lease • Franchise • Management contract • Owner/operator
Retail	Turnover leases becoming more popular. Many familiar high street names are operated as franchises.	<ul style="list-style-type: none"> • Hybrid lease • Franchise • Owner/operator
Self-storage	Usually offering rental on a month-to-month basis where the client has sole access. Units range in size and there is generally an onsite manager and a high level of security. Self-storage has a relatively high turnover of users, like hotels.	<ul style="list-style-type: none"> • Management contract • Owner/operator
Serviced offices	Operators typically supply accommodation, property services and business support services to their clients. The business model is based on clients being prepared to pay a premium to locate in premises on short flexible leases with access to business services including secretarial, ICT and meeting facilities. Clients lease office desks, self-contained single units or suites on a very short-term basis, even weekly.	<ul style="list-style-type: none"> • Hybrid lease • Franchise • Management contract • Owner/operator
Housing	The rapid growth in student numbers in most developed markets has seen a surge in purpose-built multi-storey residential accommodation. Specialist operators now manage multiple student residential blocks in many locations. The universities themselves have also expanded the number of student halls and entered into lease and leaseback arrangements.	<ul style="list-style-type: none"> • Management contract. • Owner/operator.

2. DEFINING AND DIFFERENTIATING OPERATIONAL REAL ESTATE

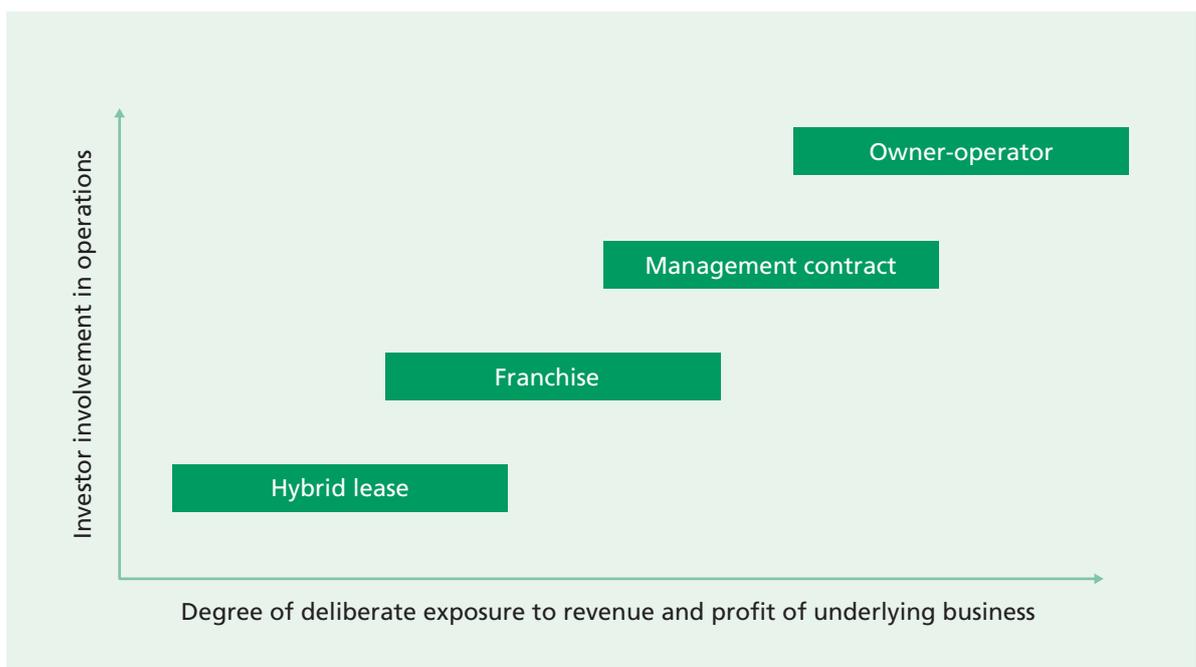
A case study and a worked example have been included to illustrate the differences between approaches in the hotel sector. See Section 3.2.2 and Appendix A.

Operating models in the hotel sector

For hotel investors, the choice of operating model is driven by a number of factors including:

- What is the investor's risk appetite?
- How much operational control does the investor wish to have, if any?
- Which brands are most suitable for the hotel type and its location?
- Which of those are available under a lease structure, franchise or management contract?

Figure 2.2: Operating Models in the Hotel Sector



Source: Didobi 2020

2. DEFINING AND DIFFERENTIATING OPERATIONAL REAL ESTATE

From the investor's perspective, some of the advantages and disadvantages of the four main operating models in ORE are:

Table 2.3: Hybrid Lease Hotel Operating Model

Advantages	Disadvantages
<ul style="list-style-type: none"> • Safety of a base rent. • All operational risk and liabilities are passed to the hotel chain operator. • Investable with little or no hotel operational experience. • Provides a fixed "base layer" return. 	<ul style="list-style-type: none"> • Downside if hotel does not trade well. • Limited control/influence over operations. • Covenant strength of operator needs to be evaluated and quantified. • Many hotel chain operators prefer management contracts to leases (see Observations).
Example: Travelodge	

Table 2.4: Franchise Hotel Operating Model

Advantages	Disadvantages
<ul style="list-style-type: none"> • Full control and flexibility in the hotel's management, subject to compliance with the hotel chain's brand standards. • Benefits from the hotel chain's services, such as training, technical and design services and brand operational support. • Immediate benefit of the hotel chain's global distribution systems and any loyalty programme. • Limited hotel operational experience can be overcome by appointing a third-party operator. 	<ul style="list-style-type: none"> • Subject to a large degree of uniformity and operational controls plus brand standards, which may change from time to time. • Need to have the operational and financial capability to maintain the required standards consistently. • All operational and financial risk borne by the investor (e.g. all contracts are entered into by the operator for and on behalf of the franchisee). • Franchise fees vary greatly depending on the licensed brand.
Example: Marriott	

2. DEFINING AND DIFFERENTIATING OPERATIONAL REAL ESTATE

Table 2.5: Management Agreement Hotel Operating Model

Advantages	Disadvantages
<ul style="list-style-type: none"> • Little or no hotel operational experience needed (operator manages on the investor's behalf). • Operator licenses use of a brand and provides operating know-how, technical and design services and access to reservation systems. • Operator uses its large-scale operations to procure favourable terms from vendors. • Hotel benefits from any loyalty programme which is run by the hotel chain. 	<ul style="list-style-type: none"> • Limited operational influence. • Hotel chain operators charge a management fee and an incentive fee (and possibly reimbursement of some expenses). • Need to have the financial capability to maintain brand standards and to fund capex and shortfalls in working capital. • Management contracts can be drafted to make it very difficult or costly for an investor to terminate. • All operational and financial risk borne by investor (e.g. all contracts are entered into by the operator for and on behalf of the investor). • Subject to a large degree of uniformity and operational controls plus brand standards, which Example
Example: Hilton	

Table 2.6: Owner Operation Hotel Operating Model

Advantages	Disadvantages
<ul style="list-style-type: none"> • Suitable for those with strong operational experience. • Freedom to operate and to maximise returns. • No fees are payable to a third party. • Expertise in hotel operations can be showcased. 	<ul style="list-style-type: none"> • Lacks the advantages of referral, reservation and operational systems provided under other forms of hotel operation compared to high profile franchises. • Financing may be difficult to obtain without the assurance of links with a recognised hotel chain or operator with a strong track record. • All financial and operating risk borne by investor alone. • Need to build a brand and resource a new team.
Example: Claridge's	

2. DEFINING AND DIFFERENTIATING OPERATIONAL REAL ESTATE

Observations on Hotel Operating Models

Major hotel chains often utilise several of the operating models described³ within their portfolios. The first and last models, leasing and owner-operation, are usually classified as “asset-heavy” business models, which allow tighter control over hotel operations. In contrast, franchises and HMAs, are sometimes grouped together as “asset-light” models, which enable faster revenue growth along with lower capital investment.

Options 3 and 4 can also be structured via a third-party operator (sometimes called a “white label management company”), which can enter into the franchise agreement or HMA on the investor’s behalf.

2.4 Key Section Findings

- Investor demand for ORE assets has risen dramatically over the last decade.
- ORE is a real estate investment where the return is directly and deliberately linked to the revenues and profits of the business conducted on or from the premises.
- ORE cannot be simply defined by physical characteristics.
- The ORE market can include traditional and alternative real estate asset types.
- There are four distinct operating models used by investors in ORE:
 - Hybrid lease;
 - Franchise;
 - Management contract; and
 - Owner/operator.

³ <https://marriott.gcs-web.com/static-files/be3e4b14-5761-4a18-aca9-d265589a7403>

3. ASSESSING AND QUANTIFYING RISK

Having defined ORE as a type of real estate investment and identified how it differs from more traditional real estate investments, how do investors approach assessing and quantifying the risks associated with making ORE investments?

Section 3.1 examines theoretical methods of real estate investment appraisal and their relevance and suitability for assessing and quantifying the risk/return associated with ORE.

Section 3.2 considers current market practice and which modelling processes and approaches are being used by investors when underwriting investments.

3.1 Theoretical Approaches to Investment Modelling

3.1.1 Calculating Investment Value⁴

For traditional real estate, the investment appraisal process is well established and requires the investor to develop a Discounted Cash Flow (DCF) model. Net Present Value (NPV) and Internal Rate of Return (IRR) are both forms of DCF that are widely used, but according to research previously carried out by the IPF, the recommended approach to appraisal is the NPV.

While the NPV and the IRR criteria can lead to similar decisions, the use of the IRR for appraisals is often discouraged in academic circles because the IRR cannot rank mutually exclusive projects – i.e. the project with a higher IRR may have a lower NPV. Furthermore, a single project can have more than one IRR as can happen for projects that have periods of positive and negative expected cashflows.

NPV Approach

NPV offers a conceptually sound approach for appraising investment opportunities. The investor determines the present value of expected future cash flows using the investor's required rate of return. If the discounted value of the expected future cash flows is higher than the current cost of the investment, the opportunity should be considered.

The three key parts to the NPV approach are:

- Modelling cash flows;
- Calculating a discount rate; and
- Setting a holding period.

Modelling Cash Flows

The assessment of NPV through discounted cash flow analysis represents the investor's best estimate of income and associated expenditure based on detailed analysis. Three techniques are available to better understand the source of risk and to arrive at a measure of those risks.

⁴ A practical example of how to assess and quantify an ORE investment opportunity is provided in Appendix A

3. ASSESSING AND QUANTIFYING RISK

Scenario analysis - this means examining the outcomes of the investment decision under different economic circumstances. A probability is assigned to each scenario and the expected NPV can be calculated and a measure of variability around the mean value (the standard deviation) can be estimated. It enables the investor to examine the impact of different sets of circumstances and encourages explicit assessment of the probability of each scenario happening. However, one of the biggest challenges is quantifying the probabilities, particularly in immature markets.

Sensitivity analysis - a simple means of identifying the independent variable that causes the greatest change in the dependent variable, i.e. which factors affect the NPV. It enables the investor to identify the most important variables and gain insight into the investment's likely behaviour in different circumstances or scenarios. However, its main weakness is that it takes each item in isolation nor does it address the likelihood or probability of changes occurring.

Simulation methods (the Monte Carlo approach) - each of the inputs to the model (e.g. gross revenue, operating expenses) can vary within a prescribed probability range and this iterative process generates multiple NPVs.

Calculating the Discount Rate

The fundamental investment pricing equation at its simplest is as follows:

Equation 3.1:

$$y + g = r + rp$$

where:

y = initial yield; g = expected net rental income growth; r = risk-free rate of return; and rp = risk premium.

The discount rate is also known as the investor's required rate of return or hurdle rate and in equation 1 above it is $r + rp$.

The fourth term, the risk premium, represents the extra return above the risk-free rate that an investor needs to be compensated for the risk of any investment. The risk-free rate is usually taken to be the return on longer-dated government bonds. At the time of writing⁵, the yield on 10-year UK government fixed-interest loan securities (also known as gilts) was 31 bps.

Generic reasons for adopting a specific real estate risk premium include the higher transaction and management costs, lower liquidity and marketability and poorer information in the property market than other investment markets. In some cases, depreciation risk is included in the risk premium.

The traditional assumption was a risk premium of 2% (Dubben et al. 1991) but it is now accepted that there is no such precise figure and that the risk premium varies by the nature of the real estate investment. Sayce et al (2006) and Hutchison et al (2011) note that the underlying influences on the real estate risk premium also include the covenant quality of the tenant.

Baum (2015) and Hartzell and Baum (2020) suggest that risk premia vary with sector, location, lease form and building property type: from 2% for standard shops through to 4% for secondary offices and industrials. A similar stance is taken by Wyatt (2013), without quantifying the differential premiums.

3. ASSESSING AND QUANTIFYING RISK

Academic empirical studies that analyse these components of the risk premium are limited. Hutchison et al (2011) find no market evidence that there is a risk premium associated with covenant strength or status of tenants. Studies by Dunse et al (2007), Gunnelin et al (2004) and Sivitanidou and Sivitanides (1999) identified the potential existence of location specific risk premiums, linked to small local markets being thin and, hence, illiquid or volatile.

The risk premium is linked, therefore, to the characteristics of real estate relative to competing investments. Within the real estate asset class, a risk premium could also vary according to whether the investment is seen as core, core plus or opportunistic investment style for example. The risk premium can be adjusted for individual investments to reflect location, sector, covenant and lease form.

The issue of calculating the risk premium is now addressed. The current knowledge base suggests that real estate risk premia are normally in the 2% to 5% range and this gives a scale order for a potential ORE risk premium. However, just as the risk premium varies for different types of real estate, so will it for individual ORE investments.

To assess a risk premium that works for ORE, the same criteria are still necessary, as it is a real estate investment. However, the approach may not be sufficient, as it does not factor in the full extent of business risk – that is, the riskiness of the tenant/operator's business. The theoretical approach to investment appraisal modelling addresses four key risk criteria, being location, sector, covenant and lease form; however, it appears that real estate investment theory has not yet evolved to adequately address business risk⁶ within its risk premium.

A detailed description is provided in the Worked Example of Investment Modelling in Appendix A.

Setting the Holding Period

This is the number of years the investor intends to hold the asset for.

Calculating an Internal Rate of Return

This is an alternate measure of return and is very similar to NPV. The difference is that the discount rate is the rate that reduces the NPV of an investment to zero. Being a percentage, the IRR is easily communicated. However, it is often considered inferior to NPV because it makes too many assumptions about reinvestment risk. It does not always provide clear signals, for example, where there are unconventional cash flows there may be multiple IRRs or, indeed, none.

Preferred Theoretical Model for the Appraisal of ORE

Having regard to the arguments presented, the recommended model for calculating investment value is to:

- Calculate NPVs based on estimated cash flows and using a single discount rate applied to all cash flows⁷;
- Capture uncertainty in the estimates of the cash flows in the numerator of the equation rather than in the discount rate; and
- Calculate the discount rate as, the appropriate risk-free rate plus a risk premium that adequately reflects the multiple risks facing an investor in ORE.

⁶ Business risk includes compliance risk, operational risk, reputational risk and other risks

⁷ Except (possibly) the terminal cash flow, also known as the exit value

3. ASSESSING AND QUANTIFYING RISK

3.2 Current Practice in Assessing Operational Real Estate Risk

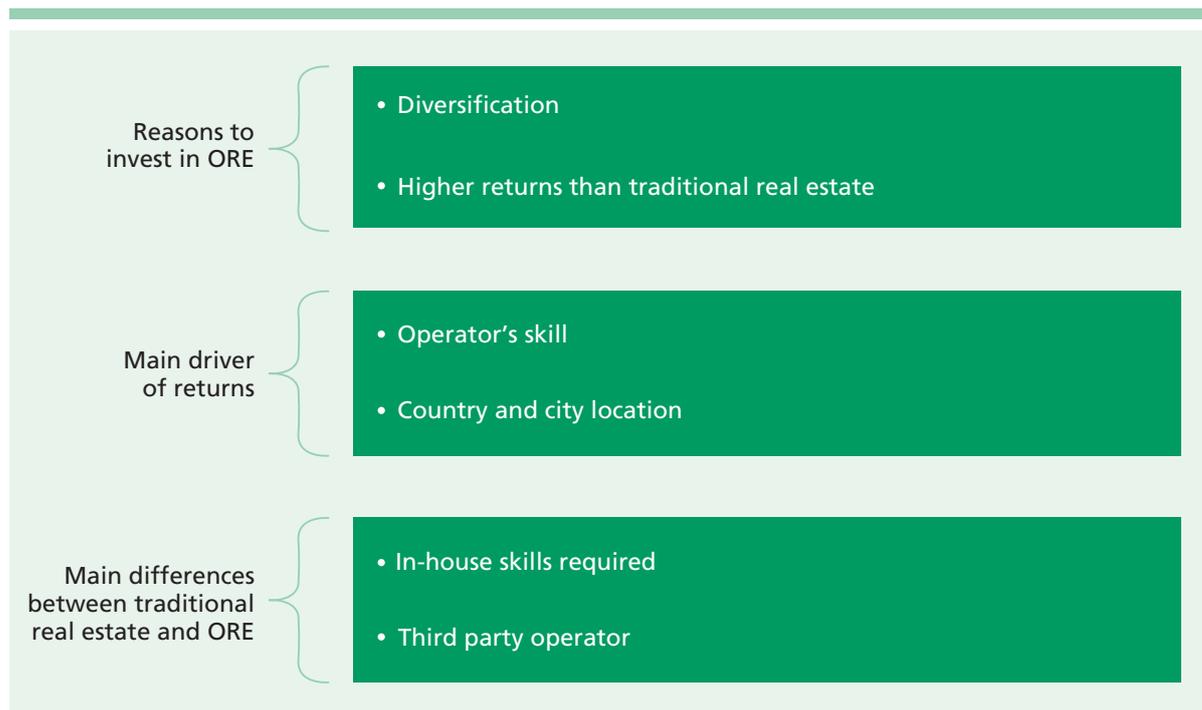
Section 2 examined sub-sectors and operating models within ORE and provided a concise definition of ORE. Section 3.1 went on to examine the appraisal of ORE from a financial theory perspective.

This section moves from the theoretical to the practical, focusing on current industry practice and the ORE investment appraisal processes currently being used by investors.

A survey of 42 ORE investors, lenders, operators and real estate professionals, was conducted in July 2020 (details of which appear in Appendix B) and asked participants to define their approaches to the assessment and quantification of the risks associated with investing in ORE. To complement the survey, 10 contributors elaborated on their responses via telephone interview.

A summary of key findings from the survey are shown in Figure 3.1.

Figure 3.1: Survey and Structured interview Results



Source: Didobi 2020

Respondents listed the top three key risks to consider as:

1. Economic risk – supply, demand and economic growth;
2. Business risk – tenant credit, tenant mix and lease duration; and
3. Cash flow volatility - defined as uncertainty around operator earnings/costs/revenue volatility.

3. ASSESSING AND QUANTIFYING RISK

If, however, the latter is bundled into a single category of 'operator volatility', this would be ranked first, with 86% of respondents citing this as the key factor. Only 14% did not see some form of 'operator volatility' as a risk; two respondents considered all three types of volatility to be important, 13 two types and 21 respondents one type.

Other risks (principally political, legal and environmental, liquidity and financial) were of lesser concern.

In terms of assessing the risk in different operating models, one that includes a base rent is generally considered less risky. Traditional rent (i.e. fixed amount with mark-to-market or inflation-related reviews) is considered slightly riskier than a base rent plus share of revenue, which may be explained by the closer alignment of investor and operator interests.

Assessing Risk in the Hotel Sector

When invited to "describe briefly how you assess risk in the hotel sector", one respondent said that it looks at the operator's covenant strength (ability to pay), another that demand and variability of the income stream are examined, while a third mentioned the need to use specialist consultants. These assessments would indicate the non-traditional nature of these real estate investments.

Investor Approaches to Quantifying Risk

Almost three-quarters of survey respondents quantify the potential impact of the different risk factors when underwriting an ORE investment opportunity.

Methods used can be broadly grouped as follows:

1. Adjusting the yield/risk premium;
2. Stress testing/due diligence on operator;
3. Scenario analysis;
4. Sensitivity analysis; and
5. Simulation.

Adjusting the yield/risk premium

It was suggested by respondents that investors put a spread on the yield used for a comparable traditional asset, which could be in the order of an additional 0.75%, to reflect short-term leases and the need to provide amenities. Other investors cited use of a CAPM-based risk premium approach.

Due diligence on operator

Operator skill is a principal driver of ORE returns, so it is unsurprising to see investors addressing risk by means of due diligence on the operator.

Due diligence includes stress testing the operator's business model and a thorough and comprehensive examination of the operator, including an analysis of their income statement and balance sheet. One participant uses projections to derive sustainability of rent from projected success of operations. Greater accounting skills are needed to undertake proper due diligence on operators, according to one respondent.

3. ASSESSING AND QUANTIFYING RISK

Scenario analysis

This is widely used, though in very different ways.

Most of those respondents who specified this analysis use the classic three options, of base case, upside and downside, although one optimistic respondent used just base case and upside, feeling it was more in tune with its firm culture. Scenarios are sometimes created by adjusting the assumptions for yield shift and rental growth. Modelling increases in operating cost was also mentioned.

One contributor to the survey and interviews emphasised that static scenarios that are well spread apart are better because they offer a wider range of insights. They also suggested that a crude Porter Five Forces analysis⁸ of each case is worthwhile.

Sensitivity analysis

Used by more than 80% of the respondents, short-term and long-term income growth assumptions will be adjusted at the asset level to reflect specific risks, such as different levels of capex and voids. Operating costs are tested.

Simulations

Monte Carlo simulations and similar exercises are rarely, if ever, used. According to one respondent, real estate does not have enough data points to justify such simulations.

⁸ A method used to measure competition intensity, attractiveness and profitability of an industry or market. The five forces are: 1. Competition in the industry, 2. Potential of new entrants into the industry, 3. Power of suppliers, 4. Power of customers, 5. Threat of substitute product.

3. ASSESSING AND QUANTIFYING RISK

3.2.1 Invesco Case Study – Review of an ORE Investment

In order to better understand how investors implement risk assessment in their underwriting process, a case study was undertaken with Invesco Real Estate (“IRE”).

In this study, the target property was a hotel in Portugal and the authors followed the process IRE took to quantify and assess the risks associated with underwriting this operational asset.

Background

Tivoli Avenida Liberdade Lisboa⁹ is a 5-star luxury hotel in Lisbon, which has 285 bedrooms, an outdoor swimming pool and two restaurants. It is one asset in a large open-ended European hotel fund for institutional investors.

The manager’s approach to hotel transactions is guided by a strategic framework:

1. High barrier markets, good micro locations

The manager’s efforts are focused on the key gateway cities in Europe. Micro location is very important as it influences the balance of business and leisure demand drivers and the ability of individual hotels to drive rates. The impact of new supply can be assessed at this level as well.

2. Guest and owner-focused brands

The manager takes a view on how brands add value to the hotel’s financial performance compared to the cost of branding, which can be significant. The manager seeks brands with an owner focus, particularly in relation to refurbishment capex and hotel design.

3. Proven operators

Working with operators that have a proven track record of operational delivery, including sustainability performance and credentials, is important. Ideally, the brand will also be the operator as this provides further alignment of interests, but this is not always possible, particularly with the major US brands.

4. Aligned deal structures

Deals must suit both the real estate investor and the hotel operator, with interests aligned between both parties. For core investments, the manager prefers a hybrid lease structure where there is both a fixed element of the rent and a variable component, which is linked either to hotel revenue or profitability.

5. Proactive asset management

Post-transaction, the manager maintains a close relationship with the hotel’s operational team, helping to deliver major capital projects and holding ongoing discussions regarding hotel performance. The manager likes projects where it can add value using its deep sector knowledge to find a unique angle for its investments.

⁹ <https://www.tivolihotels.com/en/tivoli-avenida-liberdade-lisboa>

3. ASSESSING AND QUANTIFYING RISK

Strategy into action: Tivoli Hotel Portfolio, Lisbon

In June 2019, IRE entered the Portuguese hotel market with the acquisition of the featured hotel, the Tivoli Avenida Liberdade Lisboa, plus two other hotels in Lisbon for €313m on behalf of two of the manager's clients, a fund and a separate account mandate. The hotel fund structure is open-ended, for institutional investors, targeting a 10-year gross leveraged IRR of c.7-8% per annum, most of which is income return.

IRE acquired the hotels in a deal with Minor International (MINT). The hotels are operated by MINT's subsidiary company, NH Hotels, with whom IRE has had a strong partnership over many years.

The hybrid lease agreement is set at a level that has allowed the manager to support NH Hotels during the pandemic. A sustainable level of fixed rent has proved to be important in the recent crisis, and where that rent has been set at a reasonable level historically, agreement of terms to assist operators and navigate through the crisis has been much easier.

In this example, it can be seen that investors (i) have applied operator due diligence, (ii) have thought through different scenarios when setting the rent levels and (iii) have appraised the risk using a form of DCF.

3.3 Key Section Findings

- The survey showed that investors use a range of methods to appraise risk when underwriting ORE investments. However, no standard approach has been adopted across the real estate investment industry.
- Academic theory supports the use of NPVs with an appropriate discount rate when appraising an ORE investment opportunity.
- When assessing risk, the focus is on economic and business risks and the variability of the operator's earnings, costs and revenues.
- When quantifying risk, investors focus on scenario/sensitivity analysis and operator due diligence.

4. CONCLUSION AND BEST PRACTICE RECOMMENDATION

Section 2 provided a clear definition of ORE and how it differs from traditional real estate investments and why it should not be simply treated as a subset of the 'alternative' real estate universe.

Section 3 examined how real estate investors assess and quantify risk when underwriting an ORE investment opportunity. Drawing on insights from academia and from real estate professionals who are active in ORE, it was possible to compare the theoretically correct approach with current practice.

This Section identifies differences between the theory of risk assessment/quantification and practice, beginning with a snapshot of ORE in the context of the overall real estate universe. The section concludes by making specific recommendations on how the gap between theory and practice may be narrowed.

Snapshot of ORE

As a preamble to the gap analysis, it is useful to consider the economic fundamentals that drive operational real estate.

Demand for commercial real estate is a derived demand, related to its ability to produce another good or service. In the case of a law firm, for example, the direct demand is for legal advice, while the derived demand is for the office space needed to produce that advice.

The use of space is one factor in the production of goods and the delivery of services. The ability of the owner of space to maintain the price charged to occupy that space will depend on the ability of the occupier to absorb that cost in their business. When the occupier's business declines temporarily, their ability to continuing paying the agreed price for space depends on whether they can reduce profit margins, cut costs elsewhere in the production chain or use their balance sheet to ride out the problem.

If the occupier cannot absorb the occupation cost, the owner cannot expect to receive the agreed price from that occupier. This is the case whether the relationship between owner and occupier is defined by an institutional lease or otherwise because a lease will not prevent occupier insolvency.

In traditional real estate occupation cost may be a low percentage of the occupier's total costs, whereas in operational real estate the occupation cost may be the largest single cost. For a law firm leasing a CBD office, rent is likely to be less than 10% of its total costs, whereas for a budget hotel rent could be 30% or more of total cost.

This leads to the next economic fundamental about traditional and operational real estate. In traditional real estate, the occupiers are to some extent fungible. If one professional services firm leaves a CBD prime office, another firm, from any sector, may move in without too much reconfiguring of the asset. However, within the operational real estate sector, the pool of substitute occupiers is smaller and from within the same industry¹⁰.

Another differentiator is the nature of the occupier's business. For many occupiers, the space they occupy is not core to their own business, it is simply the shelter they need for their people, equipment or goods. In operational real estate, the opposite is true: for some ORE occupiers (for example, co-working, hotels and student accommodation) repackaging and embellishing space is their core business¹¹.

¹⁰ INREV: Operational Real Estate – Real Asset or Real Economy?

¹¹ A determining characteristic of operational real estate is that the asset is integral to the product or service being offered to an end customer and therefore, the income generated within the asset. Source: INREV

4. CONCLUSION AND BEST PRACTICE RECOMMENDATION

Similarly, in traditional real estate the occupier's own customers have little or no connection with the occupier's space – for example, a law firm's clients may never visit the office. Contrast this with operational real estate, where the occupier's customers (rather than the occupier's staff or goods or equipment) are the primary consumers of the space.

Therefore, considering all the factors discussed above, any investment in ORE is not just an investment in physical space. It is not just the box that matters, it is also what happens in the box. The growth of ORE has shone a greater spotlight on the importance of understanding the business model of the tenant/operator.

4.1 Gap Analysis

A comparison between the theoretically preferred approach to risk assessment to what happens in practice, as revealed in the industry survey, and structured interviews identified the main gaps between the two as:

1. Under-analysis of the variability of cash flows;
2. Over-reliance on modifying a traditional discount rate to reflect risk;
3. Insufficient emphasis on NPV as the preferred method of appraisal;
4. Inappropriate application of the concepts of tenant, tenancy and rent; and
5. Skills gap of real estate practitioners.

This gap analysis is not to suggest that no-one is applying the right approach/approaches to assess risk. Indeed, a number respondents do seem to apply the textbook approach. It is also not saying that the requisite skills do not exist in an organisation, but maybe they are inefficiently utilised.

4.1.1 Cash Flow Variability

To estimate the variability of cash flows from operational real estate requires a deep understanding of the operator's business and the operator's financials, and this becomes more and more evident as the commercial relationship between owner and operator evolves from a traditional landlord/tenant one towards a business partnership.

For example, in the hotel sector, estimation of free cash flows to the investor requires a granular analysis of the hotel's business. Cash flows from rooms and from food and beverage departments should ideally be assessed separately rather than treating all such cash flows the same.

Where the investor's return is linked to profitability as opposed to revenue, the investor needs to assess and quantify the tenant/operator's costs. Profitability-based returns give the investor the most exposure to operational upside and downside risk¹² and heuristics such as subjective adjustments to cash flows or using a single rental growth assumption (c.f. as in traditional real estate) is insufficient.

There is a reluctance to perform probability analysis at asset level, though less so at sector level. This may be due to data availability.

¹² They also provide closer alignment of interest, according to one survey respondent.

4. CONCLUSION AND BEST PRACTICE RECOMMENDATION

4.1.2 Adjusting Discount Rates

Adjusting the standard property discount rate by a margin based on intuition (which appears to lie between 0.25% and 0.75%) is too blunt a measure to reflect riskiness. ORE differs fundamentally to traditional real estate because the investor is directly and deliberately exposed to the operator's business. Deploying a discount rate that is firmly rooted in just real estate is incomplete, therefore.

As noted in Section 3.1, the discount rate should be calculated as the appropriate risk-free rate plus a risk premium that adequately reflects the multiple risks facing an investor in ORE.

A better approach is to explicitly estimate a discount rate in layers, including risks from both the real estate and business domains, starting with a suitable risk-free rate. To this should be added a risk premium for the tenant/operator's credit risk¹³, followed by one for depreciation and illiquidity and concluding with a risk premium that captures business risks. See the Worked Example in Section 3 for more detail.

4.1.3 Insufficient emphasis on NPV

The 2017 IPF study found that "where DCF is used the decision criteria are based around the internal rate of return (IRR) of the project rather than the NPV ... from a formal finance perspective, IRR is never a better investment criterion than the NPV." (See also Section 3.1.2, Calculating an Investment Value.)

Appraisal of ORE projects may be more difficult to undertake; however, prior research indicates that use of more rigorous cash flow, option and scenario modelling leads to optimal investment decisions.

4.1.4 Tenant, Rent and Associated Terms

There is a tendency to use the term 'tenant', regardless of the contractual arrangement that is in place or planned (e.g. a management agreement or franchise). The concepts of tenant and rent are very familiar but, when assessing and quantifying the risk in ORE investments, they can confuse the nature of the relationship between the two parties. Neither is apt when, for example, an investor decides to buy a hotel run under a hotel management agreement. Tenant fails to reflect the nature of the owner-operator relationship (they are business partners) while rent disguises the fact that the owner's income is by no means certain or fixed.

In a traditional real estate investment, rent increases in line with market rents or inflation – measures that are calculated at market level. In ORE, any uplift in the landlord's income may be linked to the specific performance of an individual operator in a particular asset.

Replacing 'tenant' with 'occupier' does not resolve this problem, because the true occupier of a hotel, flexible office or student hall is not the operator but, rather, the operator's customers, which explains the preferred the terms tenant/operator and income stream used in this study.

¹³ This should be done for both traditional and operational real estate. See the Worked Example in Appendix A for more detail.

4. CONCLUSION AND BEST PRACTICE RECOMMENDATION

4.1.5 Practitioner Skills Gap

This fifth, and final, gap is not a direct result of comparing theory with practice; however, it is evident from the survey and subsequent telephone interviews that respondents are conscious of the following skills gaps:

- Accounting skills to assess the operator's business plans;
- Operator selection skills to identify a solid business partner; and
- Modelling skills to better assess and quantify investment risk.

4.2 Best Practice Recommendations

In identifying areas where there is scope for improvement in terms of assessing and quantifying the risk in ORE, a key finding of this research is that the underwriting of ORE needs to be more granular than approaches currently used to evaluate traditional real estate investment opportunities. Assessing an ORE investment opportunity requires knowledge of a wider range of risk factors and while these skills undoubtedly exist, they are not always utilised.

To encourage industry discussion around this topic, the following guidance is offered to ORE investors:

1. When undertaking an ORE investment appraisal, the risks associated with the physical asset from those attached to the skill of the operator and their ability to generate secure and sustainable cashflow should be separated.
2. A forensic examination should be undertaken of the tenant/operator's revenues, costs and profits, including a detailed understanding of their business model, the sector they operate in and their track record in delivering cashflow.
3. Data sources outside traditional real estate market should be sought out. Equity, fixed income markets and credit agencies can offer greater insights into the creditworthiness and operational skills of companies and individuals and this data should be included in the decision-making process.
4. The Net Present Value approach should be used to appraise opportunities.
5. A comprehensive discount rate should be constructed that reflects traditional property risks (including illiquidity and the risk of locational, economic, physical and functional depreciation), business risks (such as profitability and operator skill) and the creditworthiness of the operator/tenant.
6. The skill base and financial knowledge within investment teams needs to be broadened and may require, where appropriate, the adaptation of risk modelling techniques used in the equity and fixed income markets, bringing the underwriting of real estate assets into line with other investment asset classes. Real estate investment can then be more easily understood within the wider context of institutional investment markets and readily compared on a like for like basis with equities, fixed income, and other investment asset classes.

4. CONCLUSION AND BEST PRACTICE RECOMMENDATION

4.3 Conclusions

Due diligence undertaken on a tenant/operator is like that employed to underwrite a General Partner for a fund and is a detailed process. The need to conduct detailed analysis may lead to small ticket operational assets becoming less liquid and result in future ORE transactions being split between large single assets and portfolio deals. A further possibility is that specialist consultants offering ORE appraisal services may emerge.

Increasingly, investors may see the need to recruit people with experience in the underlying business sector to work alongside their real estate professionals, something that is already happening in some of the larger investors and fund/investment management houses (for example, hiring people from the hospitality sector to work on hotel funds).

ORE is less mature than other forms of real estate and there are fewer readily available industry benchmarks and historic data series to draw on. However, there is plenty of data available on the underlying business sectors. Harvesting data from the bond and equity markets, from the representative bodies within each relevant business sector, from government sources and elsewhere will improve the risk analysis of ORE investors in the future.

As the market grows more familiar with the rich data that is available and with ORE itself, hitherto reluctant investors are expected to become more active in this emerging sector of the global real estate market. In a lecture given to Wharton students, University of Pennsylvania, in September 2001, Sam Zell, the US real estate billionaire and pioneer of ORE investing, said "I never got into hotels because hotels aren't real estate; they're operating businesses". Ten years later, he bought his first hotel for US\$95m; it was sold four years later, for US\$113m, making a profit of US\$18m on the deal. The importance of risk assessment and the impact of 'black swan' events, such as Covid19, are well illustrated by the fact that this hotel was sold in November 2020 for \$54.5M.

APPENDIX A - WORKED EXAMPLE OF INVESTMENT MODELLING

An investor is considering the purchase of a large luxury hotel, which has generated revenue of approximately £15m per annum over the period 2014 to 2019. The investor's preferred operating model is a hybrid lease with a base rent of £4m and a variable rent of 20% of EBITDA. The investor has a long time horizon (20 years) and does not plan to use debt to facilitate the purchase. The tenant/operator's corporate bonds are rated BBB.

Future cash flows

The investor's starting point is to estimate future cash flows. The last five years' income statements are shown in Table A1 (ignoring rounding errors).

Table A1: Tenant/Operator Income Statements, 2015-2019

	2019	2018	2017	2016	2015
Revenue	17.0	16.2	14.8	13.9	13.0
Operating expenses	9.1	8.7	8.0	7.4	6.9
Rent	4.9	4.6	4.3	4.1	3.8
Depreciation, amortisation and impairment	1.4	1.4	1.2	1.1	0.9
EBITDA	3.0	2.8	2.6	2.5	2.3

In addition, the tenant/operator has provided the 2019 RevPAR statistics for the hotel.

The hotel's revenue comes almost exclusively from the rooms (that is, there is very little revenue from other departments, such as food and beverages) so analysis of the revenue stream is relatively straightforward, using the historic RevPAR statistics for the hotel. In 2019, the hotel's RevPAR was £130, and the investor believes that this is achievable again, when covid-19 travel restrictions are lifted. The investor further believes that 4% annual growth is realistic, based on the five-year history provided.

The hotel has 320 bedrooms and, therefore, annual revenue of £15m is the investor's starting point (320 rooms @ £130 RevPAR for 365 nights).

APPENDIX A - WORKED EXAMPLE OF INVESTMENT MODELLING

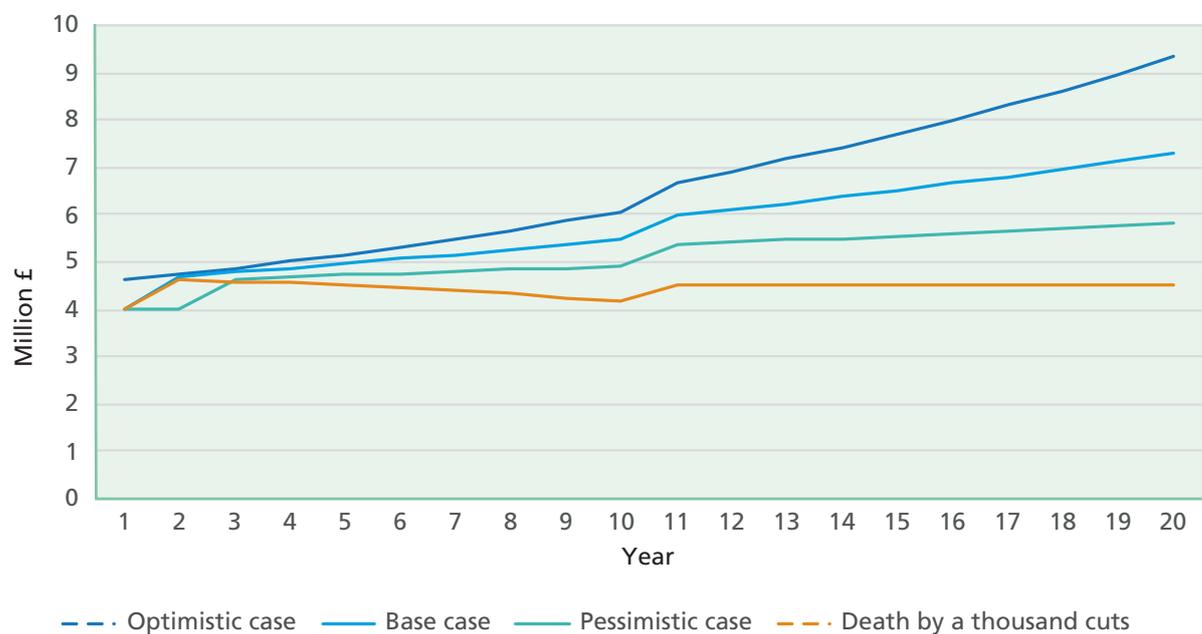
Scenario analysis

To reflect the variability of revenues, costs and profits, the investor decides to apply scenario analysis. Four scenarios are chosen:

1. The optimistic case is that business returns to 2019 levels in 2021 and revenue grows strongly thereafter;
2. The base case is that revenues are 50% of trend in 2021 before recovering in 2022 and growing at the realistic rate thereafter;
3. The pessimistic case is that revenues are 50% of trend in 2021 and 75% of trend in 2022 before recovering in 2023 and then growing slowly thereafter; and
4. The "death by a thousand cuts" case is that revenues decline gradually over time, while fixed costs creep up year after year¹⁴.

In all four cases, the base rent of £4m increases to £4.5m after 10 years. The estimated cash flows under each scenario are summarised in Figure 4:

Figure A1: Annual Income Stream Scenarios



Source: Didobi 2020

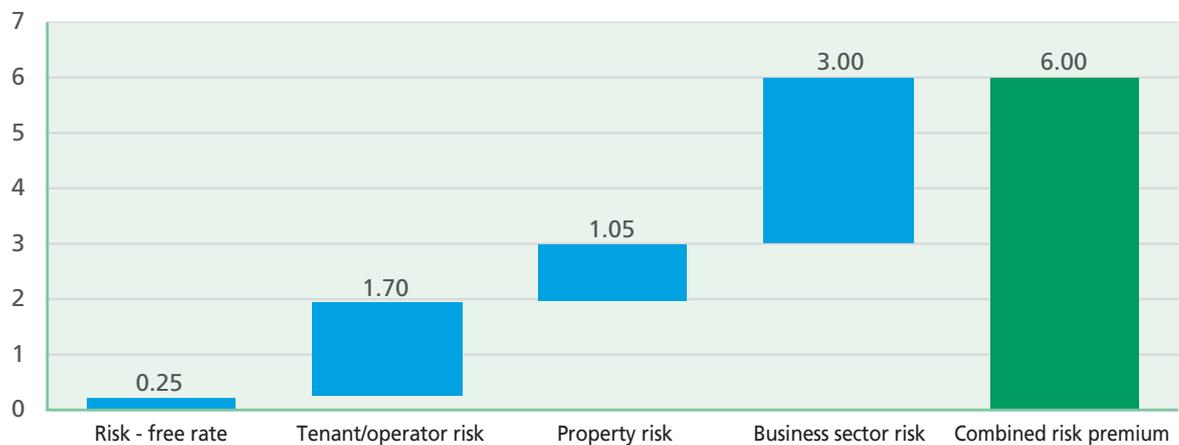
¹⁴ In this scenario, operating leverage (i.e. fixed costs as a percentage of total costs) rises; when operating leverage is high, any change in revenue will have an exaggerated effect on EBITDA, to which the investor is exposed.

APPENDIX A - WORKED EXAMPLE OF INVESTMENT MODELLING

Discount Rate

The discount rate should reflect all the risks facing this investor. To construct this, the investor begins with the long-term risk-free rate and adds three risk premia, one each for credit risk, property risk and business risk. The investor believes that this approach adequately reflects the risk associated with (a) the tenant/operator (b) the property itself and (c) the nature of the business carried out on the premises. The waterfall chart, Figure A2, shows how this discount rate is built up.

Figure A2: Risk Premia for ORE based on Underlying Hotel Asset



Source: Didobi 2020

Key to each component of the discount rate:

- Risk-free rate (RfR) = yield on benchmark sovereign bonds
- Tenant/operator risk¹⁵ = spread between BBB corporate bond yields and RfR
- Property risk¹⁶ = spread between property yields and BBB corporate bond yields
- Business sector risk = ungeared beta for hotel sector × the equity risk premium

The investor is using information from the bond, property and equity markets to quantify risk.

Present Value and Net Present Value

The investor now has the numerator (future cash flows) and the denominator (discount rate) in place and can calculate the present value (PV) of this potential investment.

Using the optimistic case scenario, the PV is £83.7 million; under the base case scenario, the PV is £72.3 million; under the pessimistic case scenario the PV is £62.9 million; under the Death by a Thousand Cuts scenario the PV is £52.7m. If the scenarios are probability-weighted at 25%, 40%, 25% and 10% respectively, the average PV is £70.8m.

Therefore, the investor should pay any figure below £70.8m to generate a positive NPV.

¹⁵ Research undertaken for IPF in 2015 found no general relationship between the performance of a property and the strength of its tenant covenants, suggesting that in traditional real estate the risk of tenant default was not priced. The suggested approach in this study explicitly addresses this risk by harnessing information from the bond markets and from historic Dun and Bradstreet statistics.

¹⁶ The same research found that the market (i.e. systematic risk) is the predominant risk in most properties.

APPENDIX A - WORKED EXAMPLE OF INVESTMENT MODELLING

Sensitivity Analysis

In addition to the scenario analysis, the investor will also undertake “What If?” or sensitivity analysis to understand the effect of any spike in variable costs. The PVs may be recalculated to reflect a 10% increase in these.

Using the optimistic case scenario, the PV is now £82.2 million; under the base case scenario, the PV is £71.2 million; under the pessimistic case scenario the PV is £62.0 million; under the Death by a Thousand Cuts scenario the PV is £52.2 million.

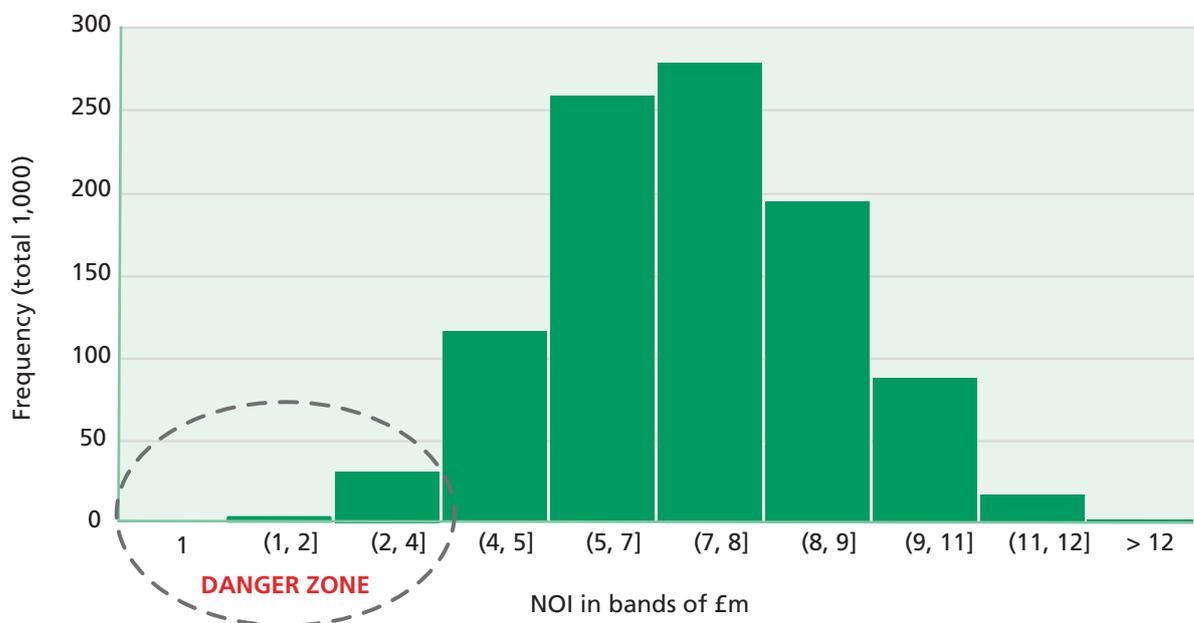
If the scenarios are probability-weighted at 25%, 40%, 25% and 10% respectively as before, the resultant average PV is £69.7m.

The investor should pay any figure below £69.7m to generate a positive NPV.

Simulation

As a third method to assess and quantify the risk in this potential ORE investment, the investor runs a Monte Carlo simulation. The aim is to identify the probability of operating income (revenue minus operating expenses) being insufficient to pay the base rent of £4m. The investor calculates this probability at around 4%.

Figure A3: Operating Income Simulation



Source: Didobi 2020

Conclusion

Armed with the results of these three exercises, the investor values the hotel at £70m, roughly half-way between the figure suggested by the scenario analysis and the sensitivity analysis.

APPENDIX B - EVIDENCE FROM SURVEY

What is your exposure to ORE?

We currently invest in ORE	73%
We advise clients on investments in ORE	31%
We intend to invest in ORE in the near future	21%
We operate ORE assets on behalf of investors	16%
We lend money to parties involved in ORE	14%

Which markets are you in?

UK and Ireland	69%
Continental Europe	50%
Global	42%

Which sectors are you in?

Hotel	73%
Student housing	73%
Self-storage	40%
Medical offices	38%
Leisure (pubs, cinemas, marinas, and other)	33%
Other	9%

How would you describe the investment style you or your clients bring to ORE?

Core plus	69%
Core	57%
Value add	50%
Long income	35%
Opportunistic	4%

Please choose the most important investment purpose or purposes of ORE.

Diversification	64%
Higher returns than traditional real estate	64%
Competitive risk-adjusted returns	47%
Relatively stable cash flows	42%
Potential for capital growth	26%
Protection against inflation	19%
Lower volatility relative to other growth assets	4%
Other	0%

APPENDIX B - EVIDENCE FROM SURVEY

Do you have a target for total return in your ORE assets?

Yes	40%
No	59%

What is it?

IRR	76%
Performance versus risk free rate	11%
NPV	5%
Profit on cost	5%
Inflation plus	0%
Multiple	0%
Payback time	0%
Performance versus peer group or index	0%
Other	0%

Do you have a target for income return?

Yes	47%
No	52%

How important is the franchise's brand and support as a driver of total return?

Extremely important	47%
Quite important	47%
Unimportant	4%

How important is location (country, city, etc.) as a driver of total return?

Extremely important	73%
Quite important	26%
Unimportant	0%

How important is the operator's market share as a driver of total return?

Quite important	76%
Extremely important	11%
Unimportant	11%

APPENDIX B - EVIDENCE FROM SURVEY

How important is the operator's skill as a driver of total return?

Extremely important	88%
Quite important	11%
Unimportant	0%

How important is the physical quality of the asset as a driver of total return?

Quite important	52%
Extremely important	47%
Unimportant	0%

How important is the size of the asset as a driver of total return?

Quite important	61%
Unimportant	26%
Extremely important	11%

How important is the submarket (postcode, street, etc.) as a driver of total return?

Quite important	52%
Extremely important	45%
Unimportant	2%

What are the main differences between traditional real estate and ORE?

In-house skills required	66%
Third party operator	64%
Additional oversight required	54%
Cash flow pattern	45%
Risk profile	42%
Data required to manage	35%
Lease terms	31%
Capex required	19%
Liquidity of asset	16%
Reliance on technology	9%
Opportunity for capital gains on disposal	7%

APPENDIX B - EVIDENCE FROM SURVEY

Which of these rental structures are riskiest from the investor's perspective?

Share of revenue or NOI only	88%
Base rent plus share of NOI	16%
Base rent plus share of revenue	14%
Traditional rent	11%

When investing in ORE, which risks do you consider the most important?

Economic risks	71%
Business risks	69%
Volatility of the operator's earnings	45%
Volatility of the operator's costs	42%
Volatility of the operator's revenues	38%
Political, legal, and environmental risks	31%
Liquidity risks	26%
Financial risk	19%

Once risk factors are identified, do you quantify their potential impact?

Yes	73%
No	26%

Do you use discounted cash flows when assessing potential investments in ORE?

Yes	83%
No	16%

Do you consider the variability of cash flows?

Yes	94%
No	5%

Do you adjust the discount rate(s) to address risk issues?

Yes	91%
No	8%

APPENDIX B - EVIDENCE FROM SURVEY

Do you model risk and return?

Yes	85%
No	14%

Which methods do you use?

Sensitivity analysis	80%
Scenarios	72%
Simulation / probability (e.g. Monte Carlo)	13%
Other	0%

Does your model include any of these?

Macro-economic data	94%
Sector-specific data	83%
Data from direct real estate market	77%
Capital market assumptions	72%
Data from REITs / listed property companies	25%
Factor analysis	11%

Are you involved in the hotel sector?

Yes	69%
No	31%

Please indicate your preferred hotel type.

Budget	69%
Luxury	13%
Resort	0%
Other	17%

Do you analyse risk for the hotel as a whole, or department by department (e.g. rooms, food and beverage, conferencing, lobby retail, spa, etc.)

As a whole	58%
Department by department	34%
Other	6%

APPENDIX B - EVIDENCE FROM SURVEY

As a hotel investor or owner, would you prefer:

Operator with lease	51%
Operator with management contract	31%
Direct operation	3%
Other	13%

Are you involved in the student housing sector?

Yes	66%
No	33%

Please indicate your preferred location:

Off campus	71%
On campus	28%

As an investor or owner, would you prefer:

Operator with lease	39%
Operator with management contract	28%
Direct operation	25%
Other	7%

Are you involved in these forms of ORE?

Medical office	33%
Self-storage	31%
Leisure (cinemas, pubs, marinas and other)	26%
Other	16%

APPENDIX C - BIBLIOGRAPHY

- Baum, A. (2015). **Real Estate Investment**. 3rd ed., Routledge.
- Cushman & Wakefield (2019). **Broader Horizons – The Attraction of Alternative Real Estate**. July 2019, Cushman & Wakefield
- Dubben, N. and Sayce, S. (1991). **Property Portfolio Management**. Routledge.
- Dunse, N., Jones, C., White, M., Trevillion, E. and Wang, L. (2007). **Modelling urban commercial property yields: exogenous and endogenous influences**. *Journal of Property Research*, 24(4), pp.335-354.
- Gunnelin, Å., Hendershott, P., Hoesli, M. and Söderberg, B. (2004). **Determinants of cross-sectional variation in discount rates, growth rates and exit cap rates**. *Real Estate Economics*, 32(2), pp.217-237.
- Hartzell, D. and Baum, A. (2020). **Real Estate Investment and Finance: Strategies, Structures, Decisions**. Wiley.
- INREV (2020). **Operational Real Estate – Real Asset or Real Economy?** September 2020, INREV
- IPF (2015). **What Constitutes Property for Investment Purposes? A Review of Alternative Real Estate Assets**. Short Paper 23, February 2015, IPF.
- IPF (2017). **An Investigation of Hurdle Rates in the Real Estate Investment Process**. May 2017, IPF.
- IPF (2020). **Property Ownership in a Flexible World**. Short Paper, February 2020, IPF.
- Savills (2016). **Spotlight: Alternative Assets**. March 2016, Savills, London.
- Sayce, S., Smith, J., Cooper, R. and Venmore-Rowland, P. (2006). **Real estate appraisal: from value to worth**. Wiley-Blackwell.
- Shepherd, S (2020). **Turnover-based rents model is the future**. July 2020. Property Week.
- Sivitanidou, R. and Sivitanides, P. (1999). **Office Capitalization Rates: Real Estate and Capital Market Influences**. *Journal of Real Estate Finance and Economics*. 18, 297-322.
- Wyatt, P. (2013). **Property valuation**. 2nd ed., Wiley-Blackwell.
- Zell, S. (2001). **Real Estate: Past, Present, and Future**. Wharton School of the University of Pennsylvania, Working paper #416, Spring 2002 2/20.



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