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#### Valuing flexible offices in the UK



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#### Foreword

Flexible workspace plays an important role in the knowledge economy with the desire of skilled labour for quality working environments creating increased demand for flexible space solutions.

As this report notes, flexible workspace provision has grown significantly in UK regional centres and estimates the sector's value at £19bn, against a backdrop of some 10 million people working in offices in the UK.

As the sector has expanded, the attraction of flexible space is no longer confined to start-ups and new firms looking to meet varying short-term space requirements. Large corporates also see the benefits.

However, the report also notes that market immaturity and lack of comparables can make it tricky to value flexible workspace, leaving industry participants with the feeling that the risk premium attached to variable service income streams is too high. Better-quality data would improve valuation accuracy. To that end, this report makes clear recommendations for the industry and the RICS on the sector's valuation process and information requirements.

On behalf of the Property Research Trust, I am delighted that we have been able to fund this latest addition to the body of research on what is clearly a significant property sector, and I encourage readers to utilise its findings to the full. My thanks to the authors for their excellent work.

Alan Dalgleish Chair, Property Research Trust

#### **Executive summary**

The provision of flexible office space grown significantly across the globe and has established itself within key markets, including central London, UK regional centres, the US and Europe. No longer confined to attracting only start-ups, it is increasingly considered a part of corporate office occupation that reflects changes in business, labour markets, and the wider economy.

Landlords increasingly see flexible space as a means of attracting tenants to their buildings, as well as helping them retain occupiers and minimise vacancies amid new market trends.

Flexible space includes a variety of types, all of which obviate leases and provide for short-term adjustments by occupiers. Occupiers benefit from a menu of services without facing overhead costs. The key issue is how this type of office is to be valued.

Our report outlines developments in the flexible office space sector from older and more recent literature, examines the definitions of flexible space, the growth of and changes in the sector, the issues as seen by flexible space providers and what issues there are for valuation. The sector remains relatively opaque with valuation information more limited than for standard offices.

Flexible space providers indicate the importance of brand identity and the difficulty of transferring the business with the building. They also note concerns with valuation and risk attached to service income streams. Using data provided from two of the serviced office operators, we review conventional approaches and discounted cash flow (DCF) methods.

This research recommends that industry adopt DCF as the preferred method for valuing flexible space markets. Valuers should use this technique together with the ability to examine the operators' revenues, costs and profits to understand the complexities of the underlying operational business model. Consequently, this research further recommends that the RICS should provide guidance on the valuation process and information requirements, similar to previous guidance notes on trade-related valuations, for example. Of course, it should be emphasised that a valuer must have the necessary market knowledge and expertise to undertake such valuations.

# Chapter 1 Introduction



Flexible workspace provision has experienced significant growth globally as well as within the UK, with significant increases in office space leased to flexible space providers in central London. A recent RICS Insight paper (2019) noted growth in UK regional centres as well as in the US and Europe. The attraction of flexible space is no longer confined to start-ups and small and new firms looking to meet varying short-term space requirements. Large corporates also see benefits from the adaptability that flexible space can offer.

In a report we published with Capital Economics, we estimated that the serviced office sector was worth approximately £16bn using a conventional leasing approach. However, when full account is taken of workplace rental income, adding the charges from the supply of services available in flexible space, we estimated the sector's value at £19bn, almost 20% more than a conventional valuation.

Demand for serviced offices has increased significantly post-pandemic: in London it is back to levels recorded before Covid-19. A total of 35% of commercial property transactions were for flexible space in 2020, while London is a world leader in flexible offices with more than 17 million sq ft of space. Demand for business has grown: almost half of office users in research carried out by Prime Office Research anticipate using flexible space in future. The key demand driver is the need for flexibility and scalability and comes from all occupiers, small start-ups to large established corporates.

More than 90% of office owners surveyed thought that flexible offices were on the cusp of becoming mainstream. Kinnear (2018) noted that "What property owners recognise is that flexible workspace is one of the best ways to attract tenants to their buildings and incubate them for future growth. Also, they realise that if they can keep their offer in step with the evolving needs of corporate clients then they will keep their tenants in place for longer." Owners are mixing flexible offices with traditional leases to provide diverse income streams and rents in one office portfolio.

Flexible offices encompass a distinct heterogeneity of office space, including co-working spaces, serviced offices, and various hybrids that have appeared in response to changing market conditions. In a sense, this adaptation reflects what Keogh and D'Arcy (1994) expect to be a characteristic of mature office markets, namely "...the ability to accommodate a full range of use and investment characteristics". They further note that "... what is at issue is the potential for property markets to respond effectively to the opportunities and constraints presented by the wider economy..."

An Investment Property Forum (IPF) report states that for office space to be categorised as flexible it should have both shorter contractual occupation obligations and higher service provision (IPF, 2020a). As we review the literature below, we consider different related definitions of flexible space as well as report discussions and issues identified in interviews before considering the issue of how to value flexible office space.

# Chapter 2 **Research method**

The research employs a mixed-methods approach, incorporating desk-based critical analysis and semi-structured interviews. The analysis focused on key themes, concepts, and gaps in the existing literature related to market evolution and performance, demand drivers, operating models, valuation challenges and approaches, and the need for professional guidance.

The research commenced with a desk-based critical analysis of relevant academic papers, industry reports and professional publications related to the flexible space markets and valuation practices.

Face-to-face semi-structured interviews were conducted individually with participants from the flexible space market operators and online with valuation experts. An interview guide with open-ended questions was used (tailored to the expertise of the participant) to elicit in-depth responses related to the key themes.

### Chapter 3 **Literature review**



Harris (2019) noted that around 10 million people in the UK work in offices. For productivity improvements, which is a major problem facing the UK economy, any intervention that can increase service sector productivity would be a significant boost to economic growth. He further noted: "Physiological and psychological well-being are critical to productivity. However, it is often the case that poor design and environmental conditions have a negative impact. It is widely accepted that the costs of work-related stress and illness are growing, and yet very little attention is afforded [to] the ... workplace."

Cooke et al (2022) examine how corporate occupiers view the use of flexible office space in the changing work environment after the global pandemic. They conducted semi-structured interviews with 11 corporate real estate managers across a number of different sectors, representing both public and private sector occupiers. They argue that the combination of occupiers and activities in flexible space is not sufficiently aligned with the office being a corporate hub that underpins collaboration, company ethos, knowledge creation and innovation.

However, the authors also argue that they anticipate the continued evolution of flexible space, reflecting the changing employment context and corporate demand for short-term office occupancy. This could be due to, for example, a corporate entering new markets in different locations and requiring flexible space before it becomes more fully established in these markets. Also, a demand for short-term project space was thought to provide another justification for flexible office provision.

Cooke et al argue that the "...advancement and adoption of mobile technologies, casualisation and deregulation in labour markets, increased outsourcing and supply chain complexity has meant that businesses now have increasing proportions of contingent workers." Furthermore, they suggest that "the rise of platform-based technologies combined with the expansion of flexible employment have stimulated the expansion of flexible occupation of office space."

Changes in the labour market, specifically reflecting volatility in demand and increased economic uncertainty, including shorter time periods between disruptive events, can lead to a "temporary competitive advantage" that means firms no longer want the high fixed costs of standard offices (McGrath, 2013). This experience is reflected in the changing composition of the workforce, e.g. the increased proportion of short-term employment contracts and reduced share of long-term salaried staff.

While these issues have been raised as a source of demand for flexible space, they are by themselves not necessarily permanent features of the labour market of the future in either the UK or other countries. Additionally, where they have happened they may be concentrated more on lower value-added segments of the labour market that have limited demand for any kind of office space. Further, those experiencing this type of labour market flexibility may not remain in this sub-sector, it representing only part of their working lives. That said, increasing heterogeneity of experience in the market is also reflected in increasing heterogeneity of offerings in flexible work space.

Enhancing employee' experience of the workplace has become more important as work has "become more cognitively complex; more team-based and collaborative; and more dependent on social skills and technological competence" (Cooke at al). This reflects, to some extent, the dominance of the service sectors in developed economies that are increasingly the source of value-added productivity-based economic growth. Offices provide spaces for interaction and potential innovation. Some authors refer to hotelisation of offices that can provide different levels of service (associated with the hotel star ratings). Harris (2019) notes the role the office has in enhancing productivity and knowledge sharing, as well as providing a broad range of support functions.

Fiorentino and Livingstone (2021) examine the evolution of coworking spaces in London and Rome. They suggest that the developments in flexible space reflect trends in local economies, such as deindustrialisation, changes in real estate markets and labour markets then reflecting regeneration and innovation policies respectively. In this context flexible space can be seen as a way of underpinning new economic growth. Comparing London and Rome, they observe that London has a more responsive market context in terms of demand changes and supply responses with a more certain regulatory and planning framework in which both occupiers and providers of flexible space can operate. In contrast to some other authors who suggest that flexible offices are not conducive to productivity-enhancing encounters, they state that, "the proximity of workspaces stimulated knowledge transfers and professional collaborations".

The role of flexible space in the knowledge economy with a skilled labour force demanding quality working environments was also cited as a source of increased demand for flexible space solutions from corporate clients. The authors note the development of coworking spaces in Shoreditch in the early 2000s with occupiers gradually becoming more diverse and representing more sectors. This, "diversification of demand on the London market has generated a range of shared office solutions enhancing the debate from 'coworking' to 'flexible' ... and 'serviced' office spaces", note Fiorentino and Livingstone.

A range of ownership styles exists in flexible office space provision. "Owners may choose a more passive approach and outsource the management of the space and related service to a third party (WeWork) ... Other spaces can be owner-led and investor-led with structures," (ibid). These would include Regus, operator-owners such as Workspace, and active owners such as British Land.

The London market contains a range of occupiers and investors in flexible office space, which has a presence in the core submarkets of the West End and the City of London. Fiorentino and Livingstone (2021) suggest that flexible space in London provides investors with a relatively safe investment with good expected return in a growing market sector.

Appel-Meulenbroek et al (2019) examined occupier preferences for the services and facilities offered by flexible office providers. They surveyed 137 users/clients of 13 serviced offices in The Netherlands. They found that the most important influence on perceived significance of specific services and facilities was derived from job-related characteristics of serviced space occupiers. This was also the main reason they chose to use flexible space. Earlier research had suggested that different serviced office providers supply different products to reflect the varied preferences of different types of occupiers (Peltier, 2001). Quality differences will also be reflected in 'rents' paid compared to standard offices.

Appel-Meulenbroek et al define serviced offices as, "Fully furnished office space within a building that is let, sublet or licensed to third parties on a serviced basis. The services will tend to comprise all of the building services and a menu of business support services. It is an umbrella term that includes [...] hybrid forms of serviced offices with coworking offices." They also note that "the rental fee of serviced offices is often based on a menu system in which there is a standard product bundle for a fixed price, which can be upgraded with communal services on a pay-as-use basis" (op cit), following Gibson and Lizieri (2001). Appel-Meulenbroek et al found that the majority of their sample of serviced offices occupiers expected to use flexible space for the long term. Serviced offices were used as a regular office by more than 80% of occupiers in their survey. After job-related characteristics, using flexible space for meetings was found to be the next most important reason, although this was less than half of respondents. Important services were identified as cleaning and maintenance, tea/coffee facilities, managed/provided technology services, and a mix of small/ private offices and fixed workspaces together with breakout and meeting/ conference rooms. While these may not be unique to serviced offices and are available in standard offices, flexible office occupiers do not face paying the fixed costs of maintaining these spaces.

The survey also found that serviced office occupiers from different-sized organisations did not have different preferences for services and facilities provided, other than for those that were building related.

Definitions of serviced offices predate Appel-Meulenbroek et al, including, for example, Byrne et al (2002) who classify them as "working space offering shared facilities and the provision services" (Tsolacos et al, 2013, p65). Access to the range of services is seen as being important in attracting occupier demand. Serviced offices can be distinguished from coworking offices (spaces). These are spaces "where many freelancers and employees, who previously worked from home, satisfy the need to interact, socialise or collaborate with others" (op cit). Kojo and Nenonen (2017) suggest that knowledge sharing, interaction, and collaboration are key benefits for users of coworking spaces. Bates (2006) suggests that coworking spaces are a type of service provision, while serviced offices are similar to standard offices but with better services as well as flexible occupation terms.

Nappi and Eddial (2021) adopt the following definition of flexible offices: "An office where all screen walls have disappeared (Brunnberg, 2000), employees have no allocated workstations and the space is divided into zones defined by activities (open-office desks, huddle rooms, rooms for concentrated work, relaxation areas)" (Göçer et al, 2018).

Nappi and Eddial note the potential cost saving for occupiers from not having to run their own buildings. Further, they note that rather than cost, "real estate actors and the press highlight the importance of the flex-office as a means to foster better collaboration, improve the quality of work-life and promote new ways of working that are suitable for technological growth." In their research they adopt a discourse analysis and argue that the discourse on flexible office space has three roles.

First, there is a performative function that focuses on cost saving without lower employee satisfaction from flexible space. Second is a normative function linking to the brand image and values of the company, for example productivity growth, environmental awareness. Third is what the authors refer to as a "symbolic and ritual function". This relates to the role flexible space provides for new modes of working, enhanced flexibility and modern leadership attractive to younger professionals.

Nappi and Eddial found that the discourse on flexible space was generally positive. However, they also argue that there are hidden costs associated with occupying flexible office space. Linked with the work of Davis et al (2011), they argue that flexible space may lead to lower control over interactions, negatively affect productivity, increase stress, and employee demotivation due to less control over their working environment.

Nappi and Eddial conducted 16 semi-structured interviews in France with a range of professionals. They identified hidden costs of moving into flexible space, including absenteeism, lower productivity, loss of social ties, less commitment and satisfaction, time lost by employees not having a fixed workplace/space, negative impacts on team working, disputes over space use, and adjustment costs. While they do not quantify the value of these hidden costs, they argue that there is poor change management when moving to flexible space and that such space aligns poorly with employee needs.

The literature thus far has used a variety of terms – flexible offices, serviced offices, coworking offices – some with more differentiation than others. While coworking definitions seem to separate it from serviced offices, the latter term is often used interchangeably in the literature. More recently we see the term 'space-as-a-service', (SAAS). Tsolacos et al (2023) suggest that serviced offices, as well as coworking offices, can be seen as prototypes of SAAS.

Consistent with other literature, Tsolacos et al highlight the importance of "creating a positive workplace experience in a highly serviced environment [that] has led to a change in occupational demand for office space". This change, they expect, will impact on the whole office market. They see SAAS as a mix of serviced offices and coworking, where "serviced offices provide facilities and services specific to the tenants, while coworking provides space for collaborative working between tenants" (op cit).

Tsolacos et al consider the relationship between SAAS characteristics and office rents. Here they construct a hedonic model for office rents where the rent is related to building characteristics. While, as they note, there is no defined list of specific characteristics, there are various attributes that they associate with SAAS, such as conference facilities, breakout space, pubic and/or client 'touchdown' space and rooftops and terraces with tenant access. Their results suggest that services (at some of them) matter to tenants. However, this analysis does not make an explicit link from the SAAS characteristics back to serviced offices, but may relate more to building attributes that could attract a rental premium.

Relatively little research has been conducted on the financial aspects of flexible offices, either from a valuation perspective or considering rents paid by flexible office providers when they themselves lease space in traditional

office buildings. This may reflect the relatively opaque nature of the sector. However, as it grows in size and seeks further investment funds, the financial dimension and the sector's relative performance will become more important to understand and evaluate.

Chegut and Langen (2019) examined the rent paid by flexible workspace providers in six cities in the US. They employed hedonic regression analysis and found that there was no significant difference between rent paid by flexible space providers and traditional leased office occupants, except that in Los Angeles and New York, flexible space operators paid a lower rent. However, they do not explain why this is. It could be due to higher supply relative to demand and/or longer lease terms taken by flexible space operators who could then benefit from rental discounts for longer duration of occupancy.

Antunes Batista da Silva et al (2021) build upon the methodology adopted by Chegut and Langen in their study on flexible space rents in the London office markets. Citing Williams et al (2020) for Cushman and Wakefield, they note that flexible workspace "accounted for approximately 16 million square feet, which equates to 5.8% of total Central [London] office stock" by June 2020. However, they also argue that the Covid-19 pandemic highlighted the weaknesses of the flexible space business model (Green, 2014), namely long-term commitments in rents for long leases (where the flexible space provider is also a renter) against short-term income from flexible space occupants, and the relatively low profit business model they adopted.

However, Antunes Batista da Silva et al also noted that the pandemic strengthened the trend towards management agreements with a majority of investors willing to consider entering management agreements with flexible space providers (Savills, 2021).

They extend the standard hedonic model often applied to model rents at the level of individual builds (see for example Dunse and Jones, 1998) to capture the impact the presence of flexible space within office buildings has on rent. They further refine this to include the proportion of flexible space within a building to explore whether changes in this proportion impact rent.

Using CoStar data for London, they constructed a database of more than 1,000 leases in 156 multi-let buildings. Approximately 25% of leases include flexible workspace providers. Their analysis showed that flexible space tenants paid 6% less effective rent compared to non-flexible space tenants. When comparing the proportion of space occupied by flexible space providers, only when this proportion was 10% or less did they find a rental discount, this time of just over 10%. Higher shares of flexible space providers had no statistically significant impact on rent.

Antunes Batista da Silva et al also explored whether the larger flexible space providers had any bargaining power with landlords. They found that there was no rental discount for WeWork, Regus, or The Office Group, but that Landmark received a discount of approximately 15%. However, new leases with flexible space providers had a discount of almost 14%.

Frodsham (2023) investigates the investment implications of the flexible space market. As the sector does not have published information for investment returns, he examines the impact that a move towards inclusion of flexible space would have on the risk-return profile for office investment. His analysis suggests that "leasing flexibly is expected to generate a higher rental income than traditional leases through higher occupational densities and the provision of services, although it also increases costs" (op cit). He also points to higher volatility of income with flexible offices. He estimates that this will lead to a volatility risk premium that will "... be around 21 and 72bps higher for two-year and one-year flexible leases respectively than for a traditional 10-year lease. On a traditional 25-year lease, the premium is estimated to be 12 bps higher, on the same basis" (ibid).

Frodsham also notes that transparency on the performance of flexible space operators over a cycle would help in understanding risk in the sector. Furthermore, he notes the need for a publicly available database on sector performance.

#### Chapter 4 **Discussion**



As part of this project, we undertook both virtual and face-to-face interviews with a range of serviced office providers. The interviews were conducted in London to capture a greater range of providers in one location, reflecting the spatial concentration of the sector as well as being cost and time efficient for the researchers. Some of these providers had operations outside London and South East England, while one had operations in other countries. A notable feature of the serviced office market is its heterogeneity, an aspect that can only be effectively explored by on-site visits.

The serviced offices were located in core office submarkets, such as the City of London and the West End. Individual office buildings/floors varied in space configuration. Some tended to more open-plan workspaces while others had more individual or small team offices with breakout spaces, meeting rooms and conference facilities. In some cases, it was hard to see any differences between the serviced offices and conventional leased space in terms of space configuration and quality of fitout.

Serviced office providers, though heterogeneous, commented on similar business aspects. One issue that arose from the interviews was the importance of brand identity in relation to the offer to the market. This also

linked to the branded offer made by some of the larger property companies to the market. This is consistent with Keogh and D'Arcy's (1994) discussion on market maturity, in that a mature property market will have a wide range of uses and investment opportunities and the flexibility to adjust to market needs.

The interviewees made a clear distinction between themselves as serviced office providers and coworking offices/space providers. While some provided hot desking, others did not. There was mention of day passes with no specific desk allocated. Nappi and Eddial (2021) mentioned concern over worker contentment (and related productivity) if they had to find a desk, while increasing evidence of corporates using serviced offices (Cooke et al, 2022) suggests that the aspects of innovation, perhaps in more branded serviced space offerings, may enhance worker contentment.

Some interviewees noted a move from traditional offices to greater accommodation and desire for the presence of serviced office providers within buildings. In contrast, one serviced office provider felt that limits to serviced space in buildings acted as a barrier to growth. All serviced space providers noted that occupiers stayed longer than the one-year licences many of them used.

Market immaturity and lack of comparables was noted by some of the providers. This is consistent with the relative difficulty of sourcing market information on serviced office space, an issue noted in the RICS Insights paper (2019), which also suggests that better-quality data would improve valuation accuracy. All providers referred to the probable lack of transferability of the business with the building if another provider was to take over. This is akin to the debates over the direct and indirect approaches to corporate expansion of real estate service providers into different countries 20 or 30 years ago. However, brand uniqueness may also provide a competitive advantage in future expansion of the sector.

Serviced office providers also noted that their role may evolve into building management, as well as a frustration with valuation and what they perceive as too high a risk premium attached to variable service income streams – part of our motivation for this study. They argue that these are not so variable and much more predictable, which we discuss further below. As noted in the RICS Insights paper "... paying particular attention to the factors that make the property different from an ordinary office and establishing whether these factors can be assumed for any reasonable occupier or operator, as well as upon transfer of the real estate interest will be important when determining market value."

# Chapter 5 Flexible space market: operational real estate



The classification of real estate assets has evolved over time and is typically described by their physical property type and fall within two broad categories: non-specialist (traditional) and specialist (alternative) real estate (French, 2004; Investment Property Forum, 2015).

Non-specialist real estate sectors – retail, office, and industrial property – are flexible in terms of the type of tenant and business run within it. Due to the wide range of potential occupiers, there is normally sufficient trading activity and comparability of asset within each market sector to observe property prices and rents.

Specialist real estate sectors, for example hotels and student accommodation, are specific in their function and relatively inflexible in terms of the type of tenant and business run within it. Given that the property is so closely linked to the trade (business) they are often referred to as trade-related properties and tend to be bought and sold as operational entities. Trade-

related properties are more **heterogeneous** and therefore there are fewer transactions, so use of comparison is more difficult.

However, we are now seeing a blurring of these distinctions, particularly within the flexible space market. Peraira Gray (2021) observes that real estate generally is increasingly "now being seen as an operating business", where investors are moving from the view that "space is an asset" to viewing it as "space as a service" and therefore taking a greater interest in the occupier. This has become categorised as operational real estate (ORE), which the IPF (2020b) defines 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."

IPF argues that ORE is mostly associated with specialist real estate types, rather than non-specialist. However, the flexible office space market is also a clear example of this as we observe a range of offerings in the market that provide office space with varying levels of additional income-generating services to the occupier.

Table 1 below provides a summary of the range of products and their characteristics. As we move from a conventional lease agreement through to a membership scheme, the defining characteristics, compared to traditional leases are shorter and less onerous contractual terms and a greater degree of service provision.

| Table 1: Cate                 | Table 1: Categories of Office Space |               |                          |  |  |  |  |  |
|-------------------------------|-------------------------------------|---------------|--------------------------|--|--|--|--|--|
|                               | Office Category                     | Contract Type | Occupation<br>Length     | Characteristics  |  |  |  |  |
| Conventional<br>(Traditional) | Cat A/B                             | Lease         | 5-10 years               | Space let on a long-term lease on full repairing<br>and insurance terms. Tenant typically let at Cat<br>A specification with the tenant responsible for<br>fitting out to own specification.   |  |  |  |  |
| Flexible Space<br>Market      | Cat A+/<br>Plug and Play            | Lease         | 3-5 years                | This lies between Category A and B finish and<br>fit-out. Cat A+ fit outs are used by landlords<br>wishing to lease their space immediately. The<br>fit out is generic, with basic fittings and finishes,<br>ready for tenants to move in and customize. |  |  |  |  |
|                               | Managed                             | Lease         | 2-5 years                | Offices managed by a third-party provider,<br>offering additional services and amenities.<br>Occupiers have dedicated or bespoke space,<br>with their own identity, while sharing reception,<br>meeting, conference and other support facilities.        |  |  |  |  |
|                               | Serviced                            | Licence       | 3 months -<br>2 years    | Fully furnished offices with additional support services, such as reception and administrative assistance.   |  |  |  |  |
|                               | Coworking                           | Licence       | Rolling monthly contract | Shared office spaces where individuals or small teams work in a communal environment.  |  |  |  |  |
|                               | Member                              | Subscription  | Annual<br>Membership     | Membership-based spaces that provide access to a network of flexible workspaces and services.  |  |  |  |  |

From our review of academic literature and market reports, together with interviews with operators and valuers, four distinct operating models can be identified, as shown in Table 2.

| Table 2: FSM Busine   | ess Operating Models  |
|-----------------------|---|
| Owner/Operator        | Under this fully integrated model, the owner is the operator.   |
| Hybrid/Turnover Lease | Within the lease contract. All or part of the rent is based on an agreed percentage of turnover and/or EBITDA.  |
| Management Contract   | A revenue and profit share model between an owner of an<br>asset and an operator of the asset. The investor engages<br>the operator to operate and manage the property on the<br>investor's behalf for a fee. |
| Franchise             | The franchisor (owner) can license its knowledge, procedures, intellectual property, brand, and rights to sell its branded services to a franchisee.  |

The provision of flexible office space is not new. Various forms such as business suites, executive suites and serviced offices can be traced back to the mid 1960s. Lizieri (2003) gives a comprehensive overview of the historic change in occupational demand and denotes the rapid growth of the serviced office sector within the UK since the early 1990s.

Despite the long history of flexible office provision, very little has been written on their valuation and it was not until the late 1990s that the most appropriate valuation approach began to be discussed and debated. Lawson (2000) observed that the UK property industry was facing challenges in valuing and financing serviced office spaces. At the time, valuers were criticised for hindering the growth of the sector by valuing buildings based on vacant possession and banks for refusing to consider valuations other than on a pure bricks-and-mortar basis. The logic was that a flexible office operation may fail, so no extra value should be attached to the business component associated with ancillary services.

McAllister (2001) explores the issues relating to the valuation of properties where income is derived from both the letting of floor space and the provision of services to the occupier. He argues that the value should be split between the property (the office building) and business (additional support services to the user), and the valuer should consider the derivation and risk profile of each income flow. This is challenging because the valuer must decide what proportion of the business component attaches to the property and which components attach to the business (McAllister, 2004).

From Table 1 we can see that there is a contract in the form of either a licence or lease that attaches to the property and is fixed for periods from one month to five years depending on the contract type. Income associated with other business services – such as IT, administrative support, communications, meeting rooms and catering – do not attach although they may create significant profit and are variable.

For income-producing specialist and non-specialist properties the valuer has at their disposal variants of the income approach to valuation; namely income capitalisation (investment), profits and discounted cashflow (DCF) methods. Specifically for the flexible space market (FSM) sector, Wyatt (2013) argues that the approach used is dependent on whether the property is owned by the operator or not.

The income capitalisation (or investment) method directly discounts the future expected market rent at an appropriate freehold yield to determine the capital value of the property. Due to the non-specialist nature of the property and flexibility of potential uses there is normally sufficient trading activity and comparability of asset within each market sector to observe property prices and rents.

The profits method allows the valuer to indirectly find the rent of the premises and calculate the overall value of the business as an operational entity. Using expert knowledge and experience, the valuer determines an adjusted net annual profit that is achievable by a competent operator which is then divided into two figures: a sum available as assumed rent for the property and a residual profit for the operator of the business (Wyatt, 2013). The rent component is capitalised at a suitable investment yield to arrive at a capital value of the property asset. The business component is also capitalised at a yield that reflects the high risk of this tranche of income. In practice, the valuer often simplifies the approach by directly capitalising the adjusted net profit directly: the earnings multiplier approach (Dunse et al, 2004).

Within the hotel sector, for example, this method is well established. Hotels trade regularly and there are established benchmarking services. The key performance indicators include average daily room rate (ADR), revenue per available room (RevPAR) and occupancy. This is less straightforward for FSM given the range of offering. For serviced offices and coworking spaces, the KPIs average desk rate, average revenue per desk and occupancy are used. For managed spaces, traditional measures are perhaps more appropriate.

The variants of the income approach as described are classified as traditional or conventional approaches. A single-period income (market rent or stabilised profit) is capitalised in perpetuity by applying an all-risks yield. The all-risks yield is an implicit pricing measure of the inherent risks and opportunities associated with a particular property asset. Its use has been criticised by many academics for not supplying sufficient information of the drivers of value of a property asset, quantifying risk, its sensitivity to subjective adjustments and difficulty in handling variable cashflows (see Baum et al, 2021 for a comprehensive critique).

Given the shorter, more flexible occupation terms and variable revenue

streams for added business services and facilities, arguably the valuation of the flexible space market may challenge conventional valuation approaches. A multiple-period DCF approach is potentially more appropriate. In fact, Lawson (2000) refers to a report by DTZ and the University of Reading (Crosby et al (1999)) which called for more use of cashflow analysis.

IPF (2020b) presents a strong case for the use of DCF for the appraisal of operational real estate and Preira-Gray (2021) argues that DCF "might far better capture the reality that property is now being seen as an operating business."

IPF goes on to recommend that when undertaking an ORE appraisal, the risks associated with the physical asset should be separated from those attached to the skill of the operator and their ability to generate secure and sustainable cashflow. When deriving a suitable discount rate it should reflect traditional property risks, business risk and creditworthiness of the operator or tenant.

Although the flexible space market has evolved over the last 25 years the debate over the most appropriate valuation approach has not advanced since the work of Crosby et al (1999).

#### **Valuation Practice**

JLL (2018), Cushman and Wakefield (2020) and Office Space in Town (Dreisin et al, 2017) have published their in-house approaches to the valuation of FSM and three methods can be identified. The following example of a serviced office will be used to illustrate the valuations. The property is centrally located in the CBD of a major city. It has a net internal area of 25,000 sq ft and 70% of the floorspace is dedicated to providing 350 workstations with the reminder providing associated social and business support facilities. A summary of the key input data and a simplified 10-year stabilised cashflow forecast is provided in Tables 3 and 4.

| Table 3: Summary of key input data           |            |  |
|--|------------|--|
| Input Data Summary                           |            |  |
| Net internal area                            | 25,000     |  |
| Estimated rent per sq ft                     | £60.00     |  |
| Estimated market rent                        | £1,500,000 |  |
| Net initial yield                            | 7%         |  |
| Exit yield                                   | 8%         |  |
| Purchaser costs                              | 6.8%       |  |
| Target rate of return                        | 8.5%       |  |
| Holding period                               | 10 years   |  |
| Number of work stations                      | 3,500      |  |
| Maximum occupancy rate                       | 90%        |  |
| Work station rate p.a.                       | £9,000     |  |
| Average service income per work station p.a. | £2,250     |  |

#### Table 4: Stabilised cash flow

| Year                            | 1     | 2     | 3     | 4     | 5     | 6      | 7      | 8      | 9      | 10     |
|---------------------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| Work stations<br>(WS) available | 350   | 350   | 350   | 350   | 350   | 350    | 350    | 350    | 350    | 350    |
| Occupancy rate                  | 90%   | 90%   | 90%   | 90%   | 90%   | 90%    | 90%    | 90%    | 90%    | 90%    |
| Occupied WS                     | 315   | 315   | 315   | 315   | 315   | 315    | 315    | 315    | 315    | 315    |
| Anticipated inflation           |       | 2.5%  | 2.5%  | 2.5%  | 2.5%  | 2.5%   | 2.5%   | 2.5%   | 2.5%   | 2.5%   |
| Average rate per<br>WS p.a. (£) | 9,000 | 9,225 | 9,456 | 9,692 | 9,934 | 10,183 | 10,437 | 10,698 | 10,966 | 11,240 |
|                                 |       |       |       |       |       |        |        |        |        |        |

| Revenue                      |           |           |           |           |           |           |           |           |           |           |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| WS income (£)                | 2,835,000 | 2,905,875 | 2,978,522 | 3,052,985 | 3,129,310 | 3,207,542 | 3,287,731 | 3,369,924 | 3,454,172 | 3,540,527 |
| Net income from services (£) | 708,750   | 726,469   | 744,630   | 763,246   | 782,327   | 801,886   | 821,933   | 842,481   | 863,543   | 885,132   |
| Total income (£)             | 3,543,750 | 3,632,344 | 3,723,152 | 3,816,231 | 3,911,637 | 4,009,428 | 4,109,664 | 4,212,405 | 4,317,715 | 4,425,658 |
|                              |           |           |           |           |           |           |           |           |           |           |
| Costs                        |           |           |           |           |           |           |           |           |           |           |
| Property costs (£)           | 708,750   | 726,469   | 744,630   | 763,246   | 782,327   | 801,886   | 821,933   | 842,481   | 863,543   | 885,132   |
| Employment (£)               | 212,625   | 217,941   | 223,389   | 228,974   | 234,698   | 240,566   | 246,580   | 252,744   | 259,063   | 265,539   |
| Running costs (£)            | 127,575   | 130,764   | 134,033   | 137,384   | 140,819   | 144,339   | 147,948   | 151,647   | 155,438   | 159,324   |
| Total costs (£)              | 1,048,950 | 1,075,174 | 1,102,053 | 1,129,604 | 1,157,845 | 1,186,791 | 1,216,460 | 1,246,872 | 1,278,044 | 1,309,995 |
| EBITDA (f)                   | 2,494,800 | 2,557,170 | 2,621,099 | 2,686,627 | 2,753,792 | 2,822,637 | 2,893,203 | 2,965,533 | 3,039,672 | 3,115,663 |

The first is a variant of the profits method using an earnings multiplier approach. The net operating profit, or EBITDA, is determined after an analysis of the accounts to establish the stability of the occupancy rate, desk rate and operating costs (including wages, business rates, and property expenses). This is very similar to a basic hotel valuation where the valuer will focus on the occupancy rate and average achieved room rate.

The capitalisation rate is often based upon transactions in office property with short term leases.

|                          | Say         | £302,000,000 |
|--------------------------|-------------|--------------|
| Capital value (Net)      |             | £301,413,556 |
| Capital value (Gross)    |             | £321,909,677 |
| YP in perpetuity @ 7.75% | 12.90       |              |
| EBITDA                   | £24,948,000 |              |
| Total costs              | £10,489,500 |              |
| Total income             | £35,437,500 |              |
| Earning multiplier       |             |              |

The second approach is a hybrid of the profits and investment methods, often referred to as the split-yield approach. The valuation begins with an analysis of the accounts to determine a stabilised EBITDA as in variant 1. The EBITDA is split between an assumed rent for the property and a residual profit for the operator of the business. Given that FSM occupies standard office units the valuer substitutes an estimated market rent based on comparable transactions evidence. EBITDA minus estimated market rent equals the residual profit. Each tranche of income is capitalised at different yields to reflect the risk inherent within each income stream.

|                           | -           |              |
|---------------------------|-------------|--------------|
| Split income/yield ap     | proach      |              |
| Estimated MRV per sq ft   | £60.00      |              |
| Net internal area (sq ft) | 250,000     |              |
| Estimated MRV             | £15,000,000 |              |
| Net operating profit      | £24,948,000 |              |
| Core income               |             |              |
| MRV                       | £15,000,000 |              |
| YP in perpetuity 7.00%    | 14.29       |              |
|                           |             | £214,285,714 |
| Top slice (Variable)      |             |              |
| Net income                | £9,948,000  |              |
| YP in perpetuity 9.25%    | 10.81       |              |
|                           |             | £107,545,946 |
| Capital value (Gross)     |             | £321,831,660 |
| Capital value (Net)       |             | £301,340,506 |
|                           | Say         | £302,000,000 |

Finally, the DCF method is used where a future series of cashflows are constructed to represent the actual operating performance, payments and receipts and capital expenditures that can be foreseen with reasonable reliability, typically five to 10 years. The approach is explicit in its cash flow assumptions allowing for cost inflation and income growth. A discount rate (or target rate of return) based on the assumptions outlined earlier is applied.

| Disco | ounted cash   | flow         |                 |
|-------|---------------|--------------|-----------------|
| Year  | EBITDA        | Sale value   | NCF             |
| 0     |               |              |                 |
| 1     | £24,948,000   |              | £24,948,000     |
| 2     | £25,571,700   |              | £25,571,700     |
| 3     | £26,210,993   |              | £26,210,993     |
| 4     | £26,866,267   |              | £26,866,267     |
| 5     | £27,537,924   |              | £27,537,924     |
| 6     | £28,226,372   |              | £28,226,372     |
| 7     | £28,932,031   |              | £28,932,031     |
| 8     | £29,655,332   |              | £29,655,332     |
| 9     | £30,396,715   |              | £30,396,715     |
| 10    | £31,156,633   | £389,457,917 | £420,614,551    |
|       | Capital value | (Gross)      | £325,014,834.96 |
|       | Capital value | (Net)        | £304,321,006.52 |
|       | Say           |              | £305,000,000    |

All respondents agreed that these were the generally accepted approaches, and each used one or more broadly as outlined above. Given the lack of transactions information, valuations are undertaken in teams with traderelated and office specialists. This allows detailed analysis of accounts overlaid with office market transactions, enabling a "sense" check in the absence of comprehensive information.

However, currently there is a greater reliance on the conventionally based approaches. This is understandable when we reflect on previous challenges faced by valuers when faced with market changes, for example reversionary freeholds, over-rented freeholds, shortening leases and break options. Valuers tried to modify the conventional methods to address the challenge but, in each case, DCF methods have been shown to be more robust, more flexible and more accurately model the true underlying cash flow (Baum et al (2021)).

When challenged on the use of traditional methods the respondents defended their use in three ways. First, echoing the view more generally of traditional valuation methods, they are relatively easy to use. Second, given the simple splitting of the income they can provide to clients a relatively plain illustration of the business risk and underlying office value. Finally, there is still a lack of knowledge, confidence and expertise in the application of DCF, particularly in markets where the FSM is less developed and therefore demand for valuations is lower. Both approaches are very simple, but very much in the traditional school, which has been widely criticised over many years (Mallison (1994), Peraira Gray (2021) and Baum et al (2021)). In common with earlier debates, yield selection, particularly on the business component, is subjective. Many respondents discounted the freehold yield to account for the higher risk associated with the top slice. Applying a higher yield makes sense, but basing it on property yield does not. The drivers underlying the freehold yield applied to the rent are very different to those of the business: the yield applied may be 'right', but the method of deriving it is not.

It was noted that there is a need to accelerate the use of DCF for two reasons. First, many valuations are for banks and respondents emphasised that banks have moved away from simply requesting a vacant possession value to a more detailed knowledge of the business and its cashflows. Second, management agreements are becoming increasingly common among operators as they look to be 'capital light'. Such agreements can be complex and the arrangements for owner/operator profit share and incentives can be modelled more accurately within a DCF approach.

One respondent questioned the need for traditional approaches and felt that DCF was increasingly more appropriate. Although based in standard office buildings, operators are not indifferent to the specification of the building. Operators are seeking buildings in good locations close to transport hubs (as with standard office buildings), older buildings (typically 1970s and 1980s), and smaller ones of 2,300-3,750 sq m (25,000-40,000 sq ft) which are more easily configured for FSM use (for example central corridor for ease of space configuration).

Buildings with the potential to offer social spaces, ground floor spaces for coffee shops, gyms etc and rooftop terraces (Tsolacos et al (2023)) are particularly attractive to operators. Although not themselves directly rented, they have the impact of raising the overall rent or desk space rate. Buildings that arrive on the market are likely to seek interest from FSM operators who will bid on the property based on their DCF investment valuation.

Unlike hotels, for example, in the current market FSM offerings are not trading in enough volume to provide reliable transactions data. Due to the relatively low barriers to entry (compared to specialised property types such as hotels), operators are either developing their own offering in standard vacant premises, or seeking distressed assets that require substantial refurbishment.

Data availability for the valuation of flexible office space is a complex issue. Unlike traditional real estate transactions, flexible workspace data is more difficult to gather and interpret. Operators react quickly to changes in demand, trends, and customer expectations and therefore what is being offered as a package to occupiers and its price is not standardised. Proxy 'desk rates' are available for flexible workspace locations and types, but these are based on asking prices and offer no further information. Asked whether a database of transactions and KPI data similar to that available for the hotel sector, for example STR (Smith Travel Research), would benefit the market and improve transparency, all the interviewees agreed that it would. However, extensive research would be required regarding what is included, how the data is derived and how a standard benchmark could be created. Some respondents do have access to comprehensive in-house data and there is a reluctance from a purely commercial perspective to share it.

Interestingly, a number of respondents felt that FSM will very quickly become mainstream as landlords fulfil market expectations and make their properties more attractive to tenants. "I don't think it's going to be a subsector for much longer. I think it's just what landlords are going to be expected to do," said one.

The office sector will simply become a range of flexible offerings and services to meet market demands and improve the letting prospects for their premises.

Asked whether a guidance note produced by RICS would be helpful, respondents were uncertain. There was a sense that the valuation is still very specialist and as with all other areas of valuation, it should not be undertaken by valuers who do not have the necessary market knowledge and expertise. However, a guidance note would align with other sectors and bring some transparency to the method adopted and information required. There would need to be a clear caveat about still requiring the necessary expertise.

Rather than a guidance note on flexible space markets, some felt that there is a skills gap within the profession in using DCF and interpreting business accounts. Specialist valuers are confident in the use of DCF and business analysis and they are forced to consider the fundamental drivers of value. Many in the office sector can still rely on conventional methods, but as the market shifts from traditional passive leasing to proactive operational real estate, DCF will be required to adequately deal with the more variable income stream associated with flexible offices.

In line with the findings of the IPF (2020b) report on operational real estate when using DCF to advise clients, the valuer relies upon the internal rate of return rather than deriving a hurdle rate to determine the net present value. It was unclear how the discount rate would be derived.

### Chapter 6 **Conclusions**



The flexible space market has evolved over the past few years in response to the rise of mobile technologies, casualisation within labour markets, flexible employment and, of course, the impact of the global pandemic. The market has responded by offering a range of products that provide flexibility of tenure, low-cost set up, and ease of entry and exit when compared to a traditional lease on property. In addition, the operator offers business services and can create an environment with like-minded individuals to support collaboration, knowledge-sharing and innovation. This has resulted in a variable income that is over and above that achievable from letting a vacant property.

Traditional landlords are also responding by offering enhanced spaces and entering into management agreements to benefit from this growing sector. Across this range of offerings, we see a distinction from simply letting space to landlords being actively involved in operating the space and deriving an additional financial benefit from it. We are seeing space-as-a-service and the term 'operational real estate' has been used to describe these properties where "the return is directly and deliberately linked to the revenues and profits of the business conducted on or from the premises" IPF (2020b). The flexible space market falls firmly within this category, along with hotels, student accommodation and specialist residential build-to-rent properties. This presents a valuation challenge and in particular further questions the appropriateness of traditional valuation methods that assume a perpetual fixed income capitalised by an implicit all-risks yield. Previous debates in relation to over-renting, shortening of leases and the prevalence of break options are revisited with the flexible space market when the operator is facing a variable income stream. Criticisms in relation to an overreliance on, and sensitivity to, the all-risks yield and subjective adjustments to account for risk, continue to be valid for this sector.

A DCF approach is arguably more appropriate, allowing the valuer to analyse the cashflow in detail and enabling the distinction between the propertyrelated income and the business-related income. History shows that when faced with market changes that challenge valuation, the initial reaction is to adapt conventional approaches but, over time, DCF is shown to be more robust.

However, DCF, although a relatively simple technique used widely in business and finance, is only as good as the inputs and the knowledge and expertise of the user. The flexible service market is still evolving, operational businesses are not trading and therefore market evidence is not readily available. Valuation must be built from the first principles to develop the cashflow for the operation and for those operating within the office market this is not an area they are necessarily familiar with.

Data availability is an issue. Many large firms have in-house databases, but these are not publicly available for obvious business reasons. Definitions are still evolving within the industry and items such as desk rate are not standardised. The sector needs to look at the hotel industry for the types of information that should be recorded to allow effective benchmarking and valuation inputs.

From this research, it is recommended that industry adopt DCF as the preferred method for valuing flexible space markets. Valuers should use this technique together with the skills to examine the operators' revenues, costs and profits and understand the complexities of the underlying operational business model. Consequently, the RICS should provide guidance on the valuation process and information requirements similar to previous guidance notes on trade-related valuations, for example. Of course, it should be emphasised that a valuer must have the necessary market knowledge and expertise to undertake such valuations.

# References

Antunes Batista da Silva, F; Liu, N; Hutchison, N (2022). *Flexible workspace providers as tenants: an analysis of the rental prices in the London market*. **Journal of Property Investment and Finance**, 40(5), 448-464.

Appel-Meulenbroek, R; van de Kar, M; van den Berg, P; Arentze, T (2019). Employees' preferences for services and facilities offered in serviced offices. Facilities, 37(1/2), 3-20.

Bates, T W (2006). *Community and collaboration: new shared workplaces for evolving work practices,* available at: http://hdl.handle.net/1721.1/66875

Baum, A E; Crosby, N; Devaney, S (2021). **Property investment appraisal** 4th edition. Wiley-Blackwell, pp320. ISBN 9781118399552

Baum, A; Saull A; Braesemann, F (2020). *PropTech 2020: the future of real estate*. Report, **Saïd Business School**, University of Oxford. Available at https://www.sbs.ox.ac.uk/sites/default/files/2020-02/proptech2020.pdf

Blackledge, M (2017). **Introducing property valuation** Second edition. London, Routledge.

Brunnberg, H (2000) *Evaluation of flexible offices*, Proceedings of the **IEA 2000/HFES 2000, Congress**, pp 1-667.

Byrne, P; Lizieri, C; Worzala, E (2002). *The location of executive suites and business centers in the United States*, **Journal of Real Estate Portfolio Management**, (8), 3, pp255-270.

Chegut, A and Langen, M (2019). "The financial impacts of coworking: rental prices and market dynamics in the commercial office market", *SSRN Electronic Journal*, Preprint, 31 October, DOI: 10.2139/ssrn.3481142.

Cooke, H; Fiorentino, S; Harris, R; Livingstone, N; McAllister, P (2022). *Corporate occupiers' attitude to flex space in the post-Covid environment.* **Journal of European Real Estate Research**, 40(5), 493-507, https://www. emerald.com/insight/content/doi/10.1108/JPIF-02-2022-0011/full/html

Crosby, N; Gibson, V; Lizieri, C; McAllister, P (1999). *The valuation of serviced offices,* report for **citib@se/DTZ Debenham Thorpe**.

Dabson, A; McAllister, P (2014). *Evolution and change in the serviced office sector: a decade later*, working papers in real estate and planning 02/14, Henley, **University of Reading**, Reading.

Davis, M C; Leach, D J; Clegg, C W (2011). *The physical environment of the office: contemporary and emerging issues*, in Hodgkinson, G P and Ford, J K (Eds), **International Review of Industrial and Organizational Psychology**, Vol 26, Wiley, Chichester.

Dreisin, A; Evans, A; Pragnell, M; White, M; Dunse, N (2017). *Serviced offices:* A new asset class, **Capital Economics**, London.

Dunse, N; Jones, C (1998). *A hedonic price model of office rents*, **Journal of Property Valuation and Investment**, 16(3), 297-312.

Dunse, N A; Hutchison, N E; Goodacre, A (2004). *Trade-related valuations and the treatment of goodwill*, **Journal of Property Investment & Finance**.

Fiorentino, S; Livingstone, N (2021). *Contemporary Coworking in Capital Cities: Evolving Geographies of Workspace Innovation in London and Rome*. In Mariotti, I; Di Vita, S; Akhavan, M (Eds) **New Workplaces – Location Patterns, Urban Effects and Development Trajectories: A Worldwide Investigation**, Springer, Cham, Switzerland.

French, N (2004). *The valuation of specialised property: a review of valuation method*, **Journal of Property Investment & Finance**, Vol 22, No 6, pp533-541.

Frodsham, M (2023). *Investment Implications of the Flexible Space Market*, **Investment Property Forum (IPF)**, Short Paper IPF Research Programme 2018-2021

Gibson, V A; Lizieri, C M (1999). *The role of serviced office space in office markets and corporate property portfolios*. **University of Reading**.

Gibson, V A; Lizieri, C M (2001). *Friction and Inertia: Business Change, Corporate Real Estate Portfolios and the UK Office Market,* Department of Land Management & Development, **University of Reading**.

Göçer, Ö; Göçer, K; Ergöz Karahan, E; Ilhan Oygür, I (2018). *Exploring mobility and workplace choice in a flexible office through post-occupancy evaluation*, **Ergonomics**, 61(2), 226-242.

Green, R (2014). *Collaborate or compete: how do landlords respond to the rise in coworking?* **Cornell Real Estate Review**, Vol 12, pp52-59, available at https://scholarship.sha.cornell.edu/crer

Harris, R (2019). *Defining and measuring the productive office*, **Journal of Corporate Real Estate**, 21(1), 55-71, DOI: 10.1108/JCRE-05-2018-0016.

IPF (2015). What Constitutes Property for Investment Purposes? A Review of Alternative Real Estate Assets, **IPF Research**, Short Paper 23, February 2015, London.

IPF (2020a). *Property Ownership in a Flexible World*, **IPF Research**, Short Paper, February 2020, London.

IPF (2020b). *Operational Real Estate Risks and Rewards*, **IPF Research**, Short Paper, December 2020, London.

Jansen van Vuuren, D (2016). *Valuing specialised property using the DCF profits method*. Journal of Property Investment & Finance, 34(6), pp641-654.

Keogh, G; D'Arcy, É (1994). *Market maturity and property market behaviour: a European comparison of mature and emergent markets*. Journal of Property Research, 11, 215-235.

Kojo, I; Nenonen, S (2017). *Evolution of co-working places: drivers and possibilities*, **Intelligent Buildings International**, 9(3), 164-175.

McGrath, R G (2013). *The End of Competitive Advantage*, Harvard Business **Review Press**, Boston.

Nappi, I; Eddial, H (2021). *Real cost of flex-offices: discourse and reality*, **Journal of Corporate Real Estate**, 23(4), 225-242.

Peltier, S (2001). *Analysis of the Supply of Serviced Office Space*, **Massachusetts Institute of Technology**, Cambridge.

Peraira-Gray, P J (2021). *Independent Review of Real Estate Investment Valuations*, **RICS**, London, p35, pp2.

RICS (2019). *Valuation of flexible workspace*, RICS Insight Paper, **Royal Institution of Chartered Surveyors**, London, ISBN: 9781783213771

Savills (2021). *Landlord flex survey: UK commercial - February 2021*, available at https://www.savills.com/research\_articles/255800/311419-0 (accessed 26 February 2023).

Tsolacos, S; Lee, S; Tse, H (2023). 'Space-as-a-service': A premium to office rents?, Journal of European Real Estate Research, (16), 1, 64-77. https://doi.org/10.1108/JERER-10-2021-0049

Williams, L; Swinnerton, E; Dunn, C; Taylor, A (2020). *UK Coworking 2020: What's Next on the Flexible Workplace Horizon?* **Cushman & Wakefield**, London.

Wyatt, P (2013). Property valuation 2nd edition, Wiley-Blackwell, Chichester.