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SHORT PAPER 24

What is Fair Value?

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What is Fair Value?

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What is Fair Value?

1. EXECUTIVE SUMMARY

In the context of a global economic recovery and rising capital values in the UK and many markets globally, this paper examines the rise of new investor types and their impact on fair value. Two methodologies for assessing fair value are applied, Robert Shiller's Cyclically Adjusted Price Earnings Ratio (CAPE), which assesses value relative to historic performance, and a forward-looking relative value model. The key findings of the paper are as follows:

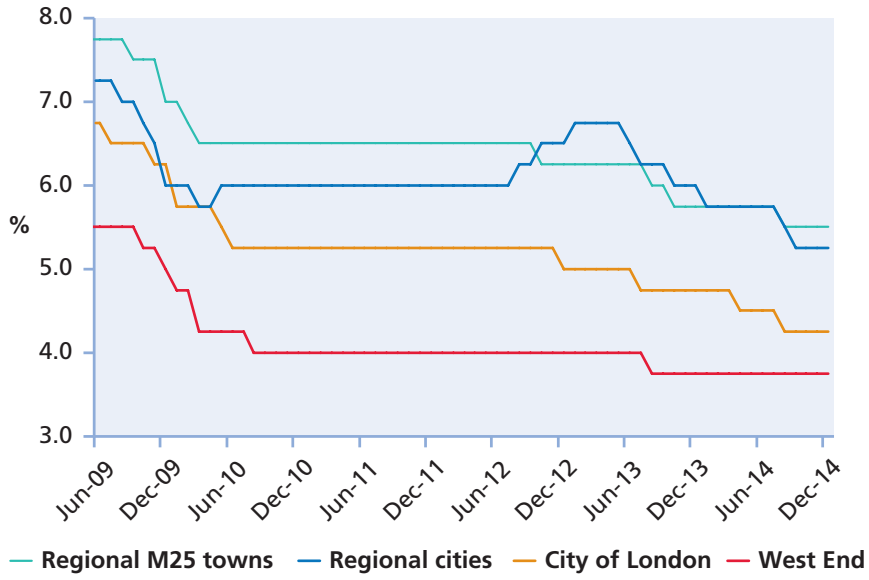
- New investor types, notably sovereign wealth funds and insurance companies, have emerged in recent years and taken a rising share of global investment activity. Their activity is concentrated in global gateway cities, which have likewise seen a rise in their share of overall global investment.
- Their emergence can be traced to the rise of savings in emerging market economies since 2000. Rising savings have been reflected in the rise of sovereign wealth funds, the growth of the insurance sector in emerging markets and growing pension fund assets under management. Rising savings have also changed the balance between global savings and investment, leading to lower global real interest rates. These trends are likely to be sustained, with the IMF observing there is no reason to believe that the drivers causing higher savings and lower global real interest rates will go into reverse in the medium term.
- While their investment activity has been concentrated on global gateway cities, they have not had an impact on pricing that can be distinguished from broader market trends. Yields have also come under downward pressure in smaller cities and the wider commercial market, although this may reflect the ensuing impact of tighter yields in gateway cities.
- The CAPE analysis finds that UK property (captured by the IPD UK All Property Index) is marginally under-valued overall, with a CAPE of 17.3 at the end of 2014 compared to a historic average of 17.8. Given rising capital values, the ratio is trending upwards following a period of significant undervaluation from 2009 to 2013. CAPE analysis of the UK office market suggests a clear contrast between the position of Central London, where there is evidence of over-valuation, and the rest of the UK, which remains under-valued.
- Analysis using a relative value model also finds under-valuation for both the overall UK market and City of London offices. Depending on the chosen time horizon for investment, UK All Property is found to be between 4% and 20% under-valued. For instance, for an investor with a 10-year time horizon, the fair value equivalent yield is estimated to be 5.9%, compared to the actual 6.4% at end 2014, implying under-valuation in the order of 8%. This under-valuation could also be interpreted as an allowance for an anticipated rise in long-term bond yields of 90-210 basis points.
- Results for prime City of London offices also show under-valuation of between 8% and 13%, despite the low prevailing yield of 4.25%. This is partly driven by a strong rental growth outlook.
- The results show that the under-valuation is greater for investors with longer intended hold periods, suggesting that new types of investors may be perceiving value differently compared with those with a 5-10 year time horizon.
- Under a limiting case, it is shown that, for a safe-haven investor intending to hold prime property in perpetuity, values could feasibly rise much further while still maintaining relative value. Given that long term interest rates in many countries are at the lowest levels ever, fair value could be achieved with prime office yields ranging from 1.8% to 2.4% in London, Paris, New York and Tokyo, pointing to a substantial premium above investors with a more conventional approach.
- Notwithstanding that a substantial premium can be justified, the tendency for real estate market pricing signals to be transmitted across markets means that gateway cities are unlikely to see much lower yields in isolation of their broader domestic markets, but this will be worth continued monitoring.

2. INTRODUCTION

Over the past two years (2013-2014), economic recovery has prompted a broad-based market recovery, as evidenced by higher investment and leasing volumes globally. In this environment, capital values are rising, due to a combination of inward yield movement and, to a lesser extent, rising rents.

In the UK, the early part of the market upswing saw divergent performance, with London experiencing rapid growth in contrast to stable or falling values in regional markets. Currently, however, yield compression is being seen across most prime asset classes and, increasingly, across secondary stock as well, as illustrated in Figure 2.1. As a consequence, the entire market is experiencing strong investment return performance, with the IPD All Property total return reaching almost 18% in 2014 and consensus expectations pointing to another strong performance in 2015.

Figure 2.1: UK prime office yields



Sources: JLL

Any expansion phase, with capital values rising rapidly, naturally poses some key questions, but such questions are perhaps even more pertinent in light of the relatively recent experience of a major downturn in 2007-2009: is the market over-priced? Related to this, what is fair value?

These are always key questions, but there are some differences in the current cycle. Interest rates are much lower, and look set to remain lower for the foreseeable future. This is partly due to a sluggish global recovery and a legacy of high household and government debt, but it is also because of a shift in the balance of global savings and investment, which has driven down real interest rates in the major developed economies. Related to this, a decline in corporate investment in many countries points to greater caution in the strength of outlook for the global economy and perhaps also reflects higher risk aversion.

2. INTRODUCTION

In addition, the supply side has been slower to react to the rise in tenant demand, with less speculative development a notable feature across the major UK markets. This reflects greater caution from developers in the aftermath of the previous cycle and, also, an ongoing lack of available credit for speculative development despite a generalised improvement in credit conditions, which indicates that this situation may become prolonged. In time, this may be seen to have lessened the risk of downturns caused by over-supply.

Recent years have also seen new buyer types, notably sovereign wealth funds and large insurance companies, emerge in the investment market. There is speculation as to the precise impact this has had on pricing and whether it has caused enduring change. Demand in some of the major global gateway cities has certainly become more diverse by region and buyer type; this is very clear in London, where sovereign wealth funds and insurance companies from the Asia-Pacific region have become very significant players.

This paper aims to answer the fundamental question posed above: what is fair value in this environment? Furthermore, has it changed with the advent of a more international global marketplace, given the potentially different motivations of some large international investors?

Section 3 assesses recent trends in global investment flows by city, noting the rise in demand from new types of buyers and consequent impact. The drivers for the emergence of these buyers are explored in Section 4, combined with some discussion of how their preferences may differ from more conventional investors. Section 5 then assesses whether there has been a material impact on market pricing in the cities being targeted by these new investors, as distinct from wider market trends.

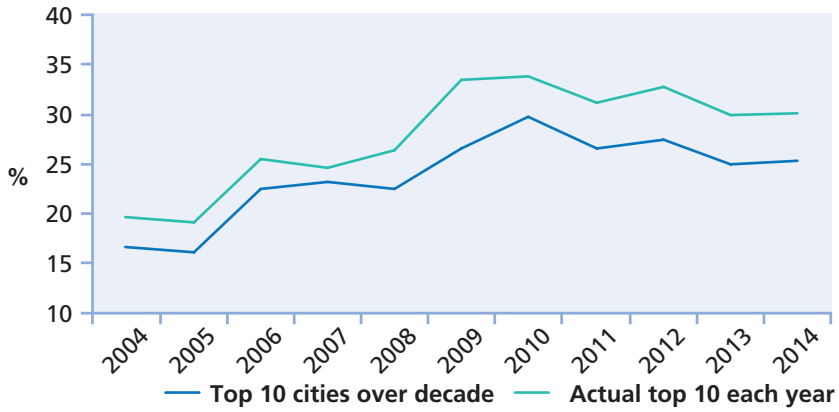
Having established the context, the paper then directly addresses the fair value question in Section 6. Two methodologies are presented: an historic perspective, applying Shiller's Cyclically Adjusted Price to Earnings ratio (CAPE) to UK property, and a forward-looking relative pricing model, used to assess fair value across the overall UK market and London in particular. Section 7 adapts some of the assumptions in the model to envisage the perspective of a safe-haven investor with a longer time horizon and a desire to diversify assets under management across geographies and asset classes. It estimates the extent of the premium these investors may be willing to pay over investors taking the traditional approach.

3. RISING DEMAND

Improved economic growth, the prospects of rising occupier demand and a sustained low interest rate environment have prompted a surge in real estate investment. Global investment volumes also grew strongly in 2014, totalling US$710 billion, up 20% on 2013, to be 6% below the previous peak of US$758 billion in 2007. UK investment volumes hit a new record in 2014, up to £65 billion, surpassing the previous peak set in 2006.

This testifies to the weight of demand for commercial property impacting the market at present. Demand has been especially prevalent in the major cities of the developed world, often referred to as 'gateways', owing to their importance as major centres of international business. There is evidence for this in the rising share of global investment activity accounted for by the top 10 cities each year, which has risen from around 20% to 30% over the past 10 years. It is worth noting that, since there is some consistency in the top cities from year to year, this rising share also holds true for the top 10 cities over the full period, as illustrated in Figure 3.1.

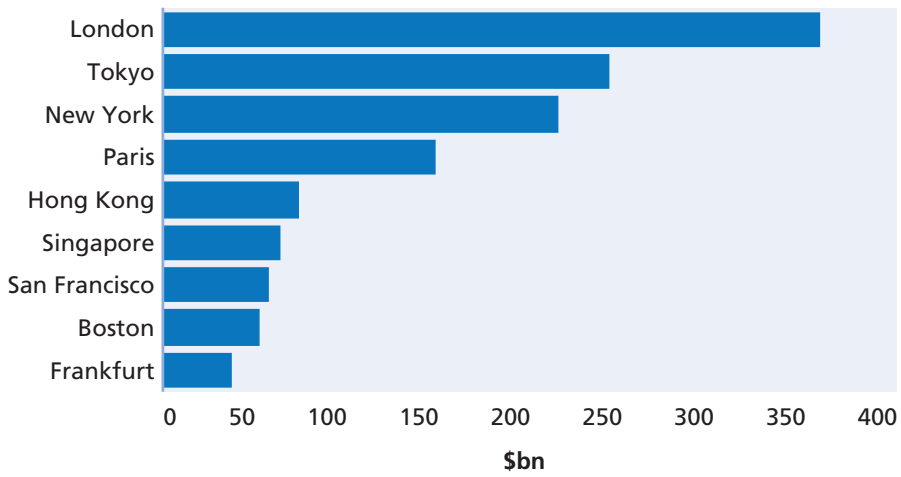
Figure 3.1: Investment in the top cites as a proportion of overall global investment



Sources: JLL

Figure 3.2 shows the ranking of the most heavily invested global cities between 2004 and 2014, identifying London, New York, Tokyo and Paris as clear leaders within this group.

Figure 3.2: Top cities for global investment – total turnover 2004-2014



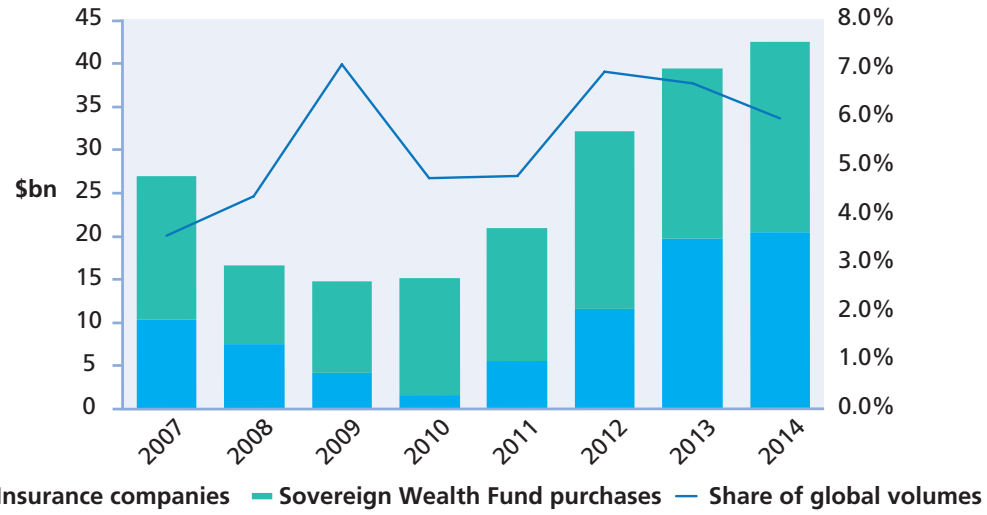
Sources: JLL

3. RISING DEMAND

Rise of new buyer types

One reason for the rising share of major cites is the emergence of new buyer types, most particularly sovereign wealth funds and major insurance companies, as large-scale buyers of commercial property. While global volumes have now broadly returned to the peak levels of 2006-2007, the share of turnover accounted for by these two investor groups has risen from 3.6% in 2007 to 6.0% in 2014.

Figure 3.3: Total global sovereign wealth fund and insurance company real estate investment



Sources: RCA, JLL

Over this period, the share of sovereign wealth funds has more than doubled, from 1.4% to 2.9%, while the share of insurers has risen from 2.2% to 3.1%. While this total may still appear relatively small, the presence of these new players in the market has been enhanced by their involvement in many of the very largest deals, and many market participants sense that they will continue to take on a greater share over time. Table 3.1 illustrates some recent sovereign wealth fund acquisitions in Europe, which have been heavily concentrated in London and Paris. Beyond this, a number of major shopping centres and portfolios have also been acquired, but no other cities have seen similar levels of activity.

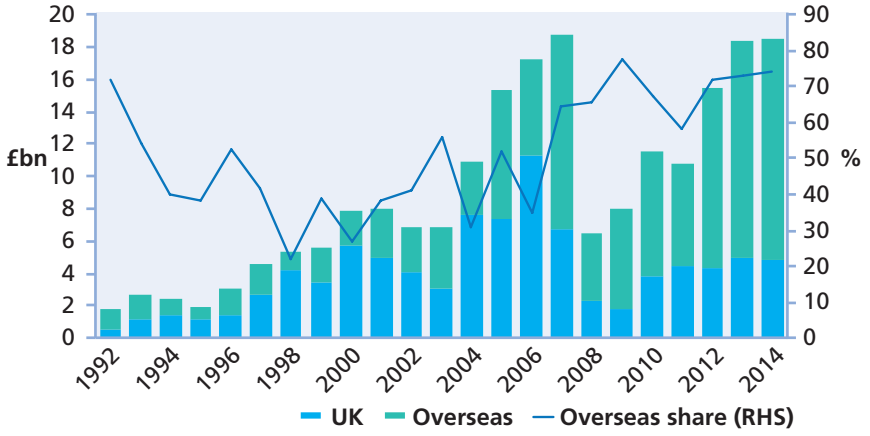
3. RISING DEMAND

Table 3.1: Selected recent sovereign wealth fund purchases

Year	Location	Property	Sector	Price	Purchaser	Source of Capital
2014	London	HSBC tower	Office	GBP 1.1 billion	Qatar Investment Authority	Qatar
2014	London	Bank of America Financial Centre	Office	GBP 583 million	Norges Bank Investment Management (NBIM)	Norway
2014	London	The Pollen Estate	Mixed	GBP 381 million	NBIM and The Crown Estate	Norway
2013	London	Broadgate	Mixed	GBP 1.7 billion	GIC	Singapore
2013	London	More London, SE1	Office	GBP 1.7 billion	St Martins Property Corporation	Kuwait
2013	Paris	Portefeuille Docks Lyonnais Partie IDF	Office	EUR 580 million	Abu Dhabi Investment Authority	UAE
2012	Zurich	Uetlihof	Office	CHF 1.1 billion	NBIM	Norway
2012	Sheffield	Meadowhall	Retail	GBP 762 million	NBIM	Norway

This activity is affecting the composition of the investor base in these cities, most clearly so in Central London. Figure 3.4 illustrates the marked rise in the cross-border share of office investment, from around 40%-50% up to 2004 to around 70% currently. While other cities have not experienced such a clear shift, prime assets in cities such as Tokyo and New York now generate much stronger competition from cross-border investors than previously.

Figure 3.4: Central London office investment turnover



Sources: JLL

4. DRIVERS FOR THE RISE IN DEMAND FROM NEW INVESTOR TYPES

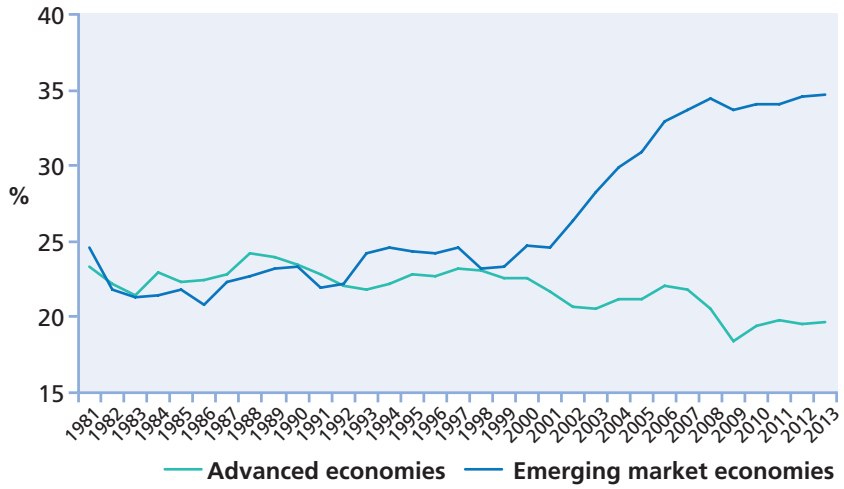
The past 15 years has seen a change in the balance of global savings and investment, leading to the emergence of new investors. It has also resulted in a reduction in real interest rates, which is impacting asset markets across all regions. Both these factors may be expected to result in increasing demand for real estate.

Rise in savings in emerging economies

Emerging market savings, as a share of GDP, increased very sharply in the period 2002-2008, from 20%-25% to around 35% and have remained at a high level ever since (Figure 4.1). China alone accounts for more than half of this rise, with oil exporting countries also responsible for a significant part of the increase.

There are a number of reasons for this change of behaviour, which has been common across both household and government sectors. For households, rapid economic growth, most particularly in China, led to rapid income growth, which provided additional capacity to save. With this additional household income, saving was generally prioritised over consumption spending, perhaps due to the need for individuals to provide their own safety net in the absence of a comprehensive government transfer payment system, and also because of a lack of readily available bank lending.

Figure 4.1: Nominal savings as a proportion of GDP



Sources: IMF

For a number of governments, savings were derived from increased earnings on state-owned oil production, with the oil price rising rapidly during this period, and also through a rapid accumulation of foreign exchange reserve holdings by central banks, most significantly in the case of China, but also in Malaysia, Taiwan, Korea and Singapore.

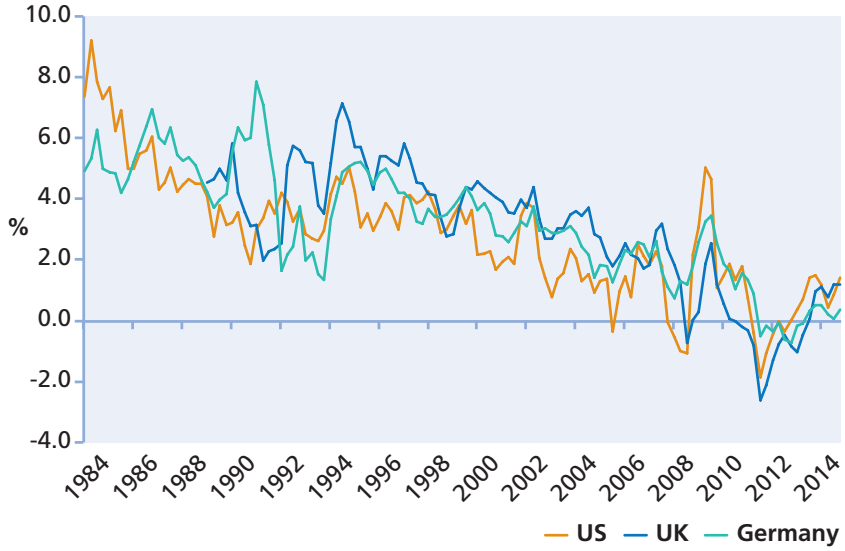
4. DRIVERS FOR THE RISE IN DEMAND FROM NEW INVESTOR TYPES

The build-up of foreign exchange reserves received significant attention in the lead-up to the financial crisis of 2007-2009 and was generally regarded as both a cause and symptom of global imbalances – the pronounced divergence of current account positions between deficit countries led by the US, and also including the UK and Australia, and surplus countries led by China and Germany. To some extent, the desire to build a substantial buffer of foreign exchange reserves was a legacy from the Asian crisis, when several countries experienced disorderly capital outflow and had inadequate foreign exchange reserves to maintain their pegged exchange rate regimes. It also reflected a desire to maintain strong export growth through this period, with exchange rates managed by central banks to guard against rapid appreciation, which would potentially have impacted competitiveness and, thereby, overall growth performance. This was achieved through central bank intervention in the foreign exchange market, resulting in substantial reserve accumulation.

Lower real interest rates

Viewed over a long period, it is clear that global real interest rates have been on a continuous downward trend since the early 1980s (Figure 4.2). The fall is common across the major advanced economies; with increasing global financial integration, real rates are increasingly determined by common global factors, especially at longer maturities. The IMF note that real rates have fallen, from an average of 5.5% in the 1980s, to 3.5% in the 1990s, to 0.3% from 2008-2012, across a wide sample of 40 advanced and emerging economies[1]. While falling inflation risk could be seen as explaining the drop during the 1980s and 1990s, the fall has persisted since 2000. The recent uptick has been due to falling inflation and the sharp downward move in nominal yields over the recent months suggests that this will also prove temporary. Real rates are now close to zero for 10-year maturities and well below zero for shorter maturities.

Figure 4.2: Falling global real interest rates



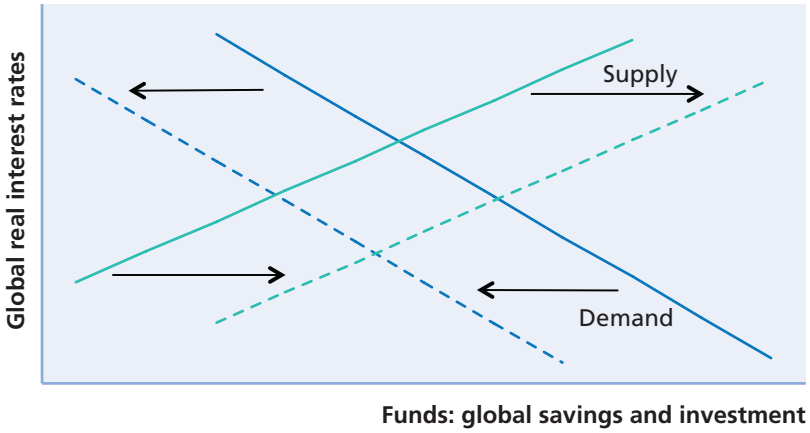
Note: 10-year nominal government bond yields deflated by CPI
Sources: Datastream/JLL

Global real rates are effectively determined by the balance between desired savings and investment (Figure 4.3). As such, the rise in savings previously noted has been an important recent driver of the change. Viewed through this prism, the change in emerging market preferences, expressed through a rise in savings, has increased the global supply of savings at any given real interest rate.

[1] Pescatori and Furceri, Perspectives on Global Real Interest Rates, Chapter 3, IMF World Economic Outlook, April 2014.

4. DRIVERS FOR THE RISE IN DEMAND FROM NEW INVESTOR TYPES

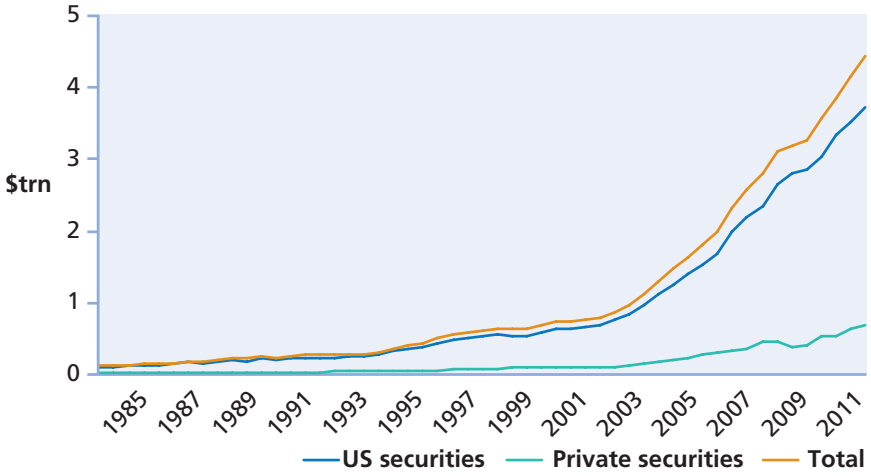
Figure 4.3: Real interest rate and shifts in demand for and supply of funds



Sources: IMF

This rise in savings has been accompanied by a closely-related shift in aggregate global portfolio allocations toward fixed income assets, and government bonds in particular, instead of equities and this change in composition has also exerted downward pressure on real rates. The shift can be seen clearly in the surge in foreign holdings of the government bonds of advanced economies and can largely be attributed to the accumulation of foreign exchange reserves in the form of government securities. This is most clearly evident in the rapid build-up of foreign official holdings of US treasuries, with comparatively little change in foreign holdings of private securities, but the impact on the US bond market reflects a broader global trend (Figure 4.4).

Figure 4.4: Foreign holdings of US securities



Sources: IMF

Finally, the fall in real rates has been exacerbated in recent years by a persistent decline in investment in advanced economies in the aftermath of the financial crisis. Investment-to-GDP ratios remain well below historic averages and are not expected to rebound rapidly, even in the improving wider economic climate, perhaps because of diminished growth expectations and higher risk aversion.

4. DRIVERS FOR THE RISE IN DEMAND FROM NEW INVESTOR TYPES

Unquestionably, weak investment, sluggish growth and large output gaps have prompted central banks to pursue a wide range of accommodative policy measures, most notably near-zero base rates and quantitative easing (QE). However, these should be viewed as symptoms rather than the underlying cause of low real rates of return. Indeed, the fall in real rates long pre-dates the advent of QE.

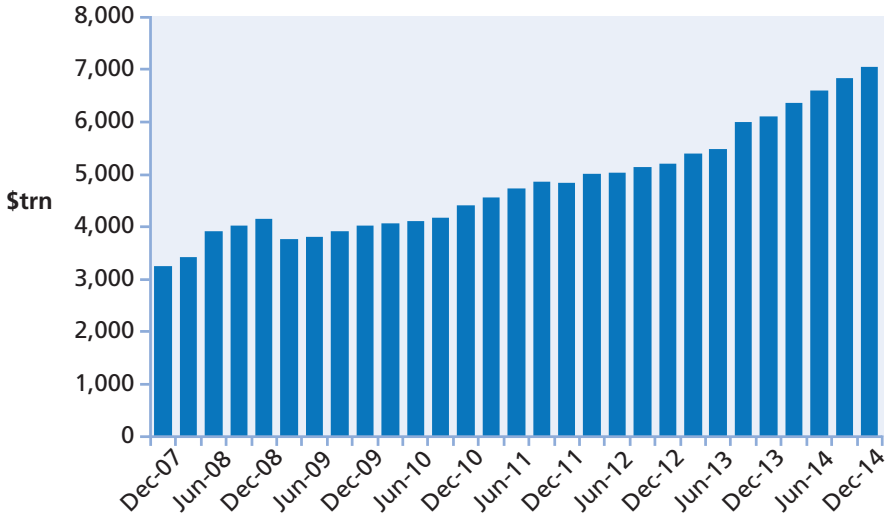
While QE is commonly viewed as an emergency measure designed to alleviate deflationary pressure associated with the global financial crisis, and this was certainly the trigger for its implementation in the US and UK, its recent adoption in Europe in response to persistent deflationary pressure and weak demand demonstrates that it is also a consequence of the lack of investment described in this paper.

Emergence of different investor types

Rising emerging market income levels and savings have fed through directly to the emergence of new investment funds and a growing insurance sector. This has led to a rise in demand for real estate, whether as part of a multi-asset portfolio or a dedicated property fund, as part of a broader rise in demand for investible assets.

The emergence of sovereign wealth funds is a key part of this, given some of the principal channels through which savings have increased have been under state control. Oil exports are state-controlled in many countries, both emerging and developed, as are, by definition, foreign exchange reserves. Not surprisingly perhaps, over recent years there has been a rapid build-up of sovereign wealth fund assets under management globally (Figure 4.5).

Figure 4.5: Estimated sovereign wealth fund assets under management



Sources: SWF institute

Insurance companies are another key source of investment, with the some of the largest coming from China, Taiwan and Korea, reflecting rising income levels and the rapid growth of the sector. Insurers in these countries traditionally have had low allocations to real estate and faced several restrictions that limited their ability to pursue cross-border investment, although recent regulatory changes have loosened restrictions and unlocked latent demand.

4. DRIVERS FOR THE RISE IN DEMAND FROM NEW INVESTOR TYPES

Meanwhile, global pension fund assets under management are also rising quickly in response to rising wealth and savings in emerging markets, rising life expectancy globally and the realisation in developed economies that many industry and government-run funds are significantly under-funded and unable to meet mandated commitments to their members at the current rate of contributions.

Table 4.1: Largest sovereign wealth funds

Fund	Country	AUM (GBP billions)
Government Pension Fund	Norway	893
Abu Dhabi Investment Authority	United Arab Emirates	773
SAMA foreign holdings	Saudi Arabia	757
China Investment Corporation	China	653
State Administration of Foreign Exchange	China	568
Kuwait Investment Authority	Kuwait	548
Hong Kong Monetary Authority	Hong Kong	400
GIC	Singapore	320
Qatar Investment Authority	Qatar	256
Temasek Holdings	Singapore	177

Source: SWF institute

What are new investors looking for?

These new investor types, led by sovereign wealth funds and insurers, tend to accumulate very large sums, and, in the case of sovereign wealth funds, their assets are not acquired in domestic currency. Oil exporters will tend to accumulate US dollars and central bank reserves will be built up across a range of currencies, but, again, mainly US dollars, reflecting each country's most significant international trade linkages. While their liabilities are ultimately domestic, there is a need to keep much of the wealth offshore to manage domestic inflationary pressure and avoid local currency appreciation. Furthermore, domestic markets may not offer adequate investment opportunities.

While the research has not sought to fully understand their motivations, it can be inferred that, as these investors grow, they are likely to seek diversification, both by geography, to mitigate currency risk, and, also, by asset class. They are likely to be relatively risk averse and will seek to maintain the real value of their assets over time. Indeed, there is already evidence of this by the way they have contributed to the shift in global portfolio allocations toward government securities.

Sovereign wealth funds are likely to take a long-term view and, therefore, can be expected to hold assets for longer periods than other investors. Reflecting their size and sovereign interest, they may also wish to maintain a high level of control. Naturally, like more conventional investors, they will also retain a clear focus on the outlook for returns relative to the perceived risk of their investment activities and factor in tax and legal considerations.

More generally, Blundell (2014) posits that uncertainty about political stability, the rule of law and increased awareness of the possibility of sovereign default has created a class of investors more concerned with wealth preservation than optimisation.

4. DRIVERS FOR THE RISE IN DEMAND FROM NEW INVESTOR TYPES

How is this impacting property investment strategies?

Property has the potential to meet many of these objectives. It offers the income-producing qualities of bonds, but with the potential for value growth and significant diversification due to its long-term performance being closely aligned with local market fundamentals.

Given the focus on minimising risk, it is likely that prime property will be favoured over secondary. Similarly, core locations are likely to be preferred and the first steps in building a property portfolio will be into more liquid and transparent markets that offer a demonstrable historic record of macroeconomic stability and long-term investment performance. The view of risk is likely to be influenced less by historic volatility than by perceived stability and store-of-value characteristics; cyclical fluctuations in value can be accepted if the buyer is confident that real value will be preserved over time.

The desire for control and risk minimisation suggests that direct investment will be preferred to indirect and the sheer scale of assets under management will make larger lot sizes a more efficient means to build exposure, while the desire for diversification means that such investors will be less concerned about foreign exchange risk than conventional funds.

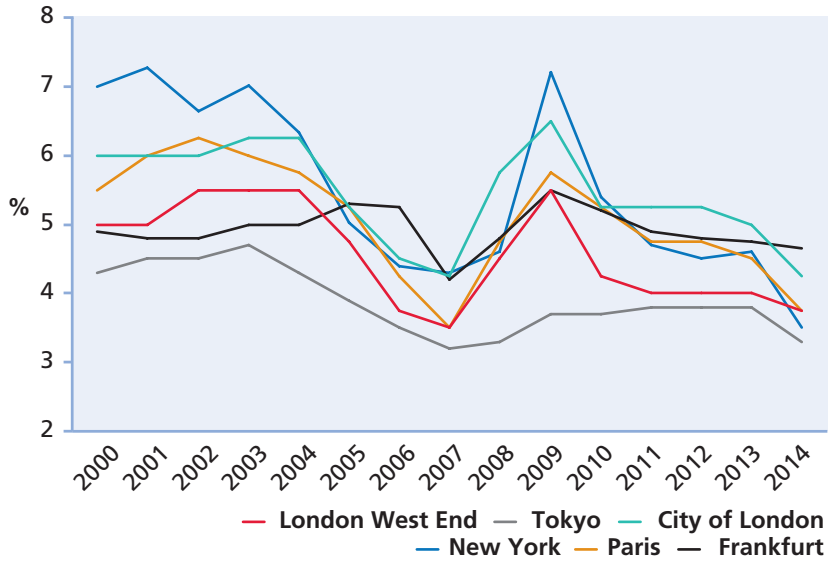
The foregoing is consistent with the pattern of investment reported in Section 3. The appetite for real estate investment is rising, with anecdotal evidence suggesting that allocations are increasing. This typically comes in the form of direct investment in prime property at a large scale in the most transparent, liquid and connected international markets at the heart of global commerce, notably London, New York, Paris and Tokyo.

Looking ahead, despite the strength of recent activity, real estate is still a relatively small share of overall funds under management. For instance, it is estimated that Norway's Government Pension Fund's allocation to real estate at end 2013 was only 1%. Likewise, insurance industry statistics indicate that insurance companies in Asia allocate, on average, around 2% of their assets to real estate, compared to 6.7% in the US and 5.1% in the UK. Coupled with the rapid growth of overall assets under management and the likelihood that this will continue over the medium term, there appears to be significant scope for further growth in real estate investment from these buyers.

5. IMPACT ON MARKET PRICING

As noted at the outset, yields are trending inward across the UK and this is also reflected in prime yield movements in the world's most heavily demanded cities, as illustrated in Figure 5.1. The gap has narrowed between these locations, with a larger recent inward movement in New York, the City of London and Paris. German yields have been more stable over time, as have yields in London's West End and Tokyo.

Figure 5.1: Prime office yields in selected global cities



Sources: JLL

The current position is closely comparable to the situation that existed in 2007. New York prime yields are at an all-time low of 3.5%, as are yields in the City of London, while Paris, Tokyo and London West End are only slightly higher than previous yield floors. Before considering the fair value question, it is also appropriate to question whether the change in pricing can be attributed to the impact of the new investors described in Section 4. Alternately, are yields simply reflecting a more general cyclical upswing applicable across all markets, whether core or non-core, prime or secondary?

The issue is examined in two ways, by assessing the relativity between gateway cities and smaller cities in the same country and the relativity between different lot sizes. If new investors have had a meaningful impact on pricing, it might be expected that a wider yield gap would emerge between the major gateways and smaller cities in the same country. Likewise, a smaller gap might be expected between achieved yields on larger and smaller lot sizes.

Is the gap widening between leading cities and the rest of the market?

In Figure 5.2 and 5.3, historic prime yields are plotted for the lowest yielding office markets in the UK and France against those of a representative smaller city. In each case, no material gap opens up between the yields in recent years.

5. IMPACT ON MARKET PRICING

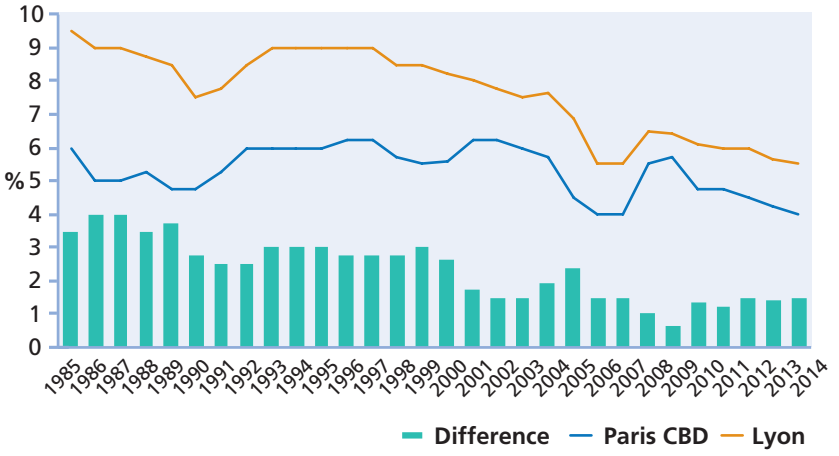
In the UK, the comparison of London West End versus Leeds shows that a yield gap opened up in the 1980s, which has shifted up and down over time. It grew to a high in 2012 and, at that point, there was a clear divergence in the strength of demand, with London experiencing strong cross-border inflows while investors were very wary of the outlook for occupier demand in regional cities. However, over the past two years this gap has closed, as the UK's regional cities have experienced a strong recovery in investor demand in 2013 and 2014.

Figure 5.2: UK prime office yields – London West End and Leeds

Sources: JLL

In both France and Germany, the yield gaps have actually fallen over time, with the largest change occurring at around the time of the inception of the euro, with the differentials remaining broadly stable since then.

Figure 5.3: French prime office yields – Paris CBD and Lyon



Sources: JLL

5. IMPACT ON MARKET PRICING

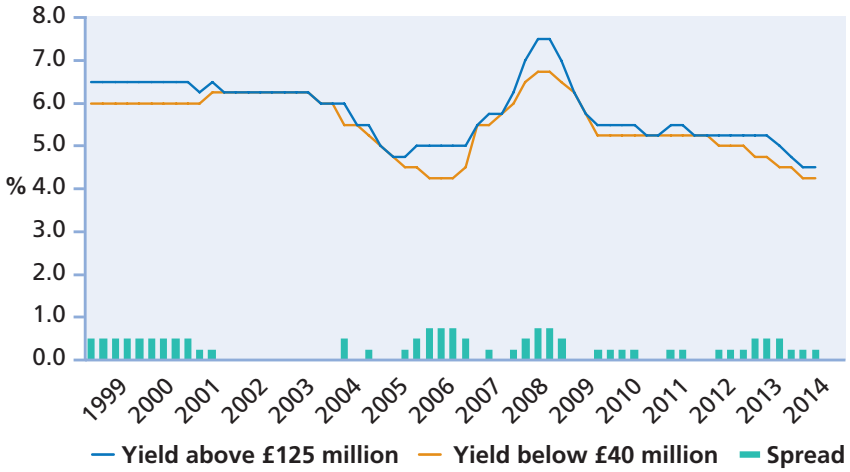
While this suggests that there is not clear evidence of a material and enduring change in yield relativities due to the rise of new investor types, it may be that the weight of money directed at major cites indirectly contributes to lower yields outside these locations because domestic investors, unable to compete for larger lot sizes in core gateways, search elsewhere, bringing down yields in smaller cities. Anecdotally, this has been the recent experience in the UK.

Has the yield range for different lot sizes changed?

While there is not yet sufficient evidence to point to a durable change in yield relativities between cities, there is some evidence of a narrowing premium for smaller lot sizes, driven by greater willingness to accept lower yields for larger lot sizes.

In the City of London, the yield premium for smaller lots currently stands at around 25 basis points, having fallen considerably since 2006-2009, although the yield premium was at a very low level (virtually zero) in 2002-2003 (Figure 5.4). More convincingly, however, the yield on larger lot sizes is now at an historic low, of 4.5%, for lot sizes in excess of £125 million, whilst some exceptional deals have seen even keener pricing, notably the recent sale of 30 St Mary Axe (The Gherkin). It is possible to discern a change in market pricing during the current upswing relative to the 2006-2007 period. At that time, there were fewer transactions taking place around the yield floor of 4.25% and larger lots still commanded a discount. At the present, prime yields are being achieved across a wider base of transactions and larger buildings are subject to more intense competition.

Figure 5.4: Prime yields for different City of London lot sizes



Sources: JLL

5. IMPACT ON MARKET PRICING

Lack of clear evidence of a direct impact on market pricing

Both of these comparisons fail to show a clear-cut impact on pricing from the rise of new investors. During 2011-2012, yields diverged between London and other UK markets, but this gap closed significantly over the period 2013-2014.

Although the yield for larger lot sizes in the City of London is at its lowest ever level currently, it is not possible to prove a narrowing of the gap between larger and smaller buildings. This may be due to the generalised market upswing, at present impacting all markets, potentially obscuring long-term changes. Accordingly, ongoing monitoring is recommended, to determine whether the relationship has fundamentally changed.

6. ASSESSMENTS OF FAIR VALUE

To make a quantitative assessment of fair value in this environment, the researchers have juxtaposed two contrasting approaches. Firstly, they adapt Robert Shiller's Cyclically Adjusted Price to Earnings (CAPE) ratio to the property market. CAPE makes an assessment of value relative to the historic performance of property itself, specifically the ratio of income to capital value. Effectively, this tests whether current income flows, as a proportion of capital value, are in line with historic experience. As such, and all else being equal, it might be expected that lower yields would to lead to an adverse finding using this metric.

Secondly, they apply a forward-looking relative value model, which assesses property pricing and the outlook for forecast property investment returns, relative to the returns available from fixed income investment, using the government bond market as the chosen comparator. This approach provides a quantitative framework to enable a bottom-up assessment of expected and required returns, taking into account the impact of a number of different influences. For instance, on the one hand, yields are low relative to historic experience and, all else being equal, this will lead to lower income and lower total returns. On the other hand, the current low interest rate environment means that fixed income returns are also low, so property may still look attractive on a relative basis. Also, a positive outlook in some occupational markets should underpin rental growth and this supportive outlook should provide some offset to lower yields and commensurately lower income returns.

The approaches are intentionally different, with one comparing property pricing relative to historic experience, without reference to the wider economic and financial context, and the other looking ahead at forecast returns relative to fixed income alternatives, as represented by government bonds. Estimates of the extent to which property is over- or under-valued according to each metric are provided, explaining the models and noting the assumptions made throughout. Within the relative value model, different assumptions are adopted to illustrate how the preferences of different investor types can lead to different answers to the question of what is fair value? The analysis focusses on the UK, given superior data availability, but the framework can be readily applied to other global markets.

6.1 Assessing fair value using Shiller's CAPE

An approach developed by Nobel laureate Robert Shiller[2] compares asset prices with long-term movements in earnings, generally calculated over the previous five to 10 years. This CAPE ratio is a chartist- rather than fundamentals-based method and has been commonly applied to US equities. The ratio is interpreted relative to a historic mean benchmark to assess fair value. Although not specifically designed to predict cycles, higher than average CAPE ratios can be interpreted as showing a market where values are high relative to historic levels, so prices may be more likely to fall, and vice versa.

For UK property, the CAPE ratio can be assessed by comparing current capital values with a moving average of earnings, after adjusting both for the impact of inflation. IPD nominal capital values and UK CPI inflation have been used throughout. Earnings are derived from the annual (chain-linked) income return estimates, as cash totals are not directly available[3].

[2] See for instance http://www.econ.yale.edu/~shiller/data.htm

[3] The authors also experimented by using the 2013 income return projected backwards on the basis of IPD's reported income growth rates. Although this initially seemed intuitively more attractive, different outputs resulted and, after discussion with IPD, it was deemed unsatisfactory and, hence, excluded.

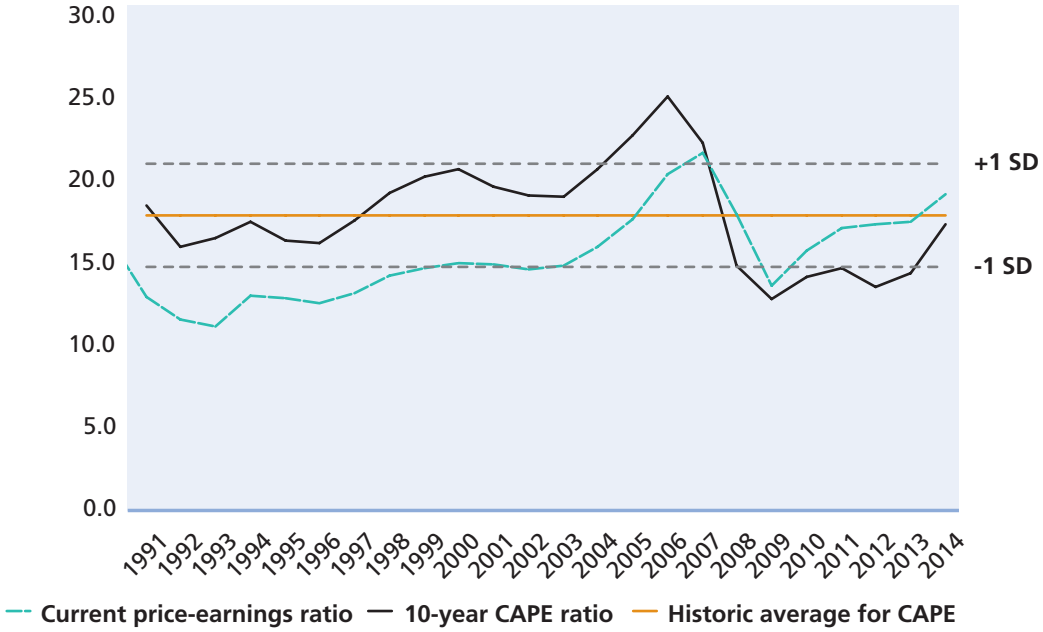
6. ASSESSMENTS OF FAIR VALUE

Alongside a 10-year CAPE measure, a concurrent CAPE ratio has been included, using current year earnings and capital values. This indicator's volatility, at least as originally applied to equities, was one of the reasons the backward-looking CAPE method was devised. However, it provides a useful comparison and is likely to shape immediate investor perceptions of the cyclical position.

CAPE and IPD All Property

Figure 6.1 illustrates the results of the CAPE analysis for the IPD All Property Index.

Figure 6.1: Comparison of IPD All Property CAPE measures



Sources: IPD

The 10-year average CAPE measure suggests a lengthy period of over-valuation from the late-1990s, more significantly so between 2005 and 2007. This trend was sharply reversed in the downturn and ratios had plummeted to new lows by 2009. More recently, UK property values have recovered, though the CAPE measure showed little upward movement until 2014, having been more than a standard deviation lower than the mean at end 2013. Even after a sharp jump in the CAPE during 2014, the All Property measure still suggests that UK property remains on average somewhat under-valued. With real income levels broadly static, the recent leap in the ratio has been primarily the result of rising capital values.

The current price to earnings ratio indicates that the market recovered more quickly post-crisis, with values at or above the historic mean since 2010, whilst 2014 levels are the highest since 2006. This is more in line with evidence from recent capital flow figures and strong investor sentiment. However, it is also in part due to the skew caused by low values in the 1990s and early 2000s, which depress the long-term average. There may be a case for using the 10-year historic average as a benchmark in this case, which, at 17.8, is identical to the backward-looking CAPE, which would indicate that the market was close to fair value in 2014.

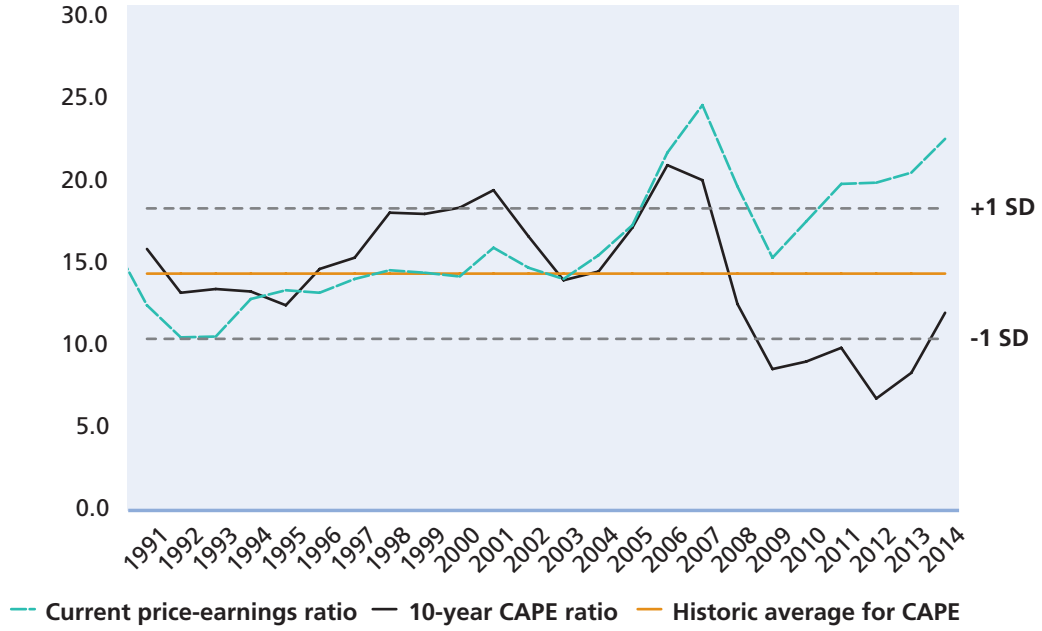
6. ASSESSMENTS OF FAIR VALUE

The difficulty of finding an appropriate yardstick is common to all CAPE measures and is one of the weaknesses of the approach. Together with the volatility of these measures and the relatively low frequency of the annual IPD data used, this means that results must be carefully interpreted. For the IPD All Property Index, CAPE evidence suggests the UK commercial market has been well below fair value in recent years, although there was a significant convergence on the mean during 2014. While this approach cannot deliver absolute precision and the current measure suggests higher valuations, the authors are reasonably confident that it points to a recovering market, not an over-heating one.

CAPE and IPD UK office segments

Repeating the analysis for City of London offices highlights a more volatile market and, also, starker divergence between the current value ratio and 10-year CAPE (Figure 6.2). The City CAPE ratio shows a pattern not dissimilar to UK All Property, with clear undervaluation until 2013, followed by a sharp increase towards the mean in 2014. By contrast, the ratio of current earnings to capital value suggests a much hotter market, with values as high as at any time since the peaks of the last boom.

Figure 6.2: Comparison of IPD City of London offices CAPE measures



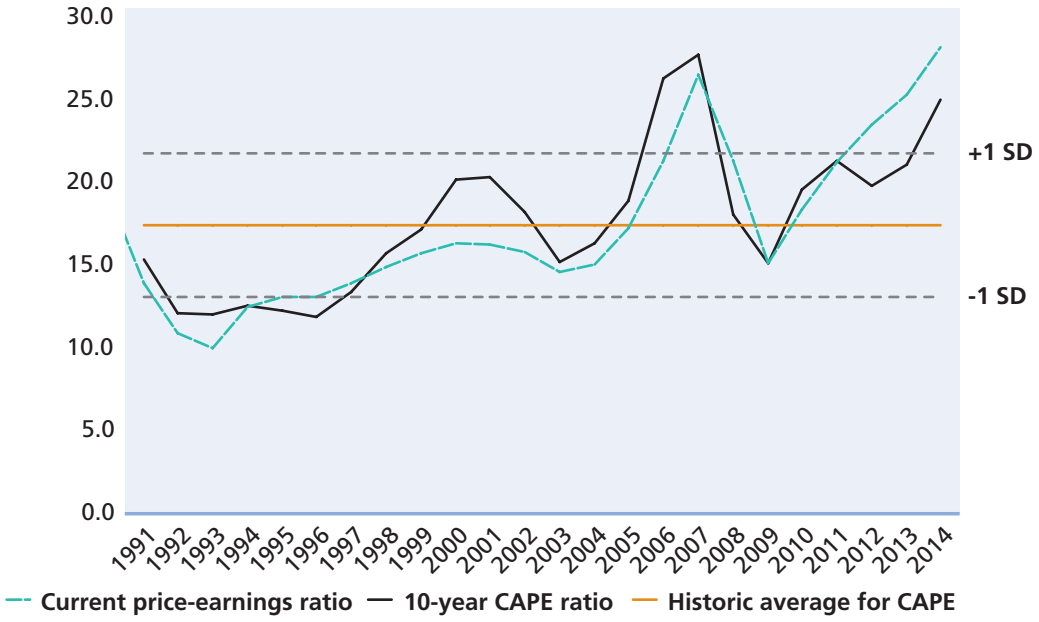
Sources: IPD

Some reservations have emerged regarding the use of IPD data for City offices. In the last decade, the sample for this market has halved, as new investors, often from overseas, have replaced traditional institutions, resulting in fewer buildings being reported in the IPD universe. In the current measure, this is compensated by falling income levels. However, the lags in the 10-year CAPE ratio mean that there will be a continuing weight on historic earnings that relate to a larger stock of properties. It is also arguable that the properties removed will be lower yielding, leading to compositional changes in the sample over the period measured. These changes could distort the CAPE downwards and complicate the evaluation of City offices.

6. ASSESSMENTS OF FAIR VALUE

London West End is not hampered by similar data problems, with the sample both larger and more consistent over time (this segment also includes the Midtown area). The CAPE and current measures are also broadly in line (Figure 6.3). Ratios point most clearly to asset prices above fair value since 2010 using the current measure. The deviation from the mean on the CAPE remained within one standard deviation of the mean until 2014, when the CAPE measures jumped significantly due to rapid growth in capital values. Of all the UK office segments in this analysis, the evidence of over-valuation is strongest in the West End of London.

Figure 6.3: Comparison of IPD London West End and Midtown offices CAPE measures



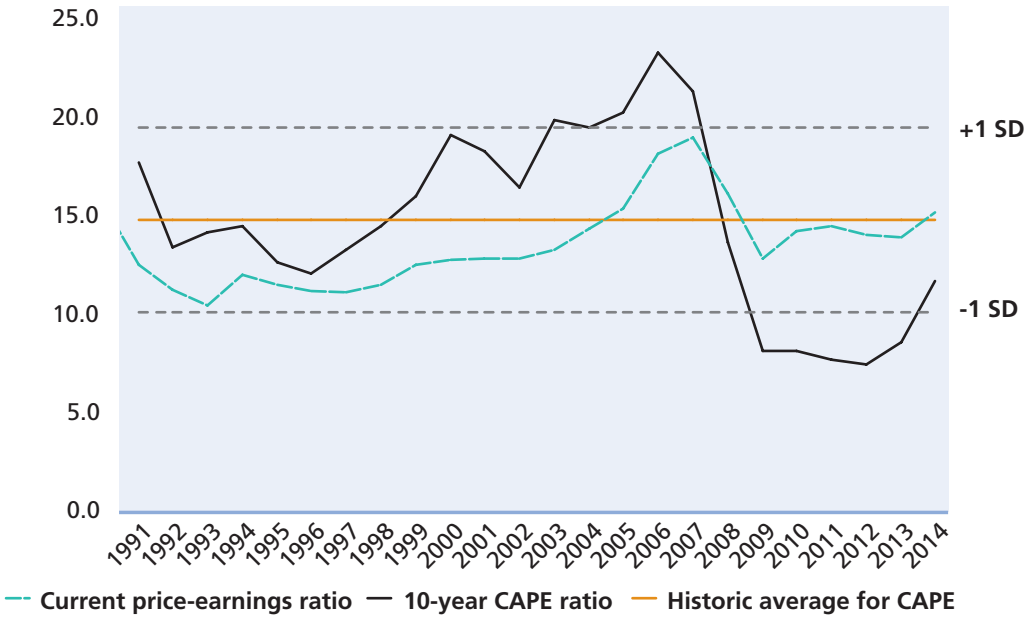
Sources: IPD

The West End results are in line with the view that London has been central in driving the recovery in both the economy and in property, at least until 2014 when a broader upturn was established. This is further confirmed by the results for the other IPD office market segments: the South East and the Rest of UK. These regional markets are a significant part of the UK office universe, accounting for more buildings than the combined Central London sample within IPD, albeit with significantly lower total capital values.

Outside London, the upturn in capital values has been far more slow-moving, while net income has continued to decline over recent years. As a result, Shiller CAPE ratios are still well below historic averages, though, again, a significant improvement was registered in 2014, with the South East's revival most notable (Figures 6.4 and 6.5). There is some evidence of over-valuation in the latest current earnings measures for the rest of UK and the South East. The more pronounced cyclicality of this measure is a common theme in all markets surveyed.

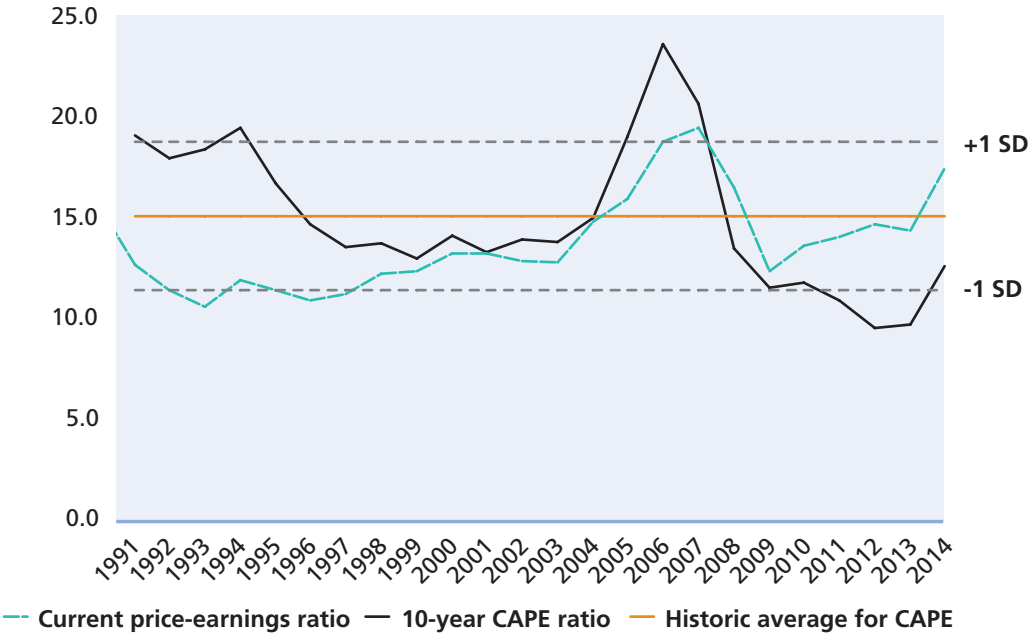
6. ASSESSMENTS OF FAIR VALUE

Figure 6.4: Comparison of IPD South East offices CAPE measures



Sources: IPD

Figure 6.5: Comparison of IPD Rest of UK offices CAPE measures



Sources: IPD

6. ASSESSMENTS OF FAIR VALUE

Conclusions from Shiller's CAPE

In summary, the results from applying Shiller's CAPE to UK real estate provide an interesting perspective. They suggest that the UK property market is still marginally under-valued overall. Nonetheless, the strength of the revival in ratios over the last 12 months has been notable in office markets and there is evidence of over-valuation reappearing in Central London according to this metric. The CAPE approach is considered to be a useful 'rule of thumb' and the 10-year view embedded in the approach appears to provide a more robust standard than the current price-earnings ratio across the markets analysed.

However, there remain important flaws with the approach. Aside from UK IPD data issues and the relatively short perspective in comparison to equities, a reliable historic benchmark is critical to the assessment of fair value using this approach. A full sample mean was used wherever possible (post-1981) but, given profound changes within UK real estate markets over even this period and the swings in CAPE values, it is difficult to gauge how appropriate this is in assessing current performance for each market.

Furthermore, there are questions as to its wider applicability to real estate assets. In particular, a better understanding of the appropriate lag structure – which may not be the 10-year standard used here – in valuing real estate markets will be necessary to develop this approach. Further insights would also be gained from repeating the analysis on more segments and using quarterly data, albeit that this would potentially limit the historic context.

4.2 Building a fair value model

Another approach to assessing fair value is to assess relative value. This is often done by comparing property yields with bond yields, or earnings yields on equities, and analysing the spread relative to historic experience.

However, a static analysis such as this does not account for the near- to medium-term market outlook, or allow for the impact of different investment time horizons. The model outlined below seeks to provide a more comprehensive approach, incorporating forecast rental growth and yield impact into the modelling and also accounting for different investment time horizons. It builds up expected returns, based on the yield at purchase, and the outlook for capital growth, based on forecast rental growth and yield shift, and required returns, based on gilt yields, plus compensation for transaction costs, depreciation, risk and the relative illiquidity of property.

Expected and required returns are compared to determine whether property is over- or under-valued at a point in time. Fair value is defined in terms of the yield at purchase: the yield at which the expected return over a given time horizon is equal to the required return. At this point, the expected total return on property exceeds the return on gilts by an amount that exactly compensates the investor for the additional costs and risk associated with property investment.

It is worth noting at the outset that there are inherent measurement difficulties in estimating required returns. The precise impact of depreciation can vary widely and required compensation for risk and illiquidity will differ between investors, so are essentially intangible – indeed, these are the subject of several separate IPF research papers. The estimates provided here aim to take this research into account; however, it is important to recognise that opinions differ and alternative assumptions, both higher and lower, can also be justified. The framework provided within this paper can readily be adapted for these different assumptions.

6. ASSESSMENTS OF FAIR VALUE

Estimating required returns

The starting point for required returns is the gilt yield, to which is added a premium to reflect the compensation required for depreciation, transaction costs and the relatively higher risk and lower liquidity inherent in property investment.

Gilt yield: The model compares nominal property returns with nominal gilts. For an assumed five-year hold, the five-year gilt is used, and likewise for other assumed hold periods.

This does not pre-suppose that nominal gilts are risk free. Investors are subject to inflation risk, in that future inflation could deviate from the expectation built into market pricing at purchase, whilst overseas investors are subject to exchange rate fluctuations. However, for the purposes of a comparison with nominal property returns they remain the most relevant fixed income benchmark, certainly for domestic investors and, arguably, for many foreign investors in the UK. As both property returns and gilts are subject to inflation and currency risks, there is no explicit allowance for these.

Transaction costs: Fixed costs of 7.0% are assumed, reflecting typical UK market practice (5.75% at purchase, including 4.0% stamp duty, and 1.25% at sale). An annual cost of 0.5% is included to reflect management costs irrespective of time horizon. These costs are annualised and, so, are lower over longer time periods reflecting the reduced impact of fixed costs.

Depreciation: Figures are taken from the 2011 IPF report: *Depreciation of Commercial Investment Property in the UK*. The report estimated rental depreciation and capital expenditure across a range of sectors and segments. An All Property figure of 1.0% per annum is based on the 0.6% for rental depreciation quoted in the IPF report and a weighted (40/40/20) sum of the capital depreciation estimates for office (0.6%), retail (0.4%) and industrial (0.3%). While depreciation is likely to be greater in the early years of a property's life, it is beyond the scope of this paper to estimate a non-linear depreciation schedule, hence the annual estimate is assumed to be constant, regardless of time horizon.

Risk and illiquidity: This will vary for different investors and is essentially intangible at an aggregate level. One approach to measuring the required premium is to analyse the difference between gilt yields and actual/expected property returns over time, after allowing for depreciation and transaction costs. These vary widely over time, given historic fluctuations in the market, so it is difficult to form estimates with confidence, although they tend to be in the range of 1.5% to 2.5%.

For these purposes, a more conservative 3% is used as the base estimate for a five-year hold period, recognising the results from the IPF's historic periodic survey of IFAs, which asked what minimum return is required above a risk-free rate; the highest responses were recorded for the 2% to 3% and 3% to 4% bands[4]. It is assumed that this will reduce for longer-term investors, given reduced investment volatility over longer time horizons.

[4] IPF survey of Independent Financial Advisors, February 2013.

6. ASSESSMENTS OF FAIR VALUE

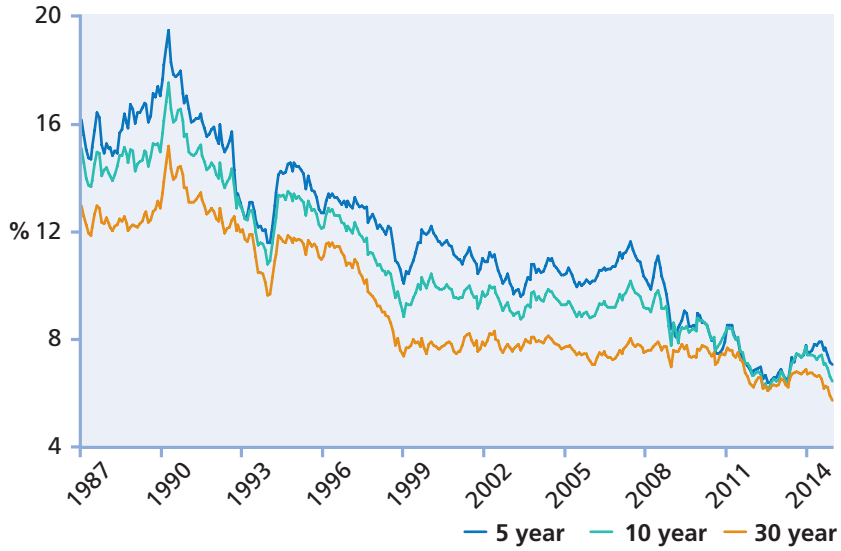
Table 6.1: Estimated annualised required returns for IPD UK All Property Monthly Index series

	5 year	10 year	30 year
Gilt yield	1.2	1.8	2.5
Transaction costs	1.9	1.2	0.7
Depreciation	1.0	1.0	1.0
Risk/liquidity	3.0	2.5	1.5
Total	7.1	6.5	5.7

Note: Gilt yield as at end December 2014, all figures in %

Given falling nominal and real interest rates over a sustained period, required returns have fallen significantly over time[5] (Figure 6.6). In recent months, long-dated nominal gilt yields have hit all-time lows and, so, required returns are commensurately at historic lows for longer assumed hold periods.

Figure 6.6: Gilt yields 1987-2014



Sources: IPD

Estimating expected returns

Total return is determined by the income earned over the period of the investment and by the change in capital value over time.

Equivalent yield: The intention is to capture the average yield over the full investment term and for this reason the equivalent yield is used. However, in the IPD context, income returns tend to be slightly lower than the equivalent yield, so an adjustment is made to reflect this[6].

[5] For this purpose, the risk premium is taken to be constant over time. Higher or lower premia could be justified during episodes of heightened uncertainty, notably during the global financial crisis, or strong confidence, but this would not detract from the falling trend over time.
[6] The average All Property monthly income return since 1987 is 7.13%, whereas the average equivalent yield is 7.97%, a difference of 0.84%.

6. ASSESSMENTS OF FAIR VALUE

Expected capital growth: While the yield is known at the time of purchase, the change in capital value cannot be known with certainty ahead of time and, so, is a function of forecast rental growth and yield impact. JLL's current forecasts are used until the end of the forecast horizon, after which long-term average rental growth is assumed to drive capital growth with no further yield impact[7].

The current forecasts for rental growth reflect a generally positive outlook, given surging growth in employment and low levels of speculative development activity. On the yield side, the JLL forecasts are broadly in line with the findings in the recent IPF paper: Implications for Property Yields of Rising Bond Yields, which noted that in a scenario assuming economic recovery continues over the medium term, consistent with the current consensus view, the impact of an increase in gilt yields from 3% to 4% by 2019 is almost cancelled out by an acceleration in rental growth, so that the equivalent yield is only forecast to rise by 0.25%.

Table 6.2: JLL forecasts for IPD UK All Property Monthly Index (%)

	End 2014	2015	2016	2017	2018	Long run
Equivalent yield	6.4	6.2	6.3	6.4	6.5	6.5
Rental growth		3.0	2.7	2.7	2.6	2.1

Table 6.3: Estimated annualised expected returns for IPD UK All Property Monthly Index series

	5 year	10 year	30 year
Equivalent yield	6.4	6.4	6.4
Adjustment for lower income return	-0.8	-0.8	-0.8
Forecast annual capital growth	2.4	2.3	2.2
Forecast total return	8.0	7.9	7.8

Note: End December 2014, figures in %

Figure 6.7 and 6.8 show how returns have evolved over time for both five- and 10-year time horizons, also illustrating the compositional breakdown and how this has changed over time. The calculations are based on total return as a function of equivalent yield (adjusted for lower income) and capital growth, based on a five- or 10-year hold period beginning at each point in time. The estimates for capital growth are split into annualised rent and yield impact, where actual data are used up until end 2014, and forecasts thereafter[8].

[7] In practice, capital growth is also impacted by depreciation and measured by IPD as net of capital expenditure. However, this is accounted for as part of required return and, so, 'gross' expected capital value growth is modelled here, calculated based on the combined rent and yield impact.

[8] For instance, the forecast capital growth over a 10-year hold from end 2009 reflects expected rental growth and expected yield movement over the 10-year period to end 2019. Annualised rent and yield performance take into account actual growth to end 2014 and forecast growth to end 2019.

6. ASSESSMENTS OF FAIR VALUE

Figure 6.7: Rolling actual/forecast returns for five-year hold

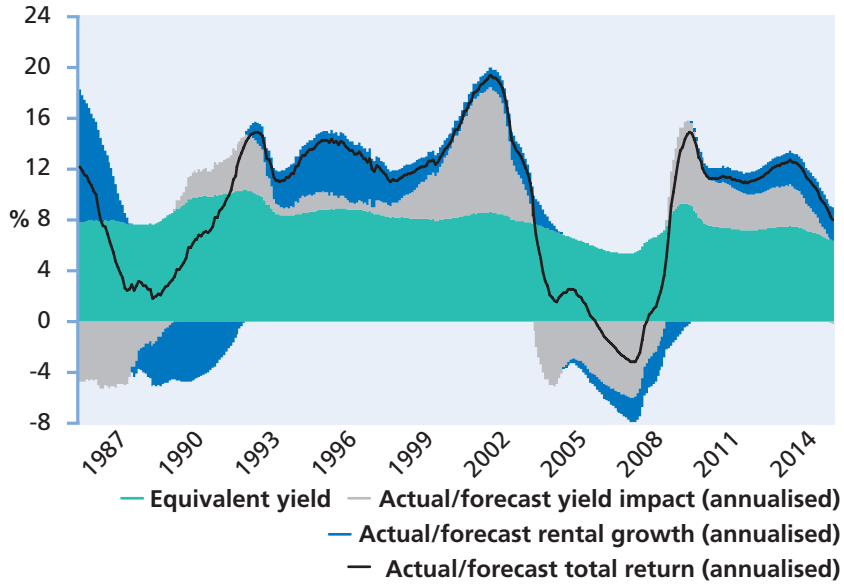
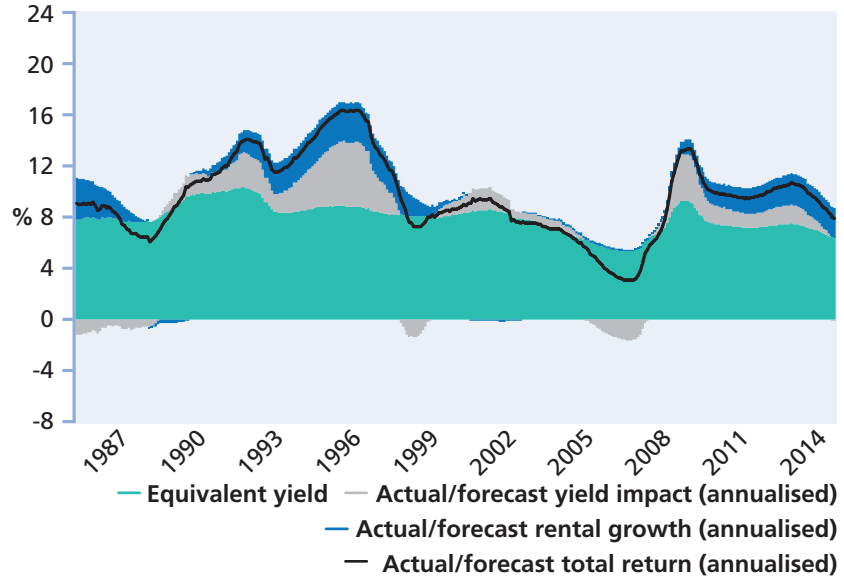


Figure 6.8: Rolling actual/forecast returns for 10-year hold



Greater volatility is immediately apparent in the five-year case, with the early 2000s identified as the best time to have bought property in order to benefit from the subsequent market upswing in 2004-2007, before exiting prior to the onset of the crisis. Not surprisingly, the lowest five-year return came from acquiring at the top of the market in 2007. Expected returns rose substantially thereafter, with mid-2009 identified as the optimal time to have acquired property to take advantage of the current upswing. Expected returns have fallen more recently, since reaching around 10.5% in the first half of 2013, declining as the equivalent yield falls, in turn reducing expected income returns and the outlook for capital growth.

6. ASSESSMENTS OF FAIR VALUE

Comparing expected and required returns to establish fair value

The modelled estimates of expected and required returns are brought together in Table 6.4 to assess whether the market is over- or under-valued according to this metric.

Table 6.4: Assessing fair value for UK IPD All Property

	5 year	10 year	30 year
Required return	7.1	6.5	5.7
Forecast total return	8.0	7.9	7.8
Equivalent yield	6.4	6.4	6.4
Yield equating required and forecast return	6.2	5.9	5.1
Estimated over/under-pricing (negative indicates under-valued)	-3.6	-8.4	-19.9
Alternative: adjustment to bond yield	+90bps	+140bps	+210bps

Note: End December 2014, figures in %

With required returns for a five-year hold at 7.1% and expected returns at 8.0%, the market is assessed to be under-valued. While the equivalent yield stood at 6.4% at end 2014, it is shown that an investor taking this approach could justify paying a lower yield and that fair value would be achieved with an equivalent yield of 6.2%. At this point, income returns would be lower and forecast capital growth would be weaker, due to the higher price at acquisition and the same forecast exit yield and rental growth.

This finding of under-valuation is echoed by an assessment over longer assumed hold periods of 10 and 30 years, with the degree of under-valuation ranging from 4% to 20%. Investors with a longer time horizon are shown to be able to justify acquiring at lower yield levels, owing to a lower risk premium and reduced annual transaction costs, with the yield estimated to be able to fall as low as 5.1% before the market would be over-valued for an investor taking a 30-year view.

Given significant historic volatility, the five-year finding could be interpreted as within a broad range of fair value, but the 10- and 30-year results give a stronger indication of under-valuation.

Overall, the results demonstrate that, despite recent yield compression, the overall UK property market remains good value relative to the very low rates on offer from investment in gilts. The corollary is that fair value could also be restored by rising gilt yields, in the absence of further declines in the property equivalent yield. Table 6.4 also shows how much gilt yield would need to rise by to restore fair value through this means.

Fair value over time

Figures 6.9 and 6.10 provide a historic perspective on expected and required returns, bringing them together to show when the market has been over- or under-valued. Again, five- and 10-year hold periods are examined separately, but the results are largely consistent across the two.

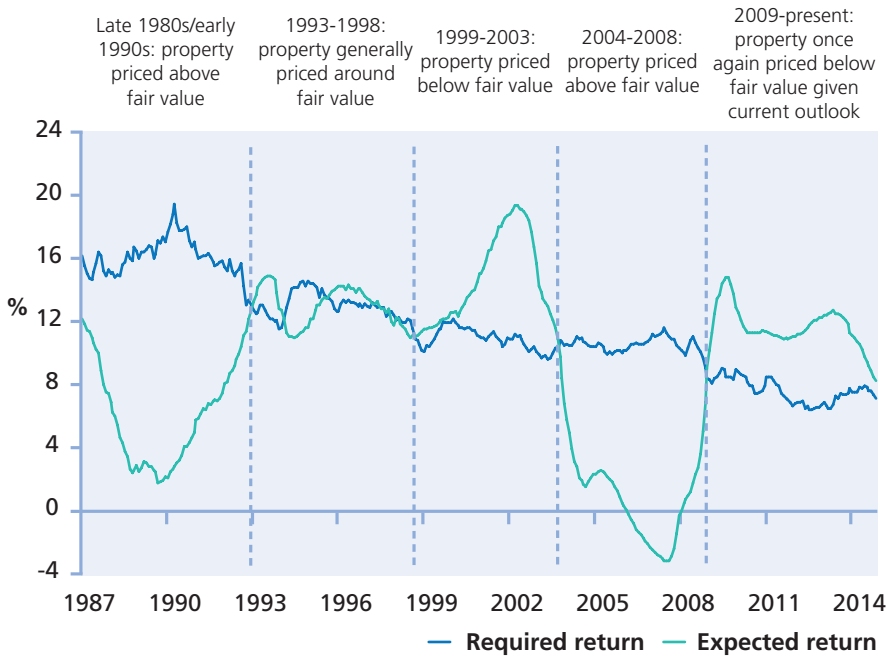
The market has seen lengthy periods of over- and under-valuation, coinciding with recognised cycles. The market experienced a strong upswing during the mid-1980s but was over-valued later in the decade, which lasted until well into the 1990s, given the enduring nature of the recession and its impact on rents and capital values. Equivalent yields peaked at 10.4% in 1992 and negative rental growth persisted until 1995. Gilt yields were also much higher at this time, partly reflecting higher inflation expectations.

6. ASSESSMENTS OF FAIR VALUE

From 1993, investors were rewarded with a period of inward yield movement that more than offset rental weakness. Property was generally under-valued during the 1990s, owing to sustained rental expansion. Thereafter, the assessment is heavily impacted by the crisis. For a 10-year hold, the optimal entry point was 1997, while for a five-year hold the market was under-valued until 2002.

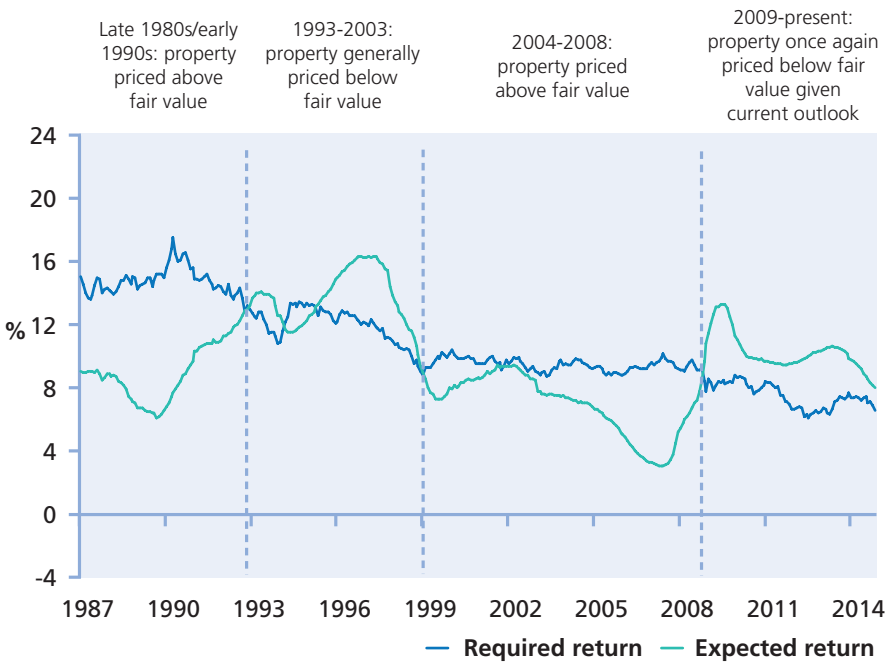
The results show that fair value was restored in December 2008. Yields were still rising at this time, peaking at 9.3% in June 2009. Late 2009 was the optimal time to buy and expected returns have fallen since, driven down by yield compression, although this was interrupted by a period of rising yields and consequently strong returns from buying in 2012-2013.

Figure 6.9: Historic assessment of fair value based on five-year hold



6. ASSESSMENTS OF FAIR VALUE

Figure 6.10: Historic assessment of fair value based on 10-year hold



Applying the analysis to prime City of London offices

Having established a general methodology and applied it to the overall UK market, the prime market is reviewed, given its greater relevance to new investor types.

Required return estimates for City of London offices are presented in Table 6.5 and differ in two ways. Firstly, a lower risk premium is assumed to account for reduced leasing and location risk and higher liquidity in a prime City building compared to average UK property. This is evidenced by much lower prevailing yields in the City compared with UK All Property.

Table 6.5: Estimated annualised required returns for City of London prime offices

	5 year	10 year	30 year
Gilt yield	1.2	1.8	2.5
Transaction costs	1.9	1.2	0.7
Depreciation	1.3	1.3	1.3
Risk/liquidity	2.0	1.7	1.0
Total	6.4	6.0	5.5

Note: End Q4 2014, figures in %

Secondly, office depreciation is higher, at 1.3% per annum (0.8% rental depreciation plus 0.5% capital expenditure per IPF 2011 paper)[9].

[9] The paper reports a much lower depreciation figure of 0.7% for City of London office (0.5% rental depreciation and 0.2% capital expenditure). Given the large divergence it was decided to use the higher figures for overall offices.

6. ASSESSMENTS OF FAIR VALUE

Expected returns are calculated in the same way and are set out in Tables 6.6 and 6.7. It should be noted that the prime yield, typically quoted as a net initial yield, is effectively an equivalent yield, given that it assumes market rents prevail throughout with no adjustment for lower income returns.

Table 6.6: JLL forecasts for City of London offices (%)

	End 2014	2015	2016	2017	2018	Long run
Equivalent yield	4.25	4.00	4.00	4.25	4.25	4.25
Rental growth		9.60	4.38	3.50	1.35	2.00

Table 6.7: Estimated annualised expected returns for prime City of London offices (%)

	5 year	10 year	30 year
Equivalent yield	4.25	4.25	4.25
Forecast annual capital growth	4.1	3.1	2.4
Forecast total return	8.4	7.3	6.6

The near-term forecast for strong rental growth reflects very strong employment growth in London and very limited speculative supply. In the long term, despite evidence of negative real rental growth in the City since the 1980s, 2% per annum is considered a more realistic long-term assumption for nominal growth, given rising building costs and a scarcity of developable land in the City.

The forecast for yields reflects the strong rental growth outlook, which has previously tended to coincide with yield compression, the persistently low interest rate environment and the weight of demand for London property from large-scale institutional investors.

Table 6.8 shows the results for the five-year and 30-year hold periods. As in the overall UK case, despite significant recent yield compression, the City market remains under-valued. The estimates suggest that the degree of under-valuation is slightly greater than for the overall UK market for a five-year view but to a lesser degree for a 30-year view.

Table 6.8: Assessing fair value for prime City of London offices (%)

	5 year	10 year
Required return	6.4	5.5
Forecast total return	8.4	6.6
Equivalent yield	4.25	4.25
Yield equating required and forecast return	3.9	3.7
Estimated over/under-pricing	-7.8	-13.4
Alternative: adjustment to bond yield	+200bps	+110bps

6. ASSESSMENTS OF FAIR VALUE

As in the generalised All Property case, an investor with a longer time horizon will be willing to pay more, with a fair value yield for the 30-year case at around 3.7%, compared with around 3.9% for the five-year case. This is a smaller difference than in the overall UK estimate, which can be explained by the influence of a strong rental growth outlook in the near term, driving a larger difference between five- and 30-year annualised capital growth forecasts.

The results suggest that recent yield compression can be explained as a rational response from both an 'optimising' short-term investor to strong rental growth expectations, as well as a longer-term investor with lower transaction costs and risk premia. However, it can also be deduced that, in the absence of a strong rental growth outlook, the shorter-term investor would not be prepared to support yields at this low level, while a longer-term investor could still justify pricing around this level, so a larger gap would open up between the two fair value yield estimates.

7. NEW FRONTIERS – ADAPTING THE APPROACH FOR A SAFE-HAVEN INVESTOR

As previously explained, global investment is rising and there is a strong focus on the major gateway cities. Emerging investor types, notably sovereign wealth funds, may have different motivations and return expectations compared to traditional investors looking to optimise over the short- to medium-term.

While the results from a conventional relative value model using different time horizons have been explored, the model can be further adapted to better suit the perspective of an investor looking for international diversification and a store of wealth over the very long term.

To present a plausible limiting case for the most significant global cities for property investment, the model is adapted on the basis that property is held in perpetuity. Further, the longest dated nominal government bond is used as the comparator. For the UK, this is the 50-year gilt.

For transaction costs, the impact of stamp duty tends to zero in perpetuity, so an assumed management cost of 50 basis points represents the sole transaction cost. For depreciation, in the absence of city-specific estimates, the London figure is used.

In the limiting case, it is assumed that no compensation is required for risk and liquidity. While this is an extreme assumption, used for the purpose of illustration, there are sound reasons why the risk premium could be much lower for long-term safe-haven investors. In addition to reduced volatility of returns over the longer time frame, in recent years, the European experience has shown that sovereign bonds carry both long-term inflation and solvency risk. The world was a very different place 30, let alone 50, years ago and it is reasonable that many would perceive property to at least partially obviate some of this risk, given its nature as a real asset that will retain value notwithstanding changes in the financial, macroeconomic and political landscape. Furthermore, regardless of property's direct inflation hedging characteristics, it seems reasonable to assume that rents will keep up with inflation over the very long term in these major global hubs, whereas coupon payments remain fixed in nominal terms.

In modelling expected capital growth, short- to medium-term forecasts are ignored in favour of average long-term rental growth or an assumed national inflation rate. For the City of London, the UK target inflation rate of 2% is used, whilst, for the West End, 2.5% to take account of that market's stronger long-term capital growth and structurally constrained office supply in the core market. For New York, 2% is likewise adopted, whereas lower growth estimates are applied for Europe and Japan to reflect the lower inflation experience and outlook.

Table 7.1: Required return estimates for prime offices in selected cities – perpetual hold (%)

	City of London	West End	New York	Paris CBD	Tokyo
Bond yield	2.5	2.5	2.6	1.5	1.5
Transaction costs	0.5	0.5	0.5	0.5	0.5
Depreciation	1.3	1.3	1.3	1.3	1.3
Risk/liquidity	0.0	0.0	0.0	0.0	0.0
Total	4.3	4.3	4.4	3.3	3.3

7. NEW FRONTIERS – ADAPTING THE APPROACH FOR A SAFE-HAVEN INVESTOR

Table 7.2: Expected return estimates for prime offices in selected cities – perpetual hold (%)

	City of London	West End	New York	Paris CBD	Tokyo
Equivalent yield	4.25	3.75	3.5	3.75	3.3
Forecast annual capital growth	2.0	2.5	2.0	1.5	1.0
Forecast total return	6.25	6.25	5.5	4.75	4.3

Table 7.3: Assessing fair value for perpetual hold in selected cities (%)

	City of London	West End	New York	Paris CBD	Tokyo
Required return	4.3	4.3	4.4	3.3	3.3
Forecast total return	6.3	6.3	5.5	4.8	4.3
Equivalent yield	4.25	3.75	3.5	3.75	3.3
Yield equating required and forecast return	2.3	1.8	2.4	1.8	2.3
Estimated over/under-pricing	-47	-52	-31	-52	-30
Alternative: adjustment to long dated bond yield	+200bps	+200bps	+110bps	+150bps	+100bps

These results demonstrate that under the limiting case of a perpetual hold and a zero risk premium, a long-term, safe-haven investor could justify paying far above current market pricing. Investors adopting this stance could justifiably bid prime London office yields down significantly further, closer to or even below 2.0%. A similar result is found for other cities.

This indicates that, for a certain set of investor preferences, the market remains good value despite recent yield compression and that yields in the major global cities could be driven lower than previous floors, which were achieved in a very different environment.

While the assumptions are intentionally at the limiting point of a plausible range, it is important to note that, in large part, the result is driven by the extremely low level of long-term interest rates. The UK 50-year gilt yield stands at 2.5% at the time of writing (March 2014), having fallen to 2.1% in recent weeks, the lowest level ever recorded. Given such low fixed income returns, a relative value measure such as this will inevitably present property in a favourable light. Until 2010, 50-year gilt yields were generally around 4% and, at this level, required returns were much higher, closer to 6% using the assumptions as outlined for a perpetual hold. At this level, prime yields of around 4% could be justified. Accordingly, as very long-term rates are now 2% lower, this modelling can thereby rationalise a much lower prime yield.

8. CONCLUSIONS

Global real estate investment is increasing, prompted by economic recovery and a cyclical upswing. New investors have emerged and are taking a larger share of market activity as they grow their real estate portfolios. This has been highlighted by a spate of large-scale, high-profile acquisitions, with sovereign wealth funds particularly active in acquiring larger lot sizes in a manner that has not been seen before.

Against this background, this study has aimed to address a number of questions on the drivers for this rise in demand, its durability over time, the impact on market pricing and implications for fair value, including whether traditional methods of analysis need to be re-appraised. The paper concludes with some comments on each of these issues in turn.

Durability of the rise in demand

The rise in demand can be traced to global macroeconomic trends, most importantly the rise of savings in emerging markets, that has resulted in the growth of the investor base in these countries, and the rise of sovereign wealth funds, being a principal channel for managing public savings. This rise in savings has been assessed by the IMF as being the dominant factor in driving global real interest rates lower since the turn of the century.

In terms of the durability of this trend, at this point in time all signs are that these funds will become a permanent feature of the landscape, particularly in major cities. For many of these funds, real estate remains a small share of overall investment and there is substantial scope for further growth, from both rising allocations to real estate and, also, through rising assets under management overall.

While a cyclical market correction could be expected to dampen demand for a period, for the effect to be unwound to a significant degree in the long-term, the underlying drivers would need to reverse and this appears unlikely. While the recent fall in the oil price may have impacted on some producers, the IMF notes that there is no reason to believe emerging market savings are going to significantly decrease, nor that the related portfolio shift toward government bonds at the expense of equities will abate. As such, while global real interest rates should rise slightly as the global economic recovery strengthens, they will remain at lower levels than has been seen historically.

Impact on pricing

Despite the strength of transactional activity, it is not possible to discern an impact on market pricing that could be directly attributed to the rise of new investors. This may be due to the generalised market upswing currently impacting all markets, potentially obscuring long-term changes, so it will be worthwhile to continue monitoring over time. However, it is also likely to reflect the ensuing effect of lower yields in key centres reverberating across the wider market: if investors are unable to access product due to yield compression in core markets, they move elsewhere – which compresses yields in smaller, less liquid cities and across the wider market.

What is fair value?

Yields have moved inwardly over the past two years and, in some cases, are already at, or approaching, previous floors set in 2007. Despite this, both fair value methodologies explored in this paper find that UK property is marginally under-valued although, as yields compress, this is becoming more finely balanced.

8. CONCLUSIONS

Depending on the time horizon apted, it is estimated that both the overall UK and prime City of London markets are between 5% and 20% under-priced, although the findings necessarily depend on the precise assumptions and forecasts used.

Recent yield compression can be viewed, therefore, as a rational and, in some cases, overdue response to an improving demand in a lower interest rate environment. However, the market would move to an over-valued position if it experienced greater than 25 to 50 basis points of further yield movement and it is worth noting that, as expected rental growth emerges, the scope for further rapid growth is reduced.

An alternate way of interpreting the analysis presented is that the market anticipates a meaningful uplift in base and long-term interest rates, with current pricing reflecting this balance. The analysis presented suggests that a rise in bond yields of 100 to 200 basis points could be accommodated before pushing the market to an over-valued position.

Is the conventional model still valid?

The conventional model can still be seen as valid, but it is certainly worth revisiting traditional assumptions about holding periods and risk perception. In doing so, it may be shown that new types of investors could justify significant pricing premia above market norms. These buyers have played a part in driving down yields and, on a relative value basis, yields could justifiably be driven lower still, well below previous yield floors.

This is not to say that prime yields will reach, or even approach close to, this point, as this would require a seismic adjustment for the market as a whole. Historic pricing trends indicate that such a shift would not happen in London – or, indeed, in any other global market – in isolation and, furthermore, a lower required rate of return for a certain class of investors is not sufficient to drive down the yields across the market as a whole.

However, it does point to the relative attractiveness of property in the face of persistently low global real interest rates, especially for investors looking for long-term store of value characteristics. Prevailing near-zero real interest rate levels point to a weight of savings searching for assets and how these forces evolve over time will form a crucial part of the backdrop for property investment in the UK and globally over the next decade. Should global growth remain sluggish and long-term interest rates continue at record lows for longer than expected, while safe-haven investors continue to accumulate cash reserves in need of deployment, then not only can prime yields be expected to remain low, but further downward movement below previous yield floors is possible.

Questions for further research

This paper touches on a number of issues that warrant further investigation, including:

- To what extent do target returns differ between investor types?
- Are target returns reducing in response to lower real interest rates?
- What is the planned hold period for different investor types?
- What is the desired future allocation to property for different types of investor?
- How are pricing signals transmitted between markets and how strong is yield arbitrage between markets within countries and across borders?
- Is there evidence of changes in lot size premia in international markets?

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