

Real Estate & Planning

Working Papers in Real Estate & Planning 09/11

The copyright of each Working Paper remains with the author.
If you wish to quote from or cite any Paper please contact the appropriate author.
In some cases a more recent version of the paper may have been published elsewhere.

The Basis of Valuations for Secured Commercial Property Lending in the UK

Neil Crosby and Cathy Hughes

School of Real Estate & Planning, Henley Business School, University of Reading,
Whiteknights, Reading RG6 6UD, UK

Corresponding author: cathy.hughes@rdg.ac.uk

Tel : + 44 (0)118 378 6036

Fax : + 44 (0)118 378 8172

The basis of valuations for secured commercial property lending in the UK

Abstract

In the context of the financial crash and the commercial property market downturn, this paper examines the basis of valuation used in the UK commercial property lending process.

Post-crisis there is discussion of countercyclical measures including the monitoring of asset prices; however there is no consideration of a different approach to property valuation. This paper questions this omission, given the role that valuations play in the bank regulatory process. The different bases of valuation available to lenders within International Valuation Standards are identified as Market Value (MV), Mortgage Lending Value (MLV) and Investment Value (IV), with MV being the most used in the UK. Using the different bases in the period before the financial crisis, the UK property market is modelled at a national office, retail and industrial/warehouse sector level to determine the performance of each alternative valuation basis within the context of counter-cyclical pressures on lending. Both MLV and IV would have produced lower valuations and could have provided lenders with tools for more informed and prudent lending. The paper concludes by recognising some of the practical issues involved in adopting the different bases for the bank lending role but recommends a change to IV.

Keywords: Commercial property valuation, secured lending, Mortgage lending Value, Market Value, Investment Value

1. Introduction

In January 2011, the chair of the UK Independent Commission on Banking reported progress with his committee's review of the UK banking system. In scoping the problem he placed real estate at its heart.

“The shock from the fall in property prices, even from their inflated levels of a few years ago, should not have caused havoc on anything like the scale experienced. Rather than suffering a ‘perfect storm’, we had severe weather that exposed a damagingly rickety structure”. (Vickers, 2011, p2)

This is the only time that real estate or property is mentioned in the main text¹; although property is identified as central to the financial crisis, reviewing the approach to real estate in secured lending is not seen as part of the solution. In this paper we consider whether reconsidering the basis of valuation of real estate can prevent future ‘havoc’.

Real estate plays an important, and well documented, role in bank lending. Goodhart (2010) notes that real estate is the most common form of collateral for lending (whatever the purpose of the loan). Internationally, the Bank of England estimate that one-third of lending by UK banks world-wide is to the commercial real estate sector (BoE, 2010).

¹ Property is referred to in one footnote as to the reason why retail banks are also “risky” – again part of the problem.

Also well documented are the problems now being faced as a result of these loans. In December 2010, the Bank of England reported that a significant number of commercial real estate loans in the UK were in negative equity (BoE, 2010). Maxted and Porter (2011, p 23) found that in mid-year 2010, 16% of loans in the UK commercial property market were in breach of financial covenants; these loans are estimated to be worth around £34 Billion. 46% of these were in breach because of the Loan-to-Value (LTV) covenant. Before the crisis the maximum number of loans in technical breach was less than 2.5% and often less than 1% (Maxted and Porter, 2011).

There were warnings sounded prior to the downturn. In 2007 the Bank of England highlighted the vulnerability of financial markets caused by the increased ease of borrowing and the associated asset price growth in commercial property markets (BoE, 2007). There is also an established literature which identifies the role of financial liberalisation and credit expansion in causing bubbles in asset prices (see Allen and Gale, 1999 and 2000). The same literature also describes the inevitability of the bubble bursting with consequential collapse of stock and real estate markets.

It is within this context of asset price bubbles and crashes that this paper examines the role of valuations in the commercial property lending process, specifically focusing on the basis of valuation. The aim of the initial part of the paper is to understand some of the influences and pressures which cause bubbles in the first place and potentially impact on valuations, to establish the bases of valuation used in bank lending and the extent to which there is any discussion of revision to the basis of valuation in future crisis prevention.

This is followed by a case study of the UK commercial property market to examine the indicative level of valuations produced by the different possible bases in the pre- and post-financial crisis period. The discussion of the results focuses on the effectiveness of each of these bases for the bank lending role, including the practicalities of adopting each model. The paper then makes recommendations on the role that a different approach to property valuations could play in helping to achieve the first aim of the UK's Independent Commission: "to reduce the probability and impact of systemic financial crises in the future" (Vickers, 2011, p 2)

2. The behavioural context

While standard neo-classical theory might suggest that asset price bubbles do not exist, even the proponents of the efficient market theory agree that the behaviour of market participants can affect markets. Abreu and Brunnermeier (2003, p173) draw on the behavioural finance literature to contend that market bubbles survive due to the behaviour of actors subject to "animal spirits, fads and fashions, overconfidence, trend chasing and related psychological biases that might lead to momentum trading, trend chasing and the like." This leads to market participants, despite understanding that markets will eventually collapse, riding the bubble and generating high returns with the goal of exiting just before the crash. Alongside this, McAllister *et al* (2008) document the pressures on fund managers to 'place money' in the heated UK commercial real estate investment market of 2005/6.

Under the efficient market hypothesis, well informed arbitrageurs will act to correct any actual or even potential mispricing (Fama, 1965). However, there is a significant literature on the limits to arbitrage. For example, Brunnermeier (2001) and Shleifer

and Vishny (1997) identify principal-agent problems, including the constraints of using bank finance by traders, to limit the ability of traders to exploit arbitrage possibilities which can have “a profound impact on asset’s price process” (Brunnermeier, 2001, p205).

Allen and Gale (1999) suggest that risk shifting further enhances the ability of bubbles to survive longer than neo-classical theory suggests they should. The use of debt and the limited liability of both investors and fund managers, encourages them to take risks as they share in the returns but do not take an equal share in the losses. They may suffer reputational damage but Jensen and Meckling (1976) indicate that the incentives and rewards outweigh reputational risk. Likewise, the study of the commercial real estate investment market by Graff and Webb concluded that buyers rewarded with outcome-based fee structures led to “frenzied acquisitions and overbidding” in a market where demand exceeded supply (1997:30).

This literature all points towards behaviour that is very pro-cyclical and to the need for counter-cyclical measures; the next section considers the options and the extent to which these include the basis of valuation.

3. Crisis prevention and valuations

Countercyclical measures are the focus of attention post-crisis, not least by the Basel Committee on Banking Supervision of the Bank for International Settlements (BIS) which provides the global regulatory framework for banking. These measures are centred on the minimum capital requirements for lenders which are currently set out in Basel 2 (BIS 2005). Through these requirements, Basel 2 aimed to manage the risks taken by lenders and so protect the customers’ funds with which banks lend, as

well as maintaining the viability and resilience of the banking sector to economic shocks. This framework was implemented by the EU in 2007 via two main directives which together are known as the Capital Requirements Directive or CRD (EU 2006a and 2006b). In turn, this is implemented in the UK by the Financial Services Authority (FSA) under its wide statutory powers of rule-making.

However, post crisis BIS is strengthening regulation through Basel 3 largely to try and reduce the systemic risks associated with procyclicality. As part of this strengthening, a countercyclical buffer is to be introduced which will require national authorities to monitor key indicators of system-wide risk, particularly the credit/GDP guide and mean that banks must hold additional capital where there is a build-up of such risk. However, while authorities are encouraged to consider other indicators, there is little support here for countercyclical measures that relate to property.

Although the guidance gives deviations from the trend of property prices as a potential indicator to use in the decision to build-up the buffer, the view of BIS is that “deviations tend to narrow way ahead of the emergence of financial stains, suggesting that they would start releasing the buffer too early.” (BIS 2010; p9).

However, there is strong support in the wider literature for varying capital requirements on the basis of changing asset prices as well as credit growth, written both before the crisis (see Goodhart 2005) and since (see for example Davis and Karim 2010). This approach has been taken in Spain and has been credited with lessening the impact of the financial crisis there (Barrell *et al* 2009)².

² However, at the time of writing, Spain along with Portugal are being increasingly identified as a potential case for a bailout following Greece and Ireland within the Eurozone.

There is discussion in the literature on countercyclical measures more directly related to property. Goodhart (2010) exemplifies this in his support for the use of countercyclical measures centred on loan-to-value (LTV) and loan-to-income (LTI) ratios. However, he actually advocated the use of pro-cyclical mark-to-market mechanisms for the valuation of assets, perhaps because he saw the alternative as being a reversion to the (once common) use of historic accounting methods. Initially there also seemed to be support for LTV/LTI based measures in the UK. The Turner Review (2009) was the regulatory authority's report on what went wrong and what measures could be implemented to lessen the possibility of it happening again; a key suggestion was to vary LTV and LTI ratios over the property cycle so reducing the ratios when property prices are rising strongly and vice versa. The study of bank lending on commercial property by Maxted and Porter (2010) showed that this risk mitigation approach was not one used by lenders during the period between 1998 and 2007 as lenders' maximum LTVs in the UK market remained very stable at around 80% LTV; they only fell in the post crisis era so enhancing the cycle rather than acting against it. (See Figure 1). In any event, a more recent discussion document from the UK regulator suggests that it is reluctant to engage in such direct product regulation, in the residential market at least (FSA 2010), preferring to focus on measures to ensure loans are affordable.

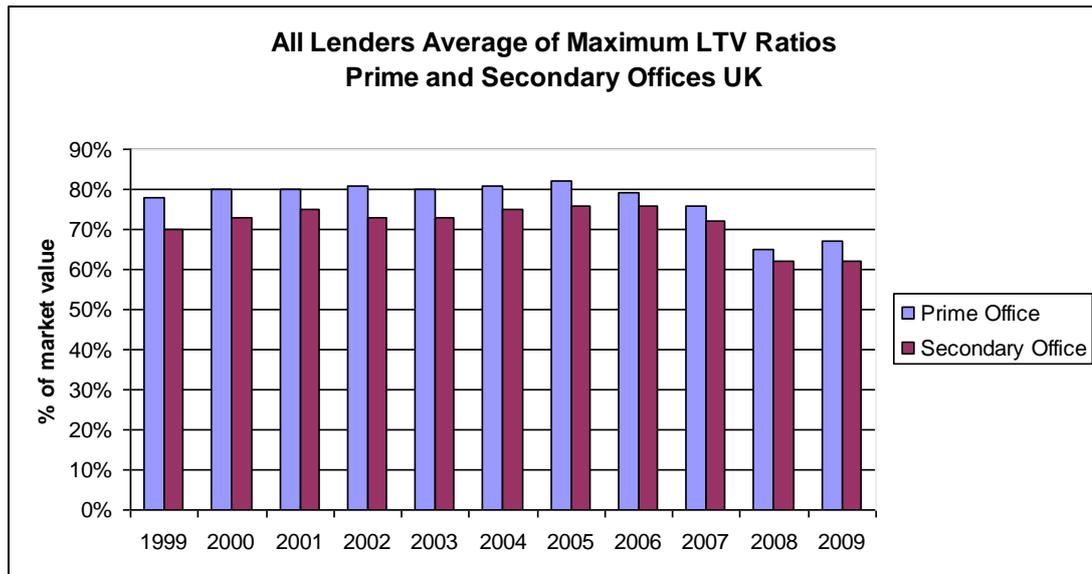


Figure 1 – Maximum Loan to Market Value Lending Ratios for Prime and Secondary Offices – All Lenders 1999 to 2009. (Source Maxted and Porter, 2010)

This discussion reveals some appetite for monitoring asset prices and related ratios as part of countercyclical measures, However, nowhere does this include a different approach to property valuation itself. This is despite the fact that it does have a significant part to play in the bank lending process and in fuelling asset price bubbles. This role is discussed in the next section.

4. The role of property valuations in the lending process

Property valuations contribute to the bank lending process on a number of levels. First, where property is used as security for loans, they are used in individual lending decisions and to track the progress of loans. At as macro level, they are an integral part of capital adequacy systems. Relevant to this are the two alternative approaches to minimum capital requirements within Basel 2 known as the standardised approach

and the internal ratings based (IRB) approach which have differing approaches to the risk weighting of real estate loans which centre on the valuation. The reforms in Basel 3 leave these aspects unchanged.

In the standardised approach, risk weightings are fixed. Commercial loans attract a 100% weighting but there are exceptions for well developed and long established markets which may attract a 50% weighting for elements of the loan below a 50% ratio of loan to Market Value (MV) or 60% of Mortgage Lending Value (MLV). The IRB approach allows lenders to make their own internal assessment of risk by considering various risk drivers; these are probability of default, loss given default, exposure at default and maturity. Under this approach it is possible for a loan on commercial real estate to attract a risk weighting as low as 30%.

Within this framework, real estate that is acting as collateral for a loan must be valued by an independent valuer to identify its MV or MLV and risk weightings are affected by the LTV ratio of outstanding loans on these properties. As Van Order (1990) noted, LTV acts as a buffer against risk and is a key indicator of the risk of default and the extent of loss in the event of a default.

Panagopoulos and Vlamis (2008) remark that real estate lending and valuation are not well handled within Basel 2. In particular, they criticize the lack of attention paid to valuation methods. However, valuation method is a means to answering particular valuation questions and these questions are posed by the different definitions of value. Therefore it is the basis, not the method, that dictates the valuation result, within normal confines of valuation accuracy (RICS/IPD, 2009), and which should be the centre of attention. These bases of value are well developed internationally and

are set out in both the international valuation standards (IVS, 2007) and within the RICS UK national standards.^{3 4}

5. Bases of valuation in secured lending

MV is an exchange price concept with no shelf life beyond the date of valuation. It is perceived generally to be both observable and objective in that it can be related to actual transactions taking place in a market and the valuer is therefore a scorekeeper and not a market maker (Baum and Crosby, 2008). However, it has its critics in the context of secured lending. Market values track the cycle and, as they are central to legitimising and sanctioning loans, and go hand in hand with the increased bank lending and inflated prices noted earlier. This relationship was expounded by Borio *et al* (2001) and more recently by others such as Barrell *et al*, (2009). Borio *et al* (2001) extended their concerns to include short term cash flow approaches and their

³ Market Value is the estimated amount for which an asset should exchange on the date of valuation between a willing buyer and a willing seller in an arm's length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently and without compulsion. (RICS, 2008).

⁴ The mortgage lending value shall mean the value of the property as determined by the valuer making a prudent assessment of the future marketability of the property by taking into account long-term sustainable aspects of the property, the normal and local market conditions, the current use and alternative appropriate uses of the property. Speculative elements should not be taken into account in the assessment of Mortgage Lending Value. Mortgage Lending Value shall be documented in a transparent and clear manner. (EMF, as set out in RICS, 2008)

tendency to promote pro-cyclicality. Such disquiet is central to the current drive to find countercyclical measures that can be used to prevent a recurrence of the recent crisis.

In this context it may seem that alternative valuation methods such as MLV have a role to play. MLV differs from MV in that it is a concept aiming to provide a value that is stabilised through time. Its roots are in mainland Europe; consequently the UK and some mainland European valuation traditions have clashed as markets globalise and more consistency of practice is sought (JLL, 2008). MLV was described by Borio *et al* as being “designed to produce more stable valuations” (2001: p36) because of its use of long term trends and discount rates. Similarly, Quentin (2009) advocated the use of MLV as a means of evening out the peaks and troughs of M V. Certainly, Lea *et al* (1997) believed that MLV has stabilised property cycles in Germany.

However the definition and application of MLV has been criticised by Crosby *et al* (2000) as having no economic basis (it is not a value in exchange or in use) and being incapable of objective analysis due to the variety of different interpretations which can be applied to each element of the definition. They suggested Investment Value (IV), a value in use concept, also defined in International Valuation Standards, as an alternative approach to MLV. Although IV is, like MV, a snap shot value at the valuation date, it is normally applied through the development of an expected cash flow discounted at a risk adjusted discount rate, which may vary through time with changes to expected cash flows and changes to the risk free rate and risk premium (see, for example, Baum and Crosby (2008) and RICS (2010)). Lind (2005), while agreeing that MLV is too subjective also feels that IV suffers from the similar

problem. He discusses another valuation approach for bank lending purposes which he termed 'Reference Value' with the same aim of smoothing valuations through the cycles as in MLV with reference to historical data. However, it is not an established basis of valuation with an agreed definition within IVS so we do not model this approach to valuation within this paper but note the contribution of Lind (2003), Lind and Persson (1998) and Norlund (2008) to this debate.

Crosby *et al* (ESRC 2004) found that the identification of exchange price (MV) was the dominant basis of valuation and that capitalisation rate comparable valuation was the major method adopted in bank lending valuations in the UK in the period before the financial crisis. However, this study found that lenders frequently amended MV by asking valuers to incorporate assumptions reflecting less favourable circumstances. These included assuming that let properties were vacant or they were in a different leasing or physical state; for example, assuming condition and lease expiries consistent with the end of the loan rather than the beginning. MLV was found to be little used by UK lenders or valuers. This is perhaps not surprising as the Red Book states that MV is the appropriate basis and should be used for all secured lending valuations (RICS, 2008, p89). IV is not identified as an appropriate basis of valuation for lending purposes in International or UK valuation standards.

6. Research questions

The literature suggests that valuations have an important role in individual lending decisions and are central to risk management in capital adequacy systems. It is also clear that while property or real estate is central to the financial crisis, and is therefore presumably relevant to crisis prevention in the future, current discussions on the

reform of banking by both BIS and the UK regulator appear to be ignoring real estate issues in general and property valuation in particular.

The research question that arises is whether changing the basis of valuation could be used to help prevent any future crisis. Although MV appears to be the worst possible pro-cyclical basis for bank lending purposes, it has survived three major property crashes in the UK since the early 1970s. We therefore consider the practical application of the alternative models, applying them to a segmented model of the UK property market through the latest bubble/crash cycle (from the end of 2004 to the end of 2008). The model uses aggregated Investment Property Databank and Investment Property Forum data on the office, retail and industrial markets to undertake simple annual re-valuations using MV, IV and MLV bases with appropriate application of methods of valuation for these bases. A first objective of this research is therefore to identify the appropriate method and use of the data for each basis.

7. The application and data requirements of the three bases of valuation

The application of valuation bases and models in the UK is relatively well documented in basic academic and practitioner texts and surveys of practice. Baum and Crosby (2008) provide a detailed analysis of the various approaches to MV and IV. Ruchardt (2003) gives an equally detailed exposition of the application of MLV, albeit from a German perspective. However, he suggests that this perspective is also shared across Europe with the European Mortgage Federation producing a number of reports concerning the application of the technique across Europe.

It is beyond the scope of this paper to set out anything other than the broad principles of the three different techniques in order to isolate the general modelling approach to valuation of each of them.

There have been a number of surveys of UK practice of both the bases used and the application of methods. Crosby (1991) and French (1996) illustrate that market value for investment properties is normally undertaken by capitalisation rate based comparative models in the UK and that cash flow based approaches are not often used. Recent guidance notes produced by the RICS suggest that, where comparable evidence exists, the method adopted is still based on capitalisation rates (all risks yields) and that explicit cash flow is only used for IV or worth (RICS, 2010), normally within the context of an acquisition or sale.

MV is the current market rent capitalised at a capitalisation rate based on an analysis of current market sales. In order to track values through time it is only necessary to identify the capitalisation rate at the date of valuation and the level of rental value growth over the time since the previous valuation.

IV is an explicit cash flow model and the major inputs are market rent, rental growth rate, target rate of return, holding period and exit capitalisation rate. Even using these simple inputs and ignoring other issues such as lease events, the impact of depreciation and capital expenditure, it is a more complex model than the market valuation model and this may explain the charge of subjectivity which is often levelled at it. We will address issues of subjectivity and valuation variation in our discussion after the modelling of the UK market before and after the financial crisis.

MLV is a less well documented approach and needs some more identification before modelling. The latest EMF (2009) report reiterates the basic approach of MLV and the key issues to be addressed by the valuer:

The future marketability and saleability of the property has to be assessed carefully and prudently. The underlying time perspective goes beyond the short term market and covers a long term period.

As a principle, the long term sustainable aspects of the property such as the quality of the location, construction and allocation of surfaces must be taken into account.

As far as the sustainable yield to be applied is concerned, the rental income must be calculated based on past and current long term market trends. Any uncertain elements of possible future yield increases should not be taken into account.

The application of capitalisation rates is also based on long term market trends and excludes all short term expectations regarding the return on investment.

The valuer must apply minimum depreciation rates for administration costs and capitalisation of rents.

If the mortgage lending value is derived using comparison values or depreciated replacement costs, the sustainability of the comparative values needs to be taken into account through the application of appropriate discounts where necessary.

The mortgage lending value is generally based on the current use of the property. The Mortgage Lending Value shall only be calculated on the basis of a better alternative use, under certain circumstances i.e. if there is a proven intention to renovate or change the use of the property.” (EMF, 2009, Annex 3)

How these principles are to be achieved is less well articulated, although Ruchardt (2003) provides a number of rules based, worked examples showing that the rent used in the MLV calculation is based on actual current market transactions, with the proviso that rent must be sustainable. Ruchardt (2003, p35) suggests that sustainable rents need not be crisis rents but would clearly be below maximum rents obtained “*at the lowest point of market development*” They can be at the same level as market rents and Ruchardt (2003, p90) reiterates that current market transactions give a realistic and objective basis for sustainable rent. However, IPF (2010) illustrates that sustainable rental value assessments in Frankfurt during the period 1997 to 2007 were smoothed compared to agent assessments for the same market. Sustainable rents are also reduced for any natural vacancy which is thought to exist.

For the modelling process it is assumed that current market rents will be used as the basis for the MLV calculation but we would expect some element of smoothing to be introduced if market rents showed a tendency to rise significantly in any particular year.

The capitalisation rate choice is even more formulaic. Ruchardt (2003, p104-105) sets out the principle that capitalisation rates are fixed by reference to past long term rates and that in Germany these rates are, for commercial property, in the region of 6%-7% for commercial and 6.5%-8.5% for industrial/warehouse property. However, the rates should be identified individually and therefore in this modelling process capitalisation rates will be derived from the long term data from the market in question, the UK. Ruchardt (2003, p113-4) specifically identifies the UK as a place where deductions for operating expenses are not deducted from rents so valuers are

required by the German Mortgage Bank Act to add at least 15% to the capitalisation rate to compensate.

There is also another requirement that the capitalisation rate used in the MLV should not be lower than one used in MV. This would only become an issue in the UK market where capitalisation rates were 15% higher than trend.

The next section of this paper details the modelling process and the data used in the current study to understand the effect of having bank lending valuations carried out by either MLV or IV rather than by MV over the last cycle.

8. The “value” of the UK property market 2004 to 2008

A simple model of the three basic sectors of the UK property market from the end of 2004 to the end of 2008 is set out below

Market Value

Market valuation in the UK is based on the simple capitalisation rate model:

$$V_0 = \frac{RV}{KI} \quad (1)$$

When used in practice, capitalisation rates (KI) are usually estimated from analysis of transactions involving the sale of comparable assets rather than by estimating target rates of return and constant growth rates. The simple model assumes a property just let at its rental value (RV) on a full repairing and insuring lease by the tenant (i.e. the rental value estimate is also the net operating income (NOI)). In the UK the normal rent revision period is 5 years but in the simple model annual rent reviews are assumed for the sake of calculating the market value at each annual valuation date. Capitalisation rates are assumed to be observed from the market place and the equivalent yield or capitalisation rate for office retail and industrial property is taken from the annual UK Investment Property Databank digest. The NOI or RV is assumed to be #1 at the beginning of the period under observation (end of 2004) and

is then grown each year by the observed rental growth in that year, also from the IPD digest for the appropriate sector. The valuation at each period is the NOI or rental value at the valuation date divided by the cap rate for the appropriate time period. Table 1 sets out the information for the valuations at the appropriate valuation dates at the end of 2004 to the end of 2008.

Table 1 - Rental Value and Capitalisation Rates UK Commercial and Industrial Property Market end 2004 to 2008 used in Market Value (source IPD).

	Rental Value			Capitalisation rate (IPD Equivalent Yield)		
	Office	Retail	Industrial	Office	Retail	Industrial
End of Year						
2004	1	1	1	7.09	6.01	7.66
2005	1.026	1.038	1.011	6.32	5.46	6.88
2006	1.104	1.066	1.023	5.45	5.03	6.21
2007	1.208	1.087	1.040	6.18	5.681	6.87
2008	1.162	1.089	1.040	8.29	7.76	9.35

The estimates of MV were then checked against the movement in capital values within the IPD index. They are virtually identical with IPD capital growth for retail and industrial sectors (within 1.5% every year). They overstate the office market increase during 2005 and 2006 by a combined total of 10% compared to the IPD annual index.

Mortgage Lending Value

The definition and application of MLV is more difficult to interpret as to how a valuation would be approached. However, in principle the basic idea is to identify sustainable inputs. As occupational markets were not particularly volatile during this period, market rent can act as a surrogate for sustainable rent. The backward looking historical approach to capitalisation rates is used to introduce some form of objectivity to the valuation. The capitalisation rate is therefore determined by

reference to an historic average as indicated below for the IV but, in accordance with Ruchardt (2003), 15% is added to the long term trends. Table 2 sets out the data used in the MLV valuations and the model is as equation (1) but with the cap rate (k_2) determined as above.

$$V_0 = \frac{RV}{k_2} \quad (2)$$

Table 2 - Rental Growth and Capitalisation Rates UK Commercial and Industrial Property Market – Mortgage Lending Value - end 2004 to 2008 (source IPD).

	Rental value			Capitalisation rate (IPD Equivalent Yield Average)			
	Office	Retail	Industrial	Office	Retail	Industrial	
End of Year							
2004	1	1	1	8.32	7.63	9.96	
2005	1.026	1.038	1.011	8.24	7.55	9.84	
2006	1.104	1.066	1.023	8.14	7.45	9.70	
2007	1.208	1.087	1.040	8.06	7.38	9.60	
2008	1.162	1.089	1.040	8.07	7.40	9.59	

Investment Value

The IV of each sector is based on a simple 5 year cash flow. For rental value growth the model utilises the Investment Property Forum Consensus rental value growth forecasts of each sector for the five years ahead (g). (actually taken from the following February forecast as the closest to the valuation date) This cash flow is discounted at a target rate of return (TR) based on the survey of target rates by DTZ within their Money into Property series (DTZ, annual). The exit value is a combination of the actual rental growth forecast on the rent capitalised at an exit capitalisation rate. This exit yield is based on the IPD equivalent yield series. Taking the average over the period 1981 (the date IPD first started measuring property

performance in the UK) to the valuation date. This is the same rate as was used in the MLV valuations (*k2*) before the 15% was added. All inputs were available at or around the date of valuation so no hindsight is involved.

$$V0 = \frac{RV (1 - (1 + TR)^{-t})}{TR} + \frac{RV (1 + g)^t}{k2} \quad (3)$$

The additional inputs necessary for the IV are included in Table 3.

Table 3 - Rental Growth forecasts and Target Rates UK Commercial and Industrial Property Market – Investment Values - end 2004 to 2008 (source DTZ, IPD).

	Rental value forecasts for the next 5 years (from Feb year plus 1)			Target Rates - DTZ)			
	Office	Retail	Industrial	Office	Retail	Industrial	
End of Year							
2004	3.5	1.9	1.9	8.5	7.7	8.5	
2005	4.6	1.5	1.8	8.60	7.20	9.10	
2006	4.1	1.8	1.9	8.90	8.80	9.40	
2007	1.4	1.4	1.2	8.80	6.60	11.70	
2008	-4.0	-2.0	-2.3	7.00	8.00	7.00	

The Target Rates from DTZ appear very variable in the last 2 years. A longer term assessment of the risk premium above medium term bonds in the DTZ survey suggests that retail has a lower risk premium than offices and offices lower than industrial. Using a fixed risk premium every year of 2.5% for retail, 3% for offices and 3.5% for industrial does appear to produce a less volatile profile although for every year and every sector except one; industrial in 2007, the difference in value is no more than 6%. Following a significant increase and then decrease in the target rate reported for industrial in 2006 and 2007, there is a 17.5% difference between the IV using DTZ target rates and 3.5% above bonds in that year. However, for the purposes of this exercise the more volatile DTZ outcomes are utilised.

Valuations of the UK office, retail and industrial markets

The resulting valuations by each basis are set out Table 4

Table 4- Market Value, Mortgage Lending Value and Investment Value of the UK Commercial and Industrial Property Market End 2004 to 2009.

Market Rent £1 Beginning 2005.

	MV Office	MV Retail	MV Industrial
2005	14.0962	16.6437	13.0503
2006	16.2250	19.0026	14.6969
2007	20.2681	21.1790	16.4747
2008	19.5398	19.1519	15.1273
2009	14.0192	14.0282	11.1250
	MLV Office	MLV Retail	MLV Industrial
2005	12.0153	13.1005	10.0359
2006	12.4432	13.7505	10.2758
2007	13.2365	13.7871	10.4316
2008	13.5707	13.8132	10.5870
2009	11.9134	13.5365	10.4331
	IV Office	IV Retail	IV Industrial
2005	13.4311	13.9574	11.2736
2006	14.3456	14.6954	11.1914
2007	15.1436	14.4267	11.3354
2008	15.2639	15.9704	10.3897
2009	13.1343	13.3991	11.1491

At the beginning of the analysis period, the difference between the valuations already suggests that MVs are significantly in front of the worth of these properties as evidenced by their IVs. This difference is illustrated in Fig 2 and shows that offices are the least over-valued by this measure. As the bubble progresses through 2005 and 2006 offices continue to be the least over-valued sector with retail the most

overvalued and, by the beginning of 2007, retail is over-valued, along with the industrial/warehouse sector, by nearly 50%. In the post 2007 crash era, property MVs fall back and this analysis suggests that by the end of 2008 the market had returned to a situation whereby MVs were close to IVs, indicating a correction but not an over-reaction. This is also the conclusion from the use of IV at a Target Rate based on Bonds and fixed risk premium through time (See Figure 3).

In all cases the MLV is lower than both MV and IV throughout the period. At the peak of the market in early 2007, MV was around 75% to 80% higher than MLV undertaken using the model specified above.

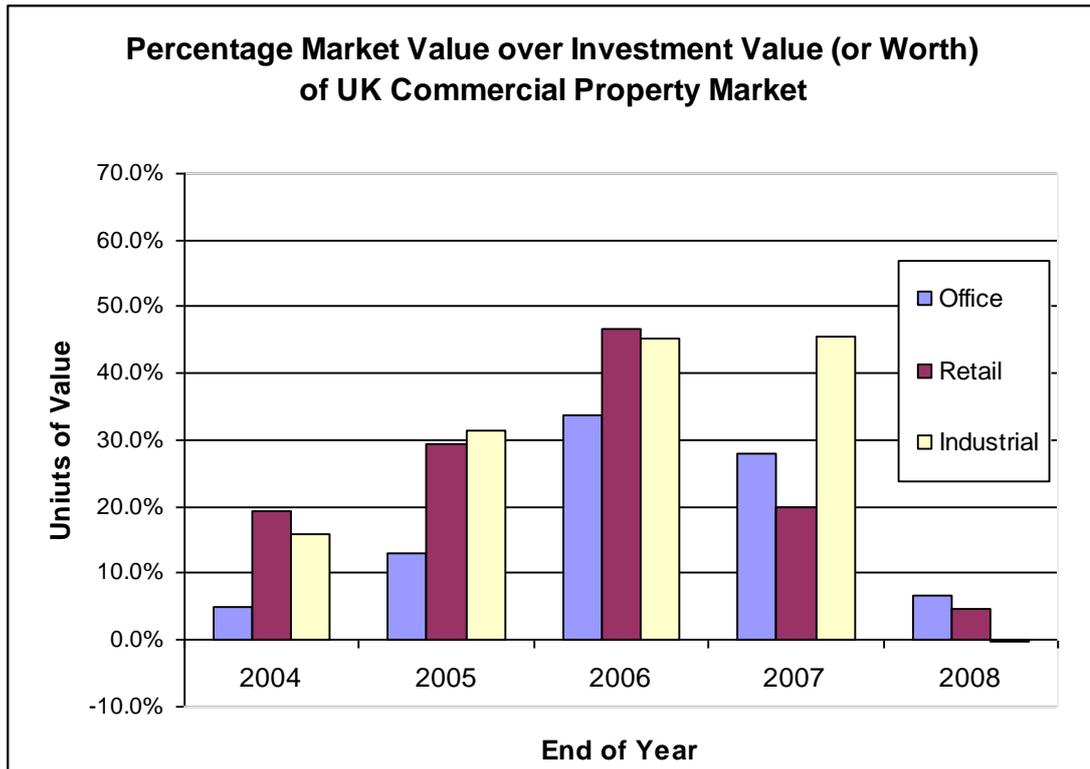


Figure 2 : Difference between Market Value and Investment Value – UK End of Year 2004 to 2008. TR based on Survey Evidence. Constructed by authors from source data from IPD, IPF and DTZ.

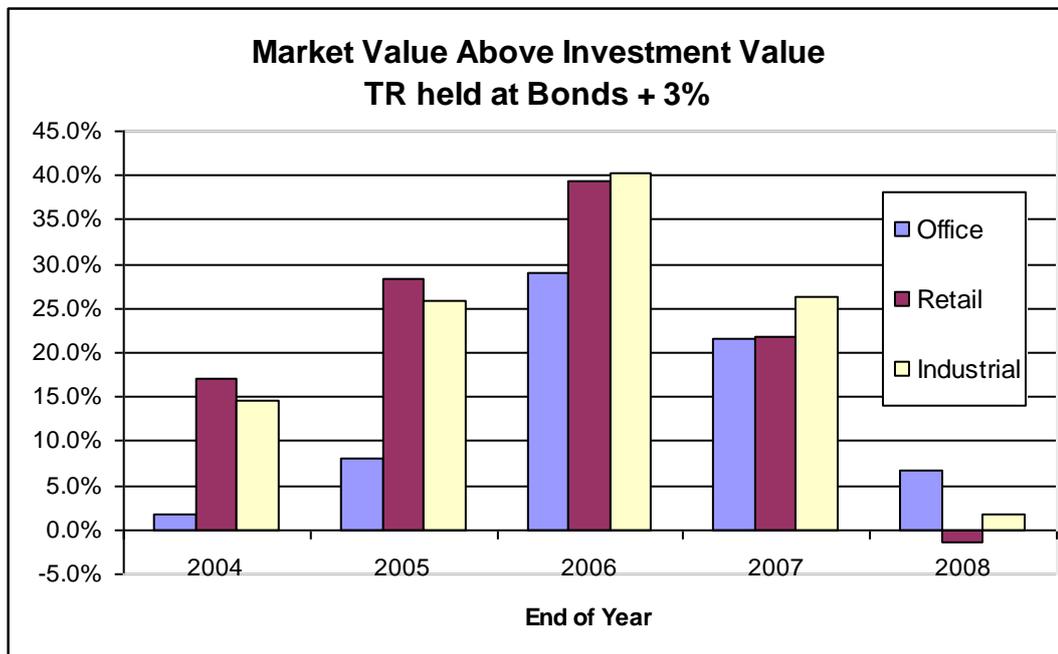


Figure 3 : Difference between Market Value and Investment Value – UK End of Year 2004 to 2008. TR based on Bonds plus a fixed risk premium. Constructed by authors from source data from IPD, IPF and DTZ.

Figure 4 indicates the similarity between MLV and IV. Although MLV is significantly lower than IV at around 25% - 30% the gap remains fairly consistent through time and does not show any significant widening as the bubble progresses. Both models therefore introduce a similar level of smoothing of the asset values compared to MV. Using a fixed risk premium based IV again does not change this conclusion. In fact it creates a more pronounced flat line difference between 2004 and 2007 before indicating that IV falls closer to MLV in 2008 (See Figure 5). But crucially, in the period before the crisis where most lending was taking place, there is no difference in the behaviour of the valuations compared to MV – they both fall away from MV at a similar rate as the bubble progresses.

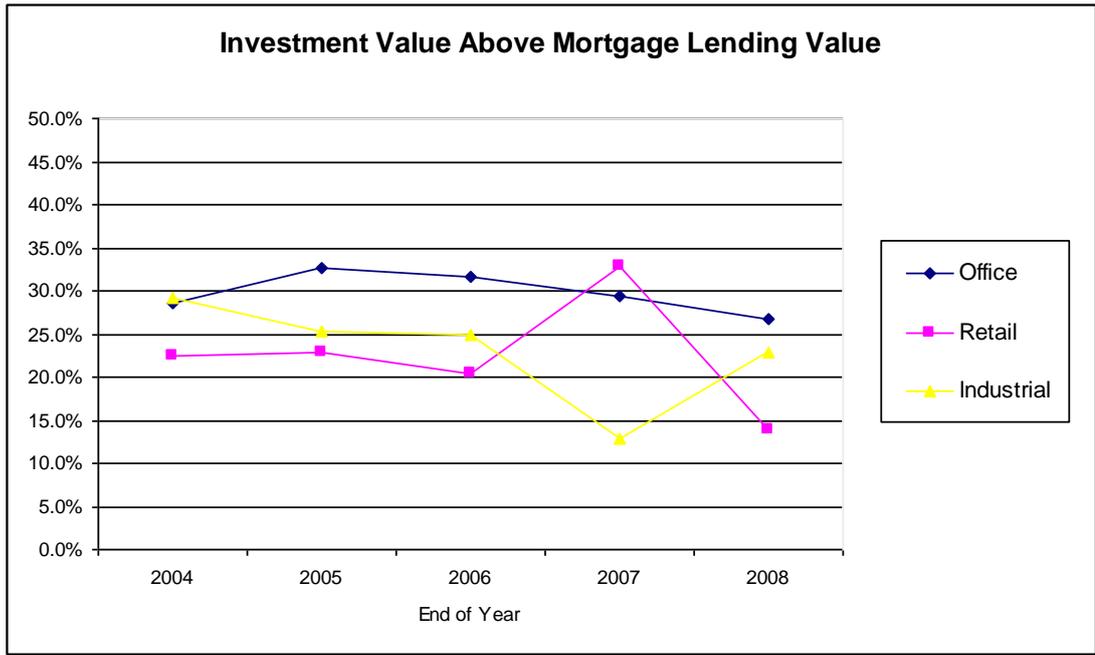


Figure 4 : Difference between Mortgage Lending Value and Investment Value – UK End of Year 2004 to 2008. TR based on Survey Evidence. Constructed by authors from source data from IPD, IPF and DTZ.

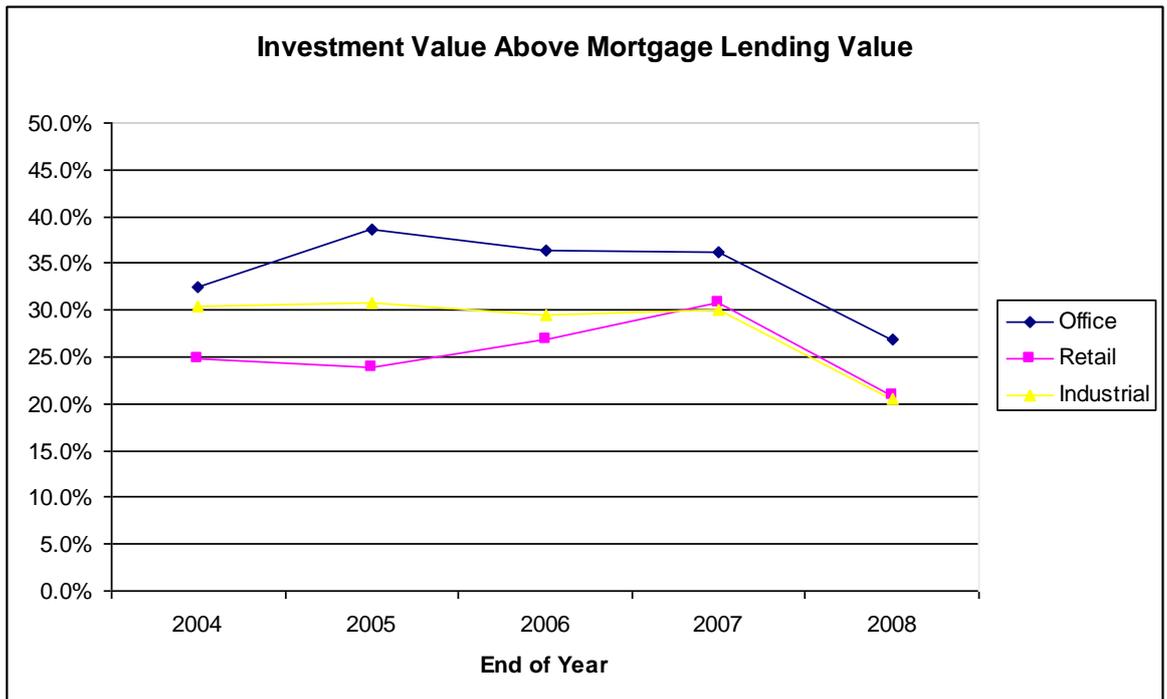


Figure 5 : Difference between Mortgage Lending Value and Investment Value – UK End of Year 2004 to 2008. TR based on Bonds plus a fixed risk premium. Constructed by authors from source data from IPD, IPF and DTZ.

Conclusion

The aim of this research was to examine the role of valuations in the prevention of future banking crises. Property has been identified at the root of the crisis but in the UK is not part of the discussion around future prevention. However property valuation has a role in the capital adequacy framework.

This research addresses the issue of valuation concepts and bases at a time when concerns over the pro-cyclicality of current governance instruments are being expressed. The literature on bubbles and crashes suggests investors need little encouragement to extend bull markets in the expectation that early exit would harm short term performance and therefore bank lending practices that encourage and feed those expectations must be, in some way, responsible for this behaviour.

The regulatory authorities have identified 2 bases of valuation within capital adequacy requirements and these are Market Value and Mortgage Lending Value. Our previous survey work shows that MV dominated bank lending decision making at the individual asset level in the period before the financial crisis and there is also no doubt that MV tracks bubbles rather than acts against them.

There is evidence that lenders in this period were aware of the limitations of MV for bank lending purposes. MV was often tempered with various assumptions that showed lenders considering the longer term prospects of buildings, particularly those held as investments. Overseas lenders in particular seemed to be attempting to amend the MV definition. These amendments included considering the state, age and leasing of the building at the end of the loan period, not the beginning. So while the lenders obviously believed that a benchmark exchange value was what they needed, they did

appear to put some shelf life to the valuation through the time scale of the loan.

However, they appeared not to have extended this to assessing the exchange price at the end of the loan or other future date (a future market value). They also did not attempt to use any form of Investment Value, the other different valuation concept defined within International Valuation Standards, so this also suggests they were not willing to forecast future values. But the current MV with no amending assumptions was obviously not perceived to be perfect for the lending purpose. MLV was used by a small minority of lenders but not enough to have any major impact on overall lending.

Lenders did not appear to have used the other mechanisms at their disposal. LTV ratios, which could have been adjusted to encourage countercyclical behaviour, were not reduced until after the financial crisis – counter cyclical arguments would suggest at precisely the wrong time after MVs had fallen from their cyclical peak in 2007. The current discussion around regulatory reform suggests that not only are property valuations not part of the proposed solutions, neither are counter-cyclical adjustments to LTV and LTI.

Would the use of a different valuation regime have changed the nature of lending in the UK? Both IV and MLV produce lower valuations but more importantly they do not react significantly to increasing asset prices caused by a changing relationship between income and capital asset prices. In other words, assuming consistent LTV based lending during the bubble, the actual amounts of lending secured on commercial property to property would have reduced. Both bases react to increases in the rental markets although the ambiguities surrounding the definition and application of MLV make that aspect of value change more difficult to model.

MLV gives the lower valuations but this should not be the only criteria. MLV is a routine rather than any form of objective economic appraisal and does not conform to any known economic concept of value. Both MV and IV conform to concepts of value in exchange and value in use.

IV produces a counter cyclical value profile but suffers from the perception of subjectivity of inputs. The level of valuation accuracy (valuation to sale price) and variation (valuation compared with valuation) is well documented in the UK and elsewhere but this is a measurement of variation around MV only. There has been no attempt to measure valuation accuracy or variation in MLV and IV valuations. Given the difficulties of identifying a price benchmark for an accuracy study, variation is the only realistic measure for MLV and IV. Given the rules based routine of MLV, little variation may be expected but the ambiguities in much of the application may well introduce significant variation. It would be interesting to see if the commonly held perception that more inputs would lead to more variable valuations is actually true for IV. On the surface it would appear to be a major issue. Baum (2000) found that investors generally use IV to inform investment decisions, it appears they would have been used in the market place during the bubble. If they were being used in the decision making process, there must have also been some major manipulation of target rates, growth rates and exit capitalisation rates during 2005, 2006 and the early part of 2007. For example, assuming exit yields at the same level of entry yields creates a situation whereby IV is within +/-10% of MV in all three sectors in the years 2005, 2006 and 2007. If investors were manipulating IV to support investment decisions, would the use of IV in bank lending valuations be similarly compromised?

The application of alternative bases can be utilised at a variety of levels. The modelling in this paper was undertaken at a main property sector level to illustrate the concepts but the same modelling could be undertaken at various disaggregated segments of the property market down to the individual property level. Banks could apply the alternative bases at these different levels to inform lending policy at the sector, area or other disaggregated level, not just at the individual property level.

But which model should be applied regardless at which level. First MV could be used as in the past. It was the main basis for bank lending valuations in the last three UK property crashes and excessive bank lending to the property market has been implicated in each of these. Without reform of either the valuation basis or the lending indicators applied to these bases, it is hard to see how the next debt-fuelled property crash can be avoided. Second, MLV could be adopted and applied however it can only operate at a cook book routine level – with the banks or the valuation professions producing a workshop manual with a required set of inputs based on consistent schedules of data and rule of thumb adjustments such as the 15% for “depreciation” as at present. Third, IV could be the preferred solution. It is a rational concept and approach but it is subject to the valuer’s analysis of a range of inputs that could combine to produce significant valuation variation. However, as indicated above, there is no evidence of what levels of variation exist between valuations undertaken for IV.

The apparent difficulty of this choice may explain why MV has survived so long for the bank lending purpose despite being a major part of the problem. The alternatives open up a number of practical questions of application but if it is a choice between a discredited approach, a workshop manual or a rational modelling of an uncertain

future, there seems little alternative to developing the latter into a major influence on the secured bank lending process for commercial investment property. It seems that, given the current direction of travel, the changing regulatory regime does not even recognise the potential benefits of addressing these issues at a conceptual level, let alone addressing the practical difficulties of implementing any changes.

Acknowledgements

This paper is partly based on research carried out with the financial support of the UK Economic and Social Research Council, project number R/000/23/9599, entitled ‘The Status of Property Valuations’, and the authors gratefully acknowledge that support.

References

Abreu, D and Brunnermeier, M.K. (2003) Bubbles and Crashes. *Econometrica*, **71**(1) 173-204.

Allen, F and Gale, D (1999) Bubbles, crises, and policy. *Oxford Review of Economic Policy*, **15**(3), 9-18.

Allen, F and Gale, D (2000) Bubbles and Crises. *The Economic Journal*, **110**(460), 236-55.

Barrell, R. Davis, P. Karim, D. and Liadze, I. (2009) Bank Regulation, Property Prices and Early Warning Systems For Banking Crises in OECD Countries. *Economics and Finance Working Papers*, 09-28, June. Brunel University.

Baum, A., N. Crosby, P. Gallimore, P. McAllister and A. Gray (2000) *The influence of valuers and valuations on the workings of the UK property investment market*. Investment and Property Forum, RICS, Jones Lang LaSalle: London.

Baum, A. and Crosby, N. (2008) *Property Investment Appraisal (3e)* Blackwell: Oxford.

BIS (2005) *International Convergence of Capital Measurements and Capital Standards*. Bank for International Settlements. Basel

BIS (2010) *Basel III: A global framework for more resilient banks and banking systems*. Bank for International Settlements. Basel

BOE (2007) *Financial Stability Report, April*. Bank of England: London.

<http://www.bankofengland.co.uk/publications/fsr/2007/fsr21.htm>

BOE (2010) *Financial Stability Report, December*. Bank of England: London.

<http://www.bankofengland.co.uk/publications/fsr/2010/fsrfull1012.pdf>

Borio, C, Furfine, C and Lowe, P (2001) *Procyclicality of the financial system and financial stability: issues and options, Marrying the macro and microprudential dimensions of financial stability*. Bank for International Settlements: Basel.

Brunnermeier, M. K. (2001) *Asset Pricing under Asymmetric Information: Bubbles, Crashes, Technical Analysis and Herding*. Oxford University Press: Oxford

Crosby, N. (1991). The Practice of Property Investment Appraisal: Reversionary Freeholds in the U.K. *Journal of Property Investment and Valuation*, 9: 109-22.

Crosby, N. French, N and Oughton, M. (2000) Bank Lending Valuations on Commercial Property: does the European Mortgage Lending Value add anything to

Davis, E P and Karim, D (2010) Macroprudential regulation – the missing policy pillar. *National Institute Economic Review*, 67-80.

DTZ (annual) *Money into Property*. DTZ: London

EMF (2009) *2009 EMF Study on the Valuation of Property for Lending Purposes*. European Mortgage Federation: Brussels.

ESRC (2004) *The Status of Property Valuations*. ESRC grant final report. www.esrc.ac.uk/my-esrc/grants/R000239599/outputs/FullResearchReport/Read/58972ab9-46ad-41ab-9664-b1ab8f587833.

EU (2006a) *Banking Consolidation Directive* (Directive 2006/48/EC)

EU (2006b) *Capital Adequacy Directive* (Directive 2006/49/EC),

Fama, E.F. (1965) The Behavior of Stock-Market Prices. *Journal of Business* 38: 34-105.

- French, N. (1996) Investment valuation: Developments from the Mallinson Report", *Journal of Property Valuation and Investment*, Vol. 14 (5), pp.48 - 58
- FSA (2010) *CP10/16 Mortgage Market Review – Responsible Lending*. Financial Services Authority: London.
- Gallimore, P, Hughes, C and McAllister, P (2006) *Property stock selection: Organization, incentives and information*, London: Investment Property Forum.
- Goodhart, C A E (2005) Financial Regulation, Credit Risk and Financial Stability. *National Institute Economic Review*, 192: 118-27..
- Goodhart, C (2010) Is a less pro-cyclical financial system an achievable goal? *National Institute Economic Review*, 211: 81-90.
- Graff, R. and Webb, J. (1997). Agency Costs and Inefficiency in Commercial Real Estate. *Journal of Real Estate Portfolio Management*, **3**(1), 19-37.
- IPF (2010) *Depreciation of Office Investment Property in Europe*. Investment Property Forum: London.
- IVS (2007) *International Valuation Standards (8e)*. International Valuations Standards Committee: London.
- Jensen, M C and Meckling, W H (1976) Theory of the firm: managerial behaviour, agency cost and ownership structure. *Journal of Financial Economics*, 3(4), 305-60.
- JLL (2008) *Global Real Estate Transparency Index*. Jones Lang LaSalle: London.
- Lea, M, Dubel, A and Laszek, J (1997) *The risks of commercial real estate lending*, The Urban Institute: Washington DC.

Lind, H. (2003). *Value concepts, value information and cycles on the real estate market*. Division of Building and Real Estate Economics, Royal institute of Technology, Stockholm

Lind, H. (2005). Value concepts, value information and cycles on the real estate market: A comment on Crosby, French and Oughton (2000). *Journal of Property Investment & Finance*, 23 (2) 141-147.

Lind, H and Persson, E. (1998). The quest for a market related concept that is not market value. *Working paper No 31*,_Royal Institute of Technology, Stockholm

Maxted, W and Porter, T. (2010) *The UK Commercial Property Lending Market.- Year End 2009 – Technical Supplement: Analysis of Lending Terms* De Montfort University: Leicester.

Maxted, W and Porter, T. (2011) *The UK Commercial Property Lending Market.- Mid-Year 2010*. De Montfort University: Leicester.

Norlund, B. (2008). *Valuation Performance Reporting in Property Companies According to IFRS*. Doctoral Thesis in Building and Real Estate Economics._Royal Institute of Technology, Stockholm

Panagopoulos, Y. and Vlamis, P. (2008) Bank Lending, Real Estate Bubbles and Basel II *Discussion paper No 98*, Centre for Planning and Economic Research (KEPE), Athens.

Quentin, J (2009). The Subprime Crisis—Implications for Property Valuation? The Revival of Mortgage Lending Value. *The Appraisal Journal*, Fall, 312-18.

RICS (1992). *Manual of Valuation Guidance Notes (White Book)*. Royal Institution of Chartered Surveyors: London.

RICS (2008). *RICS Valuation Standards*. Royal Institution of Chartered Surveyors: London. .

RICS (2010). *Discounted Cash Flow for Commercial Property Investments*. Royal Institution of Chartered Surveyors: London.

RICS/IPD, (2009). *Valuation and Sale Price Report*. Royal Institution of Chartered Surveyors: London.

Ruchardt, K. (2003) *Mortgage Lending Value*. Fritz Knapp Verlag: Frankfurt am Main.

Shleifer, A and Vishny, R.W. (1997). The Limits of Arbitrage. *Journal of Finance*, **52**: 35-55

Turner, A (2009) *The Turner Review: A regulatory response to the global banking crisis*, Financial Services Authority: London.

Van Order, R (1990) The hazards of default. *Secondary mortgage markets*, 7(3).

Vickers, J. (2011) *How To Regulate the Capital and Corporate Structures of Banks?* Keynote speech. .London Business School and University of Chicago Booth School of Business Conference on Regulating Financial Intermediaries - Challenges and Constraints. London, January 22nd.

Figure captions

Figure 1 – Maximum Loan to Market Value Lending Ratios for Prime and Secondary Offices – All Lenders 1999 to 2009. (Source Maxted and Porter, 2010)

Figure 2 : Difference between Market Value and Investment Value – UK End of Year 2004 to 2008. TR based on Survey Evidence. Constructed by authors from source data from IPD, IPF and DTZ.

Figure 3 : Difference between Market Value and Investment Value – UK End of Year 2004 to 2008. TR based on Bonds plus a fixed risk premium. Constructed by authors from source data from IPD, IPF and DTZ.

Figure 4 : Difference between Mortgage Lending Value and Investment Value – UK End of Year 2004 to 2008. TR based on Survey Evidence. Constructed by authors from source data from IPD, IPF and DTZ.

Figure 5 : Difference between Mortgage Lending Value and Investment Value – UK End of Year 2004 to 2008. TR based on Bonds plus a fixed risk premium. Constructed by authors from source data from IPD, IPF and DTZ.