

Prudent or “long-term” property valuations: concepts, definitions and methods

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Accepted Version

Crosby, N. (2021) Prudent or “long-term” property valuations: concepts, definitions and methods. *Housing Finance International*, 36 (2). pp. 31-39. ISSN 2078-6328 Available at <https://centaur.reading.ac.uk/102192/>

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Publisher: The International Union for Housing Finance (IUHF).

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Prudent or “Long-term” Property Valuations: Concepts, Definitions and Methods.

Neil Crosby,

1. Introduction

In the wake of the Global Financial Crisis, lending secured on both commercial and residential real estate was identified as a major contributor in many countries and this has sparked the interest of the banking and finance regulators in how these markets operate and contribute to financial market (in)stability¹. A significant property market global boom during 2004 to 2007, which ended in some substantial and totally predictable re-alignments in the period 2007 to 2009, should not have caused the carnage in financial markets that it did had lending secured on real estate been properly regulated and controlled. It is not the purpose of this paper to discuss the economics of cycles, bubbles and crashes, etc. but cycles are a normal part of investment in all assets so the focus should be on making any financial systems sustainable and resilient to the impact of those events, not trying to eliminate them altogether.² However, controls and regulations may help to smooth the cyclical behaviour of asset markets by restricting excessive lending habits in booming markets and encouraging lending in fallen markets.

The focus of this paper is on property valuation which is an important part of the lending process secured on real estate. The most used property valuation concept and definition in bank lending valuations is “Market Value”.³ As a concept it is the identification of the exchange price and there is a world-wide accepted definition set out in various international, regional and national valuation standards, virtually all based on the International Valuation Standards Council definition.

That is not the only definition of value set out in valuation standards and another less widely used concept is long-term or long-term sustainable value which has been adopted in some countries, mainly within Europe. It seeks to address the inefficiencies of Market Value when used in the bank lending situation. The particular form of long-term valuation so far developed is called Mortgage Lending Value and it, like Market Value, also has a detailed definition. Both Market Value and Mortgage Lending Value are included in European legislation and regulation . The relevant regulation will be discussed by Annett Wünsche in an accompanying paper in this volume and the concepts and definitions of value will be looked at in more detail in the following section of this paper.

There is also a third concept of value relevant to this discussion based on value-in-use, and this has been defined within property valuation standards as Investment Value. Until recently, this basis of valuation had not been aligned to bank lending valuation purposes.

GFC post-mortem discussions on the role of real estate have included debates on valuation and on the correct basis or bases to use in secured lending. Recently, they have focused not only on Market Value and Mortgage Lending Value, but also on Investment Value (Crosby and Hughes, 2011; Cardozo, et al, 2017)

However, there is now a new initiative gaining a foothold in the financial market regulatory framework based on a new “prudential” valuation concept or framework which will be called Prudent Value for the purposes of this paper. It emanates from the Bank for International Settlements (BIS) which is responsible for the various Basel Accords via the BIS’s Basel Committee for Banking Supervision (BCBS). As far as the author is aware, the only regulatory authority that

¹ There is a mass of academic and other literature on the Global Financial Crisis and the impact of both residential and commercial real estate. For example; Wachter, et al, (2014) and Duca, et al, (2011), on residential and Ellis and Naughtin, (2010) on commercial. The importance of real estate to the financial stability agenda is emphasised by the European Systemic Risk Board (ESRB, 2018).

² There is also a substantial literature on bubbles and crashes and the role of investor behaviour and lending in asset markets including real estate (Brunnermeier & Pedersen, 2009, Jensen and Meckling, 1976; Allen and Gale, 1999, Graff and Webb, 1997, p37, to cite just a few)

³ See EMF-ECBC (2017) for information on European valuation methods within different countries

is actively seeking to implement the prudential valuation framework aspect of the Basel III accord into regulations is the EU.

The European Commission published its latest proposals in October 2021 (European Commission, 2021) and the paper by Annett Wünsche addresses the role of property valuation within the financial regulatory regime across Europe. This paper concentrates on valuation methodology and addresses issues connected to the feasibility of implementing a prudent valuation regime across Europe but the implications of this discussion may be felt globally if other jurisdictions seek to implement this aspect of the Basel Accord.

The questions to be briefly addressed are:

- What are the different definitions of property valuation, what do they actually mean, and can the definitions be transposed into a meaningful approach that creates the correct basis for lending decisions and monitoring of those decisions?
- What are the precise details of any methods that can be developed to deliver these valuations and do valuers have the ability and the resources to deliver these valuations?
- What are the alternatives and what infrastructure needs to be developed to enable valuers to deliver a prudent valuation regime?

This paper is based on evidence presented to the EU which was developed with the co-operation of the three major valuation institutions concerned with valuations in Europe; the International Valuation Standards Council (IVSC), The European Group of Valuers (TEGOVA) and the Royal Institution of Chartered Surveyors (RICS) (Crosby and Hordijk, 2021).⁴

2. Concepts and definitions of valuation

2.1 Definitions

Annett Wünsche has set out the various definitions but for completeness they are also included here as they are an integral part of the valuation methods discussion. Methods must follow definitions and different definitions must be based on different concepts.

At present, the EU regulations identify two valuation bases defined within the CRR Article 4 paragraphs 74 and 76 as Mortgage Lending Value and Market Value (Council of Europe, 2013).

Mortgage Lending Value - *"means the value of immovable property as determined by a prudent assessment of the future marketability of the property 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"* (Article 4, Paragraph 74).

Market Value - *"means, for the purposes of immovable property, the estimated amount for which the property 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 being under compulsion"*. (Article 4, Paragraph 76).

These definitions are taken from official valuation guidance notes, for example the International Valuation Standards (IVS, 2020), European Valuation Standards (EVS, 2020) and the RICS Global Standards (RICS, 2020). These standards are followed by all valuers globally, not just in Europe, and in some cases are mandatory on valuers. Departure from valuation standards without good reason has been used in some courts to prove negligence so they are a powerful source of guidance, advice and persuasion for valuers. However, generally valuation standards set out definitions and codes of conduct for undertaking valuations but do not specify methods of valuation to any great extent. They are, in the main, process manuals rather than methodology manuals.

The Basel Committee on Banking Supervision (BCBS) proposed a new valuation framework in 2017. Having identified a loss of faith in banks' reported risk-weighted capital ratios and the need for reform post GFC, the BCBS aimed to create a banking system that is *"resilient and able to*

⁴ To access this paper go to <https://centaur.reading.ac.uk/98271/>

support the real economy and contribute positively to sustainable economic growth over the medium term". (BCBS, 2017, p1). As part of that drive, it proposed a new valuation framework.

"Value of property: the valuation must be appraised independently using prudently conservative valuation criteria. To ensure that the value of the property is appraised in a prudently conservative manner, the valuation must exclude expectations of price increases and must be adjusted to take into account the potential for the current market price to be significantly above the value that would be sustainable over the life of the loan. National supervisors should provide guidance, setting out prudent valuation criteria where such guidance does not already exist under national law. If a market value can be determined, the valuation should not be higher than the market value..."

There are references to aspects of the existing definitions. The prudent value should be benchmarked against Market Value wherever possible which suggests that any prudent valuation process should include a market valuation. The relevant words within the framework are "*prudently conservative*", "*exclude expectations of price increases*" and "*take into account the potential for the current market price to be significantly above the value that would be sustainable over the life of the loan*".

It differs significantly in concept from Market Value in that Market Value is a single snapshot of expected exchange price at the date of valuation (for example loan origination), has no shelf life and has no pretensions of suggesting what might happen to the exchange value over the life of the loan. It differs from Mortgage Lending Value as it does not refer to "*long-term sustainable aspects of the property, the normal and local market conditions, the current use and alternative appropriate uses of the property*". However, conceptually a framework that includes reference to issues that last over the life of the loan and attempts to take account of market price fluctuations does appear to be closer to Mortgage Lending Value than Market Value.

In order to assess the implications of the possible movement to a prudent valuation framework, a step back into a discussion of the different valuation concepts may prove useful. As indicated previously, a theoretical discussion on concepts should precede any attempt to form a definitive definition which is in turn necessary before any methods can be devised to deliver the definition.

2.2 What is the problem with market value?

The case against Market Value as the *sole* basis of bank lending valuation is lost hence the search for an alternative to supplement it.

The reason it is lost is quite simple. In the eyes of many regulators, loans need to be considered over their whole life and this can be accomplished by either consideration of loan criteria or the valuation. Unadjusted loan criteria such as Loan-to-Value ratios accompanying a Market Value regime have been identified as pro-cyclical in that they encourage more and more lending at higher levels. The previously cited literature on cycles identifies a positive relationship between the level of lending in real estate markets and real estate prices (for example, Brunnermeier & Pedersen, 2009) and a smaller literature on lead-lag relationships between lending and real estate prices.

Whether it is increased levels of lending that drive prices upwards or increased prices that drive lending upwards based on static loan-to-value ratios is immaterial to the outcome, which is that Market Value acts pro-cyclically and enables excessive lending to take place at precisely the time it should be dampened down. Clarke (2018) suggests that the vast majority of loans which go into default when property markets downturn are originated in the last two years of the boom cycle. This is a relatively obvious finding when finance is highly competitive, markets are booming, and loan conditions are not adjusted for the impending realignment of markets. Mansley, et al (2020) indicates just how predictable these realignments are. But the ability to know where these markets were heading does not appear to have prevented excessive lending in many countries in the years when markets were obviously overpriced in the run up to the GFC. This is a massive institutional and structural market failure which regulators are trying to avoid occurring again.

So, they are looking for a solution and some believe that changes to the valuation regime may be part of that solution.

2.3 Concepts of value – under-the-cycle or through-the-cycle?

In response to this debate, RICS (2018) in its guidance note on Bank Lending Valuations and Mortgage Lending Value, included an appendix on concepts of value and on the usefulness of Market Value for loan security purposes. The requirement is for a valuation regime that does not follow the cycle and extend it, but one that acts against the cycle and encourages more restricted lending when markets are over-priced and encourages more lending when markets are under-priced. It identified three valuation/price concepts which are set out in Figure 1.

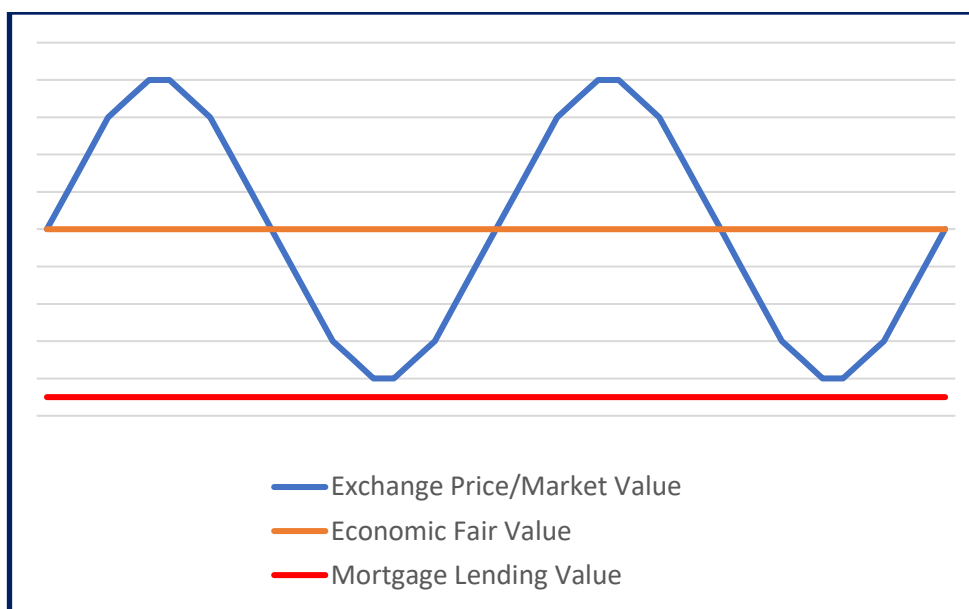


Figure 1: A Stylised View of the Different Approaches to Prudent Value (Source RICS Europe, 2018)

Mortgage Lending Value has been characterised as an under-the-cycle model indicated by the red line. The actual cycle of real estate prices is included as the blue line and this is the target for any market valuation (the identification of the expected exchange price).

The orange line is the characterisation of the proposition that the real conceptual target for the prudent value has the identification of over- and under-pricing at its heart. These appraisals are the staple diet of both commercial and residential real estate *investment* markets (where the identification of assets and segments of markets are an integral part of any purchase or sale decision) and there is a body of technique utilised to identify these values already operating within those real estate markets. These will be identified in the methods section of this paper. The through-the-cycle long-term value has been argued by the author to be a form of Investment Value as defined in valuation standards (Crosby and Hughes, 2011). The current definition of investment Value includes “*the value of an asset to a particular owner or prospective owner for individual investment or operational objectives.*” However, previous definitions of investment value included an element of ‘worth to the market’ as well as to the individual, and it is this aspect of the previous definition that has been aligned to through-the-cycle long-term value (or Economic Fair Value in Figure 1).⁵

⁵ Fair Value is the term used by Burston and Burrell (2015) of JLL in their IPF report to identify this phenomenon, but RICS (2018) used Economic Fair Value to distinguish from Accounting Fair Value.

In reality, both under and through-the-cycle long-term values move through time (see later discussion), so Figure 1 is a gross over-simplification, but it gives us the framework to assess the new valuation definitions.

A prudent valuation must be benchmarked against Market Value. If a Market Value passes the other parts of the prudent value framework, then a Market Value and a prudent value are the same thing. So, when the Market Value is below the through-the-cycle model, it suggests that markets are under-priced. At that point any correction to Market Value is upwards and so the Market Value does pass any test of being prudently conservative. It also excludes any expectations of price increases as they are assumed to be upwards and not downwards so it also passes the test of taking into account the potential for the current market price to be significantly above the value that would be sustainable over the life of the loan. It has taken that into account and decided that the current market price is significantly below the value sustainable through the loan.

When Market Value is higher than the through-the-cycle model, the situation is reversed, and it is the through-the-cycle model that gives us the prudent value. It takes into account the potential for the current market price to be significantly above the value that would be sustainable over the life of the loan and also that prices may fall during the life of the loan. It is therefore prudently conservative.

So, a prudent valuation that acts in the best interests of a financial system encouraging lending in recessions and dampening it down in the boom periods, would be based on a through-the cycle model. On its own it does not pass the Market Value benchmark test so the prudent value framework can be delivered via a definition that states that the Prudent Value is either the Market Value or the Long-term through-the-cycle value, whichever is lower.

But can we devise methods to determine through-the-cycle long-term value, can they be operated by valuers alone or does it require a more market based, institutional approach?

The final part of the Basel III prudent value framework puts a responsibility on national regulators, hopefully advised by national professional institutions, to develop the framework. "*National supervisors should provide guidance, setting out prudent valuation criteria where such guidance does not already exist under national law*".

The next section looks at the detail of applying these frameworks within existing valuation regimes across Europe which, given the diversity and range of maturity and data provision across the real estate markets of the different countries, forms a microcosm of these difficulties across global markets.

3. Property valuation methods

There is a practitioner and academic literature on both through-the-cycle and under-the-cycle valuation methods. For under-the-cycle models this is mainly related to Mortgage Lending Value and includes Ruchardt (2003) which sets out a fairly prescriptive/descriptive account of the rules for producing MLV based on the German valuation system. However, there is a critical literature on both sides of the MLV debate including that by the author of this paper (Crosby, et al, 2000; see also Bienert and Brunauer, 2007; Nordlund, 2008; Lind, 2005) and Crosby and Hordijk (2021) recommend that prudent value is based on through-the-cycle rather than under-the-cycle concepts and definitions.

The next part of this paper concentrates on two major initiatives to develop long-term valuation techniques for the two different scenarios mentioned previously: properties attracting an investment valuation approach and those attracting a direct comparison approach. One set can be characterised as investment property and the other owner-occupied. However, there are some vacant and owner-occupied properties that still attract an investment approach to valuation across both residential and commercial markets, and some investments may be valued by direct comparison. These two groups may also be characterised as mainly commercial and mainly residential but the principles cross over the different characterisations.

3.1 Case study one – UK commercial property.

The literature on through-the-cycle modelling is based in market analysis for investment decision-making. Building off work by Crosby and Hughes (2011), Cardozo, et al (2017) identify that the calculation of the worth of a property is a routine analysis in the purchase, sale and management of investment portfolios (defined as Investment Value in Global Valuation Standards) and this analysis is undertaken at both individual property level, at market segment level and at portfolio level. The identification of under-/over-priced markets and assets has a body of technique attached to it and Cardozo, et al (2017) undertake an analysis of the profile of a Mortgage Lending Value and a through-the-cycle Investment Value compared to the Market Value for various segments of the UK property market through two major recessionary periods, one in the 1990s and the other one during the GFC. They make some important distinctions between the behaviour of rental and capital markets and suggest that both elements need to be looked at individually to develop robust long-term valuation methods.

As indicated previously, Cardozo, et al (2017) also show that all values change through time, and this emphasises that it is impossible to have a value that lasts through time. All valuations need to have a valuation date attached and no valuation can guarantee that value through the life of the loan. As illustrated in Figure 2, Cardozo, et al (2017) tracked the capital values of the UK commercial property market using a Market Value, a German-style Mortgage Lending Value and a forecasted cash flow-based Investment Value and showed that all valuations in nominal cash terms mimic market movements to some extent, based mainly on rental value movements through time.

INSERT Figure 2 here

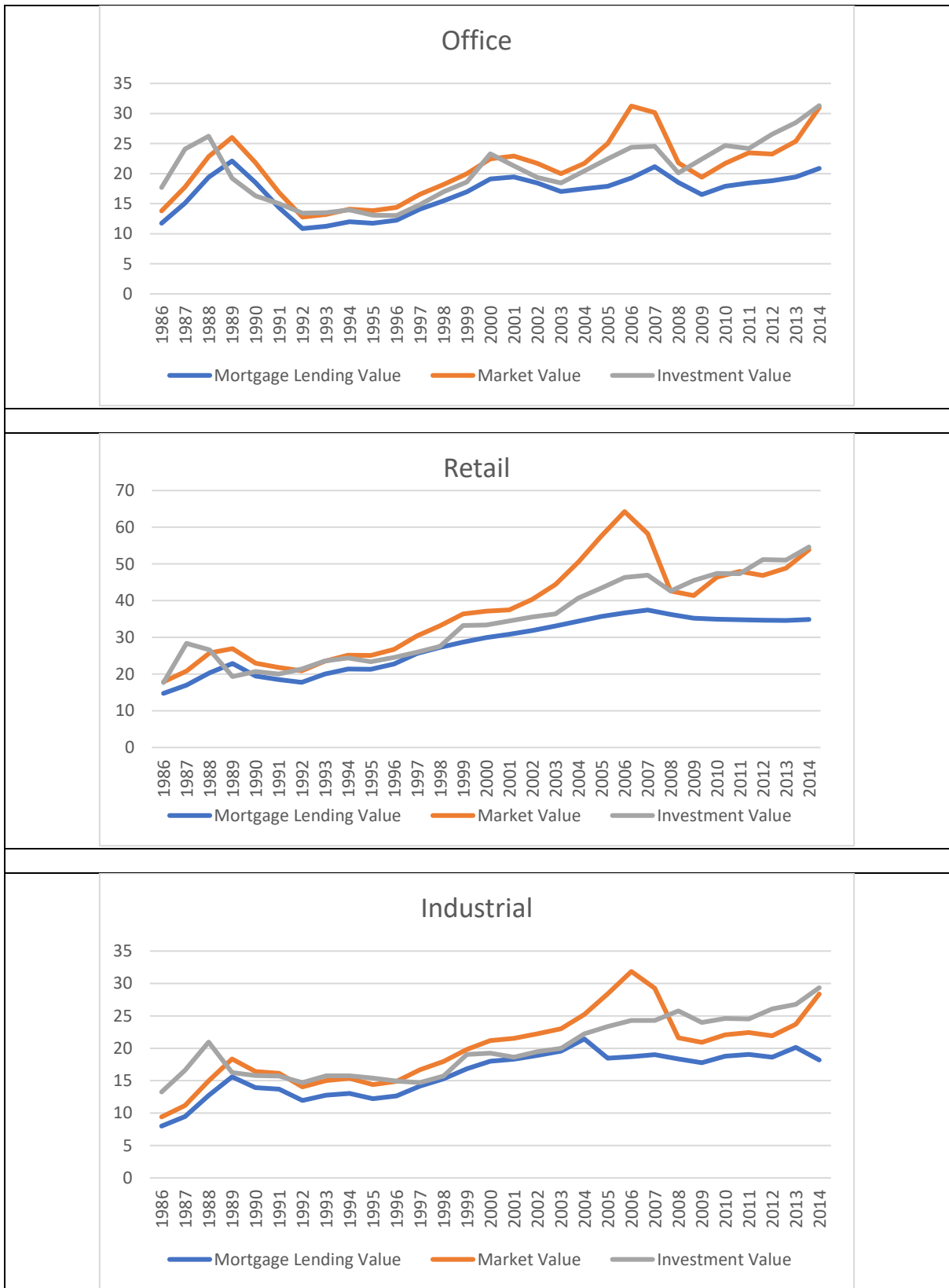


Figure 2: Capital valuations of the three main UK commercial real estate sectors 1986 to 2014 assuming Rental Value £1 in 1986 (Source: compiled by author for Cardozo, et al, 2017)

The details of the valuation methods used to produce the various valuations for Cardozo, et al (2017) and other studies are outside the scope of this paper and are fully set out in a variety of texts (i.e. Ruchardt, 2003; Cardozo, et al, 2017) and the Crosby and Hordijk (2021) paper illustrates some detailed valuations based on the principles behind the valuations of the market segments in Figure 2. Very briefly, the principles adopted within Cardozo, et al (2017) are:

Market Value – based on current rental value capitalised at the current market capitalisation rate or yield. The start rent in 1986 is £1 and rental value change is measured through MSCI index data year on year capitalised at the changing equivalent yield/capitalisation rate within MSCI for the same year (see more detail below).

Investment value – Based on a five-year discounted cash flow to assess present value using inputs which were known at the time. The specific assumptions were:

- **Holding Period:** The holding period was five years (which works best for this research because it is also the period of the rental value forecasts used).
- **Rental Value:** Current market rental values for each year were derived from the IPD rental value change index, starting at £1 in 1986, which is also used for MV and MLV. At each valuation date, It was assumed that the rental value at the time would be fixed for the next five years as this mimicked the normal lease structure within the UK market throughout the analysis period.
- **Rental Growth Forecasts:** Five-year rental growth forecasts were difficult to obtain prior to 1990 so the analysis of IV prior to that date misses the lead up to the 1989/90 peak. From 1990 to 2009, forecasts for the three main sectors (office, retail & industrial) were made available by MSCI/IPD, and the Investment Property Forum Consensus Forecasts⁶ were available from 2005 (a collation of around 30 different forecasts made for the UK commercial real estate market). International property consultants JLL also made available forecasts of the main sectors with some additional disaggregation from 2006 and more substantial disaggregation from 2010 onwards and these were used for the more disaggregated samples within that study (but not reported here).
- **Exit Yield:** The exit yield is a 15-year backward looking rolling average of IPD Equivalent Yields (capitalization rates) for the appropriate segment; the same yield series as used for Market Value. This input has a relatively high influence on the end result, given the short holding period.
- **Target Rate of Return:** The target rate of return is the combination of a Risk-Free Rate (**RFR**) and a static Risk Premium (**RP**). The RFR is a ten-year UK Government Bond redemption yield at the valuation date and the base case RP (for all CRE) is 3.5%, based on the IPF and AREF Survey of Financial Advisors.

Mortgage Lending Value

Its German application is prescribed, being intentionally constrained by conservative historic norms, particularly for yields, and requires the valuer to:

- uses a 'sustainable' rental value that ignores any over-rents, hope value or marriage value;
- allows for a minimum of 15% non-recoverable costs deducted from the sustainable rent;
- splits the land element from the building element;
- identifies life cycles and depreciation of the value ascribed to the buildings; and

⁶ See latest IPF UK consensus forecasts at <https://www.ipf.org.uk/resourceLibrary/ipf-uk-consensus-forecasts--summer-2021--full-report-.html> See also <https://www.ipf.org.uk/resourceLibrary/ipf-european-consensus-forecasts-of-prime-office-rents--november-2021--report.html>

- uses 'sustainable' cap rates which cannot fall below prescribed levels.

Cardozo, et al (2017) applied these principles to the UK data using much of the data described for the other two methods (e.g. sustainable rent = the market rent, yields based on the IPD equivalent yield/capitalisation rates.) They also introduced life cycles for the different property types to determine depreciation factors and created land value/building value splits in accordance with other research undertaken on the UK commercial property market.

In the UK, the central bank was taking a keen interest in these research initiatives, actively encouraged the research, employed the author on part-time secondment as an external consultant, and used the findings and the Crosby and Hughes (2011) modelling of markets to produce commercial property market 'mispricing' analyses in their periodic Financial Stability Reports from 2015 onwards (Bank of England, 2015). They took an active role in helping to steer follow-up research by the Universities of Cambridge and Reading, which critiqued the previous research, created a longer time series of rent and yield data for the UK, and used that to produce significantly more sophisticated analysis (Mansley, et al, 2020). The whole of this research is freely available on the Investment Property Forum website and can be downloaded in full at <https://www.ipf.org.uk/resourceLibrary/ipf-long-term-value-methodologies-in-commercial-real-estate-lending--july-2020--full-report-.html>.

The modelling techniques used were at a market level, not an individual property level, and did not use cash flow modelling and forecasting. They looked at various ways to model past trends while taking into account structural changes in markets (e.g. changes to the retailing environment). Using data available at the time and using no hindsight, they generated models and relationships which identified the over-pricing of real estate preceding the last two major property downturns in the UK in 1990 and 2007, with an early warning system of at least two years.

This research programme identified important differences between the nature of the two cycles. The 1990 downturn was precipitated by unsustainable levels of rent rises in the late 1980s and a subsequent correction in 1990-93. Capital values also fell but were caused by the fall in rents not a rise in capitalisation rates. This happened subsequently in response to the rent downturn, precipitating a minor banking crisis.

In 2007, it was rents which were stable but capital values had increased above long-term trend levels from 2004 until June 2007 due to capitalisation rates falling below any notion of a reasonable level, given the economic expectations. The fall in capital values in the summer of 2007 was initially due to a correction in capitalisation rates but the subsequent financial crisis caused rents to fall, which further escalated the falls in capital values through to 2009.

A second major finding was that the different models did not perform consistently across the two different types of downturn. All of the models successfully identified the 2007 capital asset market downturn and there should have been warning signals and preventative actions taken at least two years before the event (in 2005). This was because the boom in capital values in the 2005-2007 period was driven by interest rate and capitalisation rate reductions and all three valuation models included a major capitalisation rate input or, in the case of the more sophisticated hedonic models, used past trends in capital values and or capitalisation rates. But, in the rent driven crash of 1990, models using forecasts of rental growth did not identify the impending downturn and did not suggest market prices were too high in the late 1980s. That failure was due to momentum in the forecasting models, which tend to suggest that the current growth profiles will continue. So, not all cyclical boom and bust scenarios are the same and the models need to be able to identify both rental market and asset market cycles.

On account of these findings within Cardozo, et al (2017) study, the more sophisticated past trend modelling in Mansley, et al, (2020) did not use forecasts, concentrated much more on past trends with additional inputs to identify structural changes to the past data. These models performed much better and did identify the overpricing precipitating both downturns. Mansley et al (2020) sets out the details of these more sophisticated models.

3.2 Case study two – Spanish residential property.

This research programme is not so well established and is in its relative infancy. Spain has a history of applying Mortgage Lending Value and the research, undertaken at the University of Alicante for

the Spanish Association of Value Analysis (AEV, 2020), had the aim of creating an “objective, consensual and technically correct formula to determine the MLV of residential owner-occupied properties.” The research finds there is no specified method for MLV calculations with the result that “Spanish Valuation Companies have been determining the Mortgage Lending Value under individual criteria, with their own methodologies and with less effective overall results than would be desirable” (AEV, 2020). The implication is that current MLV values are set as an adjustment to comparison-based Market Value, with very little technical analysis behind that adjustment.

The research had two objectives. First, creating a method that “allows the determination of a prudent value at the time of the valuation, mitigating the effect that the birth of a possible bubble may be having on prices” and second, a method which is able to “analyze the upward or downward trend of prices in the 6 years following the granting of the loan, in such a way that the sustainability of the certified value is pursued for at least the next 6 years” They noted that MLV cannot predict the value of real estate in the lowest point of the price evolution curve during the life of the loan, but did aim to do that for the sixth year of the loan based on some analysis of loan defaults.

This study also went down the hedonic modelling route, similar to the UK research, using a disaggregated dataset from 271 municipalities with more than 25,000 inhabitants (clustered in 8 groups) for which public statistics on appraised prices were available. This covered a large percentage of the transactions that take place in the Spanish market. In the case of Madrid and Barcelona, the disaggregation was to 31 different districts across the two cities.

The AEV (2020) research aimed to provide an adjusted market value based long-term value as illustrated in Figure 3. For residential owner-occupied property, this approach to a prudent valuation appears to be the most promising, whether it be by means of sophisticated modeling or more basic past trend analysis, dependent upon data constraints.

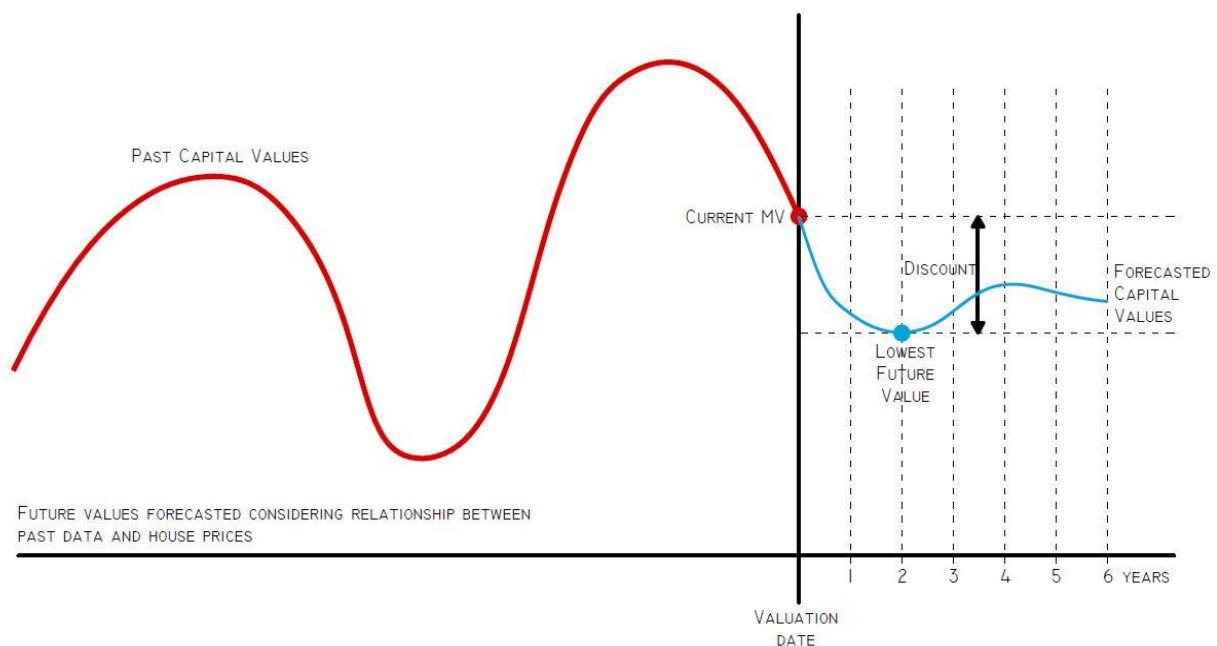


Figure 3: Residential Owner-Occupier Adjusted Market Value (source: Crosby and Hordijk, 2021)

This research is under development and is still developing the model based on data that the main body of defaults are for loans between 3 and 6 years into their loan period. The approach is regression based on a set of variables which should develop an indicator at an aggregated market level. The author does have some reservations about using loan default dates as a basis for the modelling of long-term value of specific timing windows within loan agreements as a target for the modelling as they may be influenced by the timing of and depth of cycles and the process by which banks in different countries deal with defaults.

Regardless of the nature of the modelling, the Spanish Association (AEV) are considering taking responsibility for operating the modelling and then making it mandatory for AEV's associates (Regulated Valuation Companies) to issue specific warnings or caveats in the valuation reports of properties located on municipalities/districts where the model expects a significant drop in prices in the future, and that the list of affected municipalities/districts will be updated quarterly.

4. Discussion

Crosby and Hordijk (2021) set out a much more detailed description of both case studies. They enable the identification of a number of issues and criteria which will be valid for other markets across Europe and globally.

First, there is a requirement for an individual Market Value in every case regardless of what form of long-term prudent value is finally established (assuming implementation of the Basel framework which is not certain).

Second, a long-term value based on comparison with and an adjustment to the Market Value requires some major technical analysis if it is to have any credibility.

Third, the measurement of the adjustment requires a model which could be implemented on a pan-European basis initially and in time possibly globally.

The research to date suggests two elements to the adjustment to Market Value. The first is a macro-economic element whereby the mismatch between actual prices in the marketplace and their rational levels needs to be understood and all reasonable technical analysis undertaken to determine the difference. The second is a micro-economic issue at the individual property level.

It has been illustrated that there are models that can be developed to determine these levels of under and over-pricing, but they do require different skills and information to those used in the day-to-day application of either Market Valuations or Mortgage Lending Valuations. These skills are more prevalent in the field of investment valuations where determining this mismatch between price and worth is an everyday normal occurrence. However, research into the accuracy of forecasting (see, for example, Papastamos, et al, 2015; 2018 and McAllister and Nasr, 2020) and the results of the UK case study illustrate that better models are available than the cash flow models used by many real estate investors.

The case studies both operate at the market not the individual property level. This is a major question for long-term prudent valuation. Can it be feasible to expect valuers to be able to develop these methods at the individual property level and can they be expected to have the skills to operate them at the market level? The case studies illustrate that much of this work is based on market analysis and not valuation and requires many different skills including econometrics.

Another major issue is data. It is no coincidence that the two case studies come from (a) the commercial property market which has the longest running set of continuous and consistent commercial property market data in the world and (b) Spanish residential property where there is a significant data set as illustrated above. These analyses could not have been attempted currently in many countries of the EU as the data just does not exist.

Crosby and Hordijk (2021) addressed the data issues attached to long-term prudent value and also compare that to Jones Lang LaSalle market maturity measures (JLL, 2020). Both residential and commercial real estate markets across Europe differ markedly. For example, the UK is the most transparent market in the world according to JLL, France is fourth and The Netherlands, Ireland, Sweden and Germany lie 7th, 8th, 9th and 10th. There are 5 more EU countries placed between 11th and 20th and 6 more between 21st and 30th. However, a number of eastern European countries appear in the semi-transparent category, such as Romania, Greece, Bulgaria, Croatia, Slovenia and Serbia. Some of this lower transparency ranking relates to data availability.

One of the most interesting facets of the case studies was the level of disaggregation. The Spanish residential data was highly disaggregated, but the UK study only looked at three major segments of the market; national office, retail and industrial. However, the UK commercial property data can be disaggregated down to a regional level across a multitude of property types (for example, with the MSCI indices), but this is one of only a very few countries where this would be possible. The

type of detailed analysis undertaken in the UK and Spain could not be undertaken in most of the EU countries at the current time. This raises questions of the feasibility of applying models at an individual property level and begs the question of how any adjustment factor can be determined for each individual property.

5. Conclusions

The aims of this paper centre around applications of an alternative valuation regime to those currently in operation that would satisfy the BCBS new definition of prudent value. It set out to clarify the different definitions of property value and whether they can be applied for the various secured lending purposes. It required a discussion of the concepts and nature of the different definitions and a discussion of the various methods. It also required a discussion of the problems of implementing a revised valuation framework including the knowledge and skills of the valuers and the data requirements.

The paper assumes that the discussions regarding the pro-cyclical properties of Market Value are fully accepted and the need for additional analysis is not in dispute. The need for a Market Value for every individual property is also self-evident and is implied within the new BCBS framework of prudent value. Prudent value is therefore an adjustment factor to the Market Value.

There is virtually no formal advice on how to obtain that adjustment from any source so there is a need to develop and agree the methods required and to develop formal professional guidance to aid the implementation of those methods.

There is one exception to that and there is a form of long-term value that does have a formal set of prescribed methods within the German based applications of Mortgage Lending Value. However, this paper argues that this is an inappropriate basis and that an under-the-cycle model is not the most appropriate form of long-term value. A through-the-cycle model is a much more appropriate model, with a prudent value definition that is based on either the Market Value or the through-the-cycle value whichever is lower. This would be totally in accordance with all statements within the prudent value framework.

The various methods have been briefly explored and more detail is contained in the report submitted to the EU. That report has the support of the IVSC, TEGOVA and RICS (Crosby and Hordijk, 2021). That report concluded, amongst other things that full harmonisation across the EU of a prudent valuation framework and methodology is impossible currently without significant new data sets and flexibility between countries to develop the valuation regime would be necessary. It also identified the difficulty of individual property valuations under any revised framework. It appears that even in the most transparent and data rich countries, full disaggregation and analysis of under and over-pricing is virtually impossible at that individual asset level.

The conclusions in this paper are those of the author and have not been endorsed by any of the three professional institutions. They are that the only feasible method or approach is one that develops adjustment factors at aggregated levels and applies them to individual property market valuations. There needs to be a more centrally orchestrated and concerted attempt to develop long-term property market and other related data sets for the different regions within each country, and for the different property types, if any realistic disaggregated adjustment factors to market price/value are to be constructed. Most countries in Europe and around the globe are decades away from that at the present time. National regulators need to work with national professional institutions, supported by the international valuers' organisations, to collect and collate the necessary market data to implement a through-the-cycle valuation/analysis regime that supplements the Market Value of individual property assets. The proposals by the AEV in Spain may be the way forward for all National bodies; supporting the development of data and the modelling, which they are already doing, but then using the models to create aggregated adjustment factors, sponsoring updates to the factors and generating mandatory guidance for their members to give warnings to lenders when the modelling suggest some level of over-priced markets.

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