Bank Lending, Real Estate Bubbles and Basel II

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Abstract

The aim of the paper is to show how major failures in the real estate sector have been accompanied by banking failures in the UK and elsewhere during the 1973 banking crisis and the 1990 economic recession. We argue that prudence needs to be reinforced by some form of regulation in order to prevent a repetition of the property market collapses and banking crises of the 1970s and the early 1990s. The Basel Committee on Banking Supervision acknowledges the fact that conventional lending concentration to industries such as commercial real estate is a common source of major credit problems for banks around the world. We briefly refer to the old capital adequacy framework, commonly known as Basel I, and we also review the new framework, Basel II, which has been recently initiated. We especially focus on banking supervisors' views with regard to real estate lending in Basel II and our scepticism concerning the way banks should calculate their capital requirements for property lending. This paper represents our effort to build on the existing literature on bank regulation and banking crises and our contribution will hopefully be useful for the industry professionals, shareholders and investors in their attempt to maximize their wealth.

JEL Classification: K23, G21, L85.

Keywords: Basel II, Banking Crisis and Real Estate Companies

1. Introduction

Experience from around the world indicates that poor credit quality coupled with weak credit management practices continue to be a dominant factor in bank failures and banking crises. Historical data in the UK (the 1973-1975 Secondary Banking crisis and the 1990 economic recession) and elsewhere (Japanese real estate bubble in the early 1990s) show that there is a very close relationship between the over-borrowing of the real estate companies, the real estate bubbles and the banking crises. The inter-linkages between banks and real estate companies involve an inherent transfer of credit risk.

Does the commercial property market have characteristics that make commercial real estate lending hazardous to banks? Real estate development companies are by nature highly leveraged companies ((Ball et al (1998) and Harvey (2000)). They need high equity and debt in order to finance the construction of big buildings either for residential or commercial use. High gearing ratios make them sensitive to interest rate swings particularly in countries like the UK where most debt is at floating interest rates ((Rowlatt (1993), Artis and Lewis (1993), Lewis (1994) and Miles (1994)). This particular characteristic of the real estate industry is an important parameter that needs to be considered in the profit equation of banks and for their likely survival. Another interesting question is why banks are attracted to property lending? Banks, around the world, in their attempt to increase their market share very often concentrate their portfolios in particular sectors. For example, it is evident that around 10% of the total bank loans in the UK were diverted to property companies in the early 90's (Ball et al, 1998, figure 12.2, p. 326).

Many of the credit losses suffered by banks, thrifts and insurance companies in the United States in the early 90's have resulted from excessive portfolio concentrations of loans in the real estate industry (residential mortgages, commercial real estate mortgages and commercial real estate loans). More specifically, US banks loaned enormous amounts of money to commercial real estate companies, for the period 1989-1994, based on optimistic projections of rental income growth and increased asset values (Browne and Case, 1992). "When the (real estate) bubble burst, banks had to charge off around $34 billion in real-estate-related loan losses", ((Caouette et al (1998) and FDIC (1997)). European countries such as Switzerland and Sweden as well as Japan (Siebert, 2002, p.116-119) and East Asia ((Hilbers et al (2001), Collyns and Senhadji (2002) and Quigley (2001)) experienced similar crises in the 1990s.

Should and can anything be done in order to prevent a repetition of the property market collapses and banking crises of the 1970s and the early 1990s? Prudence needs to be reinforced by some form of regulation of the financial system. We review here both ***Basel I*** and the recently initiated ***Basel II*** regulatory framework with particular reference to real estate lending. We argue that property is only a small part of the Basle II proposals and the sections dealing with property are some of the least well defined. We present our criticism and objections concerning the way that banks should calculate their capital requirements for property lending according to ***Basel II.***

In sections 2, we show how major failures in the real estate sector have been accompanied by banking failures in the UK during the 1973 banking crisis and the 1990 economic recession. Section 3 discusses the lessons to be learnt from these macroeconomic and banking crises. We then examine in section 4 the Basel I and Basel II regulatory framework. Section 5 concludes the paper.

2. UK Real Estate Companies, Real Estate Bubbles and the Banking Crises in the 70's and the 90's

In the early 70's a crash in the UK property market was produced due to the monetary, fiscal tightening together with the general economic crisis directly linked to the oil crisis of 1973. The high interest rates, the fall in property rents and capital values[1] and a drying up of finance led many property companies into insolvency. The collapse of the property market had negative repercussion on the equity market, the banking industry and the economy as a whole. Particularly, several small banks, the so called "secondary banks", whose main business was lending funds to sectors such as commercial property, became insolvent on the back of injudicious property lending[2]. The situation turned into a serious threat for the whole UK banking system. There was a widespread fear of a generalized crisis and that was reflected in Government pressure through the Bank of England for larger banks to extend credit to smaller banks to stop the all out crash that would have occurred if the smaller banks had had to place even more property on the market to repay their borrowings. The Bank of England organized a rescue operation ("the Lifeboat") with the help of the major clearing banks. Twenty-six small banks were supported by up to 1.3 billion pounds in loans (Bank of England, 1978).

Reid (1982) makes an excellent presentation of the outbreak of the secondary banking crisis and the launching of the "Lifeboat". The UK financial system was saved from the consequences of widespread failures of the secondary banks but that came at a certain financial cost; both the Bank of England and the clearing banks taking part to the "Lifeboat" made losses totaling around 150 millions pounds (Bank of England, 1978). The pattern of the 1972-75 recession neatly repeated itself thereby underlying the rather cynical observation that "the only thing we learn from history is that we learn nothing from history" (Harvey, 2000). Large falls in nominal house prices (-1.3% in 1990, -1.4% in 1991 and -3.8% in 1992) (Davis, 1995, p. 268) as well as considerable declines in commercial property prices (-14.4% in 1990, -27.7% in 1991 and -30.1% in 1992) (Davis, 1995, p. 268) followed the 1990 recession in the UK. In the residential sector, the high loan/value ratios of up to 100%, at the time, have turned a significant proportion of mortgage contracts into cases of negative equity (property prices below the value of the outstanding mortgages).

[1] According to Investment Property Databank, after rising by about 24% in 1972 and 1973, the capital value of commercial property fell by 20% in 1974, and the following year's recovery was only 5%.

[2] Bank lending going to property companies increased from 71 million pounds to 1,332 million pounds between 1970 and 1973 (Harvey, 2000).

Additionally the sale of the repossessed houses put further downward pressure on house prices. The high interest rates the fall in property rents and capital values led once again many property companies into insolvency[3]. Difficulties in the commercial property sector, arisen due to the recession itself and the preceding boom in construction, entailed marked losses for the UK banking industry. "Thus for many UK banks it was the second time in 20 years that there has unfolded a scenario of rising property values and increasing lending, followed by falling values and a residue of bad debts" (Lewis, 1994). The crisis in the banking sector in the early 90's was exacerbated not only due to the substantial lending to commercial real estate companies[4] but also due to the heavy personal sector borrowings. The only significant bank failure of the period was the collapse of the Bank of Credit and Commerce International that was shut down by the Bank of England due to fraud in July 1991. Bank of Credit and Commerce International had worldwide debts of $10 billion and 400 million pounds in the UK (Lewis, 1994).

There were though certain difficulties among small banks, which in turn led to heightened caution among depositors and lenders in wholesale markets. Three small banks –Chancery, Edington and Authority- were left to fail in early 1991 (BCBS, April 2004) as the Bank of England did not consider such failures a threat to the UK financial system. "Several building societies had to merged with larger institutions when loan losses resulting from earlier imprudent lending cast liquidity or solvency into question" (Davis, 1995). From the middle of 1991 the Bank of England kept 40 small banks, which had been heavily involved in the property market, under particular close review and intensified regulatory monitoring (Logan, 2000). Over the next years, a quarter of these banks failed[5]. Bank has also established arrangements to provide liquidity support to a few small banks e.g. the National Mortgage Bank, because it was thought at the time that the risks of contagion to other larger banks had increased.

3. Lessons to be learnt

Taking as examples the 1973-1975 Secondary Banking crisis and the 1990 economic recession in the UK, one might argue that lack of attention to changes in economic or other circumstances may lead to deterioration in the credit standing of a bank's counter-parties. Also, experience from around the world indicates that credit risk of a bank's counter-party is crucially affected by the institutional framework and characteristics of the credit markets within which it functions. The default probability (PD hereafter) of a company or the riskiness of a

[3] Between summer 1990 and summer 1994 around 15 quoted property companies, previously successful like Olympia & York, Mounntleigh, Rosehaugh and Spaeyhawk, became insolvent. Smaller property companies were also taken over by receivers (Property Week, 1995).

[4] Between 1985 and 1990 yearly bank lending to property companies increased in money terms from 7 billion pounds to 38.9 billion pounds with overseas investors providing some 40%. By 1990 the banks' total property debt amounted to approximately 500 billion pounds (Harvey, 2000).

[5] Bank of England considers as failed those banks that entered into administration or liquidation, had their banking license revoked or received liquidity support.

loan will be affected by the existence of a number of factors: 1) ***Collateral***: Loans may be collateralized by real property, automobiles, equipment, inventories, accounts receivable, securities, savings accounts as well as mutual funds and life insurance, 2) ***Third party guarantee***: If a loan is endorsed by a third party guarantee then the third party is committed to repay the borrower's debt in case the borrower defaults, 3) ***Loan covenants***: Usually the credit contract between a bank and a borrower contains covenants limiting the possible actions of the borrower. These covenants might vary across countries but usually include the responsibility of the borrower to submit financial statements frequently, commitment not to issue new debt, restricted dividend payment etc., 4) ***Information costs***: Possibility of sharing information about the credit history of borrowers in order to reduce the unavoidable information costs inherent in the lending decision, 5) ***Bankruptcy legislation***: Bankruptcy process is complex in reality and varies across countries due to the different bankruptcy legislations. For example, the level of protection of the different parties involved in the bankruptcy process (workers, suppliers, shareholders, and creditors) is different from one country to another. Although we will not attempt in this paper to describe differences in bankruptcy legislation across countries, it is important to note that these differences affect the value of the bank's claim on the bankrupt firm.

4. The Basel Committee on Banking Supervision, the 1988 Capital Accord and Basel II

Basel Committee for Banking Supervision (BCBS hereafter), the G7 Finance Ministers, the G10 central bank Governors and international financial institutions such as the International Monetary Fund and the World Bank, have called for progress in the area of market discipline of financial institutions in general and in particular, banks. The Committee's aspiration as outlined both at Basel I (1988) and Basel II (2006) is to stabilize the relationship between commercial banks equity capital –as this expressed by its core (Tier I) and supplementary (Tier II) elements[6]- and their liquid assets. These assets are included either in the banking book (that is the different categories of loans) or in the trading book (that includes financial instruments such as bonds, equities and derivatives).

BCBS has published a series of documents[7] to provide "guidance to banks on recognition and measurement of loans, credit risk disclosure and related matters". It is clear that information on bank's credit risk profiles, including the quality of their credit exposures and the adequacy of their credit risk management process, is crucial in market

[6] According to Basel II (2006), Tier I is the bank's Core capital that consists of equity capital (common stocks) plus disclosed reserves (mainly the post tax retained earnings) and Tier II consists of preferred stock and subordinated debt.

[7] -BCBS (July 1999), ''Sound Practices for Loan Accounting and Disclosure'', Basel Committee Publications, No 55, Bank of International Settlements.

-BCBS (September 2000), ''Best Practices for Credit Risk Disclosure'', Basel Committee Publications, No 74, Bank of International Settlements.

-BCBS (September 2000), ''Principles for the Management of Credit Risk'', Basel Committee Publications, No 75, Bank of International Settlements.

participants' assessment of their condition, performance and ability to survive in the long-run. BCBS sets out banking supervisors' views on sound loan accounting and disclosure practices for banks focusing on how to minimize the credit risk in the loan portfolio.

"The sound practices specifically address the following areas: (i) Establishing an appropriate credit risk environment, (ii) Operating under a sound credit-granting process, (iii) Maintaining an appropriate credit administration, measurement and monitoring process, (iv) Ensuring adequate controls over credit risk" (BCBS, 2000). Credit risk can be potentially minimized through accurate loan pricing (the riskier the borrower the higher the loan rate), credit rationing (availability of a certain type of loans available restricted to a selected class of borrowers), use of collateral, loan diversification, use of quantitative/qualitative methods to predict the probability of default by the borrower and financial regulation/supervision.

4.1. The Basel I Regulatory Framework

Apart from those guidelines proposed by the BCBS, we also need to consider the 1988 Basel Capital Accord or Basel I, the international capital standard for banks. BCBS (1988) established the basic architecture for setting minimum-risk based capital requirements for banking organizations in order to stabilize the international financial system. At the time, Basel I recognized as an important element of the risk equation, banks' ***credit risk*** exposure only. This is linked to the banking book assets. At a later stage, due to trading book expansion, BCBS recognized the importance of the ***market risk*** exposure as well.

Basel ***Capital Adequacy Agreement*** imposes internationally agreed weights on different types of risk, including off-balance-sheet risks, and requires that banks in countries subscribing to the agreement should maintain a ratio of 8% capital to risk-weighted assets. Risk weights (RW hereafter) which vary from 0%-100% are applied to both banking and trading book categories of assets to derive the ***Risk Weighted Assets***[8] (RWA hereafter). Total risk exposure for banks is derived if we multiply the R.W.A. with the quantities of banks liquid assets. According to Basel I, banks were obliged to hold eight percent (8%) of their equity capital (Tier I and Tier II form) as a cushion to the credit and market risk exposures. This is known as the ***Capital Adequacy Ratio*** (CAR hereafter) and initially had the following algebraic form:

$$CAR = \frac{Equity(Tier\ I + Tier\ II)}{\{Credit\ Risk\} + \{Market\ Risk\}} \geq 8\% \qquad (1)$$

where market risk is the banks trading book actual exposure and credit risk is the corresponding banking book actual exposure.

4.2. The Basel II Regulatory Framework

The rapid pace of financial innovation in recent years (e.g. securitization) has focused regulatory attention on potential shortcomings in Basel I. "The fundamental objective of the Committee's

[8] Basel I provide analytical tables for the percentages attributed to all banking and trading book categories of assets.

work to revise the 1988 Accord has been to develop a framework that would further strengthen the soundness and stability of the international banking system while maintaining sufficient consistency that capital adequacy regulation will not be a significant source of competitive inequality among internationally active banks" (BCBS, June 2004). More specifically, large banks around the world engage in what is termed as ***regulatory capital arbitrage***[9] (opportunities for banks to substantially reduce their regulatory capital requirements with little or no corresponding reduction in their overall economic costs). Those banks attempt to drive down the effective "regulatory capital" requirement for a set of risk positions, to levels well below the Basel Capital Accord's nominal 8%. Problems like this, have justified the need for better methods of risk quantification.

In response to these problems, a new capital adequacy framework has been initiated and is commonly known as Basel II. The New Basel Capital Accord consists of three pillars. The BCBS publication on "Basel II: International Convergence of Capital Measurement and Capital Standards: a Revised Framework (Comprehensive Version)" in June 2006 sets out "the details for adopting more risk-sensitive minimum capital requirements for banking organizations" (first pillar). The second pillar deals with the supervisory review process requirements. The third pillar aims "to bolster market discipline through enhanced disclosure by banks" (BCBS, June 2006). The revised framework explicitly requires that credit risk quantification models and internal credit risk rating systems[10] become an important element of large commercial banks' measurement and management of the credit risk of both individual exposures and portfolios.

After many years of consultation with the interested parties and in the light of a rapidly globalizing financial environment, BCBS (2006) published some new clarifying "directives", which they were focusing on three main issues. In particular, Basel II initiated:

1. New methods for a more accurate estimation of the banking book (credit risk) exposure that is the ***Standardized*** and the ***Internal Rate Based*** (IRB hereafter) methods. These methods take into account both the collateral and the relevant "haircuts"[11] attached to them.
2. An increased number of banking book and trading book categories of assets (with an analogous increase in financial collateral) for a more accurate calculation of credit risk and market risk exposure.

[9] For example banks remove from the banking book financial instruments for which the 8% Basle capital standard is too high, relative to the underlying economic risks, while retaining instruments for which the Basle standard is too low. For an extensive presentation and discussion of "the principal techniques used to undertake capital arbitrage and the difficulties faced by bank supervisors in attempting to deal with these activities" under Basel I, please see Jones (2000).

[10] Internal credit risk models are used in estimating the economic capital needed to support a bank's credit activities. For a description of the internal rating systems presently in use at the 50 largest US banking organizations please see Treacy and Carey (2000) and Federal Reserve System Task Force on Internal Credit Risk Models (1998).

[11] Haircut is the standard deviation of the price of the different types of collateral (financial or real assets).

3. The re-estimation of CAR by taking into account banks exposure to Operational Risk as well[12]. The new CAR, which emerged from Basel II, has the following algebraic form:

$$CAR = \frac{Equity\ (Tier\ I + Tier\ II)}{\{Credit\ Risk\} + \{Market\ Risk\} + \{Operational\ Risk\}} \geq 8\% \qquad (2)$$

with two restrictions:

i) ***Tier I*** (core capital) ≥ ***Tier II*** (supplementary capital) and

ii) $$CAR = \frac{Equity\ (Tier\ I)}{\{Credit\ Risk\} + \{Market\ Risk\} + \{Operational\ Risk\}} \geq 4\% \qquad (3)$$

Next in our paper is the discussion of Basel II propositions with regard to real estate lending (RE hereafter) in our attempt to identify its strong and weak points.

4.3. Basel II Framework: Bank Exposure to Real Estate Lending

BCBS initially recognized two simple RE lending categories, that is the ***residential mortgage loan*** category with RW=50% and a more general one, the ***commercial real estate loan category*** with RW=100% (see Basel I, 1998). However, this was a rather poor classification of RE loans and the need for a better and more detail categorization become obvious very soon. As it was previously mentioned, credit risk exposure is estimated in Basel II with two alternative methods; the ***Standardized*** and the ***IRB*** method. In the following section we show how banks exposure to RE lending is calculated/measured, first in the Standardized and second in the IRB approach.

4.3.1. The Standardized Approach

The Standardized approach is further divided into two sub-methods; the ***Simple*** and the ***Comprehensive*** method. The ***Comprehensive*** approach[13] pre-assumes the knowledge of the haircuts which accompany the RE collateral of banks counterparty. However, these haircuts are very difficult to be calculated because data on real estate transactions are rarely available and for this reason banks are not in a position to calculate the actual loan exposure. In the ***Simple*** approach no prior knowledge of the haircuts is required. In this approach, banks are in a position to estimate the actual RE loan exposure by using risk weights which are exogenously set by the Basel II framework (see Table 1).

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[12] For an analytical presentation of the ***Operational Risk*** exposure see BCBS (Nov. 2005) and Akkizidis and Bouchereau (2006).

[13] The relevant formula in Basel II (2006) for ***banking book (loan)*** exposure is:

$$E_i^{\ f} = \max\{0, [E_i * (1 + H_i^{\ e}) - Co * (1 - H_i^{\ co})]\}$$

with $H_i^{\ e}$, the haircut attached to bank's specific credit exposure E_i, and $H_i^{\ co}$, is the haircut attached to the collateral. Note that if $E_i * (1 + H_i^{\ e}) \leq Co * (1 - H_i^{\ co})$ then $E_i^{\ f} = 0.$

Table 1: Risk Weights in the Simple Standardized approach with RE collateral

Real Estate categories of loans	Risk Weights
Mortgages on Commercial Real Estate	100%
Mortgages on Residential Property	35%
Non-Performing Residential Mortgage Loans (past due for more than 90 days)	100%
Past due Residential Mortgage Loans (with specific provisions for more than 20% of their outstanding amount)	50%

Source: Basel Committee on Banking Supervision (2006)

4.3.2. The Internal Rate Based Approach

The IRB method like the Standardized one is divided into two sub-methods i.e. the *Foundation* and the *Advanced* method. There is a distinct difference between the two sub-methods. In the *Foundation* approach, the lending bank is allowed to use its own calculation of the *Probability of Default* (PD hereafter) for each counterparty. *Loss Given Default* (LGD hereafter) and *Exposure at Default* (EAD hereafter) are not required to be calculated by the bank. For the estimation of the regulatory capital in this case, RW which are exogenously set by the Basel II framework are used. In contrast, when the *Advanced* approach is implemented, the bank is allowed to internally calculate all the aforementioned parameters (LGD, EAD and PD)[14].

It is important to note that when the IRB approach is implemented for the estimation of the RE lending exposure, BCBS recognizes the existence of three sub-categories of RE lending.

1. The *Income Producing Real Estate* (*IPRE* hereafter) category of loans. This includes loans collateralised by real estate such as office buildings to let, retail space, multifamily residential buildings, industrial or warehouse space and hotels. In this case bank credit exposure is collateralised by the cash flows generated by a property i.e. rental, lease payments or sale of the real asset.
2. The *Residential Mortgage Loans* and
3. The *Highly Volatile Commercial Real Estate* (*HVCRE* hereafter) category of loans. This includes "loans financing any of the land acquisition, development and construction phases for properties" (BCBS, 2006, p.54). In this case, the "source of repayment at origination of the exposure is either the future uncertain sale of the property or cash flows whose source of repayment is substantially uncertain e.g. the property has not yet been leased to the occupancy rate prevailing in that geographic market for that type of commercial real estate" (BCBS, 2006, p.54).

We next present and analyse the *Advanced* IRB method with respect to R.E lending. Such method, as its name implies, is more sophisticated than the *Foundation* IRB method.

4.3.2.1. The Advanced Internal Rate Based approach

In the *Advanced* IRB approach there isn't any particular concern regarding the calculation of R.E. lending exposure since banks are allowed to internally estimate the corresponding regulatory capital

[14] For the different ways of an internal calculation of these three parameters see Stefanou & Mendoza (2005) and Panagopoulos & Peletides (2007).

(see equation 8 in Appendix). From the moment regulatory authorities of a country grant permission to a bank to internally implement ***Advanced*** IRB approach, they intervene only in order to monitor the accurate execution of the IRB method ((see Pillar 2, Supervisory Review Process, (BCBS, 2006)). In this case, any interested bank to apply this approach needs to have all the necessary information (LGD, PD and EAD) and the technological infrastructure to calculate the CAR. The proper implementation of this approach by banks is expected to lead to lower CAR than any other alternative approach. More concrete problems and deficiencies, concerning the RE lending calculation, appear when the IRB ***Foundation*** method is implemented by banks.

4.3.2.2. The Foundation Internal Rate Based Approach

As it was previously mentioned, when a bank selects to use this approach, it basically implies that it is not able to "produce" internal estimations for the LGD and EAD. In such case the bank cannot implement equations 6 and 7 from the system of equations shown in Appendix[15]. For the calculation of the regulatory capital in the ***Foundation*** approach RW which are exogenously set by the Basel II framework are used. More specifically, RW for the ***HVCRE*** (varying from 95% to 250% according to the counterparty credit condition) and ***IPRE*** (varying from 70% to 250% according to the counterparty credit condition) sub-categories of RE lending, are given in Tables 2 and 3, respectively. Lastly, there is no provision of RW as far as the third sub-category of RE lending is concerned i.e. the ***Residential Mortgage Loans.***

Table 2: Risk weights for unexpected losses (UL)[16] in the HVCRE case

Category	Strong	Good	Satisfactory	Weak	Default[17]
RW (%)	95%	120%	140%	250%	0%

Source: Basel Committee on Banking Supervision (2006)

Table 3: Risk weights for unexpected losses (UL) in the corporate risk category which includes the IPRE case

Category	Strong	Good	Satisfactory	Weak	Default
Rating	BBB- or better	BB+ to BB	BB- to B+	B to C-	
RW (%)	70%	90%	115%	250%	0%

Source: Basel Committee on Banking Supervision (2006)

For a better understanding of the way IRB ***Foundation*** approach operates, we give below an example on how the regulatory capital requirements can be calculated. Let's assume that a bank's counterparty is classified as ***Good*** in an IPRE case (from Table 3 we get that RW is equal to 90%) and bank's real estate loan exposure is €30.000 (EAD). By substituting data

[15] If it could, it would have selected to implement in the first place the ***Advanced IRB*** method.

[16] Note that in the ***IRB*** approach –in contrast to the ***Standardized*** approach – BCBS proposes the estimation of the unexpected losses (UL).

[17] When a bank counterparty defaults the EAD should be equal to the regulatory capital. Bank is obliged to cover the lost amount of money from its equity. This happens only when the RW is 1,250%. Thus, the proper RW in a case of default should actually be 1,250% and not 0% as it is presented in Tables 2 and 3.

into equation 8 (see Appendix) one can get that capital requirement is € 2160 (=90% X 30.000 X 0.08)

4. Conclusions

The real estate lending is a significant part of every bank's banking book portfolio. Any crisis in the real estate sector, produced by the sharp and unexpected fall of real estate collateral prices, is immediately transmitted to the bank's actual exposure. This is next transferred to the bank's equity capital causing a banking crisis. Historical data in the UK (the 1973-1975 Secondary Banking crisis and the 1990 economic recession) and elsewhere (Japanese real estate bubble in the early 1990s) show that there is a very close relationship between the over-borrowing of the real estate companies, the real estate bubbles and the banking crises.

Should and can anything be done in order to prevent a repetition of the property market collapses and banking crises of the 1970s and the early 1990s in the UK and elsewhere? Prudence needs to be reinforced by some form of regulation of the financial system. The main objective of the BCBS is to secure the stability and soundness of the international financial system through regulation of financial institutions and in particular of commercial banks. Although "the Basel Committee on Banking Supervision does not possess any formal supranational supervisory authority, and its conclusions do not, and were never intended to, have legal force" (BCBS, 2000). It is expected that once finalized, the Basel II framework will: 1) Increase the capital cushions of the banks around the world, 2) Lead to a reduction in major banking failures, 3) Provide cross-border consistency in capital standards, 4) Allow banks to undertake in unison what they are reluctant to do individually. Basel II has become effective for EU member states in January 2007 and is on target to become effective in USA in January 2009.

Having said that, it seems that property is only a small part of the Basle II proposals and the sections dealing with it are some of the least well defined. We are skeptical with regard to the way banks should calculate their capital requirements for property lending according to Basel II. We believe that a number of issues are not present in Basel II and particular attention should be paid on: 1) The adoption of the international definition of market value, 2) A better clarification of what constitutes HVCRE and a more concrete definition of IPRE, 3) Considering the potential merits of investment grade property as the optimal collateral, 4) Acknowledgement of international valuation standards and lastly 5) The establishment of a regular dialogue with the valuation profession in the mutual quest for improved standards.

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Appendix

The Advanced Internal Rate Based approach

Basel II (2006) provides a system of equations to calculate the regulatory capital for three categories of the real estate lending. More analytically, in the ***IPRE*** case (which is part of the corporate risk category) the following system is implemented :

$$\text{Correlation(R)} = 0.12 * \frac{1-e^{-50*PD}}{1-e^{-50}} + 0.24 * \left(1 - \frac{1-e^{-50*PD}}{1-e^{-50}}\right) \quad (4)$$

$$\text{Maturity adjustment}\left(b\right) = \left(P_a - P_b * Ln(PD)\right)^2\right) \quad (5)$$

Capital Requirement(K%) =

$$\left(LGD * N\left(\frac{G(PD)}{(1-R)^{0.5}} + \left(\frac{R}{(1-R)}\right)^{0.5} * G(0.999)\right) - PD * LGD\right) * \frac{1+(M-2.5)*b}{1-1.5*b} \quad (6)$$

$$\text{Risk Weighted Assets} = K * 12.5 * EAD \quad (7)$$

Regulatory Capital = CAR * RWA= 8% ***RWA** (8)

where :
G(PD): is the accumulated normal distribution,
PD: stands for Probability of Loan Default[18],
LGD: stands for Loss Given default and
EAD: stands for Exposure at Default.

In the ***HVCRE*** case, all the above equations are the same but equation 4, which is substituted with equation 9.

$$\text{Correlation(R)} = 0.12 * \frac{1-e^{-50*PD}}{1-e^{-50}} + 0.30 * \left(1 - \frac{1-e^{-50*PD}}{1-e^{-50}}\right) \quad (9)$$

Finally, in the ***Residential Mortgage*** lending case (which is incorporated in the general retail risk category) the above system of equations includes the following transformations from its initial form:

Correlation(R)= 0.15 (10)

and Capital Requirement (K%) =

$$\left(LGD * N\left(\frac{G(PD)}{(1-R)^{0.5}} + \left(\frac{R}{(1-R)}\right)^{0.5} * G(0.999)\right) - PD * LGD\right) \quad (11)$$

[18] It is also important to note here that Basel II set the restriction that bank's internal PD calculation cannot take a value smaller than 3%, in a year's time period of calculation.

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