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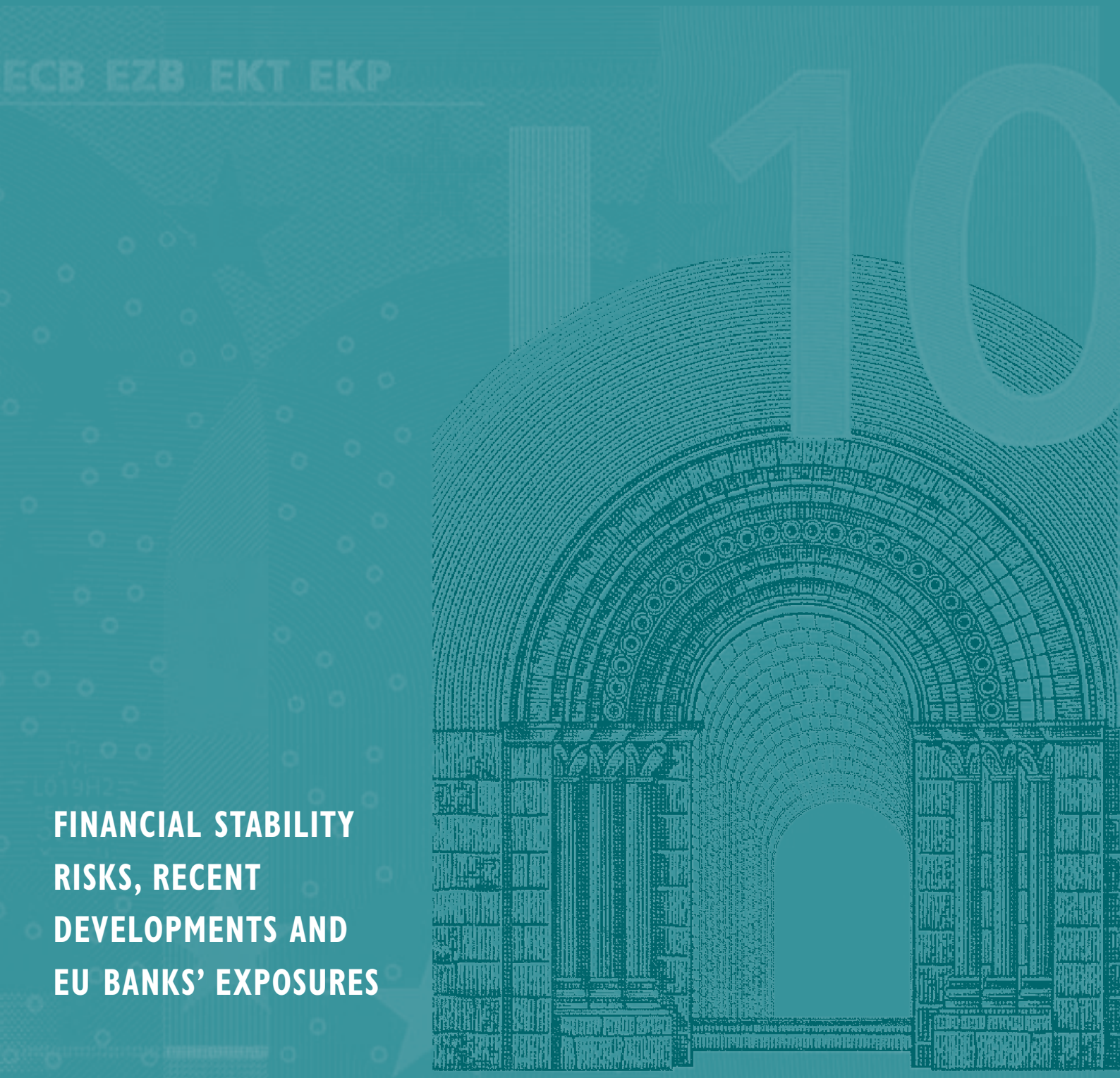
COMMERCIAL PROPERTY MARKETS

DECEMBER 2008



FINANCIAL STABILITY RISKS, RECENT DEVELOPMENTS AND EU BANKS' EXPOSURES

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EXECUTIVE SUMMARY

Developments in commercial property markets are of importance to European Union (EU) banks mainly because commercial property loans can represent a considerable part of banks' assets, and lending for commercial property tends to be more volatile than many other types of lending. Although the risks to banks stemming from commercial property markets are increasingly understood, information about commercial property prices, as well as the magnitude and possible impact of the risks they may generate for banking performance, is rather limited and fragmented across the EU. For this reason, the Banking Supervision Committee (BSC), which is a forum for cooperation among national central banks and supervisory authorities of the EU and the European Central Bank (ECB), with the assistance of its Working Group on Macroprudential Analysis (WGMA), decided to carry out a study with the objective of assessing EU commercial property markets from a financial stability perspective. This report discusses structural and more recent developments in EU commercial property markets and analyses EU banks' exposures to commercial property markets.

The analysis in this report draws on a broad range of information sources. The relevant literature is used to give an overview of structural features and the potential for financial stability issues related to the commercial property market. The analysis of recent developments in commercial property markets draws on information from databases covering a considerable number of EU countries. However, the quality of the data on commercial property markets is uneven across countries. In the light of the opacity of many aspects of commercial property markets and the risk potential of these markets, efforts could be made to achieve a more consistent framework allowing for better comparison and more adequate analysis of potential risks to financial stability.

The report also benefited from the views of a broad range of market participants and market observers.

In order to assess the magnitude of banks' exposures to commercial property markets, data were gathered by means of a quantitative questionnaire based on aggregated national information available to EU supervisory authorities and central banks. A number of national authorities also decided to survey large banks chosen due to their potentially significant exposures to commercial property. This survey consisted of a qualitative and a quantitative part.

Survey results revealed that many EU banks have material commercial property lending exposures in terms of both total assets and total loans. On average, for the EU banks surveyed, at the end of 2007, commercial property-related loans amounted to 5.4% of total assets and 11.6% of total loans. Furthermore, data collected for this report suggest that, in general, the share of commercial property-related loans in EU banks' total lending has gradually increased in the past few years, at least until 2006. Available data suggest, however, that the growth of lending to the commercial property sector decelerated in 2007 in the EU.

It should be noted that large differences exist across surveyed banks according to their involvement in commercial property lending. As regards the comparability of these ratios at the country level, a certain degree of caution is warranted. In particular, the coverage of the survey differs significantly across countries as some countries only reported data on the banks that are most active (or indeed specialised) in commercial property lending while others provided data on the whole banking system.

Regarding key commercial property market developments, after a significant downturn in the early 1990s, the recovery gathered momentum between 2003 and 2006 in most

EU Member States in the context of a sustained period of economic prosperity, prompting many new investors to enter the market. The increased appetite among global investors for higher yielding assets, strong financial innovation and relatively accommodative credit conditions also contributed to this development. In response to this growth in demand, financial institutions significantly increased financing to this asset class over this period.

At present, conditions in most EU commercial property markets have deteriorated. Capital values are easing, and even declining, in most countries in reaction to the large increases in previous years, but also due to the deteriorating macroeconomic environment, as well as the higher cost of and reduced access to finance for property investors. In some cases, the financial turmoil that erupted in summer 2007 contributed to the decreasing returns on commercial property and, without the financial market turmoil, market participants believe that at least some EU commercial property markets would probably have experienced a correction somewhat later. It should, however, be noted that developments in commercial property markets across the EU can differ significantly, which makes it difficult to draw conclusions for the EU as a whole.

Looking ahead, the deteriorating macroeconomic outlook for the EU and the protracted credit market turmoil are likely to further affect commercial property prices negatively in some EU countries. This could further restrict the amount of lending to commercial property investors, thereby negatively affecting demand for commercial property. Market indicators also suggest an uncertain outlook for commercial property companies, although developments differ across regions and countries.

Due to the deterioration in some EU commercial property markets, in recent quarters EU banks and investors have recorded reduced incomes, or even losses. Looking ahead, recent or future movements in returns on commercial property investments and decreases in commercial property values could result in further loan losses and declines in income related to commercial property lending for banks, or in increasing value adjustments in holdings of structured credit products referencing commercial property loans, such as commercial mortgage-backed securities (CMBSs). Further corrections in commercial property markets could therefore contribute to more write-downs by banks.

These problems could be exacerbated for those banks that rely on distributing commercial mortgage exposures via CMBSs, as issuance in this market has come to a near halt amid the financial market turmoil. However, these risks are mitigated by the limited dependence of most EU banks on CMBS markets.

I INTRODUCTION

While the risks to banks stemming from exposures to commercial property markets are increasingly understood, information about prices of commercial property and the exposures of European Union (EU) banks to commercial property markets is rather limited and fragmented across the EU. Since the size of commercial property loans extended by banks depends upon the level of commercial property prices, banks can face income risk from fluctuations in these prices. In addition, commercial property lending has often proven to be a volatile component in bank loan portfolios, as commercial property market conditions tend to be more closely linked to business cycle conditions than their residential counterpart. Commercial property prices were generally following an upward trend in the EU between 2003 and mid-2007 and, in some cases, may have reached levels not justified by fundamental variables. Some commercial property markets have seen a correction after mid-2007 and in recent quarters EU banks and investors have recorded reduced incomes, or even losses due to commercial property exposures. In the current turbulent financial market environment, which is already putting strain on a range of banks, it cannot be excluded that further corrections in commercial property prices could add to existing difficulties by deteriorating banks' asset quality, increasing loan impairment charges, eroding capital and, possibly, decreasing lending capacity.

Against this backdrop, the Banking Supervision Committee (BSC), with the assistance of its Working Group on Macroprudential Analysis (WGMA), decided to assess the EU commercial property markets from a financial stability perspective by analysing recent market developments and examining the level of EU banks' exposure to them.

The report is structured as follows. Section 2 provides an overview of commercial property markets in the EU. This is followed in Section 3 by a discussion of potential financial stability issues related to commercial property markets. Section 4 discusses recent developments in commercial property markets. The report then goes on to assess the risk outlook for commercial property markets in the EU in Section 5, followed by a summary of the main results of the survey on EU banks' exposures to commercial property markets in Section 6. Finally, the main conclusions of the report are summarised.

2 OVERVIEW OF COMMERCIAL PROPERTY MARKETS IN THE EU

2.1 WHAT IS COMMERCIAL PROPERTY?

Commercial property is usually defined as income-producing property, such as office buildings, restaurants, shopping centres, hotels, industrial parks, warehouses, factories and residential property owned by, for instance, a property company (see Figure 1). Commercial property companies can be defined as companies which are predominantly engaged in the ownership of, trading in, and development of income-producing real estate. Together with other types of property investors, they play a key role in commercial property markets.

Property used for residential purposes, such as multi-household dwellings, is labelled as commercial property when it is owned or developed for commercial purposes, for example by a professional property company or an institutional investor.

The definition of commercial property should reflect the risk profile of the asset class considered, rather than the ultimate purpose of the property. Therefore, the residential segment of commercial property should be distinguished from residential property owned and occupied by households. This is because commercial property is more often bought as a speculative investment by professional investors than residential property, which often serves as accommodation for its owners and has an intrinsic value.

In the EU, the main segments of commercial property in terms of value are office, retail and residential (see Figure 1). Therefore, this report focuses mainly on developments in and banks' exposures to these commercial property segments.

2.2 THE SIZE OF COMMERCIAL PROPERTY MARKETS IN THE EU

It is difficult to accurately estimate the overall size of commercial property markets in the EU and globally because of the fragmented and somewhat opaque nature of the markets in many countries. However, the overall size of global commercial property markets is estimated at around €17 trillion (see Chart 1).[1] Europe accounts for the largest share of the global market, with 38% of the total, followed by the United States and Canada with a combined share of 33%. Within Europe, Germany has the

1 See RREEF Research, "The Future Size of the Global Real Estate Market", June 2007.

Figure 1 Types of property

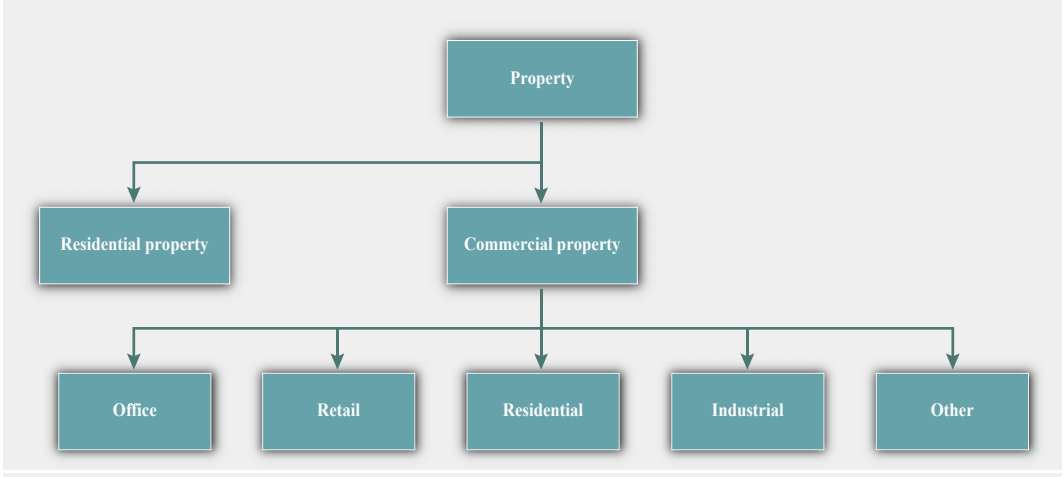
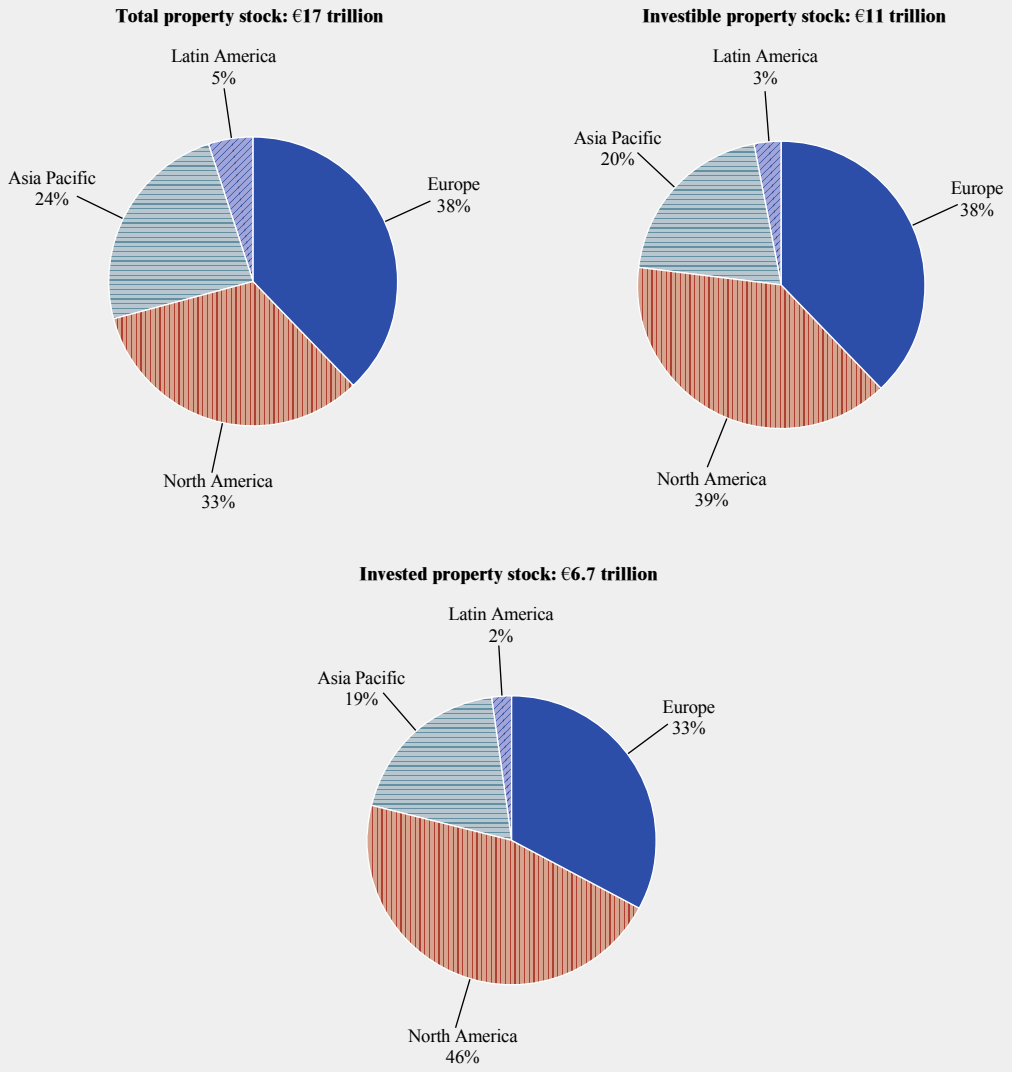


Chart 1 The size of global commercial property markets

(2006)



Source: RREEF Research.

biggest market, with a share of 17% of the total European market, followed by the UK with 14%, France (13%) and Italy (11%).

The total commercial property stock can be divided into several categories in order of increasing tradability in the markets (see Table 1). The size of the "investible" part of the market is estimated at about €11 trillion, or 65% of the total market (see Chart 1). The "investible" part is smaller due to the fact that not all properties can be sold by the owners, such as some government-owned buildings, e.g hospitals, schools and similar properties, and because government regulation is sometimes preventing the selling of property.

Within the "investible" part of commercial property markets it is possible to isolate the share that is "invested", i.e. owned by

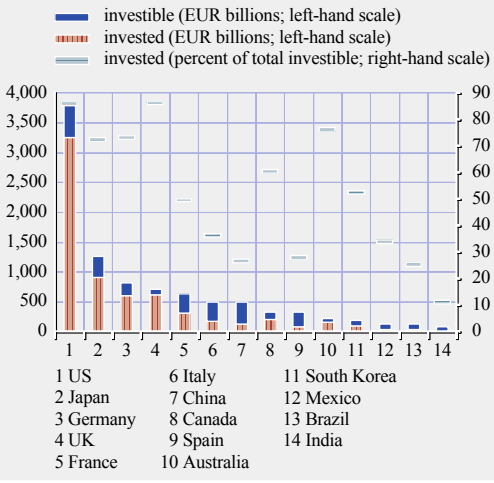
Table 1 Total, "investible" and invested commercial property stock

Total property stock	
"Investible" property stock	= share of "**total property stock**" of investment grade quality which can be sold to professional investors or is currently owner-occupied, but could become available for sale later.
"Invested" property stock	= share of "**investible property stock**" which is not owner-occupied, and thus owned by professional real estate investors for investment purposes.

professional investors and not owner-occupied. This share corresponds to the relatively more "liquid" stock in the commercial property market. The overall size of the invested market is estimated at around €7 trillion. The share of the invested part of the market in the total property stock varies considerably across countries, reflecting different degrees of owner occupation (see Chart 2). Mature economies typically have a higher share of the commercial property market invested than emerging markets. Within the EU, the United Kingdom and Germany have the highest share of the market invested with 86% and 73% respectively.

Chart 2 "Investible" and invested commercial property across selected global markets

(2006)



Source: RREEF Research.

These shares are significantly lower in other EU countries, such as France, Italy and Spain.

Beyond the variation in the size of markets across the world and within the EU, there are also differences within markets in the relative sizes of the main commercial property types, which mainly include offices, retail space, and residential multifamily houses. In general, the office segment is the largest in the EU Member States, with the exception of the UK, where the retail segment accounts for almost half of all commercial property. One reason for the strong positions of the office and retail segments is the secular trend in activities away from manufacturing towards service industries. As a result, the demand for office and retail space has increased to the detriment of industrial property. In addition, industrial property is often owner-occupied, because buildings are often tailor-made for a specific company. The share of the multi-family housing market varies considerably across EU Member States mainly due to the different forms of ownership that exist for apartments and the different occupier ownership rates.

2.3 STRUCTURAL FEATURES OF COMMERCIAL PROPERTY MARKETS

At first glance, supply and demand factors in commercial property markets seem not to be fundamentally different from those in many other markets. Supply appears to be mainly determined by the cost of the inputs (e.g. cost of land and construction materials, as well as of financing). Demand for commercial property is primarily driven by economic activity and financing conditions. There are, however, a number of features which make commercial property investment distinct from other types of investments.[2]

2 A number of authors have stressed the special nature of commercial property markets. See, for example, M. Ball, C. Lizieri, and B.S. MacGregor, *The Economics of Commercial Property Markets*, 2008, Routledge; P. Hilbers, Q. Lei and L. Zacho, "Real Estate Market Developments and Financial Sector Soundness", *IMF Working Paper*, No 01/129 2001; and H. Zhu, "The importance of property markets for monetary policy and financial stability", *BIS Papers*, No 21, 2003.

Commercial property is a real physical asset which is not portable and, as such, is less subject to the usual competitive pressure. Both supply and demand can experience significant strains and can develop differently in different countries, cities and even locations that are close to each other. Therefore, price discrimination and market power can have an impact on both the supply and the demand side.

In comparison to existing commercial property buildings, newly built commercial property typically accounts for a small share of total commercial property. The lifetime of the stock – although subject to replacement over time – is long. Also, it often takes time to construct new buildings – typically between two and four years – although the production time varies and depends on, for example, the nature of the construction and local rules and regulations. The high transaction costs (e.g. planning and construction costs, delivery lags, costs of selling and costs of destruction) act as production and resaleability constraints, leading to reduced market liquidity, i.e. there is no quick supply response to a change in demand. A corollary of the slow adjustment processes is that short-term price arbitrage (including through short-selling using derivatives) is possible only to a very limited extent, if at all.

These factors contribute to making short-run supply inelastic and the commercial property market primarily demand-driven, although this does not hold in the long run when supply is more flexible.

Commercial property markets are over-the-counter (OTC) markets, i.e. transactions are bilateral between the buyer and seller, with no central marketplace. When trades are infrequent, as is typically the case, commercial property markets are often characterised by a considerable lack of price transparency. In addition, because of the long-term nature of rental contracts, rents generally adjust only slowly to changes in supply and demand and contribute to sticky prices.

Nevertheless, sharp movements in commercial property prices can occur. In particular, expected rates of growth in real cash flows and discount rates have the potential to change suddenly, resulting in abrupt and sharp changes in income streams and value that are often difficult to predict.

Equity finance is feasible in principle but, historically, debt financing is more commonly used and investors are sometimes highly leveraged. Also non-property companies often use real estate holdings as collateral when borrowing money.

A further difference between commercial property markets and other markets is that a principal-agent problem may arise in commercial property markets when the decision-making agents are rewarded on short-term performance and act on behalf of those whose money is invested without the possibility for the former to monitor the link between the decision made and the outcome.

Because of the special features of commercial property markets, prices may sometimes deviate from their fundamental values, possibly leading to cycles and occasionally even price bubbles (see Box 1).

2.4 COMMERCIAL PROPERTY AS A FINANCIAL ASSET

Traditionally, physical assets are traded in commercial property markets. Depending on national jurisdictions and economic needs, this type of market has been complemented over time or is in the process of being complemented by a market where investors can invest indirectly in different types of property funds or in financial market products (see Table 2). In other words, commercial property is no longer only a physical asset but is increasingly also a financial asset.

The main investors in indirect commercial property placements are private investors and institutional investors, such as banks, insurance

Table 2 Direct and indirect commercial property investment

	Direct investment	Indirect investment						
		Open-ended property funds	Closed-ended property funds	Speciality funds	Private equity and hedge funds	Real estate investment trust (REITS)	CMBSs and commercial property CDOs	Property derivatives
Main investor group	Institutional investors, high net worth private investors	Private investors	High net worth private investors	Institutional investors	Institutional investors, high net worth private investors	Institutional investors	Institutional investors	Institutional investors
Tradability	Poor	Good	Poor	Poor	Poor	Very good	Good	Poor
Transaction costs	Very high	High	Very high	Moderate	High	Low	Low	Low
Correlation with other assets	Low	Moderate	Low	Low	Moderate	Correlated with equities	Low	Low
Transparency	Low	High	Medium	Medium	Low	High	High	High
Main risk for investor	Liquidity risk/ concentration risk	Liquidity risk	Liquidity risk	Concentration risk	Liquidity risk/ operational risk	Stock market liquidity	Credit risk	Liquidity risk

Sources: ZEW/ebs, Deutsche Bank Research, ECB and BSC.

companies, pension funds, endowments, foundations and hedge funds.

Indirect investments mainly take the form of property funds, such as real estate investment trusts (REITs), commercial mortgage-backed securities (CMBSs) and property derivatives.

REITs are a relatively new form of publicly traded property equity investment in the EU. They are publicly traded real estate stock corporations which are exempt from both corporate income and trade income tax. They must derive at least 75% of their income from property investments, and pay at least 90% of their taxable income to shareholders. REITs are distinct from other listed property companies in that the incentives for managers are often different. In particular, the principal-agent problem mentioned earlier is to some extent alleviated by the fact that mangers/ developers pledge their own money, which is a strong motivation to analyse risks of default carefully. In addition, REITs generally have a relatively low level of gearing and there is a tendency to incur long-term debt rather than short-term debt. Furthermore, rents rather than construction and development activities are the main source of income for most REITs. Income streams are therefore often less volatile than those of property companies.

REITs are listed on stock exchanges, and although their value should depend entirely on the value of the property they represent, they tend to move with the rest of the equity market. This can be a problem for investors seeking commercial property exposure and not equity exposure.

In recent years, listed REIT structures have been set up in a range of EU Member States. They currently exist in Belgium (1995), Bulgaria (2005), Germany (2007), Greece (1999/2002), Spain (1984/2003), France (2003), Italy (2007), Lithuania (2007), the Netherlands (1969), and the United Kingdom (2007).

The high volume of direct investment in commercial property witnessed during recent years, which has largely been debt-financed, has created a need for banks to spread some of the related credit risk via debt securities. This credit risk transfer is mainly achieved by issuing CMBSs. CMBSs are a type of bond issued in tranches (i.e. different risk categories) in securities markets and are backed by commercial property mortgages. They allow banks to spread part of the risk linked to commercial mortgages to other market participants and are traded publicly. By pooling commercial property loans into tranches with a defined risk category, CMBSs reduce the uncertainty of cash flows that characterises the physical market. The sale of the risk frees up resources for lenders.

Lately, commercial property collateralised debt obligations (CDOs) have joined CMBS transactions as an additional vehicle for financing commercial real estate. Commercial property CDOs only emerged in Europe recently, when lenders began to follow the US practice of dividing the commercial real estate loans into senior and junior pieces. This has in turn spurred demand from investors with different appetites for risk and has allowed banks to transfer more subordinated real estate loan products (such as B notes and mezzanine loans).[3] Commercial property CDOs can either be backed by rated collateral, such as CMBSs, or commercial real estate loans.[4]

Property derivatives are the latest development that support commercial property as a financial asset. Derivatives give the buyer the right to buy or sell an underlying asset at an agreed price in the future (based on price indices for property derivates) against a premium paid in advance. The cost of buying or selling physical property is thereby reduced to a fraction of its notional value. Real estate swaps are another related product. These allow two parties to swap cash flows, for instance a spread over a reference rate, against the change in a property index over a certain period. Here the cost of taking an exposure is even less than in the abovementioned property derivatives. Both product types give lenders and investors more flexibility, which should, in principle, contribute to freeing up resources for additional business.

3 See Fitch Ratings, "Laying the Foundations – the Potential for European Real Estate CDOs", September 2006.
4 See Fitch Ratings, "Commercial Real Estate CDO Servicing: A La Carte or Prix Fixe?", February 2007.

3 COMMERCIAL PROPERTY MARKETS AND FINANCIAL STABILITY

History has shown that disorderly adjustments in commercial property markets can play an important role in financial crises, most notably in the Nordic countries and in the United States in the early 1990s and in Asian economies in late 1990s (see Annex for a description of commercial property crises in the past).

Developments in commercial property markets can have important implications for financial stability via a number of channels, four of which can be considered core channels.[1] First, a significant proportion of many EU banks' assets are comprised of loans extended for investment in commercial property. Second, loans for commercial property investment tend to be more volatile than many other types of lending in banks' loan portfolios. Third, adjustments in commercial property prices can also indirectly impact on banks' balance sheets in that they have negative implications for the real economy. Fourth, institutional investors, such as insurance companies, pension funds, hedge funds and private equity firms, sometimes have large investments, both directly and indirectly, in commercial property markets.

The effects of these channels can be reinforced or alleviated by a number of other factors: 1) financial innovation plays an ever increasing role in commercial property financing, possibly generating risks; 2) major property markets worldwide seem to be increasingly interdependent; and 3) it has been noted that financial crises in which commercial property markets have played a significant role have on several occasions been linked to financial liberalisation, revealing possible shortcomings in public policy initiatives.

3.1 BANKS' LENDING EXPOSURES TO COMMERCIAL PROPERTY

In recent years, many EU banks have increased their exposures to the commercial property sector. In some cases, this has increased the dependence of banks' balance sheets on developments in commercial property markets. Banks' exposures to the real estate sector (both residential and commercial) take many different forms, such as direct holding of real estate assets, collateralised lending for the purchase of real estate, providing finance to developers and construction companies, using real estate as security for other forms of lending and extending advances to non-bank financial intermediaries such as finance companies, which provide loans to the real estate sector.[2] On average, a sample of EU banks surveyed for this report had commercial property-related loans amounting to 5.4% of total assets and 11.6% of total loans at the end of 2007 (see Section 6.2).

Changes in commercial property prices may affect the financial health of banks through different channels. Specifically, a correction in the commercial property market can lead to a deterioration in asset quality and a decline in income and profitability. However, sharp and sustained declines in commercial property prices will only lead to credit losses if – in addition to negative equity – borrowers are unable to meet their debt-servicing obligations. In this regard, it is important to monitor the financial position of commercial property borrowers, as well as price developments for financial system stability assessments. In addition to reducing asset quality, sharp declines in commercial property prices may also have an indirect impact on banks' income and profitability, especially if banks are dependent upon commercial property loans.[3] A downward adjustment in property prices may lead to a smaller capital base and a decline in the value of the banks' own holdings of commercial property. Both developments may constrain future lending capacity.[4]

1 Some of these risks have also been highlighted in ECB, "Commercial property investment and financial stability", *Financial Stability Review*, December 2007.
2 See, for example P. Hilbers, Q. Lei and Zacho, "Real Estate Market Developments and Financial Sector Soundness", *IMF Working Paper*, No 01/129, 2001.
3 See, for example H. Zhu, "The importance of property markets for monetary policy and financial stability", *BIS Papers*, No 21, 2003.
4 For occupied premises this is true only if they are evaluated in terms of their fair value, which is not necessarily always the case.

3.2 THE VOLATILITY OF BANKS' COMMERCIAL PROPERTY LOANS

As historical evidence has shown, commercial property-related lending tends to create relatively higher losses for the banking sector during times of financial stress compared with other types of lending, such as residential mortgages (see Annex for a discussion on past banking crises). There are two possible reasons for this. First, default rates and subsequent credit losses have often proven to be lower for households than for non-financial corporations during times of crisis. Second, commercial property prices tend to be more volatile and track the economic cycle with greater amplitude than residential house prices (see Box 1).[5]

Corporate borrowers have a higher probability of default during times of financial stress compared with households for a number of reasons. Developers can be faced with "perverse incentives" during a period of both robust capital appreciation and accommodative lending conditions, which may lead to greater risk-taking.[6] Investors in commercial property also often prefer to be highly leveraged, as they prefer to minimise their capital exposure in each project and to maximise the amount of risk borne by the lender. Therefore, banks often require lower loan-to-value ratios, more stringent loan covenants, guarantees and some pre-selling on a proportion of the project, when extending such advances. However, during an economic upturn, increased competition may lead to a loosening in lending standards, leading to a weakening in covenants. Also, banks often find it difficult and costly to monitor commercial property projects. This combination of asymmetric information and high gearing provides developers with an opportunity to increase the risk profile of their projects in order to maximise returns during an upturn. In this context, commercial property investors become more vulnerable to default if there is an abrupt reversal in prices. Households, by contrast, may have a greater incentive to avoid default on their mortgages, as housing is both a consumption and investment good. In addition, banks generally find it easier to evaluate the default risk of households compared with commercial property projects, i.e. the asymmetry of information is less pronounced.[7]

5 See M. Woods, "A Financial Stability Analysis of the Irish Commercial Property Market", *Central Bank and Financial Services Authority of Ireland Financial Stability Report,* 2007.

6 See R. Herring and S. Wachter, "Real Estate Booms and Banking Busts: An International Perspective", *Wharton Financial Institutions Center Working Paper*, No 99/27, 1999.

7 The sub-prime crisis has, however, highlighted the fact that banks may lack the proper incentive to evaluate the default risk of households and, consequently, to reduce problems related to asymmetric information.

Box 1

CYCLES AND BUBBLES – THEORIES AND EVIDENCE FOR COMMERCIAL PROPERTY MARKETS

References to "cycles" and "bubbles" have a long tradition in the literature on commercial real estate markets. Cycles are often loosely thought of as continuous up and down-swings around some fundamental trend, which do not necessarily imply sudden and sharp changes in value, although these are not excluded when fundamentals change rapidly. By contrast, bubbles are often described as dramatic price increases preceding a collapse. Cycles and bubbles conceived of in this way can co-exist, whereby cycles generally seem, for a number of reasons, to be regarded as being part of the "normal life" of commercial property markets, and bubbles rather as exceptional events. It is not always easy to distinguish empirically between cyclical movements and bubbles – all the more so as the empirical identification of both cycles and bubbles per se is already problematic. In addition, explanations of these two notions sometimes overlap as

reference is made to prices exceeding the fundamental value of an asset in the event of both up-swings and bubbles.

Standard explanations of asset prices are not able to account for property price cycles or bubbles. Indeed, according to the standard asset pricing model, the price of commercial property depends on the discounted value of the future stream of expected rents. In this pricing model, market participants have rational expectations and a common distribution of prior beliefs. As a result, the demand for assets is increasing if prices are below their fundamental values, thus driving prices up, and it is decreasing when prices are above their fundamental values, moving prices downwards. Thus cycles and bubbles would not exist if rational investors are present in the market. However, there are some features of commercial property markets which make the occurrence of cycles and bubbles possible even in the presence of rational market participants.

Cycles in commercial property markets

There are a range of explanations for cycles in commercial property markets.[1] One explanation focuses on occupier demand as the main driver for property development. From this perspective, cyclical fluctuations in output generate similar fluctuations in property demand, e.g. for office space, and through an accelerator effect in property development, production and supply, whereby the level of net investment in development activities is proportional to the change in level of output. However, this explanation does not account for the significant variation in the fluctuation in demand and development.

Explanations that rely on building lags may fill this gap. A delay in the production of inventory, together with the accelerator effect, produces an endogenous mechanism that generates cycles in property development. This mechanism, nevertheless, assumes that developers are myopic and do not integrate their knowledge about such lags into their strategy. By investing in a counter-cyclical manner they would be able to generate abnormal profits and thus eliminate cyclical effects.

An alternative approach focuses on rent and vacancy cycles, i.e. variables that are not used in the previous explanations. The economic cycle once again plays a key role in this approach. When economic activity decreases, declining property demand increases vacancy rates. As rents are assumed to adjust slowly, returns are too high with respect to the true demand and construction continues. Similarly, in economic boom periods, construction also responds slowly in terms of the lag in the reaction by rents. This rental adjustment approach relies on a "natural" vacancy rate that is similar to the "natural rate of unemployment" concept used to analyse labour markets. It assumes a degree of irrationality on the part of market participants in the development process, as they do not use their knowledge to generate a sub-normal profit.

A last approach considers a property owner in the rental market, who may let the property or wait for better market conditions. When the first option is chosen, the wait option is lost and adjustment costs incurred. When the second option is chosen, vacancies may remain even when demand increases. Indeed, the greater the adjustment costs and the greater the uncertainty about the future market, the better the value of the wait option. A similar reasoning applies to the

1 See, for example, W. Wheaton, "Real Estate Cycles: Some Fundamentals", *Real Estate Economics*, 27(2), 209-230; 1999; M. Ball, C. Lizieri, and B.D. MacGregor, (2nd edition), *The Economics of Commercial Property Markets*, Routledge, 2008; and P. Davis and H. Zhu, "Bank lending and commercial property cycles: some cross-country evidence", *BIS Working Paper*, No 150, March 2004.

development of property. The longer the construction period, the higher the adjustment costs and the greater the uncertainty about the future, then the greater the probability of overbuilding. This option pricing-based model relies heavily on differences in preferences, and the absence of strategic behaviour.

Data on commercial property prices suggest that different types of real estate have different cyclical behaviour, so that different explanations might be useful for understanding the different segments of the market.

Bubbles in commercial property markets

There are a number of explanations for bubbles in commercial property markets.[2] "Rational bubbles" arise if investors are willing to pay more for the asset than they know would be justified by its discounted present value, because they expect to be able to sell the asset at an even higher price later. In such rational bubbles there are no arbitrage opportunities. These bubbles could exist, for instance, in a situation where everybody knows that a bubble is present, but not everybody is aware that everybody knows this. In other words when prices are not fully revealing and, therefore, information asymmetries exist. In such a situation, the better informed market players would try to exploit their advantage. For bubbles to persist in these circumstances, investors must at least sometimes be constrained from short selling the asset (which is typically the case in commercial property markets), and at least some (uninformed) investors would have to believe that gains from trade are possible (even when they are not).

A number of arguments challenge the standard conjecture based on the "efficient market hypothesis", which holds that bubbles cannot persist because well-informed investors would arbitrage away the miss-pricing effect of non-rational investors, whose trading is possibly influenced by psychological biases. Indeed, there are limits to arbitrage. For instance, at any moment, a shift in fundamentals risks undoing the overpricing, making short selling hazardous. Furthermore, irrational noise-trading threatens the objectives of rational traders when these are short-term, and has therefore the potential to temporarily inflate a bubble even further. There is also synchronisation risk, i.e. traders need to coordinate their actions amongst themselves when a single trader is unlikely to be able to shift the market. Each trader therefore learns about the bubble at a certain stage, but does not know at what point others did and is faced with the risk of attacking the bubble either too early or too late. As a result, it is never common knowledge that a bubble has appeared and rational traders may prefer to wait and "ride the bubble" rather than to attack it.

The last type of explanation relies on heterogeneous beliefs, i.e. investors have different prior beliefs, perhaps due to psychological biases, so that they agree to disagree on the fundamental value of the asset. When there are short-sale constraints in such a situation, like in commercial property markets, optimists will push up the prices, whereas pessimists cannot undo this price movement.

Financial innovations like REITS, CMBSs and property derivatives have the potential to alleviate the short-selling constraints that characterise commercial property markets. At the same

2 A recent up-to-date survey of the literature on bubbles is by M. Brunnermeier, "Bubbles", in S. Durlauf and L. Blume *New Palgrave Dictionary of Economics* (2nd edition), forthcoming. However, not all of the theories on bubbles presented there fit the key stylised facts of commercial property markets.

time, they have the potential to expose commercial property markets to a range of bubble types, which so far have been reserved to other, more liquid asset classes.

A number of studies have tried to identify the presence of a bubble in commercial property markets.[3] For instance, one study computed fundamental values for the Sydney office market during the period 1985-1995. The results suggest that office values in the late 1980s and early 1990s were strikingly inconsistent with their fundamental values.[4] However, attempts to test the existence of bubbles are controversial, as very little is known about the exact process which leads to the formation of bubbles, and econometric tests are unable to distinguish bubbles from other time series behaviour, like time-varying or regime-switching fundamentals. Also, a range of econometric problems related to small samples remain to be resolved.[5]

Another important issue is the connection between lending booms, property prices and financial crises. One study examined eight Asian countries (Hong Kong SAR, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan POC and Thailand), which experienced property price booms during the 1990s followed by sharp declines, as well as financial crises after economic growth suffered set-backs and asset markets began to reverse.[6] The study finds evidence of the existence of a credit channel and suggests that the build-up of asset prices and the following crisis can be largely explained by the imperfections in financial markets, inadequate regulation and frictions in the real estate market. The results indicate that: 1) the effect of the credit channel is stronger in the real estate market than in the equity market; 2) the response of property prices to credit is asymmetric and is stronger during the boom phase; and 3) the returns in property markets are correlated to asset returns in the overall market.

3 For an account of these different attempts, see P. H. Hendershott and R. J. Hendershott, "Evidence on Rationality in Commercial Property Marke ts: An Interpretation and Critique", *NBER Working Paper*, No 11329, 2005.
4 See P. H. Hendershott, "Property Asset Bubbles: Evidence from the Sydney Office Market", *Journal of Real Estate Finance and Economics*, 20, 67-81, 2000.
5 See R. Gurkaynak, "Econometric Tests of Asset Price Bubbles: Taking Stock", *Federal Reserve Board Finance and Economics Discussion Series*, 2005-04, 2005.
6 See C. Collyns and A. Sendhadji, "Lending Booms, Real Estate Bubbles and the Asian Crisis", *IMF Working Paper*, No 02/20, 2002.

3.3 INDIRECT LINKS BETWEEN COMMERCIAL PROPERTY MARKETS AND BANKS

Disorderly and sharp adjustments in commercial property prices can also indirectly impact on banks' balance sheets in that they have negative implications for the real economy. This is especially relevant for countries where construction and real estate activities make a significant contribution to economic growth.

In addition, such adjustments can have a significant effect on the activity of real estate developers and construction companies. The relevance of this "activity channel" depends on the relative importance of the construction sector in the economy.[8] The abovementioned adjustments not only potentially have an impact on the financial positions and the activity of real estate developers and construction companies, but also indirectly on GDP through the households and non-financial corporations affected.

A general slowdown in economic activity may adversely affect the financial positions of borrowers by lowering their debt-servicing capacity if their income return is reduced. Additionally, the decline in the value of collateral will erode the net worth position of corporations. Both developments serve to

8 In the euro area, construction activities represent around 6% of total value added, approximately 8% of total employment and about 11% of GDP in nominal terms; these figures vary widely across countries (see Box 9 in ECB, *Monthly Bulletin*, April 2008).

elevate the external finance premium faced by all borrowers where commercial property would have been used as collateral. As a result of this re-appraisal of risk by banks, credit conditions will be tightened. For liquidity-constrained and highly leveraged borrowers, this development can significantly curtail investment and consumption opportunities. Consequently, such "financial accelerator" effects would lead to further declines in economic growth.[9]

The connection between commercial property prices, bank lending and macroeconomic variables, such as GDP and interest rates, has been investigated by various studies.[10] Results indicate a positive short-run response by property prices to credit and GDP, while, in the long-run, the dependence is positive for GDP, but negative for credit. In countries that have experienced crises linked to property losses by banks (e.g. Japan or the United Kingdom), there is evidence of a strong link between credit and commercial property. Commercial property prices seem to influence a credit expansion rather than the other way around. Also, GDP has a dominant influence on commercial property prices and on bank credit, implying an important role for exogenous shocks.

3.4 LINKS BETWEEN OTHER FINANCIAL INSTITUTIONS AND COMMERCIAL PROPERTY MARKETS

Financial stability can also be affected by adverse developments in commercial property markets as large institutional investors such as pension funds, insurance companies, hedge funds and private equity funds are sometimes significantly exposed to this sector. Pension funds and life insurance companies, in particular, are attracted to assets that provide a long-term income stream that matches their long-term liabilities. However, pension funds and insurers are also large investors in indirect commercial property investments, such as property funds, and they also sell credit protection on commercial property loans by buying commercial mortgage-backed securities.

3.5 FACTORS AFFECTING LINKS BETWEEN COMMERCIAL PROPERTY MARKETS AND FINANCIAL STABILITY

THE ROLE OF REITS, PROPERTY FUNDS AND STRUCTURED COMMERCIAL MORTGAGE MARKETS

In addition to direct investment, financial innovation in the form of real estate investment trusts, property funds, CMBSs and CDOs based on commercial real estate has transformed an often illiquid asset class into a possible source of indirect investment, thereby increasing the pool of potential investors. Such innovation can be a positive development for financial stability if it promotes risk diversification. However, these new markets also contain risks themselves. For example, as a result of an external shock, investors might withdraw funds suddenly or the market might experience high volatility, possibly leading to a drying-up of liquidity. In addition, there is concern that the complexity of some of these products and the opaque nature of these markets make it difficult for investors to appreciate the risks involved.

THE NEW INTERNATIONAL CONTEXT

The potential for financial stability issues arising from adverse developments in commercial property markets also need to be considered in the context of evolving global financial markets and investment flows. A number of studies suggest that there is a surprisingly high degree of international dependence between commercial property markets as these markets are typically local and

9 For a recent, and up-to-date account of the theory and the practical implications of the financial accelerator, see B. Bernanke, "The Financial Accelerator and the Credit Channel", speech given at the Credit Channel of Monetary Policy in the Twenty-first Century Conference, Federal Reserve Bank of Atlanta, Atlanta, Georgia, June 2007. Bernanke also addresses a number of criticisms which question the empirical relevance of the financial accelerator. Other contributions include N. Kiyotaki and J. Moore, "Credit Cycles", *Journal of Political Economy*, 105, 211-248, 1997.

10 See, for instance, P. Davis and H. Zhu, "Bank lending and commercial property cycles: some cross-country evidence", *BIS Working Paper*, No 150, March 2004.

therefore not substitutes.[11] Irrespective of the explanation for this phenomenon, namely that it may be due to a stronger dependence between national GDP growth rates, which underpin the activity in the commercial property market, this suggests that diversification effects are less important than often believed, and that there is a risk that problems in the commercial real estate sector of one country might well be accompanied by similar problems in another group of countries. In recent years, this risk has also been reinforced as a result of the rise in cross-border investment. The share of cross-border activity involving non-domestic buyers or sellers of property has grown and, in 2007 it accounted for the largest share of transactions, making up 63% of total investment (see Section 4.3).

THE ROLE OF SHORTCOMINGS IN PUBLIC POLICY INITIATIVES

It is worthwhile considering the possible role played by regulation in financial stability issues linked to commercial property markets. Usually, the constraints imposed by the regulatory environment on these markets do not give rise to such issues. However, it has often been the case in the past that the combination of rapid changes in the financial system and an inadequate or outdated regulatory framework, has contributed to costly boom-bust phenomena.[12] In particular, it has been recognised that a negative shock may generate risks for the stability of a financial system if economic incentives are distorted by shortcomings in policy measures, e.g. during periods of financial liberalisation, as well as in the structure of the financial system.[13] The fact that the interplay between commercial property market developments and regulation varies from case to case suggests that property market developments should be monitored against the background of the existing regulatory set-up.

11 See B. Case, W. Goetzmann and G. Rouwenhorst, "Global Real Estate Markets: Cycles and Fundamentals", *Yale School of Management Working Paper*, No 99-03, 1999; W. Goetzmann and S. Wachter, "The Global Real Estate Crash: Evidence From an International Database", *Yale School of Management Working Paper,* 1996; and H. Zhu, "The importance of property markets for monetary policy and financial stability", *BIS Papers*, No 21, 2003.

12 This seems to have been particularly the case in some countries affected by the Asian crisis. See, for example, C. Collyns and A. Senhadji, "Lending Booms, Real Estate Bubbles and The Asian Crisis", *IMF Working Paper*, No 02/20, 2002.

13 See B. Drees and C. Pazarbasiouglu, "The Nordic Banking Crises: Pitfalls in Financial Liberalization", *IMF Occasional Paper*, No 98/161, 1998.

4 RECENT DEVELOPMENTS IN COMMERCIAL PROPERTY MARKETS IN THE EU

This section describes key developments in EU commercial property markets over recent years, focusing on developments in total return and its main drivers; capital growth and income returns.

Box 2

LACK OF COMPARABLE AND REPRESENTATIVE PRICE AND RENT DATA ON COMMERCIAL PROPERTY

Owing to the fragmented and opaque nature of the commercial property markets in many countries, official data on, for example, commercial property prices and rents do not exist for most countries. However, some private companies do produce data on commercial property market movements in rents and capital values. Data are usually available for larger cities and might therefore not be fully representative for the country as a whole. In addition, prices (capital values) often lag actual developments in property markets as they are often based on valuations made, for example, for annual reports, which will, by construction, involve a short lag to the most recent transaction evidence.

As a result of the data quality limitations, developments in commercial property markets based on these data should be interpreted with care. However, the data used in this report are deemed to be of sufficient quality to allow for a general discussion about key developments in the EU commercial property markets.

This section of the report uses data mainly from Investment Property Databank (IPD) which is a data source that is commonly used by commercial property market analysts. The IPD data cover 19 EU Member States. Data for six eastern European EU Members States are reported together by IPD due to the relatively small size of commercial property markets in these countries. The IPD data cover more than 60% and up to above 80% of the total institutional investment market in some EU Member States, but the coverage in other countries is lower and in some cases only about 20% (see Table).[1]

Some data were also obtained from Jones Lang LaSalle and were included where data from IPD were not available. The data from Jones Lang LaSalle differ to some extent from that of the IPD as the data are for prime properties only and capital values data do not take account of capital expenditure.

1 See Investment Property Databank, "The IPD Index Guide", January 2008.

Investment Property Databank index coverage

(percentage of the total institutional investment market)

AT	BE	DE	DK	ES	FI	FR	IE	IT	NL	PT	SE	UK	six CEECs
36	17	21	41	53	61	62	82	24	62	53	34	55	n.a

Source: Investment Property Databank.
Note: Central and eastern European country (CEEC) data are for Bulgaria, Czech Republic, Hungary, Poland, Romania and Slovakia.

4.1 TOTAL RETURN DEVELOPMENTS

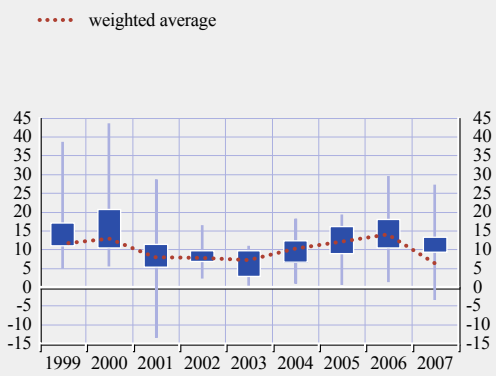
Typically, total returns (capital value growth plus income returns) on commercial property investments in the EU broadly move in cycles together with the general economic environment, since factors such as employment and consumer spending are the key drivers of demand for office and retail space respectively. Following the bursting of the dot-com bubble in 2000, total returns on commercial property decelerated in most EU Member States, amid less demand for, in particular, office space (see Chart 3). Commercial property returns increased from around 8% on average in 2003 to above 16% in 2006. This increase was rather broad-based across countries, with the exception of Germany and Italy where returns remained stable. In 2007, total commercial property returns declined to an average of 6.4% and even became negative in the UK commercial property market as a whole. The maximum-minimum distribution across EU Member States remained wide in 2007 due to the different stages that commercial property markets were in, but the inter-quartile distribution narrowed, which implies that for the majority of Member States total returns became more correlated than in previous years.

Total return developments across the main commercial property segments (retail, office and residential buildings) followed rather similar patterns between 1999 and 2007 (see Chart 4). However, developments were more volatile in the office and retail segments as demand for office and retail space is typically more cyclical and more dependent on the employment level and the general economic environment. In contrast, residential commercial property returns tend to be more stable over time as residential property often serves as accommodation for its owners and therefore has an additional, intrinsic value.

The increases in total returns from 2003 to 2006 can be attributed to large price increases for commercial property in the EU, and in 2006 capital value growth contributed to above 60% of total returns in the EU (see Chart 5). Such high levels of capital value growth can be unsustainable over the longer term if they are not accompanied by strong economic growth and rent increases. This was one of the factors behind the significant drop in this share in 2007, when price increases came to a halt in many EU Member States. The two elements of total return – capital growth and income returns –

Chart 3 EU country distributions of total returns on commercial property

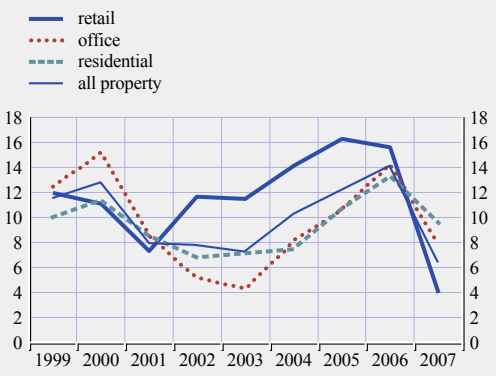
(percentage; minimum, maximum and inter-quartile distribution of country-level data)



Sources: Investment Property Databank, Jones Lang LaSalle and BSC calculations.
Note: Total return is the annual compounded rate of monthly capital appreciation, net of capital expenditure for IPD data, plus monthly net income received expressed as a percentage of monthly capital employed.

Chart 4 Total return in different commercial property sectors in EU countries

(percentage; weighted averages)



Sources: Investment Property Databank, Jones Lang LaSalle and BSC calculations.
Note: Total return is the annual compounded rate of monthly capital appreciation, net of capital expenditure for IPD data, plus monthly net income received expressed as a percentage of monthly capital employed.

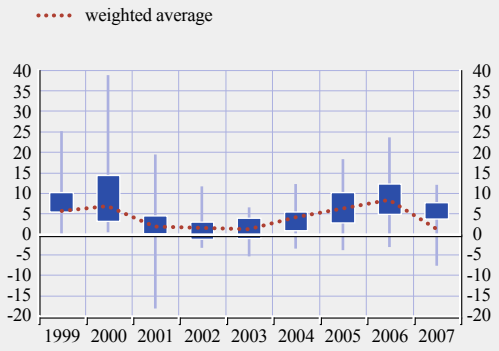
Chart 5 Decomposition of total returns on commercial property in the EU

(percentage of total return)

Sources: Investment Property Databank, Jones Lang LaSalle and BSC calculations.
Note: Capital growth is the annual compounded increase in monthly values, net of capital expenditure for IPD data, expressed as a percentage of the capital employed each month. Income return is the annual compounded rate of net income receivable per month expressed as a percentage of the capital employed over the month.

Chart 6 EU country distributions of capital growth of commercial property

(percentage change per annum; minimum, maximum and inter-quartile distribution of country-level data)



Sources: Investment Property Databank, Jones Lang LaSalle and BSC calculations.
Note: Capital growth is the annual compounded increase in monthly values, net of capital expenditure for IPD data, expressed as a percentage of the capital employed each month.

will be analysed in more detail in the following sections.

4.2 CAPITAL GROWTH DEVELOPMENTS

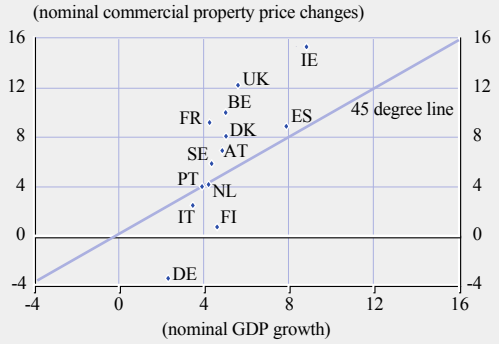
Commercial property price developments have varied widely across EU Member States in recent years (see Chart 6). Some countries only saw modest price increases or even declines between 2003 and 2006. Annual commercial property inflation rates remained below 10% in Austria, Belgium, Finland, Germany, Italy, the Netherlands and Portugal. However, in Denmark, France, Ireland, Spain, Sweden and the United Kingdom, prices rose by double-digits in some years.

As already mentioned, developments in commercial property markets tend to follow business cycle developments. Indeed, there was a positive relationship between commercial property price inflation and nominal GDP growth between 2004 and 2006 (see Chart 7). However, the fact that property prices in most countries rose more than nominal GDP suggests that price increases might in some cases have been driven by factors other than economic development, for example a hunt for yield-induced speculative activity.

During 2007, commercial property price inflation rates declined in most EU Member States and were only slightly positive for the EU as a whole (see Chart 6). Countries which have experienced high commercial property price inflation in recent years have seen steep

Chart 7 Commercial property capital growth and nominal GDP growth for selected EU countries

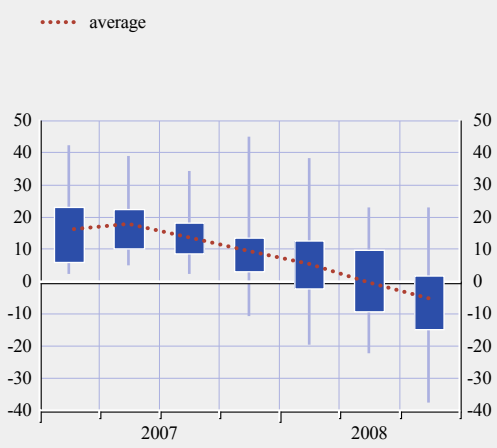
(average of period 2004 - 2006; percentage change per annum)



Sources: Investment Property Databank, Jones Lang LaSalle, Eurostat and BSC calculations.

Chart 8 EU country distributions of prime commercial property capital value changes

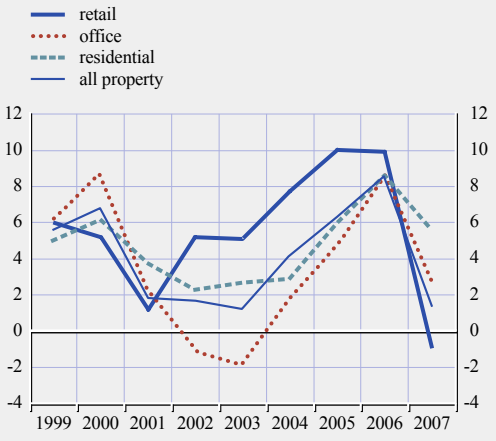
(percentage change per annum; minimum, maximum and inter-quartile distribution of country-level data)



Source: Jones Lang LaSalle.

Chart 9 Capital growth in different commercial property sectors in the EU

(percentage change per annum; weighted averages)



Sources: Investment Property Databank, Jones Lang LaSalle and BSC calculations.
Note: Capital growth is the annual compounded increase in monthly values, net of capital expenditure for IPD data, expressed as a percentage of the capital employed each month.

declines. In some countries/cities prices in certain segments (in particular, office space) even declined. The strongest deceleration in prices was witnessed in the UK and Ireland.

More high-frequency commercial property price data for prime property show that the decline in inflation rates in most EU countries in the course of 2007 continued in the first three quarters of 2008, and in many countries prices fell (see Chart 8).

It should, however, be noted that commercial property price data tend to lag actual prices as most price indicators are not based on actual transactions, but on (own) valuations made, for example, for annual reports which in many cases are estimates for the year as a whole and therefore do not necessarily depict recent developments in property markets. Moreover, this lag is likely to be larger if commercial property markets soften, which is currently the case in a number of EU Member States.

Price developments have shown similar patterns across commercial property segments, although the recent sharp declines in price inflation rates were mainly recorded in the office and retail segments (see Chart 9).

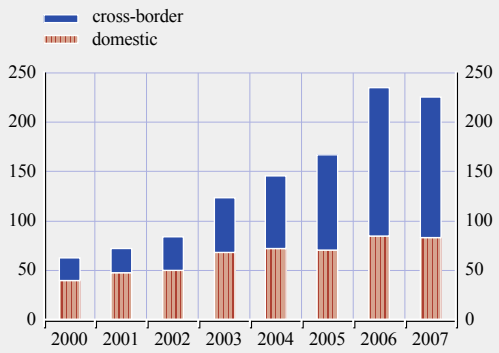
4.3 INVESTMENT ACTIVITY

EU commercial property markets have grown rapidly in recent years on account of large price increases in many countries and considerable development activity against a background of favourable economic conditions. In tandem, investment volumes grew steadily from €63 billion in 2000 to €236 billion in 2006 (see Chart 10).

Leveraged investors, such as private equity funds and hedge funds, were behind much of the investment activity in recent years. These investors were attracted by the relatively high returns on commercial property in an environment where the search for yield had compressed returns on many other asset classes. The availability of cheap financing from banks and in capital markets further contributed to investor demand for commercial property. Demand was also strong from insurance

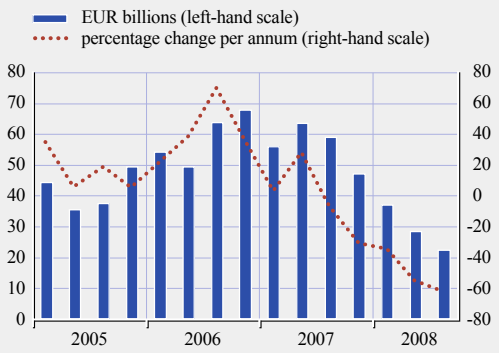
Chart 10 Direct commercial property investment volumes in the EU

(EUR billions; flow data)



Source: Jones Lang LaSalle.
Note: The data cover 23 EU Member States. Direct investments include deals above about €3 million. It excludes residential property and land development investment.

Chart 11 Quarterly direct commercial property investment volumes in the EU



Source: Jones Lang LaSalle.
Note: The data cover 23 EU Member States. Direct investments include deals above about €3 million. It excludes residential property and land development investment.

companies and pension funds looking to make long-term investments to match their long-term liabilities.

The high levels of sale and leaseback activity recorded in many countries, whereby a non-property company sells, for example, its headquarters and leases it back to free up capital, further contributed to the strong investment activity in recent years. The establishment of REITs in some EU Member States and the rapidly growing CMBS market up until 2007 also contributed to strong investment activity.

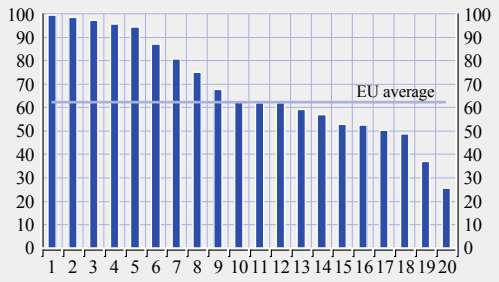
The central and eastern European markets have seen very large increases in investment activity in the past five years from €1.6 billion in 2003 to over €13 billion in 2007.[1] These markets benefited from economic growth and demand from foreign investors seeking higher property returns amid the low yields offered on property in Western Europe during this period.

Although investment volumes for 2007 as a whole held up relatively well mainly owing to high activity in the first half of the year, volumes in the second half of 2007 and the first three quarters of 2008 slowed down markedly in most countries (see Chart 11). During this period demand for investing in commercial property is reported to have shifted more to non-leveraged investors, such as unlisted property funds, pension funds and to some extent sovereign wealth funds, on account of higher funding costs for leveraged investors.

1 See RREEF Research, "Global Real Estate Investment and Performance 2007 and 2008", April 2008.

Chart 12 Direct cross-border commercial property investment in the EU

(average 2005 - 2007; percentage of total value of direct investment flows in each country)



1 LU	6 CZ	11 ES	16 GR
2 SK	7 FR	12 FI	17 UK
3 PL	8 DE	13 SE	18 AT
4 BG	9 BE	14 NL	19 DK
5 HU	10 PT	15 IT	20 IE

Source: Jones Lang LaSalle.
Note: Direct investments include deals above about €3 million. It excludes residential property and land development investment.

The share of cross-border activity involving non-domestic buyers or sellers of property has grown over recent years and accounts for the largest share of transactions, making up 63% of total investment in the EU in 2007 (see Chart 10). However, large differences exist across countries (see Chart 12). These can be attributed to differing levels of accessibility for foreign investors and differences in foreign investors' perceptions of the profitability of investment opportunities in different markets.

4.4 INCOME RETURN DEVELOPMENTS

The strong demand for commercial property for investment purposes in recent years, which led to increased prices, put pressure on income returns (net income as a percentage of the capital employed). Income returns declined steadily from around 6% in 2003 to below 5% on average in 2007 and the decline was broad-based across all EU countries for which data are available (see Chart 13). Such low levels suggest that income returns for leveraged investors with interest expenses were very low and supports the view that in recent years commercial property has in many cases been bought as a speculative investment with expectations that further price increases would continue to support strong overall returns.

Income returns declined between 2003 and 2007 across all major commercial property segments in the EU, except in the residential segment where they remained fairly constant (see Chart 14).

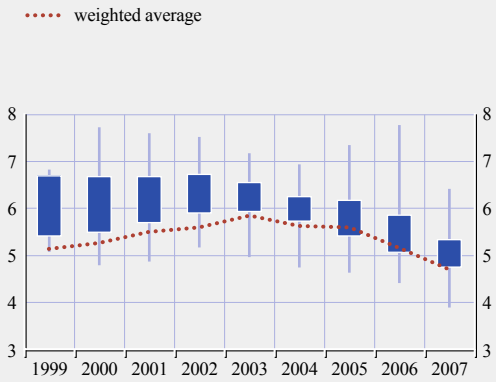
4.5 RENTAL VALUE DEVELOPMENTS

Since 2004, rents have increased in most markets in the EU. These increases were, however, preceded by lower growth rates and, in 2003, rents actually declined on average (see Chart 15). After 2003, rent developments were supported by relatively strong economic activity and low supply in some cities and/or countries which increased the demand for rented property and in particular office space. However, rents did not increase as much as commercial property prices which has been a contributing factor in lower income returns in recent years and slower price growth and declining property prices in some markets in 2007 and 2008.

Rent developments in the office segment overall are more volatile and more dependent on developments in economic activity (see Chart 16).

Chart 13 EU country distributions of income returns on commercial property

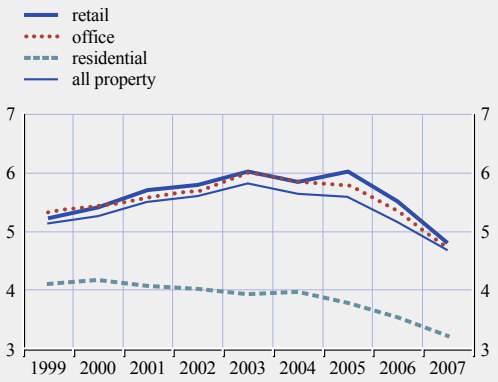
(percentage; minimum, maximum and inter-quartile distribution of country-level data)



Sources: Investment Property Databank and BSC calculations.
Note: Income return is the annual compounded rate of net income receivable per month expressed as a percentage of the capital employed over the month.

Chart 14 Income returns in different commercial property sectors in the EU

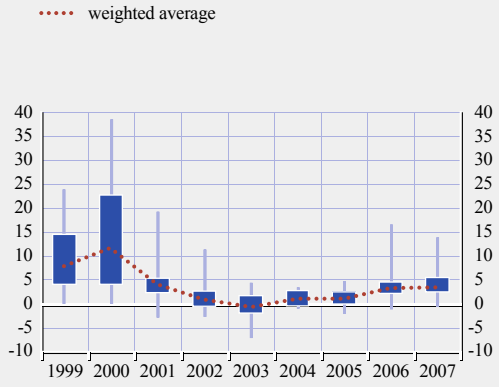
(percentage; weighted averages)



Sources: Investment Property Databank and BSC calculations.
Note: Income return is the annual compounded rate of net income receivable per month expressed as a percentage of the capital employed over the month.

Chart 15 EU country distributions of commercial property rental value growth

(percentage change per annum; minimum, maximum and inter-quartile distribution of country-level data)



Sources: Investment Property Databank, Jones Lang LaSalle and BSC calculations.

Chart 16 Rental value growth in different commercial property sectors in the EU

(percentage changes per annum; weighted averages)

Sources: Investment Property Databank, Jones Lang LaSalle and BSC calculations.

Box 3

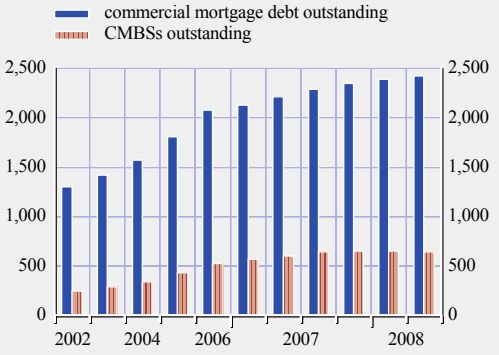
RECENT DEVELOPMENTS IN THE COMMERCIAL PROPERTY MARKET IN THE UNITED STATES

Developments in the US commercial property market can be of importance to financial stability in the European Union (EU) since many large EU banks are active globally and extend loans in the United States or hold commercial mortgage-backed securities (CMBSs) backed by loans originated in the United States. Because of the large extent of cross-border investment activity in global commercial property markets, adverse developments in the US commercial property market have the potential to spill over to commercial property markets in the EU. For this reason, this box discusses some recent developments in commercial property markets in the United States.

The US commercial property market is the largest in the world with the size of the "investible" share of the market being estimated at over USD 5.5 trillion in 2006. A large share of the market – about 85% – is owned by professional property investors (see also Section 2.2). A high level of investment activity and rising property prices in recent years have also led to an increased stock of commercial property debt outstanding, which stood at USD 2.4 trillion in the second quarter of 2008 (see Chart A). Financing via CMBSs is more common in the United States than in Europe and this market has grown in recent years, reaching a value of about USD 655 billion in the same period.

Chart A Commercial property debt outstanding in the United States

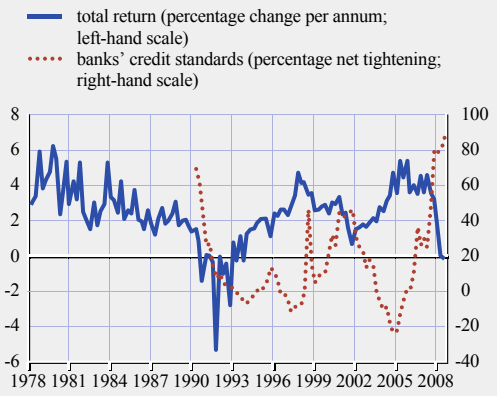
(USD billions)



Source: US Federal Reserve Board.
Note: Annual data from 2002 to 2007 and quartely data from Q1 2007 to Q2 2008.

Chart B Total return on commercial property and banks' credit standards on commercial property loans in the United States

(percentage)



Sources: US Federal Reserve Board and the National Council of Real Estate Investment Fiduciaries.

There are currently signs of growing weaknesses in the US commercial property market. Total returns on commercial property have declined sharply in recent quarters and were close to zero in the second quarter of 2008 (see Chart B). The uncertainty surrounding the US economic outlook and the financial market turmoil contributed to this decline and has led banks to significantly tighten credit standards on commercial property loans in the United States.

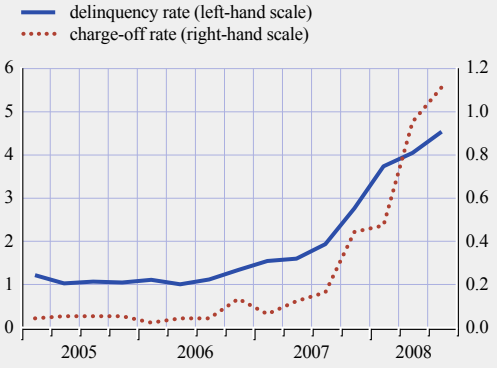
The quality of commercial property loans in the United States started to deteriorate in 2006 when the growth of prices and returns started to decelerate. Delinquency rates on commercial property loans reached 4.5% in the third quarter of 2008 (see Chart C), which is the highest level seen since 1995. Charge-off rates on commercial property loans jumped to 1.1% in the third quarter of 2008, the highest level seen since 1993.

Due to the ongoing financial turmoil and the growing fears over the US commercial property sector's prospects, CMBS issuance has dropped significantly (see also Section 5.2), and CMBS spreads have soared (see Chart D).

All in all, available information suggests that conditions in the US commercial property market deteriorated in 2007 and 2008, and both US and European banks have announced write-downs

Chart C Delinquency and charge-off rates on commercial property loans in the United States

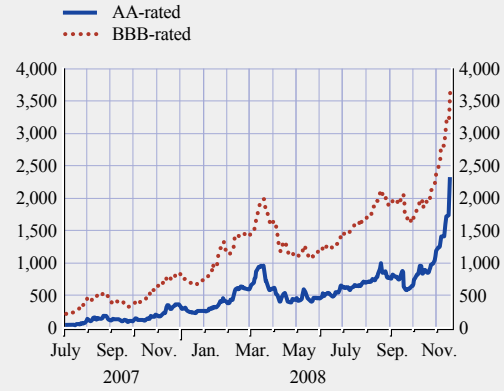
(percentage of banks' commercial property loans)



Source: US Federal Reserve Board.
Note: Delinquent loans are those that are thirty days or more past due and still accruing interest as well as those in non-accrual status. They are measured as a percentage of end-of-period loans. Charge-offs, which are the value of loans removed from the books and charged against loss reserves, are measured net of recoveries as a percentage of average loans, and annualised.

Chart D Selected CMBS indices spreads in the United States

(basis points; CMBX NA.3 AA and CMBX NA.3 BBB)



Source: JPMorgan Chase & Co.

on commercial property loans and have reduced their exposures to this type of lending. Given the uncertainty prevailing in the US commercial property market, further write-downs and losses for banks and further spillover effects on commercial property markets in the EU cannot be ruled out.

4.6 DEVELOPMENTS IN COMMERCIAL MORTGAGE-BACKED SECURITIES AND PROPERTY DERIVATIVES MARKETS

COMMERCIAL MORTGAGE-BACKED SECURITIES

Commercial mortgage-backed securities are a type of bond issued in securities markets and backed by mortgages on income-generating properties (see also Section 2.4).

The growth in demand for commercial property encouraged high levels of construction and development activity across the EU. The increase in activity was largely debt-financed, which increased banks' exposures to commercial property markets and created a need for banks to spread some of the related credit risk via debt securities. It is estimated that in 2007 roughly 10% of all bank loans in the euro area extended for commercial property purposes were securitised.[2]

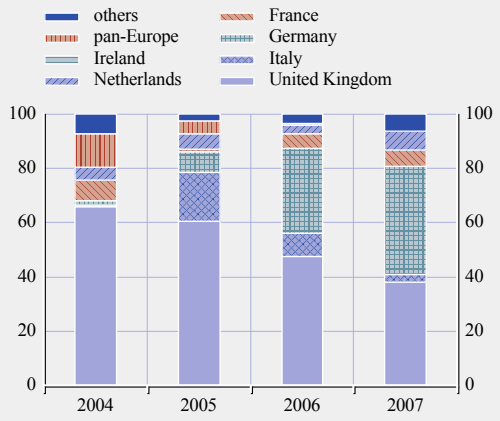
Issuance of CMBSs in Europe has grown rapidly in recent years and the issued amount totalled around €50 billion in 2007.[3] Until 2006 the United Kingdom was the largest CMBS market in Europe, although the levels of issuance were considerably smaller than those seen in the United States. In 2006 activity in other EU countries, especially Germany, increased before the turmoil erupted (see Chart 17). Over the last few years, the office and retail segments have together accounted for over 60% of annual CMBS issuance in Europe.[4]

Since the onset of the turbulence in credit markets, the issuance of commercial CMBSs has come to a near halt in Europe, with only

2 See ECB, *Financial Stability Review*, June 2008. Estimation based on various national sources and ECB lending data for monetary financial institutions.
3 See European Securitisation Forum, "ESF Securitisation 2008 Market Outlook", 2008.
4 Citigroup, "European Securitised Products Statistics", June 2008.

Chart 17 Publicly placed commercial mortgage-backed securities (CMBS) issuance by country in Europe

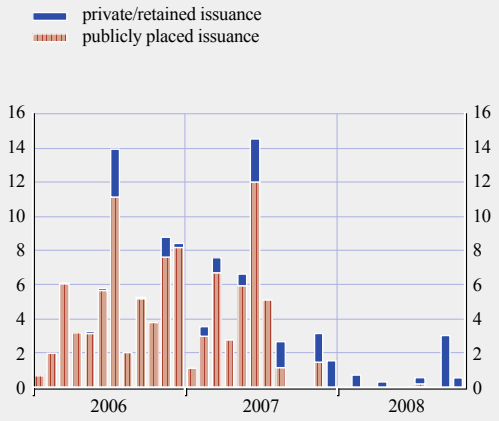
(percentage of total)



Source: Citibank.
Note: Publicly placed issuance comprises only deals that have been publicly marketed.

Chart 18 European commercial mortgage-backed securities (CMBS) issuance

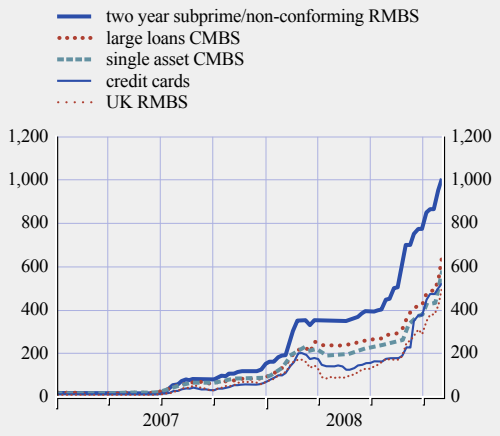
(EUR billions)



Source: Citibank.
Note: Publicly placed issuance comprises only deals that have been publicly marketed. Private/retained issuance comprises deals that have been privately placed or retained by the originator. The private and/or retained issuance figures comprise all known deals. In the case of some deals priced since August 2007, it is not clear whether the deal has been fully placed.

Chart 19 Secondary market spreads on AAA-rated European CMBSs compared with other structured credit products

(five year maturities, basis points spread over EURIBOR)



Source: Citibank.

limited private or retained issuance taking place (see Chart 18). Issuance activity in Europe during the first ten months of 2008 dropped to €5 billion compared with €44 billion during the same period in the previous year.

At the same time, secondary market spreads widened considerably, both for single asset and large loan CMBS products, including those with AAA-ratings (which was the rating applied to most CMBS issuances in 2007). The spreads also widened compared with spreads on other types of structured credit products (see Chart 19).

With a decline in investor appetite for CMBSs and a significant widening of credit spreads, the opportunities for banks to spread their commercial property loan exposures have been considerably reduced. In some cases this has reduced banks' willingness to extend loans for commercial property development and ownership. In addition, investment banks' revenue from commercial property-related securitisations has come under renewed pressure, as they have found themselves warehousing loans that were initially intended to be distributed as structured credit products, and have thereby incurred unanticipated funding and capital costs.

Furthermore, these negative developments in the CMBS market came at a time when some commercial property markets in the EU showed signs of deterioration, and they have fuelled – and could further fuel – the corrections taking place in some markets (see Section 4).

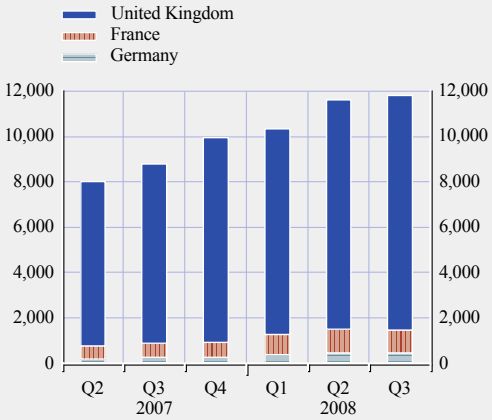
PROPERTY DERIVATIVES

Trading volumes in commercial property derivatives markets in EU Member States (in particular the United Kingdom) where such markets exist have continued to increase in the first three quarters of 2008. Investors have been turning to derivatives markets in order to hedge commercial property exposures amid the uncertainty prevailing in some commercial real estate markets. Trading in and issuance of commercial property derivatives may have also been spurred by the introduction of property derivatives indices by the Investment Property Databank.

The total notional amount of commercial property derivatives outstanding in the most mature property derivatives markets in the EU has continued to grow in 2008 (see Chart 20). A number of first-time trades were also made in some EU countries in recent quarters, which highlights the growth in what is still a nascent market in most EU Member States.

Chart 20 Total notional property derivatives outstanding in the United Kingdom, France and Germany

(GBP millions)



Source: Investment Property Databank.

The pricing of commercial property derivatives in the EU suggests that there is a possibility of a further fall in commercial property prices in some EU Member States over the next two years.

5 RISK OUTLOOK FOR COMMERCIAL PROPERTY MARKETS IN THE EU

Commercial property investors typically face two types of risk. First, they bear income risks if vacancy rates increase, rents decrease or prices fall. Second, they are exposed to funding risks due to factors affecting the availability of credit and the cost of debt, such as an increase in interest rates, the tightening of bank lending standards or a decline in demand for corporate bonds. In addition, the current low level of activity in the CMBS market may give rise to concentration risks, particularly if a significant number of commercial mortgages are in the pipeline and are waiting to be securitised.

It should, however, be borne in mind that the commercial property markets across the EU are at different stages of development and the risks discussed in this section do not necessarily apply to all of them.

5.1 INCOME RISKS

In 2007 commercial property prices in several EU Member States entered a period of adjustment following a three-year upward trend in the pace of capital appreciation. Prior to 2007 investors in these markets had relied heavily on capital gains for their returns because, as a result of the relatively modest performance of rental values between 2003 and 2006, capital growth had been the main driver of total returns on European commercial property over this period. In this context, the future evolution of income returns has increased in importance from a financial stability perspective for a number of reasons. First, the debt servicing capacity of borrowers is increasingly more dependent on rental growth especially in the case of those borrowers that are highly leveraged or have recently entered the market and do not have an adequate equity cushion. Second, the sustainability of rental growth will help to maintain the pool of potential investors which, in turn, may serve to support an orderly adjustment in the market.

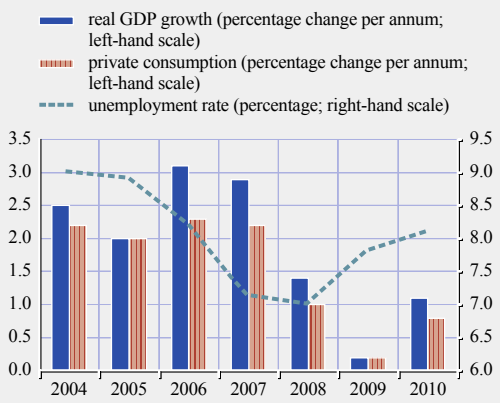
The balance between supply and demand conditions in the occupier markets will determine future rental growth. Demand for rented commercial property has held up relatively well, thus supporting a more stable income outlook for property owners. Vacancy rates for office space remained stable, at around 8%, in the third quarter of 2008. However, the growth of rents for prime office space slowed in the second and third quarters of 2008. Average increases of 3.5% year on year were recorded in the third quarter for a set of 29 large cities in the EU (but the growth rates for the individual cities ranged from -6.5% to 18%).

However, market participants expect vacancy rates to increase in many EU cities and rental growth is generally expected to decelerate further. They expect demand for renting and investing in prime property – i.e. modern buildings located in attractive areas – to hold up relatively well, whereas demand for non-prime property is expected to be reduced in most large cities in the EU. Some financial hubs, such as London and Frankfurt am Main, are, however, expected to see reduced demand for prime property also, amid declining employment in the financial services sector caused by the financial turmoil.

As previously mentioned, developments in the commercial property market tend to mirror fluctuations in the business cycle (see Section 2). A decrease in consumption and investment during a period of moderate economic activity will tend to reduce demand in the occupier markets. A decrease in demand, all else being equal, will lead to a decrease in rents, provided that no supply overhang exists. Therefore, near-term macroeconomic developments will have significant implications for income returns. In particular, factors such as employment and consumer spending can be seen as key drivers of the demand for office and retail space respectively.

Since late 2007 there has been a slowdown in activity in the EU economy and, as the turmoil in international financial markets has persisted for longer than many expected, intensifying in

Chart 21 Real GDP and private consumption growth, and the unemployment rate in the EU



Source: European Commission.
Note: Data for 2008, 2009 and 2010 are forecasts.

mid-September 2008, the macroeconomic outlook has deteriorated. Consequently, forecasts for economic growth and private consumption in the EU in 2008 and 2009 have recently been revised downwards (see Chart 21).

5.2 FUNDING RISKS

As a result of the ongoing turmoil in international financial markets, there has been a reappraisal of risk, an increase in the cost of borrowing and a marked tightening in credit standards. A decrease in the availability of financing or an increase in the cost places constraints on those commercial property investors who are dependent on external funding. As a result, investment volumes may decline further, which is likely to place further downward pressure on capital values in certain markets across Europe. These developments may also pose challenges for banks that are heavily exposed to the commercial property market for a number of reasons. First, in an environment of moderating or falling capital values, the coincidence of slowing economic activity and tighter credit conditions may increase the probability of default, especially among highly leveraged commercial property investors, and may reduce the amount of earnings derived from commercial property lending. Second, heavily exposed credit institutions may also face funding challenges in the current climate, given the very limited activity in the CMBS market and the tension in money markets since late 2007. Looking ahead, the drying-up of the CMBS market is, however, considered by market participants to be a pause in trading rather than the end of an asset class, and future CMBS issuance is expected to be less complex and characterised by more conservative collateral structures. However, in the short term, market observers agree that key trends in the CMBS market in 2008 and 2009 are a further decline in prepayment rates and covenant and trigger breaches.

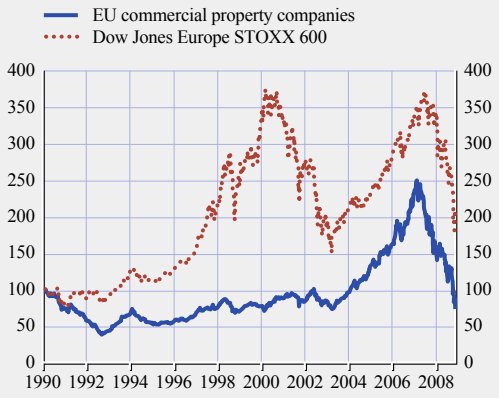
In addition to bank loans, corporations also have recourse to capital markets in order to help finance their commercial property transactions. However, these markets have been very difficult to access since the second half of 2007. Spreads have increased since the beginning of 2008, reflecting concerns about the impact of the financial market turbulence on real activity. Uncertainty surrounding the potential credit risk that this corporate sector represents has led capital market participants to re-price risk accordingly. Even high-grade corporate debt has been affected by this reappraisal of risk. Furthermore, there has been virtually no issuance of corporate bonds in the high-yield segment of the market since the summer of 2007.

5.3 OUTLOOK FOR COMMERCIAL PROPERTY COMPANIES ON THE BASIS OF MARKET INDICATORS

The share prices of companies engaged in owning, trading in, and developing income-producing real estate in the EU fell sharply at the beginning of the 1990s in the challenging commercial property market environment in several EU countries at that time (see Chart 22). Although the share prices rebounded somewhat in the mid-1990s, they did not emulate the large increases seen in the overall stock market from 1996 to early 2000, which mainly affected IT-related companies. Consequently, the share prices of commercial property companies were not affected to a great extent by the significant decline in the overall stock market from early 2000 to 2003.

Chart 22 EU commercial property company share prices and the Dow Jones Europe STOXX 600 index

(index: Jan. 1990 = 100)



Source: Bloomberg.
Note: The FTSE European Public Real Estate Index is a market capitalisation-weighted index consisting of the most heavily traded real estate stocks in Europe.

Chart 23 Cumulative changes in EU commercial property company share prices relative to the Dow Jones Europe STOXX 600 index

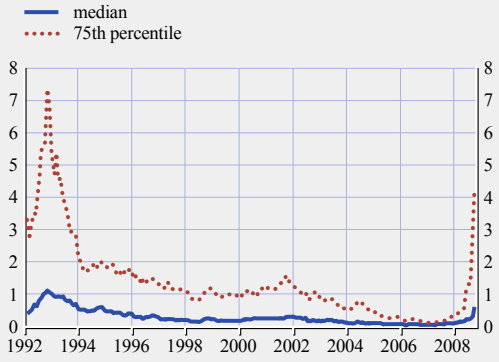
(percentage points; base: Jan. 2000 = 0)

Source: Bloomberg.
Note: The FTSE European Public Real Estate Index is a market capitalisation-weighted index consisting of the most heavily traded real estate stocks in Europe.

From 2000 to early 2007 the share prices of commercial property companies in the EU outperformed the overall stock market. In the first few years this was because commercial property companies were less affected by the re-pricing occurring in many stock market segments while, from 2003 to 2006, it was thanks to the increasing returns on commercial property investments (see Chart 23). However, several commercial property markets in the EU have deteriorated recently, as shown by the share price performances of commercial property companies. These prices fell further than the overall stock market after early 2007 as illustrated in the chart. Expectations of lower income returns and demand for commercial property investments contributed to the decline.

Chart 24 Expected default frequencies (EDFs) of commercial property companies in the EU

(percentage probability)



Sources: Moody's KMV and ECB calculations.
Note: The EDF provides an estimate of the probability of default in the following year. The data refer to around 280 real estate companies engaged in a broad range of real estate activities.

Looking ahead, the continued uncertainty surrounding the outlook for commercial property companies in the EU has started to result in sharply rising expected default frequencies (EDFs) for many companies (see Chart 24). In line with share prices developments, EDFs reached very high levels at the beginning of the 1990s then fell significantly, and thereafter only rose to a limited extent during the latest credit market downturn at the beginning of the current decade.

All in all, recent patterns in market indicators for commercial property companies imply a continued uncertain outlook for the sector as whole. It should, however, be kept in mind that developments vary widely across regions and countries.

6 SURVEY RESULTS ON EU BANKS' EXPOSURES TO COMMERCIAL PROPERTY MARKETS

While the risks to banks stemming from commercial property markets are increasingly understood, information about their magnitude has been rather limited and fragmented across the EU so far. In order to fill this information gap, the BSC decided to carry out a survey among EU banks on commercial property-related exposures and the way these exposures are managed. The survey was complemented by the collection of data for other aggregate banking sector indicators which can be useful for assessing banks' commercial property-related exposures.

6.1 MAIN FEATURES OF THE SURVEY

SAMPLE AND SCOPE

The survey conducted for this report comprised a set of quantitative and qualitative questions submitted to banks. Replies to the survey were aggregated at the country level by national central banks and supervisory authorities. In total, 17 countries submitted replies to the quantitative part of the survey: Belgium, Cyprus, Estonia, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Romania, Slovenia, Slovakia, Spain and the United Kingdom.[1] In addition, 15 countries (Cyprus, Czech Republic, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Romania, Slovakia, Spain and the United Kingdom) participated in the qualitative part of the survey.

In general, data were collected at the national level only from banks with a significant exposure to commercial property risk, but some countries provided quantitative information on the whole banking system. In most cases, the data coverage reached or exceeded 70% of the country's total banking system assets. But even in the case of some large EU countries for which the coverage was lower (40%-55%), the most exposed players in the banking sector are represented in the sample.[2] However, the results of the survey must be viewed with caution, as the sample compositions vary greatly across countries and therefore no general remarks can be made on a country level. Quantitative information on commercial property-related exposures was requested for three points in time (end-2005, end-2006 and end-2007), but only end-2007 data are summarised below due to the lower coverage obtained for the other periods. In addition to the quantitative and qualitative survey, another data collection exercise was carried out with respect to EU banks' commercial property-related lending, in order to compile the financial soundness indicators (FSIs) of the International Monetary Fund (IMF). In total, 18 countries provided aggregate data for at least one of the two FSIs which measure banks' commercial property-related lending exposures.

DEFINITIONS

The quantitative part of the survey focused on banks' credit exposures. In some cases, information was also provided on banks' other commercial property-related exposures, such as their holdings of commercial mortgage-backed securities. Data were collected from banks on a consolidated basis. As for the definition of commercial property-related loans used in the survey, countries (banks) were asked to apply the definition used by the IMF to compile its financial soundness indicators.[3] According to this definition, commercial property loans comprise loans that are collateralised by commercial property, loans to construction companies and loans to companies active in the development of real estate. Commercial property includes buildings, structures and associated land used by enterprises for retail, wholesale, manufacturing or other such purposes. Lending to companies involved in the development of multi-household dwellings is also included in the definition of commercial property loans. Significant efforts were made to tailor the data collection exercise so as to make indicators for banks' commercial

1 In the case of two countries, information on banks' commercial property-related exposures was not based on the survey but on other sources of information (e.g. the credit register).
2 The sample includes most large banks in the EU.
3 See "Financial Soundness Indicators: Compilation Guide"; International Monetary Fund, March 2006.

property exposures comparable across countries. Nevertheless, some inconsistencies may have remained, for instance due to different loan classification practices applied by banks.

6.2 SURVEY RESULTS ON BANKS' EXPOSURES

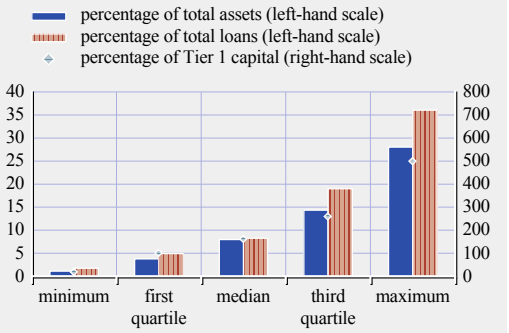
According to the survey results, many EU banks appear to have material commercial property lending exposures both in terms of total assets and Tier 1 capital. On average, commercial property-related loans of surveyed banks amounted to 5.4% of their total assets and 11.6% of their total loans at the end of 2007.[4] In absolute terms, the gross commercial property loans of EU banks taking part in the survey amounted to €1.2 trillion in December 2007. Notwithstanding possible differences in coverage and definition, this figure is broadly comparable in magnitude to available market estimates of commercial real estate-related debt in Europe.[5]

It is important to stress that large differences exist across the surveyed EU banks in terms of their commercial property lending exposures. In particular, the commercial property loans of surveyed banks as a share of their total loans ranges from 1.8% to 36.1% and as a share of their total assets from 1.1% to 28% (see Chart 25). Chart 25 also suggests that there are large differences across banks in terms of the ratio of commercial property loans to capital. In particular, commercial property loans accounted for more than 200% of the Tier 1 capital of surveyed banks in some countries. This suggests that some EU banks may have a relatively high concentration of commercial property-related risk exposures in their loan books.

As regards the comparability of these ratios at the country level, a certain degree of caution is warranted. In particular, the coverage of the survey differs significantly across countries (ranging between 40% and 100%) as some countries only reported data on the banks that are most active (or indeed specialised) in commercial property lending while others provided data on the whole banking system (e.g. based on credit registers or other sources).

Chart 25 EU country distributions of surveyed banks' commercial property loans as a share of total assets, total loans and Tier 1 capital

(2007; percentages)



Source: BSC.

As survey data were only collected for the period 2005-2007, these data provide limited information on the evolution of commercial property lending in the EU over time. Available data suggest, however, that the growth of lending to the commercial property sector decelerated in 2007 in the EU.

Other types of commercial property-related exposure seem to be relatively modest in most EU countries. Surveyed banks reported a CMBS exposure of close to €70 billion, representing around 0.4% of the total assets of banks in those countries that reported non-zero exposures.[6] Commercial real estate directly owned by banks represents an additional form of commercial property-related exposure. This accounted for 0.04%-0.46% of surveyed banks' total assets

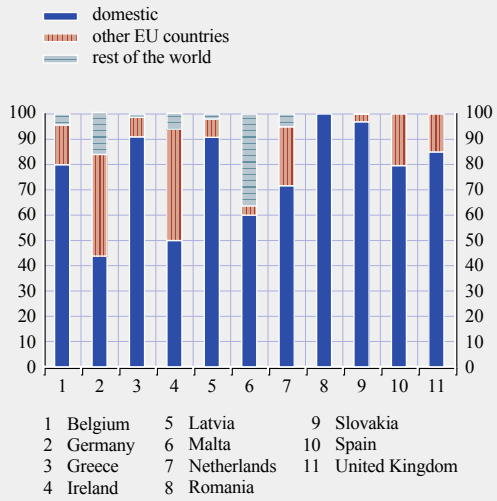
4 In this section, total assets are used as weights for the calculation of weighted averages. Note that the sample composition is not constant across all the indicators due to missing data for total assets, total loans or Tier 1 capital.

5 According to Jones Lang LaSalle, commercial real estate-related debt in Europe was estimated at between €1 trillion and €1.3 trillion in 2007. According to a recent JPMorgan Chase & Co. report covering around 40 EU banks, their on-balance sheet exposure to the commercial real estate market is about €1 trillion, or 12% of their total loans and 176% of their capital. See JPMorgan Chase & Co., "European Banks: quantifying earnings at risk from commercial real estate", 4 November 2008.

6 Due to the incomplete coverage of the survey, this figure may not necessarily be representative for the total CMBSs outstanding in the EU banking sector as a whole.

Chart 26 Geographical breakdown of commercial property loans of surveyed banks by country

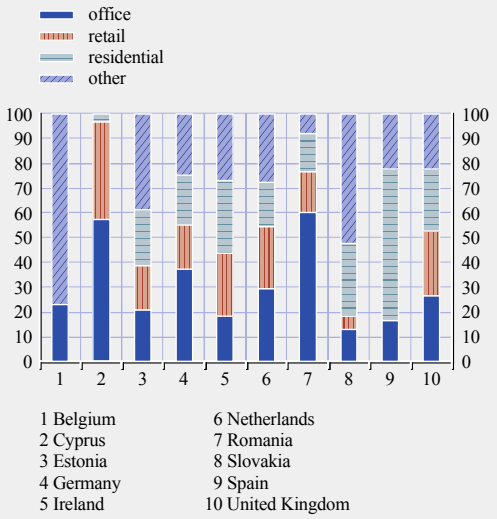
(2007; percentages)



Sources: BSC and De Montfort University survey (United Kingdom).
Note: For the United Kingdom, the breakdown applies to a sub-sample of those banks that are covered by the De Montfort University survey.

Chart 27 Property sector breakdown of commercial property loans of surveyed banks by country

(2007; percentages)



Sources: BSC and De Montfort University survey (United Kingdom).
Note: The survey concerned only three categories (the retail, office and residential sectors) which do not add up to 100% of total commercial real estate loans. The residual is shown as "other" (e.g. industrial, hotels and leisure). For the United Kingdom, the breakdown applies to a sub-sample of those banks that are covered by the De Montfort University survey.

in countries which responded to this question. Overall, these survey results suggest that EU banks' exposure to the commercial property markets is significant, in particular their credit exposure. It should be noted, however, that the extent of exposures varies greatly across the surveyed banks in the EU.

In addition to questions about the size of exposures, the survey contained several questions on the distribution of commercial property loan portfolios broken down according to geographical area, property sector (office, retail, or residential) and the purpose of the loans (development or investment). Furthermore, banks were asked to provide information on the average loan-to-value ratios of commercial property loans.

As regards the geographical breakdown, in general the bulk of commercial property lending is domestic. However, in some countries – in particular those in which some of the largest lenders operate – banks have significant cross-border exposures, mainly to other EU countries (see Chart 26). Of non-EU exposures, surveyed banks' commercial property lending activity to the United States appears to be modest, amounting to 6% of total commercial property loans at end-2007, for those banks which reported on the geographical breakdown of their exposures.[7]

Several countries also provided information on the breakdown of commercial property-related loans by type of property, such as office, retail or residential. The importance of different property sectors varies to a great extent across countries (see Chart 27). On average, banks' exposures appear to be the highest for the office sector, although this is not a general pattern across countries which provided information on this breakdown.

7 Note that not all countries with large, internationally active banking groups were able to provide the relevant figures.

In order to facilitate the assessment of the risk profile of banks' commercial property loan portfolios, banks were also asked to provide information on the purpose of the loans (property development or property investment – the former being generally considered to involve a higher credit risk) as well as the average loan-to-value ratios. However, the relatively low response rate to these questions does not allow EU-wide firm conclusions to be drawn in this respect. Therefore, the results described here should be treated with caution and should not be seen as representative for the sample of surveyed EU banks. Within the sub-group of countries which provided data on the breakdown of commercial property loans by the purpose of the loans, the share of loans for property investment – the comparatively less risky type of commercial property lending – is generally significantly higher. In particular, in three countries with some of the largest commercial property lenders in Europe, the share of loans issued to developers ranged between 14% and 40% and, accordingly, that of loans for property investment varied between 60% and 86%.

Regarding loan-to-value (LTV) ratios, in many cases, banks' responses were not representative of the surveyed banks of the respective country. Therefore, conclusions can only be drawn based on a sub-set of countries which nevertheless represent a significant part of commercial property lending in the EU.[8] Based on this smaller sample, in 2007 the average LTV ratios varied between 65% and 70%. Furthermore, some countries provide tentative evidence that the different risk profiles of loans issued to developers and loans for property investment is reflected in LTV levels, as average LTV ratios are lower for the latter category.

BANKS' EXPOSURES TO COMMERCIAL PROPERTY MARKETS – THE IMF'S FINANCIAL SOUNDNESS INDICATORS FOR COMMERCIAL PROPERTY

In addition to the survey, a data collection exercise was conducted based on IMF financial soundness indicators related to commercial property loans. The purpose of this exercise was to gather country-level data on banks' commercial property lending exposures for the broadest possible set of EU countries and also to enable developments in commercial property lending over time to be assessed. There are two types of IMF FSI that contain information on banks' commercial property loans. First, as already described above, commercial property loans comprise loans collateralised by commercial property; loans to construction companies; and loans to companies active in the development of real estate. Second, some information on banks' commercial property-related loans can be drawn from the sectoral breakdown of loans to non-financial corporations, as these loans also include real estate-related loans. Some caution is needed in interpreting the indicators based on the sectoral breakdown, as this category also includes lending related to other activities.[9] Finally, it should be noted that these indicators were provided on a domestic consolidation basis, as opposed to the broader consolidation basis used in the survey. In total, 18 countries provided data for at least one of these indicators.[10]

In order to assess the evolution of EU banks' commercial property-related lending activity over time, both types of indicator have been taken into account. According to the first FSI indicator, the median share of commercial property-related loans in total loans increased between 2004 and 2007, from 8.7% to 9.7% (see Chart 28).

Furthermore, the median share of real estate sector-related loans in total loans rose from 6.7% in 2004 to 8.6% in 2007 (see Chart 29). Overall, the commercial property lending-related FSIs seem to confirm the survey finding that the exposure of EU banks to commercial property markets is significant. The evolution of FSI indicators over time also suggests that, in general,

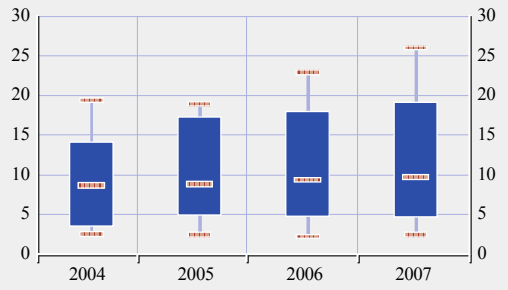
8 Furthermore, information on LTV ratios was available for at least three large banks in these countries (Germany, Ireland, France and the United Kingdom).

9 The category description is "Real estate, renting, and business activities – such as computer and related activities, and research and development".

10 Bulgaria, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Hungary, Latvia, Malta, Poland, Portugal, Romania, Slovakia, Spain, Sweden and the United Kingdom.

Chart 28 EU country distributions of commercial property-related loans

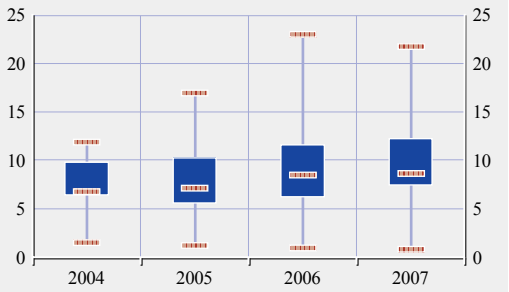
(percentage of total loans; minimum, maximum, median and inter-quartile distribution of country-level data)



Source: BSC.
Note: The data are based on FSI indicators for 11 countries.

Chart 29 EU country distributions of loans to the real estate sector

(percentage of total loans; minimum, maximum, median and inter-quartile distribution of country-level data)



Source: BSC.
Note: Data are based on sectoral FSI indicators for 15 countries.

the share of commercial property-related loans in EU banks' total lending has gradually increased in the past few years, at least until 2006.

The increasing importance of commercial property-related lending for EU banks is even more evident if it is analysed as a share of loans to non-financial corporations. According to the sectoral FSI indicator, the median share of real estate sector-related loans in total loans to non-financial corporations rose from 26.5% in 2005 to 30% in 2007.[11] As a result, in many EU countries real estate sector-related loans represent the most significant sectoral exposure of banks.

Country-level data also suggest that the growth of lending to the commercial property sector slowed in 2007 in many countries, which seems to confirm survey-based information. This may reflect some tightening of credit standards as well as more difficult funding conditions for leveraged investors.

6.3 SURVEY RESULTS ON RISK MANAGEMENT AND MONITORING IN BANKS

The survey included a set of qualitative questions on banks' risk management practices and the monitoring of their lending exposures to commercial property markets. As regards banks' business models, most surveyed banks implement an "originate and hold" business model for commercial property lending, while some apply an "originate and distribute" model or a mix of these two strategies.

Before presenting the summary of responses to the questions on risk management, a caveat is in order. Banks' responses to the qualitative questions inevitably differ significantly in terms of the degree of detail provided. Therefore, the purpose of the summary of these qualitative results is to provide an overview of the presentation by the surveyed banks of their risk management practices with respect to commercial real estate lending rather than to assess the adequacy of these practices.

CREDIT RISK ANALYSIS, PROPERTY VALUATION AND LIMITS

Banks generally require extensive information from borrowers for credit analysis, reflecting both the borrower's creditworthiness and project-specific characteristics. Regarding financial information requirements, typically borrowers must provide audited financial statements covering at least three years. Quantitative criteria mainly used for credit analysis include loan-to-value ratios and indicators which reflect the debt servicing capacity of borrowers (e.g. interest cover and

11 Note that in case of the first FSI indicator, data on the share of commercial rela estate loans in total loans was available for a relatively small sample of countries, therefore it is not reported here.

debt service coverage ratios). In addition to financial information requirements, there are also several project-specific information requirements which borrowers must fulfil.[12]

Furthermore, property valuation forms an integral part of credit analysis. Banks' practices seem to differ regarding whether property valuations are carried out internally or by external appraisers. Some banks pointed out that, in the case of external valuations, they accept reports from appraisal companies with good reputations and with which they have cooperation agreements. Other banks rely on risk management staff dedicated to real estate valuations who are responsible for engaging external appraisers and reviewing all appraisals commissioned externally in connection with secured real estate lending. Some banks reported that both internal and external appraisals may be required. For instance if estimates provided by external appraisers exceed certain limits, they must be verified by an internal appraiser. Typically market value (or fair value) and forced sale value are used for property valuations. A haircut may be also applied to the forced sale value in the case of properties with vacant possession. Vacant possession value may be required, for instance, if vacancy for a longer period is considered to be likely. As regards the wider concept of property security, banks take into account several factors, such as the location of the property, condition of the building, general market circumstances, the occupancy rate and the strength of "anchor" tenants. Revaluation of the property is required at regular intervals, i.e. annually or at least once every three years.

Based on survey responses, the assessment of refinancing risk also appears to be a part of due diligence, although not many banks provided appropriate information in this regard.

Banks' risk appetite is generally reflected in their credit policies, which are reviewed regularly, i.e. at least on an annual basis. Many banks also mentioned that they set limits for economic sectors in order to ensure proper diversification of their lending portfolios. Nevertheless, only some banks mentioned that they have a specific credit policy for commercial real estate loans and, overall, the setting of explicit limits for commercial real estate lending does not appear to be a common practice among EU banks (or at least this is not reflected in survey responses).

MONITORING AND RISK ASSESSMENT

Monitoring is carried out on an ongoing basis, for which banks require information throughout the loan period. Financial information is updated and monitored regularly, and the frequency of updates is linked to financing requests and the specific score and/or rating of the borrower (but updates are carried out at least annually). Borrowers are required to provide monthly, quarterly and/or annual operating and financial statements, rent rolls, compliance certificates, project calculations etc. on an ongoing basis. If there are some factors at the origination of the loan which require closer attention, then the project is monitored more frequently. Similarly, loans are reviewed more frequently (on a quarterly or semi-annual basis) if any changes have occurred since the granting of the loan that would adversely affect loan repayments. Most banks reported that borrowers generally comply with these information requirements, as, otherwise, they would breach a loan covenant.

Typically, commercial property loan contracts include a number of covenants, comprising financial and other (non-financial) covenants. The most frequently mentioned financial covenants are set in relation to loan-to-value, loan-to-cost, interest cover, debt service coverage or rental income-to-loan instalment ratios. Banks' practices seem to differ in terms of setting requirements for loan covenants. While some banks reported that covenants are mandatory for all types of loan, in other cases the inclusion and choice of covenants are deal-specific and depend on the risk profile of the loan (i.e. risks specific to the borrower or the project). Some banks suggested that the type and number of loan covenants may also depend on the competitive environment. Banks

12 These may include, among others, a detailed business plan (including project costs and projected cash flow) or a feasibility study done by an independent specialised company.

generally require other (non-financial) covenants which may include, for instance, ownership clauses, subordination clauses, negative pledges, stipulations that borrowers cannot take out further loans without the bank's approval, the assignment of the lease contracts and rental guarantees, etc.

Based on survey responses, banks generally have adequate procedures in place for the rank ordering of exposures, although the degree of detail provided in responses differs greatly across surveyed banks. Exposures are ranked by different loan characteristics, such as geographical region, type of product, size, location and distribution channels. Exposures may also be ranked according to banks' rights over the mortgaged property, e.g. a first mortgage ranks before a second mortgage. However, it should be noted that is not clear in all cases what procedures banks have in place for rank ordering their exposures to the commercial property sector in order to detect concentrations in their portfolios.

As regards the risk rating of borrowers, most banks referred to using a rating and scoring methodology which is usually based on qualitative and quantitative indicators. Loans that are deemed to be at risk are put on special monitoring reports (a "watch-list"). Ad hoc re-grading of exposures is also undertaken in the event of default, material events or by request. There appears to be a certain degree of variation in the sophistication of risk rating procedures used by surveyed banks. For instance, some banks rely on an overall risk management approach based on a credit value-at-risk concept which is annually reviewed and generates monthly limits. Other banks pointed out that they use an internal ratings-based approach or that they comply with the relevant Basel II requirements. Banks which belong to EU banking groups, for instance in Central and Eastern European countries, typically apply a group methodology.

The monitoring of refinancing risk involves the analysis of the credit quality of the customer, the valuation of collateral and market conditions. Refinancing risk may be assessed during loan reviews by monitoring the loan-to-value ratios, payment arrears and the value of collateral. Banks use periodical valuation of the underlying assets based on external reports to ensure that the ratio of the residual debt to the value of the underlying assets remains at comfortable levels. Banks may mitigate refinancing risk by fixing conservative LTV levels and closely watching market developments. Furthermore, in the specific case of the financing of multi-household dwellings, exposures on construction companies are mainly limited to the issuance of bank guarantees in favour of buyers in order to secure the advance payments that are paid following completion of construction tranches (which is a legal requirement), thus eliminating refinancing risk on these companies.

Banks were also asked to provide information on the practices they apply for the valuation of hedging or securitised exposures. As already indicated, this is relevant only for a smaller group of the surveyed banks. As regards hedging for CMBSs, trading assets are marked to market on a daily basis or at least on a monthly basis, based on prices from liquid markets. In the case of illiquid assets, which are classified level 3, the pricing is marked to model. Some banks suggested that, in order to take into account potential liquidity constraints or market environment characteristics, further adjustments need to be applied. For banks which reported on hedging exposures, these consist of ABX and CMBX deals. For a few banks which reported on using derivatives (swaps) for hedging interest rate risk, these hedging exposures are marked to market on a monthly basis.

LENDING STANDARDS AND CHANGES IN RISK APPETITE

Banks were also asked to describe the development of lending standards over the past three years, in particular with regard to loan-to-value ratios. Based on survey responses, it is difficult to identify common patterns in EU banks' standards for commercial property lending before the eruption of the credit market turmoil. This can be partly explained by the

fact that general conditions or the maturity of commercial property markets differed significantly across countries in which the surveyed banks operate. There are indications that some banks loosened their credit standards in the period to mid-2007 in order to increase their market shares, even though this was not a general feature across the banks surveyed. Some market participants noted that, at least in some cases, increased securitisation activity may also have been coupled with more aggressive underwriting standards in 2006 and early 2007. Some banks also noted that competitive pressure increased the willingness to accept higher LTVs.

Survey responses suggest a more general pattern across EU banks since the onset of the financial market turmoil. In particular, a number of banks indicated that risk appetite decreased after mid-2007 and thus commercial property markets may also have been affected by deleveraging in several EU countries. Several banks reported the tightening of credit standards (e.g. lower LTV ratios) or more intensive and cautious risk assessments and/or controls for potential new borrowers. There were also indications that there has been an increase in risk differentiation across markets, with lower new loan origination, stricter credit standards and higher risk premia applied to riskier regions and/or riskier activities (e.g. the share of development financing has declined). There were some indications that the risk/return ratio has improved since mid-2007, as banks can apply higher fees and margins, although this development may have been less pronounced in the EU than in the United States. In contrast, in countries where commercial property market conditions remained relatively stable or markets had not previously been subject to overvaluation, banks observed only minor changes in lending standards, if any. It was also suggested that a decline in the availability of alternative sources of financing could contribute to deterioration in the average credit quality of borrowers in the commercial property sector. Overall, survey responses suggest that since the onset of the financial turmoil banks have increasingly focused on the financing of better quality borrowers and assets. Finally, it should also be noted that in some country-specific cases, the change in risk appetite was not precipitated by the financial market turmoil. In particular, in countries where property markets had been perceived as being more risky by banks even before the turmoil, the tightening of credit standards also started earlier.

7 CONCLUSIONS

Commercial property markets are important from a financial stability point of view mainly because commercial property can constitute a considerable share of banks' assets. A survey conducted for this report found that bank loans extended for commercial property purposes account for about 12% of the total loans of EU banks surveyed.

History has shown that adverse developments in commercial property markets have the potential to cause significant losses for banks and severe financial instability. This, together with the growing size of commercial property markets in the EU in recent years, means that monitoring and analysis of commercial property market developments are warranted for financial system stability assessments. This task is, however, challenging as the data on developments in commercial property markets are often poor quality and not harmonised across countries. There is therefore a need for better data, both on prices and banks' exposures, to allow for proper market surveillance and analysis.

In addition, because of the significance of commercial property exposures for some banks, sound risk management practices within banks are crucial. For the same reason, it is important for supervisors to have adequate information on banks' exposures to commercial property markets and to monitor developments in these markets to be able to identify potential risks facing banks.

Conditions in several EU commercial property markets have deteriorated in the course of 2008. Capital values have eased, or even declined, in most countries as a reaction to the large increases in previous years but also due to the deteriorating macroeconomic environment and the higher cost of, and reduced access to, finance for property investors. Looking ahead, the deteriorating macroeconomic outlook for the EU and the protracted credit market turmoil are likely to have further adverse effects on commercial property prices in some EU countries.

Given the deterioration in some EU commercial property markets, EU banks and investors have recorded reduced incomes, or even losses, in recent quarters. Future movements in returns on commercial property investments and decreases in commercial property values could cause banks with significant commercial property-related lending and/or holdings of structured credit products, such as commercial mortgage-backed securities, to face increased earnings risks, in particular if they are exposed to weaker performing property markets.

ANNEX

I COMMERCIAL PROPERTY-RELATED FINANCIAL CRISES IN THE PAST

Three crisis episodes in the past seem to be of particular relevance in underlining the significant impact of financial crises linked to commercial property markets on the real economy: the crisis in the 1980s and early 1990s; the crisis in the Nordic countries; the savings and loans crisis in the United States; and the Asian crisis in the 1990s (see Box 4 for a description of the commercial property crisis in Sweden).

THE FINANCIAL CRISIS IN THE NORDIC COUNTRIES IN THE EARLY 1990s

During the 1980s, the Nordic countries experienced significant financial liberalisation. Prior to deregulation, the existence of interest rate ceilings, quantitative lending restrictions and foreign exchange controls had promoted excess demand for credit.[1] Lack of competition within the banking sectors in these countries in the 1970s and early 1980s had also contributed to credit rationing, as banks were highly selective when assessing credit risk, relying primarily on long-term relationships between borrower and lender.

Financial liberalisation increased competition within the Nordic banking sectors, and credit standards were subsequently loosened to gain market share. In an environment of pent up credit demand and tax systems biased towards borrowing, the coincidence of robust economic growth and shortcomings in financial deregulation led to asset and credit booms in these countries in the 1980s. A significant proportion of this increase in credit was extended to investors in both residential and commercial property, which created a concentration of credit risk in the property market. Adverse international macroeconomic developments in the late 1980s and early 1990s, in conjunction with domestic tax reforms and monetary tightening, ended the boom in the Nordic countries. The coincidence of lower income growth, declining asset prices, higher real interest rates and a concentrated loan book created considerable credit losses for the banking sector in these countries.

In particular, the commercial real estate sector caused the most deterioration in asset quality in both Sweden and Norway in the early-1990s (see Table A). Although households accounted for a significant proportion of non-performing loans, in Finland, only 1% of total household loans were written off as credit losses. By contrast, almost 50% of Finnish banks' exposures to the real estate sector had to be either booked as non-performing or written off.[2]

1 See B. Drees and C. Pazarbasiouglu, "The Nordic Banking Crises: Pitfalls in Financial Liberalization", *IMF Occasional Paper*, No 98/161 1998.
2 Ibid.

Table A Non-performing loans in Norway, Sweden and Finland

(percentage of total non-performing loans)

	Norway		Sweden		Finland	
	1988	1992	1991	1993	1991	1993
Firms	80	77	84	75	59	58
of which:						
– Construction	5	8	-	-	13	14
– Real estate business	16	30	75	50	16	12
Households	15	20	7	11	21	25

Source: B. Drees and C. Pazarbasiouglu, "The Nordic Banking Crises: Pitfalls in Financial Liberalization", *IMF Occasional Paper*, No 98/161 1998.

Box 4

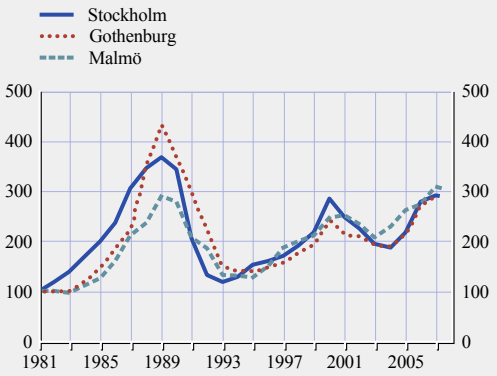
COMMERCIAL PROPERTY CRISES – THE CASE OF SWEDEN

In the early 1990s, Sweden experienced a severe banking crisis which had its roots in the commercial property market. For several years, commercial property prices and, in particular, office prices increased significantly, but in 1990 prices fell rapidly and vacancies increased. This led to extensive economic problems for the property companies and large loan losses for financial institutions. In the end, the state had to guarantee bank obligations in order to rescue the banking system.

The fast increasing property prices in the late 1980s and the following downturn was due to the interplay of three main factors: economic development, shortcomings in financial market deregulation and changes in economic policy.

Chart A Real prices for office premises in city centres

(index: 1981=100; deflated by CPI)



Sources: Newsec AB and Sveriges Riksbank.

Between 1981 and 1990, when prices peaked, inflation-adjusted office prices in Stockholm increased by more than 250%. In the subsequent years to 1993, they fell strongly back to the levels seen in 1982 (see Chart A).

The strong economic development in the second half of the 1980s resulted in increased employment in office occupations, in particular, leading to high demand for office premises. This development was reflected in higher rents. The favourable conditions soon led to optimistic expectations, not least expectations of future rents. These expectations also influenced the banks, whose lending to the property sector increased substantially in these years.

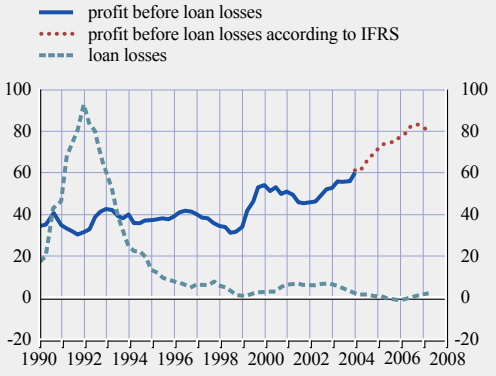
One key factor for the banks was, however, shortcomings in the deregulation of the financial markets and the abolition of credit controls in 1985. The deregulation was a response to the emergence of less-regulated, non-bank financial institutions and new capital markets, which competed with banks, as well as to demand for cheaper and higher quality financial services. Bank profitability had been low in the early 1980s and the deregulation provided an opportunity to expand lending and thereby improve profits. The deregulation threw the banks into competition for market shares, including with financial companies which were already heavily involved in real estate lending. As a result, a large proportion of bank lending was directed to assets such as commercial real estate, which fuelled prices further. It is likely that a significant proportion of the increase in the bank lending-to-GDP ratio from 43% in 1986 to 68% in 1990 was due to real estate lending. At that time, Swedish lenders also seem to have taken comfort from real estate collateralisation. For the real estate companies, the high inflation in the 1980s meant that, in practice, interest expenditures and, in turn, the required returns were low. Debt ratios rose and property investments were high. Thus, the rapid price increases were driven by the strong development in demand and rents at a time when the supply of credit increased and the real interest rate was low. However, it is also possible that optimistic expectations of future rents on the part

of both investors/developers and banks played a major part in the price movement, not least through their importance for the growth of credit.

The downturn in the commercial property market was caused by a combination of a decline in the economy and structural changes, which resulted from a shift in the economic policy. As the economy slowed down, unemployment increased and the demand for office premises fell. The realignment in the economic policies at the same time fundamentally altered the conditions upon which prices had been based. The move towards a more restrictive economic policy focused on low inflation led to a fall in inflation. In the meantime, nominal interest rates increased in the early 1990s as a consequence of the defence of the fixed exchange rate, as well as international developments, such as the reunification of Germany, which pushed international interest rates up. All this led to a sharp increase in the real interest rate and falling property values.

Chart B Profit before loan losses and net loan losses in the major banks

(four-quarter moving sum; SEK billions; 2007 prices)



Sources: Banks' reports and Sveriges Riksbank.

For the highly indebted property companies, this meant higher debt servicing costs at the same time as lower demand led to a decline in income. The payment difficulties that ultimately arose led to extensive loan losses for the creditors of these companies (see Chart B). In autumn 1991, it became obvious that the loan losses had caused solvency problems when two of the six major banks needed capital in order to fulfil their capital requirements. The problems spread and, in autumn 1992, the crises was recognised as a systemic crisis.

The credit losses incurred by the banks are estimated at approximately SEK 180 billion,[1] (or 4.2% of GDP in 1992). Property-related lending accounted for approximately 44% of the credit losses, but only 15% of total lending.[2] In the end, the Swedish government was forced to provide equity and guarantee loans to five of the six major Swedish banks active at the time in order to save the financial system. The direct costs for the tax payers ended up at approximately 2% GDP.[3]

1 See K. Fregert and L. Jonung, *Makroekonomi- teori, politik och institutioner*, 2003.
2 P. Englund, "The Swedish Banking Crisis: Roots and Consequences", *Oxford Review of Economic Policy*, Vol.15 No 3, 2004.
3 See P. Englund, (2004) op. cit. There are different ways and views on how to calculate the ultimate cost of the banking crises. One estimation is that the final direct cost for the taxpayers was SEK 35 billion or 2.1% of GDP in 1997, according to P. Jennergren and B. Näslund, "Bankkriser och deras hantering", report to Parliament, 1997.

THE SAVINGS AND LOANS CRISIS IN THE UNITED STATES IN THE LATE 1980s

A severe correction in the commercial property market in the late 1980s also caused disruption to financial stability in the United States.[3] During the early 1980s, a marked increase in demand for commercial property led to a boom in construction activity, which eventually caused a collapse in real estate prices towards the end of that decade. In the intervening period, commercial banks and other institutions had

3 See FDIC, "Commercial Real Estate and the Banking Crises of the 1980s and early 1990s", Chapter 3 in *History of the Eighties – Lessons for the Future*, Washington, 1997.

significantly increased their exposure to this sector, because deregulation and tax reforms had increased the profitability of commercial property-related lending. Many institutions had also loosened credit standards on commercial loan contracts in the 1980s to gain market share. Therefore, when the market correction took place, there were large losses for the banking sector. Many banks failed and the bank insurance fund was also affected. Furthermore, of the over 1,000 banks that failed, many had a relatively higher ratio of commercial real estate to total loans compared with the banks that survived.

According to the Federal Deposit Insurance Corporation (FDIC), the ultimate cost of the bailout was about USD 160 billion, of which USD 135 billion was directly or indirectly subsidised by the government.[4]

THE ROLE OF COMMERCIAL PROPERTY IN THE ASIAN CRISIS IN 1997

In the late 1990s episodes of severe financial distress in a number of economies in South-East Asia economies (i.e. Hong Kong, Indonesia, Philippines, Malaysia, Singapore and Thailand) could also be linked to disorderly adjustments in commercial property markets. Some countries such as Thailand and Malaysia experienced relatively greater losses as a result of this crisis compared with Singapore and Hong Kong. This has been attributed to the fact that prior to the adverse shocks, the banking sector in the latter two countries was in a relatively more robust and sound position.[5]

A number of developments led up to the period of financial distress in these economies. First, a period of sustained economic growth beginning in the mid-1980s combined with financial liberalisation led to an investment boom, particularly in the real estate sector. Second, financial deregulation occurred without a corresponding strengthening of the supervisory framework, resulting in a marked increase in highly leveraged lending to this sector. Third, exchange rates in a number of these countries were tightly managed against a basket of currencies, with the US dollar comprising the most significant component. In 1985, the devaluation of the US dollar against the Japanese yen, stimulated export performance in these countries. The resulting increase in foreign capital inflows led to a marked rise in speculation in the real estate sector, which, in turn, boosted prices and collateral values. As a result, banks and finance companies greatly expanded their exposure to this sector. Finally, the beginning of a moderation in real estate prices in early 1996, was exacerbated by a rise in US interest rates, which caused an appreciation in the Asian countries' exchange rates. The appreciation of their exchange rates combined with large current account deficits led to a wave of speculative attacks on these currencies, resulting in currency crises. Commercial property prices subsequently collapsed and financial sectors in these economies ran into difficulties as a result of widespread corporate bankruptcies.[6]

The fiscal costs of the Asian crisis have been estimated at approximately 34.8% of GDP in Thailand, 16.4% of GDP in Malaysia and 7% of GDP in the Philippines.[7]

4 See FDIC, *History of the Eighties – Lessons for the Future*, Washington, 1997.
5 See P. Hilbers, Q. Lei and L. Zacho, "Real Estate Market Developments and Financial Sector Soundness", *IMF Working Paper*, No 01/129, 2001.
6 See C. Collyns and A. Senhadji, "Lending Booms, Real Estate Bubbles and The Asian Crisis", *IMF Working Paper*, No 02/20, 2002.
7 G. Caprio and D. Klingebiel, "Episodes of Systemic and Borderline Financial Crises", World Bank, 2003.