| 1989/92 | 1993/96 | 1997/2000 | 2001/06 |
|---|---|---|---|
| UK lenders face significant bad debts from defaulted speculative development finance loans. New lending curtailed. | Market for high quality real estate loans dominated by German mortgage banks. UK building societies begin to become active through 'buy to let' at the end of this period. | Balance sheet lender's appetites and returns grow as the bull run in real estate financing gathers pace. Many listed companies leave the public markets. CMBS emerges as an asset class in its own right from the US, led by the US banks. | CMBS dominance begins and drives aggressive levels of leverage and pricing. Traditional UK and German lenders increasingly use the capital markets to manage exposure/ maximise returns. Each quarter is marked by new lenders entering the market and exposure to UK real estate reaches record highs whether measured by Bank of England, De Montfort or CMBS issuance. |

9.5 By the end of this period, the market for UK real estate finance was dominated by global investors in structured finance. The appetite for new products and pricing of primary and secondary UK CMBS issuance was therefore driven by global credit markets. This new reliance on global market conditions was fundamentally different from all previous UK real estate cycles[1].

[1] See Chapter 2.

9.6 In the second half of 2007, the increase in competition and risk appetite in real estate finance, identified above, came to an abrupt halt due to the following external factors:

- losses in US sub-prime residential mortgage securities, calling into question the entire structured finance spectrum and reducing confidence in credit ratings published by the rating agencies;





- a wider knock-on effect in all structured finance markets as bond investor appetite disappeared, leaving banks with major real estate finance loans they had expected to be able to on-sell (De Montfort estimate that there are £11 billion of loans that were originated for CMBS but that were affected by the on-set of the credit crisis)[1];
- general banking concerns regarding the loss positions held by UK lenders leading to a lack of liquidity in inter-bank lending (banks became nervous to lend to each other and LIBOR suffered a dislocation between its rate and the base rate)[2];
- reduced appetite to commit to major exposures with particular reduction in available loans to real estate.

[1] See Chapter 10 where the health of the UK commercial property lending market will be discussed in depth.
[2] See Chapter 8 where LIBOR is discussed further.

9.7 Whilst the results of the 2007 De Montfort Survey are covered in Chapter 10, key findings can be highlighted here to illustrate the current limited availability of real estate financing:

- Only 55% of lenders indicated they have an intention to increase their loan originations (versus 89% in 2006);
- Only ten lenders have indicated a willingness to make loans in excess of £50 million.

9.8 The reasons for this reluctance to make large loans are varied and depend on the type of lender. However, such reasons generally include, (i) the banks' desire to hoard cash in the face of limited market liquidity; (ii) existing exposure to real estate being too high within some banks, due to uncompleted securitisations; and (iii) potential problems with existing bank loan books following corrections in real estate values over the last 12 months leading to actual or threatened LTV breaches. In summary, UK real estate finance and the real estate capital market is, at the time of writing, in a period of difficulty. But it is recognised that the real estate markets are cyclical and the remainder of this Chapter will take these conditions into account, whilst also seeking to present the lender's perspective that might apply in the future in a more regular environment.

9.9 The above commentary relates to the appetite for senior real estate finance. The history of mezzanine finance in the real estate finance industry has a recent additional twist. Akin to the senior market, a high number of mezzanine 'buyers' (institutions prepared to buy the most subordinated elements in structured real estate loans) entered the market over the period 2003 to 2006 and then quickly disappeared as their fund-raising methods froze in the summer of 2007. This led to an almost total absence of subordinated real estate finance until the spring of 2008. At the time of writing a number of funds have begun to emerge, seeking to capitalise on this gap in the market to both acquire existing subordinated loans from lenders looking to sell and also to make new loans to fill this void.

## THE COST OF REAL ESTATE FINANCE DEBT

**9.10** The cost of debt can be split into two elements:

(i) the cost of funds (typically the five-year swap rate for real estate finance loans); and
(ii) the interest margin (the profit element charged by the lenders).

The former will be the same for senior and mezzanine loans whereas the latter will vary significantly depending on the level of risk being taken by the lender.

**9.11** The cost of senior debt in terms of interest margin, unsurprisingly for students of economics, had been decreasing over the period 2003 to 2006 as the supply of money increased, followed by a rapid increase in the second half of 2007:

| Year | Prime Office Interest Margins | Secondary Retail Interest Margins |
|---|---|---|
| 2003 | 120bps | 130bps |
| 2006 | 95bps | 120bps |
| 2007 | 125bps | 145bps |

*Source: De Montfort University 2008*

**9.12** To start to understand the reasons for these movements however, we must first analyse how banks establish their pricing for real estate finance loans. There are two traditional models:

(i) the balance sheet lender, who intends to retain the loan until it is repaid; and
(ii) the CMBS lender, who intends to sell the loan to third parties through the structured finance markets[1].

The latter is often referred to as a 'lend to sell' or 'originate to distribute' strategy or model.

[1] See Chapters 3, 16 and 17.

### The balance sheet lender

**9.13** Regulated banks raise funds for lending to clients (real estate or general corporates) through (i) the issue of equity; and (ii) raising deposits from retail and wholesale deposits. The ratio of the two is important as deposits are usually repayable in the short-term. The level of equity to deposits will therefore usually be at a level which provides headroom over and above the minimum requirement laid out by their regulator: typically Tier 1 Equity (permanent capital) must be equal to or greater than 6 to 10% of total commitments.





**9.14** The objective of this style of lender is to lend money at interest rates that deliver a target return for their equity investors after meeting the operating costs of the bank and expected losses from the loan portfolio (it is the banker's oldest maxim that 'if you never lose any money when you lend, you haven't lent enough').

**9.15** Thus the pricing of individual loans is based upon a Risk Adjusted Target Return on Equity over the assumed life of the loan. In more detail:

$$\frac{\text{NPV of the Interest Margin + Fees Received}}{\text{Equity Requirement}} > \text{Target Return on Equity p.a.}$$

**9.16** Depending on the model used, the risk of the transaction will be factored into either (i) the amount of equity allocated to the loan, or (ii) the target level of return. Thus the expected losses from loans having the risk profile associated with the transaction in question will be factored in. The important element of the pricing model here is that the lender assumes they keep the loan until maturity and that they absorb fully any credit losses associated with the loan.

**9.17** The risks to the lender are that (i) they have not correctly assessed the credit quality of the loan, leading to higher than expected losses; or (ii) the cost of their equity increases over the life of the loan, making it (with hindsight) unprofitable. This latter element has come to the fore recently with many lenders holding loans at interest rates agreed during 2005/06 where the risk has increased due to real estate market value corrections. This risk/reward mix is compounded by the increased cost of their own equity (whether measured in their ability to raise wholesale loans or new capital).

### The CMBS lender

**9.18** The assumption behind the CMBS lending model is that the loan can be sold in a short period of time at a profit, typically by breaking the loan down into risk tranches that match the investment/risk objectives of a range of investors. Typical real estate loans will be tranched into levels associated with the investment grade ratings from the international rating agencies (AAA, AA, A & BBB) together with a sub-investment grade piece. The pricing of the loans will therefore be an accumulation of the expected prices at which the CMBS lender believes that it can sell each of these pieces together with (i) headroom to cover increases in market prices of such tranches over the period between lending and sale; and (ii) a profit margin for the lender.

**9.19** For example, an 80% loan to value ('LTV') loan may be secured on a portfolio of high quality UK retail property. The loan and its tranching, along with others in the mortgage pool rated by the agencies, would be set and the

[1] See 'Property Derivatives', Merrill Lynch Fixed Income Strategy at 3 (23 April 2007) (the 'Merrill Report'). 'If you want to reduce property exposure, derivatives allow you to do that without selling a portfolio you may not be able to get back', quoted in David Shvartsman, 'Property Derivatives: An Overview', FSU Editorial 29 September 2005, available at www.financialsense.com/fsu/editorials/shvartsman/2005/0929.html.

**23.4** As stated, the advantages of property derivatives have resulted in impressive returns and historic market activity. Despite the ongoing 2008 credit crisis in the markets, property derivatives had their best ever quarter[1] and at least 20 dealers internationally have obtained licences to provide them[2]. In addition, in recent years, deal volume has increased by a factor of five from the previous year with evidence of an even greater annual volume in the future, with projections for the market in the UK to reach £100,000,000 by 2010. At the start of 2007, the value of property derivatives based on the Investment Property Databank ('IPD') Index reached a cumulative notional of some £7.6 billion. In 2006 alone, there were 360 transactions in all. The number of deals thus rose by a factor of five compared with the previous year, while the volume actually increased more than sixfold in the space of 12 months[3].

[1] Jane Roberts, 'Market Gains Critical Mass as Q1 Trading Volumes Top £3 billion', EG Capital, at 17 (April 2008). 'The CMBS market has dried up, but [the property derivatives] market kept functioning through the credit crunch, which is very positive.': Jane Roberts, 'Market Gains Critical Mass as Q1 Trading Volumes Top £3 billion', EG Capital, at 17 (April 2008) (quoting Alex Winward, Merrill Lynch head of property derivatives).

[2] 'Property Derivatives Marching Across Europe', Deutsche Bank Research (12 June 2007) at 9 (hereinafter 'DBR').

[3] See, eg, DBR at 8.

**23.5** This Chapter begins with the foundation for understanding property derivatives, introducing derivatives and the derivative marketplace. The first part summarises the component parts of a property derivative transaction, including the parties and the underlying index, as well as the documentation and deal execution. The Chapter will then discuss in greater detail common property derivative transaction structures and the transaction mechanics, including a case study illustrating one of the most common property derivatives transaction structures, the total return swap. It will further identify disadvantages and risks with respect to property derivatives and certain factors that may delay or impede the full, international development of this trading strategy, focusing on the false start of the property derivative market in the early 1990s and explaining how the market for this strategy has overcome that false start and earlier impediments. Finally, it concludes with the future outlook for this derivative, including an educated estimate of what the property derivative market will look like long term and what that outlook means for practitioners using what many believe to be the most powerful form of alternative, real estate investment available in the markets.

## THE FOUNDATION

**23.6** A property derivative is an instrument with a price and value that is derived from a published property index. Property derivatives, which may be





used as a synthetic investment or for hedging or leverage purposes, can be tailor-made to fit portfolio needs, offer flexible hedging techniques to portfolio managers and institutional investors holding illiquid real estate investments. Hedging capabilities with this instrument range from protecting parties against increases or decreases in the commercial or residential rental markets to enabling investors to gain immediate exposure to investment-grade commercial real estate in cities throughout the world. The derivative may be based on retail, industrial, office, residential or undeveloped property. As such, derivatives are instruments that derive value from an underlying asset or event. Users of derivatives either pass unwanted risk to a willing counterparty, which assumes that risk for a price, or take on risk in exchange for a payment. A simple example is an option, a basic derivative building block. In the case of a stock option, one party, the holder of the option, pays a premium to obtain the right to purchase (or sell) an underlying asset – a share of common stock. The other party, the writer of the stock option, receives the premium as payment for the option and in turn for that payment becomes obligated to perform – ie, to transfer the stock at a price upon the exercise of the option. In this way, options and other derivatives are used to manage or take advantage of risk relating to stock. Derivatives may also be based on other assets as well: a bond, a commodity, a form of currency, or an index, such as a commercial property index.



### Players in a derivative trade

**23.7** The principal participants in a derivatives transaction are two parties: a dealer and an end-user facing the dealer. Both are referred to as 'counterparties' in derivatives parlance. Counterparties frequently experience difficulty in locating other counterparties interested in buying a particular risk. Initially, brokers sought to address that difficulty by matching buyers and sellers of the same risk. As the derivatives industry matured, brokering specific types of the same risk became increasingly difficult. This difficulty gave rise to the need for a dealer of derivatives that would face a counterparty seeking to sell unwanted risk on the one hand and another counterparty wanting to trade a similar type and amount of risk on the other. A dealer in derivatives stands ready to meet the divergent needs of the various participants, or end-users, in the derivatives market.

**23.8** Thus, there are three principal participants in a derivatives trade: the buyer and seller of risk and a dealer that acts as an intermediary. The participants base their property derivative on a benchmark or index.

**23.9** For a dealer to provide a property derivative product based on an index, it must obtain a licence from either the IPD[1], a world leader in performance analysis for real estate investors, managers and occupiers, or the National Council of Real Estate Investment Fiduciaries ('NCREIF'), a member-supported non-profit association organised since 1977. NCREIF publishes

various real estate returns including total return, income and capital appreciation returns varying by property type and region. There are over 20 dealers currently licensed to trade on property indices; many dealers have teams dedicated to this instrument[2].

[1] IPD launched European property indices first in 1986 but became active in this area in 1971. Dr Ian Cullen, IPD Co-Founding Director, 'IPD Indices for Derivatives; Market Progress to End 2006' (the 'IPD Report').

[2] According to IPD, at year-end 2006, these dealers were licensed to trade on IPD indices: ABN Amro, Abbey National, BNP Paribas, Barclays Capital, Credit Suisse, Deutsche, Euro Hypo, Goldman Sachs, JP Morgan, Lehman Brothers, Merrill Lynch, Morgan Stanley, HSH Nordbank, Royal Bank of Scotland, Toronto Dominion and UBS. See, IPD Report. Nicholas Scarles, 'Property Firms Need to Make Derivatives a Tool of the Trade', EG Capital, at 18 (April 2008).

**23.10** Dealers of property derivatives face a wide range of counterparties:

(1) *Institutional investors*. The property derivative product, to date, has been designed primarily for institutional investors.

(2) *Portfolio managers*. Commercial real estate and other portfolio managers use derivatives to increase or decrease exposure to a certain property market, type or region. Managers' investments may be temporary or long-term and may hedge generic market risk while obtaining returns and freeing up capital.

(3) *Pensions*. Property derivative swaps have been presented for use to pensions since 1991, when Salomon Brothers proposed Property Asset Cash Transfers ('PACTs'), a transaction with a structure virtually identical to plain vanilla interest rate swaps[1].

(4) *Hedge funds*. For the first time, hedge funds and traders are now using property derivatives to make relative value trades as well as custom-made trades in ways that are difficult or impossible in cash markets. Hedge funds and other investors can go short to directly reduce real estate-related risk.

(5) *Private investors*. The first theoretical analysis of property derivatives focused on housing market risks for individuals and families[2]. The financial incentives for private investors are stronger than institutional investors in many cases.

(6) *Real estate developers*. Property derivatives may be used by real estate development companies to hedge risk arising from market movements in the critical development period[3].

(7) *Insurance companies*. Property derivatives have attracted significant attention from life insurance companies seeking these swaps to gain diversification or cross-border exposure[4].

[1] See, S Michael Giliberto, 'Property Asset Cash Transfers: A New Tool for Real Estate Portfolio Management', Salomon Brothers United States Real Estate Research (12 September 1991).

[2] DBR at 8.

[3] Nicholas Scarles, 'Property Firms Need to Make Derivatives a Tool of the Trade', EG Capital, at 22 (April 2008).

[4] John Ferry, 'Synthetic Real Estate – Going Nowhere Fast', Euromoney at 91 (March 2008).





**The benchmark: property derivative index**

**23.11** The parties to a property derivative evidence their competing and mutual objectives in agreements which, unlike more traditional documentation, generally do not call for the exchange of principal or real property. Instead, the parties agree to exchange payments that are based on a common benchmark or index.

**23.12** In the case of a property derivative trade, one party typically owns a real estate asset (although ownership of real property is not required and frequently is not part of the transaction). The party may have a negative view of how that asset will perform over time and will therefore seek to hedge its exposure relative to that asset. That party will select a dealer for the hedge. Either the dealer or the hedging party will identify an index of real estate assets that will be a benchmark or basis for the derivative transaction between the real estate owner and the dealer. That index is typically referred to as the 'underlying'. For example, a real estate owner with a negative outlook will enter into an arrangement with a dealer whereby the owner will pay a calculated value for *increases* in the property index, while the dealer will pay the owner a calculated value for *decreases* in the index. The dealer will seek to hedge its exposure to decreases in the index by locating another counterparty that will pay the dealer for decreases in the value of the same index for a fee.



**23.13** Indices for commercial and residential real estate form the basis for property derivative trades. A prominent commercial property index is the NCREIF NPI, which has served as a benchmark for over thirty years. At year-end 2006, there were over 5,300 properties in the NPI index with a gross fair market value of over US $247 billion[1]. NPI is a quarterly measure of the composite total rate of return of investment performance of a large pool of individual commercial real estate properties that were acquired in private markets for investment purposes only and held in a fiduciary environment[2].

[1] Merrill Report at 6–7.

[2] Merrill Report at 8.

**23.14** Property types included in the NPI are office, hotel, retail, apartment and industrial properties that are at least 60% occupied (undeveloped properties are not included). Qualified tax-exempt institutional investors or designated agents own each property that is included in the NPI. The NPI was set at 100 in Q4 1977 and it increases by existing members' acquisition of properties and through the acquisition and addition of new members and their properties. Income return from the NPI is based on a property's net operating income ('NOI'). NCREIF members calculate return by dividing NOI of a property by its average quarterly investment in the related property[1].

[1] Merrill Report at 8–9.

**23.15** In the US, four commercial real estate indices are typically the subject of property derivative transactions: the NPI; S&P/GRA (a partnership of Standard and Poor's and Global Real Analytics ('GRA')); Real Capital

Analytics ('RCA'), a real estate data vendor specialising in tracking commercial real estate transaction activity, which partnered with the MIT Center for Real Estate; and REXX (a product of Cushman & Wakefield and Newmark, Knight Frank)[1]. In early 2007, the Chicago Board of Trade announced the launch of a new futures contract based on the Dow Jones US Real Estate Index comprised primarily of public REITs[2].

1 Jim Clayton, 'Commercial Real Estate Derivatives: They're Here ... Well, Almost', PREA Quarterly, Winter 2007 at 31.
2 Jim Clayton, 'Commercial Real Estate Derivatives: They're Here ... Well, Almost', PREA Quarterly, Winter 2007 at 30, n 3.

**23.16** Residential property indices are currently the basis for property derivatives. Radar Logic, a private data and analytics business that produces a daily 'spot' price for residential real estate in major US metropolitan areas, has data that is captured from public sources and translated into prices for 25 US Metropolitan Statistical Areas. Radar Logic launched the RPX and at least five dealers (Goldman Sachs, Morgan Stanley, Lehman Brothers, Merrill Lynch and Deutsche Bank) have made markets on the index[1]. Other prominent property indices that serve as property derivative benchmarks include indices that IPD publishes. IPD indices are the primary underlying tool for trading property derivatives. The FTSE UK Commercial Property Index Series is also a prominent benchmark for property derivative trading.

1 Yiying Luthra, 'U.S. Property Derivatives – High Time?', Total Derivatives Limited (9 October 2007) available at www.totalderivatives.com/printversion.php?articleID=223435&pair=currency.

### The over-the-counter market

**23.17** Property derivatives are traded over-the-counter ('OTC') as opposed to trading on an exchange. Derivatives traded on exchanges are done so in a more standardised way, through an exchange's clearinghouse, which is the counterparty on each transaction to the end-user. An exchange provides more regulated trading by, among other things, enforcing contract performance by requiring the posting of margin. At the end of each trading day, gains or losses are recognised in a process called marking the contracts to market[1]. Parties to OTC transactions customise the terms (including maturity) and dealers in these trades require collateral by negotiating terms in documentation, as described at paragraphs 23.20–23.30.

1 Federal Reserve Bank of Boston, 'Tools of the Trade: A Basic Guide to Financial Derivatives', at 4–5 and 8 (undated).

### The geographical distribution of property derivatives

**23.18** The use of property derivatives has expanded internationally to include the launch of indices in nearly 20 countries[1]. Although the market in the UK has long been the leader in property derivatives, greater use in the US, with the initial licensing of six dealers by NCREIF, is widely expected[2]. Moreover, underlying this greater use, February 2008 witnessed an exciting development





in the US with the launch of a cross-industry led Real Estate Derivatives Special Interest Group ('RED-SIG'), a new industry alliance established to offer insight and perspective on the use and implementation of US commercial property derivative products and to facilitate the exchange of information on the use and implementation of commercial property derivatives[3].

1 See, the IPD Report, which lists indices involving properties in Australia, Austria, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, Portugal, Spain, South Africa, Sweden, Switzerland and the market leader, the UK.
2 See, eg, Natasha de Teran, 'Property Derivatives Market Ready to Explode', Financial News at 37 (19 November 2007).
3 See further www.red-sig.org.

**23.19** Merrill Lynch describes the following factors and timing as underscoring the rapid development of this product worldwide:

- *Recent success in the UK.* After their widespread introduction in the market in the UK in 2005, commercial property derivative volume reached £3.7 billion with accelerating growth.
- *Continuing licensing.* In early 2007, NCREIF licensed its indices for property derivatives to numerous parties, with no less than seven broker-dealers trading property derivatives based on NCREIF data.
- *Acceptance of derivatives in the market.* Notwithstanding credit and liquidity seizures in the markets, the use of derivatives continues to be a fundamental investment tool and natural complement to alternative forms of investment.
- *Property derivatives have spread to Asia.* The largest property derivative traded there to date took place between Goldman Sachs and Lehman Brothers Global Real Estate Group[1]. In Japan, property derivatives have priced. Elsewhere, the property derivative market in Australia is said to 'flourish soon'[2].

1 'Goldman Sachs and Lehman Execute Record Asian Property Derivatives Trade', EG Capital (May 2008) at 4. The Hong Kong property derivative market commenced in 2007. Approximately 15 trades, ranging from three months to two years in maturity, have been placed.
2 'Mark Gabbay, co-head of Lehman Brothers Global Real Estate Group in Hong Kong said that an Australian derivatives market will 'start to flourish soon. There has been a trading game there to get potential users involved.': 'Goldman Sachs and Lehman Execute Record Asian Property Derivatives Trade', EG Capital (May 2008) at 4.

### The evolution of derivatives documentation

**23.20** Derivatives are traded in a way that is quite different from deals in every other area of finance. The pace of derivative deals is so rapid that derivative traders usually initiate transactions by phone and close trades with an absolute minimum of documentation. Typically, the process starts with a verbal agreement among traders that is subsequently confirmed within approximately one hour or less. Although the traders' initial verbal agreement legally binds both parties to a trade, it offers little in the way of relief for disputes that invariably arise in derivative transactions, which range from plain vanilla to the most complex. For example, initial verbal agreements and