

Chapter 15

European CRE Loans: Learning from the Drivers of Historical Credit Performance

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15.1 Introduction

This Chapter considers the key drivers of credit performance for European CRE loans originated in the run-up to the GFC and aims to use these to derive what may be insightful and valuable lessons from an underwriting and structuring perspective for CRE lenders. It starts by setting out a brief overview of the legacy of CRE lending in Europe following the downturn, focusing on CRE debt maturity profiles, the manifestation of different types of CRE lenders, as well as origination trends. The European CRE lending landscape evolved substantially after the GFC, through an initially brief disruption period immediately post GFC, followed by a growth period and culminating in what seems to be a more normalised (or new normal) market at the time of writing.

The Chapter then goes on to identify and analyse various factors that may have affected the credit performance of European CRE loans. These factors are collectively referred to here as the “*drivers*” of credit performance for such loans. The analysis uses charts contained in a BofA Merrill Lynch Research Report prepared by Mark Nichol¹ and employs available loan-level data (sourced from Trepp) to observe credit performance via a number of variables (such as loss amount crystallised). The dataset comprises loans securitised in European CMBS transactions in the period 2000–2013. It is believed that such data is informative, as the typical five- to seven-year term for CRE loans in the European market means that the majority of such loans originated just prior to the downturn that followed the GFC have already matured, and a large number have had time to be restructured or worked out, with final determinations as to losses/recoveries made. The availability of data is, however, also limited in some aspects, particularly in the number of variables contained in the dataset (due to the limitations of the CMBS market) and hence observed and included in the analysis set out herein. The analysis is further supplemented by drawing upon the experience in

¹ Historical drivers of CRE loan performance (European Structured Finance–CMBS, 19 March 2015).

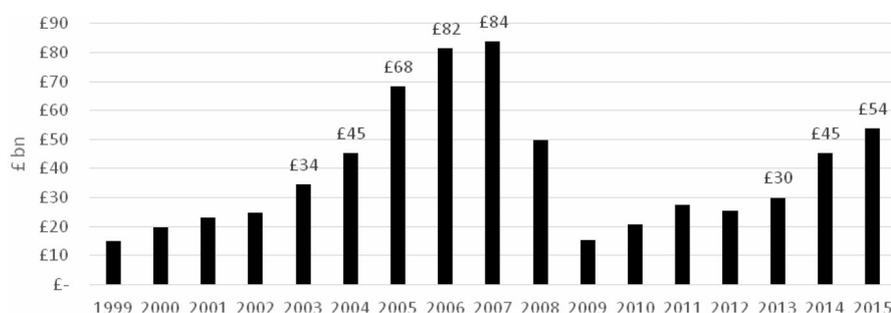
restructuring or working out distressed CRE loans across a number of European jurisdictions in the context of other drivers that may also impact credit performance.

References to performance in this Chapter always relate to credit performance unless otherwise indicated.

15.2 Legacy of European CRE lending: overview

In the immediate aftermath of the GFC, following a peak in the European CRE lending markets in terms of volume of origination, there was severe disruption and relative inactivity in the market between 2009 and 2011, with debt availability limited to very few lenders and at very conservative terms. This is reflected in the chart below, which shows the volume of CRE loan originations in the UK market since 1999, by banks and non-bank lenders:

Figure 1: Volume of UK CRE loan originations across all lenders



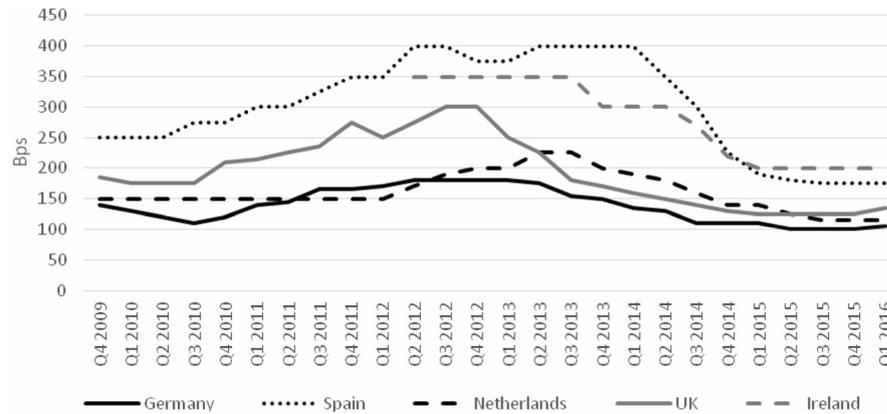
Source: *UK Commercial Property Lending Market Report (De Montfort University, 2015)*.

The chart illustrates that in 2009 there is a noticeable drop in the volume of origination and even though levels have, at the time of writing, recovered to those reached in 2004/2005, they are still quite far off from the peak of the market in 2006/2007.

The European CRE lending markets started to pick up in 2011, reaching a more stable or normalised level in 2015. This stabilisation or normalisation is evident in senior debt margins² across Europe's largest CRE lending markets up to and including Q1 2016, as indicated in the chart below:

² Margins over Libor/Euribor.

Figure 2: Margins for senior European CRE loans



Source: CBRE Research: European Commercial Real Estate Finance-2016 Update.

Since 2008, banks have been forced to start a process of deleveraging their existing loan books, in some cases facilitated by transfers of entire loan books to government agencies/bad banks, charged with their gradual disposal, whilst some banks have proceeded to sell loan books to the market directly. This substantial deleveraging exercise has seen a select number of private equity groups, predominantly US-based, purchase European CRE loan books in bulk.

Banks have further been hit by the political and economic challenges since 2014, as well as a wave of new regulation, manifested through Basel III, CRD IV and (in the UK) slotting which has had the effect of increasing regulatory capital and liquidity requirements for banks, further deteriorating their ability to maintain their traditionally high share in the CRE lending markets, as discussed further in Chapters 16 and 17. This is expected to lead to a further withdrawal of banks from the European CRE finance market.

As a result of their gradual withdrawal from the CRE lending market, banks have been losing ground to alternative lenders, whose share of the market has been steadily increasing and who were responsible for a quarter of UK CRE loan originations in 2015.

15.2.1 Debt maturity profiles

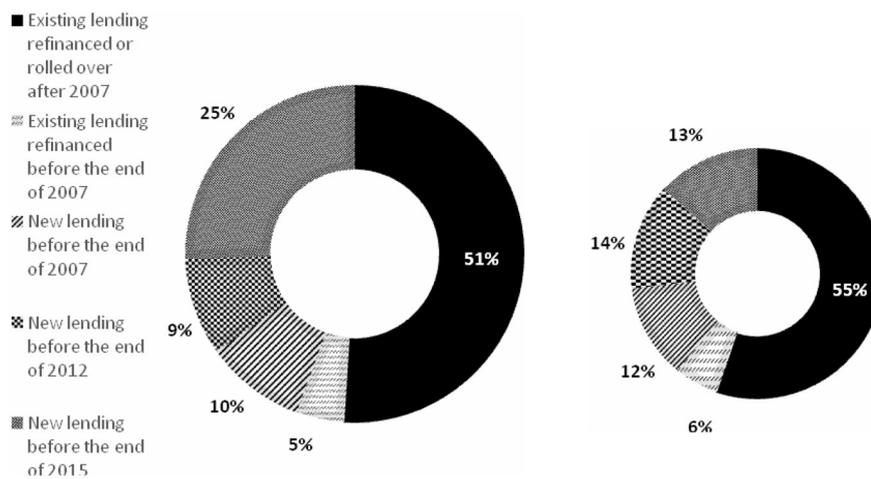
Whilst there remains a meaningful stock of legacy European CRE debt on banks' balance sheets, they have been through a substantial deleveraging

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exercise since 2010. In the UK, according to the *De Montford Report*,³ distressed legacy loans, originated just prior to the GFC, have mostly been removed from lenders' balance sheets.

The chart below indicates the breakdown of European CRE debt stock as at the end of 2014 and 2015:

Figure 3: Composition of European CRE debt stock as at the end of 2014 (RHS) and 2015 (LHS)



Source: CBRE Research

In 2015, the proportion of CRE debt stock comprising legacy lending refinanced or rolled over after 2007 was 51%, down from 55% in 2014. Combined with the legacy lending refinanced prior to 2007, the total legacy lending totalled 56% of the European CRE debt stock in 2015, down from 61% in 2014. The remaining 44% in 2015 comprised new lending, up from 39% in 2014.

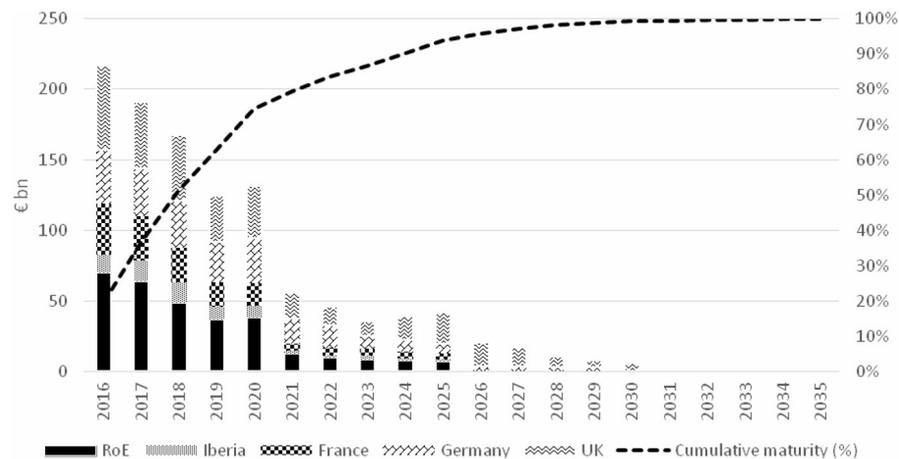
Whilst the UK, Ireland and Spain have been the jurisdictions most successful in bringing legacy loan books to the market, Italy has been less successful in doing so despite the very large volume of legacy CRE loans on its banks' balance sheets. At the time writing, the outcome of the recent Brexit referendum held in the UK, has created further issues for Italian banks following concerns over a Eurozone slowdown and a continued period of very low interest rates by the European Central Bank (aimed at reversing a slowdown) which hurts their profitability. Share prices of Italian

³ *UK Commercial Property Lending Market Report* (De Montfort University, 2015).

banks have fallen considerably since, reflecting investors' concerns. See further the discussion of the Italian NPL Market contained in Chapter 18.

The maturity profile of European CRE debt, as at the end of 2015, is illustrated in the chart below:

Figure 4: Maturity profile of European CRE debt stock as at the end of 2015



Source: CBRE Research

15.2.2 The manifestation of different types of CRE lenders

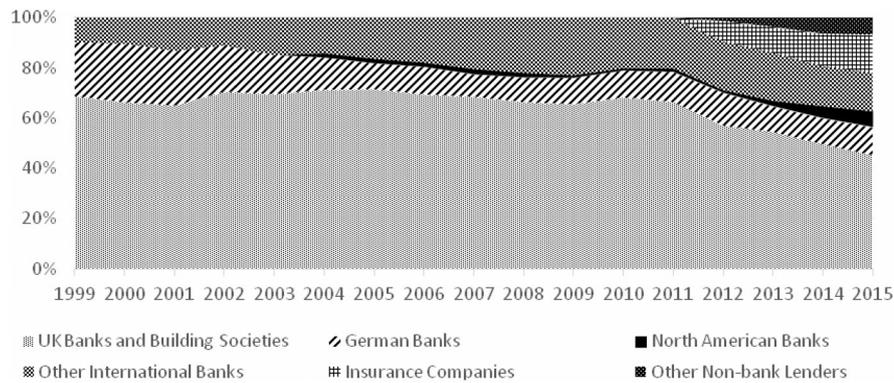
As was discussed in the opening Chapters to this book, banks have traditionally held the largest share in the European CRE finance markets. Prior to the GFC, they dwarfed any other type of lender, particularly in the period 2000 to 2007, when they significantly increased their exposure to CRE lending, with only CMBS coming somewhat near at the peak of the market in 2007. Up to 2014, alternative lenders such as insurance companies, pension funds and debt funds had provided very little CRE debt in the European market unlike the US market.

Since 2014, this has changed, as banks have been forced to retreat from the CRE lending market, prompting significant reductions in their CRE loan books as a result of heavy losses sustained following the GFC and increased capital requirements. The European CMBS market never fully recovered since the aftermath of the GFC and still struggles in terms of issuance as discussed in Chapter 1. The resultant debt funding gap has provided an opportunity for alternative lenders to substantially increase their CRE lending relative to prior to the GFC.

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Whilst data on European CRE lending is limited, some data is available on the UK market from the *De Montford Report*, illustrated in the chart below which shows the allocation of outstanding debt in the UK going back to 1999 held on balance sheets (excluding outstanding CMBS):

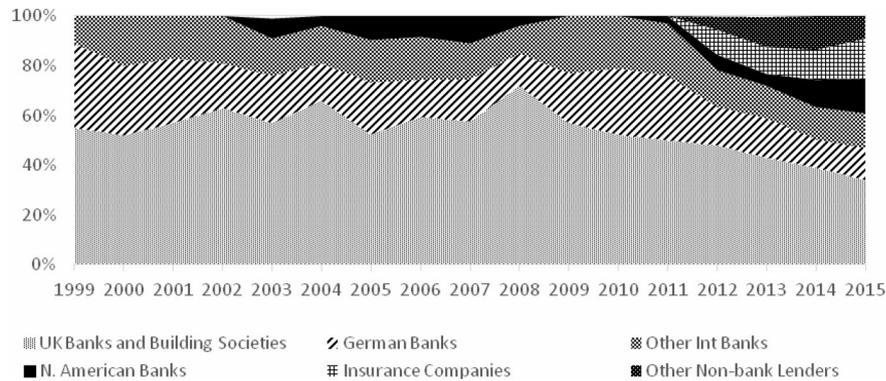
Figure 5: Outstanding UK CRE loan books on balance sheets (excluding outstanding CMBS)



Source: *UK Commercial Property Lending Market Report* (De Montfort University, 2015).

This indicates that the share of insurance companies and other non-bank lenders has been steadily increasing since 2011, whilst the share of banks (for balance sheet lending), especially UK ones, has fallen quite significantly. The same trend is exhibited more emphatically by the volume of loan originations in the UK, as illustrated in Figure 6:

Figure 6: Volume of UK CRE loan originations



Source: *UK Commercial Property Lending Market Report* (De Montfort University, 2015).

It is notable that in 2006 and 2007, at the peak of the market in terms of volume of originations of CRE loans in the UK, the vast majority of originations were done by banks (for balance sheet and securitisation purposes), whilst this has now fallen substantially to 75% in 2014 and 2015, as a quarter of CRE loans in the UK were originated by alternative lenders (insurance companies and other non-bank lenders).

15.2.3 Origination Trends

During the period 2009–2011, the disruption in the European CRE finance markets meant that very limited CRE debt was available, from a select number of lenders who hadn't completely retrenched from the market. These lenders were subject to a large number of restrictions in terms of the type of product they could successfully deliver and therefore debt was only available for a limited subset of the CRE market (predominantly prime properties), on quite conservative terms (relatively high pricing and low LTV) and with a strong focus on existing borrower relationships.

From 2011 onwards, the gradual pick-up in the European CRE lending markets facilitated a step towards normalisation. This saw banks re-engage in new origination, albeit at more moderate levels relative to the past (and despite their simultaneous ongoing reduction in legacy CRE loan exposures), with quite conservative LTV levels, not very competitive pricing and a focus on larger ticket sizes.

Whilst there was a minor surge in European CMBS in 2013 (concentrated around the German multifamily market), this dropped materially in the two following years and the CMBS market is still, at the time of writing,

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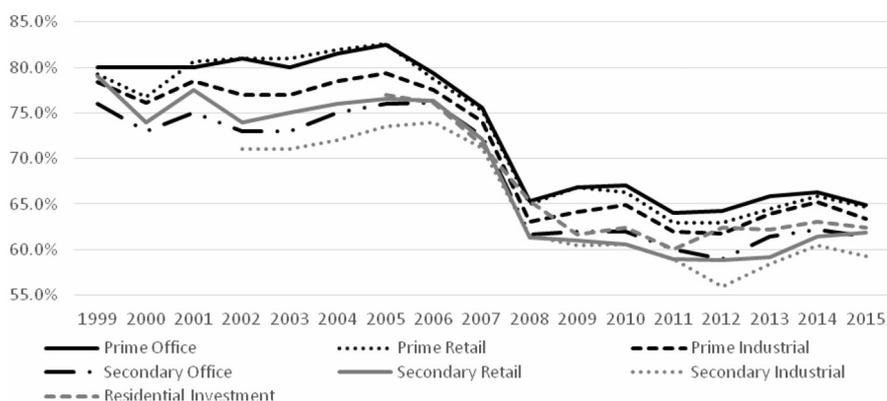
somewhat disappointingly failing to show any signs of revival. The entrance of alternative lenders, with many of them focusing on mezzanine debt generating higher returns, meant that in 2013 there was a rather fragmented market in terms of a limited supply of senior debt but an excessive supply of mezzanine debt.

This has changed since 2014, with an increasing number of lenders (both, bank- and non-bank) offering increased senior debt capacity. There has also been an increasing number of lenders interested in smaller ticket sizes, which had been a gap in the market until 2014–2015.

Whilst the European CRE lending markets at the time of writing comprise a very large number of different lenders with a high level of competition, it seems that, in contrast with the pre GFC era, lenders are less willing to compete on credit/risk and structure, but will show some flexibility on economics.

At 2015 year-end, senior LTV levels, whilst on an increasing trend since 2012, are still far more conservative on average relative to the pre GFC peak. This is seen in the chart below, which shows average LTV levels offered on new loans for UK CRE investment sectors. Whilst senior lenders seek to limit the maximum LTV ratio they are prepared to underwrite post GFC, borrowers can access higher leverage through specialist mezzanine debt fund lenders whose investor base has preference for the higher returns/higher risk associated with mezzanine loans. See further Chapters 5, 6 and 7.

Figure 7: Average LTV levels offered for new UK CRE loan originations



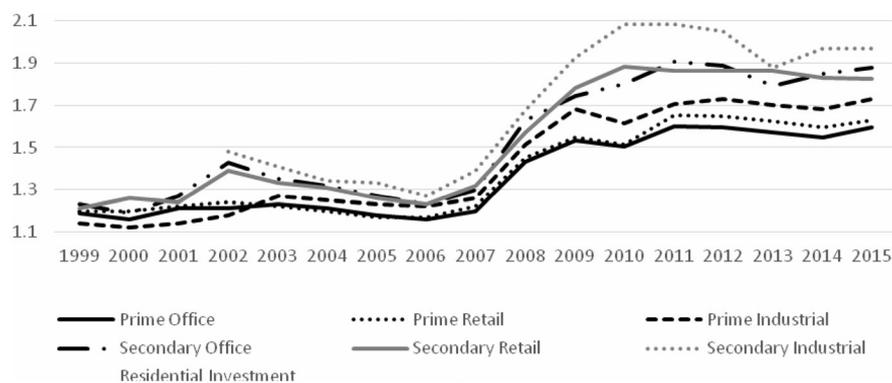
Source: *UK Commercial Property Lending Market Report* (De Montfort University, 2015).

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In a similar fashion, interest cover ratio covenants for new loans are at levels which are substantially higher relative to the pre GFC era. Figure 8 shows the average interest cover for UK CRE investment sectors.

There appears to be a reluctance by banks to accept higher LTV levels or lower interest cover ratios relative to the pre GFC peak, which may be viewed as a positive development from the point of view of underwriting standards. Borrowers would ultimately like to see a more aggressive approach by lenders, but as this Chapter outlines in section 15.3.4.2 below, factors such as day-1 leverage (as measured by, inter alia, LTV and ICR levels) were very relevant to historical European CRE loan credit performance.

Figure 8: Interest coverage ratio (ICR) covenants for senior and whole UK CRE loans

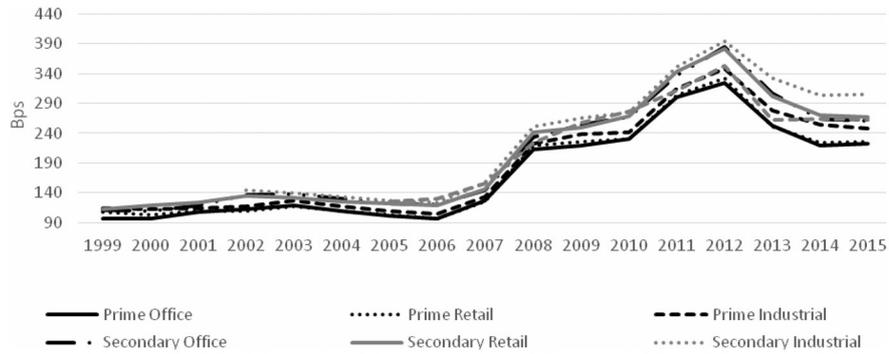


Source: *UK Commercial Property Lending Market Report* (De Montfort University, 2015).

Post GFC, lenders have been a lot more willing to compete on economics, with pricing for UK CRE lending at levels moving materially downwards from 2011 but not reaching those at the peak of the market just prior to the GFC. Figure 9 below illustrates average interest margins offered by banks and insurance companies for senior and whole loans to UK CRE investment sectors:

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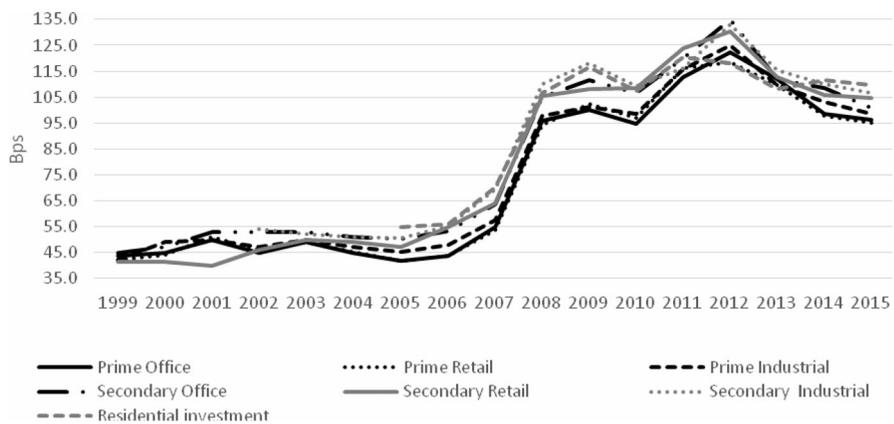
Figure 9: Average interest margins offered by banks and insurance companies for senior and whole UK CRE loans



Source: *UK Commercial Property Lending Market Report* (De Montfort University, 2015).

Surprisingly enough, the competition in relation to loan margins has not had as extensive an impact on arrangement fees, at least in the UK, as these have not moved downwards as materially, as shown in Figure 10 below, which shows average arrangement fees offered by banks and insurance companies for senior and whole loans to UK CRE investment sectors:

Figure 10: Average arrangement fees offered by banks and insurance companies for senior and whole UK CRE loans



Source: *UK Commercial Property Lending Market Report* (De Montfort University, 2015).

15.3 Historical drivers of European CRE loan credit performance

In this section, potential historical drivers of credit performance for European CRE loans are identified and analysed.

Based on loan performance data analysis in the BofA Merrill Lynch Research Report prepared by Mark Nichol⁴ and restructuring experience relating to loans originated pre GFC, the underwriting considerations (including financial credit metrics such as LTV, ICR and debt yield determined during the underwriting process) as well as the structural features in a CRE loan financing have a material contribution in the ultimate determination of the credit performance of a CRE loan.

Such underwriting considerations and structural components of a CRE loan represent the relevant lender's response to the identification of potential risks, which may be informed by either commercial or legal considerations.

15.3.1 Availability of data

The reference period relates to loans that were securitised between 2000 and 2013, the majority of which have matured, as such loans typically had a term of five to seven years. As discussed in the opening Chapter to this book, the European CRE lending market reached a historical peak in terms of volume during the period 2006/2007 which was followed by a relatively protracted period of deteriorating credit performance. This combination of high origination volume and subsequent relatively poor credit performance provides a very informative set of circumstances for the purpose of conducting such analysis, as the identification of potential drivers is easier and the consideration of their significance in credit performance is ultimately more robust under such circumstances.

Notwithstanding the fact that the reference period is favourable from an analytical perspective, the general lack of availability of data across the European CRE lending markets, both at an aggregated level as well as a granular (loan-by-loan) level, has long been a common theme, particularly more so with the development of the notion of "big data" and the relevant ease of manipulation of such "big data" where available.

This deficiency in the European CRE lending markets partly relates to the fact that CRE lending is still predominantly a private market in Europe, making it difficult to observe transactions and related information on a systematic basis, as asymmetry of information between market participants drives a motivation for reluctance of disclosure of information on the part of

⁴ Historical drivers of CRE loan performance (European Structured Finance–CMBS; 19 March 2015).

those participants with more information relative to those with less. See further the discussion of this fact in Chapter 9. Even during the 2007 peak of the CRE lending market in Europe, only a relatively small proportion of the market was public, facilitated by the securitisation of a large volume of CRE loans in public CMBS transactions and the corresponding public disclosure of information that typically accompanies the issuance of CMBS. The only loan-level data available on CRE loans in Europe therefore, emanates from information publically disclosed in the context of CRE loans securitised in CMBS transactions.

However, this deficiency in terms of availability of data in the European CRE lending markets also relates, to a certain extent, to the heterogeneous nature of CRE loans in the European market, which ultimately makes the collection of information on a standardised basis difficult.

Thus, notwithstanding the fact that useful loan-level data are disclosed in the process of the securitisation of CRE loans in public CMBS transactions, the aforementioned heterogeneity present in the structure of CRE loans allows data to be collated in such a way that only a limited number of common variables across CMBS transactions can be observed and recorded, resulting in a relatively constrained dataset for quantitative analysis.

The lack of available data on CRE lending in Europe and the potential development of a CRE loan database, are considered in further detail in Chapter 21.

15.3.2 Approach and analysis

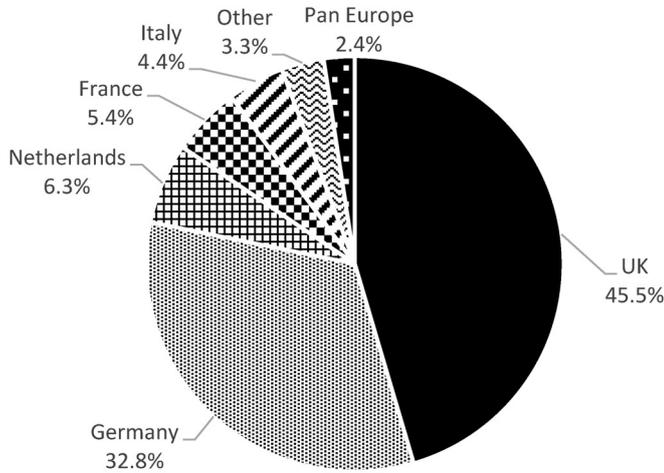
The analysis used herein employs a two-faceted approach:

- (i) **Quantitative Analysis:** employing available loan-level data (sourced from Trepp) from public European CMBS transactions, which allow inferences to be drawn in connection with drivers of credit performance. The data set analysed comprises in excess of 1,000 loans totalling c. €157.2 billion that were securitised in 184 European CMBS transactions in the period 2000–2013.⁵
- (ii) **Qualitative Analysis:** drawing upon the experience of restructuring and working out European CRE loans to draw further inferences in connection with drivers of credit performance.

The CRE loans included in the dataset are secured against underlying properties across 20 different European jurisdictions, with the main ones illustrated in Figure 11 below, by volume of origination:

⁵ Note that the dataset does not contain any loans that were originated in 2001, 2008, 2009 or 2010.

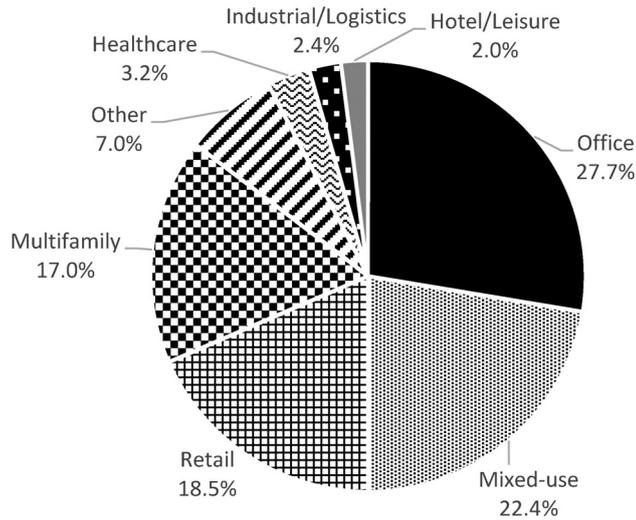
Figure 11: Distribution by jurisdiction



Source: Trepp, BofA Merrill Lynch Research

The CRE loans included in the data set are secured against different types of property, with office, mixed-use, retail and multifamily properties comprising the predominant majority by volume of origination as illustrated in Figure 12 below:

Figure 12: Distribution by property type

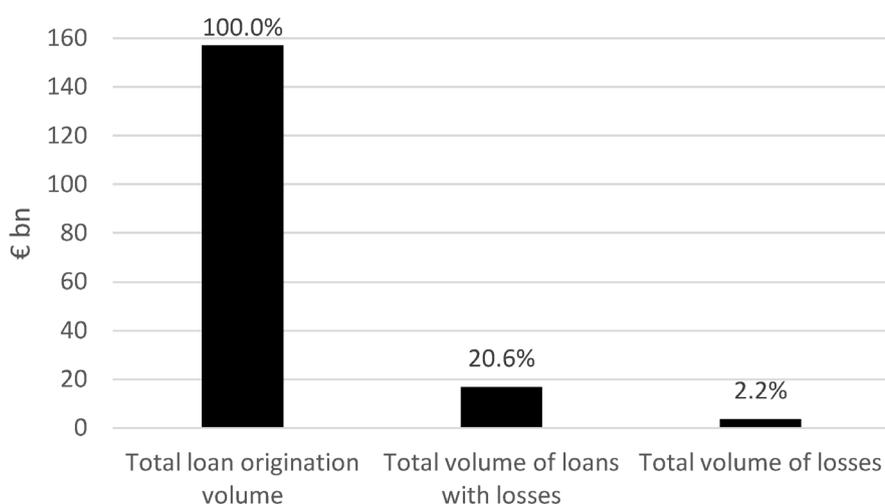


Source: Trepp, BofA Merrill Lynch Research

15.3.3 Level of losses and loss severity

Of all loans in the dataset, a loss has been determined for 150 of these, representing a c. 14.1% loss frequency by number of loans. In terms of volume, c. €157.2 billion of loans were originated in the reference period, with loans totalling c. €16.7 billion having suffered a loss and total losses amounting to c. €3.5 billion, representing a loss of c. 2.2% across all loans and a loss severity of c. 20.6% across loans that have suffered a loss. It is important to note that a 2.2% loss rate across loans in European CMBS is relatively small, when compared with the negative comments associated with CMBS transactions by the media and regulators. This is illustrated in Figure 13 below:

Figure 13: Volume of European CRE loan origination and losses



Source: Trepp BofA Merrill Lynch Research

15.3.4 Underwriting considerations and structuring drivers of credit performance

Underwriting considerations (including financial credit metrics) and structuring drivers aimed at mitigating credit risk, which are believed to be material to CRE loan performance, will now be identified and considered in turn.

15.3.4.1 Vintage

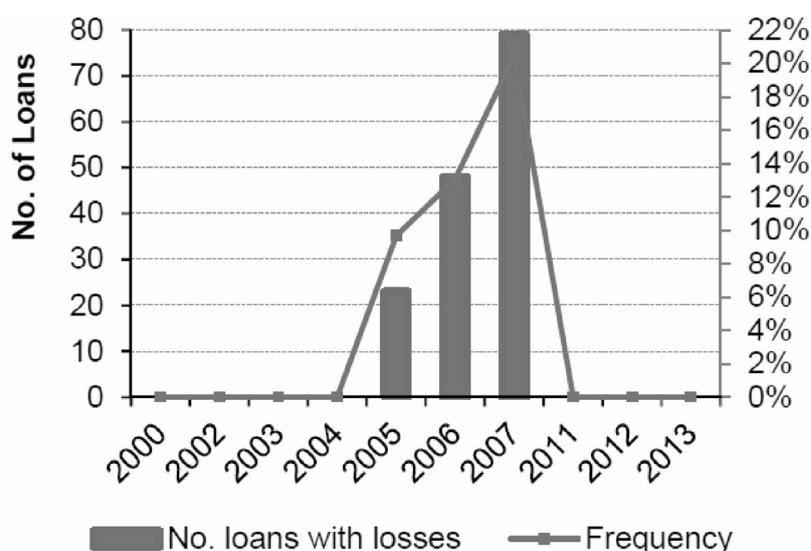
The date of origination of a loan relative to the timing of the real estate cycle was a crucial factor. As indicated below using evidence from the dataset,

vintage i.e. the year in which CRE loans were originated, is a key driver of credit performance.

In the run up to the peak of the real estate cycle, lenders tend to be more aggressive in their underwriting and generate higher volumes of loans thus exacerbating the problems when the booming phase of the real estate cycle comes to an abrupt end. This is partly due to the business model and incentivisation schemes of lenders, making it difficult for them to turn off the tap, as discussed in further detail in Chapter 2.

Starting with loss frequency, in Figure 14 below, it may be seen that there is a clear trend from 2005 onwards, with loss frequency increasing steadily up to the peak of the market in 2006 and 2007.

Figure 14: Frequency of European CMBS losses by vintage

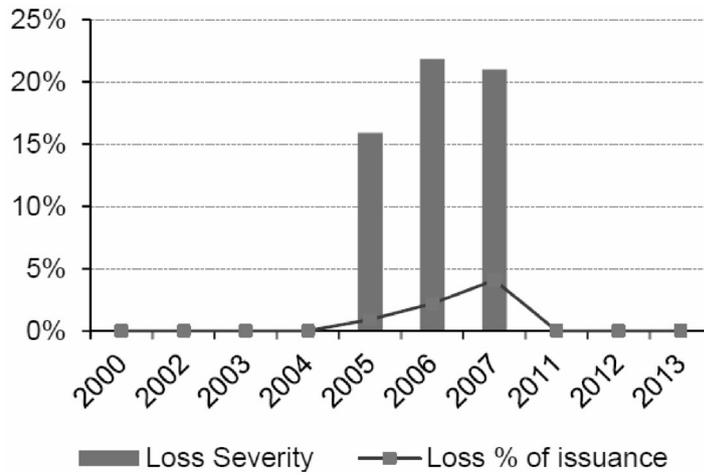


Source: Trepp, BofA Merrill Lynch Research

The trend is less pronounced when considering loss severity. Whilst there is a steady increase during the same period 2005–2007, loss severity as proportionate loss (relative to issuance volume) is not much higher in 2007 than in 2005.

Loss severity by amount of loss is quite different, with a pronounced pick-up in losses from 2005 and peaking in 2007. See Figure 15 below.

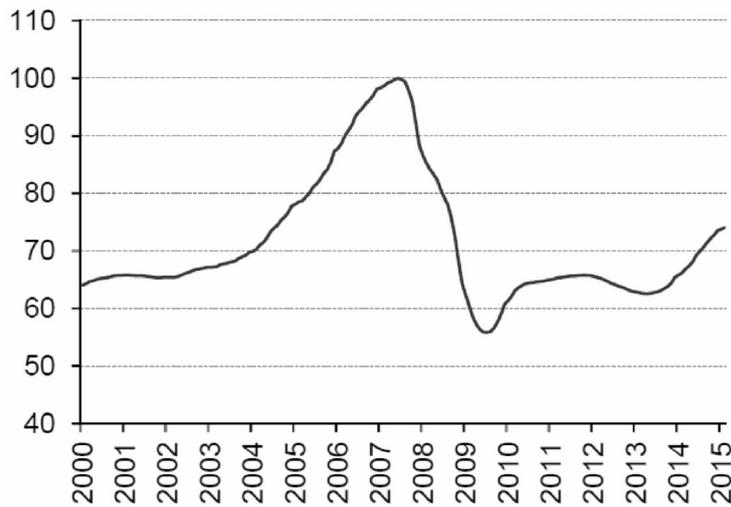
Figure 15: Loan loss severity by vintage of European CMBS



Source: Trepp, BofA Merrill Lynch Research

The corresponding booming phase of the real estate cycle (at least in the UK), is visible in Figure 16 below, which shows the evolution of UK CRE values during and subsequent to the GFC.

Figure 16: UK CRE values



Source: IPD-Capital Growth All Property Index, BofA Merrill Lynch Research

15.3.4.2 *Day-1 leverage*

Day-1 leverage refers to the amount or proportion of debt that a lender will advance towards funding a particular CRE loan at the start of its term and is the single factor most reflective of the risk a CRE lender is exposed to. It will typically be driven by a number of factors, including the value of the underlying property, the expected quality and sustainability of cashflows both during the life of a loan and post maturity, location, property type, jurisdiction and the strength and incentivisation of the sponsor. The expected cashflows going forward (based on the assumptions made by the lender in deriving these) will predominantly determine the expected exit leverage, i.e. the amount or proportion of debt outstanding and due to the lender at the end of the CRE loan's term (maturity), and it is the exit leverage achievable on the basis of expected cashflows which typically drives a CRE lender's appetite for day-1 leverage, as the two are directly and inextricably linked.

Whilst, as discussed further in Chapter 4, the assumptions a lender will typically make in its underwriting and structuring processes are aimed at mitigating several risks, a big risk to mitigate is the refinancing/repayment risk present in a CRE loan. However, a number of risks are difficult to eliminate and not always easy to predict. This could be due to a change in market circumstances in the intervening period between the start of a CRE loan's term and its maturity, both in the property markets (cap rates, occupational lease demand, etc.) as well as the lending/finance markets (availability of debt, cost of capital, interest rates). It could also be due to property-specific factors, such as one of the key tenants entering insolvency and defaulting on its rental obligations under the lease or property obsolescence. The consequent implication of this is that the value of the property and therefore the amount or proportion of debt that can be refinanced or repaid at maturity is likely to be lower than that expected by the lender in their initial underwriting. Other things being equal, this lowers the ultimate amount recovered by either a refinancing of the CRE loan or a sale of the underlying property and implies that the higher the amount or proportion of debt at the specific point in time (which is directly correlated to the level of day-1 leverage), the higher the likelihood and therefore the higher the risk that the lender will suffer a loss. Lenders will factor in tenant quality, the strength of the location, current and future tenant demand and their perception of the status of the current real estate cycle, however, in a competitive market they will also be pushed hard by borrowers to be more aggressive and competitive.

To analyse the effect of day-1 leverage on credit performance, leverage from four different angles is considered: the loan-to-value (LTV) ratio, the interest coverage ratio (ICR), the debt service coverage ratio (DSCR) and the debt yield.

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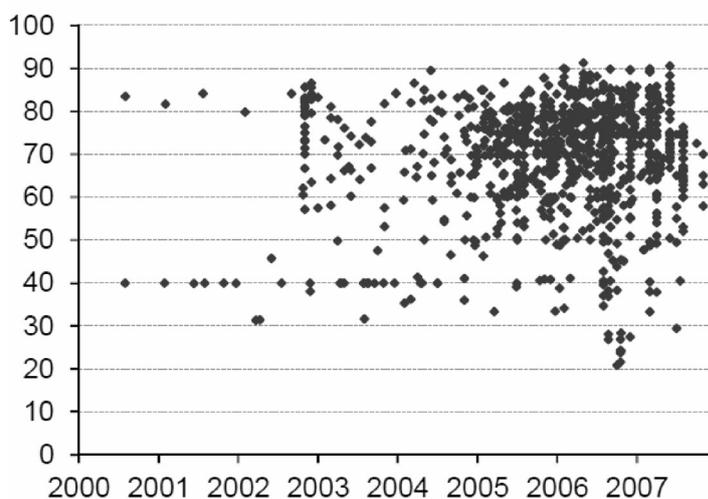
(i) Loan-to-value ratio

The LTV ratio provides an indication of leverage relative to the value of the underlying property and is calculated as the ratio of the outstanding balance of the CRE loan to the market value of the underlying property.

The deterioration in underwriting standards in the run-up to the GFC, as a result of the booming CRE markets in Europe and the competitive tension between CRE lenders at the time, is well publicised.

From the CMBS dataset this suggests that LTVs were relatively high in the European CRE lending markets even in the years prior to 2005. This is likely to be a feature of certain CMBS transactions as opposed to the wider lending market. The volume of CMBS transactions during this period was relatively low and with the ability to undertake credit-linked deals which appealed to CMBS investors, it was possible to achieve higher leverage in the CMBS markets in comparison to the bank market. See Figure 17 below.

Figure 17: Original LTV of securitised loans, as a percentage



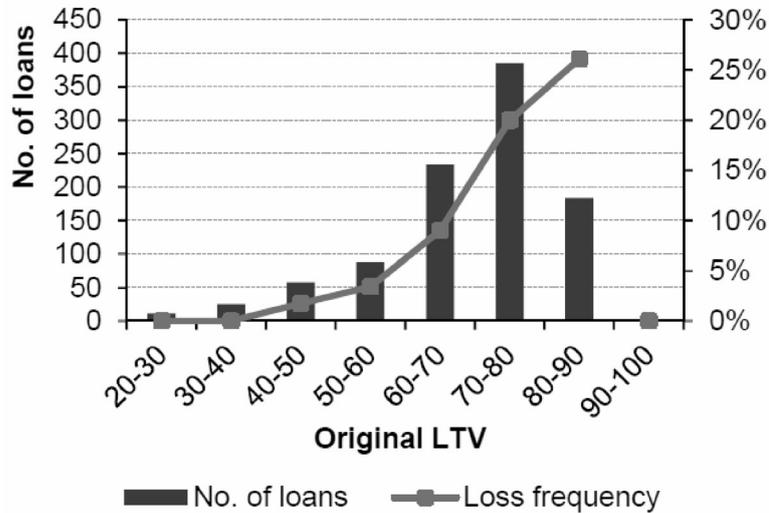
Source: Trepp, BofA Merrill Lynch Research

To facilitate the analysis of the day-1 LTV ratio as a driver of credit performance, in Figure 18 below, LTV brackets to aggregate all data points, starting at 20% and moving by increments of 10 percentage points have been created.

The frequency of losses (or loss rate) are considered, both in terms of the number of loans that have suffered losses, as well as the proportion of loans

that have suffered losses, in each LTV bracket. The results are illustrated in Figure 18 below.

Figure 18: Frequency of losses by original LTV

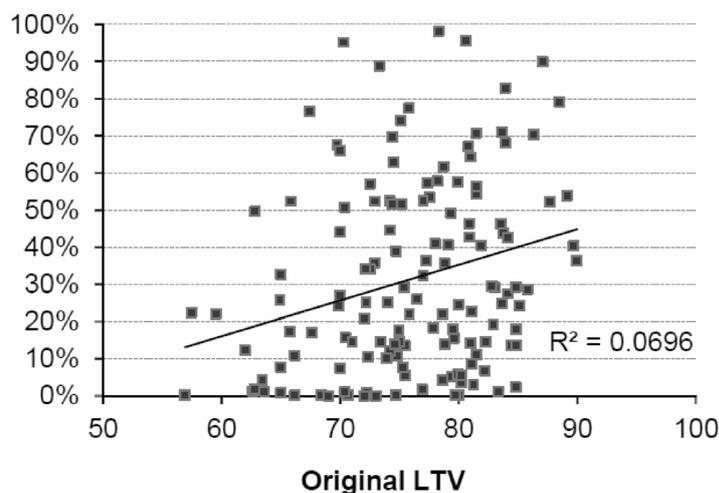


Source: Trepp, BofA Merrill Lynch Research

There is a very clear trend indicating that an increase in day-1 leverage, as measured by the LTV ratio, is correlated with an increased loss frequency. The loss frequency in terms of number of loans does not factor in the total number of loans originated in any particular LTV bracket, whilst the loss frequency as measured by the proportion of loans does, and therefore the latter could be considered a better measure of the loss frequency.

Further consideration is made in Figure 19 below to the loss severity by LTV. Whilst loss severity increases with LTV, the trend is weak due to a wide distribution of the data points (i.e. low correlation), which suggests that whilst a high LTV may result in a higher incidence of defaults, other factors may contribute to the level of loss in a more material way other than LTV.

Figure 19: Loss Severity by original LTV



Source: Trepp, BofA Merrill Lynch Research

(ii) Interest coverage ratio (ICR)

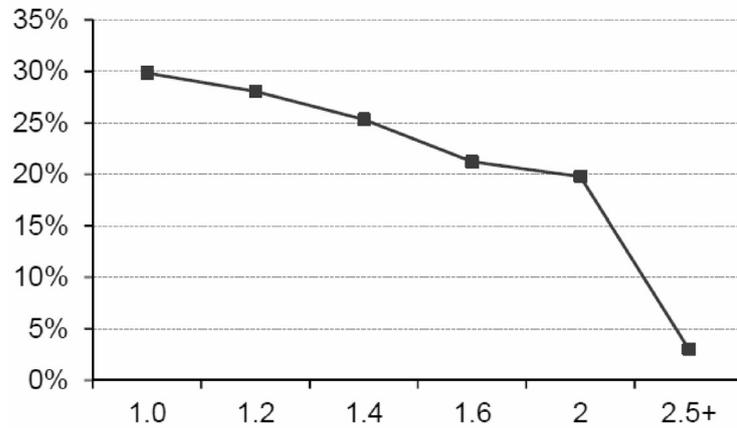
The ICR provides an indication of leverage relative to the cashflows generated by the underlying property and is calculated as the ratio of total annual cashflows generated by the property (and available for debt servicing) to the annual interest payable on the CRE loan. A lower day-1 leverage leads to a higher ICR, suggesting a higher level of cashflow is available to meet interest payments on the loan throughout its term and a greater cushion to absorb any reductions in the cashflow generated by the underlying property whilst still meeting interest payments. As day-1 leverage increases, the ICR is reduced and a smaller reduction/stress is required in cashflows in order to create issues in interest payments on a CRE loan.

To facilitate the analysis of the day-1 ICR as a driver of credit performance, ICR brackets to aggregate all data points, starting at 1.0⁶ have been created in Figure 20 below, utilising increments of 20 percentage points up to 2.5, along with an aggregate of all data points greater than 2.5 in one bracket, labelled "2.5+".

The frequency of losses (or loss rate), in terms of the number of loans that have suffered losses, are considered in each ICR bracket. The results are illustrated in Figure 20 below:

⁶ There are no loans with an ICR lower than 1.00x in the dataset.

Figure 20: Distribution of losses by initial ICR



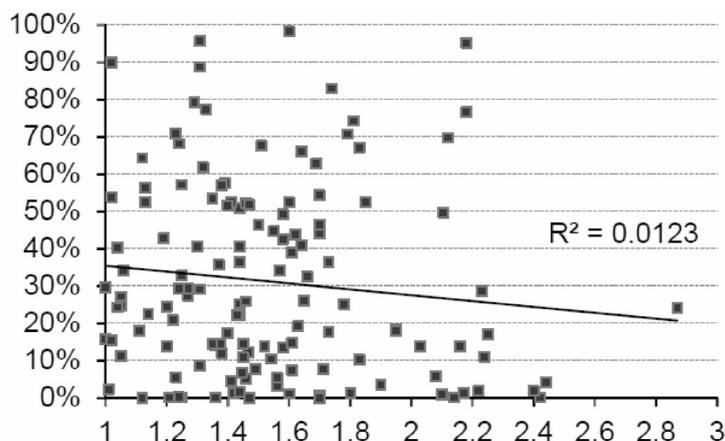
Source: Trepp, BofA Merrill Lynch Research

The results exhibit a relatively clear trend and supplement the position of many lenders today to be more cashflow-focused: an improvement in the day-1 ICR results in a lower frequency of losses. A cut-off point is visible: based on the underlying data, a day-1 ICR of 2.5 or greater seems to be the point beyond which CRE lenders are protected from negative credit performance.

The loss severity by ICR bracket is then considered, which in the same way as the LTV ratio, exhibits a weak trend due to a wide distribution. The results are illustrated in Figure 21 below.

The data again demonstrates that rather than showing that high ICR loans incur lower losses, it shows that high ICR loans are less likely to default during the term of a loan. Once a default occurs then other factors tend to apply to determine the level of loss.

Figure 21: Loss severity by original ICR



Source: Trepp, BofA Merrill Lynch Research

(iii) Debt service coverage ratio (DSCR)

Similar to the ICR, the DSCR provides an indication of leverage relative to the cashflows generated by the underlying property, however, the DSCR also takes into account the amortisation scheduled for payment during the term of a CRE Loan. The DSCR is calculated as the ratio of total annual cashflows generated by the property (and available for debt servicing) to the annual interest and amortisation (debt service) payable. For bullet CRE Loans with no amortisation during the term of the loan, the ICR and DSCR would be identical, whilst they will start deviating as amortisations starts being incorporated during the term of the CRE Loan.

A lower day-1 leverage leads to a higher DSCR, suggesting a higher level of cashflow is available to meet interest and amortisation payments on the loan throughout its term and a greater cushion to absorb any reductions in the cashflow generated by the underlying property whilst still meeting interest and amortisation payments. As day-1 leverage increases, the DSCR is reduced and a smaller reduction/stress is required in cashflows in order to create issues in meeting debt service on a CRE loan.

The dataset unfortunately does not measure DSCR levels for a sufficient number of loans to allow a quantitative analysis to be conducted in a similar fashion to that for the interest coverage ratio (ICR). However, during the relevant period under consideration, the majority of CRE loans originated in Europe were typically bullet loans or had low amortisation levels and on that basis it could reasonably be expected that the DSCR would mirror the results exhibited by the ICR (or be very similar). Therefore, in line with the

ICR, the DSCR would be expected to be a significant driver in the credit performance of CRE loans.

(iv) Debt yield

The debt yield is a financial metric that has more recently gained favour with lenders and now forms one of the key metrics to be considered in the underwriting process of a CRE loan as discussed in Chapter 4.

The debt yield is calculated as the ratio of total annual cashflows generated by the property (and available for debt servicing) to the principal balance of the CRE loan. The debt yield is a very useful metric in underwriting and structuring CRE loans, as it indicates two key parameters:

- The break-even interest rate that the underlying property can sustain for the amount of debt in question. The debt yield indicates how much scope there is for a potential rise in interest rates before a refinancing of the CRE loan (at current rental income levels) becomes restricted due to a rise in interest rates. This becomes particularly pertinent in the macroeconomic environment of extremely low interest rates (close to zero) that exists at the time of writing, whereby an increase in interest rates may be expected and lenders should factor this into their underwriting process.
- The break-even yield/cap rate that the underlying property can be sold at (at current rental income levels), in order to allow a full repayment of the CRE loan.⁷ A comparison of the current property yield with the debt yield indicates the flexibility in yield-widening that may occur in the investment market, prior to the value of the underlying property moving to a level which is below the balance of the CRE loan.

Higher debt yields for a given CRE loan therefore imply that there is less credit risk and this can be expected to be a material driver of the credit performance of European CRE loans. Amortisation or an improvement in rental levels would result in increasing debt yields over the life of a loan. It is a welcome development in European CRE lending that there is now a greater focus on debt yields both, day-1 and at loan maturity.

15.3.4.3 *Amortisation*

As discussed above, European CRE loans will typically have no or limited amortisation. The level of amortisation that is achievable will depend on the amount and quality of rental cashflows and whether the sponsor requires a cash yield on their investment.

⁷ This assumes no sales costs or any other transaction costs. In practice, one must allow for some sales/transaction costs.

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In situations where the borrower wishes a higher day-1 leverage, they are willing to forego a lower cash-on-cash return as a lender would require a commensurate increase in the rate (and therefore amount) of amortisation to reflect the higher credit risk.

Amortisation may have a considerable effect in the ultimate determination of credit performance of a CRE loan but much depends on the nature of the underlying properties. Loans secured on higher-yielding properties in secondary locations will typically necessitate higher levels of amortisation depending on day-1 leverage. Loans on higher quality properties may have higher LTVs but the amortisation may be limited due to the level of sustainable cashflow and an underwriting opinion that there is less repayment/refinancing risk.

At the 2007 peak of the market, a large volume of loans did not feature any amortisation. The subsequent drop in market values of European CRE provided the classic example of an increasing refinancing/repayment risk as such CRE loans approached maturity.

15.3.4.4 Loan Term

Many lenders pre-GFC had a typical loan term of five to seven years rather than geared to the specificity of the underlying real estate, the valuation of the properties on a longer-term basis or the business plan of the sponsor.

The peak of originations in 2006–2007 also resulted in many loans maturing at a time when debt capacity in the UK was very limited (2011–2014) resulting in a much higher default rate. In the US, most loans had a 10-year term (fixed rate market) resulting in many loans maturing in 2016–2017 when the debt markets are better positioned to provide the debt capacity necessary to refinance a large volume of loans.

The term remaining under the leases of the underlying property is an important factor in the underwriting process of a CRE loan. As discussed in Chapter 4, the weighted average unexpired lease term (WAULT) is the remaining term of the various leases, weighted by the rental income generated under each lease and is therefore a representative measure of the average remaining lease term for the entire underlying property. As well as WAULT, the granularity and diversity of leases, the credit quality of the larger tenants, and the location of a property will all be factors that determine how a lender will underwrite the sustainability of cashflows.

Most lenders focus on valuations at the outset of the loan and aim to deleverage the loan based on this valuation as opposed to the potential valuation on maturity of the loan. Whilst difficult to do, lenders should focus more on the long term sustainable value of the underlying property factoring in where appropriate the business plan initiatives of the sponsor, with appropriate assumptions. See further Chapter 4.

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In addition, the business plan of the sponsor should play an important function in determining the loan term especially if the properties need to be repositioned, improved, re-let or sold as part of a business plan. In practice, very few loan terms were based around the business plan of the borrower with a de facto five to seven year term being utilised in the vast majority of loans. A term driven more by the specifics of the underlying real estate may incentivise borrowers to meet their business plans more pro-actively. Equally, looking at longer terms on a lower leverage basis and on a long term sustainable valuation basis may smooth out some of the stresses caused by real estate lenders.

15.3.4.5 Financial covenants

A financial covenant will be used in the underwriting and structuring phases of a CRE loan to define maximum or minimum criteria in relation to certain parameters/metrics—these will typically comprise the LTV ratio and ICR. Sometimes they will also encompass other parameters/financial metrics such as the DSCR or debt yield. A breach of a financial covenant would typically be defined to constitute an event of default under the relevant loan documentation.

Alternatively, (additional) financial covenants could also be set to trigger a feature or event which is different from an event of default. The use of financial covenants, as a trigger of an event of default allows the lender to detect and mitigate the potential deterioration in the performance of a CRE loan.

Covenant-light loans (i.e. loans with limited financial covenants, in particular LTV covenants) became more common in the European CRE finance markets in 2005–2007 especially in CMBS lending, as rating agencies gave limited credit for LTV covenants. The subsequent deterioration in the performance and market values of European CRE during the downturn immediately following this period, often resulted in sponsors of the equity interests in properties owning positions which were effectively out of the money but with no ability for the lender to take enforcement action or to incentivise the borrower to pay down part of the loan.

15.3.4.6 Lender-instructed Valuations

Valuations are an essential tool in assessing the credit risk on a loan, both at the outset and on an ongoing basis. They provide important information in relation to the level of leverage and implied equity in a deal, and the quality, marketability, performance and suitability of the underlying real estate collateral as well as important market data on comparables.

The LTV ratio calculated for the purposes of testing the relevant financial covenant, will typically be done so with reference to the most recent valuation that exists, in relation to the underlying property.

Valuations are, however, not always an exact science and there will always be a certain degree of variation between different valuers. Lenders have sometimes historically accepted the practice by borrowers of “valuation shopping” where borrowers select and present their choice of valuer at the outset who they know will give the highest potential valuation. The borrower may also have the ability to select and instruct the valuer of their choice on future valuations. This may have had a role to play in the valuation negligence cases seen in the market in 2015–2016 and discussed further in Chapter 13.

Lenders should therefore provide in the relevant loan documentation that an independent valuation of the lender’s choice can be instructed on an annual basis by the lender at the cost of the borrower—this allows at least annual valuations to be produced at no cost to the lender and the relevant LTV ratio calculation to be fairly reflective of the true leverage in any CRE loan.

Lenders should also differentiate between real cash equity and soft equity as a result of increased valuations of the underlying real estate. By the time refinancings were being completed from 2005 onwards, sponsors had very little or no cash equity left in deals, thus impacting incentivisation when loans defaulted at a later date.

15.3.4.7 Portfolios: release pricing

Whenever a lender finances a CRE portfolio, the sponsor of the equity interest in the underlying properties often likes to retain the flexibility to dispose of individual properties. To facilitate this, during the underwriting and structuring phases of a CRE loan, the lender will allocate the total CRE loan amount for the relevant portfolio across the individual properties, typically on a uniform basis using the market value of each property (giving rise to the allocated loan amount or ALA, for each property). The lender will assign release pricing to each property (as a proportion of each particular property’s ALA) which will define that proportion/amount of the total CRE loan amount that the sponsor would need to repay in order for the lender to release the security related to that property only and allow its disposal.

Of course the lender would be wise not to release the relevant security for an individual property unless the corresponding amount of debt, i.e. the ALA, at a minimum, was repaid. The release pricing should therefore always be a function which is 100% or greater of the ALA for the particular property.

The credit risk here relates to the quality of the underlying properties in a relative context, i.e. compared to the other underlying properties in the portfolio. To the extent that the quality of the underlying properties differs across the portfolio, to avoid “cherry-picking” by the borrower whereby they sell the better properties first, lenders will have higher release pricing for better quality properties.

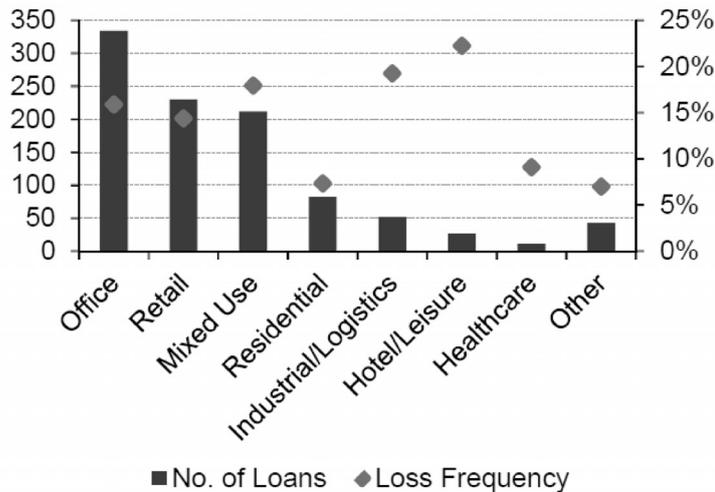
The level at which release pricing is set for individual property disposals, is quite material in the credit performance of European CRE loans financing portfolios—release pricing should be set at appropriately high levels for higher-quality properties.

15.3.4.8 Property Type

The main property types that senior lenders will typically finance, often referred to as the “core” property types, are office, industrial/warehouse and retail properties. These have been the traditional, mainstream property types classed under investment properties. There are also other types of property, classed as operating properties, where the cashflow is not generated through the traditional tenant-lease structure but through the revenue of the underlying business being operated in the property (although these could take the form of an OpCo/PropCo structure whereby a lease would be created). Operating properties would predominantly include hotels, healthcare properties (e.g. hospitals, nursing homes) student accommodation and multifamily properties. Senior lenders would typically have restrictions in place in relation to operating properties and would only be willing to finance certain sub-categories (e.g. hotel or where there is a lease in place to the operator). There are other lenders who specialise in operating properties and would look at all or some sub-categories.

To analyse the property type as a potential driver of credit performance, the frequency of losses (or loss rate), both in terms of the number of loans that have suffered losses, as well as the proportion of loans that have suffered losses, for each property type are considered in Figure 22 below:

Figure 22: Frequency of European CMBS loan losses by property type



Source: Trepp, BofA Merrill Lynch Research

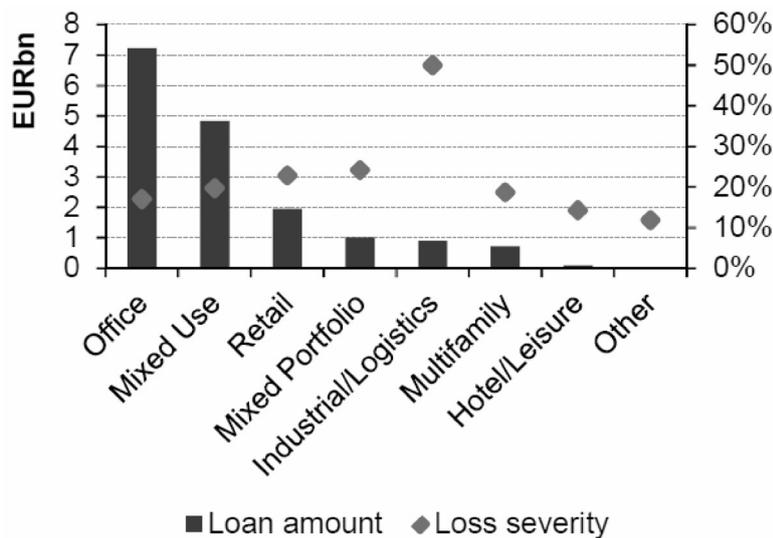
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A consideration of the frequency of losses reveals some differences across different property types, when measured using the proportion of loans that have suffered a loss in any particular category. The hotel/leisure category stands out with the highest proportion of loans that have suffered a loss (just over 20%). Industrial/Logistics properties, mixed-use, office and retail properties follow within a 5% loss frequency band, between 15% and 20%. Healthcare, multifamily and other properties seem to perform better than the rest, with a loss frequency of under 10%.

When measured using the number of loans that have suffered losses in any particular category, the results for loss frequency are inconsistent, with a much higher number of loans suffering losses for office, retail and mixed-use properties. This is likely due to the much larger number of loans originated in these categories relative to the rest and this cannot therefore be treated as evidence to contradict the loss frequency by proportion of loans that have suffered a loss.

The loss severity by property type is then considered, both in terms of the actual amount of loss crystallised as well as the proportion of losses crystallised relative to the total volume of loans originated, in each category. The results are illustrated in Figure 23 below:

Figure 23: European CMBS loan loss severity by property type



Source: Trepp, BofA Merrill Lynch Research

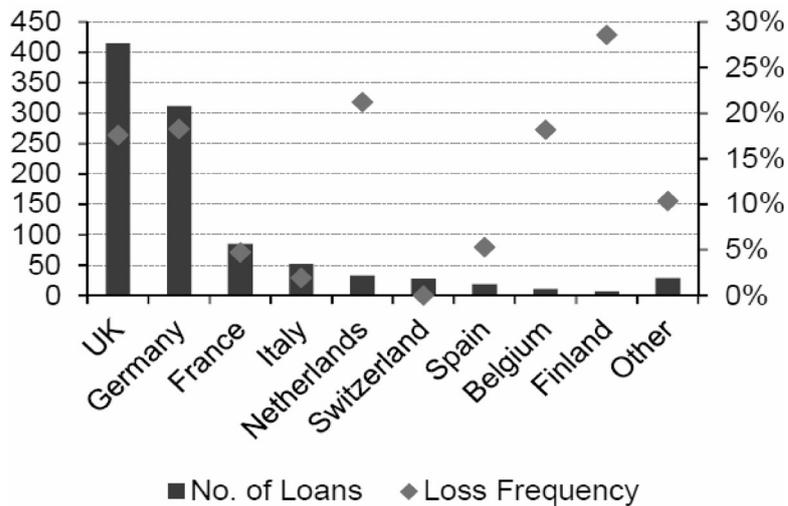
The loss severity, when measured by the proportion of losses suffered in a particular property category relative to the total volume of loans originated, indicates that industrial/logistics properties exhibit the worst credit performance with a loss severity of c. 50%. The remaining property types follow at a distance, within a c. 15% band. Loss severity by absolute amount of loss suffered is not as accurate, predominantly due to the very large differences in total origination volumes across the various property types as illustrated in Figure 12 above.

15.3.4.9 Jurisdiction of underlying properties

It is perfectly rational to expect that the credit performance of loans is, other things being equal, best in the most creditor-friendly jurisdictions, such as the UK and the Netherlands, and deteriorates across the spectrum to less creditor-friendly jurisdictions such as Spain and Italy. At least, this would be expected to be the case when considering losses or recoveries as a measure of credit performance.

The frequency of losses (or loss rate), both in terms of the number of loans that have suffered losses, as well as the proportion of loans that have suffered losses, in each jurisdiction are considered in Figure 24 below:

Figure 24: Frequency of European CMBS loan losses by jurisdiction



Source: Trepp, BofA Merrill Lynch Research

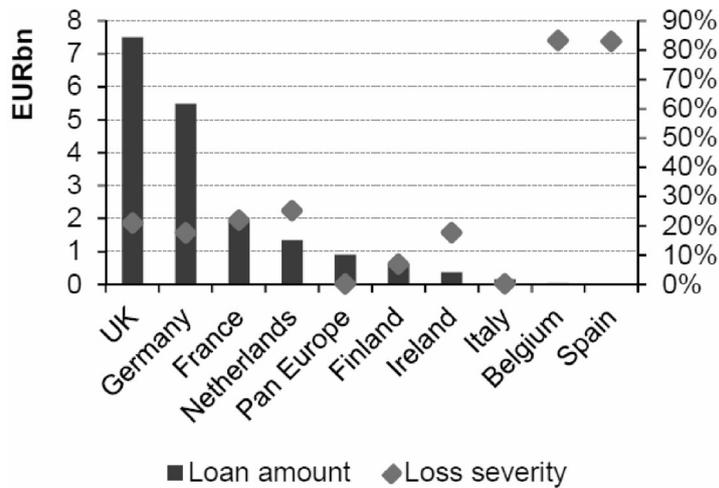
The results are unexpected and quite unintuitive, with the Netherlands and the UK, two of the most creditor-friendly jurisdictions in Europe showing a higher frequency of losses than most of the other European jurisdictions,

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including Spain and Italy. The spike in frequency of losses for the UK when measured by the actual number of loans that have suffered a loss is very likely due to the much larger number of observations in the dataset for loans originated in this jurisdiction relative to the rest. The very different number and volume of loans originated across different jurisdictions leads to a dataset which is less reliable, than if there had been a higher minimum number or volume of origination across all jurisdictions, as outliers currently skew the results substantially for jurisdictions with a very small number of loans (and volume).

The loss severity both in terms of the actual amount of loss crystallised as well as the proportion of losses crystallised relative to the total volume of loans originated, in each jurisdiction is considered in Figure 25 below:

Figure 25: European CMBS loan loss severity by country



Source: Trepp, BofA Merrill Lynch Research

When considering loss severity across jurisdictions the results are slightly more intuitive. Disregarding Belgium, due to the small number of observations, Spain is the jurisdiction with the highest loss severity (measured by proportion of losses relative to total volume of loans originated per jurisdiction), consistent with the respective protracted regime in relation to enforcement. Again, the relatively high loss severity in the UK and the Netherlands are unexpected, in the context of other less creditor-friendly jurisdictions. However, results may still be distorted due to the very large differences in total origination volumes across the various jurisdictions as illustrated in Figure 11 above.

15.4 Conclusion

As alluded to a number of times in this Chapter, the dataset available to conduct meaningful quantitative analysis is quite limited, due to the private nature and information asymmetry of the European CRE finance markets. The dataset is therefore limited only to CRE loans that were securitised in public CMBS transactions, with the consequent implications that this has on the number of variables observed, but also the relevant period for which data is available.

The analysis allows the following conclusions to be drawn:

- Vintage, as an indicator of the stage of the real estate cycle, is a key driver of credit performance—the predominant majority of losses in the dataset occurred across loans that were securitised in the 2005–2007 vintage.
- The ICR, as a measure of day-1 leverage, is a key indicator of the likelihood of a CRE loan having a default throughout the term—CRE loans with an ICR greater than 2.5 seem to be cushioned sufficiently against a default during the term of a loan. However, other factors are more likely to determine the level of loss once a default has occurred.
- The LTV ratio, another measure of day-1 leverage, whilst also being a key indicator of the likelihood of a default on a CRE loan, also does not seem to play a material role in the amount or proportion of losses, which again suggests that other factors specific to each loan influence the amount or proportion of losses.
- Loans secured against hotel/leisure properties experienced the highest incidence of defaults, closely followed by industrial/logistics properties. In terms of actual loss crystallised upon occurrence of a default, loans secured against industrial/logistics properties suffered the worst losses by far, at c. 50% of the balance of such loans originated.
- Surprisingly, contrary to common expectation, the dataset indicates that the jurisdiction of the underlying properties is not a key factor in the determination of credit performance, but this is likely to be linked to limitations of the underlying CMBS dataset.

The dataset employed in preparing this Chapter predominantly relates to CRE loans that were securitised in public CMBS transactions and does not allow a direct comparison to be made in terms of credit performance between those CRE loans that ended up being securitised and those that ended up being syndicated and/or remained on banks' balance sheets. In that respect, there may ultimately be a bias in the analysis set out in this Chapter, however, it is believed that this would not change the conclusions reached regarding the key drivers of credit performance for CRE loans materially.

