

AEW RESEARCH



EUROPEAN REAL ESTATE DEBT

ALL-IN RATES AT HISTORICAL LOW, DESPITE ELEVATED MARGINS

Q3 2019

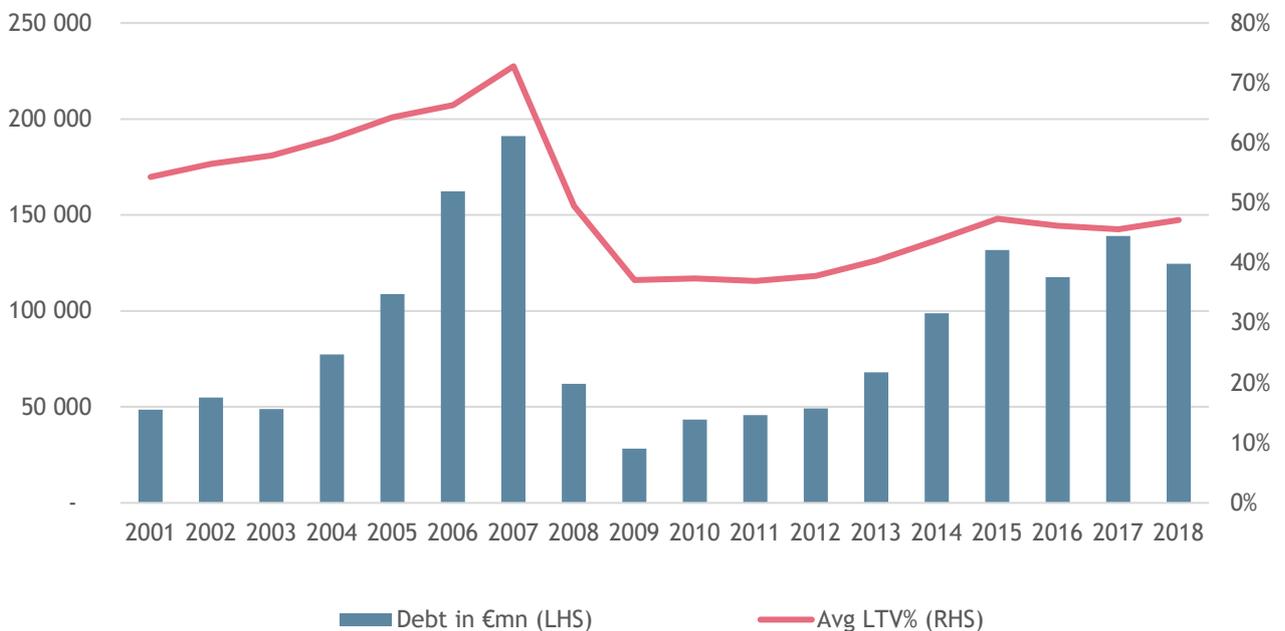
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IS CRE DEBT PRICED EFFICIENTLY ENOUGH FOR INVESTORS?

Analysis on the cost of debt for real estate investors across Europe has been historically limited by the lack of available granular loan level data. There have been a number of lender surveys, including the UK Cass Business School (formerly DeMontfort University) survey started in 1999 that allows for some useful trend analyses. Additional surveys have been launched for Germany (IREBS) and further expansions for similar lending surveys are expected for France (IEIF) and Spain (Cass & Universidad de Alicante). Some leading brokers share city and property type level data on prime lending costs, but the underlying granular loan level data has been available only to central banks and regulators (via the ECB’s AnaCredit Data initiative) as they have shifted from their initial stress testing of existing troubled bank loan books a few years ago to monitoring the current lending and refinancing activity. In this report, we share our initial analyses of loan-level data from both internal AEW and external sources. Despite sometimes significant differences between individual loans and credits, we focus on pricing and risk trends on a detailed loan-by-loan level. This should allow us to answer the question: is commercial real estate debt priced efficiently for investors in European markets?

ANNUAL LOAN ORIGATION FOR ACQUISITIONS WITH SYSTEM-WIDE LTV

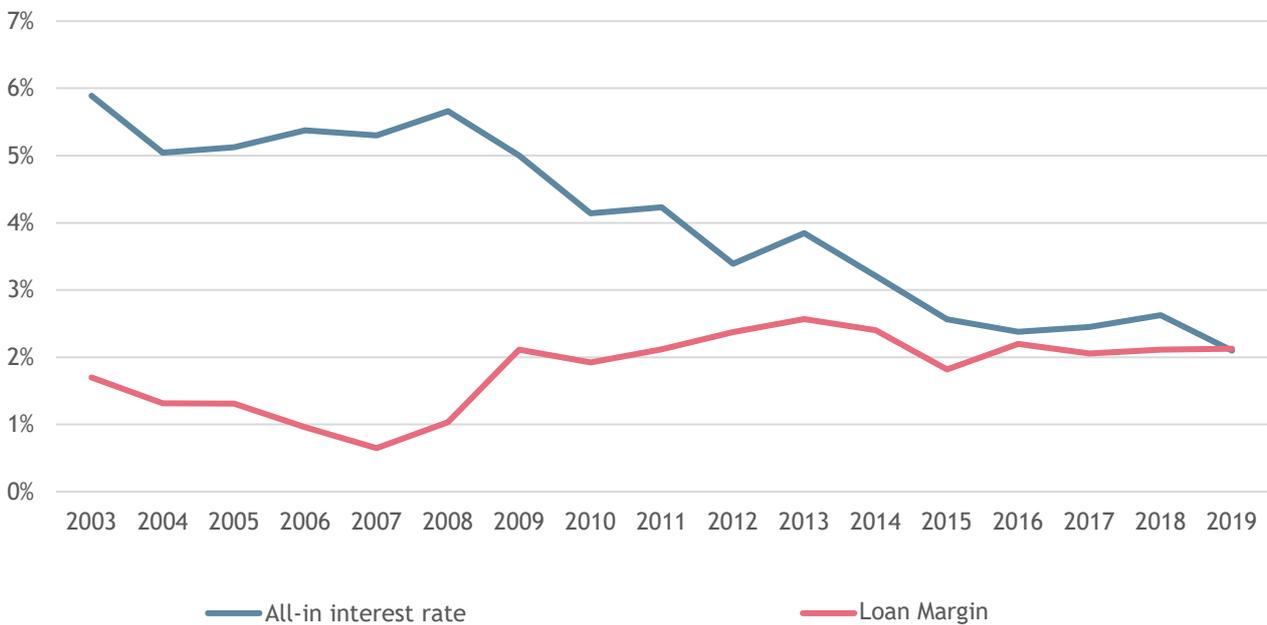


Sources: AEW, CBRE & RCA

EXECUTIVE SUMMARY:

- In this report, we evaluate all-in interest rates and loan margins for commercial real estate (CRE) investors in the European markets by using for the first time granular loan-level data and estimating historical CRE loan loss rates.
- Our granular loan-level database shows a number of interesting trends:
 - Loan margins remain elevated at about 200bps, despite coming down from 260bps peak in 2013
 - The average all-in interest rate for European CRE loans is at a historically low level of 2.1% pa as of 2Q19
 - This is only possible, since the 5-year swap rate is at unprecedented near-zero historic lows, in line with bond yields
 - German all-in rates have been consistently low, due to strong lender competition and efficient covered bond funding
 - Retail loans have become more and logistics loans less expensive, as lenders adjust pricing for changing fundamentals
- Despite record low borrowing costs, restraint and discipline by investment fund managers and institutions helped by regulatory-constrained banks limits the system-wide risk of excessive financial leverage.
- Our CRE loan-level model shows strong results in predicting the all-in interest rate by using LTV, origination year, property type and collateral locations as explanatory variables.
- At current CRE loan pricing, lenders are able to absorb potential losses through their loan margins and other fees as long as they are in line with historical averages. Our top-down estimate for historical CRE loan losses are 70bps pa for European banks and 93bps pa for UK banks. Both are ahead of CMBS-funded CRE loan losses of 21 bps pa for Europe and 24bps pa for UK.

ALL-IN INTEREST RATES ON COMMERCIAL REAL ESTATE AT RECORD LOW LEVEL

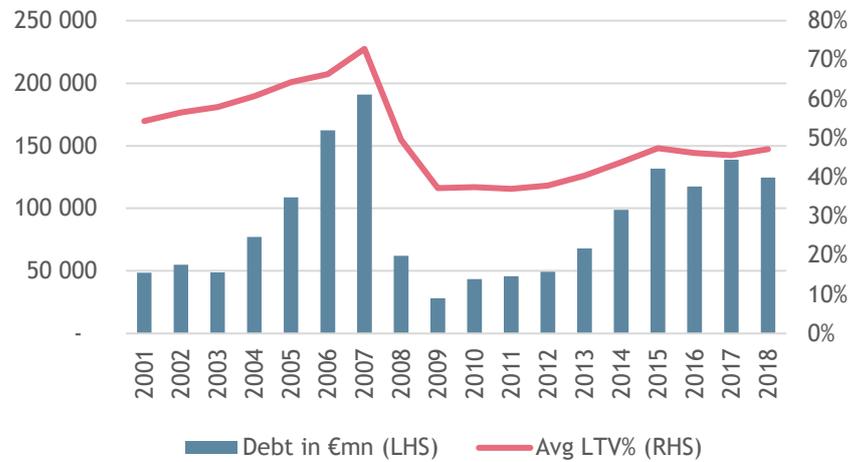


Sources: AEW, RCA & REC

SECTION 1: TREND ANALYSIS OF RATES & LTVs

ANNUAL LOAN ORIGATION FOR ACQUISITIONS AT €124BN IN 2018, WITH SYSTEM-WIDE LTV BELOW 50%

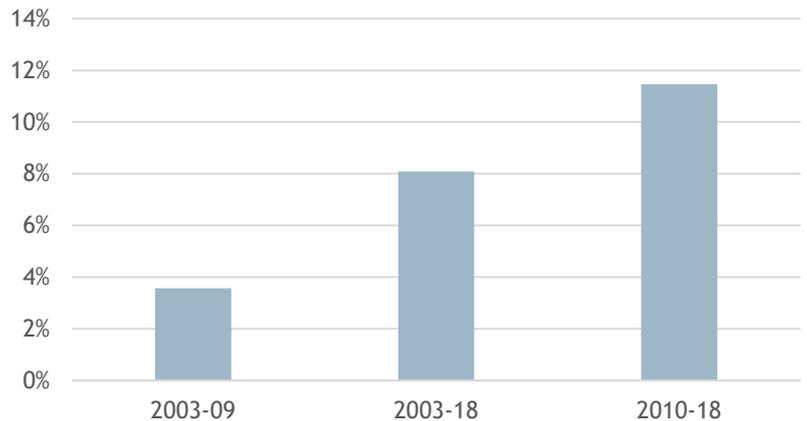
- Investors continue to have good access to debt finance across the European markets.
- This is despite the fact that, acquisition debt came down to €124bn in 2018 as total acquisitions were impacted by the continued uncertainty around Brexit.
- System-wide, the total amount of debt over acquisition volumes (or LTV) remains at modest levels below 50%.
- This is partly due to fund managers' conservatism as many institutions' risk departments require 30-40% LTV.
- Many banks are also still coming to grips with the wide range of new regulations limiting their ability to expand their real estate lending.



Sources: AEW, CBRE & RCA

NEW GRANULAR DATA REPRESENTS OVER 10% OF ANNUAL ACQUISITION ORIGATION VOLUMES SINCE 2010

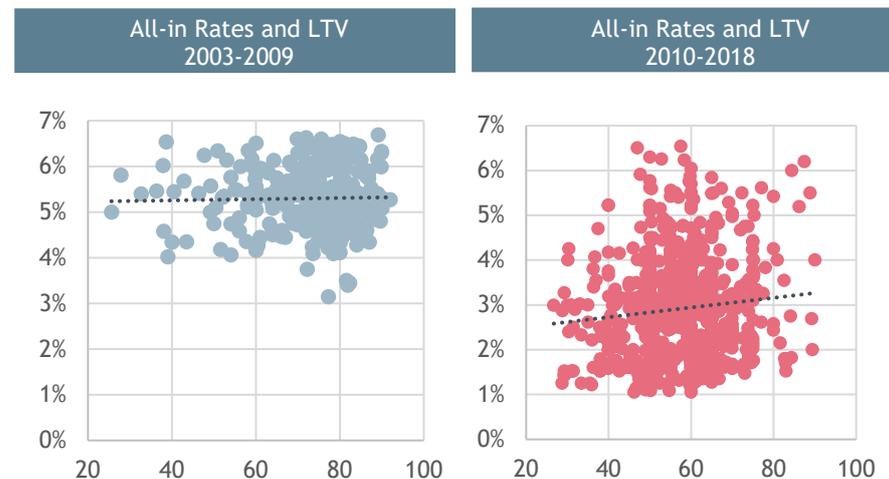
- To allow for a more in-depth analysis of the lending markets, we have started a granular database with above 1,000 records from both in-house and external sources.
- With data going back to 2003, we have modest coverage in the period to 2009.
- But, since 2010 we have over 10% of the overall acquisition debt origination coverage within our database.
- Based on this, we feel that our granular data is representative for the market as a whole.



Sources: AEW, CBRE, RCA & REC

INITIAL OVERVIEW OF GRANULAR DATA SHOWS LARGE DIFFERENCES FOR PRE- AND POST-GFC PERIODS

- A first look at our granular loan-level data shows a stronger relationship between LTV on the vertical axis and all-in interest rates in the post-GFC period. The wider range of pricing points, also implies a more selective risk assessment.
- In the pre-GFC period, competition between banks and other lenders was very strong and swap rates were significantly higher as well.
- As a starting point of further analyses, it is clear that timing of loan origination or its vintage is critical as a driver of all-in interest rates.

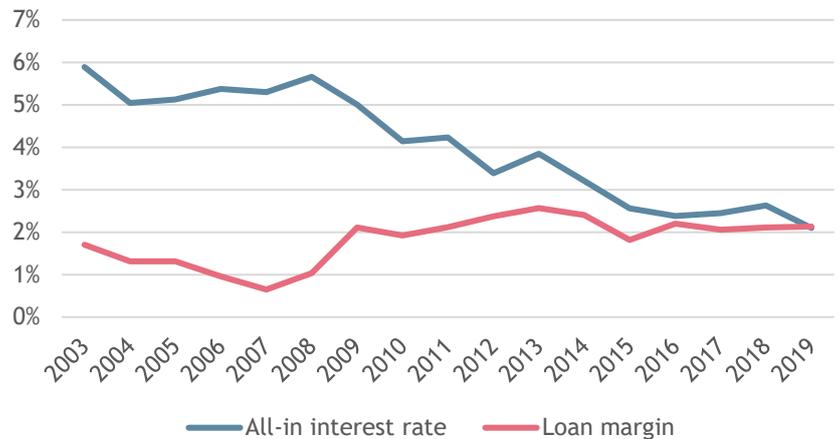


Sources: AEW, CBRE, RCA & REC

SECTION 2: LOAN MARGIN MODEL RESULTS

ALL-IN INTEREST RATES HAVE COME DOWN AS 5-YEAR SWAP RATES REMAIN NEAR HISTORIC LOWS

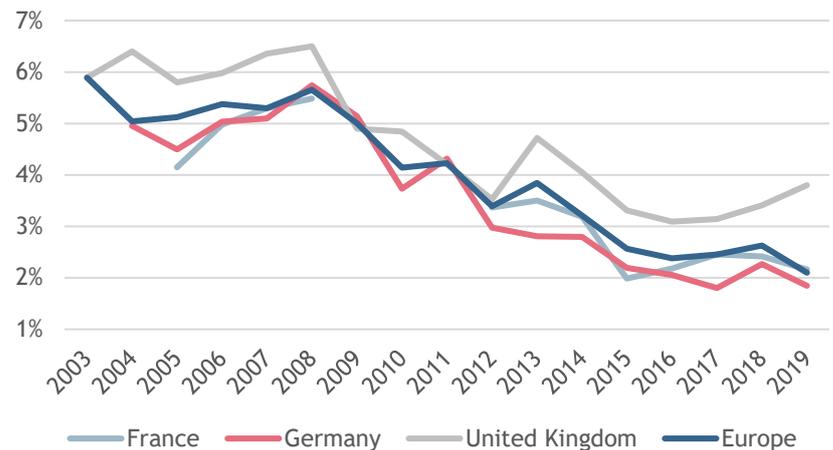
- All-in interest rates for European real estate loans are at 2.1% pa as of 2Q19.
- European real estate mortgage loans are priced mostly on a floating rate basis, in contrast with US loans at fixed rates.
- Currently they are at about 200bps margin above 3M Euribor or 3M LIBOR.
- Most banks will require these 3-month floating rates to be swapped or capped to be fixed for the full maturity of the loan.
- As a result, the difference between the all-in rate and margin is the 5-year swap rate, at near-zero historic lows.
- Loan margins remain elevated compared to pre-2008, despite coming down from 240 bps peak in 2012.



Sources: AEW, RCA & REC

GERMAN RATES HAVE BEEN CONSISTENTLY LOWER, WHILE UK HAS BEEN MORE VOLATILE

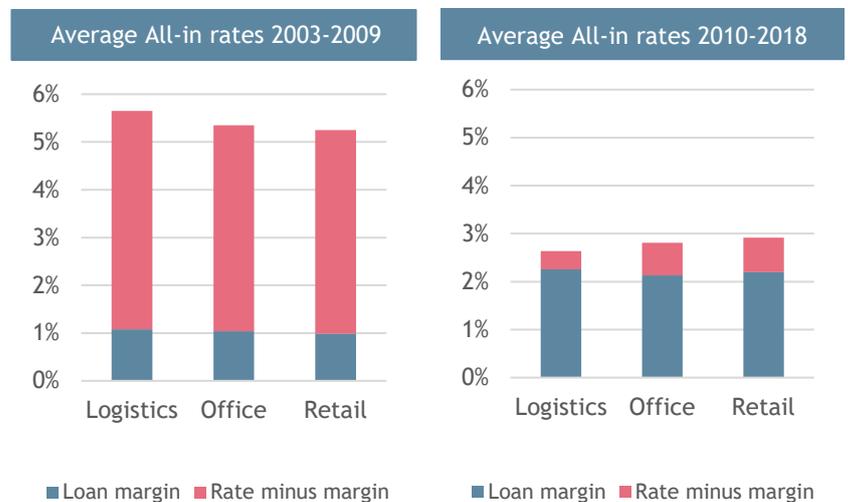
- Loan margins have varied both by country and over time.
- German loan margins were particularly low compared to other countries during the 2010-14 period.
- The high level of competition and efficient covered-bond funding available to German banks might explain this.
- In contrast, UK rates have been more volatile since 2003.
- The larger CMBS market share in the UK pre-crisis might explain the low margins in 2008.
- The impact of the new slotting regulations on UK banks' capacity to lend explains the widening to the 2012 peak.



Sources: AEW, RCA & REC

CHANGED VIEWS ON PROPERTY TYPE FUNDAMENTALS ARE REFLECTED IN RATES AND MARGINS

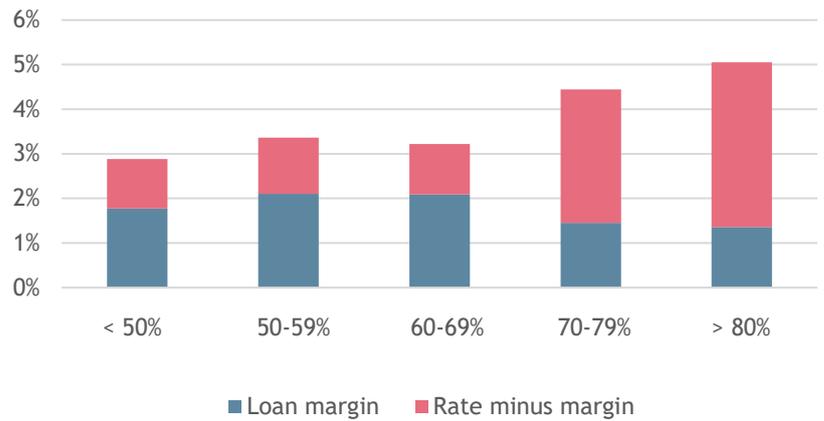
- All-in rates and loan margins across collateral property type have also changed significantly over time.
- Pre-GFC, there was very little difference in loan margins between the three main property types. This reflected the strong competition in the lending market as well as the lack of risk differentiation across property types.
- However, since 2010 we are seeing significantly higher than average margins for retail collateral reflective of the increased impact of e-commerce.
- At the same time, we are seeing lower than average margins for logistics collateral. Clearly lenders think that long term fundamentals for logistics are better.



Sources: AEW, RCA & REC

MIXED PATTERN OF ALL-IN RATES AND LOAN MARGIN PER LTV CATEGORY OVER 2003-19 PERIOD

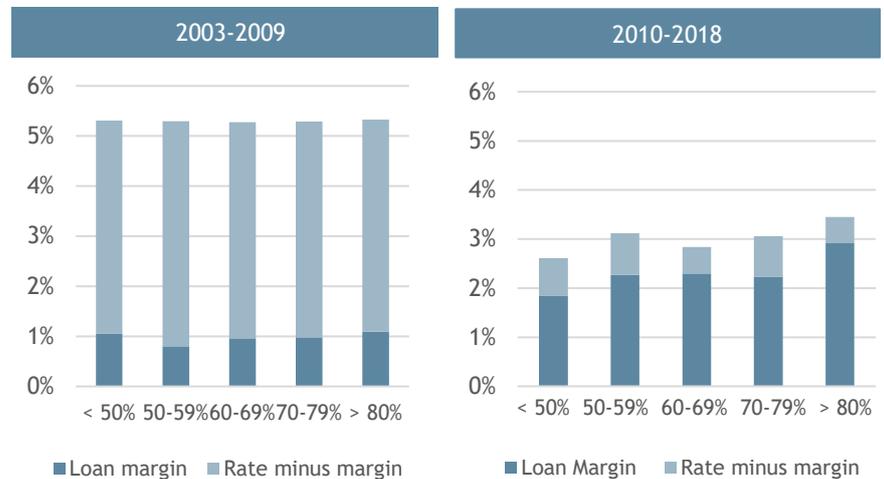
- When measured across our entire period, there is a logical pattern with higher all-in rates for higher LTV-loan buckets.
- However, when we consider the underlying loan margins, the highest LTV loan buckets have the lowest margins. This is the opposite of what we would expect.
- But, as a next step we can again look at the data across the two periods.



Sources: AEW, RCA & REC

POST GFC-PERIOD SHOWS MORE RATIONAL LTV AND LOAN MARGIN PATTERN

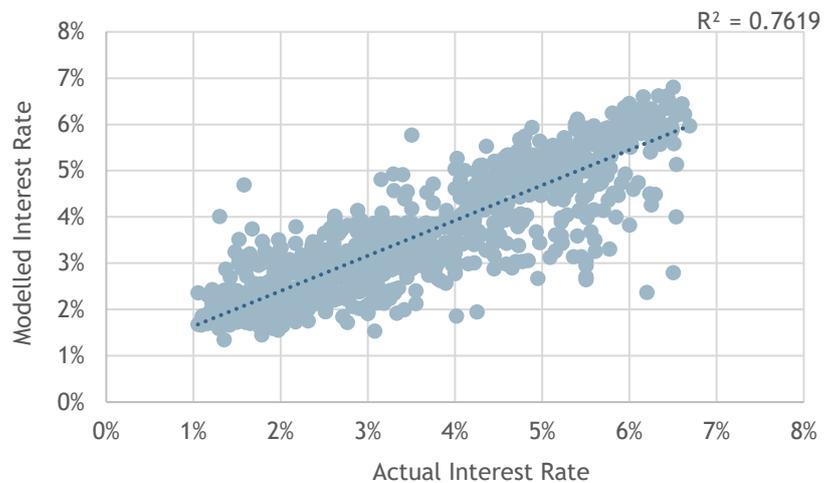
- Similar to what we see with the property types, we observe a more consistent pattern for both margins and all-in rates in the post GFC period.
- The chart shows a stunning reversal between low margins and high all-in rates before the GFC to a high margin and low all-in rate environment in the second period.



Sources: AEW, RCA & REC

OUR MARGIN MODEL SHOWS LTV IS SIGNIFICANT ONCE WE CONTROL FOR OTHER VARIABLES

- Our predictive all-in rate model shows good results, as shown in the chart - the perfect model would show a diagonal line.
- LTV, vintage, property type and location all play a significant role in the model.
- Our model can have practical applications for borrowers, lenders and others as it is able to identify less than optimal pricing.
- Further analysis could focus on linking the underlying loan data with credit scores and/or economic, financial and property market indicators.

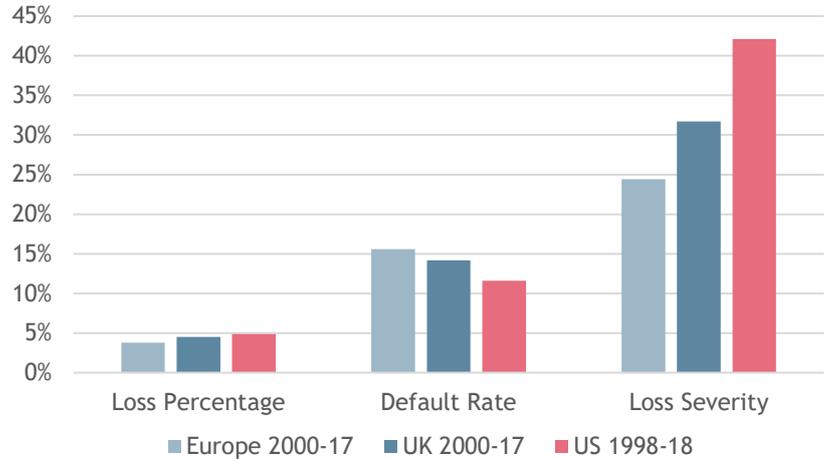


Sources: AEW, RCA & REC

SECTION 3: HISTORICAL DEFAULTS & LOSSES

CMBS-FINANCED CRE LOANS HAVE SHOWN CUMULATIVE DEFAULTS AND LOSSES

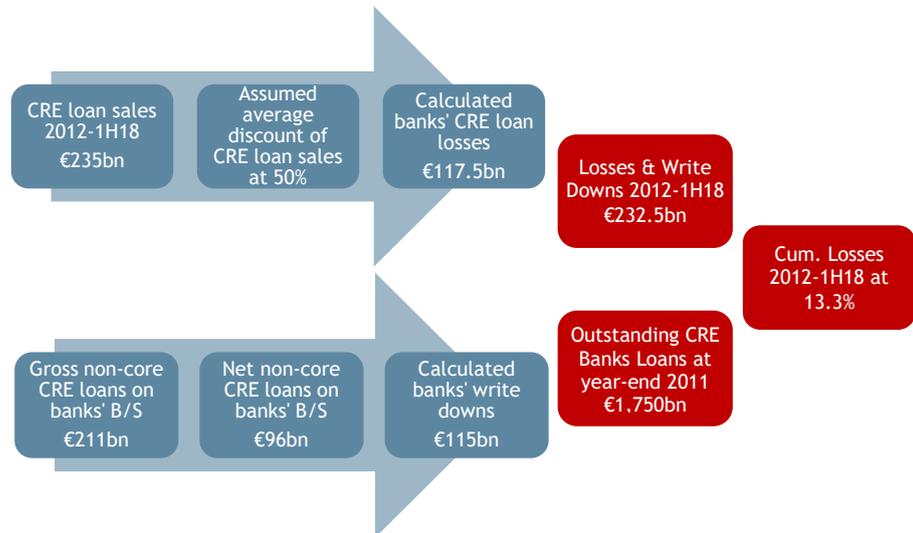
- Pricing of mortgage loans should take into account the lender's risk of borrower's default and loss severity at default.
- Since historical defaults and losses have proven to be concentrated in a small number of peak cycle origination vintages, we need to consider long term losses.
- Data on defaults and losses for CMBS-funded loans has been available since 2000 in Europe and UK and since 1998 in the US.
- Cumulative losses for CMBS-funded CRE loans in Europe and the UK were 3.8% and 4.5% respectively. Over the 18 year period, this amounts to an annual loss of 20 to 30 basis points.



Sources: AEW, Moody's & Trepp

BANKS CRE LOAN LOSSES ARE BASED ON NPL SALES AT DISCOUNTS AND WRITE-DOWNS

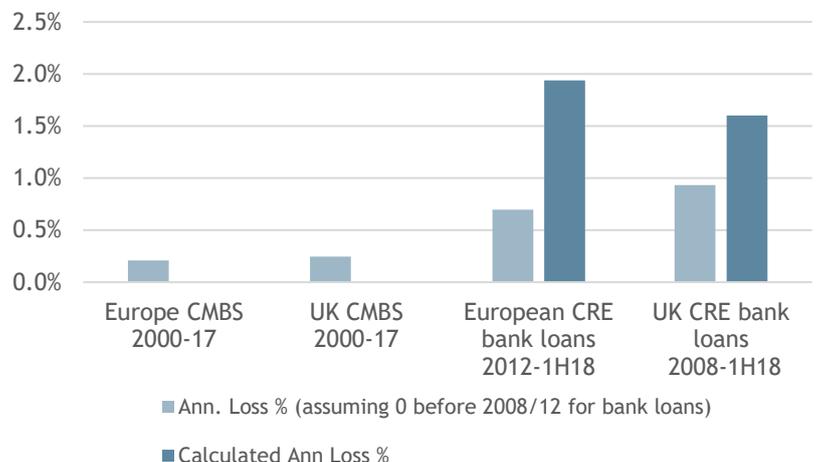
- We need to consider CRE bank loan defaults and losses, since CMBS-funded loans are not market representative.
- Evercore has been tracking loan portfolio sales and write-downs for a long period.
- Based on their data, we estimate European banks have taken €117.5bn in losses when selling CRE loans since 2012.
- In the same period, there were €115bn in write downs on non-core CRE loans.
- Over the 6.5 years, the cumulative losses and write downs were €232.5bn compared to an estimated CRE loan balance of €1.75tn.
- This puts the cumulative loss at 13.3% or 190bps pa over the period.



Sources: AEW, C&W, Evercore & IPF

BANKS HAVE SEEN 70-95BP PA LOSSES, WHICH THEY MIGHT WANT TO INCORPORATE IN THEIR LOAN MARGINS

- To compare CMBS-funded loans with bank loans, we need similar periods.
- Therefore, we assume that there were no losses and write downs for bank loans from 2000 to 2008 in the UK and to 2012 in Europe. This is not as unreasonable as it sounds, since most banks extended loan terms in that period and CMBS-funded loan losses were near zero at that time.
- When we annualise the CRE loan losses, these come out at 70bp for European banks and 93bp for UK banks. Both are significantly ahead of CMBS-funded losses at 21 bps for Europe and 24bps for the UK.
- Banks might want to incorporate these losses in their loan margins and other fees.



Sources: AEW, C&W, Evercore, IPF, Moody's & Trepp

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As at 30 June 2019, AEW managed €31.9bn of real estate assets in Europe on behalf of a number of funds and separate accounts. AEW has over 400 employees based in 9 offices across Europe and has a long track record of successfully implementing core, value-add and opportunistic investment strategies on behalf of its clients. In the last five years, AEW has invested and divested a total volume of over €20bn of real estate across European markets.

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