HOW SHOULD CROSS-ASSET INVESTORS EVALUATE REAL ESTATE?

Most cross-asset institutional investors are organised across three main departments: fixed income (or credit), equities and alternatives. Commercial real estate is typically represented in all three departments. Despite having different terminology and perspectives, investors increasingly look across departments to benefit from each other’s views on fundamental trends in the underlying credit, equity, collateral and property markets. In this report we create an analytical framework to start such a comparison in a step-by-step approach. To do this, we introduce AEW’s peripheral property perspective. It allows us to map the full investment universe from listed corporate bonds and equities, listed real estate bonds and equities as well as to private real estate equity and private real estate debt.

AEW’S - PERIPHERAL PROPERTY PERSPECTIVE

Source: AEW
SUMMARY: GOOD DIVERSIFICATION & BEST RISK-ADJUSTED RETURNS IN REAL ESTATE

- Our peripheral property perspective compares returns, volatility and correlations for private real estate investments with other fixed income and equity segments in a European context, to facilitate strategic allocation decisions for cross asset investors.

- In our fixed income comparison, we introduce a new private real estate debt (PRED) index based on pricing of over 2,300 commercial real estate loans. This PRED index shows a very similar performance as the listed real estate bond (LREB) index over the last 10 years. Both outperformed listed corporate bonds (LCB). But, PRED performance stands out as significantly more volatile than LREB (and LCB) over the period. In regards to correlations, we note that LREB and LCB returns show a strong positive correlation while PRED and LREB show virtually no correlation over our 40 quarter time series.

- From the equity perspective, the listed real estate equity (LREE) index outperformed both listed corporate equity (LCE) and private real estate equity (PREE) over the last 10 years. But, the valuation-based PREE performance stands out as significantly less volatile than LREE and LCE over the period. In regards to correlations, we note that LREE and LCE returns show a positive correlation while PREE and LREE show a negative correlation over the same period.

- In short, PREE and to a lesser extent PRED offer cross-asset investors potential diversification benefits due to their negative correlations with the other asset types, as illustrated below. Despite moderate absolute returns, PREE has in fact the highest risk-adjusted return across our asset types.

PRIVATE REAL ESTATE EQUITIES (PREE) & DEBT (PRED) OFFER CLEAR DIVERSIFICATION BENEFITS

Source: BAML, Bloomberg, INREV, EPRA, RCA, REC & AEW
SECTION 1: FIXED INCOME PERSPECTIVE

BAML EURO CORPORATE BOND INDEX REFLECTS RISK APPETITE FOR LISTED CORPORATE BOND (LCB)

- We use the ICE BAML Euro Corporate Bond Index to show the performance of listed corporate bonds (LCB).
- This tracks the performance of EUR denominated investment grade corporate debt publicly issued in the Eurobond or Euro member domestic bond markets.
- With a nearly 50% BBB component, this selected index reflects investors’ appetite for fixed income risk.
- Please note that non-European companies are not precluded from issuing Euro-denominated bonds and some will be part of this index.

STABLE LCB INDEX REFLECTS CURRENT BALANCED OUTLOOK

- Over the last ten years, our LCB index has shown an upward trend and stands at 163 to year-end 2018.
- With investors switching from stocks into lower risk corporate bonds, the index had strong performance in the immediate aftermath of the GFC (2009-10).
- As low base rate and QE policies were more pro-actively adopted by the ECB, the index again benefited in 2013-14.
- However, due to pre-emptive talks of QE easing and rate normalisation in late 2014 and 2015, the index entered a more stable period from 2016.

RETURNS ON CORPORATE BONDS TRENDING DOWN

- The average quarterly returns for the ICE BAML Euro Corporate Bond Index over the last ten years has been 1.3%.
- Over the same period there has been significant volatility in these returns ranging between 7.2% and -2.8%.
- Please note that BAML assumes no re-investment of periodic interest payments on the bonds in its return calculations. We believe this to be consistent with our other fixed income and equity return estimates.
LISTED REAL ESTATE BOND (LREB) INDEX OUTPERFORMS LISTED CORPORATE BOND (LCB) INDEX OVER LAST 10 YEARS

- In a simple comparison of our ICE BAML Listed Corporate Bond (LCB) index and our combined Listed Real Estate Bond (LREB) Index, it is clear the latter has outperformed.
- Over the last ten years, our combined REIT Bond and CMBS Index ends up 58 points (or 36%) higher than our LCB index.
- This outperformance is partly due to the timing of the recovery in the property market, with the constituents of the LREB index (REIT and CMBS bonds) more severely hit in 2008 than corporate bonds in general.

Source: BAML, Bloomberg & AEW

LISTED REAL ESTATE BOND AND LISTED CORPORATE BONDS SHOW STRONG CORRELATION

- A scatter diagram of LCB and LREB index returns for each of the 40 quarters in our dataset confirms that there is a very close relationship, as indicated by the R² at 70% (correlation coefficient of 0.83).
- Based on this result, we conclude that there might be significant overlap in the investor base buying into these bond classes.

Source: BAML, Bloomberg & AEW

LISTED REAL ESTATE BONDS AND LISTED CORPORATE BONDS MOVE CLOSELY TOGETHER OVER TIME

- The average quarterly returns for the LREB index stands at 2.0% compares positively with the LCB Index over the last ten years at 1.3%.
- Relative to the LCB index over the same period, the LREB shows higher volatility in these returns ranging between 12.8% and -3.8%.
- Total returns for both series are contemporaneously linked and show a low volatility in the last two years.

Source: BAML, Bloomberg & AEW
UK REAL ESTATE CORPORATE BONDS OUTPERFORM OTHER LREB SUB-INDICES

- Our combined Listed Real Estate Bond (LREB) Index is comprised of four different sub-indices, broken out by issuing jurisdiction (UK and rest of Europe) and issuer type (REITs and CMBS).
- The nearly 100% margin of outperformance for UK corporate real estate bonds over European CMBS bonds is surprising.
- UK real estate bonds outperformed, mostly due to the timing of their deleveraging and the recovery in the property and bond markets, as they were much more severely hit in 2008 than the secured European and UK CMBS bonds.

UK REAL ESTATE BONDS MAKE UP OVER HALF OF LREB INDEX

- Despite the fact that European REITs and other corporate bonds make up 46% of the total, UK CMBS and corporate bonds combined make up 53% of the LREB index.
- The very small 1% proportion of European CMBS included in the LREB index is likely due to the repayment of the large German multi-family CMBS deals and the shorter maturity at issuance compared to UK CMBS deals.
- Please note that bonds issued by large global real estate companies, like Unibail Rodamco Westfield, are counted in the country where the listing exchange is registered. As such, bond issuance does not exactly match geographic allocation of the property portfolio.

CORRELATIONS AMONG THE LREB SUB-INDICES ARE GENERALLY HIGH

- The table on the right shows the correlations of returns over the last ten years (40 quarters) amongst the four sub-indices discussed above.
- Correlations are on average 0.73, but range between 0.55 and 0.95 for each of the pairs.
- UK real estate corporate and CMBS bonds show the highest correlation, while in contrast European real estate corporate and CMBS bonds show the lowest correlation.
- This might be due to the limited universe of European CMBS bonds included.
PRIVATE REAL ESTATE DEBT (PRED) MATCHES LISTED REAL ESTATE BONDS (LREB) PERFORMANCE

- In a simple comparison of our newly created private real estate debt (PRED) index and our combined Listed Real Estate Bond (LREB) index, it is clear that over the last ten years their performance has been similar in aggregate.
- Despite this similarity, the PRED index underperformed up to Q2 2015 with banks and other lenders unable to match the yields achieved by bond investors. This might be due to legacy balance sheet loans and new capital reserve requirements.
- PRED index outperformance since Q3 2015 was driven by an increased ability of banks as well as new non-bank lenders increasing their market share.

PRIVATE REAL ESTATE DEBT (PRED) AND LISTED REAL ESTATE BOND SHOW NO CORRELATION

- A scatter diagram of PRED and LREB index returns for each of the 40 quarters in our dataset confirms that there is virtually no correlation between the two series, as indicated by the R2 at 0.07%.
- Based on this, it seems that there is likely no overlap in banks or debt funds making loans or these same organisations buying into the real estate bonds.

PRIVATE DEBT (PRED) RETURNS ARE MUCH LESS STABLE THAN LISTED REAL ESTATE BOND (LREB) RETURNS

- The average quarterly returns for the PRED index comes at 2.2%, just marginally ahead of the LREB index over the last ten years at 2.1%.
- Relative to the LREB index over the same period, the PRED shows much higher volatility in these returns ranging between 11.7% and -7.9%.
- Q4 2012 and Q3 2013 stand out as a particularly poor quarters for the PRED performance, possibly driven by 5-year swap rate movements.
The newly launched PRED index is based on new data on loan pricing. This granular data on all-in interest rates for newly originated real estate loans confirms the impact of QE policies in 2009 and 2012. It also shows the period of high activity in the 2005-07 period, where lenders did not differentiate loan pricing across the risk spectrum much (narrow range). In the immediate post-GFC 2008-11 era, little new lending was done as most existing loans were extended. After 2012, our data indicates a wider range of primary interest rates, as lenders price risk more precisely.

**UK Rates Ahead of the Rest of Europe, with No Significant Brexit Impact Yet**

- All-in rates have been stable over the last two years, with UK annual moving average rates strongly correlated with Europe at an average 67 bps spread since 2003.
- No lasting impact from Brexit on UK interest rates has been noted yet, despite the 20 bps spread increase immediately after the vote.
- However, the UK eligibility for inclusion in covered pools used by many German banks to fund their lending might end.
- This could impact their ability to compete on volume and pricing.

**Robust Primary Loan-by-Loan Dataset as Proxy for CRE Loan Performance**

- Our loan-by-loan dataset contains over 2,300 records with a total original principal amount of €159.5bn from 2003 Q1 to 2019 Q1.
- UK, Germany and France make up 63% of this primary loan origination.
- Rates show pricing at origination and not the performance of the asset after origination - like with the other bond and equity series.
- This limitation in measuring CRE loan performance leads us to exclude any pre-2008 data in the rest of our analysis, since losses for the 2005-07 vintages were very high and not reflected in our figures.
SECTION 2: EQUITY PERSPECTIVE

MSCI EUROPE STOCK INDEX REFLECTS RISK & RETURN FOR LISTED CORPORATE EQUITY (LCE)

- As a proxy for the performance of Listed Corporate Equity (LCE), we use the MSCI Europe Index. This tracks the performance of free-float weighted stocks issued in domestic stock markets.
- With a nearly 27% UK and 14% Swiss component, this selected index reflects investors’ appetite for both non-Euro and Euro-denominated equity risk and returns.
- Please note that this index reflects risk across multiple currencies, unlike the EUR denominated Listed Corporate Bond (LCB) index discussed earlier.

VOLATILE LCE INDEX REFLECTS POLITICAL AND ECONOMIC UNCERTAINTIES IN LAST THREE YEARS

- Over the last ten years, our LCE Index has shown a solid performance ending at 187 to year-end 2018.
- With investors generally moving from stocks into bonds, the LCE index showed weak performance in the immediate years after the GFC 2009-11.
- Stocks were more severely impacted by pre-emptive talks of QE easing and rate normalisation with a significant correction in 2015.
- With political uncertainties, trade disputes and economic slowdown the LCE index has shown significant volatility over the last three years.

LCE RETURN VOLATILITY REDUCED AS GFC IMPACT HAS BEEN MOSTLY ABSORBED

- The average quarterly returns for the LCE Index over the last ten years has been 2.7%.
- Over the same period there has been significant volatility in these quarterly returns ranging between 45% and -33%.
- Q4 2011 stands out as a particularly strong quarter, as the European stock markets bounced back from the Greek sovereign debt crisis as ECB bond buying stepped up.
LISTED REAL ESTATE EQUITY (LREE) OUTPERFORMS LISTED CORPORATE EQUITY (LCE) OVER LAST 10 YEARS

- Over the last ten years, in a simple comparison of Listed Corporate Equities (LCE) index and our Listed Real Estate Equities (LREE) index, it is clear that the latter has outperformed in aggregate.
- The starting point of our analyses does help LREE, as it was impacted more in the 2007-08 GFC than corporate equity.
- LREE index outperformance since 2014 was driven by it benefiting from low interest rates and its relative isolation from global political and trade-related issues when compared to corporate listed equities.

Sources: BAML, Bloomberg, EPRA & AEW

LISTED CORPORATE EQUITY (LCE) AND LISTED REAL ESTATE EQUITIES (LREE) SHOW POSITIVE CORRELATION

- From our scatter diagram of LCE and LREE index returns for each of the 40 quarters in our dataset, it shows that there is a positive correlation. But, as implied by the R-squared at 39%, it is not that strong.
- As a result, we would conclude that there is some overlap in investors allocating to real estate and corporate equities. REIT sector specialists do make up a significant, but not always dominant share of REIT share registers.

Sources: BAML, Bloomberg, EPRA & AEW

LISTED REAL ESTATE EQUITY (LREE) RETURNS ARE MORE STABLE THAN LISTED CORPORATE EQUITY (LCE)

- The average quarterly returns for the LREE index comes at 3.7%, significantly ahead of the LCE Index over the last ten years at 2.7%.
- Relative to the LREE index over the same period, the LCE shows much higher volatility in these returns ranging between 45% and -33%.
- Q3 2011 stands out as a particularly poor quarter for both LREE and LCE performance, triggered by the European debt crisis at the time.

Sources: BAML, Bloomberg, EPRA & AEW
To measure listed real estate equities (LREE), we use the FTSE EPRA NAREIT Developed Europe index. This index is a market capitalisation weighted index that consists of the most widely traded real estate stocks in Europe.

- 56% of the LREE index consists of UK or German listed real estate equities. Other notable countries in the index are the Netherlands, Sweden and France. Please note that companies listed on a specific stock exchange might invest in properties outside this country as well.

- Finally, it is important to note that these proportions are based on Q4 2018 and have moved over time.

Sources: BAML, Bloomberg, EPRA & AEW

Near 60% of LREE index target diversified and residential strategies

- The most popular (33%) strategy pursued by LREE constituent companies can allocate across diversified sectors, followed by single-sector strategies in residential (26%). Retail strategies include shopping centre focused listed real estate securities like Unibail-Rodamco-Westfield.

- Only a small portion (6%) of the listed real estate equities focusses solely on the industrial sector. This seems low given its current momentum, but is in-line with the portion that private real estate investors have been able to allocate to this sector, given the limited stock available.

Sources: BAML, Bloomberg, EPRA & AEW

High dividend yield drives LREE outperformance

- The average 4.4% dividend yield for LREE has been the key driver in its strong performance.

- Despite dividend growth with stock prices increasing more strongly, dividend yields came down from 2011 till 2015. With growth in market rents and lower costs of debt, dividend yields have been steadily growing over the last three years.

- We define dividend yield as the dividend paid during the last twelve months as a percentage of the investable market capitalisation of the index.

Sources: BAML, Bloomberg, EPRA & AEW
LISTED REAL ESTATE EQUITIES (LREE) OUTPERFORMED PRIVATE REAL ESTATE EQUITIES (PREE)

- When we repeat our usual simple comparison of Listed Real Estate Equities (LREE) index and the Private Real Estate Equities (PREE) Index, it is clear that the former has outperformed in aggregate over the ten year period.
- Again, the starting point of our analyses in 2009 helps LREE post a strong recovery, as it was impacted more in the post GFC 2007-08 period than private real estate. This was partly due to higher leverage in LREE.
- But, LREE index outperformance since 2009 was also driven by its higher level of leverage at low cost and access to a broader range of capital.

LISTED REAL ESTATE EQUITIES (LREE) AND PRIVATE REAL ESTATE EQUITIES (PREE) NEGATIVELY CORRELATED

- When we plot LREE and PREE index returns for each of the 40 quarters in our dataset, it shows that there is a negative correlation. But, as implied by the R-squared at 16%, it is pretty weak.
- In fact, there are three quarters of out the 40 that skew the results. Negative correlation does leave significant room for investors to benefit from diversification, something we will address in more detail later.
- However, it is hard to draw any firm conclusions on these data on the overlap in investors allocating to listed and private real estate.

PRIVATE REAL ESTATE EQUITIES (PREE) RETURNS ARE LESS VOLATILE

- The average quarterly returns for the LREE index was 3.7%, significantly ahead of the PREE Index over the last ten years at 1.4%.
- Relative to the LREE index over the same period, the PREE index shows much lower volatility in these returns ranging between 4% and -4%.
- Q4 2016 stands out as a particularly strong quarter for PREE performance, triggered by solid income growth and continued yield tightening.
INREV PROPERTY FUND INDEX REFLECTS RISK APPETITE FOR PRIVATE REAL ESTATE EQUITIES (PREE)

- As a proxy for the performance of Private Real Estate Equities (PREE), we use the average return for the INREV Property Fund Index. This tracks the performance of both core and value add property fund vehicles focused on investing in Europe, including the UK.
- 56% of the funds in the PREE index have a multi-country strategy, while the rest have a specific single country focus.
- As a result of the UK and multi-country focus this PREE index reflects risk across multiple currencies, similar to the other equity indices discussed earlier.

66% OF PREE INDEX FUNDS TARGET MULTI-SECTOR AND RETAIL STRATEGIES

- Consistent with the high level of multi-country strategy, 34% of PREE index fund constituents target multiple sectors. This leaves many fund managers with significant discretion to select from a range of different markets.
- Surprisingly, 32% of funds have a retail-focused strategy. This seems high in respect to the sometimes challenging news flow and sentiment towards the sector.

PREE AVERAGE QUARTERLY RETURNS AHEAD OF THE MEDIAN RETURN

- The average quarterly returns for the PREE Index over the last ten years have been 1.4%. However, the median fund return was 0.9% over the same period.
- This implies that there are a number of large funds in the PREE index that have outperformed most other funds and improve the average fund performance.
- This could imply that smaller funds, which are most likely to be country-specific and/or sector dedicated have underperformed.
SECTION 3: REAL ESTATE IN THE FIXED INCOME AND EQUITY MIX

PRED AND LREB HAVE OUTPERFORMED FROM A FIXED INCOME PERSPECTIVE

- On average over the last 10 years, PRED and LREB performed similarly, albeit significant differences have occurred during the period. Listed Corporate Bonds have underperformed, as indicated in our chart.
- This is largely due to the very large global investor base for corporate bonds bidding up prices and keeping returns modest. Despite their mostly secured credit quality, private real estate debt (PRED) and listed real estate bonds (LREB) require more work and specialised know-how.

PRIVATE REAL ESTATE DEBT (PRED) SHOWS SIGNIFICANTLY MORE VOLATILITY

- Despite their similar 2.1% quarterly average return, private real estate debt (PRED) stands out as significantly more volatile than LREB (and LCB) over the last 10 years.
- Especially the upside and downside spikes of PRED are noticeable with a maximum of 11.7% and a minimum of around -7.9%.
- This higher level of PRED volatility is directly linked to the primary nature of the data, taking into account all-in interest rates for newly originated loans in each quarter, instead of a series of bonds over a longer period of time (LREB & LCB).

PRIVATE REAL ESTATE EQUITIES (PREE) SHOWS BEST RISK-ADJUSTED RETURN

- Private real estate equities (PREE) have the highest risk-adjusted return based on the Sharpe-ratio. This is mainly driven by the low volatility of the INREV total return index.
- On the other hand, listed corporate equities (LCE) have a relative low risk-adjusted return as its volatility is significantly higher than the other asset classes.
- The Sharpe-ratio for Private real estate debt (PRED) is in between listed real estate and listed corporate equities. Since it does not consider performance of existing loans over time, looking only at new loan pricing might overstate volatility in PRED.
**Listed Real Estate Equities (LREE) Outperformed From an Equity Perspective**

- Listed real estate equity (LREE) outperformed both listed corporate equity (LCE) and private real estate equity (PREE) over the last 10 years.
- This outperformance is mainly driven by a strong period of growth from 2012 to 2014 in listed real estate equities.
- On the other hand, private real estate equity (PREE) underperformed.

**Private Real Estate Equity (PREE) Shows Most Stable Returns**

- Private real estate equities (PREE) have been much less volatile compared with listed corporate equities (LCE) and listed real estate equities (LREE).
- Over the past 10 years, both corporate and real estate listed equities show a similar trend, confirming their correlation. This in contrast to private real estate equities which show a much more stable and divergent trend over time.
- Also, it should be noted that listed corporate equities have rebounded in the beginning of 2019 after their correction in Q4 2018.

**Real Estate Adds Diversification Benefits to Cross-Asset Investors**

- Finally, we combine all fixed income and equity asset type total returns in our perspective in a correlation matrix.
- It shows that despite its lower returns, private real estate equity (PREE) offers cross-asset investors potential diversification benefits from its negative correlations with other components.
- The same is also true for private real estate debt (PRED), albeit to lesser extent.
- Other asset type combination correlations all make sense as components within the fixed income or equity perspective have a high correlation.
ABOUT AEW

AEW is one of the world’s largest real estate asset managers, with €65.4bn of assets under management as at 31 December 2018. AEW has over 700 employees, with its main offices located in Boston, London, Paris and Hong Kong and offers a wide range of real estate investment products including commingled funds, separate accounts and securities mandates across the full spectrum of investment strategies. AEW represents the real estate asset management platform of Natixis Investment Managers, one of the largest asset managers in the world.

As at 31 December 2018, AEW managed €31.4bn of real estate assets in Europe on behalf of a number of funds and separate accounts. AEW has close to 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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