ProMS®

Forecasting CRE Capital Expenditure in Uncertain Environments

Radley & Associates Ltd

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Executive Summary

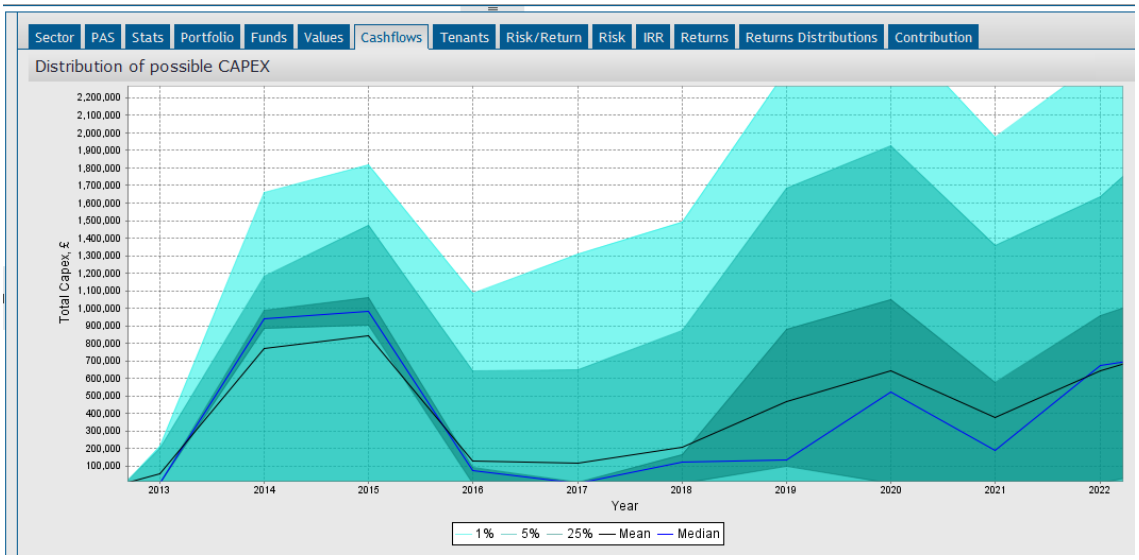
Using simulation methods on an example CRE portfolio, the expected capital expenditure requirements (CAPEX) can be projected at different levels of confidence providing essential planning input to property investors' finance departments.

Background

The amount of capital required for refurbishment of a commercial property portfolio is highly uncertain, depending as it does on future lease events, expected rents, rental uplifts due to changing rental rates and the effects of inflation on costs. With large portfolios, estimating the combined impact of all these factors is challenging.

Case study

Using a simulation system[(1)] for a sample portfolio of diversified assets, we can project the likely requirement for CAPEX at different confidence levels as follows:



Expected CAPEX is high in 2014-15 and again in 2019 -21. On average, CAPEX in 2014 is likely to be about £850,000 but we can be 99% sure that CAPEX in 2014 will not exceed £1.7m

Factors affecting CAPEX planning

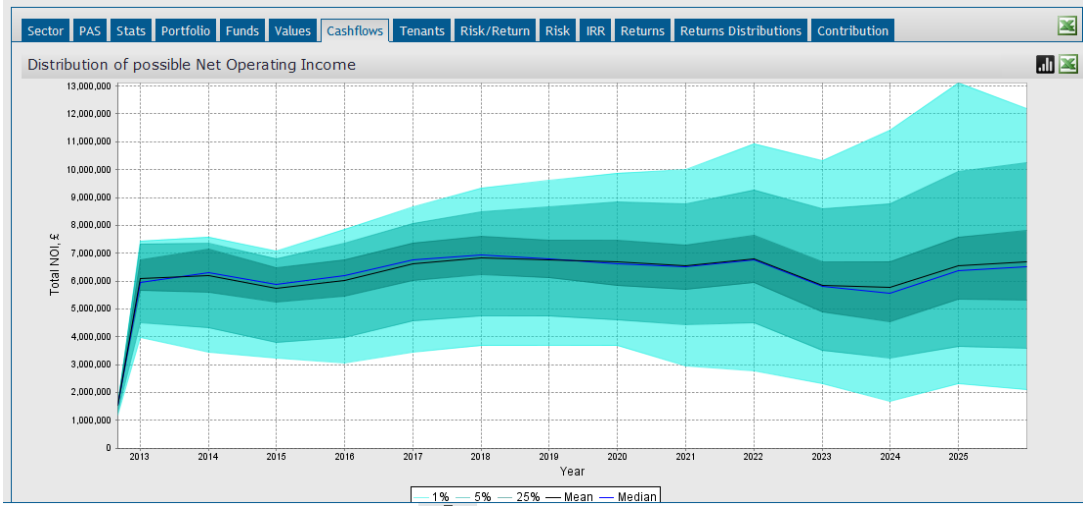
An effective simulation model for CAPEX planning needs at a minimum to include:

- Current refurbishment cost rates for each property sector and inflation scenarios
- ERV and capital depreciation rates for each property type

- ERV and yields as they change with the economy
- Uplifts in valuations and rents associated with refurbishments
- Lease events and the probabilities associated with tenants leaving at each point in time
- Tenant defaults as they change with the economy
- Void length distributions and associated costs

Many of these factors are highly interconnected, so simple Monte Carlo simulation without measuring the cross-correlation of individual factors, tends to significantly underestimate the volatility of CAPEX costs. It is important that simulation systems accurately capture correlations between critical factors such as GDP growth, rental growth, yields, void rates and inflation.

Using the same set of scenarios, we can project the likely range of net operating income form the portfolio to provide a combined cash flow projection for the portfolio.



In this case, the likely CAPEX costs can always be funded from the net operating income of the portfolio

Conclusions

By avoiding the use of a single scenario for CAPEX planning, which is often used with normal spread-sheet models, a simulation system can properly calculate the interrelated effects of changes in tenant behaviour, refurbishment costs and rents to accurately model the range of possible CAPEX requirements for the portfolio.

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(1) The analysis is carried out by Radley and Associates using ProMS, a proprietary macroeconomic simulation system for CRE investments and loans.

Radley & Associates is an independent firm dedicated to the development of advanced simulation based analytics for the Commercial Real Estate industry. Our clients include leading banks, fund managers and REITS. We have deep expertise in property, simulation modelling, econometric analysis and risk.

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