



ProMS[®]

Managing Property Investment Risk

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Not really. Like bonds or shares, commercial property investments provide periodic income (rent, dividends, coupons) and a potential capital gain or loss. Expected returns from CRE investments are affected by general market risks and by property specific risks just like a share or a corporate bond. So although Commercial Property tends to be less liquid, and with higher transactions costs, they provide investors with different levels of risk and return like any other asset.

How can CRE investment performance be compared with that of other assets?

Bond, equity and property investing all have their own terminology but the principles are the same. We have dividend yields and PE ratios or bond yields and IRRs. Each asset class has a measure of *expected investment return* over a given period – for Property investors this might be a 5 year Internal Rate of Return (IRR). But investors in other asset classes also use measures of the *uncertainty* of expected returns: measures of *investment risk*.

What risk measures do other asset classes use?

Perhaps the most common risk measure for investments for longer periods (say 5 years) is the investment volatility as measured by the standard deviation of the expected returns. Investment risk measures also include value at risk (VaR), or tail risk, usually used by those trading in commodities or short-hold financial instruments, being the expected loss of the portfolio in the worst case scenario (say a 1 in 1,000 event).

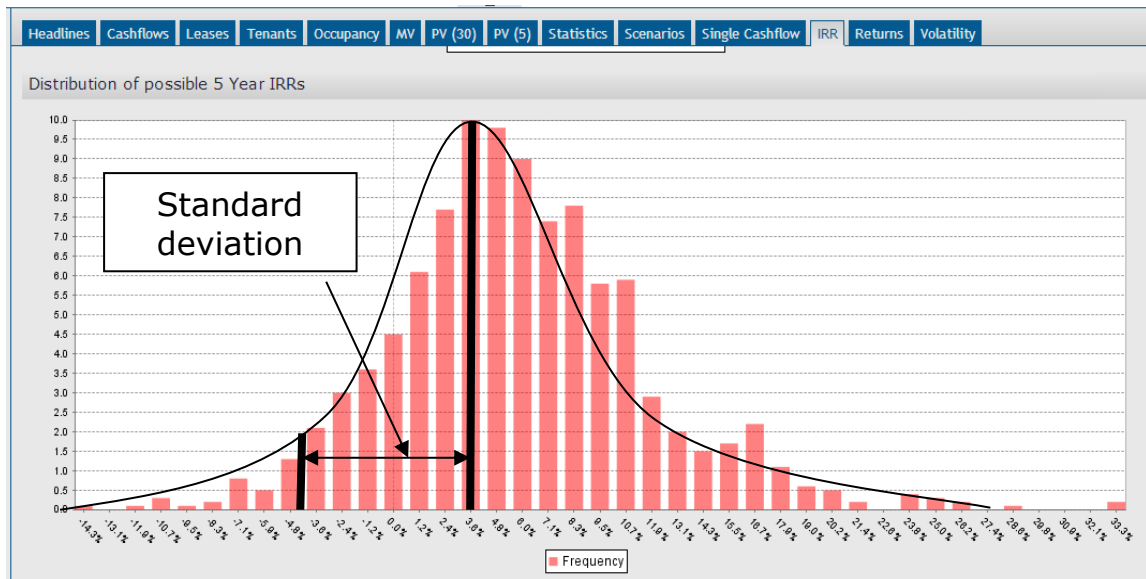
Why is measuring volatility so important to investors?

The reason today's investors only expect 1.6% for a 5-year UK gilt but they expect 9.3% from an equity investment is because of the riskiness or volatility of the equity returns compared with the certainty of the returns on the gilt. The volatility of expected returns for a 5 year gilt, held to maturity is - normally considered - to be about zero. But the volatility of 5 year equity returns is (historically) about 8.1%. So we could say the risk of the equity investment is 8.1% and that investors want about 7.7% extra return (i.e. 9.3% - 1.6%) for the risk. These ratios change over time, but in today's markets, investors expect about 1% more return for every 1% of extra volatility. Unless a property investor can measure the risk or volatility of the expected returns, it is difficult to know if the investment represents an acceptable level of return.

So how can the volatility or risk of CRE investments be measured?

Cash-flow simulation models for CRE are like a normal cash-flow projection, except that all the assumptions about the future (i.e. uncertainties) such as rental growth, void periods, break exercises, rent review levels, tenant defaults, refurbishment costs, inflation and even interest rates, are systematically flexed through thousands of scenarios to generate not just one expected IRR but thousands of possible IRRs. The distribution or range of these IRR estimates can be measured by calculating the standard deviation of the IRRs. The wider the range of possible IRRs for an

investment, the more uncertain the investment performance will be. As returns become more uncertain risk increases – which is shown by a larger standard deviation.



So what is an acceptable level of risk for a CRE investment?

For an investor thinking about a CRE investment, the risk adjusted expected return of the CRE asset should be more than they could achieve by some combination of bonds and equities. If we had two investment opportunities, one has a return of 7% and a standard deviation of 4% and the other had a return of 7% and a volatility of 6% we can make a proper comparison:

	Expected 5 year IRR	Volatility (standard deviation)	Risk adjusted return at 0.95	Sharpe ratio
5 year UK gilt	1.6%	0.0%	1.6%	NA
FTSE 100	9.3%	8.1%	1.6%	0.95
CRE 1	7.0%	4.0%	3.2%	1.35
CRE 2	7.0%	6.0%	1.3%	0.90

The CRE 1 investment is attractive on a risk adjusted basis, but the CRE 2 is not – in today’s markets.

Without being able to systematically quantify CRE investment risk, investors will have a difficult time justifying property asset allocations and the property industry will find it challenging to professionalise this asset class.

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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