



ALTERNATIVE USES FOR PROPERTY DERIVATIVES

About this paper

The purpose of this paper is to examine some more topical uses of property futures in light of current market conditions and regulatory requirements. The areas covered are:

1. Synthetic vs physical real estate for yield
2. Alpha returns/market risk management
3. Beta returns
4. Enterprise risk management
5. Property futures for defined contribution pension schemes

Background

Over the past 25 years, property derivatives have existed in many forms. Property derivative contracts were first launched in 1991 by the London Futures and Options Exchange (London FOX). Since then we have had PICs (Barclays, 1994), total return swaps (2004-12) and, most recently, property futures (Eurex, 2009 onwards).

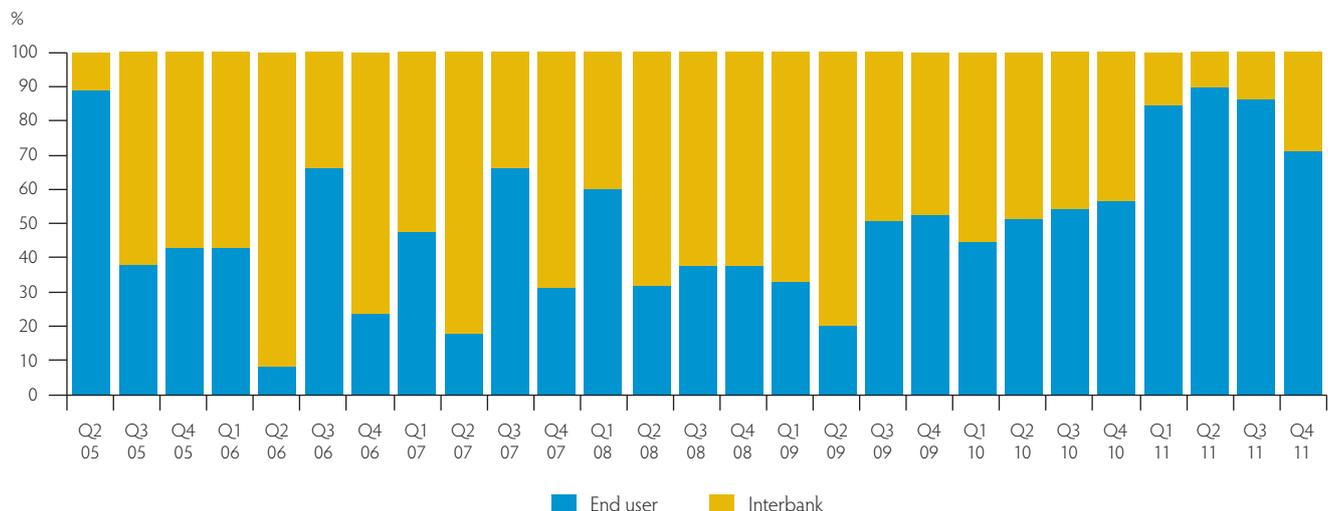
The structure of the property derivative market has also changed over time – see Figure 1. In the period 2004-12 high trade volumes were observed as banks traded over-the-counter (OTC) products between themselves. Since

2009, the market has moved almost exclusively to exchange trade futures traded by end users of the product.

Eurex, the exchange on which property derivatives are traded, currently offers contracts on the following IPD UK Quarterly Property indices for calendar year returns:

- All Property
- All Industrial
- All Retail
- All Office
- City Office
- West End & Midtown Office
- Shopping Centre
- Retail Warehouse
- South Eastern Industrial

Figure 1: Comparison of Interbank and end-user trading 2005 to end-2011



Compared to transactions in physical property, the costs of trading in property futures are significantly lower; round-trip costs in physical property of circa. 8%¹ versus 0.35%² per annum for derivatives. In a market where real yield is key, this gives property derivatives a significant advantage over physical property when used intelligently.

1. Synthetic vs physical real estate for yield

The last eight years have seen interest rates around the world fall to historically low levels and into negative territory in some countries including the Eurozone, Japan and Switzerland. This has put considerable pressure on fund managers who previously relied on fixed income products for a tangible low-risk yield. Whilst the process of 'interest rate normalisation' may have begun, in many countries it is unlikely that central bank rates will reach levels that would have been regarded as normal pre-Global Financial Crisis for many years to come.

Real estate has benefitted significantly from this low interest rate environment due to its comparatively high yield and index-linked properties. As a result, values have soared to levels in excess of the debt-fuelled levels observed in mid-2007. Some in the market are now of the view that values are at a turning point but, in the absence of any freely-available alternatives, it is possible that the real estate market will 'Keep Calm and Carry On', albeit begrudgingly, for at least the next 12 months.

Case study 1: Comparison of synthetic and physical real estate yields

Where 'yield' is the key investment objective, the ability to reduce costs can be profound. Consider the following investment recommendation:

"We propose to invest in a well-established industrial park inside the M25 with passing rent of £1m per annum. Offers are sought at circa. £18.8m, which would reflect an initial yield of 5% (allowing for standard purchaser's costs). We believe that the market can support income growth of 2% per annum. The property would therefore provide an unleveraged internal rate of return (IRR) of 6.02% over seven years."

In the current market, this would be a sensible proposition. If one strips out the purchase costs, this deal would offer a rental yield (income return) of 5.325%, with an assumed 2% capital growth per annum coming from the rental growth, i.e. 7.325% total return per annum over the next seven years.

If this performance could be replicated using property futures, the IRR would increase from 6.02% to 7.19%³.

Lower transaction costs mean that by using property futures one can also achieve greater exposure to property returns; total transaction costs for physical property in this instance equal £1.504m versus £488,000⁴ for the property futures. In addition to this, when using property futures the investor receives interest on the principal amount.

A property future, of course, only offers a beta return. The investor does not benefit from any property-specific or asset management benefits. On this point, though, it is worth considering:

- Picking the properties that will provide better than beta returns takes a lot of time and involves greater risk. By contrast, a property futures strategy can be implemented quickly and has less basis risk to individual properties. A beta return is better than no return!
- Is the investment for the yield per se or because it is expected that there will be a further fall in yields?
- When managing a large portfolio of assets, the average return will tend towards the index return through diversification.
- Case study 1 does not include additional costs associated with the ownership of physical real estate, such as asset management fees and agency fees, all of which will reduce the IRR of physical property relative to property futures.

2. Alpha returns/market risk management

The term 'alpha' refers to the unique performance of a particular asset, or portfolio, relative to the wider market. Alpha can result from a number of factors including:

- Supply and demand for certain property within a specific geographic area.
- Specific location of a particular property.
- Increased rent following refurbishment or other capital expenditure.
- Re-gearing under-rented properties.

All of the above will affect the unique returns derived from any particular property asset.

'Beta' is the market return and what is measured and reported by MSCI in the IPD indices. Buying and selling property futures is therefore buying and selling beta risk.

A common concern for fund managers is the potential for real estate yields to rise. There is demand, therefore, for a simple and effective way to rebalance risk. Doing this in the physical real estate market is expensive, time consuming and destructive to alpha. Doing this with property futures is much simpler and allows fund managers to retain all the alpha that has been generated through thoughtful stock selection and asset management initiatives within their real estate portfolios.

1 Percentage comprises purchase costs (including stamp duty land tax (SDLT)) and 1.25% selling costs.

2 0.35% covers brokerage, clearing and exchange costs. Note: This represents one-way costs only as it is assumed that the respective contract expires naturally.

3 This assumes that one is able to purchase IPD futures at a value of 100.

4 Equates to seven annual contracts with a notional of £19,930,224 (£69,715 per contract).

Case study 2: Capturing alpha from refurbishment, while reducing exposure to the sector

The scenario in this case study is:

- A fund manager with £2bn invested in real estate
- 30% of the portfolio invested in City offices (10 properties)
 - Four properties subject to refurbishment (18 months until practical completion)
 - Forecast return on capex is 20%
- Post-Brexit, the fund manager no longer wants such a large exposure to City offices
- The fund manager wants a greater exposure to industrial and logistics

The fund manager could market all 10 offices and start to replace them with industrial and logistics assets.

However, selling the properties that are being refurbished would mean that the fund would miss out on the expected 20% return on capital expenditure. With regard to these four properties, a solution would be to sell 'City Office' property futures and buy 'Industrial' property futures equal to the capital value of the properties being refurbished. This removes the market risk (beta risk) associated with City offices, allowing the refurbishment work to be completed and the fund to realise the return on its capex (alpha return).

Selling City Office futures only immunises the fund against further movements in cap rates. This is no different to any other type of hedging, e.g. hedging interest rates with a swap does not mean that investors no longer have any debt, it just means that they are not at risk from a rising cost of the debt.

Case study 2 is based upon a portfolio of existing assets. The same principles can be applied to new investments as well, i.e. sell the beta risk from the outset and invest solely in the alpha return.

Development – the biggest source of alpha

Nobody suffers the turning tide more than developers. It does not take a large increase in cap rates to wipe out all development profits within a given scheme. It is understandable, therefore, that developers are increasingly wary of committing to large, new schemes which may take many years to complete.

Selling property futures equal to the value of the property can help shield developers from falling capital values and hence the profitability of the proposed scheme. For the hedge to work, the developer needs to complete the project without material delay and have it fully let before the hedge expires. The developer is still exposed to changes in the occupational market, but this would have been the case in any event.

3. Focus on beta

Investing in direct real estate is generally viewed as investing for alpha. Stock selection is based upon things such as sector preference and potential for rental growth, all of which are indicators of future alpha. However, there may be times when the level of inflows and/or outflows of capital in a fund mean delivering market returns (beta) as a minimum is of primary concern over the short term.

A fund manager with a new allocation to real estate has the following principal routes to investment:

- Direct property
- Listed vehicles
- Unlisted funds
- Property futures

Alongside direct real estate, listed vehicles (equity in particular) and unlisted funds are alpha investments. The very nature of being listed means that the directors, or managers of the listed vehicle, will always look to report superior performance to justify the price of the share or unit. This kind of superior performance can only be derived from alpha. Unlike direct real estate, listed vehicles offer much greater levels of liquidity but also suffer additional risk that comes from being listed; is a REIT stock part of an equity allocation or a real estate allocation? The answer is that they are both and the value of a REIT stock can be affected by risks specific to real estate, but also risks specific to equity⁵.

Unlisted funds are probably the most explicit in targeting alpha. Unlisted funds will typically have asset management incentives based on performance relative to a MSCI IPD benchmark or IRR hurdle rates. The only way for a fund manager to achieve these targets is by buying smart and managing the properties well, thereby generating alpha returns. Investing in an unlisted fund can be expensive; the best fund managers will charge a higher management fee. The unlisted route is also likely to offer a lower level of liquidity than the listed sector – the degree is very dependent on the specific fund under consideration.

Property futures are the obvious choice if a fund manager wants to invest solely in the market beta. The return from a property future will be the benchmark return (MSCI IPD index) with an adjustment for the purchase price; e.g. if the investor buys at 102 and the market returns 107 (7% for the calendar year) then the investor will receive 5%.

Whilst portfolio theory tells us that buying enough direct real estate means that the diversified returns will tend towards the market beta, it is a very expensive way of achieving the beta return. This is also not what fund managers are seeking to achieve, given the large payroll, property and asset management costs, if they are to retain and win mandates from investors.

By contrast, a large portfolio of property futures could be managed by a very small team. So when compared to a large portfolio of direct property that is only returning the

⁵ See Section 5, 'Property futures for defined contribution', and the analysis of REIT prices around the Brexit referendum.

market beta, the profitability of the derivative portfolio would be greater due to lower transaction and management costs.

Whilst property futures may only return the market beta it is still possible to generate an alpha from them. If the fund's benchmark is the MSCI IPD UK All Property Index, the fund may still outperform this by investing in different, more profitable sectors and sub-sectors of the Index.

The question then remains: Is beta enough? To answer this, one must consider what beta is. By buying the beta an investor would expect income return (average rental yield) and capital growth. However, capital growth also includes rental growth as increases in rents and future expected rents are capitalised.

Over the long term, real estate has inflation hedging characteristics. In the absence of any change in cap rates a beta investment would expect to deliver the average rental yield and capital growth, which tends to increase with inflation. Property futures can be a good way to access this inflation hedging since leases on commercial property are normally subject to review every five years and not all of them will adjust in line with inflation; some properties may be over-rented (and therefore remain as they are), some leases may have fixed uplifts or RPI caps and floors. The inherent diversification of futures is the key as one would need a very large portfolio to see any kind of correlation with annual inflation.

The largest portfolio in the market is, of course, the MSCI IPD UK All Property Index, which can only be traded via property futures.

4. Enterprise risk management

The application of property derivatives for the purpose of enterprise risk management (ERM) has, surprisingly, been largely overlooked. This is particularly puzzling given how well real estate has performed in recent years, relative to other asset classes. Property futures can be used to manage one's overall exposure to real estate and, by extension, the associated regulatory capital (via Solvency II or Pillar II).

Case study 3: Bottom-up risk management

The scenario in this case study is:

- A fund manager is keen to acquire a piece of real estate but this would lead to the sector limits being exceeded.
- The deal involves purchasing real estate, seeking planning permission for a vertical extension and general refurbishment and then selling the asset on with the benefit of planning permission.

The fund manager is able to stay within the sector limits if, when buying the asset, the exposure is hedged by selling property futures. Leaving aside any basis risk, the net new exposure is small. This allows the fund manager to implement the business plan, seek planning permission and generate the alpha from the deal.

Bottom-up risk management

Bottom-up risk management refers to managing risk at the level of the individual transaction. Case study 3 gives an example of how property futures can be used in this regard.

Top-down risk management

Top-down risk management refers to risk decisions that are made at a higher level within the institution, such as risk management committees that are looking at exposure to all asset classes and not just real estate. Case study 4 gives an example of how property futures might be used in top-down risk management.

Case Study 4: Top-down risk management

The scenario in this case study is:

- FundCo is a firm that operates numerous funds across all asset classes.
- It is standard practice that FundCo has a co-investment in each fund and receives a performance-linked fee relative to the performance of the funds.
- FundCo's real estate funds are invested in a broad mix of real estate and have performed exceptionally well.
- As a result, the value of FundCo's co-investment in these, the fund has grown significantly, and its exposure to real estate (on its own balance sheet) is now far greater than it is to any other asset class.
- In addition to this, the increased value of the real estate co-investments mean FundCo's assets have now grown to a point where it will soon have to make additional allocations for regulatory capital under Pillar II.
- FundCo is not in a position to sell assets as the funds are managed under contract to individual investors and they must be allowed to run their course. Similarly, bottom-up risk management does not apply as the funds do not have a mandate to trade in property futures and, in any event, the investors would not wish to see the performance of the funds inhibited in any way.

The solution is for FundCo to sell property futures from its own balance sheet and reduce the exposure that has arisen via the co-investments. Selling property futures will reduce the value-at-risk (VAR) from a 1-in-200 year shock (testing requirements under Pillar II).

Top-down risk management may also include using property futures to increase exposure in the short term in the event of increased contributions and a shortage of suitable investment real estate assets available for sale. Similarly property futures can also be used to increase, or reduce, exposure quickly in the event of a change in allocation to real estate.

Combining bottom-up and top-down risk management

All risk management strategies are easier to apply and more successful if agreed and adhered to from the outset; applying retrospective risk management is always harder. In

an ideal world, fund managers and risk committees should agree position and VAR limits, and testing methodology at the outset. Regular meetings should be arranged to discuss how and where risk management strategies are to be applied.

The level of granular data available to fund managers will always make bottom-up risk management easier. However, any derivative strategy applied at fund level must be to the benefit of the investor and specifically approved. In a bull market, investors may not approve of any kind of hedging strategy – leaving top-down risk management as the only option for the risk committee. In today's more cautious market, though, investors may favour a more restrained approach that seeks to leverage the skill of the fund manager, rather than relying on market returns.

Top-down risk management and tactical asset allocation

In late 2004, Prudential entered into a total return swap with British Land, with Prudential selling real estate exposure. Whilst both counterparties had a vested interest in testing the property derivatives market, they also had a strategic purpose for entering the swap. For British Land, it was an opportunity to buy IPD returns at what it believed was a reasonable price. Prudential, on the other hand, wanted to switch exposure temporarily from real estate to emerging market equities without having to sell its underlying real estate assets. The trade was successful for both counterparties; British Land made money on the property derivative and Prudential's gains in emerging market equities far exceeded the losses it made on the total return swap.

The trade between British Land and Prudential is famous for being the first ever derivative trade on the IPD indices. This trade should also be famous for being the first example of top-down risk management using property derivatives; Prudential's requirement to shift risk from one sector to another was implemented by selling property returns using a property derivative. The advantage of re-allocating risk in this way is that it can be done without disrupting the existing portfolio of assets or any ongoing asset management strategies (preserving the alpha within the property portfolio).

This kind of risk management can be implemented just as easily today, in a regulatory approved environment, using property futures and is as valid a strategy as it was 13 years ago.

5. Property futures and defined contribution pension schemes

The switch from defined benefit to defined contribution (DC) pension schemes has not been easy for real estate. This is largely due to the fact that DC platforms require pension schemes to produce daily pricing, allowing investors to switch in and out of funds using up-to-date valuations. Real estate assets, by contrast, are typically valued quarterly or annually.

Despite the liquidity requirements of DC pension schemes, fund managers have devised ways of including physical real estate through hybrid funds. A hybrid fund might comprise 70% physical real estate assets and 30% REIT shares. The daily price change in the physical assets is inferred by reference to the daily price change of the REIT shares, allowing the fund manager to show daily pricing for the fund.

There are however potential issues with using REIT shares within hybrid funds. If held over a long period, REIT shares can be a good proxy for physical real estate. However, in order to achieve a reasonable correlation, the portfolio of property shares must be managed like a tracker fund with shares picked in order to reduce tracking error as opposed to their individual merits. Even if every effort is made to reduce tracking error, there is still no guarantee that over shorter periods, particularly in periods of market distress, the correlation will hold. One must therefore accept that the value of REIT shares can be affected by a number of factors other than the value of its underlying real estate.

A good example of this asymmetry is the behaviour of real estate shares after the Brexit vote (held on 23 June 2016). Immediately following the UK's decision to leave the EU, the Index of FTSE 350 REITs fell by around 23%. By contrast, over the same period the whole FTSE 350 fell by only 7%. Why was this? Some say that the greater fall in REIT shares is down to uncertainties that Brexit causes in the occupier market, particularly amongst financial tenants in the City of London. Others say that REIT shares were held by many funds as a 'liquidity barrier' and were therefore sold as demand for redemptions increased. Another compelling argument is that many UK REITs were disadvantaged, relative to other shares, by virtue of the fact that they typically do not have large overseas earnings – these became more valuable when the value of the pound fell. Probably, the margin between REIT shares and the FTSE 350 can be explained by a combination of all three factors.

Figure 2 (overleaf) illustrates the disproportionate fall of FTSE 350 REITs versus the wider FTSE 350 Index following the Brexit vote. For simplicity, both indices are rebased at 100 as at 1 June 2016.

In addition to REIT shares, fund managers may want to consider using property futures within their hybrid funds. Property futures offer daily settlement pricing (via Eurex) but they are less susceptible to equity specific risk. Although not as liquid as REIT stocks, property futures also offer a natural liquidity barrier as futures contracts are margined (as opposed to fully-funded). This means that, unless the fund is deliberately creating a leveraged position in real estate, there is a reserve of cash that can be used to provide liquidity in periods of market stress. Another alternative might be to use a structured note, which provides a return linked to MSCI IPD indices.

A further advantage is that by widening the pool of assets within a hybrid fund, the fund manager has more data to reference when inferring the value of the physical property assets.

Figure 2: Comparison of REIT and FTSE 350 share price indices before and after the Brexit vote on 23 June 2016



Conclusion

The purpose of this paper is to highlight the variety of uses for property futures. In doing so, a number of areas have been identified where real estate exposure is desirable but there are inherent associated risks. As illustrated, property futures can be used to reduce or manage these risks.

Property futures may also have the ability to reduce systemic risk. The devaluation of REIT shares post-Brexit Referendum, whatever its cause, points to structural problems within the market. If this is indeed driven by the requirement for a liquidity reserve it is hard to imagine that property futures could not be part of the solution. Since one posts margin when trading property futures, as opposed to fully funding the investment, it creates a natural liquidity reserve.

Whilst a number of the case studies and examples contained within this paper make fortuitous assumptions, and some areas require more detailed analysis and research, it is the view of the IPF Property Derivatives Interest Group that greater use of property futures could lead to a more efficient real estate investment market. Not least because a large, liquid futures market has the ability to create a short-term yield curve that would be invaluable for market participants and offer investors much greater transparency.



About the Property Derivatives Interest Group (PDIG)

PDIG was set up by the IPF in 2005 to support the development of the market, partly in response to the needs of investors and partly following the changes to the regulatory and tax environment, which made property derivatives more accessible and attractive.

The lead author of this paper is **Bill Bartram**, IRM Solutions Ltd with assistance from other members of PDIG.

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The PDIG papers

'Alternative uses for Property derivatives' is the third paper in the series published by PDIG. These papers are intended to provide information as to how property futures can be used as part of a real estate strategy. The previous papers in the series are:

PAPER 1: Property Future Contracts: an Introduction

PAPER 2: Managing Commercial Property Risk: A Different Perspective

Copies of all three papers can be downloaded from the IPF website:

www.ipf.org.uk/industry-involvement/ipf-special-interest-groups/property-derivatives-interest-group-pdig

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