



PROPERTY FUTURE CONTRACTS: AN INTRODUCTION

The **Property Derivatives Interest Group (PDIG)** is pleased to present this brief but informative paper about property future contracts. It is important for the UK property industry to understand property futures because they are highly flexible financial instruments that can potentially increase returns and reduce risk in a traditional real estate portfolio.

This is the first in a series of papers about property futures to be produced by PDIG. Subsequent papers will expand on many of the concepts explored here, ranging from pricing to property risk management techniques.

1: Why consider property futures?

They enable the implementation of quick, low-cost and dynamic real estate strategies not thought possible before. Such strategic uses include:

- **Property fund managers:**
 1. Reduce tracking error;
 2. Reduce cash drag;
 3. Portfolio rebalancing between sectors/sub-sectors;
 4. Lock-in future property returns to give certainty of return and the potential for risk reduction at the portfolio level.
- **REIT managers:**
 1. Relative value opportunities;
 2. Smart beta strategies.
- **Asset allocators & multi-asset managers:**

Manage real estate exposure in an efficient and low-cost way.
- **Defined contribution (DC) funds:**

Provide exposure to real estate in an efficient and low-cost way.

2: How large is the market and who uses it?

During the last 10 years, around £26bn worth of contracts have been executed in the UK¹.

Whilst the market has slowed following the Global Financial Crisis (GFC), there is currently renewed focus

¹ Property futures are a slight variant on property swap contracts. Whereas property swaps were more common prior to the Global Financial Crisis (GFC), property futures have taken their place (a consequence of regulation). Combined, property futures and property swap contracts over the last 10 years have amounted to around £26bn.

from, and deal execution by, large well-known organisations, smaller property funds and private high net worth individuals.

3: What are property futures?

Simplistically, property futures enable users (e.g. fund managers) to express a view on the future performance of commercial real estate (as measured by a property index).

For example, a buyer and seller may enter into a contract today whereby they set a price of 8.0% (the property futures price) on the total return performance of the UK commercial property market (as measured by the IPD UK Quarterly All Property Index) for next year (calendar year 2016). If, at the end of 2016, the calendar year percentage change in the index is 10.0% then:

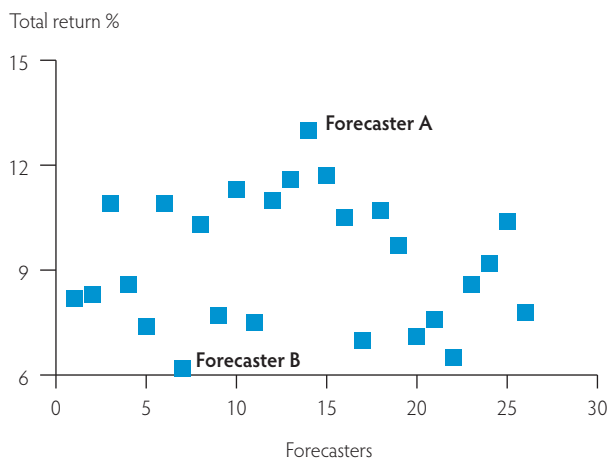
- The buyer will profit by 2.0% (10.0% less 8.0%);
- The seller will lose 2.0% (8.0% less 10.0%).

If the size of the contract is £50m, the buyer will profit by £1m (2.0% of £50m) and the seller will lose £1m. (NOTE: There is no exchange of direct property; rather an exchange of cash flows based on the contract between buyer and seller.)

So, what is the motivation for the buyer and the seller to enter into such a transaction? The answer is simple: both parties have different expectations about future return performance. To demonstrate how this can be, Figure 1 shows 26 individual property forecasts of the performance of UK All Property total returns for calendar year 2016. Based on this range of forecasts and a property future price of 8.0%, it would be advantageous for:

- **Forecaster A** (providing the most optimistic forecast for 2016 at 13.0%) to buy a property future at 8.0% because, if this forecast is correct, A should expect a return of 5.0% (13% less the price paid for the property future at 8.0%).
- **Forecaster B** (providing the most pessimistic for 2016 at 6.2%) to sell a property future at 8.0% because, if this forecast is correct, B should expect a return of 1.8% (the property future price of 8.0% less forecast of 6.2%).

Figure 1: UK All Property Total Return – IPF Consensus Forecasts (for 2016)

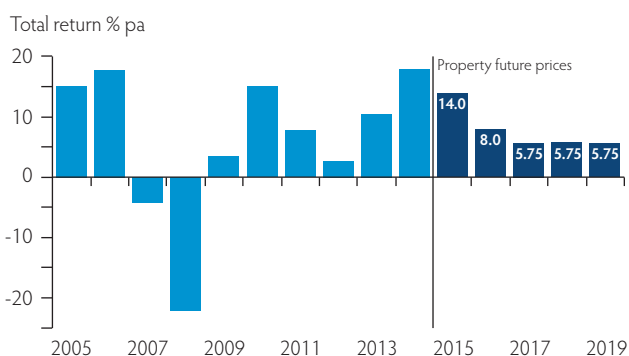


Source: IPF UK Consensus Forecasts, August 2015

So far, the focus has been on property future contracts for calendar year 2016, but contracts can be executed on any future calendar year period of the index for the next five years (2015, 2016, 2017, 2018, and 2019) – giving users the flexibility to isolate a specific calendar year period(s) that interests them.

Figure 2 shows the historical performance of UK All Property total returns, with the property future prices for each calendar year from 2015 to 2019 as at 22 September, 2015. What is notable about the property future prices in Figure 2 is that they resemble property forecasts for UK All Property total returns. But, as shown in Figure 1, there is a range in the forecasts, representing value for potential buyers and sellers. (Pricing and the development of a simple pricing framework are discussed in sections 7 and 8.)

Figure 2: UK All Property Total Returns & Property Future Prices (@ 22 September, 2015)



Source: MSCI, PDIG

4: Which commercial property indices do property futures use?

Property futures use MSCI's range of IPD property indices. The property indices available at the broad composite, sector, and sub-sector level are:

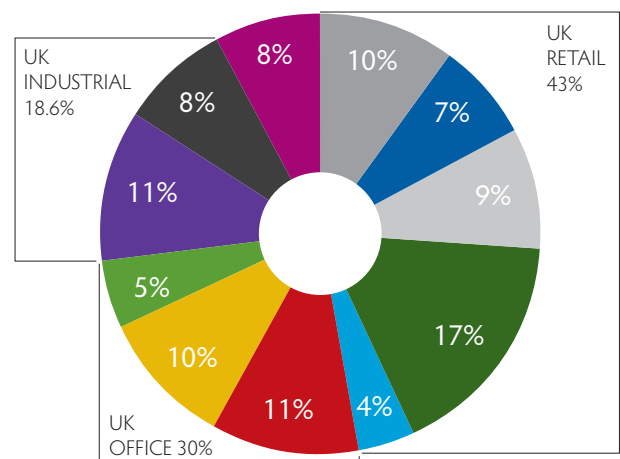
- **Composite level:** UK All Property
- **Sector level:** UK Office, UK Retail and UK Industrial
- **Sub-sector level:** UK Retail Warehouses, UK Shopping Centres, London City Offices, London West End & Mid Town Offices and South East Industrial

5: What do MSCI's IPD property indices measure?

MSCI's range of IPD indices measure the broad performance of unlevered (without gearing) direct commercial property in the UK.

The main property index on which property futures are based is the IPD UK Quarterly All Property Index, which is underpinned by nearly 10,000 properties across the retail, office and industrial sectors, with a combined value of around £145bn – see Figure 3. This is far more diverse than any individual property fund – for example, British Land, one of the UK largest REITs, is underpinned by property worth over £13bn.

Figure 3: Composition of the UK IPD Quarterly All Property Index (@ 30 June, 2015)



- Standard Retail – South East
- Standard Retail – Rest UK
- Shopping Centre
- Retail Warehouse
- London City Office
- London West End & Mid Town Office
- Office – South East
- Office – Rest UK
- Industrial – South East
- Industrial – Rest UK
- Other

Source: MSCI

Note: Index comprises £145bn, 9,618 properties

MSCI's range of IPD indices are well ingrained in the UK commercial property market with over 30 years of historical index performance and are widely used as a benchmark for many UK property funds.

6: What is the typical transaction size? How liquid is the market? What is the cost?

Property futures can be transacted in any size starting from as little as £50,000. Typical transactions over the past year have ranged between £1m and £25m.

In terms of liquidity, whilst the property futures market is relatively small at present, it is possible to exit from transactions reasonably quickly (certainly much more rapidly than for direct or unlisted property).

It is also possible to factor liquidity into the pricing of property future contracts by considering a 'liquidity risk premium'. Of course, such a premium is subjective, and each party will have a view, but it will range typically between 0.0% and 3.0% per annum. *(The application of this premium is illustrated in section 8.)*

The buying and selling costs of a property future vary between 0.1% and 0.5% (depending on whether brokerage services are required), compared with a 'round-trip' of circa 7.0% for direct property.

7: How are property futures priced?

As with the pricing of any asset (e.g. stocks and bonds), the pricing of property futures is driven by demand and supply.

As shown in Figure 1, there is a broad range of forecasts of UK All Property total returns in 2016. Within this range are potential buyers (demand) and potential sellers (supply) of the index. What determines whether a buyer or seller enters into a property future contract is the opportunity to profit.

8. Developing a simple pricing framework

It is possible to develop a simple pricing framework to establish whether property futures pricing levels on a given day represent an opportunity to buy or sell. This requires four key inputs:

1. The individual's forecasts for the property index;
2. The property futures price on the property index at the time (typically sourced from a bank or a broker);
3. The individual's view on the liquidity risk premium of property futures (see section 6); and
4. Cost (see section 6).

Using these inputs, it is possible for an individual to identify whether to be a buyer (Table 1) or seller (Table 2). For example, if the inputs generate a positive expected return (such as those in the shaded blue cells in Tables 1 & 2) then the individual may want to consider using a property futures contract for those particular calendar years.

Table 1: BUYER FRAMEWORK EXAMPLE: IPD UK Quarterly All Property Index (@ 22 September, 2015)

	2015	2016	2017	2018	2019
	%	%	%	%	%
Buyer's Total Return Index forecast	16.0	5.0	1.5	10.0	8.0
Less Property Future Price	14.0	8.0	5.75	5.75	5.75
Less Liquidity Risk Premium	0.0	1.0	2.0	2.0	2.0
Less Cost	0.2	0.5	0.5	0.5	0.5
Expected Return	1.8	-4.5	-6.75	1.75	-0.25
Potential BUY?	BUY	NO	NO	BUY	NO

Table 2: SELLER FRAMEWORK EXAMPLE: IPD UK Quarterly All Property Index (@ 22 September, 2015)

	2015	2016	2017	2018	2019
	%	%	%	%	%
Property Future Price	14.0	8.0	5.75	5.75	5.75
Less Seller's Total Return Index forecast	16.0	5.0	1.5	10.0	8.0
Less Liquidity Risk Premium	0.0	1.0	2.0	2.0	2.0
Less Cost	0.2	0.5	0.5	0.5	0.5
Expected Return	-2.2	1.5	1.75	-6.75	-4.75
Potential SELL?	NO	SELL	SELL	NO	NO

Source: PDIG

Whilst the tables show a framework for pricing of the IPD UK Quarterly All Property Index on 22 September, 2015, the same approach can be used for the other IPD indices on which property futures are based on any given day.

9: Where can one find pricing for property futures?

Generally, the best place to start for pricing is to contact a bank or a broker specialising in property futures.

NOTE: As with direct property, the price quoted may be negotiable.

10: How are property futures executed?

While stocks like British Land and Land Securities are traded on the London Stock Exchange, the EUREX Exchange is where property futures are traded and cleared. The EUREX Exchange is financially regulated and is one of the largest exchanges in the world.

11: What is the credit risk of a property futures transaction?

The credit risk is extremely small, regardless of the nature of the counterparties. The credit risk of both the buyer and seller is held by the Clearing House, EUREX Clearing as it acts as a central counterparty (CCP) to each and every trade, thus mitigating credit risk. CCPs are highly regulated, offering the highest forms of credit risk mitigation.

12: How volatile are property futures prices?

The prices of property futures on different IPD indices can change daily. Generally, however, price volatility is lower than for REITs, but slightly higher than for direct property.

Arguably, if direct property volatility was correctly adjusted to account for valuation smoothing, property futures pricing volatility would be similar to that of direct property exposure.

13: ILLUSTRATION using property futures to rebalance a direct property portfolio

SCENARIO: A UK property fund is benchmarked against the total return performance of the UK All Property Index. As at 22 September 2015, relative to its benchmark, the fund has an underweight position of £50m to London City Offices and an overweight position of £50m to UK Retail Warehousing.

The fund would like to re-balance this position because:

- It brings the weighting in line with the benchmark, thus reducing tracking error; and
- The fund expects City Offices to outperform retail warehouses in calendar year 2016 by 5.0% (12.0% City Offices vs 7.0% Retail Warehouses), hence adjusting the weighting would be expected to give a boost to the overall portfolio return of the fund.

Using direct property to undertake such a rebalancing would be virtually impossible because of the high costs and the time to find the correct physical assets. By using property futures, however, the fund could effect such a strategy if it was to:

- Buy £50m IPD UK Quarterly City Office Index for calendar year 2016 and; simultaneously
- Sell £50m IPD UK Quarterly Retail Warehouse Index for calendar year 2016.

To implement this strategy, the fund must be mindful of cost. There is no point in entering into this property futures transaction if the cost of execution is too expensive.

Using the pricing framework developed in section 8, Tables 3 and 4 show the costs of buying 2016 London City Offices and selling UK Retail Warehouses respectively. Based on the fund's forecasts of City Offices and Retail Warehouses for 2016, and the price paid to execute 2016 property futures on both indices, there would be a positive expected return, after costs, of 3.5% (2.75% from Offices and 0.75% from Retail Warehouses). This is a favourable outcome, while anything below 0.0% (on the aggregate expected

returns from City Offices and Retail Warehouses) would mean that the fund was destroying value and it would be better off not entering into such a contract.

Table 3: Buyer of 2016 IPD UK Quarterly City Office Index (@ 22 September, 2015)

	Calendar year 2016
Fund's forecast: London City Offices Total Return	12.0%
Less Property Futures Price (City Offices)	9.0%
Less Liquidity Risk Premium	0.0%
Less Cost	0.25%
Expected Return	2.75%

Table 4: Seller of 2016 IPD UK Quarterly Retail Warehouse Index (@ 22 September, 2015)

	Calendar year 2016
Property Futures Price (UK Retail Warehouses)	8.0%
Less Fund's forecast: UK Retail Warehouses Total Return	7.0%
Less Liquidity Risk Premium	0.0%
Less Cost	0.25%
Expected Return	0.75%

Source: PDIG

So by executing the trade, the fund has achieved the following:

- Rebalanced the portfolio for calendar year 2016 in line with its benchmark and reduced tracking error; and
- Boosted returns by 3.5% on £50m if its 2016 forecasts for City Offices and Retail Warehouses are correct.

About 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.

This paper was written by the PDIG Committee, the members of which are:

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