IPF Research Programme

Residual Land Values: Measuring Performance and Investigating Viability

APRIL 2018

SUMMARY REPORT

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This Programme supports the IPF's wider goals of enhancing the understanding and efficiency of property as an investment. The initiative provides the UK property investment market with the ability to deliver substantial, objective and high-quality analysis on a structured basis. It encourages the whole industry to engage with other financial markets, the wider business community and government on a range of complementary issues.

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Residual Land Values: Measuring Performance and Investigating Viability

Report

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Research Team

Steven Devaney, *Henley Business School, University of Reading*
Neil Crosby, *Henley Business School, University of Reading*
Peter Wyatt, *Henley Business School, University of Reading*

Project Steering Group

Simon Marx, *LaSalle Investment Management*
Richard Yorke, *CoStar*
Sue Forster, *IPF*
Pam Craddock, *IPF*

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Disclaimer

Executive Summary

- Data on land values is important for market analysis and policy making. This research paper reviews sources of land prices and land value estimates and finds that there is little data available in the UK on land prices or values, particularly for commercial land uses.
- A residual valuation model is used to estimate land values for hypothetical schemes in selected cities and regions of Great Britain. The residual land values are not market prices and do not capture the option value associated with real sites, but they give an indication of value for immediate development before planning obligations. Residual land values are analysed to determine whether changes in the viability of different land uses are driven primarily by costs, rents or pricing.
- Land uses that have been modelled include residential apartments, offices, high street shops, industrial units and retail warehouses. Quarterly estimates of residual land values were produced from 1995 to 2016 for apartments and from 1997 to mid-2017 for the commercial land uses.
- The findings reveal a North/South divide in land values for all land uses analysed and, in some parts of the country for some uses, development would not be viable without intervention.
- Movements in residual land values through time are mainly driven by the largest input into the valuation model, development value. One reason for this is the lack of volatility in the construction costs estimates used for this analysis.
- As a proportion of development value, residual land values have remained fairly stable across the different property types over the time period studied. The exception is during the 2007/2008 Financial Crisis when land values dropped to lower proportions across all the sectors. This indicates greater falls in land values than in the value of the associated developed asset, reinforcing the gearing effect and greater volatility of land values.
- Land value forms the highest proportion of development value for high street retail and retail warehouses in relation to other uses. For most land uses, land values are also a higher share of total value in London relative to other regions and locations.
- This research adds to existing knowledge of land values. It also increases the transparency of land markets and could assist policy-making in relation to land value capture. It establishes a framework for continued recording of land value trends into the future, setting out the limitations of the approach. Finally, it invites discussion on the suitability of this framework for the creation of a development land value series for the UK.

1. Aims of the Project

There is a paucity of data on commercial and residential land values in the UK. Constructing indexes of land values is challenging because of the thinly traded nature of land markets and the heterogeneity of the sites that are traded. As such, other attempts to track trends in land values have tended to adopt valuation based approaches. However, significant gaps exist in terms of the coverage of available data, particularly for commercial land uses.

Better information on land values is needed for market analysis and, especially in the case of residential land, policy making. This research has developed a framework for periodic estimation of residual land values for different areas that is based on a consistent valuation approach. Such information could help to increase the transparency of land markets, aid investors and developers, and provide evidence for policy makers surrounding land value capture.

The aims of the research project were:

- To set out a framework for measuring theoretical land values in a consistent way;
- To measure land values for different hypothetical scheme types in all regions and for selected major cities within the UK;
- To examine the time-series characteristics of these measures and compare trends in values across the cities and regions concerned;
- To analyse the key drivers of changes in development viability for different uses over time and whether these were led primarily by changes in costs, rents or pricing;
- To provide recommendations on the scope for regular production of such measures, their likely applications and their limitations.

The main report provides detailed analysis of the residual land values derived from this study for over 50 individual locations throughout England, Scotland and Wales across four market sectors. The main report also includes regional residual land value time series.

2. Constructing development land value series – data and methods

Land prices are created by actual transactions and their availability depends on the amount of market activity. As with built property markets, land is transacted relatively infrequently. In addition, the features of what is being traded and the degree to which salient features can be observed is often limited due to a lack of transparency regarding land transactions. There are sources of information for land prices but, perhaps even more so than for built property markets, constructing indices of land prices using transaction data is currently not feasible.

Land values are estimates of prices assuming the land was subject to a transaction. These are usually assessed for actual sites, but can be assessed for hypothetical sites in the context of constructing an index. The preferred method of valuation is comparison with transactions of similar sites. However, a lack of suitable comparable land transactions means that a valuation method that is based on first principles, known as the residual method, is often used instead. In terms of creating indices of land prices, this valuation-based approach has dominated industry practice, and it is the method used here.

The residual valuation method relies on the collection of data on development values (the market value of the developed property), costs of construction, ancillary construction costs, fees and finance, and estimates of required profit in order to assess the amount left for the residual. This residual is used to finance the purchase of the land and any profit on the land transaction itself, and provide for any planning obligations required in exchange for the grant of planning permission. Residual valuations have difficulty picking up some influences on value, such as options to defer or vary the development scheme, but do provide a consistent framework for assessing movements in values for a specified land use, and the ratios of development land value to the developed property value.

The residual valuation model is illustrated in the main report, where the inputs and assumptions made are discussed in depth. The residual land value that is produced by this model should not be confused with the land price. It is the amount available to purchase the site taking no account of any possible planning obligations and options. This may not necessarily relate to the drivers of land prices at any particular time, but it gives a consistent basis for assessing value change through time. Despite its limitations, consultation with organisations undertaking development appraisals verified that the use of the residual method is still widespread for estimating scheme viability and the Market Value of land.

The residual method can lead to negative values in some property segments and locations. They indicate where development, even in the hypothetical prime location for that use, is not viable. This is an important piece of information for policy makers, developers and investors.

Quarterly residual land values were estimated from 1995 to 2016 for residential apartments, and from 1997 to mid-2017 for offices, high street shops, industrial units and retail warehouses. The land values were produced at two spatial scales: selected towns and cities, and for all regions of Great Britain. A number of data sources are used to produce the results. This includes CBRE data on prime rents and yields for commercial real estate, ONS data on apartment prices and BCIS data on construction costs (tender prices).

3. Results

Two residual land value measures are reported for each location in each quarter: the residual land value expressed as a price per square metre of developed space and the residual land value as a percentage of development value.

The main report displays and discusses the results for individual property types and locations, with regional results in an appendix. The residual land value figures for each location and region are reported in a spreadsheet that accompanies the main report.

There are some common features within the results. First, residual land values are mainly driven by changes in development values, particularly for high street retail where the costs of development are very low relative to development value. The reason for this is the lack of volatility in construction costs. Second, there is a North/South divide and, in some parts of the country for some uses, development is not viable without intervention. Industrial in the Midlands and North is a prime example where Sheffield and Stoke-on-Trent hardly had a positive residual land value for the whole of the period (Fig 1), but negative values occur in some locations for apartments at the beginning and end of the analysis period; for example, Leeds and Liverpool (Fig 2). Only in London and its very near environs did every location exhibit positive residual land values in industrial. This north/south divide did not occur in retail or offices.

Third, given the impact of development value (i.e. estimated value of scheme once completed) on residual land value, the property market downturn in 2007 and 2008 caused a major correction in residual land values in some markets. Figure 3 illustrates the residual land values per square metre in London. This chart indicates greater proportionate falls in land values than in the value of the associated developed asset, illustrating the gearing effect and thus greater volatility of land values.

Figure 1: Ratio of Residual Land Values to Development Value – Industrial Selected Locations

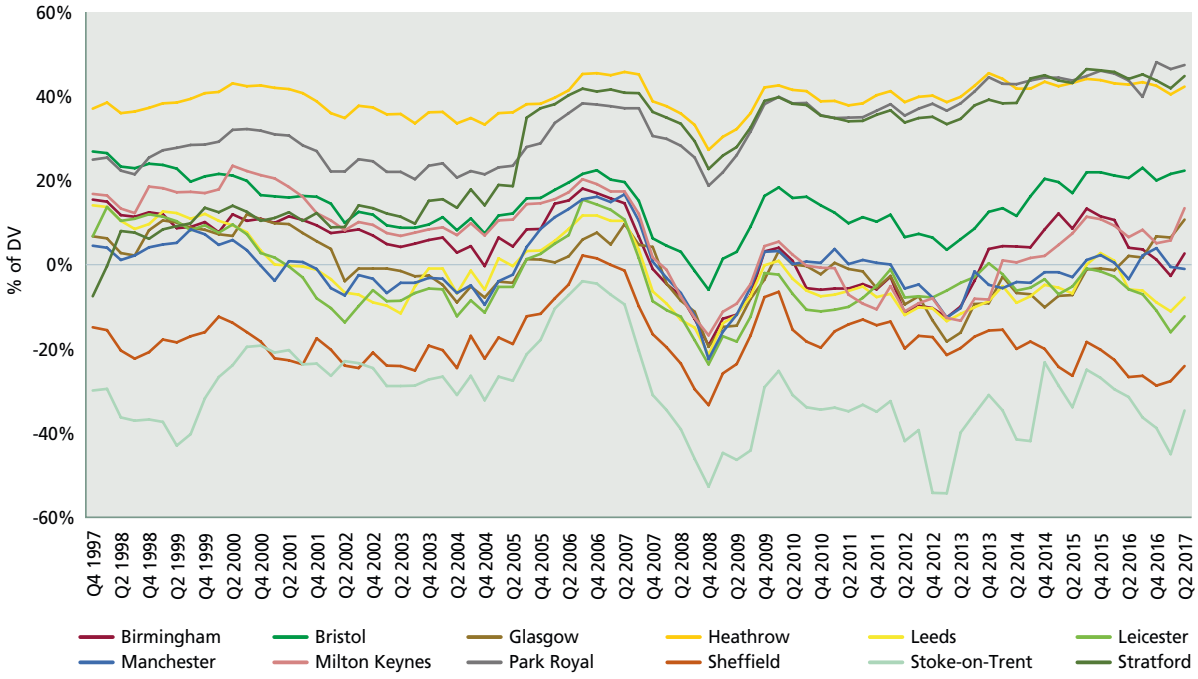


Figure 2: Ratio of Residual Land Values to Development Value – Apartments Selected Locations

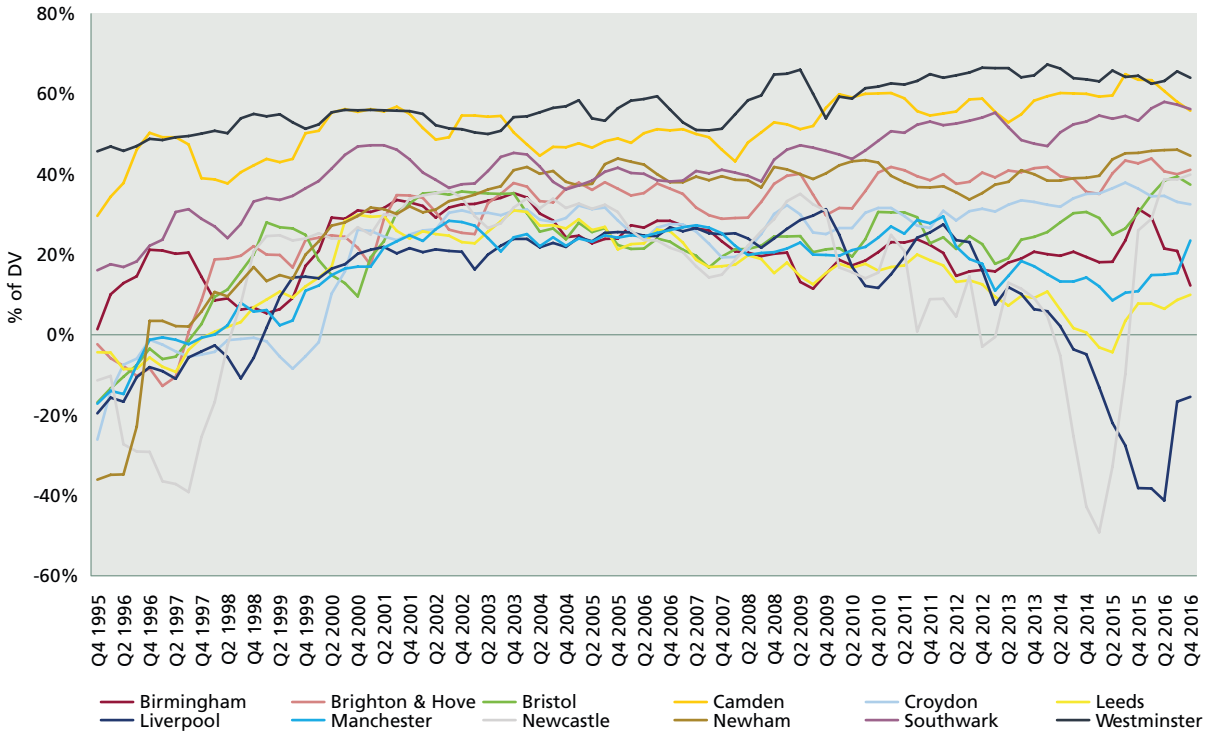
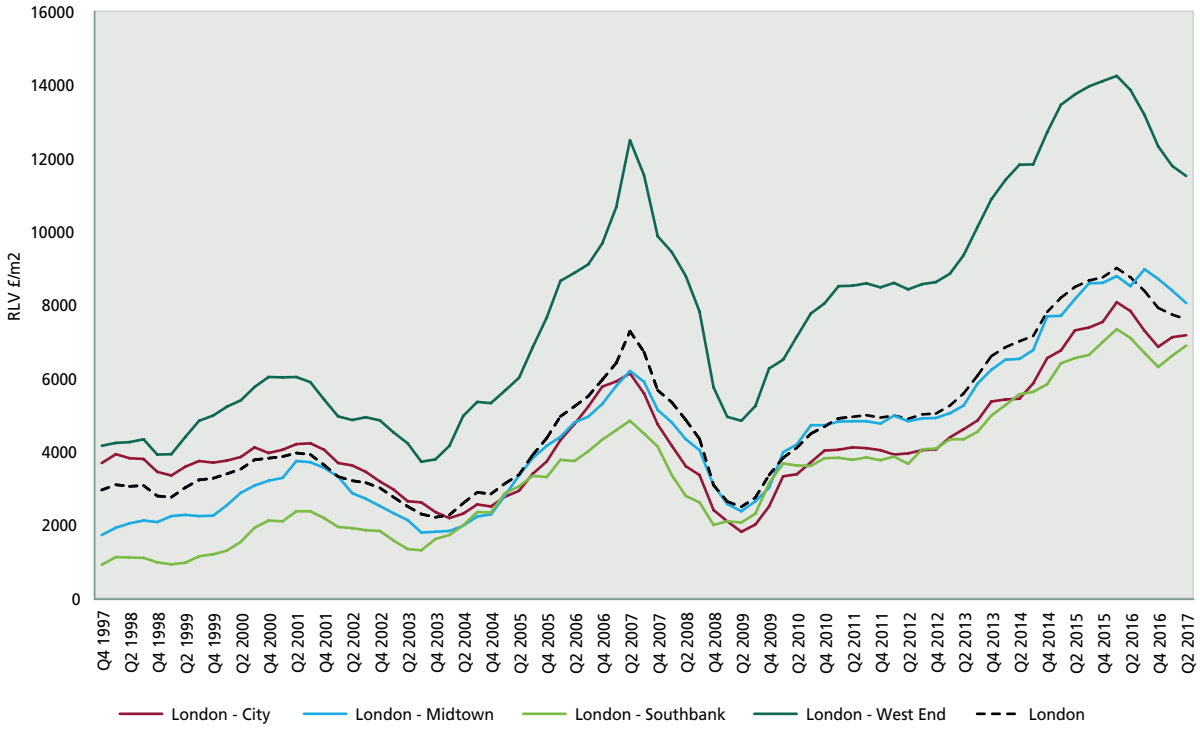
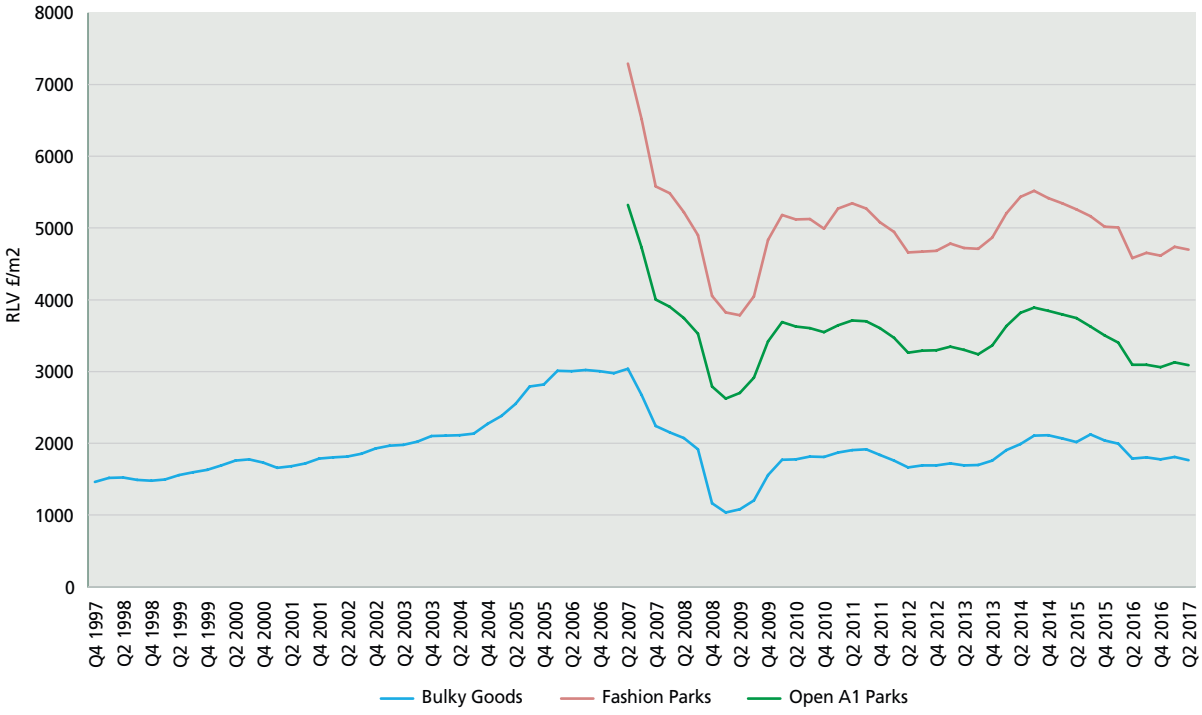


Figure 3: Residual Land Values Central London Offices (£/m²)



Retail warehouses have been measured using a different approach to the other sectors examined in this research. Rather than observe individual towns, the nature of the data available meant that results were produced according to types of park: bulky goods, fashion parks and open A1 users. Figure 4 illustrates that residual land values for the bulky goods sector have been largely static over the 20-year period. Development costs for this type of park have increased by more than the values of completed developments and the net result has been a stagnation of land values over the period. (This observation is subject to reservations around the linking of datasets in this case.) In contrast, the other two types of park appear to exhibit higher residual land values, but a very similar shape of residual land value change, with very little growth in values after the initial recovery in 2009 and 2010 following the 2007/2008 downturn.

Figure 4: Residual Land Values for Retail Warehouses – 1997 to 2017



Figures 5 and 6 summarise the results across towns and regions respectively as at the end of 2016, indicating a hierarchy of residual land values based on the ratio of land value to developed value. This hierarchy has two elements; property type and regional/city/town type location.

The high value uses per square metre surrounding retail flow through into residual land values. City/town level discrepancies are not so apparent in retail with the majority of the ratios at city centre level ranging between 55% and 66%. The exceptions are Edinburgh (68%), Glasgow (70%) and central London (74%). Bulky goods retail warehouses have the lowest ratio at around 50%. Apart from Scotland and central London, the regional high street retail variations are even less, ranging from Wales at 54% to the North East at 60%. This indicates that there is no regional north/south divide in retail. This is reinforced within the retail warehouse sector with ratios being highest in Wales and Scotland and lowest in the East Midlands, the East and the South East.

Regarding the lack of regional variation, retail is the exception. Office ratios show a much greater range. At city/town level this ranges from Cardiff at 30% to the West End of London at nearly 60%. Outside of London, the ratios hover around 40% with Manchester at 42% and Birmingham 38%. Leeds is at 33%. At regional level, the ratios are significantly lower across the board ranging from Wales at 15% to the North West at 32%, with London the outlier at 55%. These results indicate the influence of the larger regional centres such as Manchester, Birmingham, Glasgow and Edinburgh on the regional results, but also that smaller towns within the regions have much lower development land values as a % of the development values.

The north/south divide is most apparent in the industrial results. Here the ratios, even assuming prime locations, are negative for all towns north of Birmingham, apart from Manchester and Glasgow. The regional results are even more illustrative of this, with only London, the South East, the East and the South West showing positive ratios while all of the Midlands, North, Scotland and Wales exhibit negative ratios.

Apartment values also indicate this north/south divide with London standing out with a regional ratio of over 50%, the South East, South West and the East clustering around 33% and the rest clustering between 10% and 15%. The city/town level results are less consistent with a number northern cities having high ratios, such as Newcastle and Manchester. These particular inconsistencies are addressed further within the main report.

Figure 5: Ratio of Residual Land Value to Development Value – Specific Locations

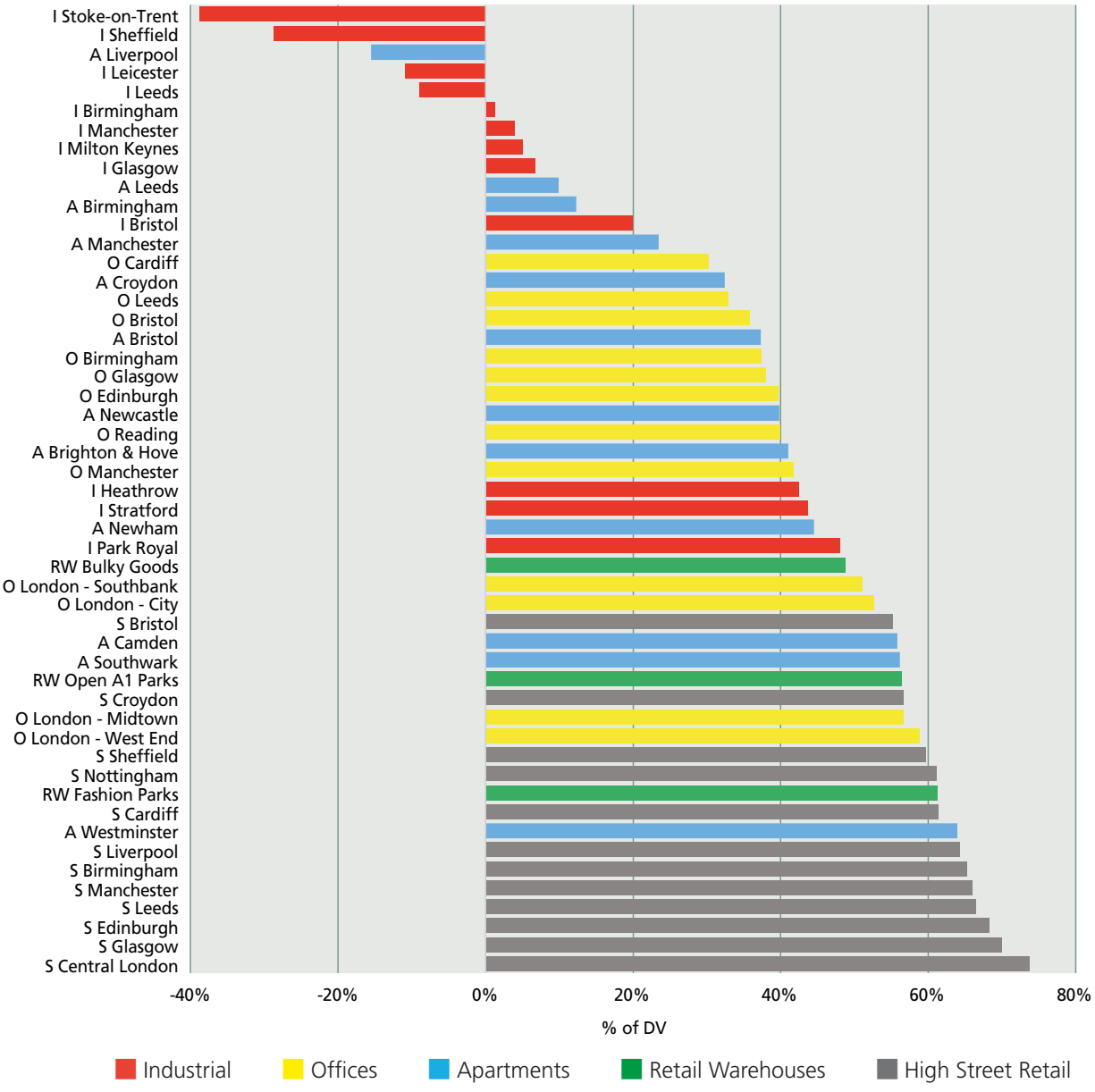
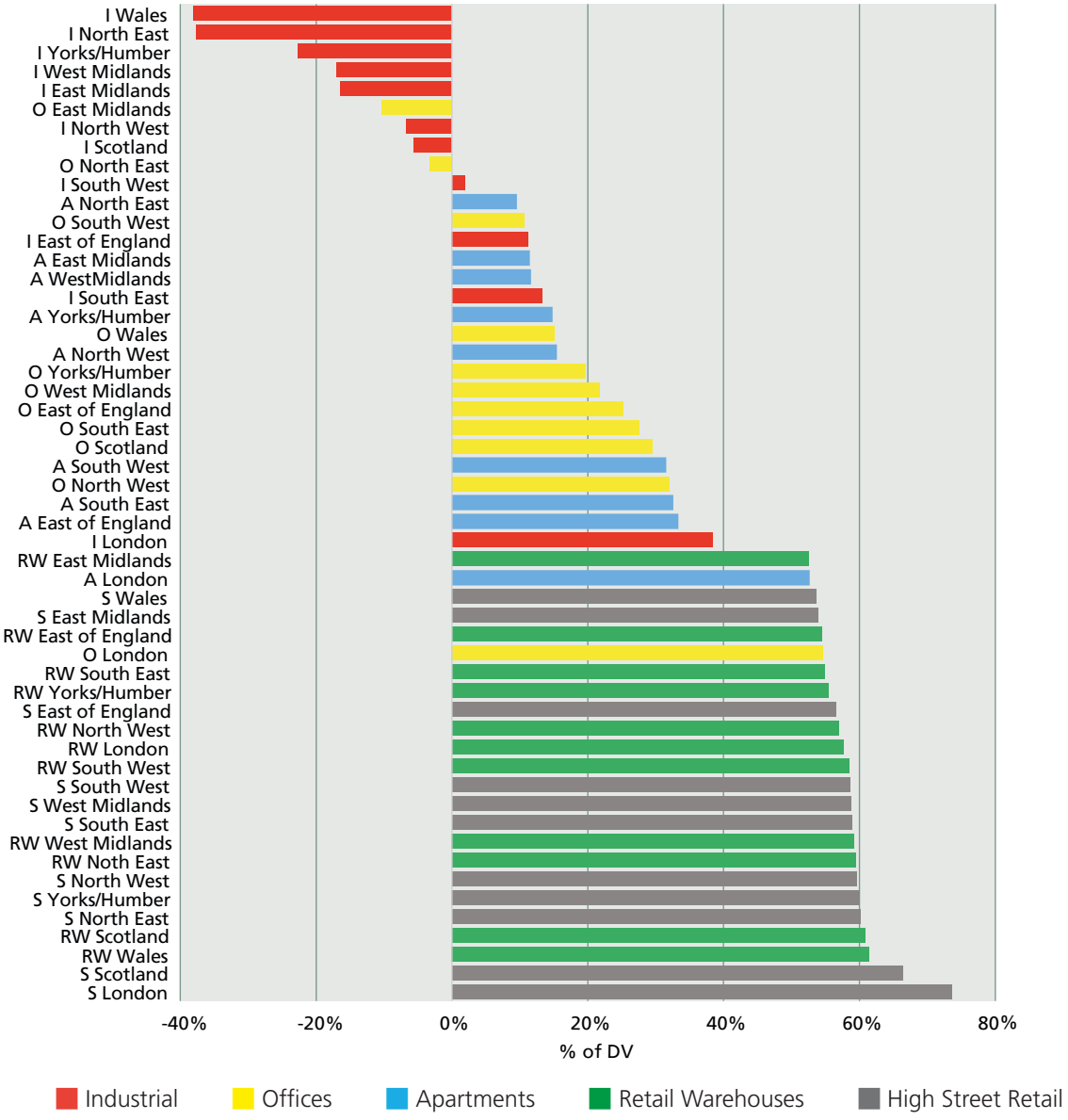


Figure 6: Ratio of Residual Land Value to Development Value – Regions



4. Conclusions

The research into land value measurement uncovered how few systematic land value measures exist in the UK. Where they do exist, they are concentrated upon agricultural and residential land uses. For commercial land uses, there is virtually nothing. This is in contrast with the built stock, where the collection and analysis of price, value and performance datasets has a long history.

The main objective for this research was to produce a series of regional and location-specific residual land values, examine the results and identify the major drivers of the results. The results are set out more fully in the main report and only summarised here.

Results were disaggregated into five primary land uses; apartments, offices, high street retail, industrials and retail warehouses. Retail warehouse rent and yield data were subject to a structural break in 2007 and so cannot be assessed in quite the same way as the other commercial and industrial sectors.

There are some common features within the results. First, they are mainly driven by development values. One reason for this is the lack of volatility in construction costs. Second, there is a major North/South divide and, in some parts of the country for some uses, development is not viable without intervention. Industrial in the Midlands and North is a prime example. Third, the property market downturn in 2007 and 2008 caused a major correction in residual land values. At other points in the property market cycle, the ratio of land value to development value was relatively stable.

The research makes it clear that the residual land values are not market prices but they do give an indication of value before planning obligations and option value. They also give some indication of value change through time and across space. The residual land values should enable users to identify which land uses have commanded most value at particular points, which will have shaped decisions about what and when to build, and what to pay. Such information can increase the transparency of land markets and of policy making surrounding land value capture. As such, the results should be of interest to real estate developers, investors that engage in or fund development, development consultants and policy makers in local or national government who are interested in viability and its determinants.

The next step is for the industry to use this report as the framework for a debate into whether residual land value would be a useful addition to existing property market data sources. If so, the next stage is to refine the model, identify any additional or alternative data sources that are required, and determine the nature and format of any periodic publication.

IPF Research Programme

Investment Property Forum
New Broad Street House
35 New Broad Street
London EC2M 1NH

Telephone: 020 7194 7920
Fax: 020 7194 7921
Email: ipfoffice@ipf.org.uk
Web: www.ipf.org.uk

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