Residual value indicators for UK regions

Construction and evaluation of new time-series estimates

Neil Crosby, Steven Devaney and Peter Wyatt (University of Reading)
Context

- Development viability appraisals are routinely carried out by developers, landowners, lenders and advisors, e.g.
  - To prepare land bids where required profit is known
  - To assess potential profit where land cost is known

- UK local authorities conduct such appraisals to establish what developers can pay in terms of planning obligations
  - Site-specific for use in negotiations
  - Area-wide for setting standard tariffs or targets

- The need to consider financial viability of development is reinforced by official guidance
A traditional residual model (or cash flow variant) is often used in viability debates. This is despite some problems:

- Uncertainty around inputs
- Model variability and treatment of finance and profit
- Benchmark for viability

Also problems of application in an area-wide context:

- Extrapolation across space
- Extrapolation through time

This study

- We apply a single framework across a range of locations to assess how residual values may have changed over time.
- We then aggregate the results from different locations into regional measures and ask:
  - How have residual values changed over time?
  - How have residual values varied across regions?
  - Do the trends correspond with construction activity?
  - Do spatial patterns correspond with adoption of CIL?
  - What inferences could we make about land values in different areas?
Other studies

- A residual value framework has been adopted to create residential land value indices in the US
  - Davis & Heathcote (2007) – national land series
  - Davis & Palumbo (2008) – MSA level land series
  - Davis (2009) – corporate and household sectors
  - See: www.lincolninst.edu/subcenters/land-values/

- We avoid using the term land values as residual model does not typically recognise option value element to such values

Data sources

- Confidential rental value and yield estimates for office and industrial locations – underlie CBRE rent and yield monitor

- Median building costs for office and industrial premises at local authority level – BCIS

- Finance costs based on 3 month LIBOR with margin added for development lending. Margin reported in semi-annual surveys by Maxted & Porter.

- Standard assumptions used for required developer profit, site preparation costs, professional fees, transaction costs, development period and site cover.
### Samples over different horizons

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>East Midlands</td>
<td>5</td>
<td>8</td>
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<tr>
<td>Eastern</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>London</td>
<td>13</td>
<td>16</td>
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<tr>
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<td>6</td>
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<tr>
<td>North West</td>
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<td>8</td>
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<tr>
<td>South East</td>
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<td>22</td>
</tr>
<tr>
<td>South West</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Wales</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>West Midlands</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Yorks &amp; Humber</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>All locations</td>
<td>76</td>
<td>105</td>
</tr>
</tbody>
</table>
Regional measures

- How do we aggregate?
- Possibilities for weights
  - Population
  - Workforce
  - Floorspace
  - Value
- Spatial mismatch – administrative versus economic area

E Midlands - % floorspace

- DERBY: 21.8%
- LEICESTER: 30.0%
- LINCOLN: 6.6%
- NORTHAMPTON: 22.8%
- NOTTINGHAM: 18.8%
RVI industrial land – England & Wales

£m / hectare

-2.0
-1.0
0.0
1.0
2.0
3.0
4.0

London
South East
Wales
West Midlands

RVI industrial land – November 2014

London
South East
England & Wales
South West
West Midlands
Eastern
Yorks & Humber
North West
East Midlands
Wales
North East

£m / hectare

-2.00 -1.00 0.00 1.00 2.00 3.00 4.00
Adoption of CIL by local authorities

<table>
<thead>
<tr>
<th>Region</th>
<th>Adopted</th>
<th>In progress</th>
<th>None</th>
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<tbody>
<tr>
<td>London</td>
<td>58%</td>
<td>36%</td>
<td>6%</td>
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<tr>
<td>South East</td>
<td>28%</td>
<td>40%</td>
<td>31%</td>
</tr>
<tr>
<td>South West</td>
<td>22%</td>
<td>49%</td>
<td>30%</td>
</tr>
<tr>
<td>East of England</td>
<td>21%</td>
<td>38%</td>
<td>40%</td>
</tr>
<tr>
<td>Wales</td>
<td>14%</td>
<td>9%</td>
<td>77%</td>
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<tr>
<td>North West</td>
<td>13%</td>
<td>10%</td>
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<td>68%</td>
</tr>
<tr>
<td>Yorks &amp; Humber</td>
<td>5%</td>
<td>33%</td>
<td>62%</td>
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<tr>
<td>West Midlands</td>
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<td>50%</td>
<td>47%</td>
</tr>
<tr>
<td>North East</td>
<td>0%</td>
<td>25%</td>
<td>75%</td>
</tr>
</tbody>
</table>

Relationship with land values

- The indicators do not capture land values for two important reasons
- First, we have only modelled one land use so far: competing land uses may generate higher residual values
- Second, land may be traded at different prices owing to the real option that ownership of a site provides
- This option element of value will be related to expectations about growth and volatility in the future
- A positive residual value may not stimulate development straight away
Summary

- Measurement exercise completed for industrial locations and in progress for office locations
- Regional level comparison allows broad relationships between regions and over time to be established, e.g.
  - Clear and persistent differences in residual value across regions in the case of industrial land
- Local level indicators may be more valuable, but disclosure and spatial aggregation issues
- Can the outputs be useful in critique or guidance of policy?
- How best can the outputs be modelled to shed light on urban economic or regional questions?