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# *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

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- 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

# Context

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- 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
- See Coleman et al. (2012), Crosby et al. (2013), Crosby & Wyatt (2015)

# This study

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- 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

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- 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
- Alternative papers using land transactions: Sirmans & Slade (2012), Nichols et al. (2013)

# Data sources

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- 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

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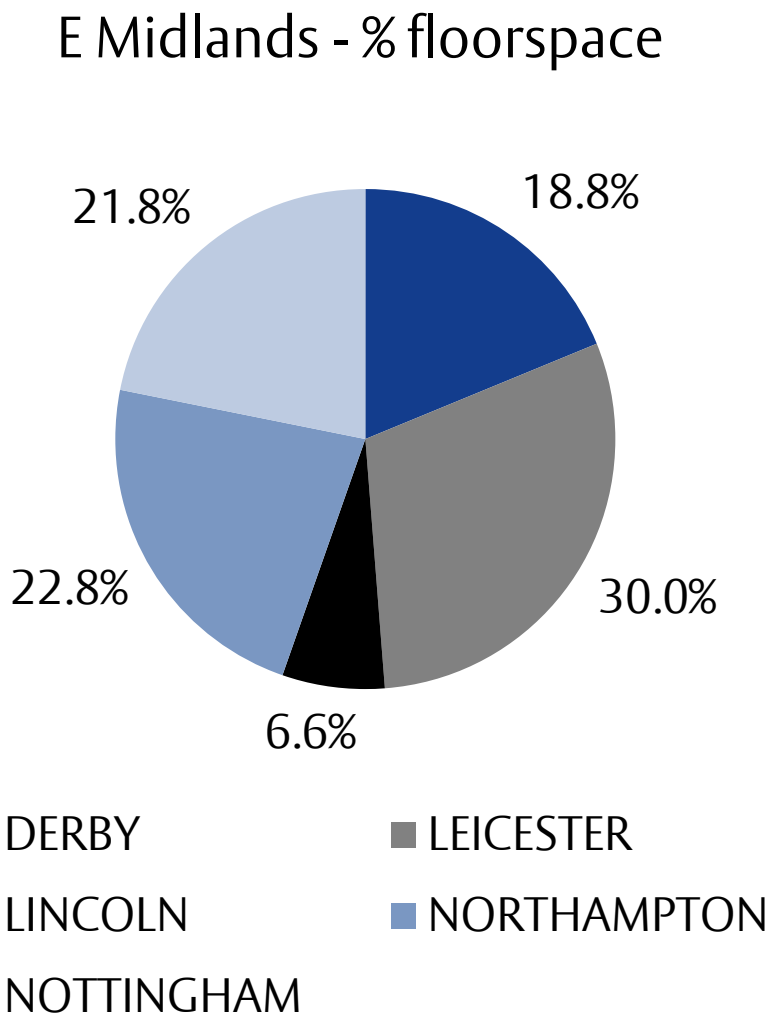
| INDUSTRIALS | 1994-2014 | 2006-2014 |
|---|---|---|
| East Midlands | 5 | 8 |
| Eastern | 11 | 12 |
| London | 13 | 16 |
| North East | 2 | 6 |
| North West | 4 | 8 |
| South East | 21 | 22 |
| South West | 7 | 12 |
| Wales | 3 | 5 |
| West Midlands | 6 | 9 |
| Yorks & Humber | 4 | 7 |
| All locations | 76 | 105 |

# Regional measures

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



# RVI industrial land – England & Wales

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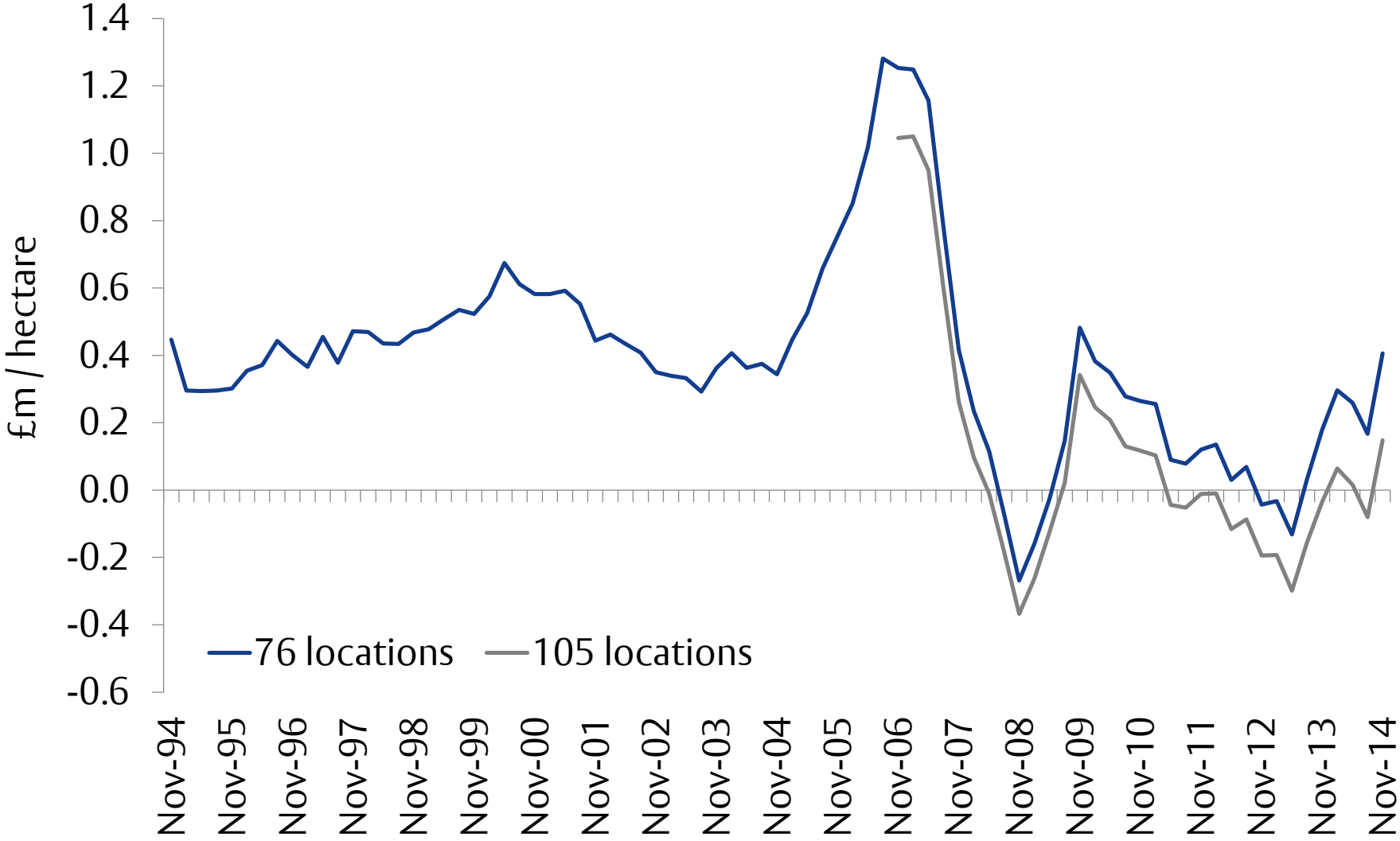

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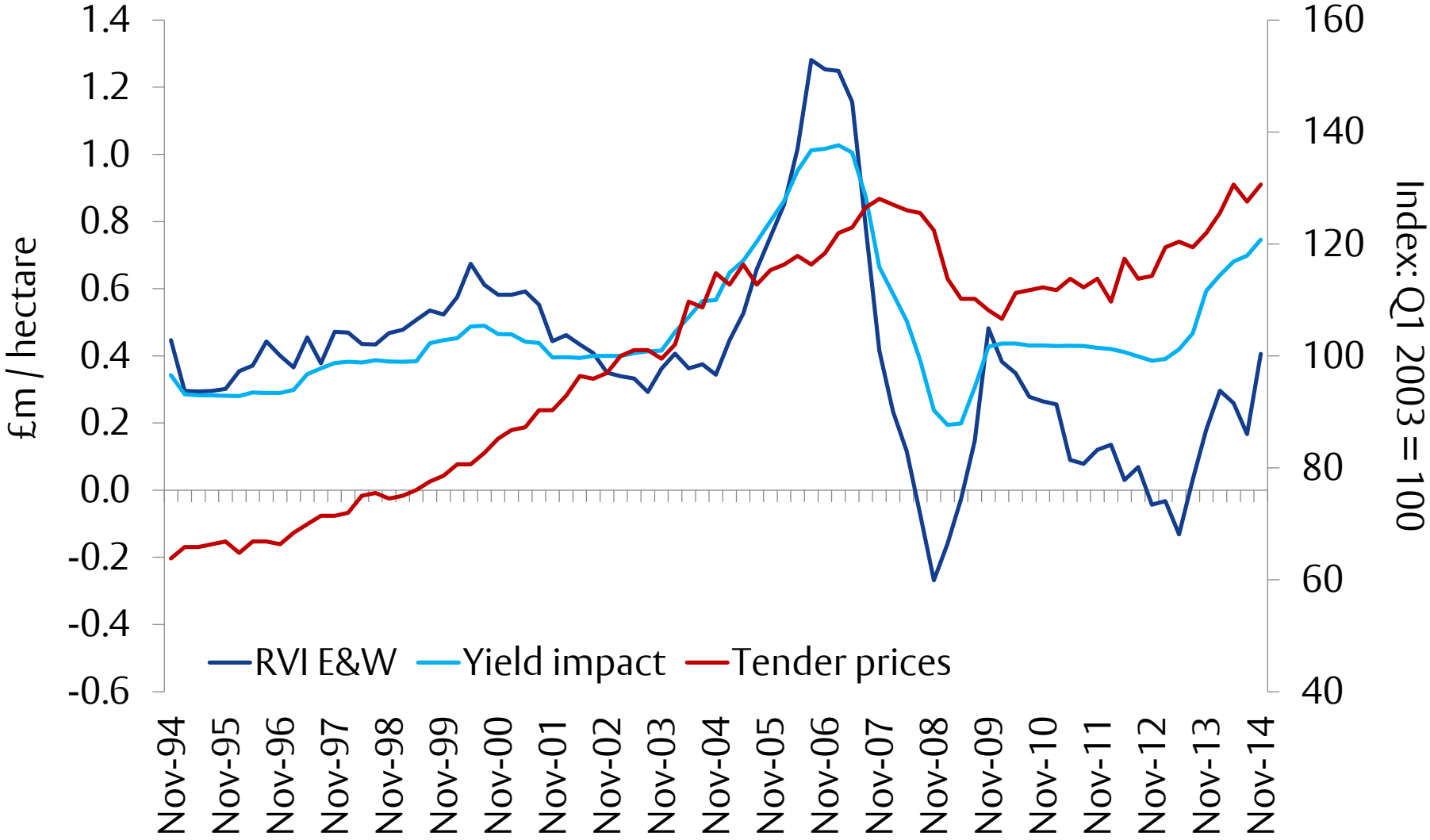

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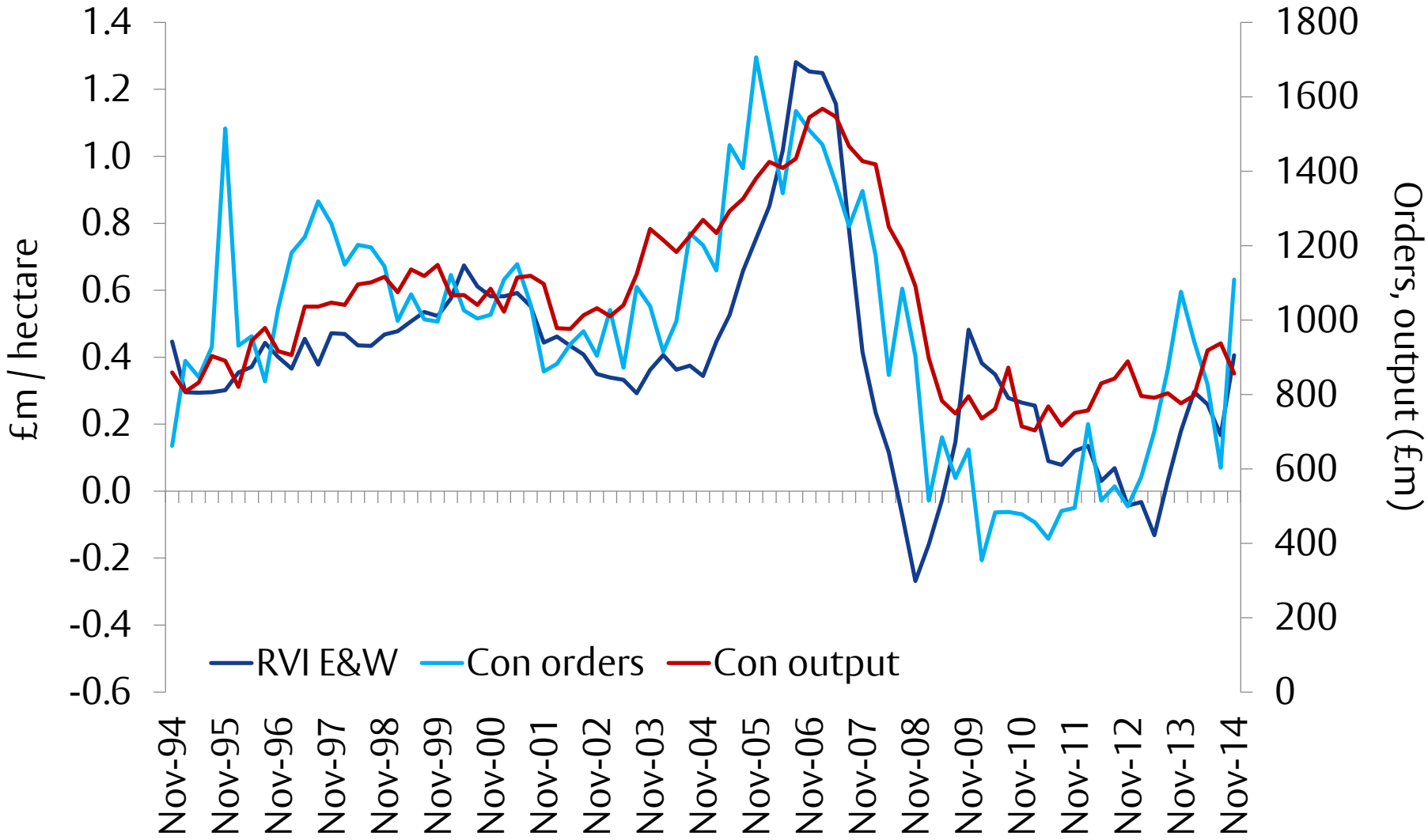

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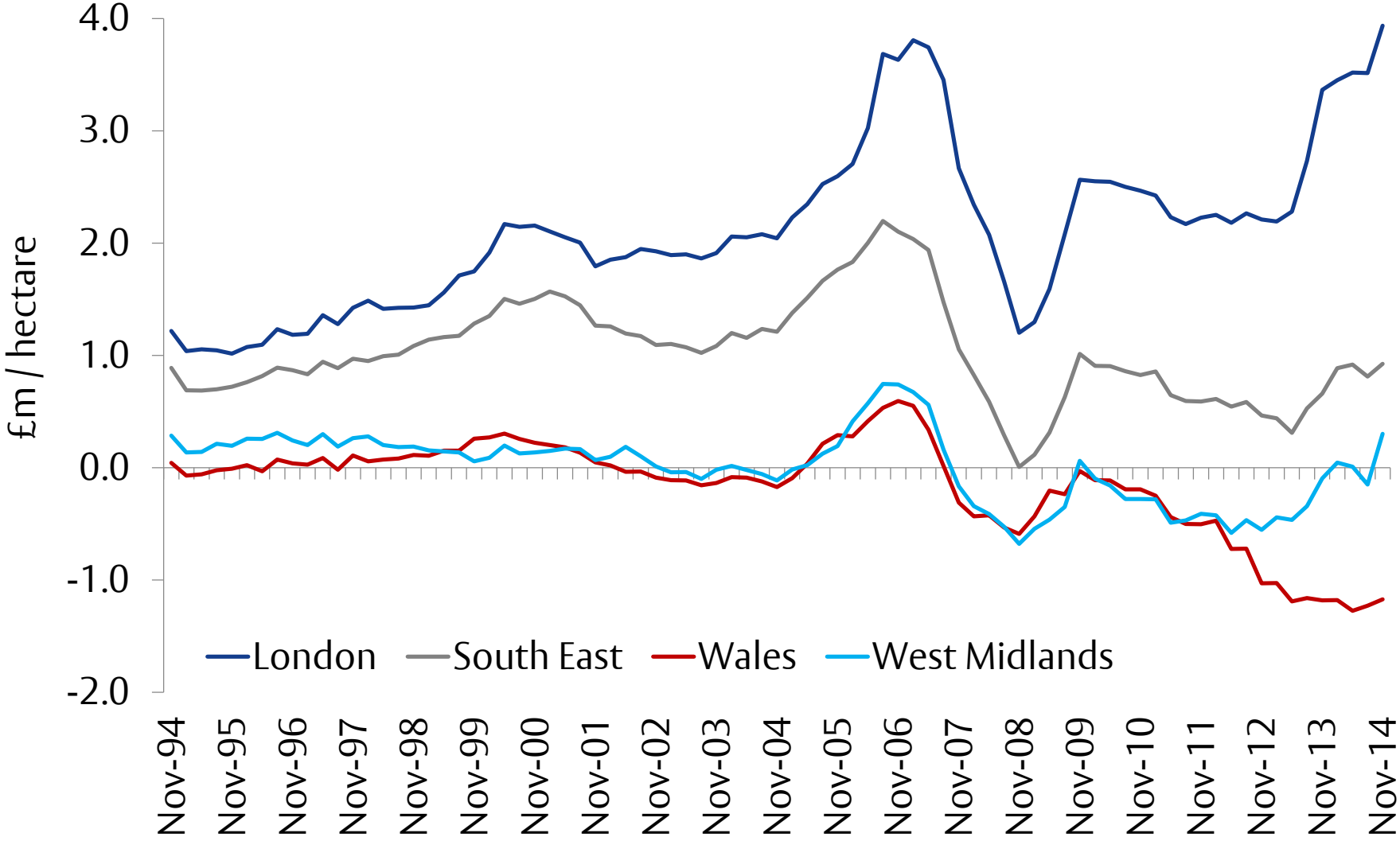

# RVI industrial land – November 2014

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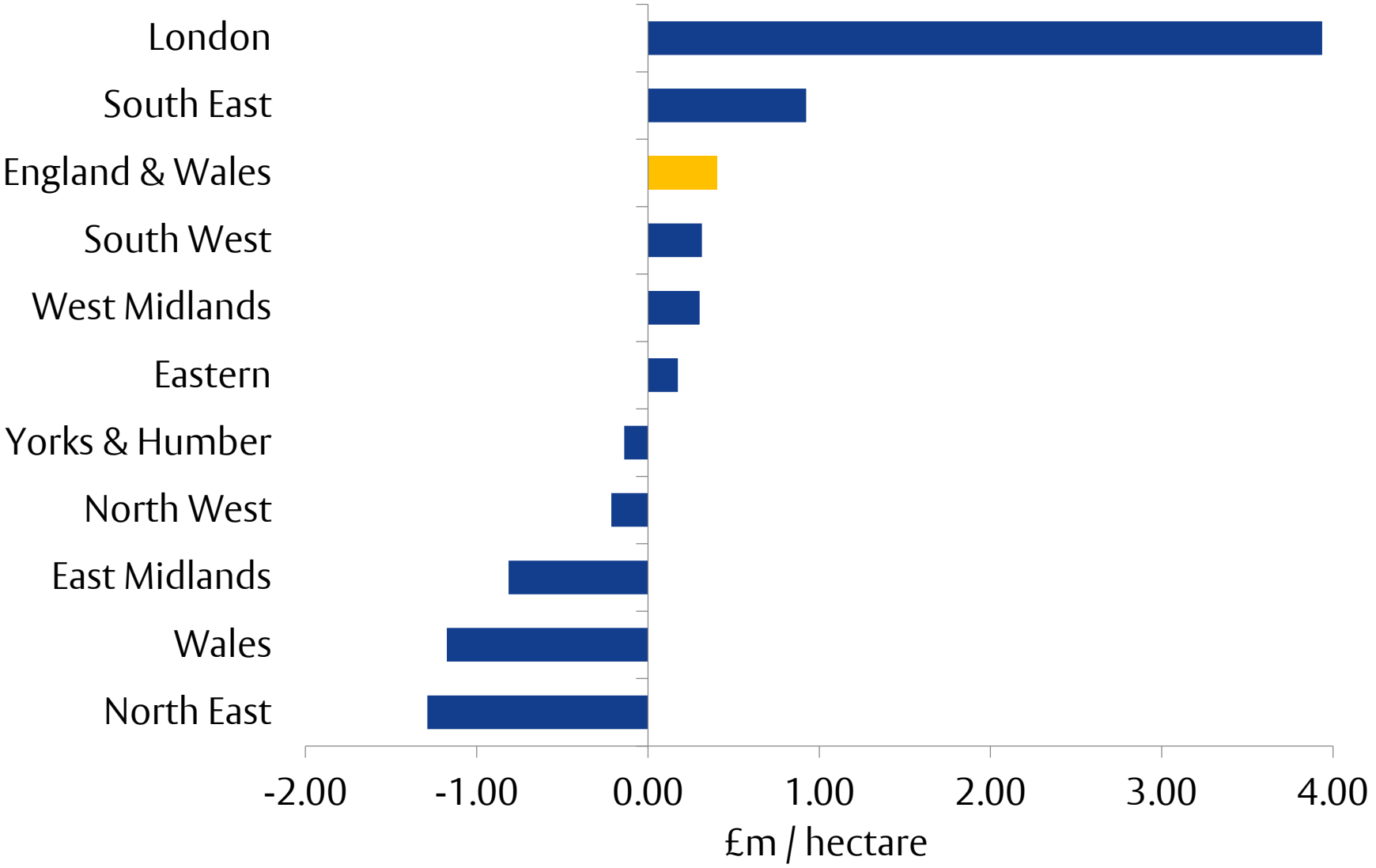

# Adoption of CIL by local authorities

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| | Adopted | In progress | None |
|---|---|---|---|
| London | 58% | 36% | 6% |
| South East | 28% | 40% | 31% |
| South West | 22% | 49% | 30% |
| East of England | 21% | 38% | 40% |
| Wales | 14% | 9% | 77% |
| North West | 13% | 10% | 77% |
| East Midlands | 5% | 28% | 68% |
| Yorks & Humber | 5% | 33% | 62% |
| West Midlands | 3% | 50% | 47% |
| North East | 0% | 25% | 75% |

Derived from list by Carpenter, J. (2015), CIL Watch: who's charging what?, 4 March 2015: www.planningresource.co.uk/article/1121218/cil-watch-whos-charging-what

# Relationship with land values

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- 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

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- 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?