

# Divergent Cities in Post-Industrial Britain

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## Backdrop

Something remarkable has happened to London over these recent decades. It has become a global capital... And it's a great strength for our country that it contains such a global city... But something remarkable has happened here in Manchester, and in Liverpool and Leeds and Newcastle and other northern cities over these last thirty years too. The once hollowed-out city centres are thriving again... The cities of the north are individually strong, but collectively not strong enough... So the powerhouse of London dominates more and more. And that's not healthy for our economy... We need a Northern Powerhouse too. Not one city, but a collection of northern cities - sufficiently close to each other that combined can take on the world (**George Osborne, 2014**)

# Introduction

- **Commonplace Narrative**
  - Old industrial cities no longer loci of economic growth and prosperity
  - Growth momentum has shifted to cities that are leading new post-industrial economy (creative industries, producer services, cultural industries, finance)
  - Prospect is one of diverging city growth paths
- **This Narrative not Unproblematic**
  - Divergence more complex than this
  - Even divergence among both industrial and 'new economy' cities
  - Evidence that smaller cities growing faster than larger cities
  - Debate over whether specialisation promotes or hinders growth

# City Divergence – Competing Conceptualisations

- Early accounts of deindustrialisation pessimistic about future of large industrial cities
- Argued that older cities were losing their economic role and rationale:

*“The relative decline of cities is an almost inevitable consequence of the process of economic change within an ‘advanced’ capitalist economy. Just as the unrestrained operation of the market economy led to the development of ever larger cities during the last century, in changed circumstances the market economy is eroding their industrial base”* (Fothergill and Gudgin, 1988, p.69, emphasis added).

## City Divergence – Competing Conceptualisations

- Recent international research reveals varied outcomes
- Some older industrial cities across USA and Europe have been devastated by manufacturing decline – spectre of ‘shrinking cities’ (Martinez-Fernandez et al, 2012)
- But others have managed to adapt and shown signs of recovery, renaissance - ‘reinvented’ themselves (Glaeser, 2005; Power et al, 2010)
- In USA, economic paths of older industrial cities have been divergent (Christopherson, 2009; Hobor, 2012; Moretti, 2013)
- Some of largest, global cities, once dominated by manufacturing have diversified into services (Power et al, 2010; Scott, 2010)

## City Divergence – Competing Conceptualisations

- Causes of this divergence not entirely understood
- Moretti (2012) – keys factors for city growth and renewal are ability to develop new innovation systems and human capital endowments
- Berry and Glaeser (2005) – key factor is attraction and growth of skilled human capital
- But Glaeser also pessimistic:
  - “The path back for declining industrial towns is long and hard. Over decades they must undo the cursed legacy of big factories and heavy industry” (2011, p. 67).

## City Divergence – Competing Conceptualisations

- This contrasts with view of Krugman (2005)
- Argues that old industrial regions - and thus presumably, old industrial cities - can achieve ‘second wind’
- Key is (total factor) productivity
- Krugman emphasises both **external economies** and local ‘**fundamentals**’ – educated workforce, higher educational institutions, high quality infrastructure, local culture of entrepreneurship, local financial structures, local fiscal autonomy
- What matters is “political economy: regions with a strong government may have a lot more ability to shape their own destiny”

## City Divergence – Competing Conceptualisations

- Also a debate over structure
- Storper (2014) – specialisation is *the* driver of city growth
- Specialisation in knowledge-based activities and services
- Markusen and Schrock (2006) identify a deepening specialisation across US cities – both large and second order cities becoming more specialised both by types of industry and by occupation:
  - “becoming more distinctive may be a survival strategy for an older industrial city. It may not increase overall employment, but it might countervail losses in uncompetitive functions” (2006, p. 1318).



# City Divergence – Competing Conceptualisations

- Research on European cities also reveals complex patterns of divergence
- Dijkstra et al (2013), Parkinson et al (2013) – no simple relationship between city size and growth:

“In many countries, large cities can be found among the top and bottom performers. Also the performance of smaller and medium-sized cities is highly varied with some faced with low or even negative growth in population and economic activities” (Dijkstra et al. 2013, p. 348).
- Martin et al (2014) – city growth patterns in UK also divergent, and complex
- Our focus in this paper

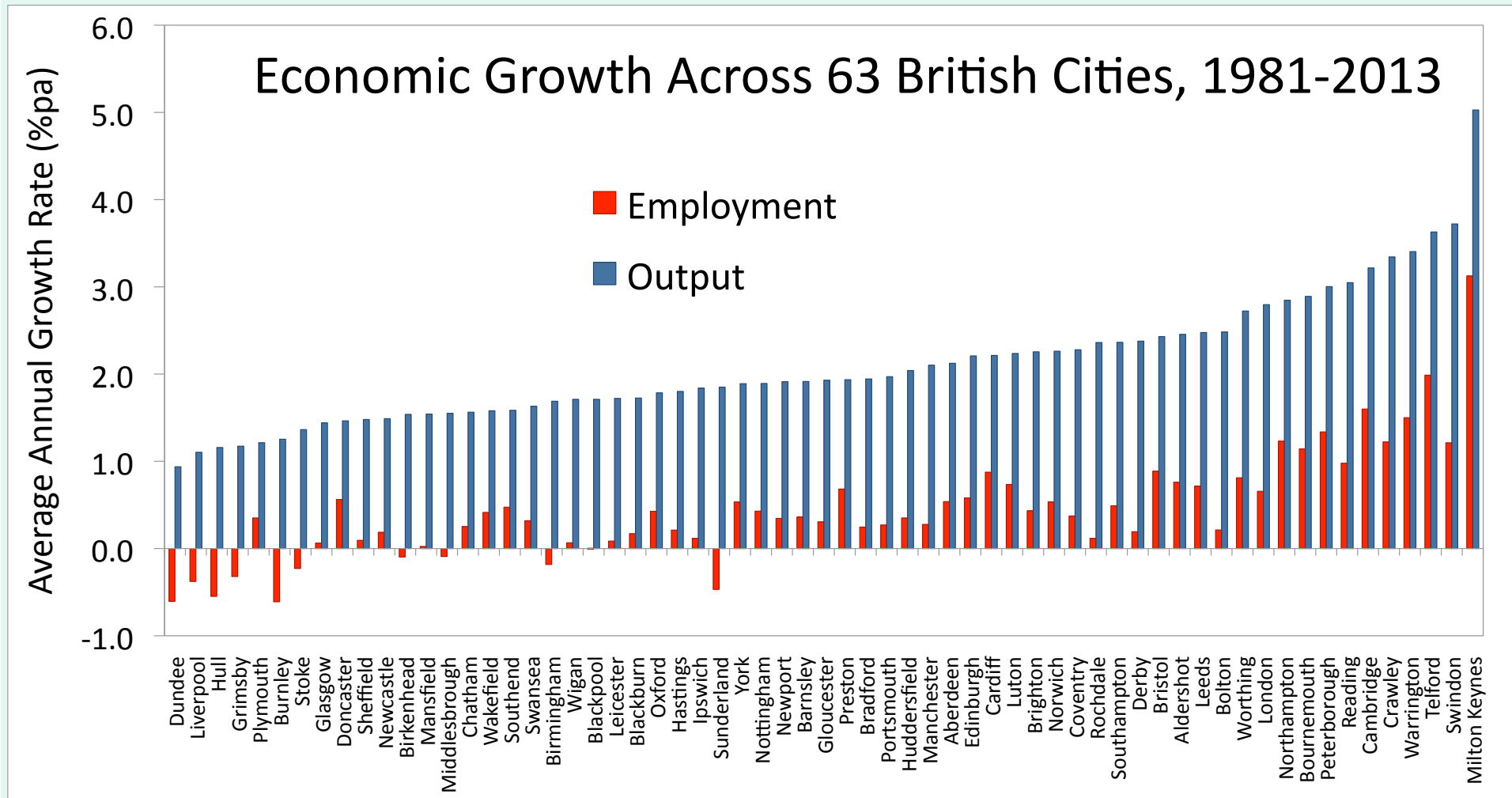
# City Divergence: The UK Experience

- **Britain's Urban Economy – A Very Brief History**
  - Three modern historical phases:
    - **Industrialisation phase, 1800-1900** (specialisation and export-driven growth important)
    - **Industrial Reorientation phase, 1900-1970** (shift of growth to modern mass production manufacturing economy, new forms of regional specialisation)
    - **Post-Industrialisation phase, 1970 to present** (deindustrialisation, rise of knowledge-based, cultural-creative, and financialised economy)

# City Divergence: The UK Experience

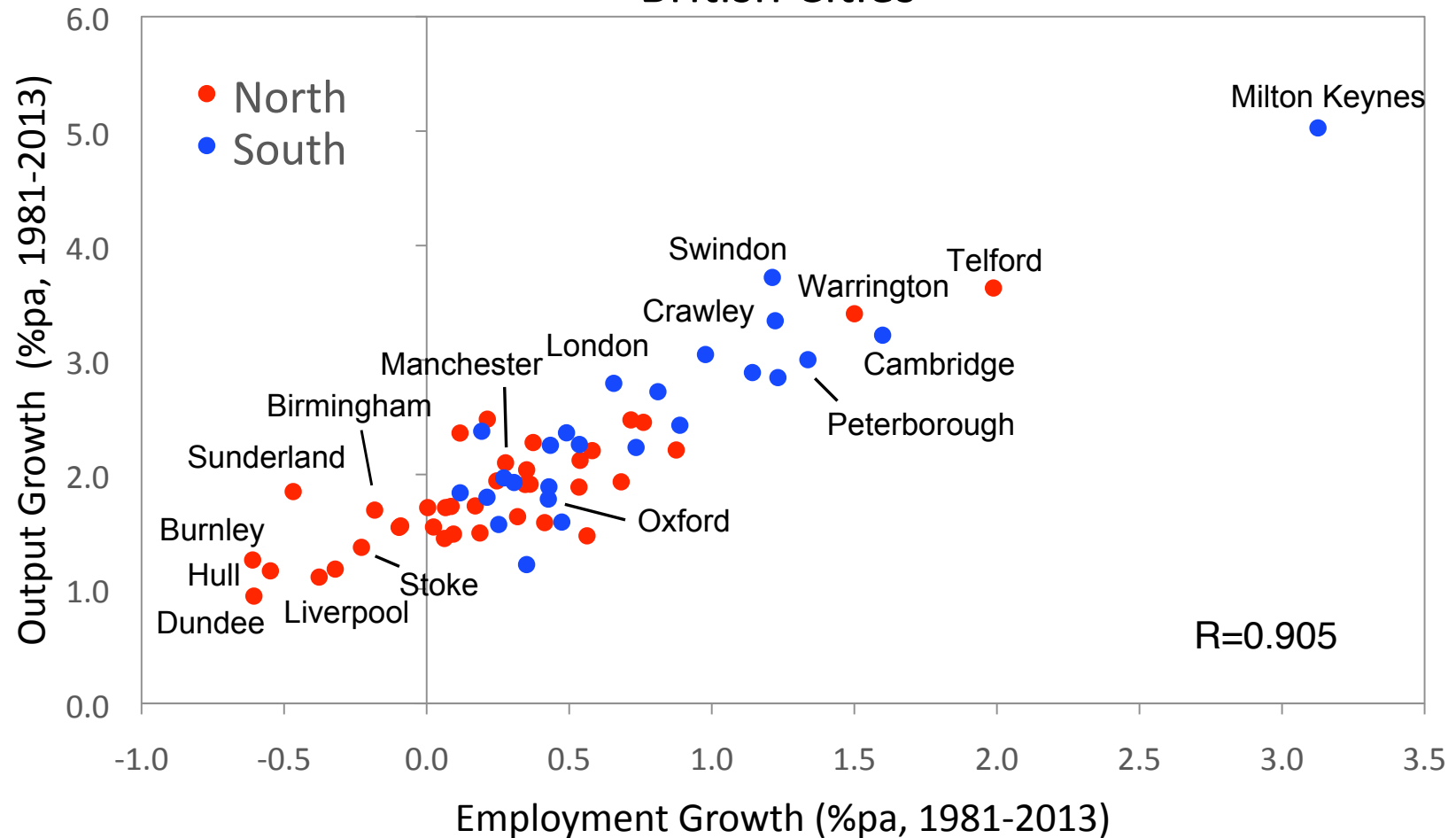
- **Recent City Growth Evolutions**
  - Major data construction effort by Cambridge Econometrics – new novel time series data set for British cities (‘Primary Urban Areas’ as defined by Centre for Cities)
  - Annual time series on population, employment, GVA and productivity, built up from Local Authority data
  - 63 Primary Urban Areas (Belfast excluded)
  - 45 sectors
  - Period covers 1981-2013

# Employment and Output Growth Across 63 UK Cities, 1981-2013

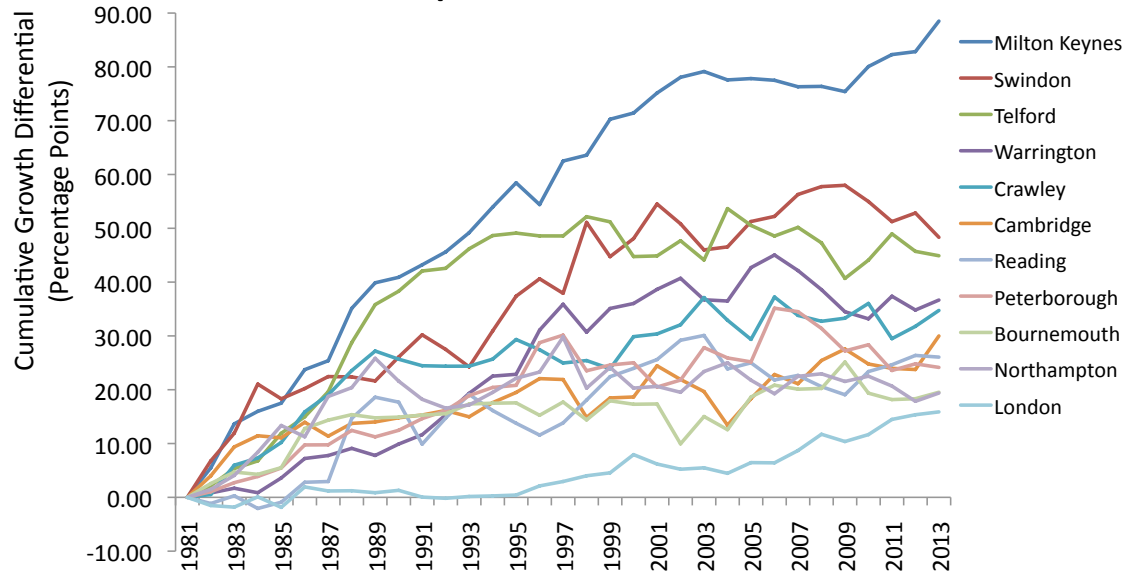


# Employment and Output Growth Across 63 UK Cities, 1981-2013, Grouped into North and South

## Long-term Output and Employment Growth across British Cities



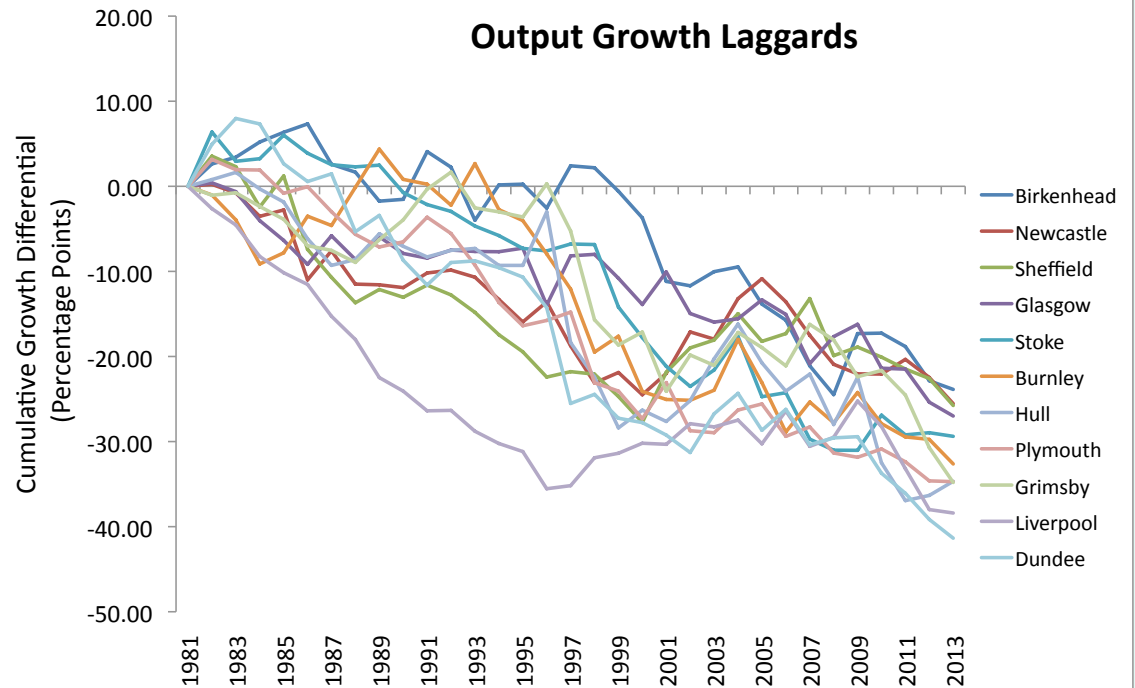
**Output Growth Leaders**



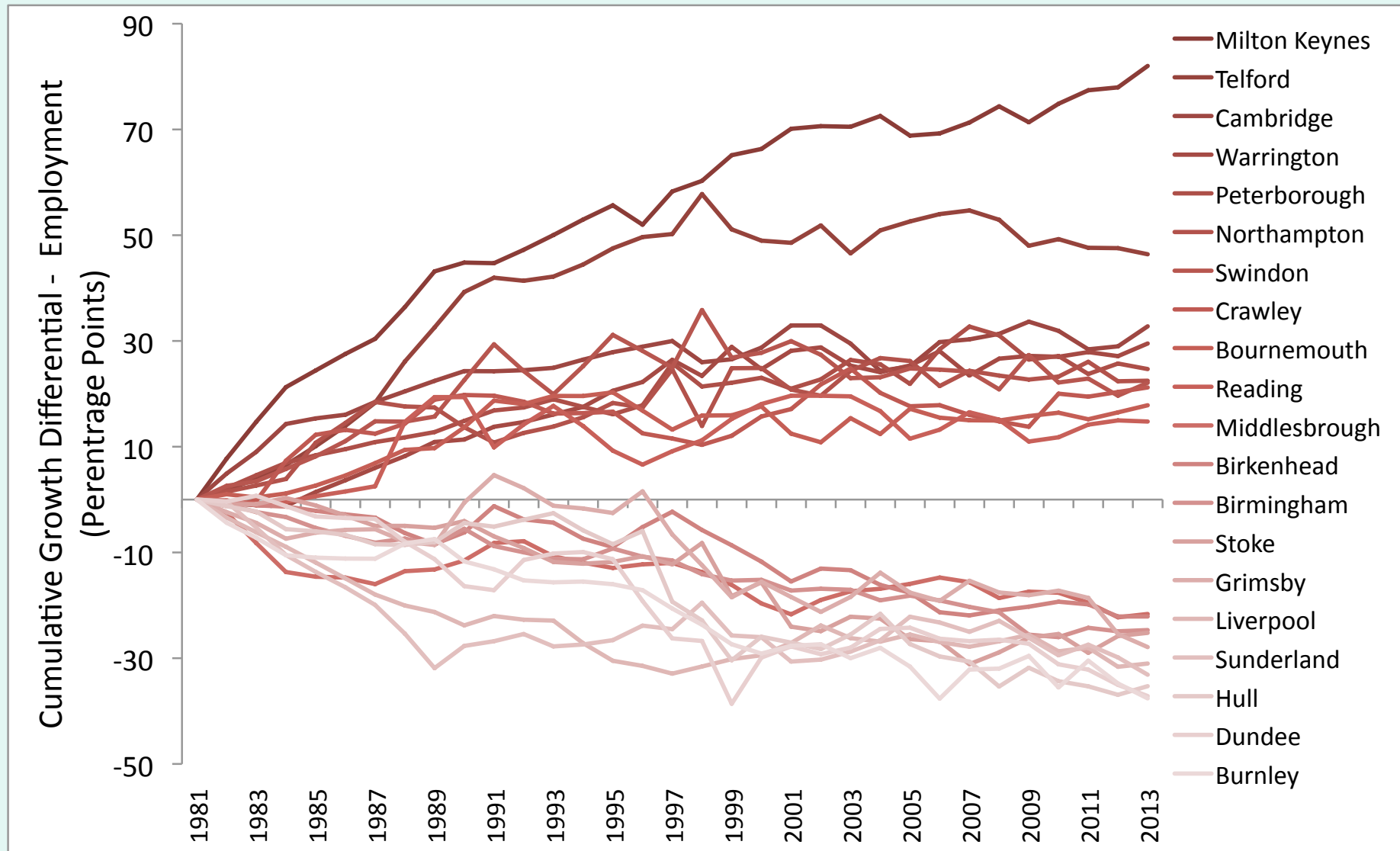
# Divergent City Growth Paths – Output (GVA) 1981-2013: Leaders and Laggards

Cumulated annual differential percentage growth rates (ie. city minus UK)

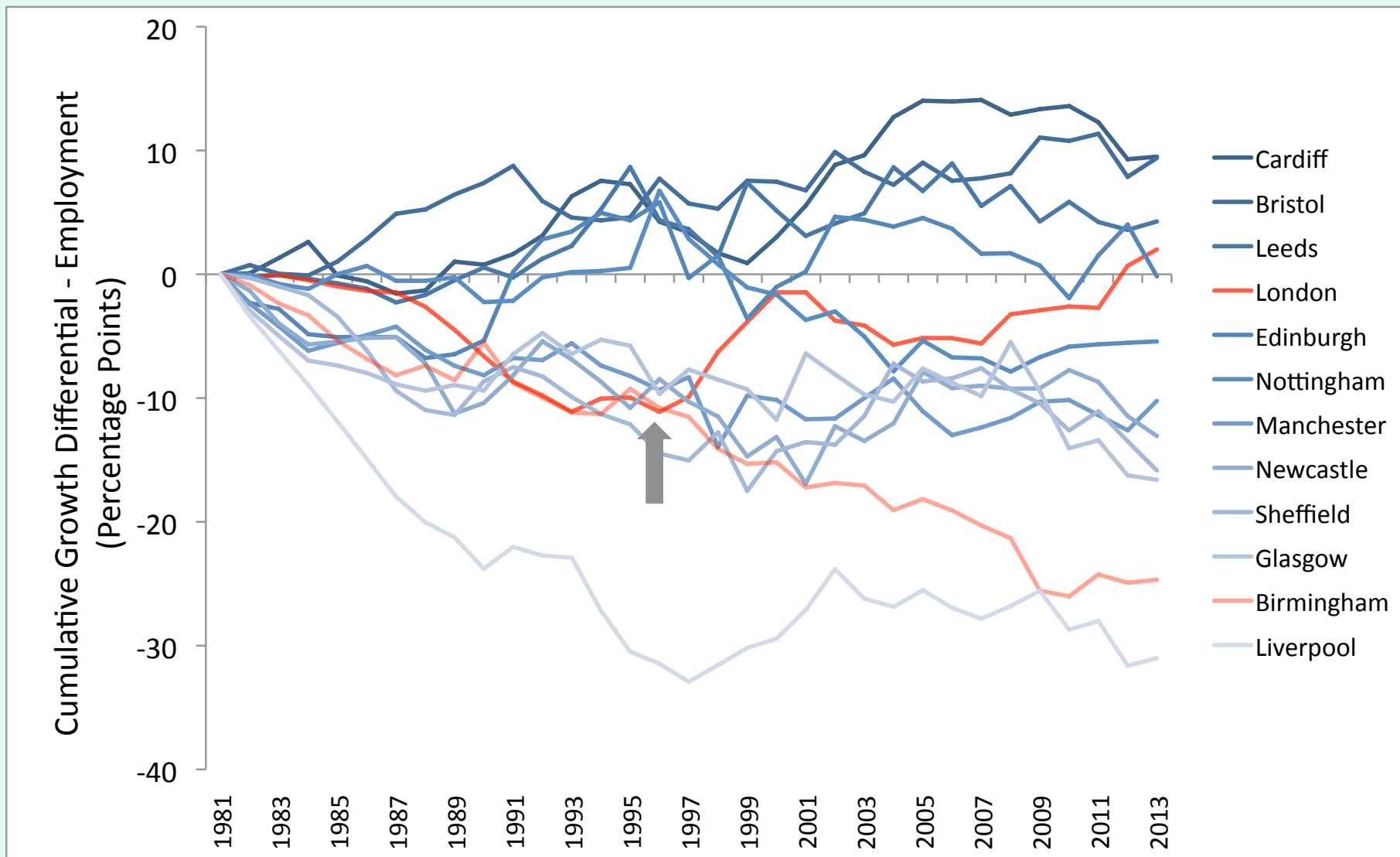
**Output Growth Laggards**



# Cumulative Differential Annual Percentage Growth in Employment, 1981-2013: Top and Bottom 10 Cities

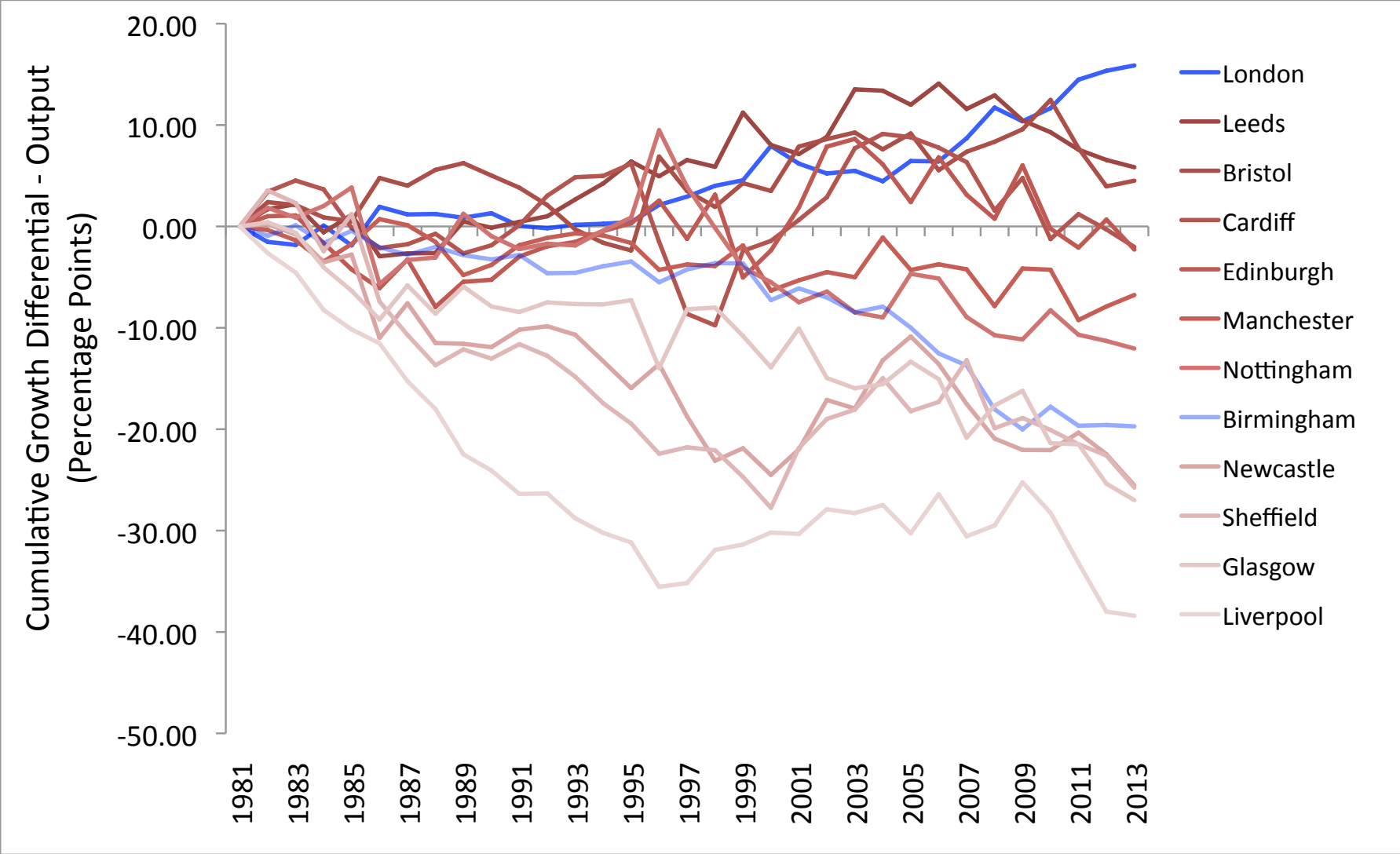


# Cumulative Differential Annual Percentage Growth in Employment, 1981-2013: Major Core Cities





# Cumulative Differential Annual Percentage Growth in Output, 1981-2013: Major Core Cities



# City Divergence – The Role of Structure

- **The Debate over Economic Structure**
  - Long-standing debate over specialisation versus diversity and city growth (Jacobsian versus Marshall-Arrow-Romer type externalities)
  - Some authors (eg Storper, 2014) argue that specialisation promotes faster growth
  - But specialisation can become source of rigidity and vulnerability
  - And a source of technological-institutional lock-in
  - Both specialisation and diversity have advantages and disadvantages

# City Divergence – The Role of Structure

## Specialised Cities (Marshallian Externalities)

- Specialised pool of labour
- Development of specialized knowledge base
- Interfirm spillovers
- Presence of upstream and downstream firms
- Tend to be smaller, hence lower costs
- Sector-specific institutions
- Initial high innovation and productivity growth

- Low modularity of economic base
- More prone to idiosyncratic shocks (low resilience)
- Prone to path dependent 'lock-in' (eg technological relatedness, imitative innovation, dense input-output relationships)
- Difficult to re-orientate

## Diversified Cities (Jacobsian Externalities)

### Advantages

- Access to wide pool of labour skills
- Cross fertilization of ideas across sectors
- Sustained knowledge creation /innovation
- Diversity (variety) offers scope for new ventures and suppliers
- High modularity buffers shocks (high resilience)
- Tend to be larger – sizable 'home market effect'
- More able to adapt over time

### Disadvantages

- Larger size can lead to agglomeration diseconomies
- Especially high land and wage costs
- Also high infrastructure costs
- May be less dynamic in short –run (but more stable over long run)

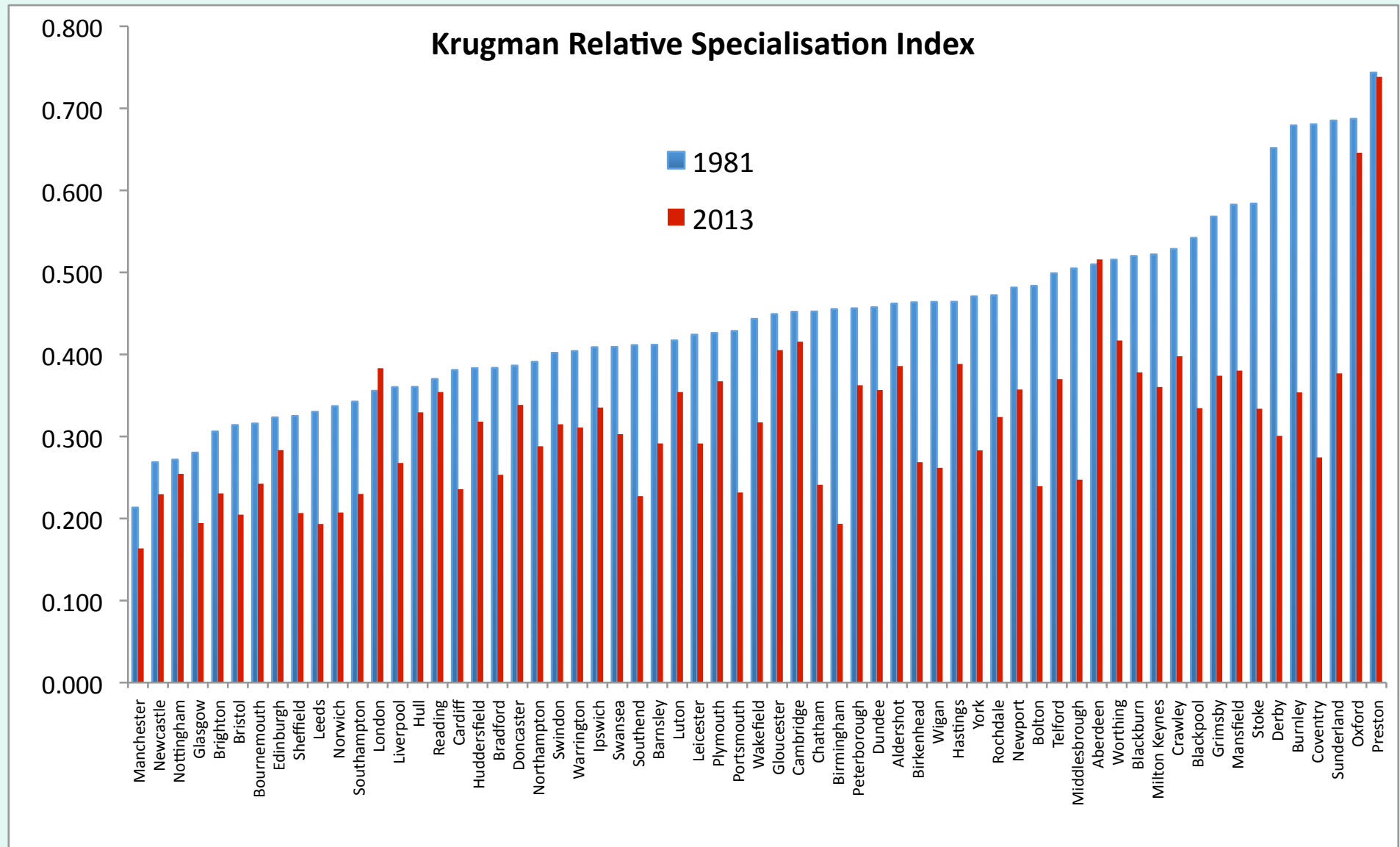
# City Divergence – The Role of Structure

- **The Debate over Economic Structure**
- Tradable base more important than specialisation or diversity per se (eg Moretti, 2010)?
- Loss of tradable base - eg. because of loss of competitiveness, or failure to reorientate into new more dynamic sectors – may be key (Rowthorn, 2010)
- Moretti (2010) suggests (for USA) that tradable sector multipliers on nontradables are key to city growth
- How then has economic structure and structural change influenced growth across British cities?

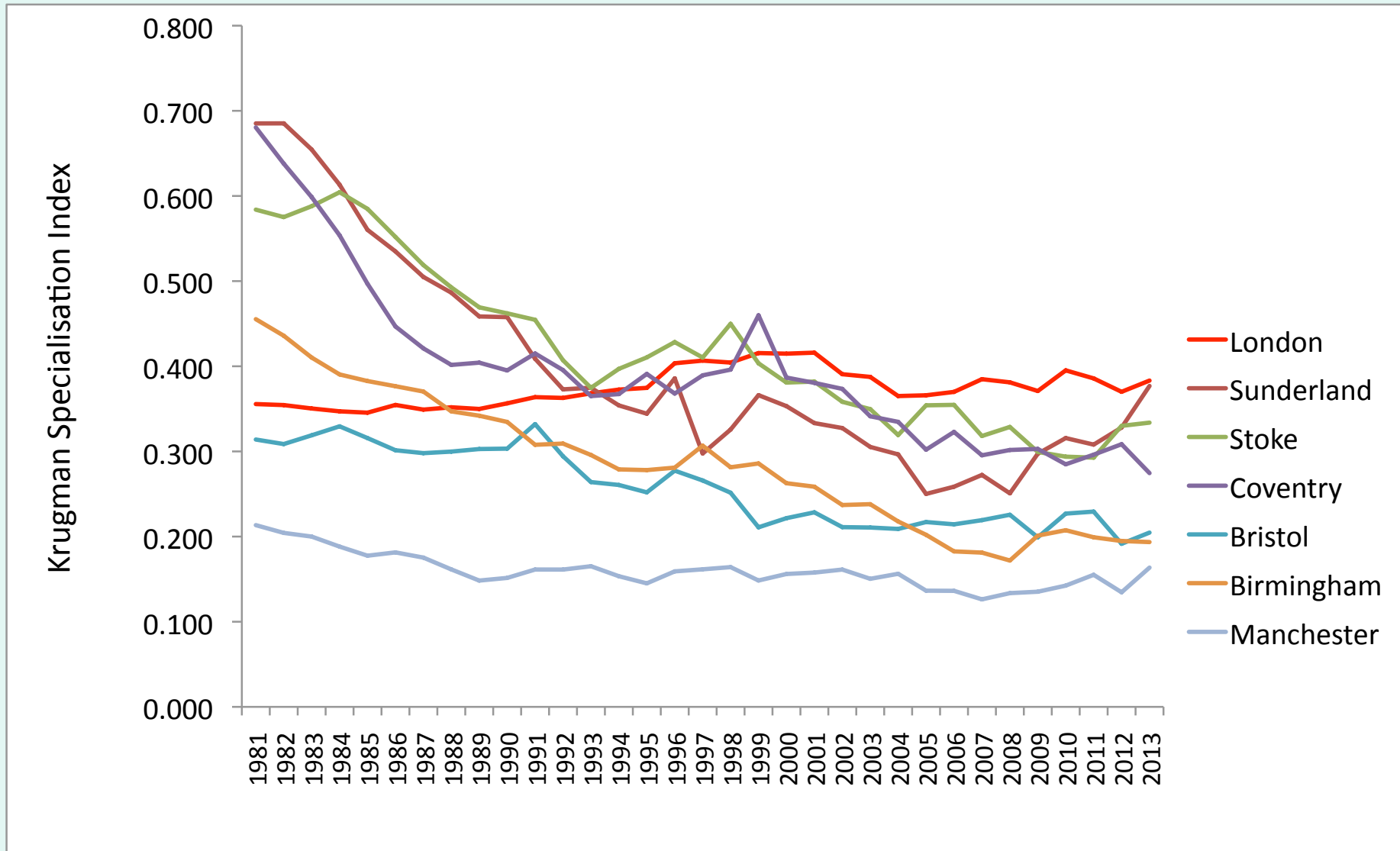
# City Divergence – The Role of Structure

- **City Specialisation and Growth**
- Using Krugman's Specialisation index, in 1981 significant differences across cities in degree of relative specialisation
- Most specialised – Stoke, Derby, Burnley, Coventry, Sunderland, Oxford, Preston
- Least specialised – Manchester, Newcastle, Nottingham, Glasgow, Bristol, Edinburgh, Sheffield
- But over last 35 years almost all cities have become noticeably less specialised

# Structural Change: Almost all Cities have Declined in Degree of Specialisation



# Specialisation Trends in Selected Cities, 1981-2013



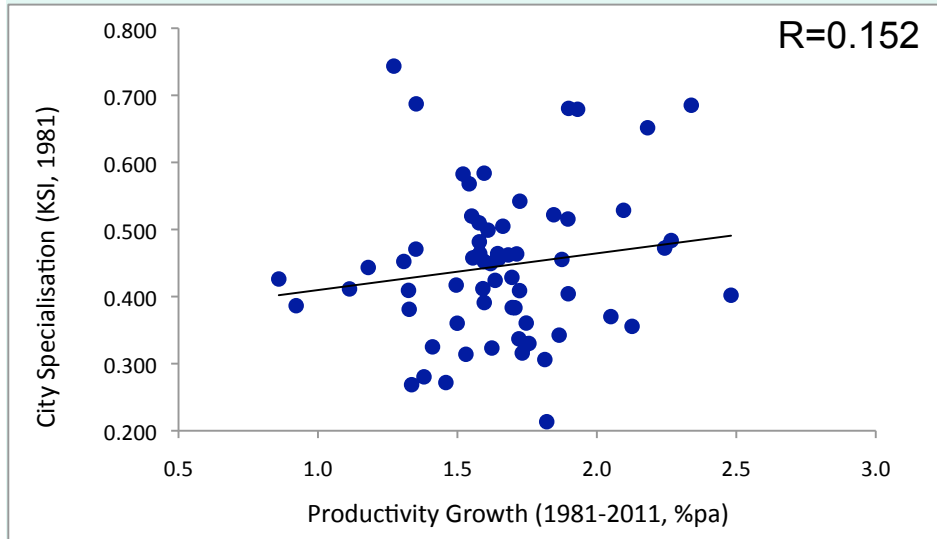
# City Divergence – The Role of Structure

- **City Specialisation and Growth**
- Little evidence that specialisation promotes faster growth
- Slight positive correlation with productivity growth
- But slight negative correlation with output growth and employment growth
- Some modest evidence that cities that have witnessed most rapid loss of manufacturing tradable base have gained least in service sector growth
- These findings suggest that there may be only weak relationship between city economic structures and long-run growth paths

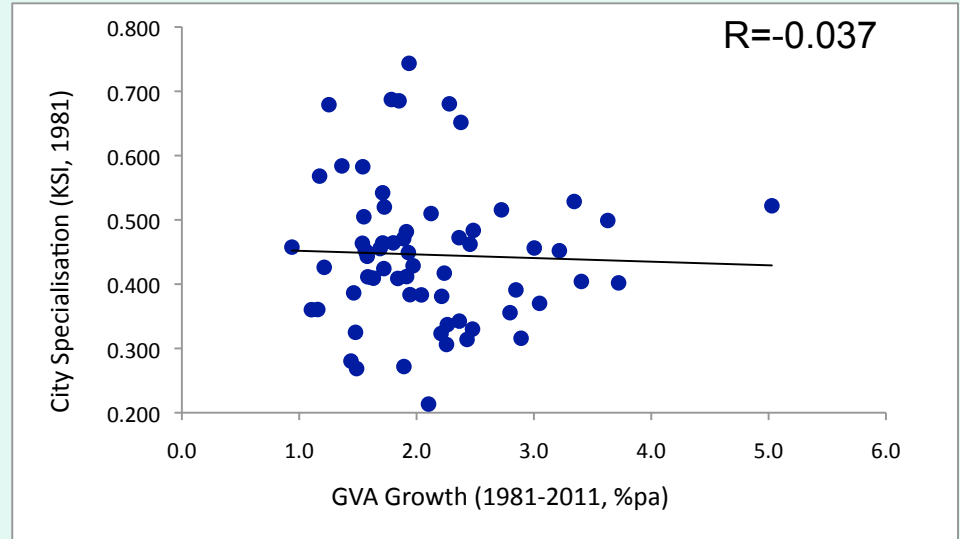


# Little Relationship between City Specialisation and Growth

## Specialisation and Productivity Growth



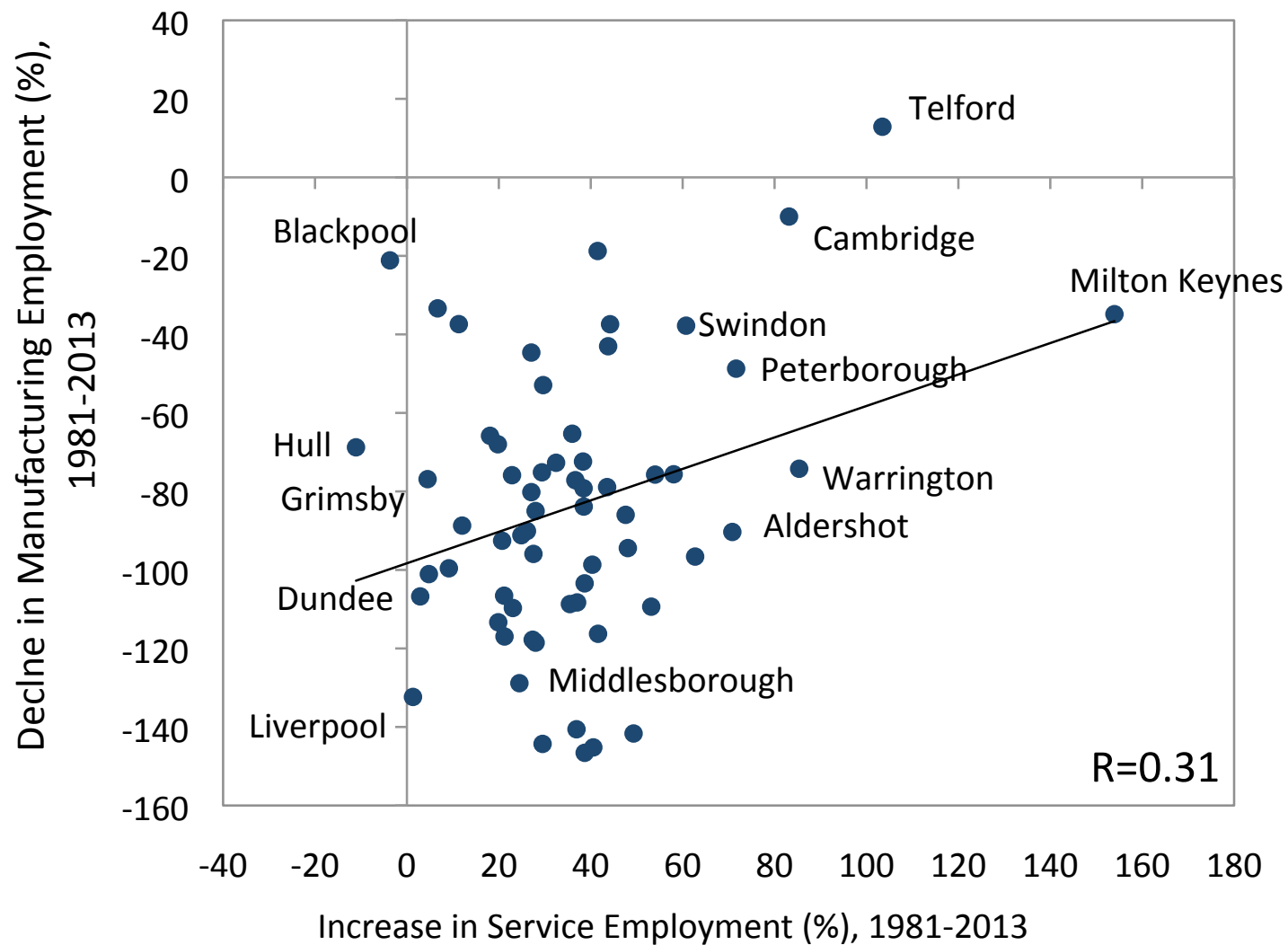
## Specialisation and Output Growth



## Specialisation and Employment Growth



# Decline in Manufacturing Tradable Base versus Increase in Services (Employment), Percent, 1981-2013



## Using Shift-Share to Assess Role of Industrial Structure in City Growth

- Shift-share decomposes city (or regional) growth into three main components
- ***National effect*** – a city's growth path had it grown at the same rate as the nation as a whole (a sort of 'counterfactual' growth)
- ***Industrial structure effect*** – that portion of a city's growth attributable to the degree to which its industrial structure differs from that of the national economy as a whole (ie its particular mix of nationally faster and slower growing industries)
- ***City-specific or 'competitiveness' effect*** – that portion of a city's growth due to the differential performance of its industries compared to the same industries nationally
- We use dynamic version of Shift Share

# Using Shift-Share to Assess Role of Industrial Structure in City Growth

- Dynamic Shift-Share decomposition of city growth

City growth = National growth effect + Economic structure (industry) effect + city specific 'competitiveness' effect:

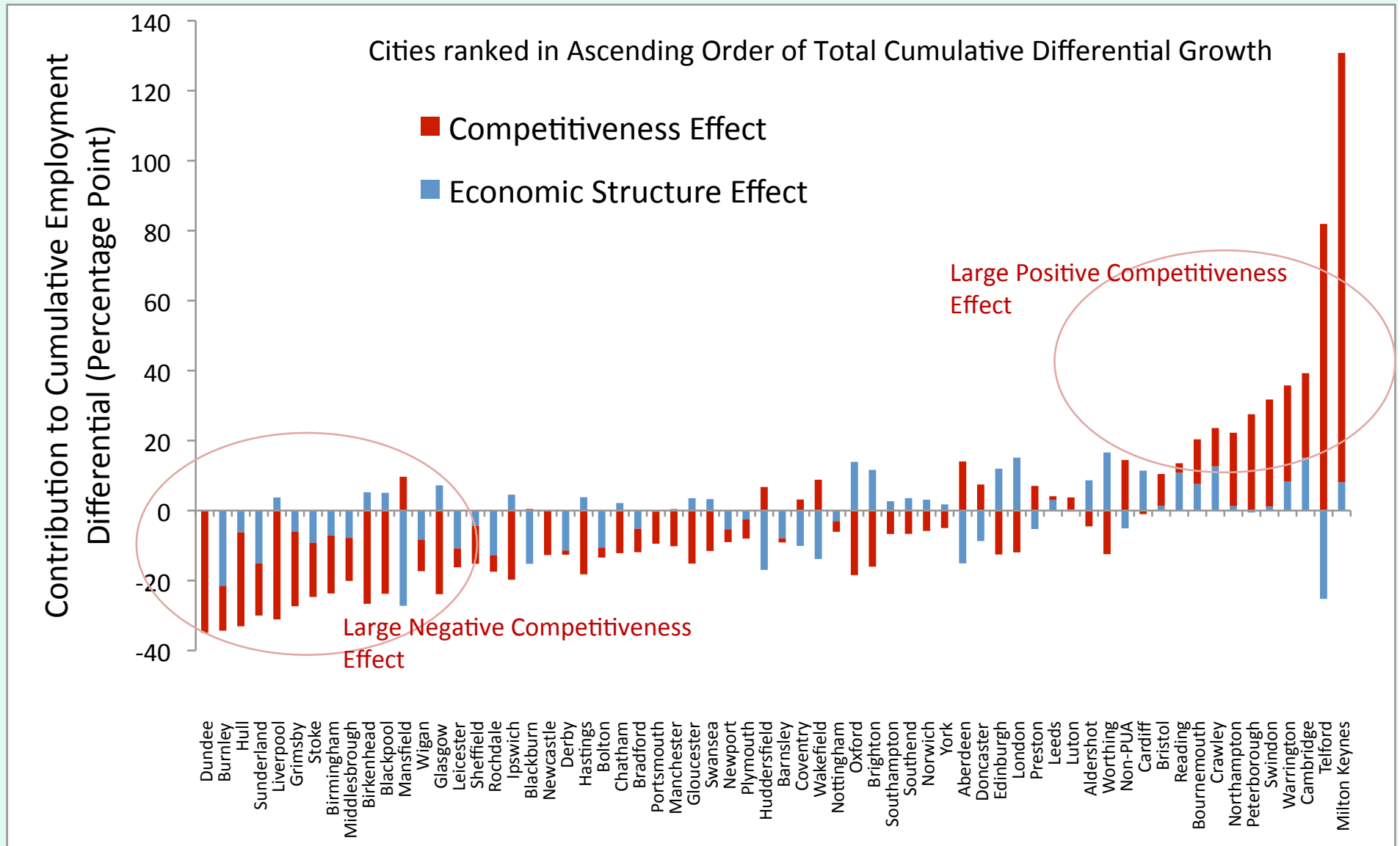
$$\Delta E_r^{t,t+k} = \sum_i (g_N^{t,t+k} E_{ir}^t) + \sum_i (g_{iN}^{t,t+k} - g_N^{t,t+k}) E_{ir}^t + \sum_i (g_{ir}^{t,t+k} - g_{iN}^{t,t+k}) E_{ir}^t$$

or re-arranging to focus on differential city growth:

$$\Delta E_r^{t,t+k} - \sum_i (g_N^{t,t+k} E_{ir}^t) = \sum_i (g_{iN}^{t,t+k} - g_N^{t,t+k}) E_{ir}^t + \sum_i (g_{ir}^{t,t+k} - g_{iN}^{t,t+k}) E_{ir}^t$$

Differential Growth = Industry effect + 'Competitiveness effect'

# Dynamic Shift-Share Decomposition of City Cumulative Differential Employment Growth, 1981-2013



## City Divergence – The Role of Structure

- Economic structure plays some role
- Fastest (Southern) growing cities tend to have favourable structures;
- Slowest (Northern) growing cities tend to have less favourable structures
- But in most cases, structural effects far outweighed by ‘competitiveness effect’
- May be function of level of industrial disaggregation (45 sectors) used here
- But similar results found in other studies of UK regions
- Suggests that ‘competitiveness’ (productivity?) is key driver of city growth (and hence of divergent city growth paths)

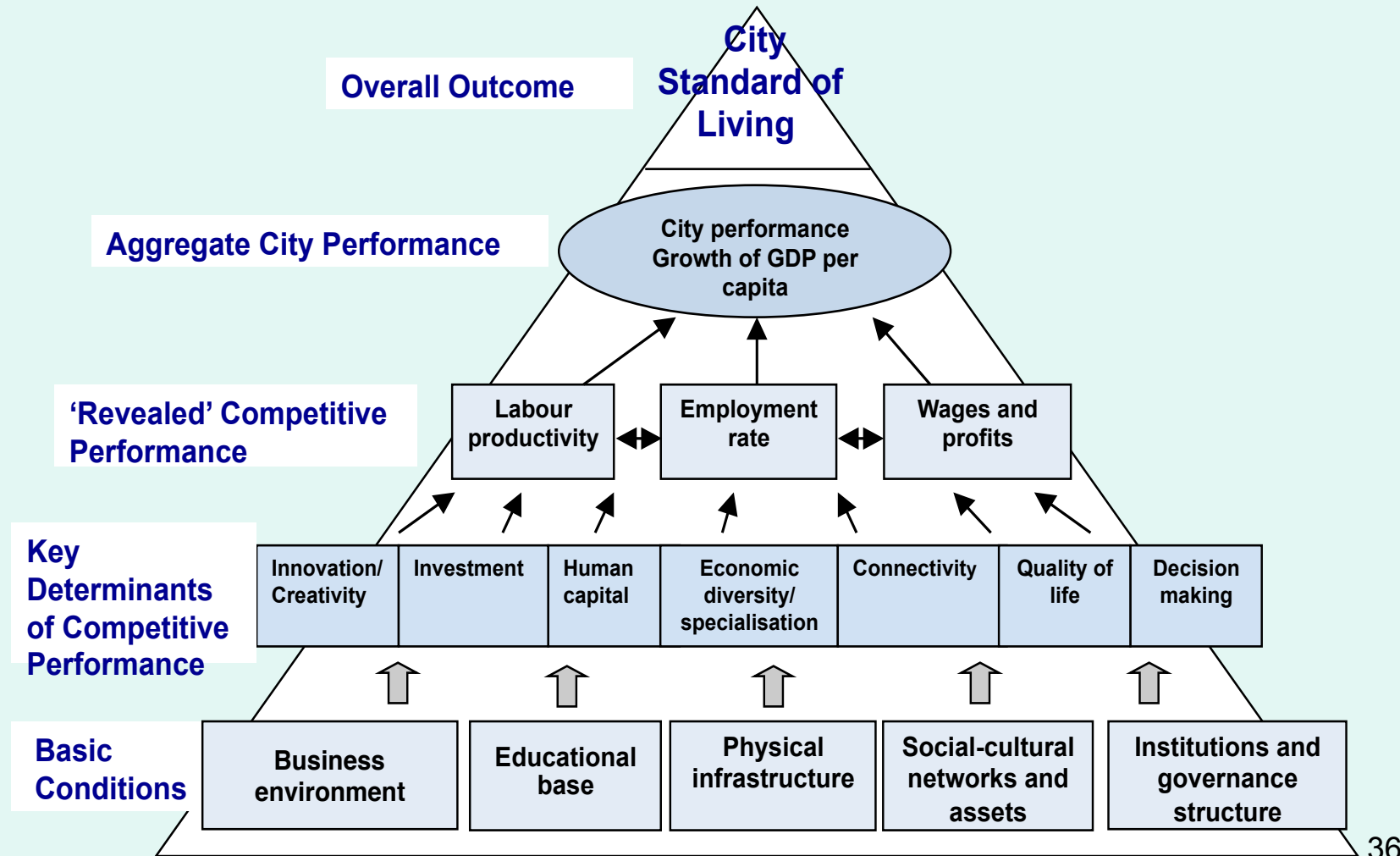
# Competitiveness - The 'Dark Matter' Driving Divergent City Growth?

- **What is city competitiveness?**

Competitiveness is a *holistic concept*. While economic size and growth matter, several other factors determine a city's competitiveness, including its business and regulatory environment, its institutions, the quality of human capital, cultural aspects and the quality of environmental governance. These factors not only help a city sustain high economic growth, but also secure its future competitiveness (**Economist Intelligence Unit, 2013**).

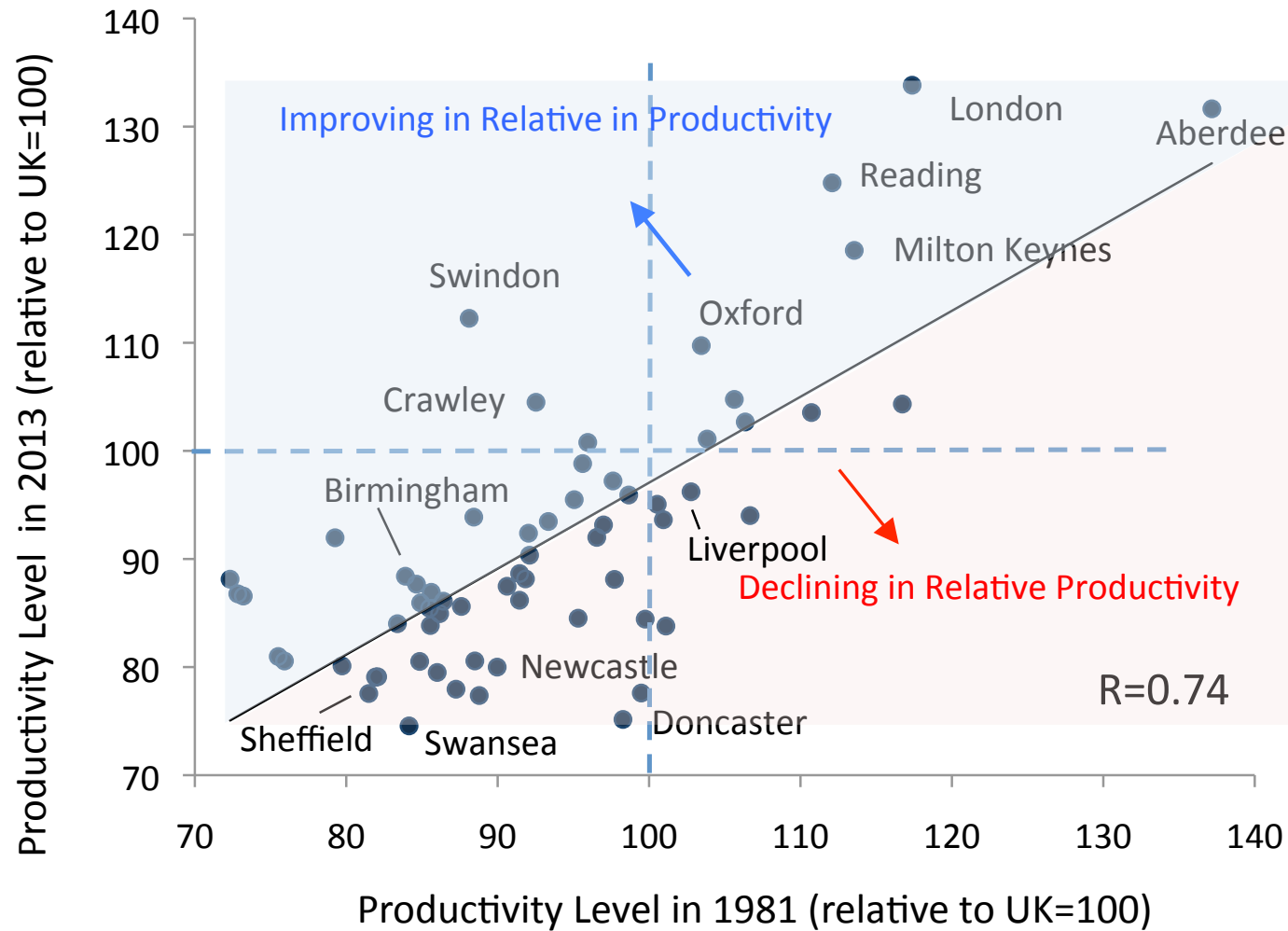
the ability of cities *to continually upgrade* their business environment, skill base, and physical, social and cultural infrastructures, so as to attract and retain high-growth, innovative and profitable firms, and an educated, creative and entrepreneurial workforce... (**Martin and Simmie, 2007**).

# Factors Influencing a City's 'Competitiveness'





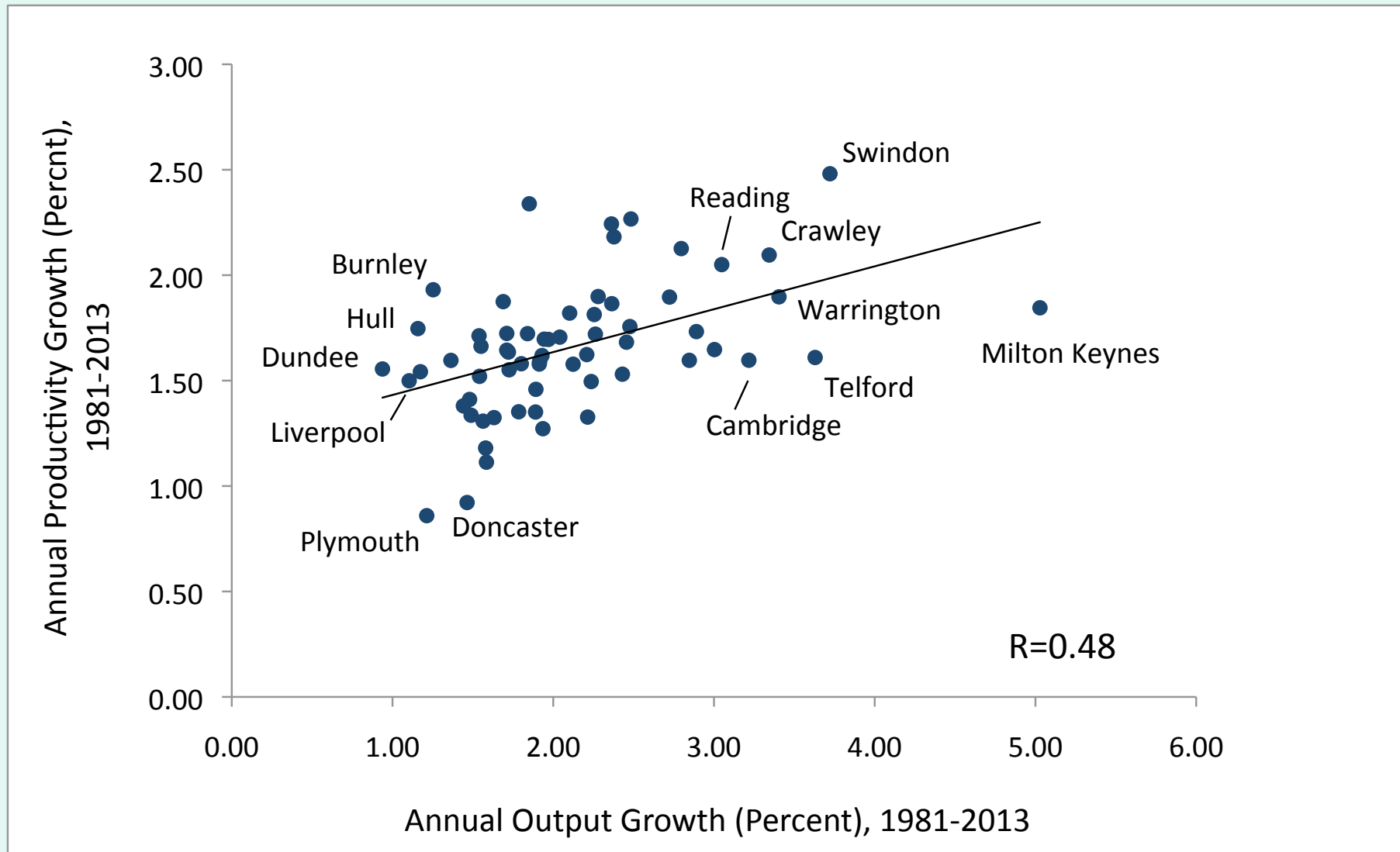
# How Productivity Varies across Cities, 1981 and 2013



# City Divergence – Competitiveness and Productivity

- Increasing returns ideas (eg Verdoorn, Kaldor, Fabricant, etc) suggest that output growth is a key driver of productivity
- Output growth promotes increasing returns from scale effects, and increases opportunities for investment in technology
- These should increase productivity
- Hence regression of labour productivity growth on output growth should give coefficient  $< 1.0$
- This would be evidence of dynamic increasing returns to scale

# Productivity and Output Growth across British Cities, 1981-2013



# City Growth Equations – Evidence of Dynamic Increasing Returns Effects?

(i)	$Productivity\ growth = 1.032^* + 0.270^* Output\ growth$ (9.723) (5.648)	Adjusted $R^2$ =0.328
(ii)	$Employment\ growth = -1.010^* + 0.715^* Output\ growth$ (-9.627) (15.111)	Adjusted $R^2$ =0.783

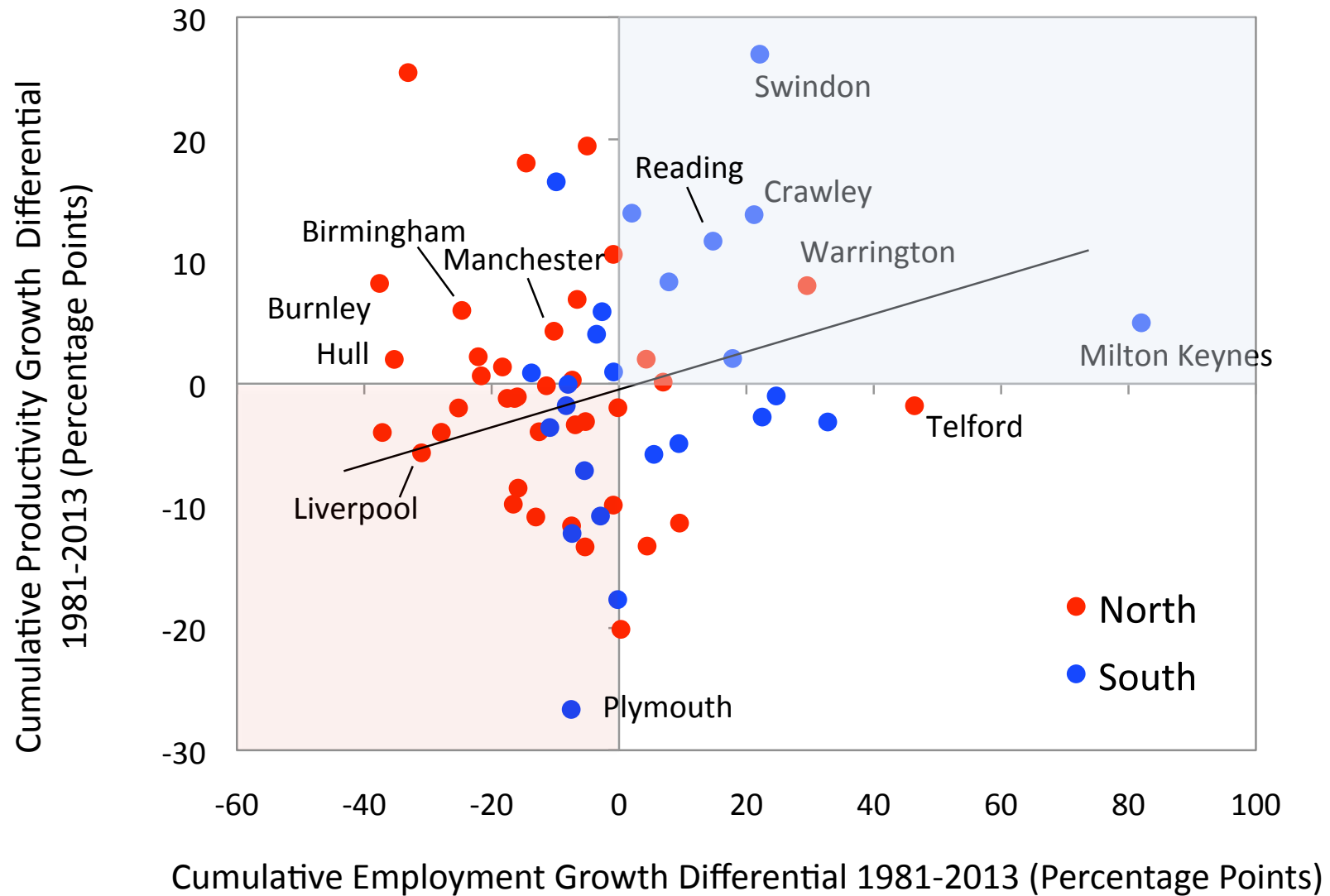
n=63 cities

Estimated using average annual growth rates measured over 1981-2013

t-values in parentheses, \* indicates statistically significant at 1 percent level

Coefficients on output growth statistically less than 1.0 (at 1 percent level) in both equations

# Cumulative Differential Productivity and Employment Growth, 1981-2013



## Conclusions and Research Agenda

- British cities show divergent growth over past 35 years
- Main difference is between Northern cities (irrespective of size) and Southern cities
- Also, smaller cities have grown faster than larger cities
- London has witnessed major ‘turnaround’ since early-1990s
- City economic structures seem less important than city ‘competitiveness effects’ - is this productivity?
- Need much more research on (inter alia):
  - City ‘competitiveness’ effects and their determinants
  - Changing nature of tradables and their effects
  - Why cities differ in structural adaptability over time
  - How lagging/shrinking cities can undergo economic revival