



BIS ECONOMICS PAPER NO. 7

Understanding Local Growth

OCTOBER 2010



BIS | Department for Business
Innovation & Skills

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Foreword

It is important to ensure that Government policy reflects new developments in economic thinking and is informed and refined in light of new evidence. Economic understanding of how cities and places perform has improved considerably over the last couple of decades with the development of spatial economics.

These developments are increasingly being recognised by policy makers and the Government has just launched a White Paper on Local Growth which sets out its new approach aiming to drive and remove barriers to economic growth at the sub-national level. This reflects a fundamental shift from previous policy, which focussed on narrowing the gaps in growth rates between the English regions to a policy that recognises that places are unique and have different potential for growth.

We are very pleased to introduce this analytical paper which examines the evidence on differences in economic performance across England and discusses the key lessons from economic theory which underpins these policy changes. The scope of this paper is to set out broad analysis on economic drivers and disparities between places. We envisage that future analysis will build on this to explore further how the Government's reforms will shape local economic growth.

This paper has been jointly drafted between our two Departments, the Department for Business, Innovation and Skills and the Department for Communities and Local Government with work supported by a wider cross Whitehall group. We are very grateful to those who contributed to this work.



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1. Introduction

Supporting economic growth is one of the key objectives of the Coalition Government and is particularly important as the economy recovers from the longest and deepest recession of the post war period and the country faces the challenge of reducing public debt. The Government considers it essential to ensure that this growth is not concentrated in certain sectors or areas of the country but that is '*balanced across all regions and industries*'¹.

The Local Growth White Paper sets out the policies this Government plans to put in place to ensure that local areas have the tools and incentives to maximise their potential for growth. These policies, which are described in detail in the White Paper, are based around three central themes:

1. **Shifting power to local communities and businesses** - every place is unique and has potential to progress. Localities themselves are best placed to understand the drivers and barriers to local growth and prosperity, and as such should lead their own development to release their economic potential. Local authorities, working with local businesses and others can help create the right conditions for investment and innovation. Under this theme the White Paper sets out policy around the creation of Local Enterprise Partnerships.
2. **Promoting efficient and dynamic markets and increasing confidence to invest** - create the right conditions for growth and prosperity, allowing markets to work. This involves reforming the planning system, so that it continues to support economic growth and is more engaged with businesses and local communities and creating a framework of powerful incentives for local authorities to deliver sustainable economic development, including for new homes and businesses.
3. **Focused investment** - tackling barriers to growth that the market will not address itself, supporting investment that will have a long term impact on growth and supporting the transition of areas with long term growth challenges to better reflect local demand. National and Local government policies should work with, and promote, the market, not seek to create artificial and unsustainable growth. The White Paper sets out detail around the Regional Growth Fund to support economic growth across England and help those areas that have been particularly impacted by public sector cuts.

This analytical paper looks at the theory and evidence on economic growth at the sub-national level which has helped to inform the policy set out in the White Paper. The scope of the paper is to set out broad analysis on the economic drivers and disparities between places. The paper draws from economics but recognises that other disciplines may also help in explaining these differences. It does not explore in detail the evidence of reforms to incentives, planning, or local enterprise

¹ Coalition Agreement Forward

partnerships; or go into the challenges faced by smaller geographies of neighbourhoods and communities. We expect these to be the focus of future analysis by relevant government departments.

- Chapter 2 - considers the economic performance across England. This section also highlights recent changes brought about by the recession and looks at the ability of the private sector to generate jobs in different parts of the country.
- Chapter 3 - seeks to highlight some of the contemporary academic thinking in economics that inform Government policy. Core concepts discussed include the economics of places, neoclassical growth theory and convergence, new economic geography and agglomeration.
- Chapter 4 - then goes on to discuss why a new policy approach is needed considering each of the three themes set out in the white paper - highlighting the need to formulate economic interventions at the appropriate spatial level, address market failures and give business increased confidence to invest.

2. The Economic Geography of England

This section examines the data on economic performance across England. It also considers the impact of the recent recession and looks at the ability of the private sector to generate jobs in different parts of the country.

It shows that there are significant and growing differences in economic performance which are much more complex than the traditional generalisation of a north-south divide. Although the South East and in particular, London, have consistently grown at faster rates than the rest of the country in recent years, performance over local areas varies considerably.

Measuring Economic Performance

There are several different ways of measuring economic performance. Gross Value Added (GVA) per head is typically used for considering performance levels within a country. Although there are some criticisms of this metric² it has the advantage that it provides a full picture of performance implicitly including both productivity and employment effects. This measure is therefore used in this section to consider differences in the economic performance of areas across England.

As performance across local areas varies considerably analysis is presented to reflect this - focussing on the sub-regional picture particularly at the local authority level. However, data at this level is not always available. ONS produces information on GVA at the Regional (NUTS³ 1) level as part of the Regional Accounts on both a residence and workplace basis^{4 5}. However, the most recent GVA estimates available (provisional estimates for 2008) do not cover the main part of the recession⁶
⁷.

ONS also publish sub-regional GVA at NUTS2 (Counties/groups of counties) and NUTS3 (Counties / groups of unitary authorities) area levels. However, at this level

² For instance Dunnell (2009).

³ Nomenclature of Units for Territorial Statistics.

⁴ NUTS1 areas are equivalent to the Government Office Regions of England and Devolved administrations of the UK.

⁵ For residence based GVA the income of commuters is allocated to where they live rather than their place of work, while for workplace based GVA the income is allocated according to the region in which commuters work. Cross region commuting is only taken into account for three regions, meaning only East of England, South East and London have different values of workplace and residence based GVA.

⁶ Provisional data for 2008 was published in December 2009.

⁷ More detail on the Regional Accounts can be found here

<http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14650>

estimates are less timely⁸; subject to a higher degree of uncertainty and revision⁹; and are only produced on a workplace basis¹⁰. ONS do not publish GVA estimates below NUTS3 level so there are no official estimates at the local authority level.

For these reasons, sub-regional GVA is only used in this document to demonstrate that economic performance is not evenly spread across the country. In the absence of information about the accuracy of GVA estimates, and due to the relatively large revisions that can occur to the sub-regional GVA estimates over time, undue importance should not be assigned to minimal differences in GVA between local areas or small changes in GVA in the same local area over time, as these changes may be due to statistical noise¹¹. Analysis in this paper which considers growth or variation between areas is based on NUTS1 level estimates.

To help understand performance at local authority level we turn to other data sources such as income data (which can act as an indicator of productivity levels) and employment information (which gives a measure of participation)¹². Participation rates are also particularly important as this Government has moved away from a simple focus on growth alone but recognises the importance of growth that is sustainable and inclusive. Information on income and employment are therefore also presented to highlight how differences in performance are often much more pronounced at a sub-regional level.

When measuring economic performance across space, two important considerations need to be kept in mind. Firstly, NUTS1 GVA estimates are only produced in nominal terms and do not fully reflect differences in price level or differential rates of price changes across the country (the potential impact of this is considered in Appendix 1). Secondly, the presence of commuters in an area's workforce, people working in one area and living in another, complicates the reporting of economic performance. For consistency with employment and population measures, residence based GVA is considered where possible in this paper. This does mean that, for

⁸ For NUTS2 and NUTS3 areas the time lag with the data is almost 2 years, with the most recent data currently available being provisional data for 2007 (published in December 2009). The earliest estimate available at this level is for 1995.

⁹ GVA estimates are partly based on sample surveys so the quality of the results varies according to sample size, with results for smaller areas subject to a greater degree of uncertainty than those for larger areas. While Regional Accounts are calculated as reliably as possible, they are often subject to relatively large revisions which can affect numerous years. Most revisions reflect either the adoption of new statistical techniques or the incorporation of new information which allows the statistical error of previous estimates to be reduced.

¹⁰ NUTS2 and NUTS3 GVA estimates are only published on a workplace basis, which means comparable supplementary data which is often required to use alongside GVA (such as workforce job estimates to allow productivity estimates to be made) are not always available.

¹¹ Due to the complex process by which the GVA estimates are produced, it is not currently possible to define the accuracy of the estimates in terms of detailed statistical properties, for example through their standard errors. This makes it difficult to identify significant differences or changes overtime. The reliability of the estimates, as measured by the extent of revisions, is often used as a proxy for their accuracy.

¹² Other survey estimates for small areas are subject to a greater degree of uncertainty than estimates for larger areas; however, more formal measures of sampling error are often available to help understand the accuracy of these estimates.

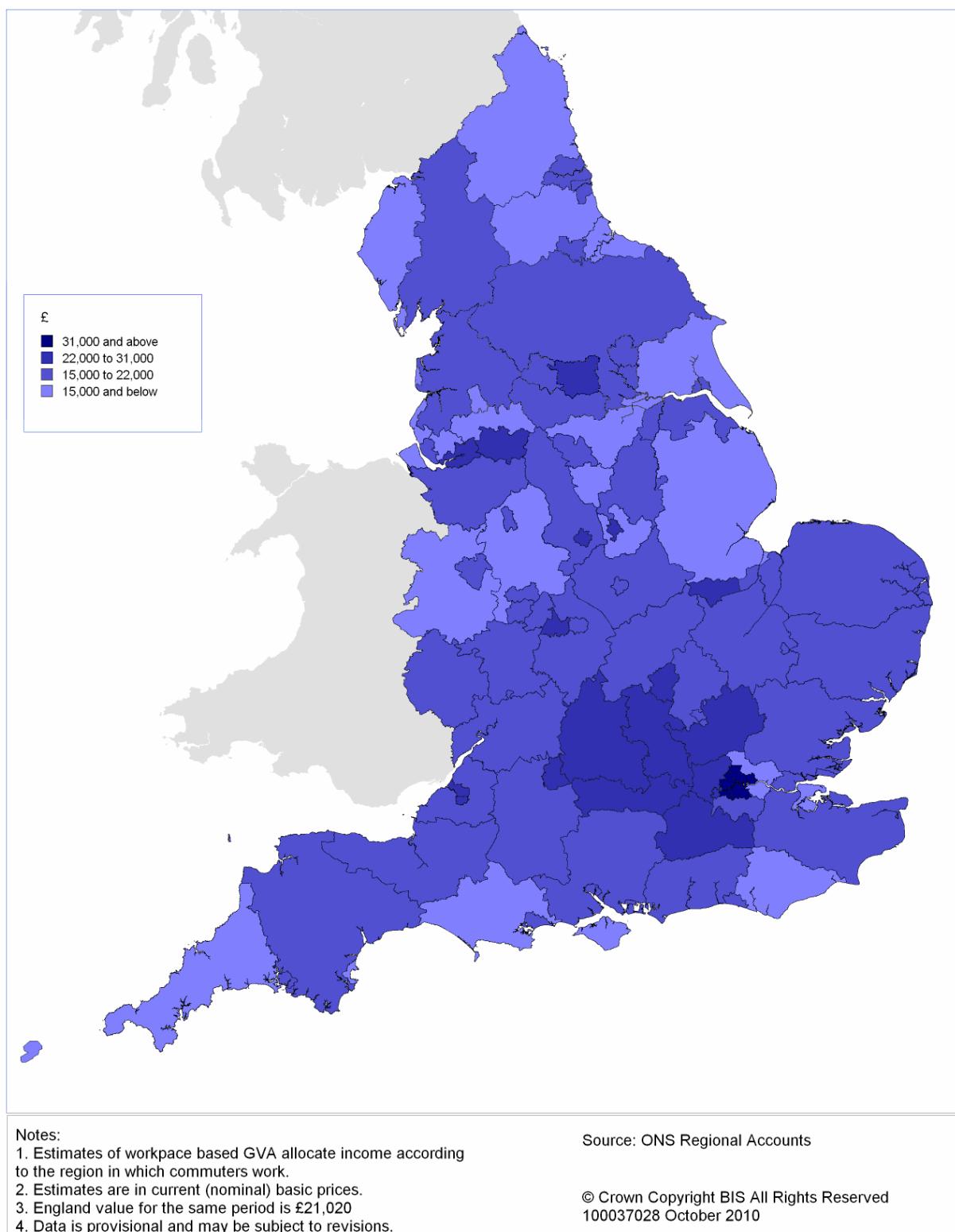
instance, some of the output reported in the South East will be generated in London and vice versa.

Economic Imbalances across England

Currently, economic performance across England is very uneven. Figure 1 shows differences in GVA per head across England. London and the wider South East tend to have higher GVA per head than the rest of the country, though even here there are poorer areas, such as East London, Medway and East Sussex. There are also important areas outside London, such as the areas surrounding Manchester, Leeds and Bristol, which have high levels of economic performance. The story of a prosperous South and a declining North is oversimplistic; the balance of England's sub-national growth is neither simple nor straightforward.

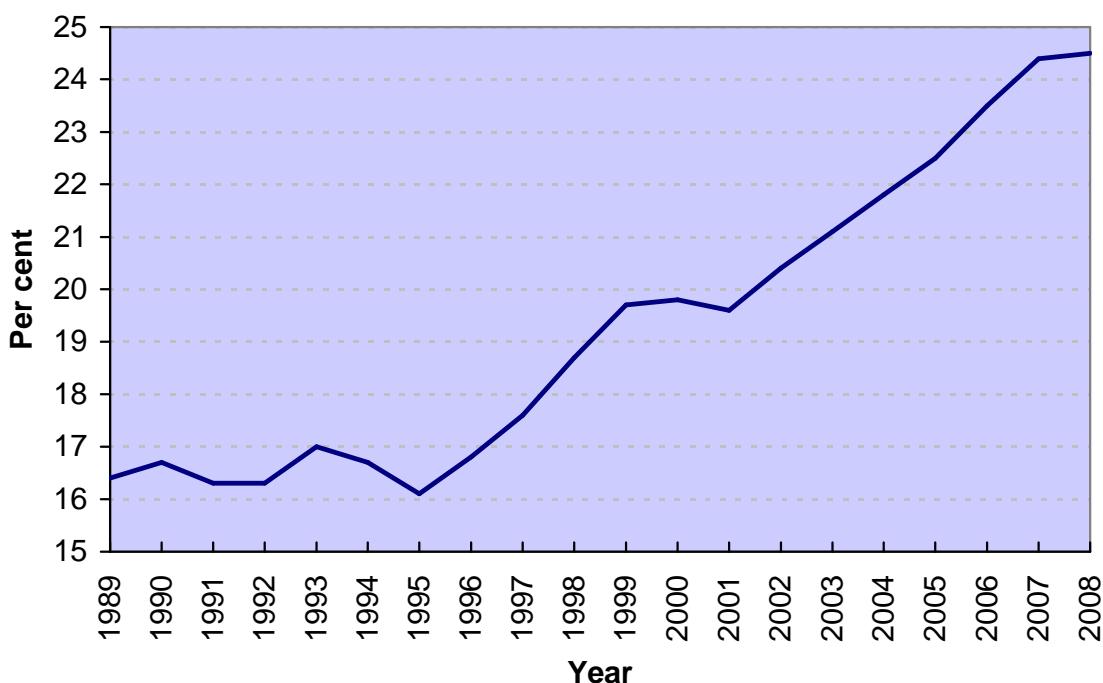
As already mentioned nominal GVA estimates are likely to overstate the real differences in economic performance between regions as they do not reflect differences in prices across the country. The information that would allow us to correct for this has constraints, but as shown in Appendix 1 although differences in prices may reduce the gap in GVA levels, the majority of the difference in economic performance are likely to remain.

Figure 1: GVA per head, English NUTS3 areas, 2007



It would also appear that imbalances in income levels have grown over the last twenty years. Regional data indicates that areas in and surrounding London have grown significantly faster than the rest of the country¹³. This faster growth has led to a significant widening of the gap in performance, as shown in figure 2. In 1989, dispersion between the regions (as measured by the coefficient of variation) was around 16 per cent but by 2008 this had increased to over 24 per cent. Furthermore, the figure shows that most of the increase in disparities has occurred since the mid 1990s.

Figure 2: Coefficient of Variation of GVA per head levels, English NUTS1 areas, 1989–2008



Source: BIS calculations using ONS Regional Accounts

Notes: 1. The Coefficient of Variation is a measure of dispersion calculated as: Standard Deviation/Mean. 2. Estimates of regional GVA are on a residence basis, where the income of commuters is allocated to where they live rather than their place of work. 3. Data for 2008 is provisional and may be subject to revisions.

The increase in imbalances across the country does not seem to be wholly due to recent economic policy. The increase in imbalances seem to have been a continuation of trends that began in the 1970s and 1980s, as the UK economy began

¹³ Regional estimates are presented as sub-regional GVA estimates are only available from 1995–2007. Estimates at sub-regional levels are also subject to a higher degree of uncertainty and revision than regional estimates.

to adapt to international economic trends such as globalisation and technological progress¹⁴. These trends can also been seen in other industrial countries¹⁵.

Economic Imbalances in productivity and employment

England's overall economic performance has become significantly more imbalanced over the last thirty to forty years. An analysis of the two determinants of performance, employment and productivity, suggest that most of this widening of imbalances is due to faster productivity growth in well-performing areas.

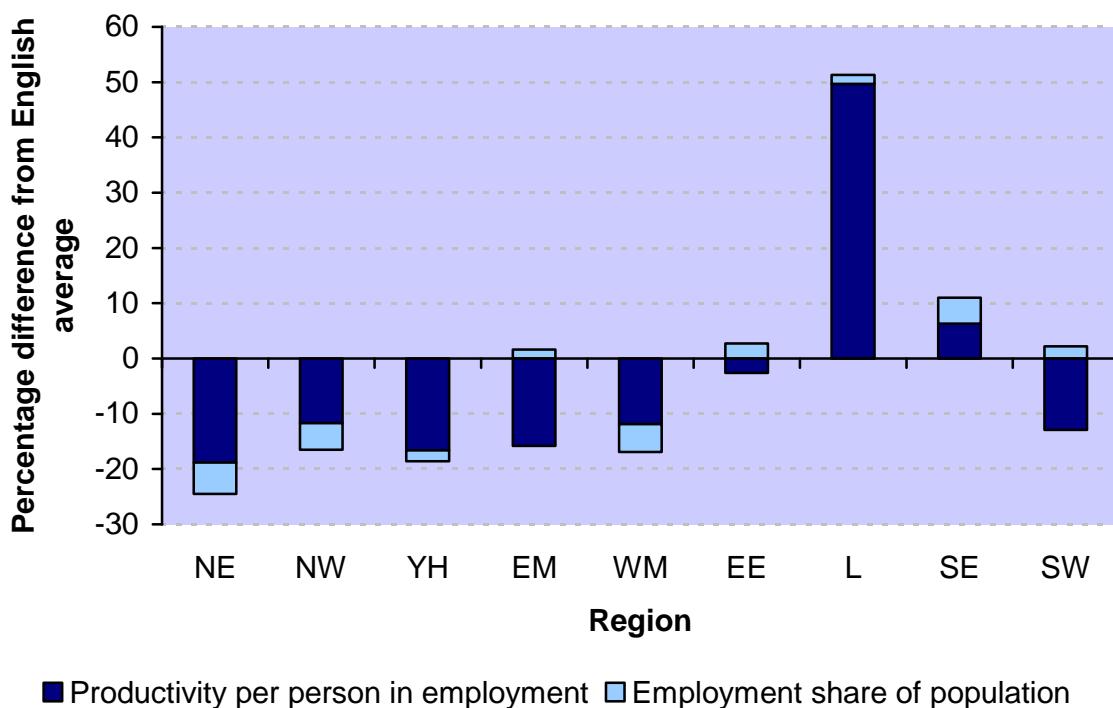
When the performance differences for 2008 are decomposed into employment share of the population and productivity, shown in figure 3, the relative importance of the two determinants is apparent. For all areas the majority of the performance difference from the English average is due to variation in productivity. Further, as discussed in the next section, there is evidence that while differences in employment rates across the country are declining, productivity differences are growing strongly, with London in particular seeing strong productivity growth.

This chart focuses on a regional decomposition, due to the limitations with the sub-regional GVA data, as discussed above. However, as we show later, there is much sub-regional variation with high productivity/ high income areas distributed across the country.

¹⁴ Crafts (2004, 2005)

¹⁵ Discussed in detail in Appendix 2.

Figure 3: Decomposition of regional GVA per head disparities, English NUTS1 areas, 2008



Source: ONS Regional Accounts, ONS Annual Population Survey, ONS Population estimates

Notes: 1. Employment information is for all aged 16 and over. 2. Estimates of regional GVA are on a residence basis, where the income of commuters is allocated to where they live rather than their place of work. 3. Statistical discrepancies are included in productivity differential. 4. Nominal GVA is used. 5 Data for 2008 is provisional and may be subject to revisions.

Economic Imbalances in productivity/ income

The main component that explains much of the differences in economic performance between areas is the productivity of people in work. As shown in table 1, productivity in London in 2008 was nearly twice that of the North East when measured as the average GVA per person in employment, though again the difference may be overstated due to price differences across the country. Further, the productivity gap is growing strongly; the gap between London and the least productive region grew from 55 to 80 per cent between 1993 and 2008.

The faster productivity growth in London and, to a lesser extent, the South East explains much of the widening in the productivity gap. Between 1993 and 2008, average annual productivity growth in London was nearly one percentage point higher than all regions except the South East.

Table 1: Regional productivity levels and average annual growth rate, English NUTS1 areas, 1993–2008

| | Productivity per person in employment (England=100) | | Average annual growth rate (1993–2008) (%) |
|------------------------|--|-------|---|
| | 1993 | 2008 | |
| North East | 90.7 | 81.1 | 3.6 |
| North West | 93.1 | 87.7 | 4.0 |
| Yorkshire & the Humber | 88.0 | 83.1 | 4.0 |
| East Midlands | 88.3 | 84.9 | 4.1 |
| West Midlands | 91.8 | 87.4 | 4.0 |
| East of England | 100.2 | 97.6 | 4.2 |
| London | 138.0 | 147.8 | 4.9 |
| South East | 101.5 | 105.8 | 4.7 |
| South West | 89.2 | 87.5 | 4.2 |

Source: BIS calculations using ONS Regional Accounts, ONS Labour Force Survey and ONS Population estimates

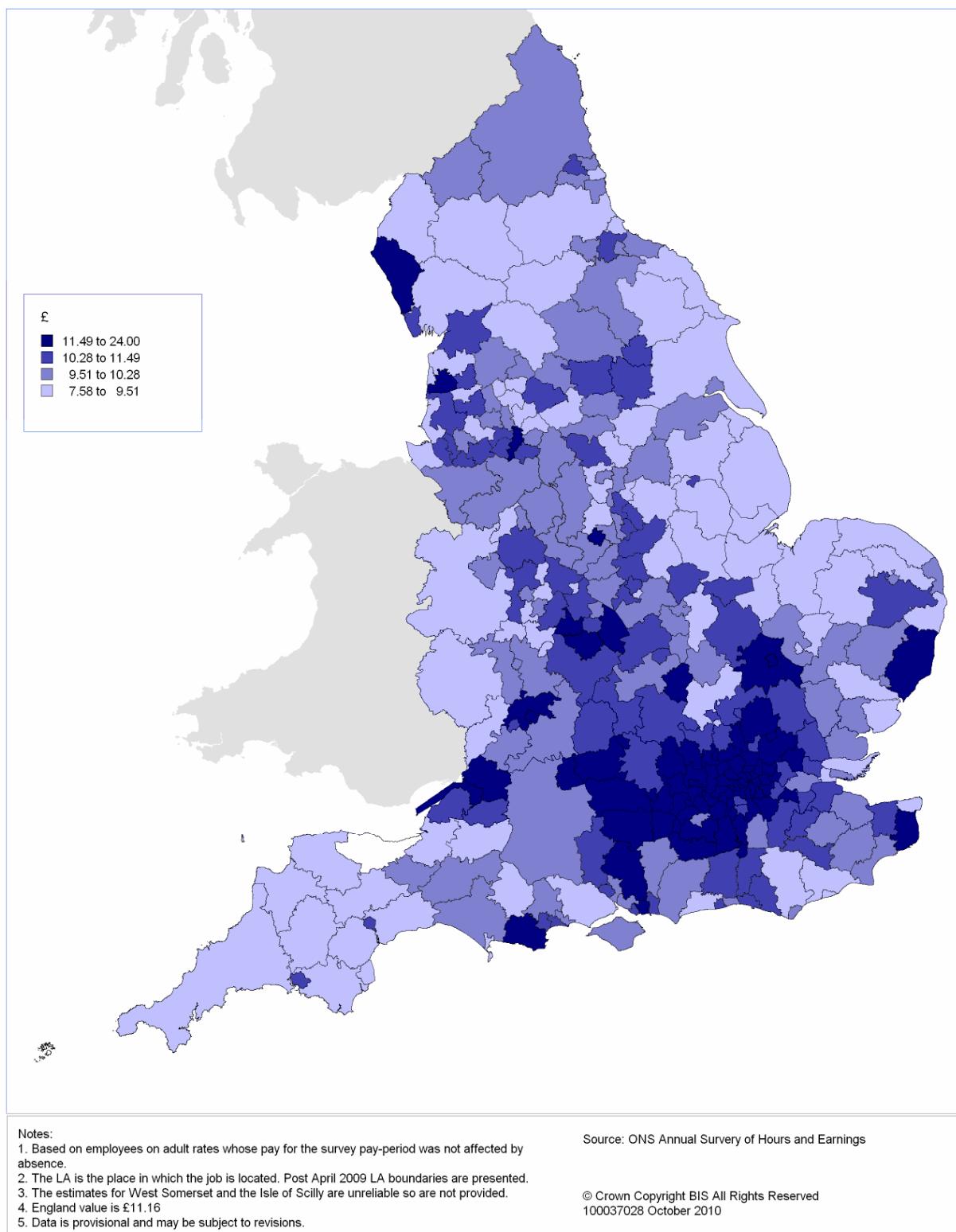
Notes: 1. Nominal GVA is used. 2. Estimates of regional GVA are on a residence basis, where the income of commuters is allocated to where they live rather than their place of work. 3 GVA data for 2008 is provisional and may be subject to revisions.

Again, analysis of the regional trends oversimplifies what is a complex spatial distribution and there is much more variation between local authorities than between regions. Because of the lack of official estimates of local authority level GVA, it is not possible to estimate productivity at this level. Official data on earnings, which are commonly used as a reasonable proxy of productivity, are produced at this level. As shown in figure 4, there are local areas with high wages/ high productivity in all regions of the country while some parts of London and the South East have relative low wages/ productivity.

The recession has had a profound impact on productivity at the UK level. Productivity began to decline in the second half of 2008, and fell by 3.3 per cent in 2009, the largest annual fall since the series began in 1960¹⁶. The latest data indicates that productivity began to grow again in the first quarter of 2010. The regional distribution of the slowdown in productivity is still unclear. Regional data is much less timely than national, with productivity data only available up until 2008, with the most current year of data published on a provisional basis and therefore liable to revision.

¹⁶ ONS Productivity estimates (Output per Worker basis).

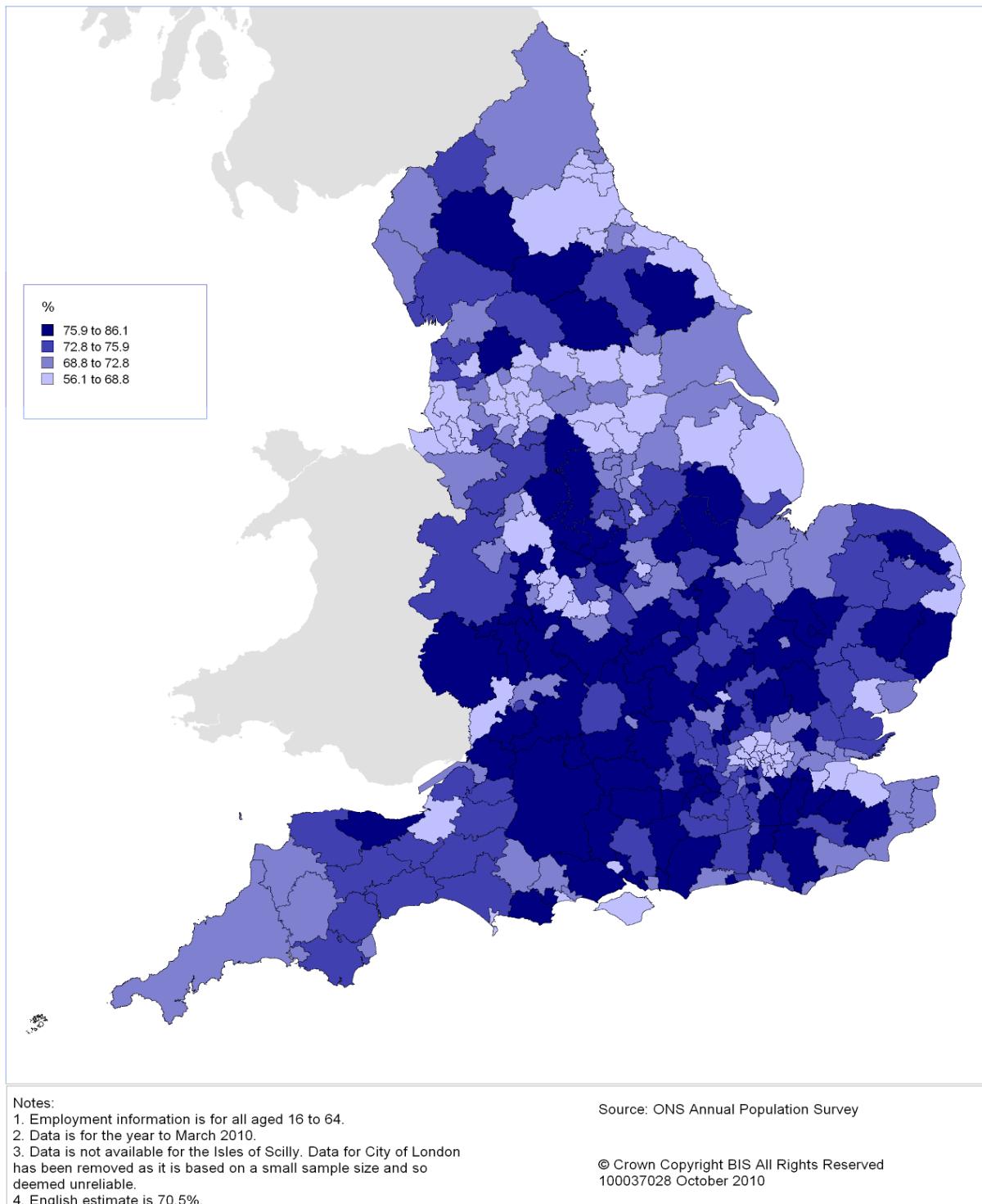
Figure 4: Median gross hourly pay for all employee jobs, English Local Authority (District/ Unitary), 2009



Economic Imbalances in employment

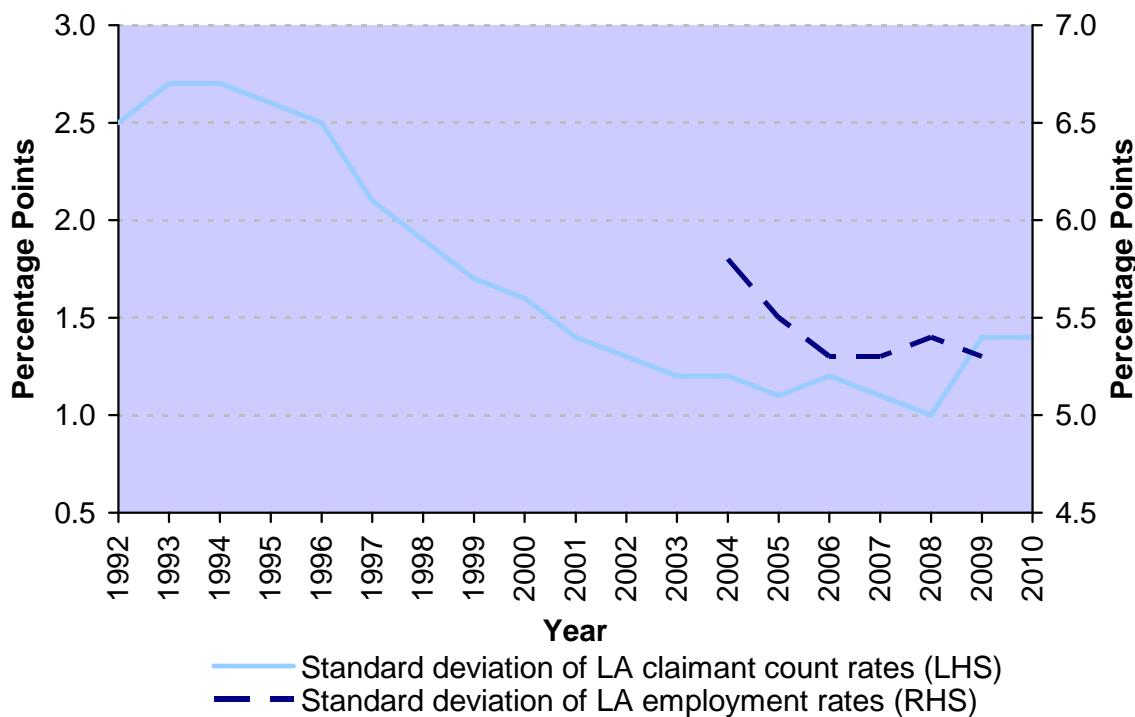
As with wages, Figure 5 illustrates that employment rates vary sub-regionally.

Figure 5: Employment rate, English Local Authority (District/ Unitary), 2010



Despite the variation in employment rates at local level, labour markets in most parts of the country have performed relatively well in recent years. England has seen a long-term improvement in the proportion of its population aged 16–64 in employment, with all but 29 local authorities (District/ Unitary) (out of 326) having a higher employment rate than the EU15 average. At the same time, areas which previously had low employment rates have seen some of the largest improvement, reducing the employment rate differences across the country. As shown in figure 6, the gap in employment rates between local authorities, measured as a standard deviation, appeared to fall before the recent recession. It is possible to look at these trends over a longer time scale using data on the proportion of the population aged 16–64 claiming unemployment benefits. This indicates that the decline in the differences between local authorities began in the early 1990s. Even though the gap has declined there remain localised areas where the claimant count rate remains high.

Figure 6: Standard deviation in claimant count rate and employment rate, English Local Authority (County/ Unitary), 1992–2010



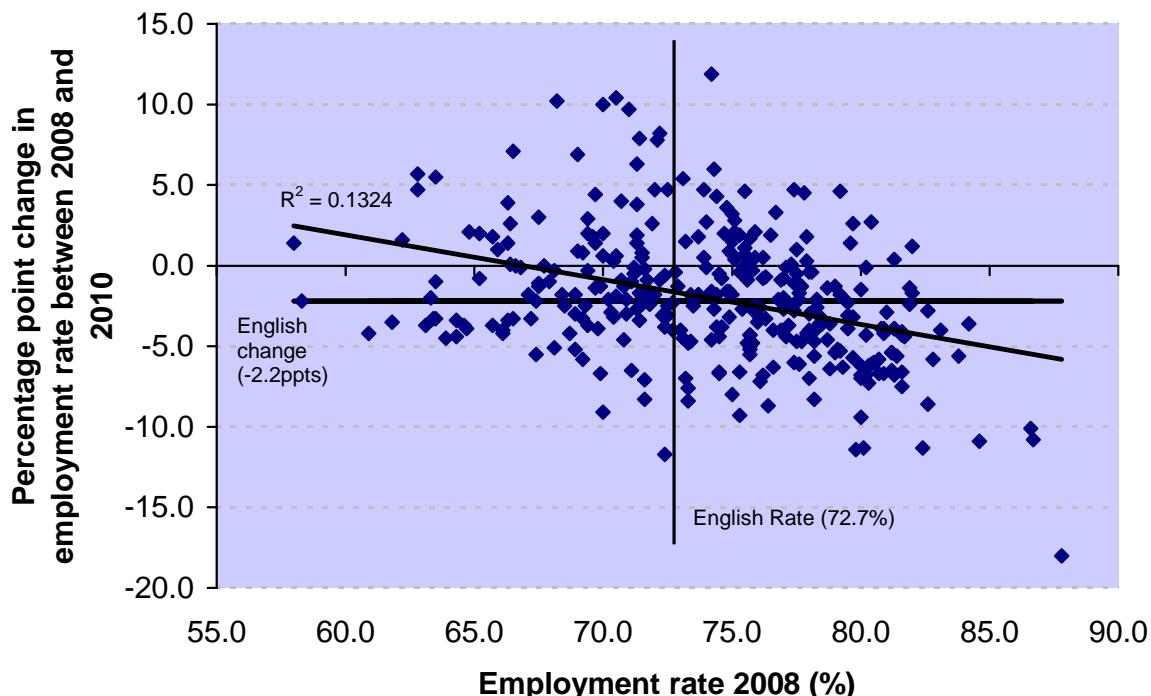
Source: Jobcentre Plus administrative system data (nomis) and ONS Annual Population Survey

Notes: 1. Residence based Claimant Count (claimant count level as a proportion of resident population aged 16–64) are used. 2. Data is not seasonally adjusted. Claimant count data are for May of each year and employment rates are for the calendar year. 3. Employment information is for all aged 16 to 64.

The recession has led to some reversal in this trend, as the decreases in employment have typically been \wedge in areas with lower initial employment rates

(as shown in figure 7 below)¹⁷. However, as the fall in employment during this recession has been smaller than expected, the recent increase in variation has been reasonably small.

Figure 7: Employment rate and change in employment rate, English Local Authority (District/ Unitary), 2008–2010



Source: ONS Annual Population Survey

Notes: 1. Employment information is for all aged 16 to 64. 2. Data is for the year to March of the period shown. 3. Data is not available for the Isle of Scilly. Data for the City of London has been removed as it is based on a small sample size and deemed unreliable.

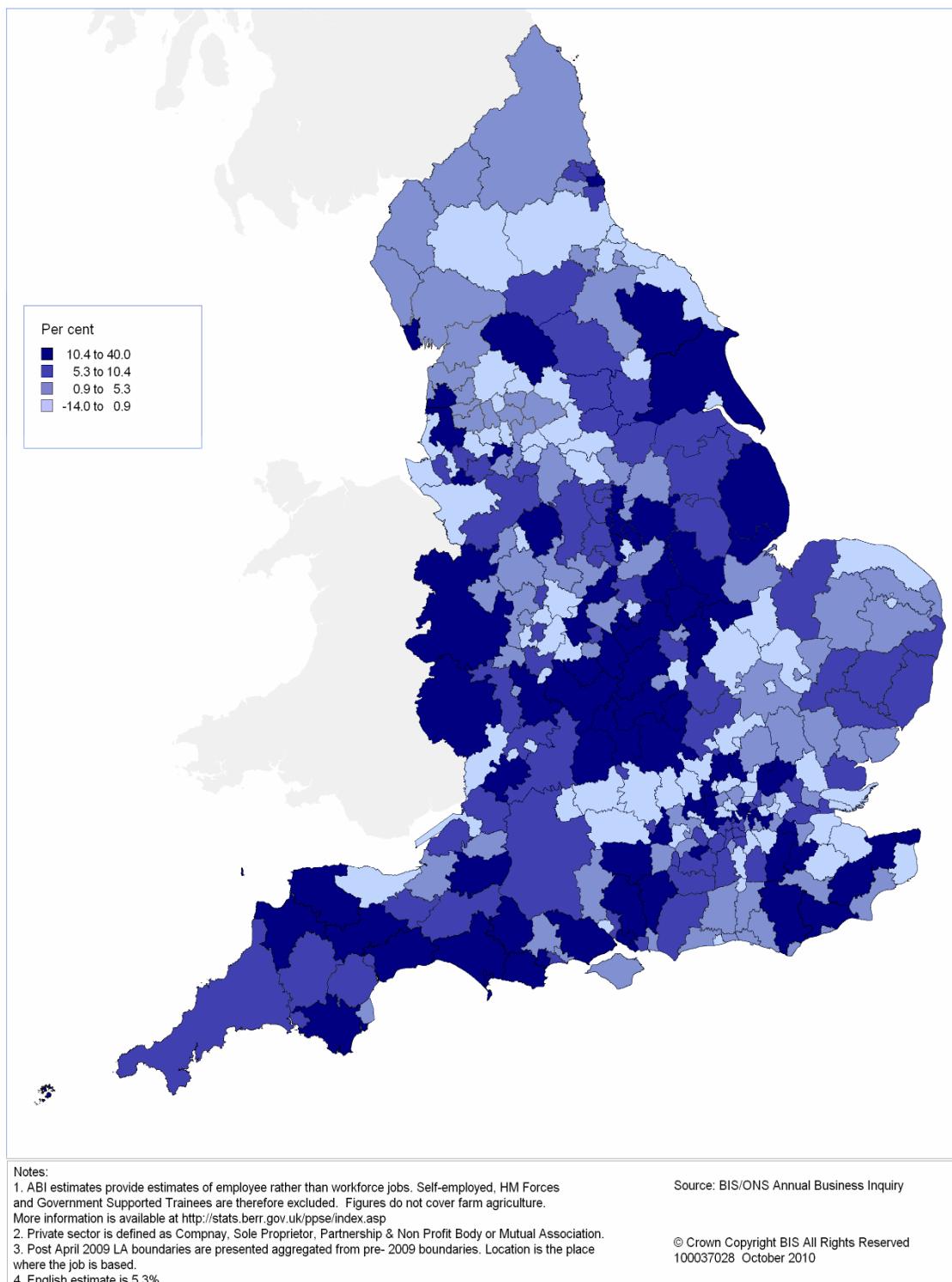
Private sector jobs

Beneath the headline improvement in labour markets, there remain areas where growth in private sector employment remains a concern. Recent BIS/ ONS data describing the number of public and private sector employee jobs by local authority (District/ Unitary) from 2003 to 2008 based on the ownership status of each organisation¹⁸ indicates that private sector employee job growth is quite unevenly distributed across the country, as shown in figure 8.

¹⁷ While the R² is relatively small the trend is highly significant.

¹⁸ Estimates are from the Annual Business Inquiry. They are a measure of jobs not employment. They cover, employee, rather than workforce, jobs (so exclude self-employed jobs, HM Forces and Government Supported Trainees). They do not cover jobs in farm agriculture. More information can be found here: <http://stats.berr.gov.uk/ppse/index.asp>

Figure 8: Growth in private sector employee jobs, English Local Authority (District/ Unitary), 2003–2008



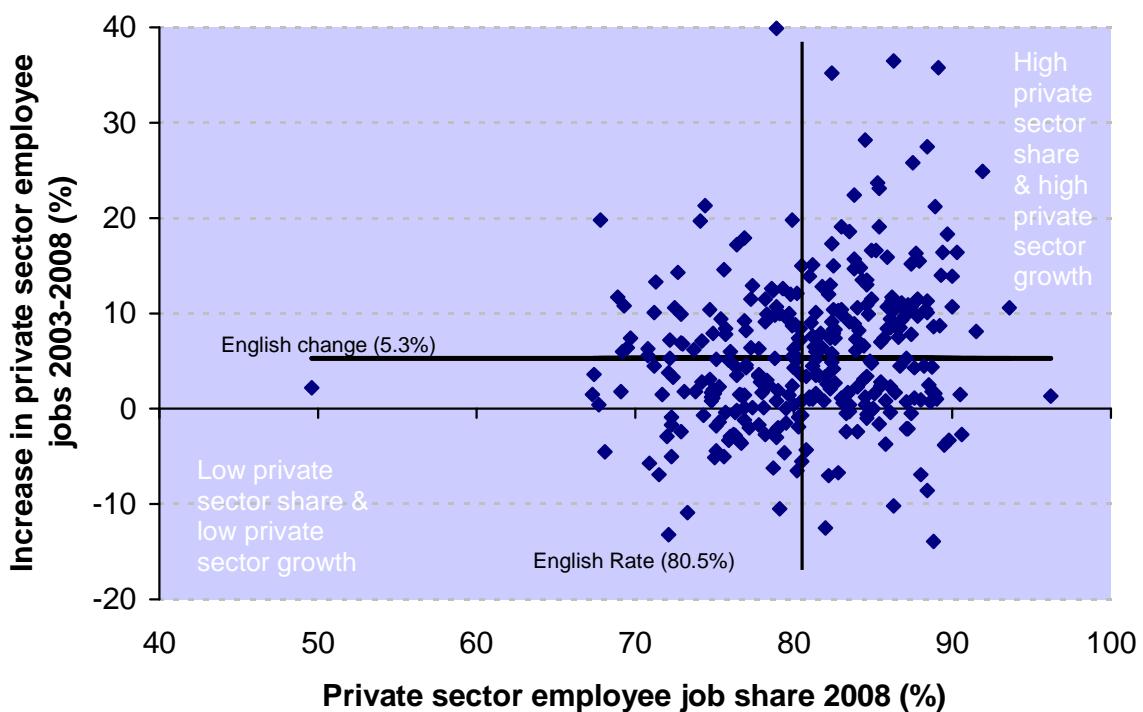
Jobs growth has occurred in a variety of places across the country. Growth seems more subdued in London and the East and South East of England, but these parts of the country typically have lower unemployment and higher private sector share. Private sector employee job growth has been marked in areas such as new and growing towns (e.g. Milton Keynes); 'regional centres' (e.g. Liverpool); and a range of prospering smaller towns across the country (e.g. Blaby). Decline in private sector employee jobs has also occurred across a mix of places, in particular manufacturing towns but also in some otherwise prosperous areas of southern England.

Although the number of private sector employee jobs increased in England by 5.3 per cent¹⁹ overall between 2003 and 2008 65 local authority (District/ Unitary) (out of 326) saw a decline (see figure 9). For these local authorities, particularly those also likely to be impacted by retrenchment in public sector employment, job growth may be challenging. Overall, the Office for Budgetary Responsibility is forecasting that at the national level the growth in private sector employment will more than compensate for the reduction in public sector employment. But private sector growth may be more difficult in areas which have seen poor private sector growth in the past, where this reflects structural issues. An analysis of past trends would suggest that the private sector does not automatically grow in response to a fall in the public sector in areas where unemployment is at typical levels²⁰.

¹⁹ These estimates are not the preferred source of public sector employment information at national and regional level but are presented here in order to be comparable to the local level estimates for employee jobs. The preferred source at more aggregate levels would be the National Statistics Public Sector Employment (PSE) series.

²⁰ The analysis is described in Appendix 3.

Figure 9: Private sector share of employee jobs and growth in private sector employee jobs, English Local Authority (District/ Unitary), 2003–2008



Source: BIS/ ONS Annual Business Inquiry

Notes: 1. ABI estimates provide estimates of employee rather than workforce jobs. Self-employed, HM Forces and Government Supported Trainees are therefore excluded. Figures do not cover farm agriculture. More information is available at <http://stats.berr.gov.uk/ppse/index.asp>. 2. Private sector is defined as Company, Sole Proprietor, Partnership & Non Profit Body or Mutual Association. 3. Post April 2009 LA Boundaries are used. These have been aggregated from pre-2009 boundaries.

3. The Economics of Sub National Growth

When considering appropriate policies for sub-national economic growth, it is important that discussion is grounded in an accurate understanding of current thinking on the economics of places. There is a burgeoning academic interest in the application of economics to how we understand cities and places - both internationally²¹ and within the UK²². This has introduced concepts and analysis that can strengthen policy making, so long as such concepts are not confused or oversimplified.

This section seeks to highlight some of the contemporary academic thinking in economics that can inform the Government's aims to '*support sustainable growth and enterprise balanced across all regions and industries*'²³. It is not within the scope of this paper to summarise the whole breadth of thinking in economic geography. There are many complex inter-relationships with labour markets, demographics and migration; with land markets, housing and planning; regeneration and neighbourhoods; that each warrant further explanation and consideration of the implications for different places and groups. But here we concentrate on the overarching ideas in spatial economics that may inform us about the relationship between economic growth and places.

Therefore, we set out the core concepts around:

- The economics of places
- Neoclassical growth theory and convergence
- New economic geography
- Agglomeration economies
- Implications of agglomeration economies.

The economics of places

There is a long history of academic thinking in geography, regional science and urban studies about the role and performance of different places. More recently,

²¹ World Bank's World Development Report (2009)

²² For example, the contributions of the Spatial Economics Research Centre and the Centre for Urban & Regional Development Studies.

²³ Coalition Agreement

economists have turned to examining the forces that underlie the distribution of activity and resource use across space.

At its most basic, economists hold that people's and firms' decision on location are shaped by three broad pillars²⁴:

- People and firms respond to incentives. This includes financial and non-financial incentives.
- The concept of "spatial equilibrium". This allows us to look at how individuals and firms make decisions to reach a state that is optimal for their economic wellbeing.
- The value of choices. Economics emphasises the value of giving people choices - and that economic utility leads us to understand the options available to people rather than impacts on land or capital.

The first pillar holds that people and firms locate in areas which best serve their needs. At its simplest, they will locate in areas that will give them the highest real income or profit; more broadly people and firms will also consider other valuable amenities that a place may possess such as the quality of the environment, access to cultural attractions or good schools.

The second pillar holds that people and firms will respond to incentives and move until the benefit of moving is counterbalanced by the costs of living in the new location. When benefits and costs balance, there is spatial equilibrium, net movement of people and business should stop; there is "no free lunch" to be gained by changing location²⁵.

Neoclassical growth theory and convergence

Economists have used neoclassical theories of economic growth theory to attempt to explain differences in economic performance between countries or areas. These theories hold that the differences between areas are due to varying access to capital and technology. Areas with highly productive workers and firms have access to more capital and more advanced technology, leading to higher productivity.

A key aspect of these theories is that, as an area's economy uses more of a particular resource, such as labour or capital, the marginal returns to that resource decline. That is, as an area uses more capital to increase the productivity of their workers, the returns to capital for investors decline.

Within the spatial economics framework, neoclassical growth theories predict that there will be countervailing incentives for people and firms. People will move to

²⁴ For a more detailed discussion of these three pillars, see Glaeser (2007).

²⁵ Glaeser (2007)

areas with high capital/high productivity to receive higher wages; firms on the other hand will move to low capital/low productivity areas to receive a higher return on their capital investment. Such movement will continue until workers and investors respectively receive a similar return irrespective of their location. That is, the spatial equilibrium would occur when all areas converged to a similar level of productivity.

More recent “New Growth” economic theories such as endogenous growth theory explain long-run growth as emanating from economic activities that create new technological knowledge, for example the accumulation of skills and knowledge. In such theories, there is no prediction that economies with different performance levels are likely to converge

The prediction of economic convergence has been subject to considerable empirical analysis, much of which is ambiguous²⁶. The evidence suggests there may be patterns of convergence between nations that already share similar economic performance such as European nations. There has also been analysis of convergence between regions, such as US States, EU regions and Japanese prefectures, which implies that convergence also occurs within countries (see Appendix 2).

The neoclassical approach to spatial economics also informed the last Government’s approach to regional policy²⁷. The policy held that regions will converge as long as economic markets are functioning well and resources and technology are mobile. Persistent differences in regional economic performance were assumed to be due to market failures, which both limit regional convergence and overall economic growth.

New Economic Geography

A fundamental component of current thinking in spatial economics is the framework of New Economic Geography. This new approach, introduced by the seminal paper by Krugman (1991), provides an integrated and micro-founded approach to spatial economics²⁸. It emphasises the role of clustering of economic activity in generating an uneven distribution of activity and income across space. The approach has been applied to the economics of cities, the emergence of regional disparities, and the origins of international inequalities.

New Economic Geography does not seek to explain all the factors determining prosperity²⁹. Economic growth can take hold in a given place for a variety of reasons, such as endowments, institutions, technology and how a place responds to a sudden change. New Economic Geography does however provide important insights into existing patterns of economic activity, future change and the contribution of ‘place’ to economic growth which can have valuable lessons for policy makers.

²⁶ Barro et al (1992)

²⁷ HM Treasury and Department for Trade and Industry (2001)

²⁸ Venables (2005)

²⁹ Venables (2006)

Agglomeration

Agglomeration economies

The concept of “agglomeration” is often cited as critical to understanding what drives urban economic performance and spatial disparities. But care is needed in describing what it actually means if it is to helpfully inform policy making. “Agglomeration” is a technical term that is used to describe a concentration of people and businesses within a geographical space. Agglomeration can take the form of:

- Cities - the most commonly referred to form of agglomeration - where there is relatively large and permanent urban settlement
- City-regions/ functional urban areas which give the economic footprint of a city beyond its urban settlement or administrative boundary
- Clusters - specialised industrial concentrations within a spatial area.

Agglomeration theory suggests that concentrations of economic activity generate economic benefits for the firms located within them. There are three broad economic benefits, or “agglomeration externalities” that help drive the economies of agglomeration:

- *A supply of labour on which firms are able to draw.* When there are a large number of suitably skilled workers, such large thick labour markets give both firms and workers greater choice. This allows workers and their skills to be better matched to those required by firms. This brings potential advantages for firms to increase productivity and for employees to improve their skills³⁰ and also allow firms to adjust rapidly to new opportunities and challenges as they arise³¹.
- *Easier access to inputs and suppliers.* Access to other firms provides opportunities to source specialist inputs. As concentrations of related economic activities grow, there are more firms using similar goods and services, thereby increasing the size and security of the intermediate goods markets and enabling a wider range of inputs to be produced at lower costs. There is evidence that industries do organise themselves in a manner that is consistent with this type of “input sharing” but it appears to be only in the case for those particular industries that make large purchases of intermediate good and where the production of those intermediate goods are also spatially concentrated³².
- *The creation of knowledge spillovers.* Knowledge spillovers occur when the movement of workers between firms or the frequent interaction of businesses increase the pace at which knowledge is shared and becomes part of working processes. This in turn leads to increased productivity as innovations spread with

³⁰ Glaeser (2010)

³¹ Overman (2008)

³² Puga (2010),

the adoption of more efficient processes and the creation of new products and services. Some studies have explored how some innovative activities often cluster geographically, in particular activities which draw from industrial and university research³³. Such clusters are not necessarily in large cities - but are in places in which there is a concentration of specific types of economic activity. It remains difficult to distinguish evidence of knowledge spillovers from evidence on access to a supply of skilled workers³⁴.

As well as these effects that work to drive agglomeration it is also worth noting that factors such as congestion and increased prices of fixed assets such as land will act as a natural constraint on agglomeration effects.

Evidence on agglomeration

There is considerable literature which attempts to measure agglomeration benefits. These studies have produced a range of estimates from 2 to 20 per cent increase in productivity resulting from a doubling of economic mass. A more recent study looking at agglomeration of cities in Great Britain³⁵ suggests that a doubling in the working-age population within an area is associated with a 3.5 per cent increase in productivity in the area. This effect declines steeply with travel time and ceases to be important beyond approximately 80 minutes.

This analysis drew out three important conclusions about agglomeration:

- The doubling of 'economic mass' to which an area has access raises its productivity by 3.5 per cent. This seems modest. But its impact is important as there are large variations in areas' access to economic mass.
- The measure of economic mass gives economically meaningful measures of the role of proximity. Therefore, the doubling of economic mass does not mean the doubling of total population - but rather emphasises the importance of improving travel-to-work times within cities and other areas.
- There is no such relationship between proximity to economic mass and the occupation composition of employment. Agglomeration theory offers predictions about productivity but not about the spatial structure of jobs.

Implications of agglomeration economies to spatial differences

New Economic Geography theory therefore indicates that there are other market forces explaining the location decision in addition to those described in the neoclassical theories. People and firms will have incentives to locate in agglomerations where their proximity to other economic activity will increase both wages and returns to investment. At the same time, the costs they face will also be higher, as demand for fixed resources and congestion increase.

³³ Audretsch,(1996)

³⁴ Puga (2010)

³⁵ Rice et al.(2006)

This new understanding of how economics work across place also alters the expected equilibrium. As both people and firms move to areas of high productivity, there will be no simple convergence in productivity levels. Even with fully functioning markets, there can be an uneven distribution of economic performance, and persistent differences that are not necessarily due to market failure.

The interaction of the benefits and costs of agglomeration can also explain why there can be such substantial differences in wages, as shown in section 2. Where people have the same preferences and characteristics and are mobile, the positive characteristics in a place or between places must be associated with negative counteracting factors and vice versa. This can be understood in terms of the decision of where firms choose to locate, where developers choose to build and people choose to live:

- Firms that choose to locate in high cost cities do so because of the benefits of being located in that city - for example through access to skilled workers, proximity to demand from customers or access to resources and transport. Conversely, firms that choose to locate in low-cost locations may have the advantages of lower costs of labour and premises but will have offsetting disadvantages such as a limited pool of skilled workers or being distant from their suppliers and markets. Different types of firms across business sectors make locational decisions based on the costs and benefits of different locations.
- Developers choose to develop new sites, homes or premises where they can receive a return on the investments. Developments in locations where the cost of building is high should be able to be sold for higher prices; and likewise development in locations where costs are low will be offset by lower sale prices. Planning and building regulations can influence the costs and benefits that shape developers' decisions.
- People living in high income cities benefit from access to employment and high wages. But in turn they must experience off-setting negative factors such as high living costs or a congested, polluted environment. The planning system can help to mitigate some of these negative factors to promote a high quality environment or provide affordable housing (for example to house the key workers necessary to make a place function effectively). Conversely, people living in low income areas must experience positive factors which counter the lower income such as lower living costs.

The insight this gives us is that even if it is possible to measure ‘nominal’ outcomes in a place, such as wages, profits, or total economic output, it remains difficult to observe whether firms and people are better off in one place than another. The differences in terms of earnings, employment and economic outcomes between places across the country could simply be aggregates of the outcomes for people

who live and work in different places and may not measure the advantages or disadvantages that a place offers³⁶.

Box A: Distribution of skilled workers

There is a highly uneven distribution of skilled workers across England with, for example over 55 per cent of the population aged 16-64 in West Inner London having a degree or equivalent qualification, compared to only 18 per cent in Stoke on Trent³⁷. These disparities are not due primarily to the quality of education across the country but because once people have gained high level skills, they are more likely to migrate to areas of the country where growth and incomes are higher.

Such migration is driven in part by agglomeration as thick labour markets are advantageous for both firms and workers, particularly where specialised workers are required as is likely to compound differences between areas.

The operation of the housing market may further increase these effects as, without a corresponding increase in housing supply, house prices will rise with the inflow of skilled people into an area and lower paid workers may be priced out. This will mean that individuals will naturally sort themselves into areas with similarly skilled people.

A number of recent studies have attempted to quantify the extent to which the apparent area disparities can be explained by differences in the composition of the workforce. The Manchester Independent Economic Review (2009) found that area's disparities in skills was the key factor explaining productivity differences and recent research published by the Spatial Economics Research Centre³⁸ found that the composition of the workforce explains more than half, and in some cases much more than half of the apparent differences in areas' wage disparities.

When developing policy it is therefore important to be aware that area disparities can arise both because of different characteristics of firms and people within an area and because of different outcomes for the same types of firms and people in different places. Given this it is difficult to make accurate judgements that some places are economically 'under-performing' or 'over-performing'. Instead, the focus should be on developing a specific understanding of what prevents firms and people within a place from realising their full potential.

³⁶ Overman (2010)

³⁷ ONS Annual Population Survey, 2009

³⁸ Overman et al. (2010)

Implication of agglomeration economies on broad spatial policy

It is important not to conclude that agglomeration equals size. For example, many of England's large 'second tier cities' arguably have economies that under-perform given the size of their urban populations - they appear to be too small³⁹. Similarly, much of England's employment growth in recent decades has been in smaller centres (towns such as Milton Keynes, Reading and Swindon). Agglomeration is not simply a matter of size and urban density but of the economic roles and linkages between places. Exploring these economic linkages and how different cities and towns complement or compete with one another, in terms of employment, earnings, living costs, and migration between locations, is an area of ongoing research among leading theoretical spatial economists⁴⁰.

The policy implication of theories of agglomeration is that enabling people and firms to benefit from proximity to centres of activity, bring beneficial economic outcomes. The harnessing of the potential benefits of agglomeration means enabling the growth of England's economic centres, principally cities and major towns across the country in which there are opportunities for economic growth. Benefits can also be realised by enabling agglomeration effects to be felt across a wider geographical area. It does not mean that policy should focus on investing in agglomerations - the mere existence of agglomeration externalities does not indicate where Government should focus its investments⁴¹.

Therefore, this implies empowering and incentivising local government, firms and people across economic centres and natural economic geographies to promote growth and correct the market and government failures which are acting as barriers to economic development. The specific nature of these barriers may be different across places - for example there may be labour market barriers such as poor skills, low accessibility to jobs, or disincentives to work; or barriers to enterprise such as limited finance or poor infrastructure; or barriers to physical development such as disused/contaminated land or lack of space. When the barriers, and the priorities to addressing them, vary in different parts of the country, the emphasis is on improving the responsiveness of policy to local economic conditions.

³⁹ Overman and Rice (2008)

⁴⁰ Overman Rice & Venables (2008)

⁴¹ Glaeser (2008)

4. The Case for Change and a New Approach

This section discusses the need for new thinking against each of the three themes set out in the Local Growth White Paper:

1. Shifting power to the local communities and businesses
2. Promoting efficient and dynamic markets and increasing confidence to invest
3. Focussed Investment

Previous policy and the need for change

Recent Government economic development policy in England was based around nine regions and a centrally imposed target of increasing economic growth in each region and narrowing the gap in growth rates between leading and lagging regions. Policy did not focus on differences within regions, which, as shown in section 2, are significant.

Development policy was primarily implemented by Regional Development Agencies, bodies accountable to Central Government and not to local people and businesses. Policies focussed on correcting market failures, thinking these were the primary factor behind differences in performance.

However the central targets were not being met even before the recent recession. Over the periods defined for the target, average annual growth increased in only one of the nine regions (London). Growth is now slower in all regions since the target was announced, and the gap between the leading and lagging regions has widened. And as shown in section 2, England is much more imbalanced now than it was in mid 1990s with the rate of regional divergence faster in the UK than other similar industrial countries (see Appendix 2).

The fact that differences in growth rates did not narrow is not surprising given that the evidence indicates that there may be substantial limits in how geographically balanced an economy can become. As highlighted in section 2, much of the increase in economic disparities seems long-term and linked to globalisation. However, these imbalances may not be primarily due to market failures, but could also be the response of well-functioning market due to factors described in section 3.

Shifting power to the local communities and businesses

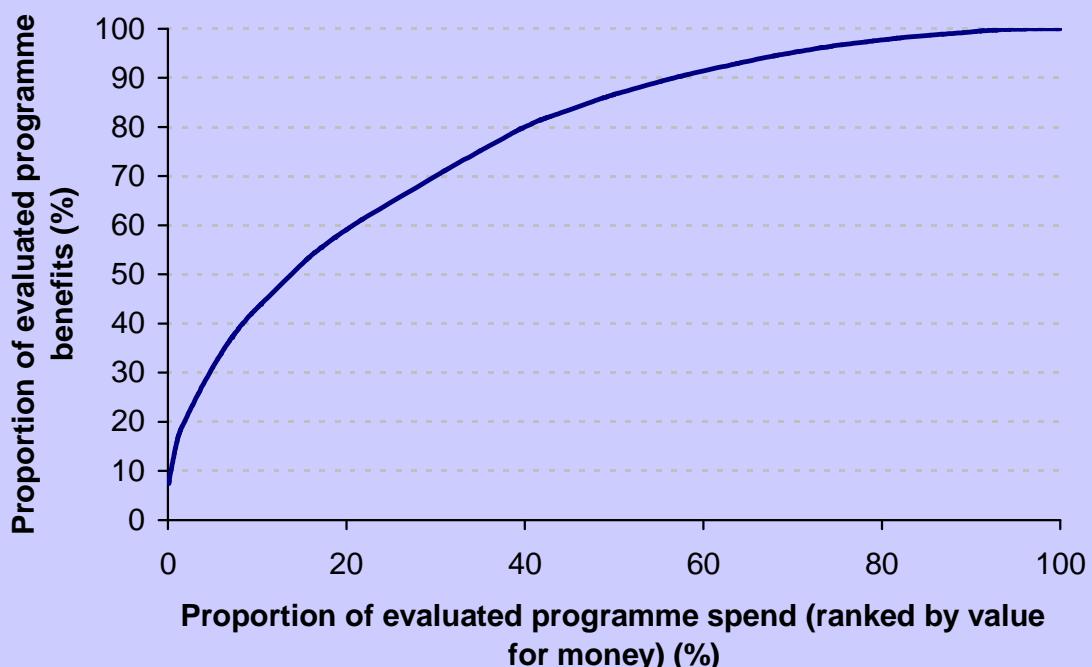
As was set out in section 2 there are considerable differences between places and the extent to which they can generate growth and private sector jobs will vary. Correcting for market failures alone will not address these as there are other effects, such as agglomeration which might mean, that mean such differences are the result of powerful market forces.

Policy making needs to reflect these complexities and a real risk with policy making that is too centralised is that policy makers are too far removed or have insufficient knowledge and flexibility to tailor their policy to local circumstances. Further, where policy makers are accountable to central not local government, their choices will not necessarily reflect local priorities; Box B provides an illustration of where more local knowledge and accountability can improve the effectiveness of Government policy.

Box B: Ensuring the most effective intervention

A vivid illustration of the problems the current arrangement can cause is the quality of RDA programmes. An evaluation of RDAs by PriceWaterhouse Coopers (2009), commissioned by the last Government, found that the performance of RDA programmes to be very variable. As shown in figure 10, the variability was such that more than half of the total benefits came from less than 20 per cent of the spending.

Figure 10: Comparison of RDA programme spend against benefits generated, 2002/03–2006/07



Source: BIS calculations using PwC (2009) data

The bulk of RDA spending was committed to a long-tail of relative low value projects. As the Government is seeking to reduce public spending and reduce the fiscal deficit, such performance is not sustainable. A more localised arrangement, which benefits from local knowledge and is accountable to local people could help policy-makers to identify and deliver the more valuable projects.

The need to decentralise functions needs to be weighed against the risk that decisions are being made at too low a spatial level where the full impact of any decision is not considered. As demonstrated by Cheshire and Magrini (2005), where administrative boundaries are smaller than the economic areas affected by any decision, economic development can suffer. Where policies have a widespread effect or there needs to be considerable cooperation across areas decisions may be better made at higher levels. This is recognised in the White Paper which recognises that it is appropriate for policies such as innovation policy to be led at the national level.

The factors that need to be considered when deciding the appropriate level of governance is shown in Box C. The exact level will differ between functions, though on the whole policy institutions should be established that reflect natural economic geographies (also known as functional economic market areas (FEMAs)) over which the relevant market operates. This will ensure that the full impacts of an intervention, both positive and negative, are considered in the decision making process.

There is no universal approach to defining FEMAs, and the relevant factors will depend on the particular policies and markets being considered. However, information on labour markets (using travel to work areas), housing markets, business linkages and supply chains, consumer markets and transport networks are typically used to inform such analysis⁴². In many cases local people and local businesses are best placed to understand how their economies work and it is also important that areas work, politically and socially as well as economically.

This need to consider FEMAs is recognised as part of the new policy framework set out in the White Paper where a key factor in assessing bids from proposed Local Enterprise Partnerships is the extent to which they reflect appropriate economic geographies.

⁴² DCLG (2010)

Box C: Factors to consider when deciding the appropriate spatial level for economic governance

- **Enabling local solutions** - the tailoring of economic policies to reflect the different economic challenges facing different places. Decentralising economic policies will bring benefits if places have different preferences, or face different challenges, either because the market failures which the policy seeks to address have different impacts across places or if Government policies have unintended spatial impacts. Even if a policy problem is more about people than places, there may be benefits in enabling flexibility in implementation to provide integrated and tailored solutions to the way in which problems come together and interact in particular places.
- **Ensuring that costs and benefits are considered across economic areas** - policy needs to be developed at a spatial level which captures the significant benefits and costs as lower government levels may not consider significant policy impacts on other jurisdictions. This may lead to policies which are not in the national interest or the loss of policy opportunities that could make all places better off. Formulating economic policies at the level at which the relevant economic market operates, whether national, regional or sub-regional, will minimise such “spatial spillovers” and will often strike the best balance between the benefits and costs of decentralisation.
- **Exploiting economics of scale and scope** - the benefits of delivering national policies which derive from exploiting economies of scale and scope. Higher levels of government may enjoy cost savings from delivering large volumes of public goods and services or have better access to specialised staff or knowledge of best practice.
- **Enabling effective co-ordination** - reflecting the need for co-ordination both within different dimensions or service areas of a policy and between different policies. Policy coherence may be hard to achieve when decisions are taken at different spatial levels. This creates a need for “joined-up” thinking across government. As policies come together in places, so there is a need to join up and coordinate delivery of different policies in particular places.

Promoting efficient and dynamic markets and increasing confidence to invest

The insights from economics show that market failures are not the cause of all the economic underperformance in some areas. However, there remain market and policy failures throughout the country which inhibit economic and employment growth. As the Local Growth White Paper makes clear, the Government role of tackling significant market failures where action is possible remains.

The White Paper also highlights the need to ensure that the Government policies and regulation supports sustainable economic growth, particularly the need for timely infrastructure provision and the availability of appropriate land for economic and housing development was also discussed. The White Paper sets ambitions for a more efficient and effective planning system and the development of means to support economic growth through new incentives around Tax Increment Financing, New Homes Bonus and the Business Increase Bonus, localisation of business rates and reform of the Community Infrastructure Levy.

The planning system plays an important role in the location of economic growth. An effective planning system provides benefits in terms of confidence to invest, coordination of investment, and high quality buildings and environments. There is also a strong economic rationale for planning in addressing environmental and social costs of development. However, there are also possible economic consequences of the planning system, for example if it reduces economic development through providing a sub-optimal supply of appropriate land types thereby increasing the prices of homes and commercial premises⁴³ or increasing the volatility of land and property prices⁴⁴.

The current local government finance system does not always provide appropriate incentives for local government to support the development of new enterprise and new homes in their area. A recent survey⁴⁵ showed that local communities want development provided it is accompanied by the necessary investment in infrastructure. However the authorities and communities who support housing and economic development receive few of the fiscal benefits of development and are often unable to raise the finances to invest in infrastructure. Moreover, local government must then take on all the additional costs of development such as the loss of green space, traffic problems and more crowded schools, but receive few of the fiscal benefits. This is because income from increased Business Rates does not go to the local area, and formula grant takes account of authorities' ability to raise income from Council Tax relative to other authorities.

Exploring and assessing the economic and behavioural impacts of the proposed reforms to planning and local incentives will be an ongoing area of future economic analysis.

Focussed Investment

Business confidence to invest is influenced by the economic cycle, but government policy can have an impact. Government needs to provide a credible financial strategy

⁴³ For instance, Cheshire and Hilber (2008) find that office space in Britain is the most expensive in the world with office space in London, Birmingham, Glasgow, Edinburgh and Manchester was more expensive than in Manhattan.

⁴⁴ Barker (2003), Cheshire (2009)

⁴⁵ Ipsos MORI (2010)

which will allow banks to lend and business to borrow at reasonable interest rates with the clear expectation that any loan will be repaid in an orderly manner.

Alongside macroeconomic stability, investors need certainty about how central and local government regulation is to be applied. In particular, investors need certainty that central and local government regulation will be applied in a predictable way and is responsive to market signals.

Where the market does not function adequately, the Government has a role to intervene to ensure that private sector business has the opportunity to grow. This is particularly important as the country emerges from a deep recession which has had serious implications for business. At a time when the public sector is contracting it is important to ensure that the private sector is in a position to grow and create employment in all parts of the country.

There is therefore a rationale for focussed government investment in projects and programmes, which would not otherwise go ahead, but which have the potential to contribute significantly to the creation of sustainable jobs which can be accessed by those who need it most and particularly in areas that have a weak private sector. This has lead to the creation of the Regional Growth Fund (described in more detail in the Local Growth White Paper).

This fund will be used to encourage private sector enterprise, create sustainable private sector jobs and to help places currently reliant upon the public sector make the transition to sustainable private sector led growth. It will complement, without duplicating, other rebalancing interventions, such as access to finance and banking structural reform, and other mechanisms to promote sustainable growth, including the Green Investment Bank.

However the need for focussed investment in particular projects does not mean that central government should be ‘picking winners’ or ‘losers’ and each proposal will be judged on its own merits. Places that have appeared to be in long-term decline have bounced back. It is important therefore to recognise that the role of a place may evolve and change over time.

Conclusions

As has been seen in sections 2 and 3 places are different in a variety of ways and this has implications for their abilities to generate private sector employment and economic growth. Previous Government policy didn’t fully take into account this diversity and policy focussed primarily on correcting market failures in order to even out economic performance across the country. However as is highlighted by New Economic Geography places may differ due to powerful market forces. Attempting to act against these forces is unrealistic and unsustainable.

Of course Government can, and should, continue to address both market and policy failures where these arise. Policies set out in the White Paper, including the need to

consider issues at the local level, seek to address this. However, even if these failures could all be corrected differences between places would continue to exist.

A key challenge for Government is therefore to ensure that all individuals have the incentives and ability to benefit from economic growth wherever it takes place. Policies which enable all places to fulfil their potential are a key part of this as are policies aimed at improving skills, participation and mobility.

Appendix 1. The impact of price difference on the differences in economic performance across the country

As discussed in section 2, the official Gross Value Added (GVA) data is published on a nominal basis with no adjustment for differences in the prices of goods and services across the country. The data implicitly assumes that a nominal pound has the same value in all parts of the country.

There is, however, clear evidence that there are significant price variations across the country. The most obvious is probably the cost of housing where there are large spatial differences; average house prices, for instance, in Surrey and more than double those of Northumberland⁴⁶. Prices also tend to vary for goods and services that operate within a local, as opposed to national market; such as hair-dressing or childcare.

Price differences will influence welfare levels, which depend on real not nominal income levels. While average income levels in London tend to be higher, so is the cost of living, so a high nominal wage is required to achieve the same welfare. Price differences can also complicate the measurement of economic performance. On a nominal basis, the productivity of London hairdressers will be higher than those in Teesside, because the value of a haircut measured using nominal prices is higher in London. But, the apparent higher productivity is due to the higher price of the service; the real productivity will be broadly similar across the two areas as long as the quality of the service is the same.

While the problems with using nominal data are well known, addressing them is difficult. Until there are official measures of price differences across the country, it will not be possible to produce real regional GVA data. An estimate of the impact of price differences can be made using regional consumer price indices produced by the ONS for 2000, 2003 and 2004⁴⁷; the indices for 2004 are shown in table A1. The data indicates that a standard basket of goods and services in London are around 16 per cent higher than the same basket in the North East. Applying these indices to the nominal GVA figures in 2004 suggest that real difference in economic performance may be around a three-quarters of the nominal differences⁴⁸.

⁴⁶ Land Registry, average house price, August 2010, Surrey=£298,000, Northumberland=£140,000.

⁴⁷ Ball and Fenwick, 2003; Wingfield *et al*, 2005

⁴⁸ This assumes that the regional relativities for consumer prices hold for wider prices.

Table A1: Regional price levels and nominal and real GVA per head, English NUTS1 areas, 2004

| Government Office Regions | Relative Price Levels (UK=100) | GVA per Capita (UK=100) | |
|---------------------------|--------------------------------|-------------------------|-------|
| | | Nominal | Real |
| North East | 94.2 | 78.0 | 82.8 |
| North West | 96.9 | 86.4 | 89.2 |
| Yorkshire & the Humber | 94.2 | 86.0 | 91.2 |
| East Midlands | 97.4 | 89.7 | 92.1 |
| West Midlands | 97.8 | 87.3 | 89.3 |
| East of England | 101.1 | 105.7 | 104.5 |
| London | 109.7 | 147.7 | 134.7 |
| South East | 105.3 | 115.0 | 109.2 |
| South West | 101.3 | 92.4 | 91.2 |

Source: BIS calculations using ONS Regional Accounts and Regional consumer price levels (Wingfield et al, ONS, 2005)

Notes: 1. Estimates of regional GVA are on a residence basis, where the income of commuters is allocated to where they live rather than their place of work 2. The consumer price (National weight) provides information on the comparable price of the regional cost of a national basket of goods.

While this analysis gives an indication of the potential impact of price differences it is not ideal. Firstly, it is for 2004 and it is not clear how much recent regional price relativities may have changed over recent years as the ONS has not updated these indices since 2004. Secondly, there are significant price differences within regions which are not reflected in the consumer price indices for example, the indices exclude a number of items relating to housing costs, such as mortgage interest payments, house depreciation and council tax, where there are known to be significant regional price differences.

Appendix 2. Long-term and international trends

Analysis of the ONS data on Gross Value Added (GVA) per head suggests that differences in economic performance across the country has widened since 1996. However, this data are only available back to 1989 and 1995 on a regional and sub-regional basis respectively. When this analysis is placed within a wider context, and compared to English data from earlier periods as well as similarly industrialised countries, it indicates that regional imbalances have been increasing over a long time period and are influenced by international economic trends.

Long-run trends

Craft (2005a) estimated regional GVA per head figures from 1871 to 1911 and 1954 to 2001 based on census information⁴⁹. The regions used in this analysis are slightly difference from the current Government Office Regions, but it is possible to adjust the current ONS data to similar basis. Table A2 shows the results; the figure for 2007 is based on BIS' own adjustment of the current ONS data⁵⁰.

⁴⁹ Using a method developed by Geary and Stark (2002).

⁵⁰ Crafts (2005) produced estimates for each census year from 1871 to 1911, and 1954 to 2001. The years shown in table A2 are those where the trend in coefficient of variance turned, as well as the first and last year.

Table A2: Regional GDP per capita levels, England Standard Statistical Regions, 1871–2007

| Standard Statistical Regions (UK = 100) | 1871 | 1911 | 1981 | 2001 | 2007 |
|--|-------|-------|-------|-------|-------|
| London | 141.9 | 165.6 | 126 | 133.9 | 164.9 |
| Rest of SE | 89.5 | 86.3 | 108.4 | 119.0 | 101.3 |
| East Anglia | 97.0 | 76.8 | 94.7 | 109.1 | 91.9 |
| South West | 88.6 | 85.7 | 91.8 | 88.4 | 89.3 |
| East Midlands | 106.2 | 90.6 | 91.9 | 91.0 | 86.2 |
| West Midlands | 84.8 | 78.4 | 95.6 | 89.7 | 83.4 |
| North West | 106.0 | 97.2 | 89.1 | 89.3 | 83.9 |
| North | 94.1 | 89.5 | 92.9 | 85.5 | 75.2 |
| Yorkshire & Humber | 91.3 | 76.2 | 90.2 | 75.6 | 81.6 |
| Coefficient of variance (%) | 10.8 | 15.8 | 11.4 | 16.9 | 17.7 |

Source: Crafts (2005a) and BIS calculations of ONS Regional Accounts

Notes: 1. Estimates of regional GVA are on a workplace basis, where the income of commuters is allocated to their place of work. 2. Following Crafts (2005a) London and the Rest of the South East were combined into one observation for the purposes of calculating the coefficient of variance. 3. The Coefficient of Variation is a measure of dispersion calculated as: Standard Deviation/Mean.

A number of broad conclusions are apparent in this data:

1. Over at least the last 140 years London's GVA per head has been consistently higher than in the rest of the country.
2. There was a sustained episode of falling regional imbalances, from around the time of the First World War to the 1970s. This episode coincided with a period of retreating or low international trade.
3. That current episode of increasing regional imbalances began in England around the end of the 1970s and beginning of the 1980s, again coinciding with the beginning of the current phase of intensified trade liberalisation⁵¹.

International comparisons

It is also possible to compare the current English trends to those seen in similar industrialised countries. The OECD publishes regional GVA per head data for all its members on a consistent basis from 1995 to 2007.

⁵¹ See for instance Collier and Dollar (2001).

Comparisons of regional imbalances across countries is complicated by the number and size of each country's sub-national units. Countries with more or smaller sub-national units will typically have greater apparent imbalances; effectively the data is more disaggregated which reveals more of the underlying variability of economic performance across a country. In this case the rate of convergence is compared, shown in table A3, where a positive number indicates that a country is becoming less imbalanced and a negative more imbalanced⁵². This estimates of convergence can be compared to a similar analysis done by Barro and Sala-i-Martin (1991) for the period 1950 to 1985.

Table A3: Regional convergence in Western countries, 1995–1985 and 1995–2007

| Countries | Rate of β convergence (%) | |
|--------------------------|---|------------------|
| | 1950–1985 | 1995–2007 |
| France | 0.97 | 0.35 |
| (Western) Germany | 2.30** | 1.31* |
| Italy | 1.18** | 0.95** |
| United Kingdom | 3.37** | -2.18** |
| United States | 1.75** | -0.78* |

Source: BIS calculations of OECD Regional Accounts data, and Barro and Sala-i-Martin (1991)

Notes: 1. The rate of convergence (also known as β convergence) is determined by comparing region's initial GDP per head with the subsequent GDP per head growth rate. The convergence rate is the gradient of the regression line (for technical reasons the log of the GDP per head level is used in the regression). Barro and Sala-i-Martin (2003) discusses convergence metrics in some detail. 2. Asterisk denote probability that the rate of convergence equals zero (* - $p < 5\%$, ** - $p < 1\%$).

The data for the most recent period (1995–2007) suggests that of the five industrial countries considered, Germany and Italy experienced a decrease in regional imbalances, France experienced neither increasing or decreasing imbalances, while the United Kingdom and the United States experienced increasing imbalances. Further, all five countries seem to have seen at least a slowdown in the rate of convergence and a reversal in the UK and the US since the earlier period (1950–1985), which is consistent with the long-term UK trends discussed above. According to Barro and Sala-i-Martin (2001), the UK was experiencing the fastest rate of convergence; it now seems to be experiencing the fastest rate of divergence.

⁵² The rate of convergence (also known as β convergence) is determined by comparing region's initial GDP per capita with the subsequent GDP per capita growth rate. The convergence rate is the gradient of the regression line (for technical reasons the log of the GDP per capita level is used in the regression). Barro and Sala-i-Martin (2003) discusses convergence metrics in some detail.

Summary

The data suggests that the current episode of growing regional imbalances in England are due, in part, to international economic trends, such as globalisation and improving technology. These factors, and the associated fall in demand for unskilled labour, are likely to be driving some of these differences in performance as the traditional heavy industries and manufacturing, in parts of the country decline.

Much of today's urban settlement pattern has deep roots to the Industrial Revolution and many of the areas of the country with weaker economic performance today are former industrial or manufacturing centres. London and the South East, on the other hand, has disproportionately gained globalisation and technological progress, benefits from its better international connectivity and more skilled workforce.

Appendix 3. Local labour market interaction between public and private sectors

The analysis below examines whether a change in public sector jobs within a local labour market may be correlated with change in private sector jobs. Where the private sector is constrained by a lack of available labour, an increase in labour supply from a reduction in public sector employment may lead to growth in the private sector. The analysis below examines whether there is any interaction using the BIS/ ONS release of local level public and private sector employee job data⁵³.

The analysis indicates that where competition for labour is intense, growth in public sector jobs can limit private sector jobs growth. But, this effect diminishes rapidly as unemployment rises, possibly as unemployment provides an alternative source of labour supply for the private (or public) sector. The analysis implies that at the levels of unemployment seen before the recession, the interaction between the two sectors at a local level is low or non-existent.

Analytical Method

The basic approach has been to compare changes in the public sector employee job levels with private sector levels within a local labour market, as shown in equation 1. Fixed area effects are included to control for differences in the areas' economic conditions or size. Time fixed effects are also included to control for the effect of the national economic cycle. Lags variables were also included to allow any delayed interaction to be identified.

$$\Delta p_i = \beta_0 + \beta_1 \cdot \Delta s_i + \beta_2 \cdot \delta_i^a + \beta_3 \cdot \delta_t^t \quad (\text{equation 1})$$

Where: p_i is the number of private sector employee jobs in area i

s_i is the number of public sector employee jobs in area i

δ_i^a is the area fixed effects

δ_t^t is the time fixed effects

Initially, the analysis focused on the sub-regional public and private sector employee job estimates. The analysis further supplements this with data from the Labour Force Survey (LFS) so that a broader measure of private sector jobs could be used that included self-employment. Further, the LFS allows unemployment to be considered in the analysis, as shown in equation 2.

⁵³ Estimates are from the Annual Business Inquiry. They are a measure of jobs not employment. They cover, employee, rather than workforce, jobs (so exclude self-employed jobs, HM Forces and Government Supported Trainees). They do not cover jobs in farm agriculture. More information can be found here: <http://stats.berr.gov.uk/ppse/index.asp>

$$\Delta j_i = \beta_0 + \beta_1 \cdot \Delta s_i + \beta_2 U_i + \beta_3 (U_i \cdot \Delta s_i) + \beta_4 \cdot \delta_i^a + \beta_5 \cdot \delta_y^t \quad (\text{equation 2})$$

Where: j_i is the number of private sector jobs including self-employment in area i
 U_i is the unemployment rate in area i

The appropriate spatial level with which to analyse local labour markets is unclear. Local authorities are probably too small, as there is significant movement of people for work over authority boundaries. The analysis is therefore focussed on English NUTS3 areas (approximately county level) as this may better approximate local labour markets.

Results

The regression results are shown in table A4; the results for the (non-interacted) unemployment rate variable were omitted as they were never significant; the area and time fixed effect results were also omitted.

The first three regressions (I to III) focus purely on employee jobs, the second three (IV to VI) includes self-employment, assuming that all self-employment would be classified to the private sector. This wider measure is used to try to get fuller coverage of public and private sector jobs, although jobs in HM Forces and for Government Supported Trainees are still excluded. Three regression specifications are reported for each data set:

- Contemporaneous comparison of the change in public and private employee jobs;
- Comparison of the change in public and private employee jobs with one lag; and
- Comparison of the change in public and private employee jobs with one lag with an interacted unemployment term.

Table A4: Regression results

| Dependent variable | Employee jobs | | | Employee jobs + self-employment | | |
|------------------------------------|---------------------|---------------------|---------------------|---------------------------------|---------------------|---------------------|
| | I | II | III | IV | V | VI |
| NUTS 3 | | | | | | |
| $\Delta p_{i,t-1}$ | | -0.340** (0.041) | -0.325** (0.043) | | | |
| $\Delta j_{i,t-1}$ | | | | | -0.352** (0.044) | -0.338** (0.043) |
| $\Delta s_{i,t}$ | 0.0335** (0.106) | 0.055 (0.110) | -1.000** (0.355) | 0.455* (0.148) | -0.012 (0.156) | -1.036* (0.471) |
| $\Delta s_{i,t-1}$ | | -0.162 (0.139) | -1.290** (0.361) | | -0.152 (0.158) | -2.231** (0.476) |
| $\Delta s_{i,t} \cdot U_{i,t-1}$ | | | 24.87** (7.487) | | | 24.72* (9.919) |
| $\Delta s_{i,t-1} \cdot U_{i,t-2}$ | | | 25.76** (7.770) | | | 47.49** (10.24) |
| Obs | 635 | 508 | 464 | 591 | 464 | 464 |
| Adj. R ² (%) | 11.0 | 34.7 | 37.0 | 7.1 | 32.1 | 35.5 |
| Data source | ABI | ABI | ABI, LFS | ABI, LFS | ABI, LFS | ABI, LFS |

Source: BIS calculations using ONS Annual Business Inquiry and ONS Labour Force Survey microdata

Notes: 1. Standard errors in parenthesis; * denotes that the probability of the coefficient equally zero is less than 5%, ** denotes a probability of less than 1%. 2. Analysis is based on English NUTS3 areas using data from 2003–2008. 3. The unemployment rate used was: number of unemployed people/(number of unemployed people in area + number of people working in the area).

Discussion

The results suggest that private sector employment is not heavily constrained in most local labour markets such that an increase in labour supply from a decline in public sector employment may not lead to an automatic increase in private sector employment.

Where only the contemporaneous variables are compared (regressions I and IV), there is a significant multiplier positive correlation between public and private sector job levels. This may be due to a fall in the public sector jobs reducing overall economic demand in an area which would negatively affect private sector jobs. When the lagged variables are included (regressions II and V), the correlation disappears.

The final regressions (III and VI), which includes the interacted unemployment variable, indicates that public sector jobs may constrain private sector jobs, when unemployment is low. Where there is no unemployment, the regression suggests that a fall in public sector jobs will be met by an immediate increase in private sector jobs of a similar size. But, this effect rapidly diminishes as unemployment increases. The average unemployment in 2003 to 2008 was near 5 per cent; at this rate, the model suggests the effect will be trivial.

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