A Regional Perspective on the Knowledge Economy in Great Britain

Report for the Department of Trade and Industry

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Acknowledgements

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The Local Futures Group (www.localfutures.com) is a research and strategy consultancy that creates and promotes a geographical perspective on economic and social change. The knowledge economy is the main area of Local Futures research as a geography think tank. The Group is also a web business that offers geography-based benchmarking information and technology platforms for local and regional agencies as well as corporate clients.

Executive Summary

This report argues for a distributed policy approach to the knowledge economy in Britain. By this we mean that the Government should actively promote its vision of the knowledge economy as a policy paradigm at the regional, sub-regional and local levels – where its vision ultimately needs to become a reality. In the course of doing this, the knowledge economy needs to be widened out, joined up and universally understood.

This was the general conclusion that emerged from Local Futures' work on the regional knowledge economy, carried out for the RDAs from June 2001 to March 2002. At that time, the policy driver was the new Frameworks for Regional Employment and Skills Action (FRESAs) that were launched shortly before this report was completed. Subsequently, Local Futures has extended this line of research to the sub-regional and local levels, and demonstrated the relevance of the knowledge economy agenda to the strategies of Learning and Skills Councils and Local Strategic Partnerships.

Here, we provide an overview of the results of our regional research on the knowledge economy. At the heart of this analysis is an original model of the knowledge economy called "Regional Economic Architecture" (REA). The REA provides a unified (demand-supply) view of the knowledge economy using employment and skills indicators as 'building blocks' and recognised EC benchmarks for measuring the knowledge intensity of industries. We have applied the REA to all of the RDA regions and Scotland, for 2000 and 1994.

The results of the REA analysis clearly show that London dominates the British knowledge economy, accounting for around 30 per cent of its 'knowledge-intensive' business employment – private sector-led industries where graduates make up at least 25% of the workforce. In the majority of regions, for example the North East and East Midlands, the business drivers of the knowledge economy are relatively weak, and the public sector (education, health etc) plays the central role in knowledge-driven development and, by corollary skills formation. This uneven or centralised geography of the knowledge economy in Britain has profound implications – such as 'brain drains' that undermine capacity building, graduate under-employment and local bottlenecks for people with intermediate qualifications. The reality is that there are two incompatible geographies of the knowledge economy: a relatively distributed pattern of growth in qualifications and the graduate labour pool contrasting with a highly concentrated pattern of knowledge-intensive job creation that favours London and its hinterland, and the South East more widely. These regional and also local and sub-regional imbalances focus attention on geographical, occupational and industrial mobility issues in the knowledge economy.

The analysis also highlights the realities of social exclusion in the knowledge economy. London is an economic 'powerhouse' but a highly polarised society, in which 'knowledge divides' are at their most extreme. Around a third of Londoners have degrees, but an equal number live in 'skills poverty' – the remaining third are the increasingly high profile 'key workers' whose intermediate qualifications are badly needed. In regions such as the West Midlands and the North West, intermediate skills are available but un-exploitable owing to the continuing decline of manufacturing industry.

Knowledge divides are pervasive. Each region faces an 'employability-pension time bomb' – given that older workers were 'too early' for the great recent expansion of HE in the 1990s, will the knowledge economy enable them to 'work till they drop'? There are deep ethnic-racial divides, with the Pakistani-Bangladeshi communities being most vulnerable to social exclusion in the knowledge economy. In areas such as the Black Country, the majority of working-age women are still employed outside the mainstream of the knowledge economy. These 'knowledge divides' should be recognised as an integral part of the Government's knowledge economy agenda – presently, they are separately analysed as aspects of social deprivation.

Also in the report we include some results from Local Futures research on the knowledge economy in Europe. A series of maps show that the UK regions perform strongly on the qualifications of the workforce and even the business drivers of the knowledge economy: but, this contrasts strongly and disturbingly with Britain's poor performance on regional GDP per head or conventional productivity measures. There is a 'skills-productivity paradox' – why are the regions 'long' on qualifications, but 'short' on productivity and earnings? Are we building a 'paper knowledge economy' based on a thriving qualifications industry, rather than a demand-driven economy with different business, skills and educational needs?

The Government needs to create a genuine national vision of the knowledge economy, one that can be tied into the varied regional, sub-regional and local economic contexts of policy and delivery. The new FRESA activity and Local Strategic Partnerships provide an ideal basis for achieving a more distributed policy approach – what is needed to tackle the 'knowledge divides' in communities and local labour markets. Workforce development strategies also provide a knowledge economy 'window' – creating potential for cluster strategies aimed at making large numbers of SMEs more knowledge-driven and innovation-minded. The public sector has been the 'Cinderella' of the knowledge economy – yet, and particularly in the current economic climate, its role in knowledge-driven job creation and skills formation is crucial. Finally, big cities tend to dominate the knowledge economy in most regions - this dominance 'by day' but not 'by night' (knowledge workers as commuters) raises a plethora of transport, planning and sustainability issues concerning the spatial structure of the knowledge economy. What would be the most efficient and sustainable spatial structures for the regional knowledge economies – and the national knowledge economy? This should also be part of a much wider knowledge economy agenda in Britain.

1   Introduction

"…*We will only compete successfully in future if we create an economy that is genuinely knowledge driven.*" – the Prime Minister's Introduction to the 1998 Competitiveness White Paper, Building the Knowledge Driven Economy.

1.1   All roads lead to the knowledge economy

There appears to be a consensus in policy and academic communities that a globally competitive knowledge economy is a 'zero option' for the UK. The rest of Europe faces the same scenario. The Lisbon European Council decided that by 2010 Europe should become,

"*The most competitive and dynamic knowledge based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion*".

The term 'knowledge economy' refers to the overall economic structure that is emerging in the UK – calling for a 'joined up' or 'horizontal' policy approach not only in Whitehall and Westminster, but also in the Regions and at the level at which Local Strategic Partnerships work. We need a policy matrix for the knowledge economy that is both inclusive and accepting of regional and local differences in economic development.

The scope of knowledge economy policy is vast. We lack the necessary analytical tools and data for policy-making. Ideally, a research-policy agenda should encompass new economic institutions and cultures, new technology paradigms and the ICT infrastructure, national and regional innovation systems – and human capital, or the knowledge, skills and other attributes of the workforce (OECD, 199X).

In this report, we focus on one of the cornerstones of knowledge economy policy – employment and skills. This is a reasonable starting point and confirms the Government's view that human capital powers the knowledge economy:

"*In an increasingly knowledge-based economy, there is a strong link between productivity and the quantity and quality of skilled labour. A more highly skilled workforce can generate greater innovation, increase flexibility in the workplace and enable better adaptation to new technologies*". – 2001 Pre-Budget Report

Significantly, then, the Departments of Trade & Industry (DTI) and Education & Skills (DfES) joined forces in publishing the 2001 Competitiveness White Paper – pointing to a growing recognition that knowledge-driven development requires a unified approach to the economy and employment and skills. The same white paper also described the regions as "*building blocks for economic success*".

The Government wants the regions, led by the Regional Development Agencies (RDAs) and the devolved administrations for Scotland and Wales, to play a major role in knowledge-driven development. The knowledge economy is 'written into' regional and national economic strategies – most noticeably, in the cases of Scotland and South East England.

The basic aim of this report is to promote debate and interest in the knowledge economy as a regional, sub-national and local agenda. Currently, it is widely perceived to be a national and economic agenda; untowardly, it is closely associated and linked into the UK Online Strategy, so that references to the knowledge economy commonly 'pop up' in ICT sections of strategy reports. We think the knowledge economy agenda needs widening and distributing across the UK.

1.2   This report

This report originates in Local Futures' research collaboration with the RDAs, from June 2001 to March 2002. The <u>research</u> focus of this collaboration was to build a human capital-based model of the knowledge economy and then apply it to all of the regions. The <u>policy</u> focus was the preparation of the first Frameworks for Employment and Skills Action (FRESAs), jointly called for by the DTI, the DfES and the Department for Work and Pensions (DWP).

What emerged out of this research collaboration was an original model of the knowledge economy called "Regional Economic Architecture" (REA). With employment and skills as its building blocks, the REA offers a simple 'one-page' view of the knowledge economy, which policy-makers and stakeholders from lay and expert backgrounds have found accessible and thought provoking. The results of the REA analysis were scrutinised and positively received by regional audiences across Britain, culminating in a presentation to the new London Skills Commission, this March.

Local Futures has since rolled out the REA model to the sub-regional and local levels – for example, in Nottinghamshire, the Black Country, Crawley and Camden. This work has conclusively demonstrated that the knowledge economy is relevant to community strategies, local strategic partnerships and the education, training and workforce development strategies of Local Learning and Skills Councils (LSCs). Through the course of this work, including presentations to the 2002 LGA Conference on Economic Development, we have encountered genuine interest in the REA model and its applications for local policies and partnerships.

This report offers an overview of our work on the regional knowledge economy. It is organised as follows:

- Chapter 2 explains the REA model and uses the East Midlands case for illustration

- Chapter 3 presents the results of applying the REA model to the regions, using a selection of maps and graphs

- Chapter 4 is an informal and brief look at the position of European regions in the knowledge economy

- Chapter 5 scopes out a policy agenda for the knowledge economy

The Annex contains the REA results for all of the English regions.

2 Regional Economic Architecture (REA)

2.1 Catching up with the knowledge economy

The knowledge economy is here, but the analytical tools and indicators for measuring its performance are missing. The OECD (1996) concluded in its major programme of work on The Knowledge-Based Economy that:

> "*At the heart of the knowledge-based economy, knowledge itself is particularly hard to quantify and also to price. We have today only very indirect and partial indicators of growth in the knowledge base itself. An unknown proportion of knowledge is implicit, uncodified and stored only in the minds of individuals. Terrain such as knowledge stocks and flows, knowledge distribution and the relation between creation and economic performance is still virtually mapped*".

A definitive list of indicators for mapping and measuring the knowledge economy does not yet exist. The OECD has tended to lean towards 'harder' technology, innovation and intellectual property; strategic management experts have tended to focus on various aspects of the business process (this is where the knowledge economy literature is mostly to be found in major bookshops). Chart 2.1 suggests where 'hard' and 'soft' knowledge economy indicators ought to be developed.

We need to 'catch up' with the knowledge economy. Most of what policy-makers need to know is still unknown, and the result is sometimes confusion. Untowardly, the terms 'knowledge economy', 'new economy' and 'digital economy' are used interchangeably – in certain RDA economic strategies, Sub Regional regeneration strategies or LSP community strategies, we have found that the knowledge economy is only mentioned under an ICT heading. This presumably reflects what is to be found on the Office of the e-Envoy's web site: "*The Government's programme to ensure that the UK is a world leader in the new knowledge economy is the UK Online Strategy*".

There is a need to promote a much wider and thorough understanding of the knowledge economy, given that it is the vision that guides Government policy thinking on the economy, skills and employment, the 'information society' and regional economic development. The knowledge economy concept needs to appear in strategy documents – but more important than that, it must be properly understood and digested.

Chart 2.1 Different views on knowledge economy fields

OECD – Macro-level Knowledge Economy	Strategic Management – Business Process	EC Immaterial Investments as Innovation
R&D Spend	Knowledge about social/economic changes, demand articulation	Knowledge and education
Know How	Hard technological knowledge	Distribution and logistics
Industrial patterns/design	Strategic choices about core competences (contracting out, co-development)	Image, design and quality
Patents & licences	Strategic positioning of products and concepts	Premium brands and market differentiation
Artistic creations/copyright	Product design, user friendliness and integrated electronic software	Innovative/active marketing/advertising
Royalty payment rights	Integrated values, convenience, quality of life, self affirmation, fun	Ability to produce, re-package and market content
Training and Human Resource Development	Brand names, advertising and image-building	Organisational transformation
Market share	Team and network building	Re-training
Product certification	Process design, learning organisation and 'soul'	Distribution channels
Customer/subscriber lists	Reputation in networks	New communication patterns
Product/service brands	External logistics	Knowledge-intensive and high value added production
Software and similar products	After-sales service and customer feedback	Consumer behaviour

Source: European Commission, Panorama of EU Industry, 1997

In this respect, an excellent reference is the "Korean Knowledge Economy" report produced by Carl Dahlman and Thomas Andersson (IBRD, World Bank, OECD, 2000). The authors define the knowledge economy as "*one that encourages its organisations and people to acquire, create, disseminate and use (codified and tacit) knowledge more effectively for greater economic and social development*". They go on to define what they call the 'four pillars' of the knowledge economy:

- *"An economic and institutional regime that provides incentives for the efficient use of existing knowledge, the creation of knowledge and entrepreneurship"*

- *"An educated and skilled population that can create and use knowledge"*

- *"A dynamic information infrastructure that can facilitate the effective communication, dissemination and processing of information"*

- *"A system of research centres, universities, think tanks, consultants, firms and other organisations that can tap into the growing stock of global knowledge, assimilate and adapt it to local needs and create new local knowledge"*

The knowledge economy agenda is, therefore, a vast and complex one, with many tools and indicators still missing. Importantly, it needs to be a 'joined up' policy agenda – the implications of the 'four pillars' perspective is that a 'big push' on R&D or higher education does not guarantee success – the other elements may be 'off'. For the regions, and the RDAs in particular, the challenge is immense given that effective control over the 'four pillars' may simply not exist. Are the regions, and Scotland and Wales, fully empowered to build a competitive knowledge economy for their businesses and communities?

2.2 The REA Framework

The REA is an attempt to create a unified, simple view of the knowledge economy using human capital 'building blocks' – employment on one side and skills measured by qualifications on the other. For the purposes of this paper, we use the East Midlands case to explain the architecture.

Chart 2.2 – Regional Economic Architecture for the East Midlands, 2000

Avg. Weekly Earnings £ 309 / GB = 100 89.7 — 76.2% Employment Rate

TOTAL EMPLOYMENT — Knowledge Intensity

	K1	K2	K3	K4
% of Total Employment	20.2%	21.3%	13.1%	45.4%
Average Earnings	£ 287	£ 344	£ 353	£ 291
% of Private Sector Employment	3.0%	20.9%	17.1%	59.0%
Average Earnings	£ 467	£ 347	£ 353	£ 291

Occupational Structure

	K1	K2	K3	K4	£
Managers and administrators	7.5%	16.4%	20.3%	16.4%	£ 540
Professional occupations	26.4%	13.0%	5.4%	1.9%	£ 461
Associate prof & tech occupations	21.6%	12.6%	9.3%	2.9%	£ 368
Clerical,secretarial occupations	8.1%	22.8%	22.5%	10.4%	£ 223
Craft and related occupations	2.3%	6.9%	13.6%	21.5%	£ 324
Personal,protective occupations	26.0%	10.7%	0.9%	6.3%	£ 180
Sales occupations	0.9%	2.7%	6.0%	14.2%	£ 216
Plant and machine operatives	0.9%	8.0%	14.9%	17.0%	£ 299
Other occupations	6.2%	6.9%	7.3%	9.5%	£ 182

Business Structure

	K1	K2	K3	K4
Micro (1-10)	3.4%	19.9%	15.8%	61.0%
Small (11-49)	1.8%	21.1%	17.3%	59.8%
Medium (50-199)	2.6%	21.9%	17.6%	57.9%
Large (200+)	2.2%	27.4%	15.8%	54.6%

TOTAL WORKING AGE POPULATION — Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	20.8%	24.0%	23.6%	31.6%
Average Earnings	£ 528	£ 342	£ 292	£ 261

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	88.3%	80.1%	77.6%	65.0%
Unemployment Rate	2.1%	3.3%	4.3%	5.3%
Inactivity Rate	9.6%	16.7%	18.2%	29.7%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	22.0%	19.5%	30.9%	16.5%	18.6%	29.1%	28.5%	35.0%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	9.1%	13.0%	29.9%	26.5%	36.8%	38.5%	24.2%	21.9%
25-44	25.8%	22.5%	30.2%	16.3%	19.0%	32.3%	25.0%	28.9%
*45-64	23.2%	18.4%	32.2%	11.3%	10.1%	19.2%	34.5%	51.0%

Human Capital Indices

	Overall	Male	Female
Overall	2.34		
All ages		2.46	2.20
16-24		2.24	2.31
25-44		2.57	2.32
*45-64		2.44	1.97

Employment Rates

	Male	Female
All ages	81.5%	70.3%
16-24	66.7%	58.6%
25-44	90.1%	74.7%
*45-64	77.6%	70.2%

Source: Local Futures Group, derived from ONS data

All of the RDA strategies share a vision for their regions – getting into the European 'top 10' regions on GDP per head performance, and achieving prosperity, cohesion and sustainable development. In the REA, we have adopted three basic indicators that are consistent with this common vision – high average earnings, high employment rates and, as shown in Chart 3.20, income distribution as a proxy for inclusion. These are the triple goals of strategy in the REA framework – what the knowledge economy should deliver. In Chart 2.2, we show two of these basic goals – the regional employment rate and regional average earnings (national index).

The red box in the East Midlands REA indicates that the region's score is 10% below the national average; the blue box signifies a regional score that is within 10% (above or below) of the national average; and, the green box shows where the region scores 10% above the national average. This coded colour scheme is used throughout the REA model. Thus, the East Midlands under-performs on earnings and actually scores slightly above the national average on its employment rate. Like several regions hit by de-industrialisation, the East Midlands is a caught in a low-wage 'vicious circle' of development.

The left tree of the REA is the 'demand side' of the knowledge economy. Using a benchmarking methodology set out in the EC *Employment in Europe 2000* report, we begin by classifying all of the 60 two-digit sectors in the Standard Industrial Classification (SIC) into four broad 'K' groups according to the degree to which they are knowledge based. The degree to which a sector is knowledge based is indicated by the proportion of graduates (or people with equivalent qualifications) in its workforce. Then, again following the EC methodology, we classify all sectors and their employment totals into four 'K' groups:

K1 sectors: where graduates make up at least 40% of the workforce. The East Midlands has 8 K1 sectors, including Education and Health and Computer Services, which together generate 20% of the region's jobs.

K2 sectors: where graduates make up between 25% and 40% of the workforce. The East Midlands has 12 K2 sectors, ranging from public administration, finance, chemicals, electrical equipment manufacture and utilities, which together generate a further 21% of all jobs in the region.

K3 sectors: where graduates make up between 15% and 25% of the workforce. The East Midlands has 9 K3 sectors, including machine equipment, postal and telecommunications services, wholesale trade and printing and publishing, which together generate 13% of all jobs.

K4 sectors: where graduates make up less than 15% of the workforce. The biggest component sectors here include retail, construction, hotels and restaurants and altogether 31 low value, low wage service and manufacturing industries. These K4 sectors generate 46% of all jobs.

The top row in the left REA tree shows the proportion of East Midlands employment generated by each of the four broad K groups in 2000 – the colours showing if these shares were well above, well below or near to the national average. Thus, we can see that the East Midlands under-performs on high knowledge intensity K1 sectors for job generation, whilst being dependent on low knowledge intensity K4 sectors. The row

below shows this varying knowledge level in the regional economy once the public sector is crudely removed – by taking out the employment contributions of health and social work, education and public administration and defence. Crude though this method is (given the private sector's share of basic human services), it thus provides valuable insights into the business-driven sphere of the East Midlands knowledge economy. Here we see that the region's business drivers are extremely weak – 75% of private sector employment is concentrated in sectors that are NOT knowledge intensive. This is the 'long tail' of the knowledge economy that needs to 'wag' if Britain's productivity performance is going to improve.

In the columns below, we highlight the occupational profiles within the K sector boundaries. Here, the disappointing feature in the East Midlands is the deficit in managerial and administrative layers of K1 and K2 sectors – indicating a lack of entrepreneurship in the knowledge economy. The last set of columns show the importance of large, small and micro firms as employment generators – the East Midlands contrasts sharply with London's head office based knowledge economy in this respect, as do all of the regions except Scotland and the South East.

The right tree of the REA is the 'supply side' of the knowledge economy – in this case, the workforce and its stock of qualifications. The top row indicates the shares of the regional working age population with NVQ4/5 (degree or equivalent), NVQ3 and NVQ2 ('intermediate'), and NVQ 1 and no qualifications. From Chart 2.2, we can see that the graduate workforce is relatively small in the East Midlands, but the rest of the region's skills profile is similar to the national average (at least within 10% of it). This row is used to create what we call a 'human capital index' measured only as a weighted average of NVQ qualifications in the regional workforces. The columns below give gender and age breakdowns for these four different qualifications-based sectors of the regional workforce. We can see that clear evidence of 'knowledge divides' by age and gender in the East Midlands workforce – see Chapter Three to follow for a discussion.

The REA results for the regions included 'architectures' for both 2000 and 1994, thus affording a view of change during the late 1990s. The positive shifts that policy-makers should be looking out for are growing employment shares in the K1 and K2 boxes – meaning more firms and more jobs are becoming knowledge-driven – and shifts up the occupational or knowledge 'ladder' within all industries and K sectors. In the left tree, policy makers will be encouraged by shifts from right to left in the top row: upward mobility, greater employability, better qualifications. This should be reflected in a more balanced improvement for both young and old, and for both men and women.

The big issues for policy makers nationally and in the regions are:

- Will the emerging knowledge economy exacerbate regional imbalances or disparities? Can regions catch up, in the absence of powerful business drivers? What should the values ideally be in the top row of the left tree of the REA by say 2010?

- What should the values ideally be in the top row of the right tree of the REA by say 2010? What human capital profile – and in effect, what type of 'knowledge society' – should the regions seek to create? How will social and economic aims be reconciled?

2.3   Data sources

Ideally, the REA should be built from one, consistent data source. The ideal would be a combined skills-employment and earnings-output survey delivered by DfES, DTI and DWP. These are the same departments that lead on the FRESA work across the country, and the first two mentioned delivered the last Competitiveness White Paper. The knowledge economy needs one big consistent and regular survey, so it can be analysed effectively for policy development.

In the REA we have used different sources to make progress and to highlight the potential value of better data. The Labour Force Survey data are residence based, while the New Earnings Survey and Annual Business Inquiry data are workplace based. In the left tree, the occupational and employment data are residence based, along with the occupational earnings. The employment earnings and business employment data are workplace based. For the sub-regional analysis the demand side data is by place of work and the supply side data is by place of residence.

Since the data sources use sampling techniques some of the individual data records that underlie the REA may have large margins of error. This is only true for data records that are of small sample sizes. Since the REA uses fairly large aggregations of the data the confidence levels of the summary outputs are very high. The problems exist when examining individual sectors that have small local workforces. In these cases earnings and qualifications levels by sector can be subject to large margins of error.

These are 'health warnings' that apply to most of the data sources that we ideally need for analysing and making policy for the knowledge economy. They have not undermined presentations of the REA to regional and local audiences throughout Britain – the key messages and 'storylines' have come through.

3 Regional Competitiveness in the Knowledge Economy

3.1 Not one but many 'knowledge economies'

There are as many knowledge economies, as social formations, in Britain as there are regional economies – and as we show in the next chapter, sub-regional and local economies. The Government has drawn the boundaries of the regional knowledge economy – these are the RDA territories and Scotland and Wales. We take these spatial frameworks as a given for the REA analysis.

This chapter provides an overview of the results of our REA analysis as it applied to each of the nine RDA regions. The results were originally provided to the RDAs as CD reports, one for each region. This report is the first attempt to provide a national overview of the research results as a hard copy publication.

We begin here by comparing the performance of the regions from the REA knowledge economy perspective – focusing on employment and skills. In the next chapter, we move inside the regions to view sub-regional and local patterns of knowledge-driven economic development.

3.2 Regional disparities – *new economy, same old geography*?

We begin with the 'top box' of the REA – regional employment rates and average earnings. The results are summarised in Chart 3.1, where the dotted purple lines show the national (GB) average, and the green line represents the EU average.

These results confirm the encouraging performance highlighted in the UK Employment Action Plan (DWP, 2002) – *most of Britain has already exceeded the EU 2010 target employment rate of 70%.* Here, we see that only Wales and the North East currently slip below this 70% threshold. Thus, the Government's description of the UK as "a highly dynamic and diverse labour market" appears to be right. What we do know, however, is that *roughly the same proportion of regions – 9 out of 11 – lie below the EU regional average for GDP per capita*. We have a high employability, low productivity paradox.

The chart also underlines one basic concern expressed in the European Employment Strategy – *the persistence of significant regional imbalances*. Within Britain, there is a 15-20% gap between the North East and the South East in terms of regional employment rates and average earnings levels. London's own paradox is its earnings supremacy, but employment rate inferiority. *In the London Borough of Newham – at*

the heart of Europe's most economically powerful region – the employment rate stands at a dismal 50%.

Chart 3.1 Regional Disparities in Earnings and Employment Rates, 2000
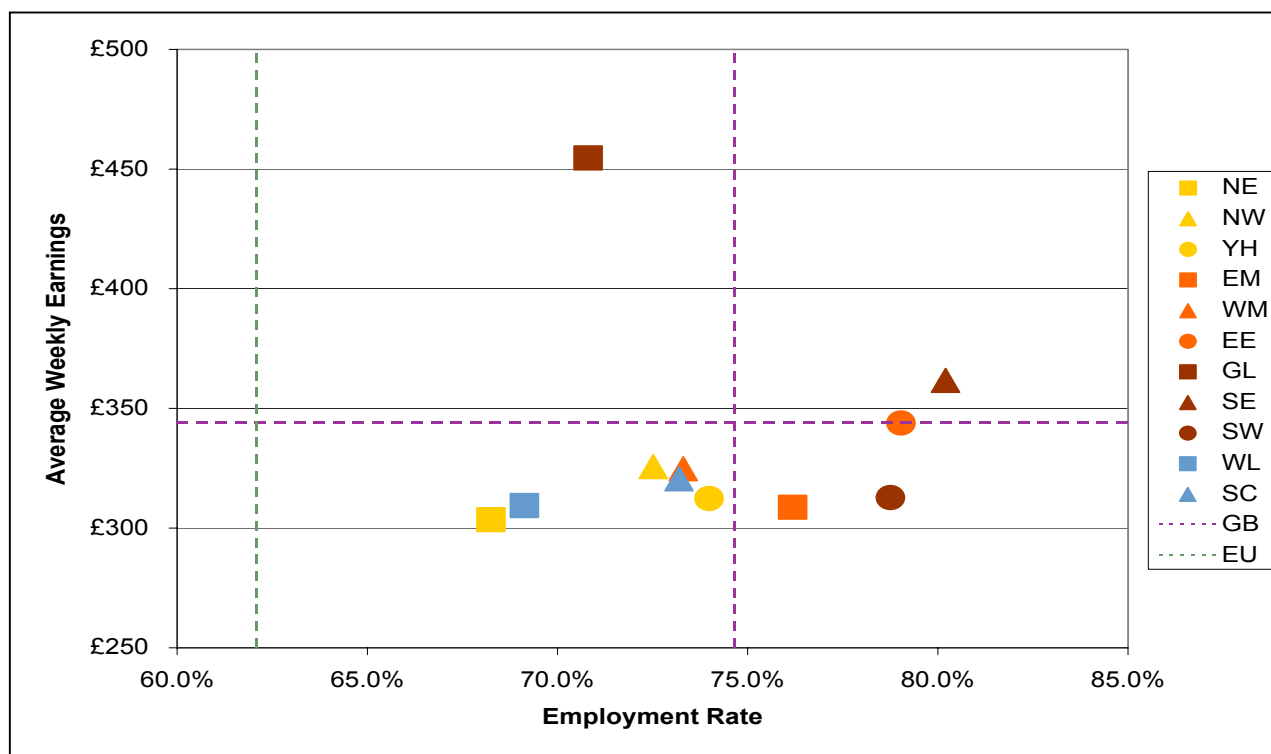
Source: Local Futures Group, derived from ONS data

3.3   Regional employment in the knowledge economy

For Britain as a whole, 10 out of a possible 60 industries can be classified as highly knowledge intensive K1 sectors in 2000. They generated about 30% of total employment, and significantly 60% of these jobs were concentrated in mainly public sector activities – namely, Education, Health and Social Work. The private sector was represented in this 'top 10' by Business Services (7% of total employment), IT (2.5%) and Chemicals (1.2%). A further 20% of total employment was generated by 16 K2 sectors, with Public Administration, Defence and Social Security accounting for around 1 in 3 of these jobs. The main private sector industries here were Finance and Real Estate Services (6% of total employment), Recreation & Culture (3%), Printing and Publishing (1.5%) and Other Transport Manufacture (1%).

- Nationally, 26 out of 60 industries are describable as 'knowledge intensive' (graduates make up at least 25% of their workforces); they generated 50% of half of Britain's jobs in 2000. The public sector generated 50% of K1 & K2 employment.

Chart 3.2 shows how this knowledge economy employment picture varies across the country. London clearly leads the way, with 19 K1 sectors and 16 K2 sectors generating 65% of the capital's jobs. In contrast, Yorkshire & the Humber and the East Midlands have 8 K1 and 12 K2 sectors, which generate 40% of all regional employment. The public sector generates around 34% of London's K1/K2 jobs – in the two regions mentioned, this figure climbs to 62% (Y&H) and 55% (EM).

- The depth and extent of the knowledge economy vary greatly across Britain, with London dominant. Business drivers are weak outside London and the South East, and there is a high dependency on the public sector as a generator of knowledge-based employment.

Chart 3.2 Knowledge Sector Count by Region, 2000
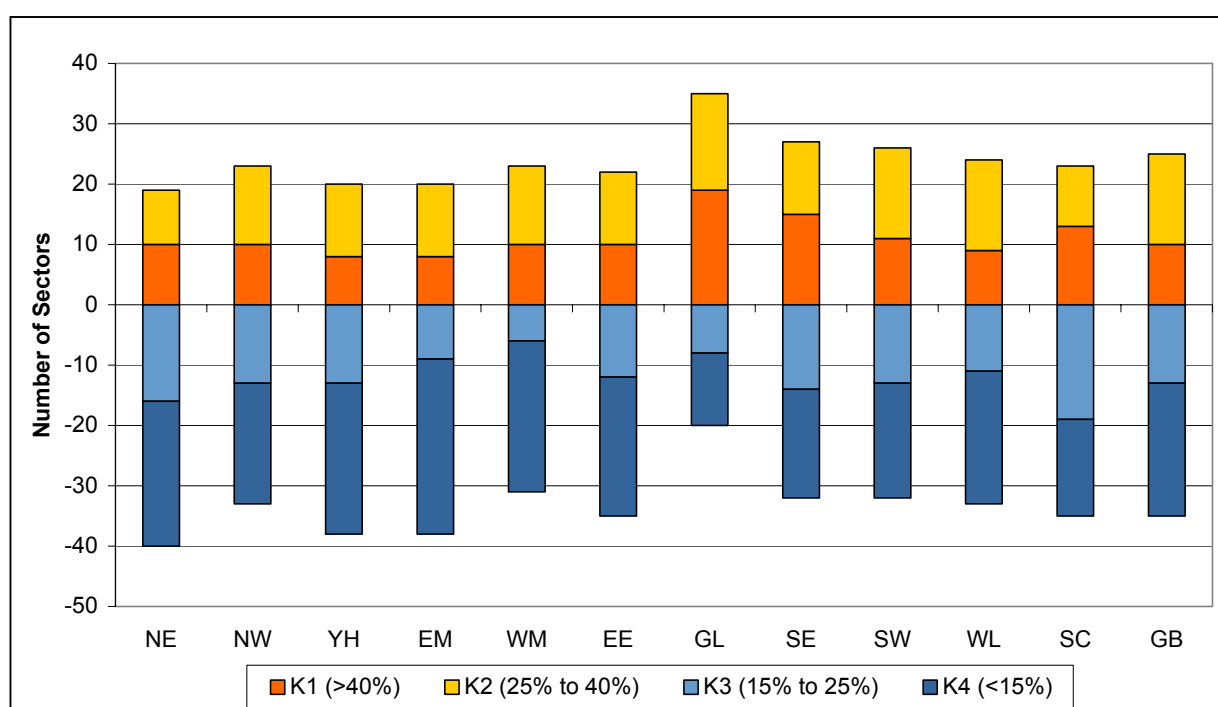
Source: Local Futures Group, derived from ONS data.

The regional geography of the knowledge economy in Britain is a historical legacy. London's status as the nation's capital of commercial, financial, political and civil service activities goes back centuries. Globalisation and technological change have greatly reinforced its dominance of the national knowledge economy. In Chart 3.3, we can see that London's powerful K1 economic base is driven by large and small businesses. In addition, within K2 and K3 sectors, London specialises in high knowledge-intensity managerial and professional functions in low knowledge intensity industries – revealing its head office status in retail, construction and a range of new and old manufacturing industries.

- London dominates the knowledge economy as a political and civil service capital and a commercial and corporate capital. Globalisation and technology have reinforced this over the last twenty years.

Chart 3.3 - Regional Economic Architecture for the London Knowledge Economy, 2000

		Avg. Weekly Earnings	£ 455	70.8%	**Employment Rate**
		GB = 100	132.1		

TOTAL EMPLOYMENT
Knowledge Intensity

TOTAL WORKING AGE POPULATION
Human Capital

	K1	K2	K3	K4		NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	55.4%	10.4%	17.3%	16.8%		30.0%	18.9%	17.6%	33.5%
Average Earnings	£ 489	£ 564	£ 323	£ 401	Average Earnings	£ 633	£ 424	£ 413	£ 381
% of Private Sector Employment	42.6%	13.4%	22.4%	21.6%					
Average Earnings	£ 552	£ 564	£ 323	£ 401					

Employment

Employment Rate	87.1%	75.0%	68.5%	55.8%
Unemployment Rate	3.0%	4.9%	7.2%	7.1%
Inactivity Rate	9.9%	20.1%	24.3%	37.1%

Occupational Structure

	K1	K2	K3	K4	£
Managers and administrators	19.1%	22.7%	24.2%	17.8%	£ 706
Professional occupations	21.4%	8.4%	3.4%	2.8%	£ 621
Associate prof & tech occupations	22.3%	13.8%	3.5%	2.3%	£ 569
Clerical,secretarial occupations	17.5%	18.9%	15.2%	7.5%	£ 302
Craft and related occupations	2.2%	11.3%	4.7%	25.3%	£ 425
Personal,protective occupations	11.4%	4.0%	2.5%	16.4%	£ 297
Sales occupations	1.2%	2.7%	33.1%	2.7%	£ 199
Plant and machine operatives	1.4%	6.9%	7.6%	14.8%	£ 360
Other occupations	3.4%	11.2%	5.7%	10.4%	£ 220

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	31.2%	28.7%	22.1%	15.4%	14.9%	20.4%	31.7%	35.5%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	17.5%	17.6%	26.5%	28.7%	30.4%	30.0%	25.6%	23.7%
25-44	39.0%	34.9%	19.9%	13.1%	12.6%	19.6%	28.6%	32.3%
*45-64	26.2%	24.5%	23.4%	10.3%	9.8%	15.1%	40.7%	50.1%

Business Structure

	K1	K2	K3	K4
Micro (1-10)	43.4%	7.1%	26.0%	23.6%
Small (11-49)	35.5%	11.0%	26.5%	27.0%
Medium (50-199)	42.9%	15.2%	23.0%	18.9%
Large (200+)	49.8%	19.2%	18.5%	12.4%

Human Capital Indices

	Overall	Male	Female
	2.45		
All ages		2.53	2.37
16-24		2.36	2.40
25-44		2.69	2.51
*45-64		2.35	2.09

Employment Rates

	Male	Female
All ages	76.7%	64.4%
16-24	54.3%	53.9%
25-44	86.7%	67.4%
*45-64	72.9%	66.1%

Source: Local Futures Group, derived from ONS data

Chart 3.4 shows how the knowledge intensity of a particular sector varies between regions. Financial services in London will include global investment banks, but in the North East it could be dominated by building society 'call centres'. Similarly, the IT sector in the South East region may contain R&D labs and head offices of international companies – in Scotland, the same sector may be comprised of chip assembly plants. The basic point is that knowledge levels vary considerably within the same sector across regions – even the quality of the Public Administration sector rises and falls across the regions.

Chart 3.4 Sectors vary in their knowledge intensity across regions, 2000
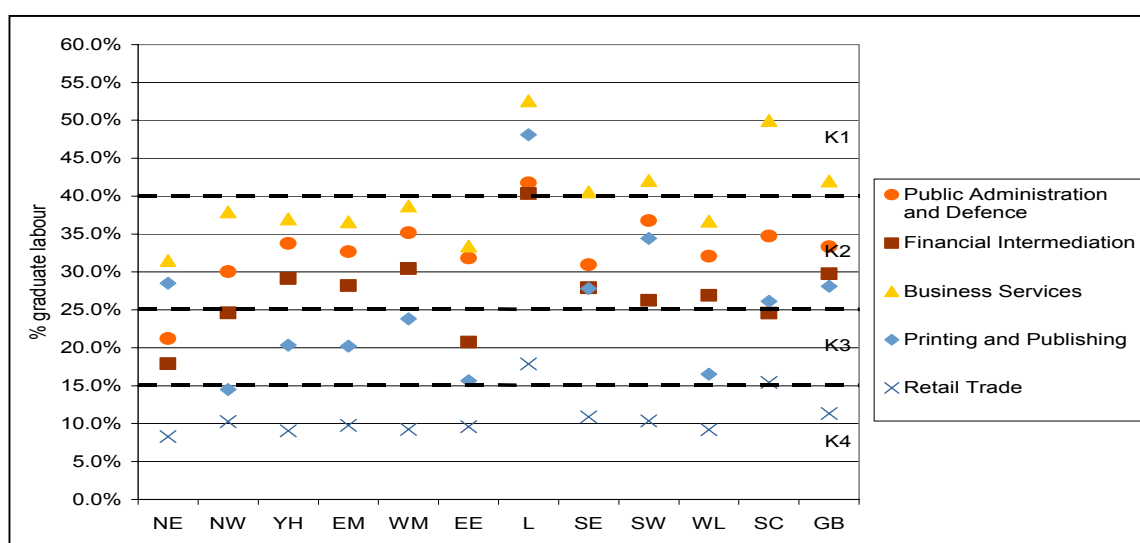
Source: Local Futures Group, derived from ONS data

The regions face an immense challenge in building up a competitive knowledge economy base. De-industrialisation over the years has taken its toll on manufacturing production and factory-based work – it has also destroyed the knowledge bases of firms, industries and institutions that supported the 'old economy'. Textiles in the East Midlands and the West Midlands car industry are obvious examples of this. In southern Germany and northern Italy, we can find regions where manufacturing sectors are major drivers of the knowledge economy – the old versus new economy dichotomy is a false one looked at from a knowledge economy perspective.

The Government's 'cluster' strategy aims to build up knowledge bases and networks in different sector groupings. Chart 3.5, showing the North East situation, underlines the need for building the knowledge economy on a very broad front. About 80% of the region's business-based employment is concentrated in K3 and K4 sectors – the managerial-entrepreneurial layer of the economy is relatively thin ('red'). Cluster policies are one ingredient, but the big challenge is to raise knowledge levels across the North East SME population, and to transform the public sector into a driver of knowledge-driven economic development.

Chart 3.5 – Regional Economic Architecture for the North East Knowledge Economy, 2000
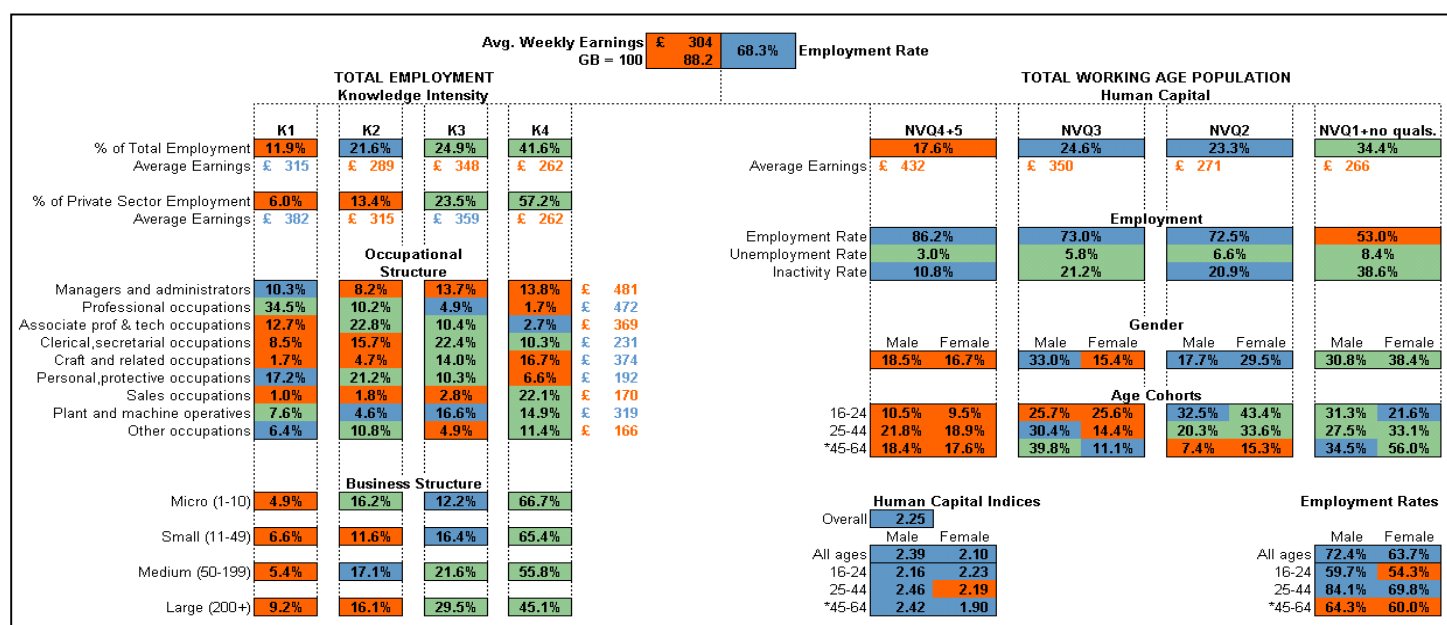
Source: Local Futures Group, derived from ONS data

3.4 Regional workforces in the knowledge economy

As explained in Chapter 2, the right tree of the REA model provides a view of the knowledge base of the regional workforces – indicated by the proportions of the working age population with different levels of NVQ qualifications, ranging from degree holders to people who lack even basic qualifications. Again, we see that this human capital 'architecture' varies considerably from region to region.

- London has a highly polarised human capital structure – 1/3 of Londoners have a degree, but 1/3 have no and low qualifications, both these shares being well above the national average. Reflecting this, London is 'hollowed out' in terms of its intermediate (levels 2/3) base of qualifications – the so called 'key workers' who keep the 'wheels of London's buses' turning, fix the plumbing and nurse the capital's large patient population. (Please see Chart 3.3)

- The North East, Britain's weakest knowledge economy, has a very different human capital profile. People with little to no qualifications also account for 1/3 of the working age population; but, in terms of relative size, the graduate labour pool is only half as big as London's, and much smaller than the national one. Reflecting its existing and historical industrial base, the North East still has 50% of its working age population with level 2/3 craft, technical and vocational qualifications – it appears what London needs is in the North East!

Chart 3.6 provides an overview of this qualifications picture for all of the regions. In the majority of the regions, 7 out of 11, the relative size of the graduate labour pool falls below the GB average of around 24%. The graduate economy – and thus the Higher Education system – displays a clear and definite North-South Divide. London and the South East/South West – and Scotland with its own HE base – have extensive graduate populations.

Chart 3.6 – Qualifications of the Regional Workforces, 2000
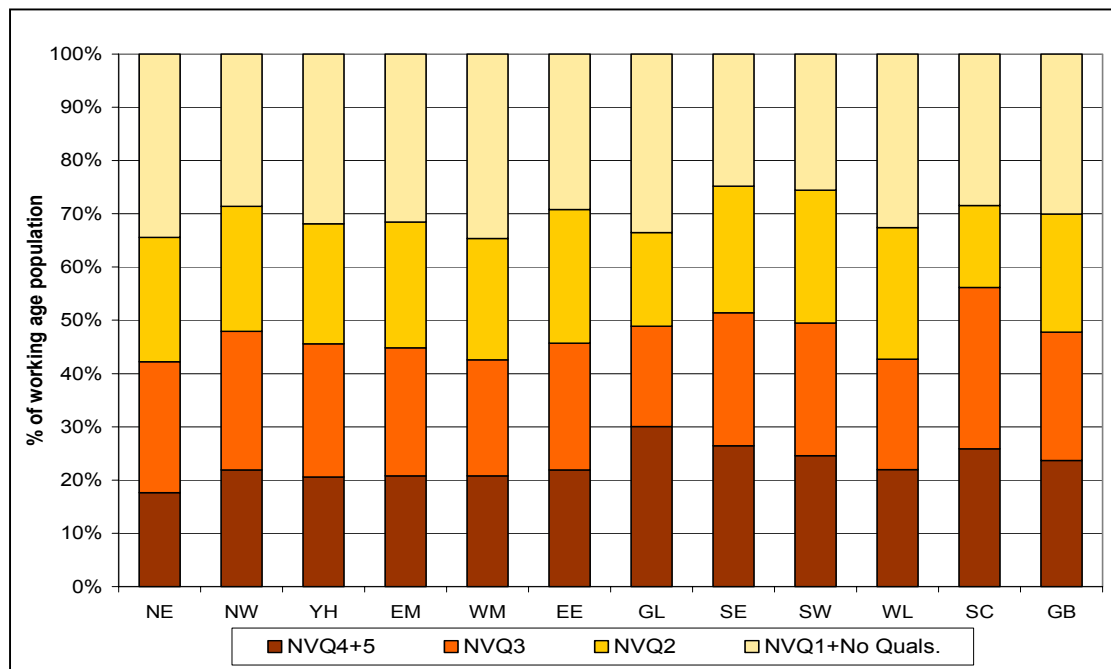
Source: Local Futures Group, derived from ONS data

The opposite side of the coin is 'skills poverty' – the proportion of the regional working age population with no or level 1 qualifications. Here, the South East and the South West rank highest – given its sheer scale, London faces the greatest challenge in terms of sheer numbers of people that need to be equipped for participation in the

knowledge economy. Commuters from the South East and the East of England (and other regions) are better qualified than Londoners on average – they make up London's 'top heavy' knowledge economy workforce (the left tree in Chart 3.3).

Relatively speaking, the West Midlands is plagued by the same degree of 'skills poverty' as London. However, as we can see from Chart 3.7, the region's graduate labour pool is small by national standards. The employment rate for degree holders stands at nearly 90%, but drops to 60% for West Midlands people with no or basic qualifications.

Chart 3.7 – The REA for the West Midlands (2000)

Avg. Weekly Earnings £ 325 | GB = 100 94.4 | 73.3% Employment Rate

TOTAL EMPLOYMENT — Knowledge Intensity

	K1	K2	K3	K4	
% of Total Employment	21.9%	22.8%	10.0%	45.2%	
Average Earnings	£ 309	£ 350	£ 384	£ 297	
% of Private Sector Employment	4.5%	23.4%	13.1%	59.0%	
Average Earnings	£ 449	£ 344	£ 384	£ 297	

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	7.4%	16.4%	13.1%	16.6%	£ 557
Professional occupations	28.6%	12.6%	7.0%	2.0%	£ 485
Associate prof & tech occupations	19.0%	13.0%	5.8%	2.5%	£ 369
Clerical,secretarial occupations	10.3%	23.3%	12.6%	11.9%	£ 232
Craft and related occupations	2.0%	7.7%	26.4%	20.6%	£ 351
Personal,protective occupations	23.6%	10.2%	0.4%	6.8%	£ 196
Sales occupations	1.6%	2.6%	3.2%	16.3%	£ 205
Plant and machine operatives	1.5%	8.3%	23.1%	14.8%	£ 305
Other occupations	6.0%	5.9%	8.4%	8.5%	£ 177

Business Structure

	K1	K2	K3	K4
Micro (1-10)	3.6%	25.7%	4.3%	66.4%
Small (11-49)	2.8%	23.7%	6.2%	67.3%
Medium (50-199)	5.2%	24.6%	10.5%	59.7%
Large (200+)	6.3%	30.0%	17.1%	46.7%

TOTAL WORKING AGE POPULATION — Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	20.8%	21.8%	22.8%	34.6%
Average Earnings	£ 478	£ 354	£ 279	£ 274

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	87.7%	79.8%	75.2%	59.9%
Unemployment Rate	2.5%	3.6%	5.7%	6.3%
Inactivity Rate	9.8%	16.6%	19.0%	33.8%

Gender

	NVQ4+5 Male	NVQ4+5 Female	NVQ3 Male	NVQ3 Female	NVQ2 Male	NVQ2 Female	NVQ1 Male	NVQ1 Female
	21.8%	19.6%	27.6%	15.4%	17.8%	28.3%	32.8%	36.6%

Age Cohorts

	NVQ4+5 Male	NVQ4+5 Female	NVQ3 Male	NVQ3 Female	NVQ2 Male	NVQ2 Female	NVQ1 Male	NVQ1 Female
16-24	10.9%	11.4%	26.5%	25.4%	33.8%	38.9%	28.8%	24.3%
25-44	25.8%	22.9%	26.8%	15.2%	19.1%	31.8%	28.3%	30.1%
*45-64	22.0%	19.3%	29.0%	10.3%	8.9%	17.2%	40.1%	53.2%

Human Capital Indices

	Male	Female
Overall	2.29	
All ages	2.38	2.18
16-24	2.19	2.24
25-44	2.50	2.31
*45-64	2.33	1.96

Employment Rates

	Male	Female
All ages	78.2%	67.8%
16-24	63.8%	58.9%
25-44	88.5%	71.4%
*45-64	72.2%	67.3%

Source: Local Futures Group

The South East presents a striking contrast. The region's 80% employment rate stands well above the national average – and ranges from nearly 90% for degree holders to 70% for people with no/low qualifications. These comparisons between the South East and the West Midlands reinforce arguments made in The Government's Employment Strategy (Work and Pensions Committee, Third Report of Session 2001-02):

> "*Within the generally acceptable national economic situation and encouraging employment statistics there are some quite wide regional variations. This is particularly the case in areas with a historically high proportion of employment in industries that have been in decline, such as manufacturing*" (p.11).

The 'decline' in the West Midlands relates, of course, to the region's vehicle manufacturing economy – including the extensive networks of SME component suppliers and all of the economic institutions that grew up around the industrial base and the workforce. We emphasised this earlier in the case of the North East, East Midlands and other regions hit by de-industrialisation and today the 'nut-cracker'

effect of a high exchange rate and fierce global price competition. Again, the RDAs in these regions are seeking to establish a 'floor' and even bring about a 'renaissance' in areas of manufacturing that have cluster potential. The challenge is immense – between December 2000 and December 2001, 159,000 manufacturing jobs were lost across Britain. All long-range employment forecasts point to a continuing decline in manufacturing – for 'clusters' read 'niches' in regional economic strategies, meaning that the knowledge economy has to be built up across the whole regional economy.

Ironically, the South East needs people with no/low skills to fill sandwiches, clean houses and otherwise deliver a lower-order service economy (feedback from the REA presentation to the SE FRESA Forum). Half of the working age population is qualified to levels 2 and 3 – in other words, what the South East has, London needs. A finely grained occupational analysis of skills shortages is needed to confirm the apparent potential for 'a human capital skills trade' between London and the South East. What geographical and cost barriers get in the way? House prices, transport costs and congestion, social and cultural attitudes and so on were all mentioned in the course of Local Futures presentations of the REA results to audiences in London and the South East.

Chart 3.8 – The REA for the South East (2000)

Avg. Weekly Earnings £ 362 / GB = 100 105.1 | 80.2% Employment Rate

TOTAL EMPLOYMENT — Knowledge Intensity

	K1	K2	K3	K4	
% of Total Employment	33.3%	21.1%	15.7%	29.8%	
Average Earnings	£ 364	£ 383	£ 403	£ 300	
% of Private Sector Employment	20.7%	19.5%	20.7%	39.1%	
Average Earnings	£ 455	£ 386	£ 403	£ 300	

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	14.3%	23.1%	26.5%	17.5%	£ 606
Professional occupations	26.4%	7.8%	4.5%	2.4%	£ 513
Associate prof & tech occupations	17.9%	15.8%	5.2%	3.0%	£ 407
Clerical,secretarial occupations	13.9%	23.7%	18.2%	8.4%	£ 244
Craft and related occupations	2.5%	7.1%	12.9%	21.5%	£ 376
Personal,protective occupations	15.9%	12.3%	2.0%	8.7%	£ 217
Sales occupations	1.4%	3.3%	6.8%	20.6%	£ 216
Plant and machine operatives	1.8%	4.2%	12.8%	8.7%	£ 322
Other occupations	5.8%	2.7%	11.2%	9.3%	£ 205

Business Structure

	K1	K2	K3	K4
Micro (1-10)	25.7%	12.9%	14.4%	47.0%
Small (11-49)	18.4%	14.5%	21.7%	45.4%
Medium (50-199)	23.4%	16.0%	26.0%	34.6%
Large (200+)	31.2%	22.8%	22.1%	24.0%

TOTAL WORKING AGE POPULATION — Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	26.4%	25.0%	23.8%	24.8%
Average Earnings	£ 797	£ 613	£ 549	£ 480

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	88.0%	81.9%	81.0%	70.4%
Unemployment Rate	1.9%	2.2%	3.1%	4.1%
Inactivity Rate	10.1%	15.9%	15.9%	25.5%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	28.1%	24.7%	30.1%	19.4%	19.0%	29.1%	22.9%	26.9%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	11.9%	12.0%	31.2%	36.1%	36.7%	36.1%	20.2%	15.8%
25-44	32.4%	29.8%	28.7%	17.4%	18.8%	31.4%	20.0%	21.5%
*45-64	29.4%	23.5%	31.3%	13.8%	11.6%	21.9%	27.7%	40.8%

Human Capital Indices

Overall: 2.53

	Male	Female
All ages	2.63	2.42
16-24	2.35	2.44
25-44	2.74	2.55
*45-64	2.62	2.20

Employment Rates

	Male	Female
All ages	85.6%	74.3%
16-24	70.4%	68.0%
25-44	94.0%	76.2%
*45-64	81.5%	74.5%

Source: Local Futures Group, derived from ONS data

3.5   Change and balance

Britain 'boomed' between 1994 and 2000, with employment levels breaking all records. The 'new economy' flourished, led by new technology and the City, and the 'gates' of higher education were thrown open to ultimately a majority of young people.

Local Futures produced 'architectures' for the year 1994, and looked at patterns of change to 2000. How did the knowledge economy change?

- The Government's policies to increase employment rates worked (New Deal, Job Seekers Agreement, etc) – employment rates rose in all regions and across all age/gender groups

- The Government's policies to increase qualifications levels worked – the proportion of the working age population with no/low qualifications dropped by 25% in the North West and South West, and by 10% in Scotland and London.

- The Government's policies to increase the graduate labour pool worked – its share of the working age population rose by 18% in the North East to 30% in the South West.

Thus, Government policies combined with a record-breaking labour market performance ensured that all regions made rapid progress in the direction of the knowledge economy – at least, on the supply side and measured by qualifications.

Evidence on the demand side (the left tree of the REA) reveals a mixed and perhaps less encouraging picture, and one that contrasts starkly with the double-digit growth performance on qualifications. Nationally, employment growth in K1 and K2 sectors was 9% and 1% respectively – however employment in the lower knowledge-intensity sectors K3 and K4 was static and declined. In general then, these employment changes marked a shift towards the knowledge economy – finance, business services and ICT leading the way.

However, these changes need to be considered very carefully. K1 and K2 employment growth was small in most regions when compared to the big rises in the graduate labour pool. In the North East, for example, K1/K2 employment grew by 1-2%, but the proportion of graduates in the workforce increased by 17%. In the South East, K1 employment growth was 4% and K2 was –2.5% - but there was a 25% increase in the graduate labour pool. Scotland's knowledge economy is similarly off-balance: graduates increased their share of the working age population by 25%, but knowledge-intensive sectors – where they mostly expect to find work – showed employment growth rates of 6% and 3%.

Basically, the knowledge economy in most regions is unbalanced. Job generation in knowledge-intensive sectors – even in a highly favourable economic period – was not keeping pace with the rise of a more highly qualified working age population, 25% of which was made up of degree-holders. In effect, we may have created a supply-driven knowledge economy – or one where employers lack the absorptive capacity for more qualified staff, including graduates. The new emphasis on 'demand-led' post-16 education and training is therefore timely and necessary – but what about the supply side? Is the knowledge economy littered by paper qualifications? Do all regions need the same human capital base – degree may be in abundance, but 'one can't find a plumber!'

In Chart 3.9, we can see how demand and supply in the regional labour market match or don't match up. Here 'demand' is calculated from the occupational structure of employment in the REA model and average qualifications by occupation data from Warwick University's Institute for Employment Research. Supply is simply the taken from the right tree/top line of the REA model.

In the North East case, there are insufficient graduates to meet employer demands. The RDA for the region, One North East, has expressed concern about the 'brain drain' of graduates to London and the South East. In the course of the REA presentations, this same concern was echoed in the West Midlands, the North West, East Midlands and Yorkshire and the Humber. But, importantly, the new thrust towards graduate retention initiatives will only work in regions like these, if there is a matching increase in graduate employment opportunities. Otherwise, and qualitative evidence supports this, what we are currently seeing evolve is a knowledge economy characterised by high levels of disguised, hidden under-employment. The very recent rise in graduate unemployment is only the tip of a greater iceberg! In Nottingham, graduates tend to find temporary work or placements in public services – 'doing the photocopying' – before moving on to jobs in other regions. This 'revolving door' or 'back door' of graduates works like a dam that stops local people with level 3/2 qualifications from finding permanent jobs.

Chart 3.12 – Supply and demand for qualifications – North East (2000)
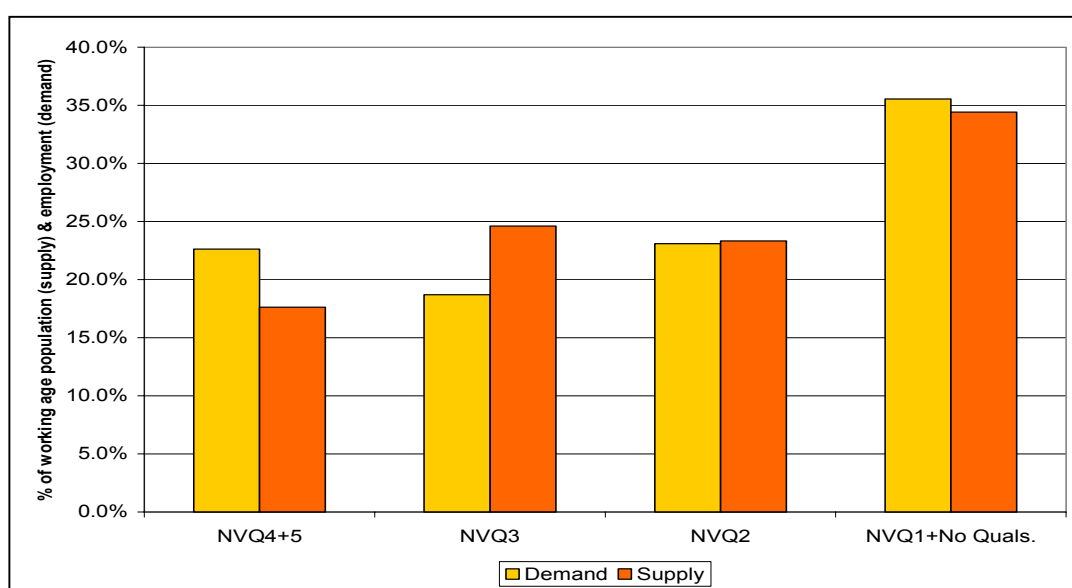
Source: Local Futures Group

The excess supply of Level 3 qualifications is a picture repeated right across the country – with the exception of London. We have already suggested one plausible reason for this - graduates crowding out local people with level 3 qualifications. Employer recruitment policies – led by the public sector – should be aimed at closing this 'back door'. However, in the North East case, the issue lies also at NVQ levels 2 and 3 – here, everything depends on creating a new economic culture in schools and businesses that will encourage a higher level of expectation, ambition and

performance. Smashing the dominance – and match-up – of the two yellow and orange bars on the right of Chart 3.12 should be the target of the North East FRESA, and the region's workforce development strategies.

Scotland's situation is perhaps more complex. It retains graduates successfully, but here too, there is an excess supply or unmet demand for level 3 qualifications. Feedback to the REA analysis from Scottish Enterprise and the Scottish Executive was consistent with this picture: level 3 qualifications are not in demand, though the Scottish education system leads the rest of Britain in producing people with these qualifications. The challenge is then to persuade more and more school leavers to go on to university (the current policy thrust). However, the low employment growth performance of Scotland's K1 and K2 sectors suggests that increasing the graduate population may simply lead to more underemployment (anecdotal evidence), a significant increase in the brain drain and more pressure on public sector job generation. None of these scenarios is desirable – other than as 'holding patterns'.

Chart 3.14 – Supply and demand for qualifications – Scotland (2000)
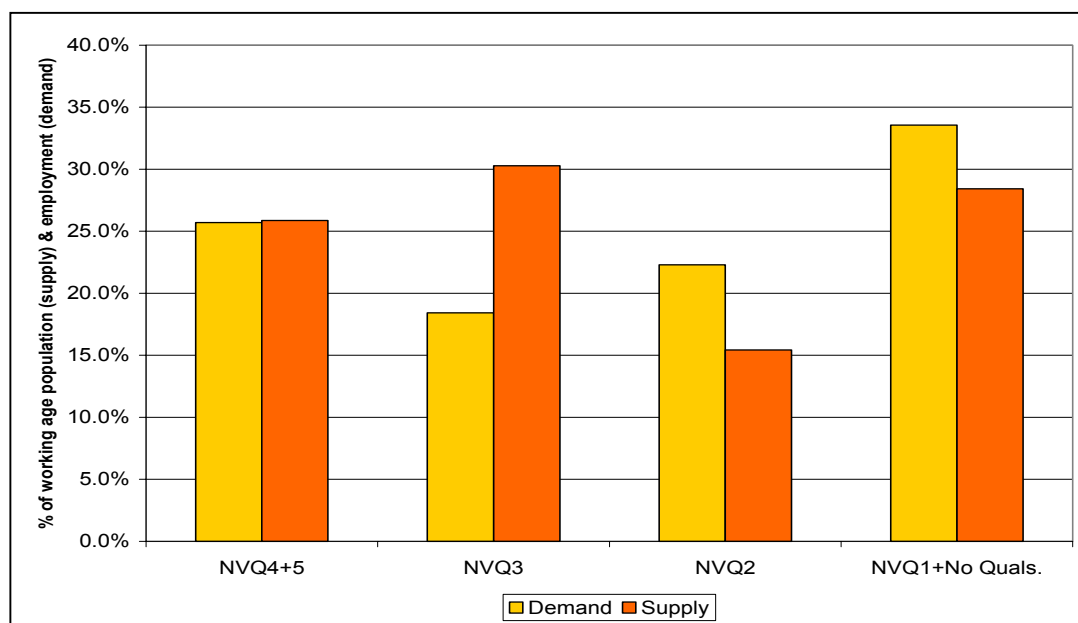
Source: Local Futures Group

The depressing picture, from a knowledge economy perspective, is the excess demand for low-level qualifications – 0, 1 and 2. Scottish employers – from large firms operating IT assembly plants or small firms running hotels – seem to place a low value or have a low need for level 2 plus qualifications and skills. Scottish policy makers and agencies, in complete contrast, are committed to building a world -class inclusive knowledge economy. There is a massive job to do in transforming the knowledge bases of SMEs and employers more generally – to create the absorptive capacity for innovation and change, and hence the demand for human capital through new higher-qualified staff and training-up existing employees. Scotland is not alone in this. All regions of Britain face the same challenge – meaning that it is a national problem.

3.6   Social exclusion in the knowledge economy

Qualifications are not job guarantees. However, they enhance employability and generally higher earnings come with higher qualifications (see Chart 3.17 below). In a knowledge economy, human capital accumulates mostly 'on the job' through informal learning. This does not necessarily show up in the qualifications structure of the organisation. Further, it is only through work that individual, organisation and social investments in qualifications pay off in terms of earnings, profits and economic growth. Thus, the quality of the job has to match the quality of the qualification.

Having said this, mobility in the knowledge economy calls for formal qualifications – for screening job applicants and suppliers of knowledge-based services, levering value out of knowledge networks and moving towards knowledge asset management as a source of competitiveness or 'modernisation'. The knowledge economy is characterised by the codification of knowledge and its conversion into economic commodities – software billionaires are the new economy's 'oil millionaires'. Formal qualifications are part of this codification process. The massive expansion of the graduate labour market will lead to the devaluation of degrees – meaning a graduate can be hired for the price of someone with A levels – but also to an elite of graduates with real talent and from high ranking universities who will attract economic rent.

Basically, we can look at social exclusion in the knowledge economy context in terms of levels of qualifications attained by different groups. Chart 3.15 shows the age divides in the Nottinghamshire knowledge economy. The HE explosion in recent years has obviously by-passed older generations of the workforce, Equally significant is that a massive 40+% of people over 45 years of age have no to low qualifications.

Chart 3.15 – The Age Divide in the Nottinghamshire Knowledge Economy
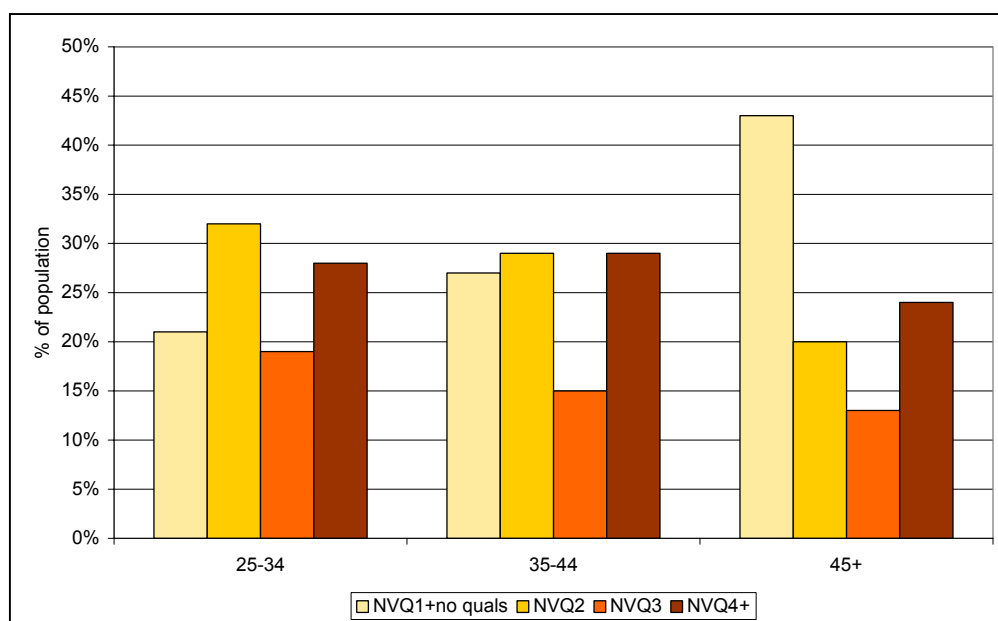
Source: Local Futures Group, derived from ONS data

The 'age divide' magnifies the role of the Government's lifelong learning policies – and the LSC network and the FE sector. Its current and future significance lies in the collapse of the pension market and the future outlook for pension incomes. Experts and the Government say that people will have 'to work till they drop'. If the knowledge economy *is* the future, how will the 'third age' workforce fare in an already qualifications-congested labour market? Will a growing 'army of silver-haired commuters' travel to London's knowledge workplaces on packed South West trains each morning? The 'age divide' should be one of the key issues in the FRESAs. From a knowledge economy perspective, we must reckon with not so much a 'pension time bomb' but a 'pension-employability time bomb'!

Chart 3.16 shows the 'gender divide' in the Black Country knowledge economy. Nationally, the majority of new graduates are now women – but in this old industrial sub-region of the West Midlands only 18% of working age women possess a degree or equivalent. Here, and in other regions, the great majority work in part-time lower order services that call for no to low qualifications. For too many women the knowledge economy is a 'pipe dream' or a vague future prospect. The public sector of the knowledge economy holds the key to what happens next – will modernisation favour women. In areas like the Black Country this should be a central item on the FREA agenda.

Chart 3.16 The Gender Divide in the Black Country Knowledge Economy
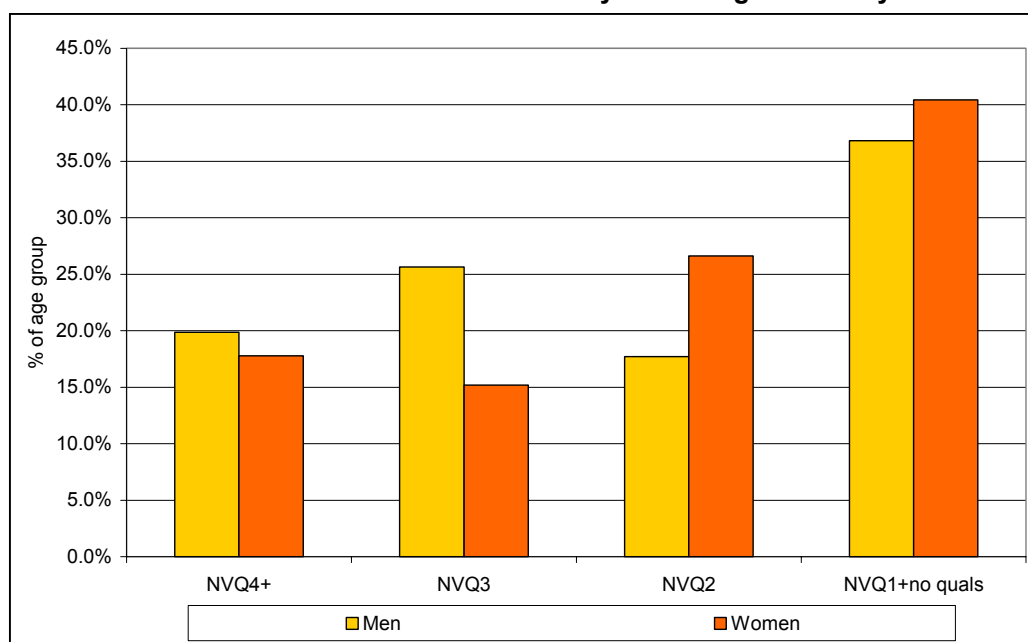
Source: Local Futures Group, derived from ONS data

Another dimension of social exclusion in the knowledge economy is ethnicity and race. Chart 3.17 shows how employability and average qualifications or the REA human capital index (the top line/right tree of the REA) vary between ethnic groups by London's five sub-regions. From the chart, we can clearly see that there is a clear and strong positive correlation between employability and formal qualifications.

There is a huge 'distance' between London's white working age population and the Pakistani/Bangladeshi community, with respect to employment and earnings. Ironically, this knowledge divide is greatest in Central London – where the knowledge economy is most powerful, but where several of the country's most deprived wards are to be found. The London knowledge economy favours the capital's white and Indian populations – their superior performance in school examinations and university entry will increase this lead. The challenge for London's FRESA is to ensure a more equitable basis of participation in the knowledge economy.

Chart 3.17 - The Ethnic Divide in the Knowledge Economy
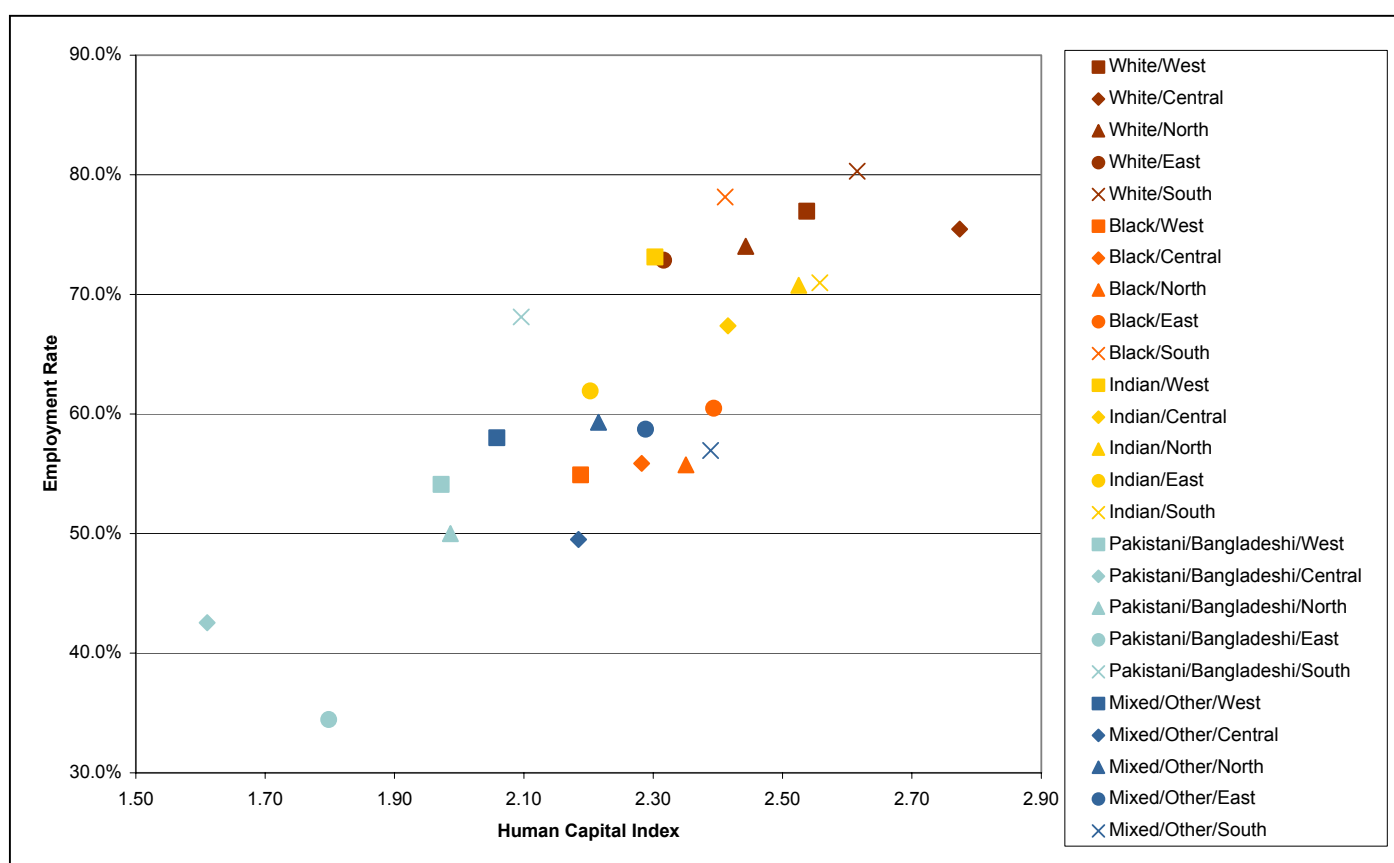
Source: Local Futures Group, derived from ONS data

The Government's Employment Strategy recognises the existence of these age, gender and ethnic divides in the labour market. The REA analysis situates and highlights these 'divides' in the knowledge economy context. In effect this 'joins up' employment and industrial policy, and the inclusion and competitiveness agendas. Now launched, the FRESAs are supposed to establish and build on these vital policy linkages that come to light more readily from the REA knowledge economy analysis. FRESAs should also encourage a unifying knowledge economy perspective at the sub-regional and local levels – where LSC strategies, including workforce development, and LSP strategies, including community and neighbourhood development should 'carry' the knowledge economy agenda. This distributed 'policy architecture' is an ideal and acknowledges the essential point that the knowledge economy is where people are.

3.7   Sub-regional and local variation

Thus far, we have looked at the regions as knowledge economies – and so the analysis has been based on regional averages. But, regional averages mask how sub-regions and local communities are positioned in the knowledge economy – the effect being to stall the knowledge economy as an agenda for sub-national and sub-regional partnerships and agencies. The original collaboration between the RDAs and Local Futures included an outline analysis of the sub-regional dimensions of the knowledge economy in each region. Since then, Local Futures has extended this research with partners in the Black Country, Nottinghamshire, Camden, Merseyside, South London and others.

Chart 3.18 - The sub-regional geographies of employment and skills
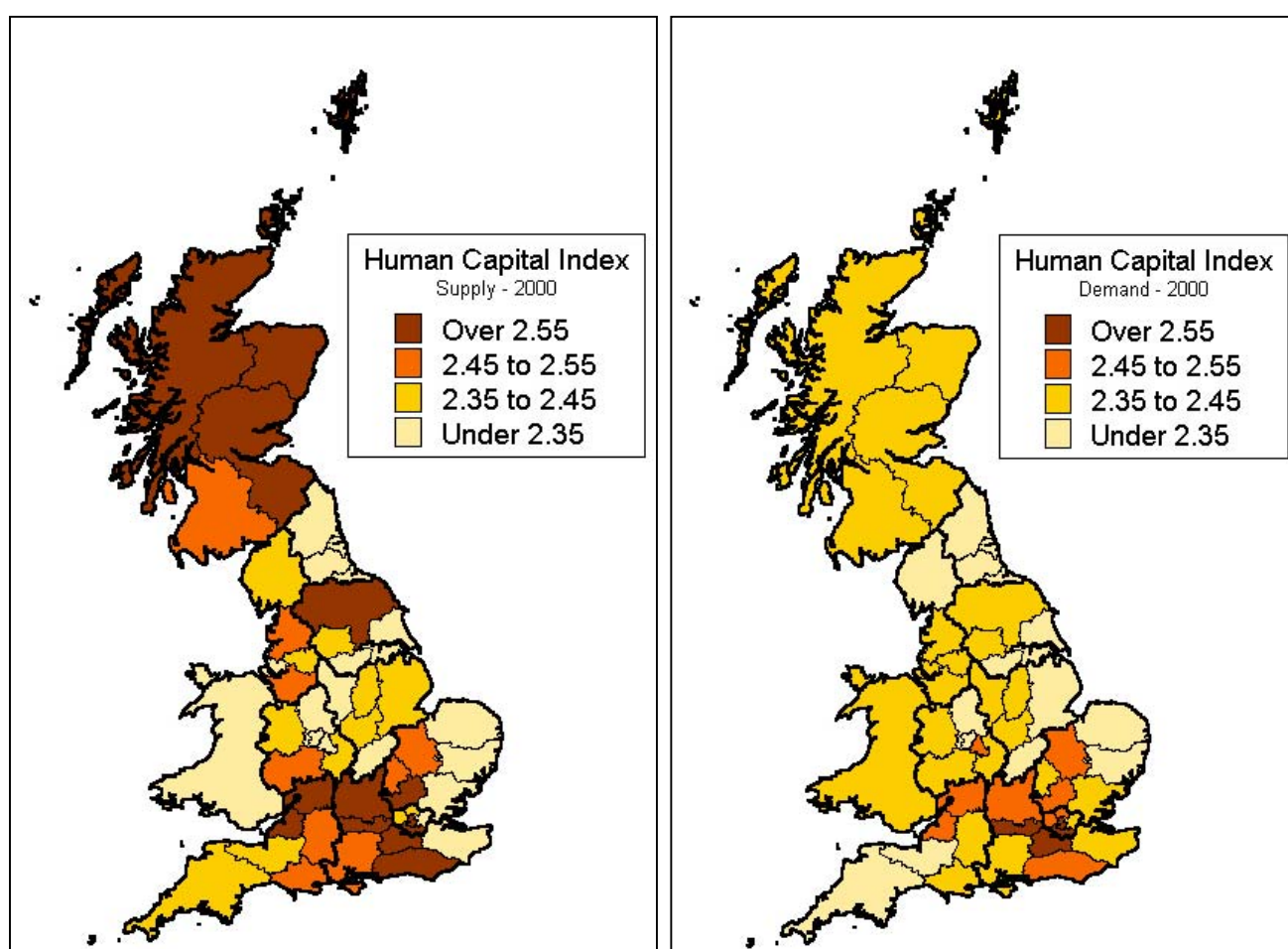
Source: Local Futures Group, derived from ONS data. Note that the scores for Wales and Scotland are national averages.

The left map shows how average qualifications levels (the top line in the REA right tree) varies across the sub-regions of England – defined by LSC areas, the primary spatial framework for delivering post-16 education and training. The dark brown and pink colours indicate where qualifications levels are high, whereas the wheat coloured areas are lagging behind on qualifications. There are clear knowledge divides with the regions – the East of England, London and the South East are marked by an

East-West split. The South West takes in the knowledge-intensive Bristol and M4 Corridor area, but also the Objective 1 areas of Cornwall. The East and West Midlands regions have more universal skills problems. Thus, it is clear that the knowledge economy agenda needs to be elaborated in a sub-regional context, from a supply side or infrastructure perspective.

The right map shows how job quality – defined as the average qualifications level of employment (based on the REA occupational structures) – varies across the sub-regions. The knowledge economy is supposed to generate higher quality jobs for a growing majority of the workforce. How big will this majority become, and is there a limit? As Chart 3.18 clearly shows, the knowledge economy is creating quality jobs mainly in a T-shaped area running north-south from Cambridgeshire through London to Sussex, and fanning out east-west along the M4 corridor to Bristol, Birmingham and Solihull stands out as a knowledge economy 'island'. Most sub-regions of Britain – including East London – are not experiencing the job-generating power of the knowledge economy.

The demand-supply mismatch in Chart 3.18 raises a number of issues. Firstly, it suggests a low level of mobility – by occupation and industry and also geographically. We do not have evidence to assess these key mobility issues. Geographical inertia can, of course, be the result of strong socio-cultural and kinship ties – poor transport links and crucially big house price differentials are also major factors. The new FRESAs should take these labour market issues into account – clearly then, key partners for the RDAS are the County Councils and unitary authorities and the local LSCS. Are the inter-regional issues associated with the demand-supply mismatch – the spatial bias of the knowledge economy - being looked after in 'inter-FRESA' policies?

The distinctiveness of the sub-regions needs to be properly reflected in LSC strategies too. The LSC network is a national one, with the local councils under pressure to deliver against nationally prescribed targets. Local flexibility, in both vision and policy, should be a feature of the LSC network to enable a more <u>tactical</u> approach to sub-regional and local economic development.

Metropolitan dominance is also a major sub-national feature of the knowledge economy. Nationally, London generated 38% of the country's business-based K1/K2 employment in 2000. Its vast commuting hinterland is reflected in the lack of any 'core city' pattern in the South East and East of England regions. The latter's main problem is to tackle the 'sprawl' effects of London's massive growth in the form of house price inflation, key worker shortages and traffic congestion. Thus, the planning framework of the knowledge economy – and inter-regional FRESA and Economic Development collaboration – is crucial to these regions.

Elsewhere, the degree of metropolitan dominance is greater. Newcastle generated 52% of the North East's business employment in K1/K2 sectors – Birmingham matched this in the West Midlands. Manchester and Liverpool jointly accounted for 62% of this employment in the North West, while Glasgow and Edinburgh's combined

share in Scotland was nearly 40%. The East Midlands has four city drivers in the knowledge economy – Nottingham (12%), Leicester (9%), Derby (9%) and Northampton (8%), each of which dominate their counties. In regions with an extensive population, cities are less dominant - Bristol generated 14% of South West business K1/K2 jobs, while Cardiff's share in Wales was 18%.

The Government's national urban policies aim to bring about a 'renaissance' in big cities, and the 'Core City' network backed by the ODPM recognises the knowledge economy in its competitiveness analysis. Very clearly, city-region relationships are a key dimension to knowledge economy policies. In looking at policy issues and potential, it should be noted that, like London, the assets of the cities are their business knowledge bases, but the liabilities are their relatively large unskilled or low-skilled populations. For example, Nottingham dominates the knowledge economy in Nottinghamshire LSC area, but over 40% of the city's working age population are excluded from it owing to lack of basic skills. In a Local Futures workshop recently, one participant remarked – '*the knowledge economy travels over the (River Trent) bridge in the morning, and returns home in the evening'* (to the prosperous suburbs).

Indeed, within cities and sub-regions, the knowledge economy is characterised by significant local variation. Local patterns of social exclusion in the knowledge economy are observable from maps of 'Education Deprivation', a component of the Government's Index of Multiple Deprivation.

Chart 3.19 – Local Education,Skills & Training Deprivation in the North West Knowledge Economy
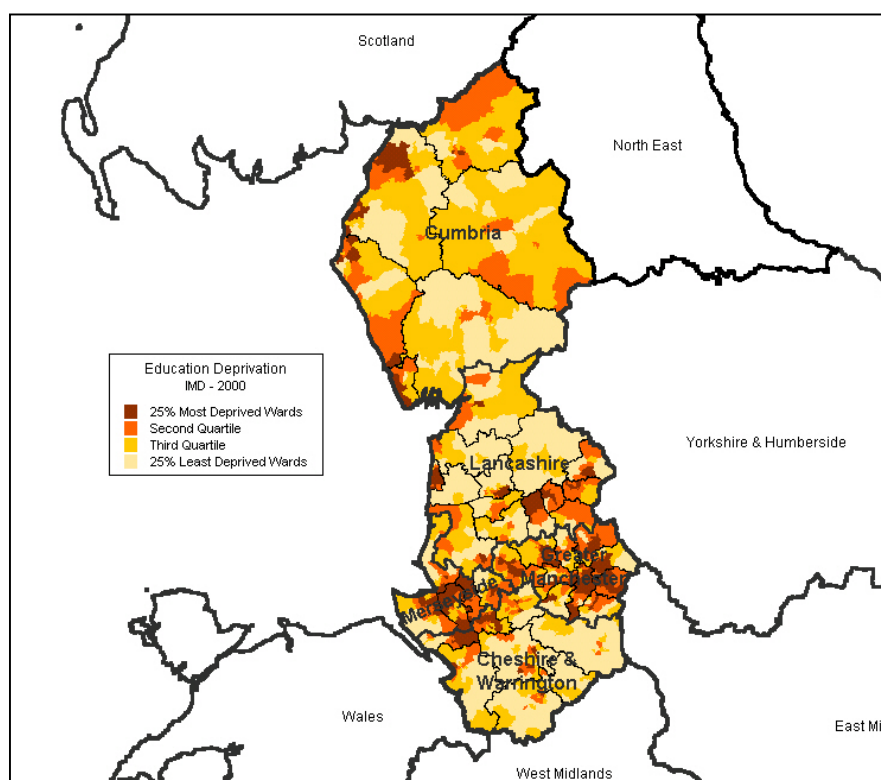
Source: Local Futures Group, derived from ONS data

Chart 3.19 is a map of social exclusion in the North West knowledge economy – all regions have similar maps, even the prosperous South East and South and West London sub-regions. The social exclusion agenda should be an integral part of the knowledge economy agenda. However, 'on the ground', the latter is an abstraction and a national economic concern. The agendas do not converge in 'words or action'. Local Strategic Partnerships (LSPs) are surely the obvious place to knit together the knowledge economy and community agendas – there is an emerging and converging set of stakeholder interests involving local authorities and LEAs, local LSCs, community and voluntary services, FE colleges and others. The Government has launched a promising Skills and Knowledge Programme to improve the expertise of neighbourhood renewal stakeholders. Could or should this evolve into a wider knowledge economy initiative?

3.8   Summary – the regional 'league tables' … but, an 'ironical twist'

Chart 3.20 summarises the competitiveness scores of the regions as knowledge economies, based on indices calculated from the rows and columns of the REAs. The second table shows how they rank. The "Inequality Index" is derived from the occupational income distribution. A high score/high rank indicates a high level of income inequality.

London comes 'top' on business drivers and earnings – but 'bottom' on inequality and its employment rate and skills profile is modest or average. The capital is a powerful knowledge economy but one that is socially exclusive. The North East lies at the opposite extreme – weak on skills, weak on business drivers, but high on social inclusion – but its competitiveness is no worse than Yorkshire and Humber on business drivers, or the West Midlands on skills and qualifications.

In the context of Local Futures workshops, at the regional, sub-regional and local levels, we have found that the REA indicator set stimulates interest and debate across the wide range of stakeholder groups – not only the RDA, LSC, FE/HE and general employment/skills and economic development community, but also representatives from the police, health and voluntary sectors and from large and small businesses. Thus, the REA model of the knowledge economy 'works' as it was especially designed to do – as a heuristic device, a transparent representation of the knowledge economy seen from demand and supply perspectives, and a potential 'wood from the trees' framework for regional, sub-regional and local strategies. In other words, the REA helps to 'carry' the knowledge economy agenda from the national to the local level, and from the economic to the social domain of policy-making and partnership working.

Chart 3.20 – The REA 'league tables' for the regional knowledge economy in Britain

Headline Indicators	NE	NW	YH	EM	WM	EE	GL	SE	SW	WL	SC	GB
Earnings	88.2	94.6	90.8	89.7	94.4	99.9	132.1	105.1	90.9	89.9	93.2	**100.0**
Employment Rate	68.3%	72.5%	74.0%	76.2%	73.3%	79.0%	70.8%	80.2%	78.8%	69.1%	73.2%	**74.7%**
Inequality Index	97.1	100.3	105.0	105.0	115.1	102.4	161.1	104.9	100.7	114.6	117.7	**113.8**
Knowledge Economy Indices												
Total Employment	2.04	2.38	2.17	2.16	2.21	2.18	3.05	2.58	2.45	2.39	2.69	**2.43**
Private Sector Employment	1.68	1.89	1.63	1.68	1.73	1.84	2.77	2.22	1.99	1.83	2.31	**2.00**
Micro Business Employment	1.59	1.83	1.58	1.66	1.67	1.74	2.70	2.17	1.87	1.72	2.37	**2.00**
Small Business Employment	1.59	1.77	1.55	1.65	1.62	1.67	2.55	2.06	1.82	1.74	2.26	**1.90**
Medium Business Employment	1.72	1.88	1.66	1.69	1.75	1.85	2.82	2.28	2.04	1.86	2.26	**2.06**
Large Business Employment	1.89	2.03	1.80	1.77	1.96	2.10	3.06	2.61	2.30	2.04	2.52	**2.31**
Human Capital Indices												
Total	2.25	2.41	2.34	2.34	2.29	2.38	2.45	2.53	2.49	2.32	2.54	**2.41**
Male	2.39	2.54	2.45	2.46	2.38	2.48	2.53	2.63	2.58	2.41	2.65	**2.52**
Female	2.10	2.27	2.23	2.20	2.18	2.28	2.37	2.42	2.38	2.22	2.42	**2.30**
Ages 16-24	2.19	2.29	2.24	2.27	2.22	2.28	2.38	2.40	2.34	2.25	2.56	**2.33**
Ages 25-44	2.33	2.54	2.45	2.45	2.40	2.49	2.60	2.64	2.60	2.42	2.66	**2.53**
Ages 45-64	2.16	2.27	2.23	2.21	2.14	2.26	2.22	2.41	2.38	2.21	2.32	**2.27**

Headline Rankings	NE	NW	YH	EM	WM	EE	GL	SE	SW	WL	SC
Earnings	11	4	8	10	5	3	1	2	7	9	6
Employment Rate	11	8	5	4	6	2	9	1	3	10	7
Inequality Index	11	10	5	6	3	8	1	7	9	4	2
Knowledge Economy Rankings											
Total Employment	11	6	9	10	7	8	1	3	4	5	2
Private Sector Employment	9	5	11	10	8	6	1	3	4	7	2
Micro Business Employment	10	5	11	9	8	6	1	3	4	7	2
Small Business Employment	10	5	11	8	9	7	1	3	4	6	2
Medium Business Employment	9	5	11	10	8	7	1	2	4	6	3
Large Business Employment	9	7	10	11	8	5	1	2	4	6	3
Human Capital Rankings											
Total	11	5	7	8	10	6	4	2	3	9	1
Male	10	4	8	7	11	6	5	2	3	9	1
Female	11	6	7	9	10	5	4	1	3	8	2
Ages 16-24	11	5	9	7	10	6	3	2	4	8	1
Ages 25-44	11	5	7	8	10	6	4	2	3	9	1
Ages 45-64	10	4	6	9	11	5	7	1	2	8	3

Source: Local Futures Group, derived from ONS data

There is a genuine twist of irony in looking at the regional structure of the knowledge economy in the second half of the 1990s. This was 'boom time' in the City, the Dot.Com New Economy, Marketing and Advertising, Knowledge Management, Universities and all of the other leading edges of the knowledge economy. The Competitiveness White Papers, the OECD Knowledge-Based Economy studies, and so on were published at the time. As we have already said, 'all roads lead to the knowledge economy'.

However, does the knowledge economy really deliver salvation from the economic cycle or distribute job guarantees to people with degrees and job protection for those economies where knowledge workers and knowledge-based sectors are 'thick on the ground'? The answer is apparently not. Chart 3.21 shows how the current recession – from the beginning of 2001 to August 2002 – hit the workforce across Britain's sub-regions. We can see that the impacts on redundancies of the economic downturn were felt on both sides of the North-South Divide (a line from the Severn to the Wash) - and, the most successful sub-regional knowledge economies in the 1990s appeared in the 'top 10' worst hit areas. The knowledge economy, in other words, is vulnerable to the economic cycle and our analysis would benefit from an international or global perspective.

Chart 3.21 – Current recession hits knowledge economy 'heartland' in the South

Average Quarterly Redundancy Rate* per 1000 People in Employment From Spring 2001 to Summer 2002

(English Sub-Regions**, Scotland and Wales)

Quarterly Redundancy Rate (%)

- 8.1 to 15.7
- 7.1 to 8
- 5.9 to 7
- 3.1 to 5.8

0   100   200
kilometres

Source: ONS; Local Futures
* Quarterly average over 6 quarters
** The English sub-regions correspond to the LSC boundaries
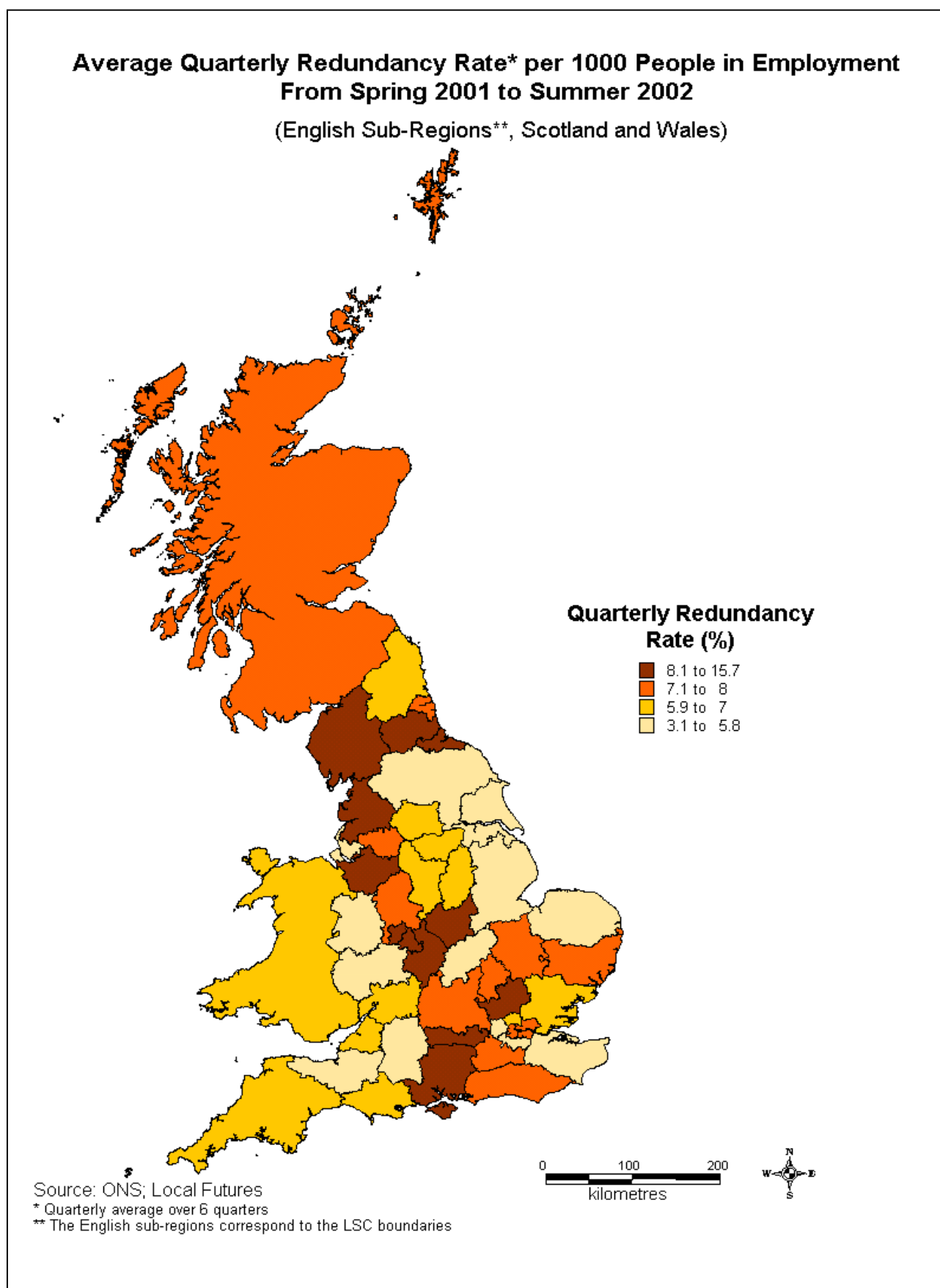
4 European Regions in the Knowledge Economy

4.1 Introduction

The title of this chapter is also the title of Local Futures current research programme on European regions in the knowledge economy (ERKE). With its strong emphasis on benchmarking and evidence-based policy, ERKE includes case studies of the knowledge economy in Scotland, Merseyside, the Black Country, Nottinghamshire, the London Borough of Camden and the North East Region. The first wave of ERKE research spans July 2002 to June 2003.

This chapter introduces some of the results of applying the REA model to European regions. The research is in progress, nevertheless, some of the results are worth disseminating in the context of this report.

4.2 The European league tables for regional knowledge economies

The Government's stated goal in setting up the RDAs was to create regional 'powerhouses' capable of competing with the best in Europe – measured by their GDP per head performance. This is reflected in the competitive aspiration for European 'top flight' status to be found in most regional economic strategies.

Building a strong knowledge economy should ensure that the British regions achieve their European goals. According to the OECD *Education at a Glance* report (2001):

> *Tertiary education is associated with better access to employment and higher earnings. Rates of entry to both types of tertiary education are an indication in part of the degree to which the population is acquiring high-level skills and knowledge valued by the labour market in knowledge societies.* (p.149)

The UK, alongside the US, stands at the top of the international league in terms of graduation rates – and like, all OECD countries, the share of graduates in the workforce has risen rapidly and continuously over the past decade or so. However, countries differ fundamentally in terms of the 'architectures' of their knowledge economies, as the results of applying the REA model to the UK and Italy clearly show in Chart 4.1.

Chart 4.1 (a) The REA for the UK Knowledge Economy

GDP/capita (PPP) 102.8 | 74.1% Employment Rate

Employment by education intensity

	K1	K2	K3	K4
Total employment	29.7%	18.1%	13.0%	39.3%
Private Sector Employment	14.5%	15.8%	17.3%	52.4%

Industrial Structure

	K1	K2	K3	K4
Agriculture/Primary	0.0%	0.0%	0.0%	4.8%
Manufacturing & Construction	1.7%	18.9%	51.1%	36.9%
Private Services	35.0%	42.7%	48.9%	58.8%
Public Services	63.4%	34.4%	0.0%	0.0%

Workforce with tertiary education	>40%	25-40%	15-25%	<15%

Working age population by educational attainment

	Tertiary		Upper Secondary		Below Upper Sec.	
	28.5%		53.0%		18.5%	
Demographics	Males	Females	Males	Females	Males	Females
25-59	30.4%	26.6%	54.6%	51.3%	14.9%	22.1%
25-34	32.3%	28.8%	58.0%	60.0%	9.7%	11.2%
35-49	30.8%	27.9%	55.1%	51.9%	14.0%	20.2%
50-59	27.2%	21.5%	49.3%	39.3%	23.5%	39.2%
Employment Status						
Employed	92.2%	84.7%	83.5%	72.2%	60.3%	45.5%
Unemployed	2.6%	2.3%	6.2%	5.4%	14.3%	8.3%
Inactive	5.2%	13.0%	10.3%	22.4%	25.4%	46.2%

Chart 4.1 (b) The REA for the Italian Knowledge Economy, 2000

GDP/capita (PPP) 102.6 | 56.7% Employment Rate

Employment by education intensity

	K1	K2	K3	K4
Total employment	20.8%	16.8%	12.8%	49.6%
Private Sector Employment	9.6%	10.3%	16.4%	63.7%

Industrial Structure

	K1	K2	K3	K4
Agriculture/Primary	0.0%	0.0%	0.0%	11.2%
Manufacturing & Construction	1.0%	15.5%	59.1%	42.5%
Private Services	34.9%	27.5%	40.9%	46.0%
Public Services	64.0%	52.3%	0.0%	0.0%

Workforce with tertiary education	>40%	25-40%	15-25%	<15%

Working age population by educational attainment

	Tertiary		Upper Secondary		Below Upper Sec.	
	10.1%		37.8%		52.1%	
Demographics	Males	Females	Males	Females	Males	Females
25-59	10.2%	10.0%	38.0%	37.5%	51.8%	52.5%
25-34	9.3%	11.7%	47.0%	50.4%	43.8%	38.0%
35-49	11.5%	10.5%	38.3%	38.1%	50.2%	51.4%
50-59	9.0%	6.9%	25.8%	19.8%	65.1%	73.2%
Employment Status						
Employed	89.3%	76.4%	75.0%	54.6%	65.9%	29.2%
Unemployed	4.3%	8.7%	7.8%	14.6%	9.9%	18.0%
Inactive	6.4%	14.9%	17.2%	30.8%	24.2%	52.8%

Source: Local Futures Group, ERKE programme, derived from Eurostat data

The national differences in Chart 4.1 clearly reflect underlying differences in each country's economic base, institutions and culture. This reinforces a basic point made throughout this report – that the trajectories of knowledge economies are unique, whether we look at the UK versus other EU countries or the UK regions versus other EU regions. For this reason, a distributed approach to knowledge economy policy making is essential – the level and composition of regional and national investments in qualifications, skills and human capital must be tailored to fit with the corresponding regional and national economies. This is obviously a dynamic and distributed process that the new FRESAs should aim to realise.

Currently, all regions of Britain – even the North East – exceed the European average for the proportion of the working age population with tertiary education qualifications. But, as we see in Chart 4.2 (a), only London appears in the top 20 European regions ranked by GDP per head. All of the 'top 18' are powerful city-regions that interestingly vary in terms of the basic REA indicators:

- Brussels' 55% employment rate contrasts with London's 70% (low within the UK)

- 11% of the working age population in the Milan conurbation has tertiary qualifications compared to London's 40%

- Business drivers vary considerably too, the Private KE Index varying from 75% in Rome to around 90% in London

This type of comparative analysis provides insights into the big city 'motors' of the European knowledge economy – the degree to which the business-political system is centralised, for example, and the effects of commuting hinterlands. Very clearly, the knowledge economy is polarised at the 'centre' in each European country – London is not an exception.

The 'bottom 20' shown in Chart 4.2 (b) also makes interesting reading. The high tertiary education profiles of the three British regions match closely with the regions of former East Germany – areas where high qualifications contrast with low GDP per head. Indeed, these former-Communist regions score well above all of the 'top 20' European regions on the Human Capital (average qualifications) Index. However, they lag behind their English 'neighbours' on employment rates – Germany's current unemployment rate is 10%, and the worst off areas are the former Communist regions.

The European rankings are particularly interesting because of the issues they raise about the links between the knowledge economy defined in terms of formal qualifications and degree/ tertiary benchmarks and economic performance or productivity. There is little rank correlation between GDP per capita and the REA Knowledge Economy Indices across the regions. This is even more starkly shown in the European maps presented in Chart 4.3. Why does regional Britain perform so contrastingly on productivity and qualifications?

The Local Futures ERKE programme of research is investigating this European knowledge economy context in greater depth. There are puzzles and paradoxes and contradictions to look at. Yes, the results have thrown up more questions than answers, such as:

- Are the UK regions long on qualifications, but short on skills? Are we producing 'qualifications mountains' like Europe's old 'butter mountains'?

- Is the problem one of not converting qualifications into skills and thence productivity? If so, where are the bottlenecks, region by region?

- What skills profiles – the balance between the different NVQ stocks – suit regional capacities and aspirations?

The knowledge economy, as we saw at the end of Chapter 3, does not make regions and communities 'recession proof'. It also does not guarantee regions a place in Europe's 'top 20' – where the British regions want to go and where the Government expects them to go. The knowledge economy as a concept is right, the challenge is to make it work in practice.

Chart 4.2 (a)– Top 20 NUTS 1 Regions in Europe (GDP/Employed Person, 2000)

Rank	Region	Country	GDP/employed person (Euro)	Employment Rate	% working age with tertiary education	Human Capital Index	Knowledge Economy Index	Private Sector Knowledge Economy Index
1	BRUXELLES	BE	179,005	55.1%	35.3%	96.9	107.3	91.8
2	LUXEMBOURG (GRAND-DUCHE)	LU	122,047	62.9%	19.0%	79.8	95.7	79.5
3	HAMBURG	DE	120,667	66.8%	26.8%	109.3	96.7	82.0
4	BREMEN	DE	108,940	62.1%	20.3%	99.8	90.0	71.9
5	LONDON	UK	108,690	69.7%	40.6%	123.3	103.9	89.4
6	ILE DE FRANCE (Paris)	FR	93,886	65.9%	34.4%	103.3	102.3	88.3
7	LAZIO (Rome)	IT	92,047	52.8%	13.8%	68.1	93.3	75.2
8	LOMBARDIA (Milan)	IT	90,166	61.5%	10.6%	59.1	83.5	71.6
9	HESSEN	DE	85,856	67.6%	25.3%	108.6	93.7	78.3
10	EMILIA-ROMAGNA	IT	84,370	66.0%	11.8%	61.6	79.6	66.1
11	NORD OVEST	IT	83,803	60.1%	10.9%	57.5	83.6	69.4
12	MADRID	ES	83,218	57.5%	33.2%	86.4	89.9	76.7
13	NORD EST	IT	80,729	62.5%	10.0%	57.5	79.3	63.9
14	IRELAND	IE	79,029	65.2%	24.6%	86.1	85.4	70.4
15	NORDRHEIN-WESTFALEN	DE	78,880	63.4%	20.8%	101.6	89.2	72.3
16	CENTRO (I)	IT	78,775	60.5%	10.4%	57.1	79.5	63.9
17	BADEN-WUERTTEMBERG	DE	77,931	70.3%	25.7%	105.7	91.2	75.7
18	BAYERN	DE	77,460	71.3%	23.3%	104.8	88.6	73.1
19	SAARLAND	DE	77,172	61.5%	17.5%	99.7	91.6	72.5
20	MEDITERRANEE	FR	75,920	55.2%	21.1%	82.1	94.3	70.6

Table 4.2 (b) – Bottom 20 NUTS 1 Regions in Europe (GDP/Employed Person, 2000)

Rank	Region	Country	GDP/employed person (Euro)	Employment Rate	% working age with tertiary education	Human Capital Index	Knowledge Economy Index	Private Sector Knowledge Economy Index
56	NORTH WEST	UK	61,644	70.1%	26.7%	108.5	93.0	73.9
57	NORTHERN IRELAND	UK	61,344	63.1%	23.0%	94.6	89.0	64.0
58	CANARIAS	ES	61,271	53.9%	19.4%	57.4	74.5	58.3
59	EST	FR	61,086	63.9%	20.3%	86.5	88.8	68.7
60	CENTRO (E)	ES	60,659	53.0%	21.0%	58.2	74.3	56.8
61	NORTH EAST	UK	60,532	64.4%	22.6%	101.4	94.2	74.1
62	SOUTH WEST	UK	60,139	77.0%	29.9%	117.3	95.3	76.1
63	SUEDOESTERREICH	AT	59,920	65.2%	12.9%	94.5	79.9	62.2
64	NOROESTE	ES	59,583	59.0%	21.7%	59.4	70.4	57.1
65	SUR	ES	58,302	46.9%	20.4%	55.9	75.2	58.1
66	NISIA AIGAIOU, KRITI	GR	57,550	64.0%	12.8%	56.1	64.6	50.7
67	OOST-NEDERLAND	NL	56,378	68.7%	21.6%	88.5	95.8	75.0
68	VOREIA ELLADA	GR	54,937	57.3%	17.8%	68.1	68.6	53.8
69	SACHSEN-ANHALT	DE	53,408	59.2%	25.6%	118.1	84.3	62.9
70	SACHSEN	DE	52,020	62.9%	30.2%	125.5	87.3	68.4
71	MECKLENBURG-VORPOMMERN	DE	51,321	62.3%	28.4%	120.4	82.8	61.3
72	ATTIKI	GR	51,244	54.8%	22.6%	89.8	84.4	68.1
73	BRANDENBURG	DE	49,811	62.1%	29.8%	124.8	85.2	64.8
74	THUERINGEN	DE	49,316	65.1%	30.3%	124.2	85.8	64.6
75	CONTINENTE	PT	48,246	72.7%	9.9%	31.4	70.6	55.6
76	MADEIRA	PT	48,155	65.8%	5.5%	22.1	65.3	46.9
77	ACORES	PT	41,351	61.1%	6.9%	22.0	75.1	52.4

Source: Local Futures Group

Notes: The Human Capital Index takes into account three levels of educational attainment – Tertiary, Upper Secondary and Below Upper Secondary. The formula for the Human Capital Index is: 100 + % of working age with tertiary education - % of working age with less than an upper secondary education. The Knowledge Economy Index (KEI) is calculated in the same way as in the previous chapter. The difference is that the K-groupings of sectors are a standard EU-wide set of 2-digit NACE industries as defined in *Employment in Europe 2000*.

Chart 4.3 Regional GDP per head in the EU, 2000
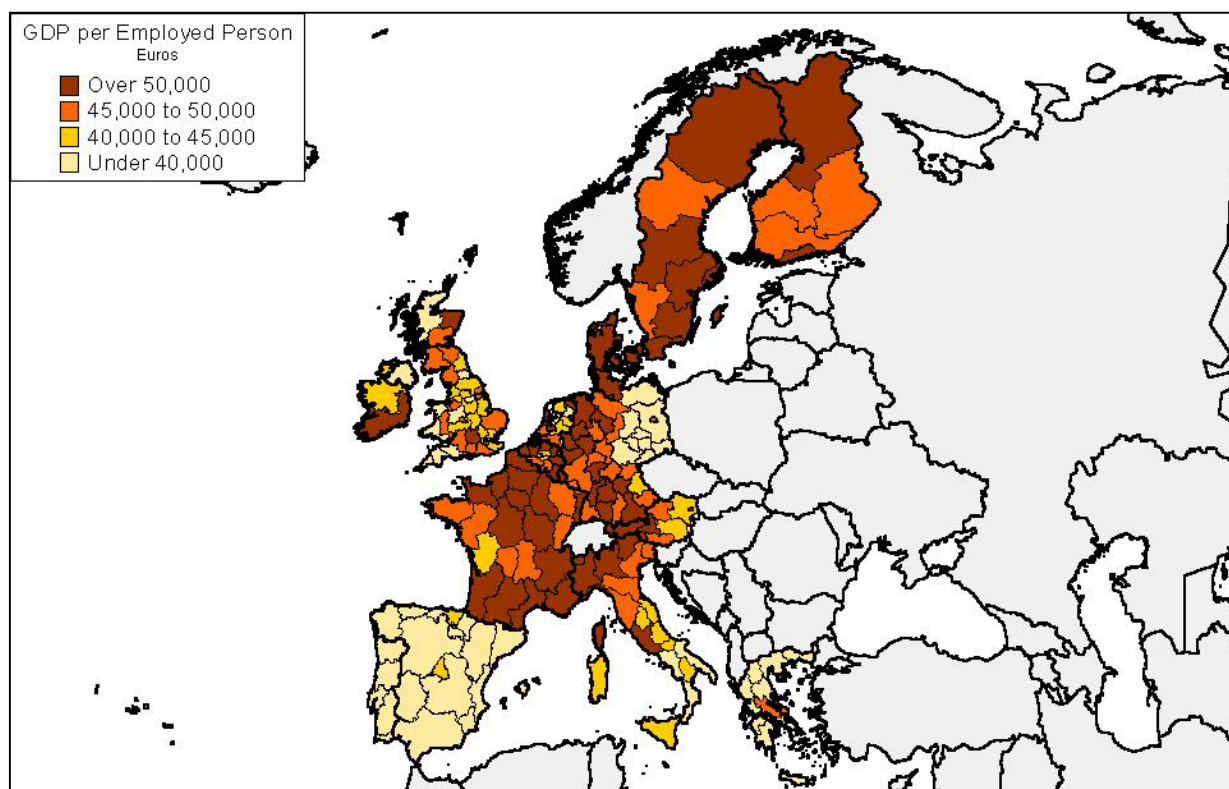
Chart 4.2 – Regional workforce qualifications in Europe, 2000
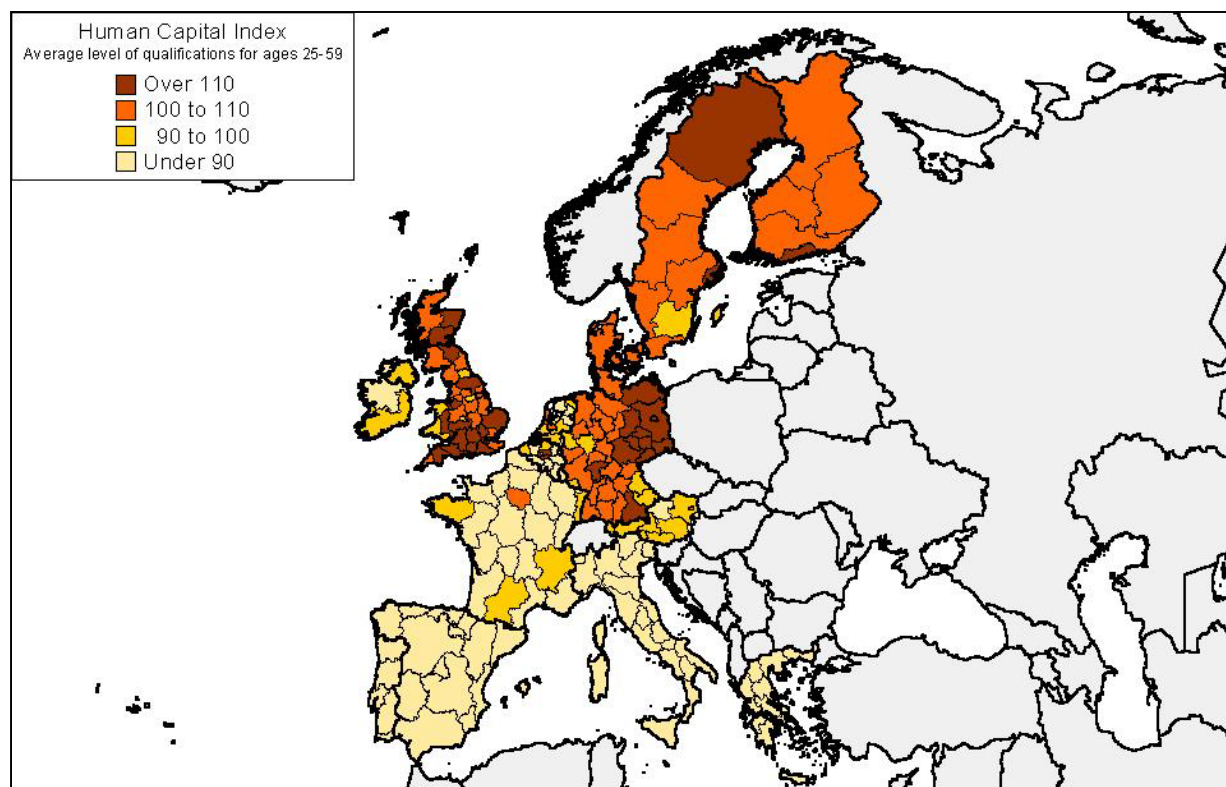
Source: Local Futures Group

5   A New Agenda for the Knowledge Economy

5.1   Creating a genuine national vision

The Knowledge Economy *is* the Government's vision of Britain's future. There is a political and intellectual consensus on this vision. What is missing is a widely shared understanding of what this vision means in theory or practice, and thus where the knowledge economy should appear in the countless 'strategy' documents being mass-produced, year after year across Britain. Mostly, not knowing what to do with the Government's vision or the concept, strategy authors give the knowledge economy a casual mention in the preamble or vision (definitely), ICT (very likely), education and skills (likely) sections of their reports. There are exceptions to this, but generally the knowledge economy 'occupies a slum dwelling in the town of British economic development' (to borrow from American economist George Stigler's comment on the status of information in neo-classical economics).

The Knowledge Economy needs to be widely digested by regional, sub-regional and local policy makers and properly embedded in the economic development strategies for their areas. Economic development is a social process, such that the knowledge economy is not all about growth and competitiveness – it is also about social inclusion and community well being. Thus, the knowledge economy agenda should be distributed geographically and used as a basis for unifying or joining up apparently un-related areas of policy. We have gathered a number of recommendations on areas where a new policy approach to the knowledge economy could be developed.

5.2   A timely roll out for the Knowledge Economy

The *RDA*s will be rolling out the new *Frameworks for Employment and Skills Action* (FRESAs) – as strategy, partnership and intelligence vehicles - to local and regional audiences right across England. Here is an ideal opportunity for building a shared understanding of the knowledge economy across geographical and stakeholder communities – including business.

> Launch an information and publicity strategy for the knowledge economy as part of the FRESA roll out process? FRESA should include sub-regional and local maps.

In the context of *LSC* activity, there are parallel opportunities to embed the knowledge economy concept in new *workforce development* strategies. These 'demand-meets-supply' strategies aim to improve the quality of human capital in the SME population, while simultaneously improving the capacity to raise productivity through innovation

and changes in business processes. Knowledge is at the centre of workforce development – in the form of human and social capital assets.

> The knowledge economy and its business process and skills and employment agendas could be brought together under the workforce development initiatives being produced by local LSCs across the country. The forthcoming Strategic Area Reviews are timely and opportune.

Local strategic partnerships have been formed across the length and breadth of Britain. The knowledge economy agenda would be ideal for lifting the strategic horizons of these partnerships – since the REA is designed in a way that enables stakeholders with little formal economics background to make connections between the economy, the workforce and the community – that is, to look at the relationships between the two REA 'trees'. By taking components of the REA down to the local, ward and neighbourhood levels – whilst retaining the 'architecture' for sub-regions and regions – it is possible for LSP partners to look inside their own areas and link local issues with wider national trends and policies.

> The knowledge economy should be promoted as a strategic context for Local Strategic Partnership acitivtites. There are established and new routes to promote the knowledge economy in this way – the LGA and Local Futures are collaborating on best practice ideas.

5.3   The right balance – and the 'double cluster' imperative

The REA analysis is relevant to a growing public debate on the future of higher education, the value of many degrees and the possibility that Britain is over-producing graduates. Our results suggest that these issues are worth looking at seriously – connecting any review of HE to the needs of not just the national economy, but also the regional and local economies in which universities are located. The Government has, of course, made a start on this. We believe that it needs to take note of the following points, based on the REA results and Local Futures evidence obtained in the ERKE research:

- *Graduate retention* initiatives only benefit local or regional knowledge economies if appropriate job opportunities exist. Where they do not, the untoward result of graduate retention – via temporary work and placements in public services – will be to create barriers to entry for 'local people' with level 3 qualifications looking for permanent jobs.

- *Employer recruitment policies and practices* matter considerably in this light. Public authorities, such as local government, could take the lead in ensuring that recruitment outcomes match up with local economic and employment objectives with respect to mobility and inclusion.

- *'Double-sided' cluster policies* create potential for graduates to enter knowledge-based businesses and industries – universities and the new Sector Skills Councils

are closely involved in these RDA co-ordinated, Government backed approaches to the knowledge economy. We support cluster approaches for high knowledge intensity sectors, but they need to be greatly extended across sectors, firms and disciplines.

- Regions and local economies urgently need cluster approaches *for the low-knowledge intensity, low-value, low horizon SMEs* that make up the majority of their businesses. We saw in Chapter Three that in most regions – and most desperately in areas such as the Coalfield Regeneration areas of Nottinghamshire, or the rural areas of Norfolk – the bulk of private sector employment is concentrated in small and micro businesses whose owner-managers and key staff will have probably been 'passed by' the HE explosion. These are the types of businesses that need to employ graduates and take on graduate placements. However, they are more likely to recruit people that share their own cultural attitudes and human capital attributes, through localised social and kinship networks – in other words, social capital as an economic factor works to perpetuate the status quo with regard to innovation and change.

Economists place increasing emphasis on the role of social capital in economic development. It is important to create policies that reflect the double-edged nature of social capital. It can work with the grain of the knowledge economy, in the case of high knowledge intensity business and sectors - or against the grain, in the case of low knowledge intensity SMEs. Workforce development strategies, and 'getting in amongst owner-managers' (outreach) at the local level to change economic culture in the 'grassroots', become absolutely crucial to cluster policies.

We expect the graduate controversy to continue. University 'top-up' fees and graduate taxes could choke off excess demand for degrees – but what would that do to the Government's target of getting 50% of young people into higher education? The key point is that young people may not want to be 'rocket scientists' any more than they might want to be 'plumbers'! As we saw, the official statistics indicate that other EU countries and regions are more productive and enjoy a higher standard of living than us – although in Britain, we are generally better qualified and more widely employed in 'knowledge-based' service industries.

The true focus of new knowledge policy thinking needs to be not the HE sector and graduates per se – but, the entire human capital needs of employers that the Government wishes to transform into 'knowledge-driven' businesses and indeed public services. Regional, sub-regional and local economies provide a basis for this type of holistic and inherently inclusive approach to the knowledge economy. Graduate retention, employer recruitment and 'double-edged' cluster initiatives need to be researched for their impacts, joined up and linked to the labour market policy objectives.

5.4   The knowledge divides – losers and winners

Knowledge, along with skills and competences, is key to participation in a modern economy and society – as employers and workers, consumers and citizens and parents and carers. We saw that participation in the knowledge economy broadly tends to favour men, the 'under-45s' and white and Indian ethnic groups. The wider implications of being at 'the bottom of the knowledge ladder' are that the same people suffer social exclusion in other areas – health prevention, financial literacy and exploiting the power of e-government depend, for example, on the knowledge base of individuals and families. The knowledge economy threatens to increase social polarisation – particularly in big cities – and marginalisation in rural areas. We need policies to tackle the three great knowledge divides:

- *Age* – the 'employability-pension time bomb'

- *Gender* – the cultural and practical barriers that face women, particularly at the lowest knowledge levels – 0,1 and 2 – in deprived areas

- *Ethnicity* – the cultural and basic numeracy and literacy challenges, for example in London, Birmingham and Bradford

A recent report by the Third Age Foundation found that ageism in the workplace is still widespread – the 'pension-employability time bomb' now hangs over these same workplaces. Similarly, with women now comprising the majority of new graduates, it is absurd that only 4 out of the top 20 employment sectors for women requires a graduate qualification.

A powerful, dynamic and strongly motivated FE sector is absolutely essential to creating a socially inclusive knowledge economy. The option is zero. Who else will deliver the lifelong learning needs of an older workforce for whom the gates of higher education were too narrow or simply uninviting? Here, local learning partnerships bring colleges, LEAs and local authorities and the local LSCs together. They need excellent shared intelligence to plan effectively and strong connections with regeneration communities of practice.

These age, gender and ethnic divides are tackled in various ways through a range of government policies, including regeneration, labour market and community strategies. They need to be explicitly recognised as and integrated into the knowledge economy agenda. For example, in buoyant sub-regional economies, we find strategic plans that refer to 'pockets of deprivation' – including educational and income deprivation – in an otherwise dynamic economy with a 'world class' skilled workforce. When these 'pockets' add up to 25% of the resident workforce, as they do on the case of London South LSC area, for example, then they are no longer 'pockets' that call for localised solutions.

These 'pockets' are knowledge divides created by *structural change* in a knowledge-based, technologically advanced economy. RDA, LSC and LSP strategies need to

recognise this by connecting regeneration into the heart of economic development initiatives – and the wider knowledge economy agenda.

5.5   Recognising the public sector as a knowledge economy player

The REA results show in no uncertain terms that the public sector is a major driver of the knowledge economy – in terms of direct employment and hence skills formation. Where business drivers are weak or 'hit by recession' – as in the case of the London-South East heartland – the knowledge economy is highly dependent on public sector employers.

A major implication of this dependence is that the modernisation of public services agenda has profound economic implications. And clearly, in some areas of the country, the potential fall out of modernisation will be particularly great. In theory, a modernised public sector should also be more knowledge-based or driven – how will this be reflected in levels of local employment and the composition of skills and qualifications?

Research is needed on the role of the public sector in the regional knowledge economy. Can its knowledge-related contribution to skills formation – and enterprise development – be made more dynamic and expansive? The answer is probably yes, but the relevance of the question from a knowledge economy perspective first needs to be properly recognised by regional and local policy makers.

5.6   Cities as drivers of the knowledge economy

In Chapter 3, we highlighted metropolitan dominance as a structural characteristic of the knowledge economy. Countries do, of course, differ in the urban structures of their economies. The UK knowledge economy is massively dominated by London, with the regional capitals – now acting as a strategic alliance called 'the core cities group' – a very long way behind. Other countries – Germany most obviously – have more distributed knowledge economies.

The economic case for a distributed knowledge economy in Britain is extremely strong. More economic value can be levered from universities – in terms of the research base and the graduate labour pool – and the public education and training infrastructure. Indeed, the Government's new policy thrust towards 'demand-led' education and training depends on building up the SME and 'cluster' bases of metropolitan knowledge economies. We need a regional policy for the knowledge economy, with the cities being part of it.

Planning strategies for the knowledge economy are needed which strike a balance between economic, social and environmental objectives. The big cities are where social polarisation in the knowledge economy is most extreme, and where 'skills poverty' is greatest in terms of sheer numbers. Their increasing dominance as knowledge economy 'hubs' also accounts for worsening transport congestion,

mounting pressures on public services and metropolitan sprawl – with its impacts on smaller towns and rural communities in the rest of the region.

Planning frameworks for the regional knowledge economies should be produced. They should be directed towards creating a spatial structure that delivers a sustainable pattern of development for the knowledge economy – against economic, social and environmental objectives. Cities are important players in this process, but the coherence of the regional framework is paramount.

The Government's agenda for a future system of regional government in England matters to this discussion. Knowledge and power are closely intertwined – does it follow that stronger regional capitals will lead to stronger regional knowledge economies? The Local Futures current programme on European Regions in the Knowledge Economy (ERKE) is addressing this type of question. But even now, surely some regions have nothing to lose from a more distributed knowledge economy.

Annex – Year 2000 Regional Architectures

This Annex contains the regional economic architectures for Great Britain and all of the regions (Northern Ireland is excluded), for the year 2000. The CD series that includes the 2000 and 1994 architectures, data annexes and supporting commentaries for each region can be purchased directly from the Local Futures Group – www.localfutures.com.

REA for Great Britain, 2000

| Avg. Weekly Earnings | £ 344 | 74.7% | Employment Rate |
| GB = 100 | 100.0 | | |

TOTAL EMPLOYMENT
Knowledge Intensity

	K1	K2	K3	K4	
% of Total Employment	29.9%	20.5%	12.3%	37.2%	
Average Earnings	£ 341	£ 399	£ 394	£ 292	
% of Private Sector Employment	15.1%	19.0%	16.4%	49.5%	
Average Earnings	£ 421	£ 413	£ 394	£ 292	

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	10.7%	19.9%	21.0%	17.2%	£ 585
Professional occupations	26.0%	8.6%	5.0%	2.1%	£ 512
Associate prof & tech occupations	18.9%	16.9%	4.9%	2.6%	£ 415
Clerical, secretarial occupations	13.1%	25.5%	19.6%	8.4%	£ 242
Craft and related occupations	2.2%	7.0%	11.6%	21.8%	£ 360
Personal, protective occupations	18.6%	11.2%	1.9%	7.7%	£ 210
Sales occupations	1.1%	3.4%	7.4%	17.1%	£ 199
Plant and machine operatives	2.5%	4.0%	17.6%	13.6%	£ 313
Other occupations	6.8%	3.4%	11.1%	9.4%	£ 191

Business Structure

	K1	K2	K3	K4
Micro (1-10)	19.3%	14.6%	12.5%	53.6%
Small (11-49)	13.6%	16.1%	16.5%	53.7%
Medium (50-199)	18.4%	15.8%	19.2%	46.6%
Large (200+)	22.5%	22.7%	18.2%	36.7%

TOTAL WORKING AGE POPULATION
Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	23.7%	24.1%	22.2%	30.0%
Average Earnings	£ 563	£ 402	£ 345	£ 317

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	87.2%	79.3%	75.8%	61.0%
Unemployment Rate	2.5%	3.5%	5.0%	5.9%
Inactivity Rate	10.3%	17.3%	19.2%	33.1%

Gender

	NVQ4+5		NVQ3		NVQ2		NVQ1+no quals.	
	Male	Female	Male	Female	Male	Female	Male	Female
	24.5%	22.8%	30.3%	17.2%	17.6%	27.3%	27.6%	32.7%

Age Cohorts

	NVQ4+5		NVQ3		NVQ2		NVQ1+no quals.	
	Male	Female	Male	Female	Male	Female	Male	Female
16-24	12.0%	13.1%	29.9%	29.5%	34.2%	36.8%	23.9%	20.6%
25-44	29.3%	27.2%	28.7%	16.3%	17.7%	29.4%	24.3%	27.2%
*45-64	24.3%	21.4%	32.5%	11.8%	9.6%	18.7%	33.5%	48.1%

Human Capital Indices

	Overall	2.41

	Male	Female
All ages	2.52	2.30
16-24	2.30	2.35
25-44	2.63	2.43
*45-64	2.48	2.07

Employment Rates

	Male	Female
All ages	79.5%	69.3%
16-24	64.8%	60.4%
25-44	89.0%	73.1%
*45-64	74.1%	68.5%

REA for the North East, 2000

Avg. Weekly Earnings	£ 304		
GB = 100	88.2	68.3%	Employment Rate

TOTAL EMPLOYMENT — Knowledge Intensity

	K1	K2	K3	K4
% of Total Employment	11.9%	21.6%	24.9%	41.6%
Average Earnings	£ 315	£ 289	£ 348	£ 262
% of Private Sector Employment	6.0%	13.4%	23.5%	57.2%
Average Earnings	£ 382	£ 315	£ 359	£ 262

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	10.3%	8.2%	13.7%	13.8%	£ 481
Professional occupations	34.5%	10.2%	4.9%	1.7%	£ 472
Associate prof & tech occupations	12.7%	22.8%	10.4%	2.7%	£ 369
Clerical,secretarial occupations	8.5%	15.7%	22.4%	10.3%	£ 231
Craft and related occupations	1.7%	4.7%	14.0%	16.7%	£ 374
Personal,protective occupations	17.2%	21.2%	10.3%	6.6%	£ 192
Sales occupations	1.0%	1.8%	2.8%	22.1%	£ 170
Plant and machine operatives	7.6%	4.6%	16.6%	14.9%	£ 319
Other occupations	6.4%	10.8%	4.9%	11.4%	£ 166

Business Structure

	K1	K2	K3	K4
Micro (1-10)	4.9%	16.2%	12.2%	66.7%
Small (11-49)	6.6%	11.6%	16.4%	65.4%
Medium (50-199)	5.4%	17.1%	21.6%	55.8%
Large (200+)	9.2%	16.1%	29.5%	45.1%

TOTAL WORKING AGE POPULATION — Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	17.6%	24.6%	23.3%	34.4%
Average Earnings	£ 432	£ 350	£ 271	£ 266

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	86.2%	73.0%	72.5%	53.0%
Unemployment Rate	3.0%	5.8%	6.6%	8.4%
Inactivity Rate	10.8%	21.2%	20.9%	38.6%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	18.5%	16.7%	33.0%	15.4%	17.7%	29.5%	30.8%	38.4%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	10.5%	9.5%	25.7%	25.6%	32.5%	43.4%	31.3%	21.6%
25-44	21.8%	18.9%	30.4%	14.4%	20.3%	33.6%	27.5%	33.1%
*45-64	18.4%	17.6%	39.8%	11.1%	7.4%	15.3%	34.5%	56.0%

Human Capital Indices

	Overall		Male	Female
	2.25			
All ages			2.39	2.10
16-24			2.16	2.23
25-44			2.46	2.19
*45-64			2.42	1.90

Employment Rates

	Male	Female
All ages	72.4%	63.7%
16-24	59.7%	54.3%
25-44	84.1%	69.8%
*45-64	64.3%	60.0%

REA for the North West, 2000

Avg. Weekly Earnings	£ 326		
GB = 100	94.6	72.5%	Employment Rate

TOTAL EMPLOYMENT — Knowledge Intensity

	K1	K2	K3	K4
% of Total Employment	24.1%	22.3%	20.9%	32.7%
Average Earnings	£ 325	£ 356	£ 372	£ 266
% of Private Sector Employment	6.4%	20.8%	28.3%	44.5%
Average Earnings	£ 481	£ 360	£ 372	£ 266

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	8.1%	17.5%	18.1%	19.3%	£ 550
Professional occupations	27.6%	12.1%	4.5%	1.5%	£ 500
Associate prof & tech occupations	19.6%	15.3%	4.7%	2.6%	£ 391
Clerical,secretarial occupations	10.8%	24.4%	15.7%	11.1%	£ 232
Craft and related occupations	2.1%	7.5%	29.5%	11.8%	£ 346
Personal,protective occupations	22.3%	11.1%	0.4%	9.3%	£ 206
Sales occupations	1.1%	3.1%	5.8%	19.1%	£ 204
Plant and machine operatives	3.2%	3.0%	12.0%	16.6%	£ 315
Other occupations	5.1%	6.0%	9.2%	8.6%	£ 180

Business Structure

	K1	K2	K3	K4
Micro (1-10)	4.2%	23.9%	22.5%	49.3%
Small (11-49)	2.9%	20.6%	26.8%	49.7%
Medium (50-199)	5.8%	20.6%	29.5%	44.1%
Large (200+)	7.7%	27.6%	24.5%	40.2%

TOTAL WORKING AGE POPULATION — Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	21.9%	26.0%	23.4%	28.6%
Average Earnings	£ 471	£ 337	£ 278	£ 273

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	86.4%	78.4%	73.6%	56.2%
Unemployment Rate	2.3%	3.2%	5.3%	5.6%
Inactivity Rate	11.2%	18.4%	21.2%	38.2%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	22.7%	21.0%	34.1%	17.1%	17.8%	29.6%	25.3%	32.2%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	10.0%	10.6%	31.9%	29.3%	34.5%	39.0%	23.6%	21.1%
25-44	27.2%	25.8%	32.5%	16.1%	18.6%	32.5%	21.7%	25.7%
*45-64	23.1%	19.6%	37.0%	11.9%	9.2%	19.9%	30.7%	48.6%

Human Capital Indices

	Overall		Male	Female
	2.41			
All ages			2.54	2.27
16-24			2.28	2.29
25-44			2.65	2.42
*45-64			2.52	2.02

Employment Rates

	Male	Female
All ages	77.2%	67.3%
16-24	65.9%	55.6%
25-44	88.1%	73.5%
*45-64	68.7%	64.6%

REA for Yorkshire and Humber, 2000

| | | Avg. Weekly Earnings | £ 312 | 74.0% | Employment Rate |
| | | GB = 100 | 90.8 | | |

TOTAL EMPLOYMENT
Knowledge Intensity

	K1	K2	K3	K4
% of Total Employment	20.7%	20.5%	13.9%	44.8%
Average Earnings	£ 298	£ 321	£ 364	£ 290
% of Private Sector Employment	2.2%	19.0%	18.6%	60.1%
Average Earnings	£ 468	£ 305	£ 364	£ 290

Occupational Structure

	K1	K2	K3	K4		
Managers and administrators	6.4%	15.7%	14.5%	17.0%	£	514
Professional occupations	26.0%	9.9%	5.3%	1.5%	£	485
Associate prof & tech occupations	20.6%	14.4%	10.1%	2.5%	£	376
Clerical,secretarial occupations	9.1%	29.3%	15.6%	10.4%	£	229
Craft and related occupations	1.3%	5.1%	15.0%	20.6%	£	352
Personal,protective occupations	27.9%	12.2%	1.7%	6.8%	£	183
Sales occupations	0.4%	3.1%	6.4%	15.7%	£	198
Plant and machine operatives	0.9%	3.5%	21.7%	15.1%	£	307
Other occupations	7.4%	6.6%	9.6%	10.3%	£	194

Business Structure

	K1	K2	K3	K4
Micro (1-10)	2.6%	20.8%	8.9%	67.7%
Small (11-49)	1.3%	19.0%	13.1%	66.6%
Medium (50-199)	2.0%	20.4%	19.2%	58.4%
Large (200+)	1.2%	23.1%	30.3%	45.4%

TOTAL WORKING AGE POPULATION
Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	20.6%	25.0%	22.5%	31.9%
Average Earnings	£ 488	£ 342	£ 293	£ 282

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	87.1%	79.6%	77.0%	59.8%
Unemployment Rate	2.6%	3.8%	4.9%	6.9%
Inactivity Rate	10.3%	16.6%	18.1%	33.4%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	20.5%	20.7%	32.4%	16.7%	18.2%	27.4%	28.9%	35.2%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	9.8%	11.8%	28.7%	26.3%	34.2%	38.4%	27.2%	23.6%
25-44	24.1%	24.0%	32.0%	16.5%	18.5%	29.4%	25.3%	30.1%
*45-64	21.1%	20.8%	34.8%	11.5%	9.9%	17.9%	34.3%	49.7%

Human Capital Indices

	Overall	2.34	
		Male	Female
All ages		2.45	2.23
16-24		2.21	2.26
25-44		2.55	2.34
*45-64		2.43	2.03

Employment Rates

	Male	Female
All ages	78.0%	69.5%
16-24	62.3%	60.2%
25-44	87.2%	73.2%
*45-64	73.9%	69.2%

REA for the East Midlands, 2000

| | | Avg. Weekly Earnings | £ 309 | 76.2% | Employment Rate |
| | | GB = 100 | 89.7 | | |

TOTAL EMPLOYMENT
Knowledge Intensity

	K1	K2	K3	K4
% of Total Employment	20.2%	21.3%	13.1%	45.4%
Average Earnings	£ 287	£ 344	£ 353	£ 291
% of Private Sector Employment	3.0%	20.9%	17.1%	59.0%
Average Earnings	£ 467	£ 347	£ 353	£ 291

Occupational Structure

	K1	K2	K3	K4		
Managers and administrators	7.5%	16.4%	20.3%	16.4%	£	540
Professional occupations	26.4%	13.0%	5.4%	1.9%	£	461
Associate prof & tech occupations	21.6%	12.6%	9.3%	2.9%	£	368
Clerical,secretarial occupations	8.1%	22.8%	22.5%	10.4%	£	223
Craft and related occupations	2.3%	6.9%	13.6%	21.5%	£	324
Personal,protective occupations	26.0%	10.7%	0.9%	6.3%	£	180
Sales occupations	0.9%	2.7%	6.0%	14.2%	£	216
Plant and machine operatives	0.9%	8.0%	14.9%	17.0%	£	299
Other occupations	6.2%	6.9%	7.3%	9.5%	£	182

Business Structure

	K1	K2	K3	K4
Micro (1-10)	3.4%	19.9%	15.8%	61.0%
Small (11-49)	1.8%	21.1%	17.3%	59.8%
Medium (50-199)	2.6%	21.9%	17.6%	57.9%
Large (200+)	2.2%	27.4%	15.8%	54.6%

TOTAL WORKING AGE POPULATION
Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	20.8%	24.0%	23.6%	31.6%
Average Earnings	£ 528	£ 342	£ 292	£ 261

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	88.3%	80.1%	77.6%	65.0%
Unemployment Rate	2.1%	3.3%	4.3%	5.3%
Inactivity Rate	9.6%	16.7%	18.2%	29.7%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	22.0%	19.5%	30.9%	16.5%	18.6%	29.1%	28.5%	35.0%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	9.1%	13.0%	29.9%	26.5%	36.8%	38.5%	24.2%	21.9%
25-44	25.8%	22.5%	30.2%	16.3%	19.0%	32.3%	25.0%	28.9%
*45-64	23.2%	18.4%	32.2%	11.3%	10.1%	19.2%	34.5%	51.0%

Human Capital Indices

	Overall	2.34	
		Male	Female
All ages		2.46	2.20
16-24		2.24	2.31
25-44		2.57	2.32
*45-64		2.44	1.97

Employment Rates

	Male	Female
All ages	81.5%	70.3%
16-24	66.7%	58.6%
25-44	90.1%	74.7%
*45-64	77.6%	70.2%

REA for the West Midlands, 2000

Avg. Weekly Earnings £ 325
GB = 100 94.4   73.3% Employment Rate

TOTAL EMPLOYMENT
Knowledge Intensity

	K1	K2	K3	K4
% of Total Employment	21.9%	22.8%	10.0%	45.2%
Average Earnings	£ 309	£ 350	£ 384	£ 297
% of Private Sector Employment	4.5%	23.4%	13.1%	59.0%
Average Earnings	£ 449	£ 344	£ 384	£ 297

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	7.4%	16.4%	13.1%	16.6%	£ 557
Professional occupations	28.6%	12.6%	7.0%	2.0%	£ 485
Associate prof & tech occupations	19.0%	13.0%	5.8%	2.5%	£ 369
Clerical, secretarial occupations	10.3%	23.3%	12.6%	11.9%	£ 232
Craft and related occupations	2.0%	7.7%	26.4%	20.6%	£ 351
Personal, protective occupations	23.6%	10.2%	0.4%	6.8%	£ 196
Sales occupations	1.6%	2.6%	3.2%	16.3%	£ 205
Plant and machine operatives	1.5%	8.3%	23.1%	14.8%	£ 305
Other occupations	6.0%	5.9%	8.4%	8.5%	£ 177

Business Structure

	K1	K2	K3	K4
Micro (1-10)	3.6%	25.7%	4.3%	66.4%
Small (11-49)	2.8%	23.7%	6.2%	67.3%
Medium (50-199)	5.2%	24.6%	10.5%	59.7%
Large (200+)	6.3%	30.0%	17.1%	46.7%

TOTAL WORKING AGE POPULATION
Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	20.8%	21.8%	22.8%	34.6%
Average Earnings	£ 478	£ 354	£ 279	£ 274

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	87.7%	79.8%	75.2%	59.9%
Unemployment Rate	2.5%	3.6%	5.7%	6.3%
Inactivity Rate	9.8%	16.6%	19.0%	33.8%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	21.8%	19.6%	27.6%	15.4%	17.8%	28.3%	32.8%	36.6%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	10.9%	11.4%	26.5%	25.4%	33.8%	38.9%	28.8%	24.3%
25-44	25.8%	22.9%	26.8%	15.2%	19.1%	31.8%	28.3%	30.1%
*45-64	22.0%	19.3%	29.0%	10.3%	8.9%	17.2%	40.1%	53.2%

Human Capital Indices

	Overall	Male	Female
Overall	2.29		
All ages		2.38	2.18
16-24		2.19	2.24
25-44		2.50	2.31
*45-64		2.33	1.96

Employment Rates

	Male	Female
All ages	78.2%	67.8%
16-24	63.8%	58.9%
25-44	88.5%	71.4%
*45-64	72.2%	67.3%

REA for the East of England, 2000

Avg. Weekly Earnings £ 344
GB = 100 99.9   79.0% Employment Rate

TOTAL EMPLOYMENT
Knowledge Intensity

	K1	K2	K3	K4
% of Total Employment	12.8%	33.9%	11.5%	41.9%
Average Earnings	£ 395	£ 336	£ 383	£ 315
% of Private Sector Employment	7.1%	23.9%	14.8%	54.2%
Average Earnings	£ 539	£ 366	£ 383	£ 315

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	11.4%	15.4%	22.5%	18.8%	£ 586
Professional occupations	41.5%	12.2%	5.8%	1.7%	£ 499
Associate prof & tech occupations	11.3%	18.3%	16.6%	2.6%	£ 400
Clerical, secretarial occupations	10.9%	18.5%	25.4%	11.2%	£ 236
Craft and related occupations	3.9%	4.2%	13.2%	19.7%	£ 375
Personal, protective occupations	12.7%	17.4%	1.2%	6.9%	£ 187
Sales occupations	1.5%	1.8%	4.1%	15.5%	£ 208
Plant and machine operatives	2.5%	4.0%	9.3%	14.0%	£ 310
Other occupations	4.3%	8.2%	1.9%	9.5%	£ 205

Business Structure

	K1	K2	K3	K4
Micro (1-10)	5.6%	25.0%	7.4%	62.0%
Small (11-49)	3.2%	22.6%	11.9%	62.3%
Medium (50-199)	5.4%	27.8%	13.5%	53.4%
Large (200+)	10.9%	31.6%	14.5%	43.1%

TOTAL WORKING AGE POPULATION
Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	21.9%	23.8%	25.1%	29.2%
Average Earnings	£ 561	£ 425	£ 350	£ 300

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	87.8%	83.3%	79.7%	69.2%
Unemployment Rate	1.9%	2.3%	3.3%	4.2%
Inactivity Rate	10.3%	14.4%	17.0%	26.6%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	23.0%	20.8%	29.9%	17.1%	19.5%	31.3%	27.7%	30.8%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	10.4%	12.9%	28.6%	26.9%	35.8%	39.5%	25.1%	20.6%
25-44	26.1%	23.6%	29.1%	17.8%	20.8%	34.3%	24.0%	24.3%
*45-64	24.2%	20.5%	31.4%	11.0%	10.9%	22.6%	33.4%	45.9%

Human Capital Indices

	Overall	Male	Female
Overall	2.38		
All ages		2.48	2.28
16-24		2.24	2.32
25-44		2.57	2.41
*45-64		2.46	2.06

Employment Rates

	Male	Female
All ages	84.4%	73.1%
16-24	73.0%	67.3%
25-44	91.9%	75.7%
*45-64	79.9%	72.0%

REA for Greater London, 2000

Avg. Weekly Earnings | £ 455 | 70.8% | Employment Rate
GB = 100 | 132.1

TOTAL EMPLOYMENT
Knowledge Intensity

TOTAL WORKING AGE POPULATION
Human Capital

	K1	K2	K3	K4	
% of Total Employment	55.4%	10.4%	17.3%	16.8%	
Average Earnings	£ 489	£ 564	£ 323	£ 401	
% of Private Sector Employment	42.6%	13.4%	22.4%	21.6%	
Average Earnings	£ 552	£ 564	£ 323	£ 401	

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	19.1%	22.7%	24.2%	17.8%	£ 706
Professional occupations	21.4%	8.4%	3.4%	2.8%	£ 621
Associate prof & tech occupations	22.3%	13.8%	3.5%	2.3%	£ 569
Clerical, secretarial occupations	17.5%	18.9%	15.2%	7.5%	£ 302
Craft and related occupations	2.2%	11.3%	4.7%	25.3%	£ 425
Personal, protective occupations	11.4%	4.0%	2.5%	16.4%	£ 297
Sales occupations	1.2%	2.7%	33.1%	2.7%	£ 199
Plant and machine operatives	1.4%	6.9%	7.6%	14.8%	£ 360
Other occupations	3.4%	11.2%	5.7%	10.4%	£ 220

Business Structure

	K1	K2	K3	K4
Micro (1-10)	43.4%	7.1%	26.0%	23.6%
Small (11-49)	35.5%	11.0%	26.5%	27.0%
Medium (50-199)	42.9%	15.2%	23.0%	18.9%
Large (200+)	49.8%	19.2%	18.5%	12.4%

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	30.0%	18.9%	17.6%	33.5%
Average Earnings	£ 633	£ 424	£ 413	£ 381

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	87.1%	75.0%	68.5%	55.8%
Unemployment Rate	3.0%	4.9%	7.2%	7.1%
Inactivity Rate	9.9%	20.1%	24.3%	37.1%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	31.2%	28.7%	22.1%	15.4%	14.9%	20.4%	31.7%	35.5%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	17.5%	17.6%	26.5%	28.7%	30.4%	30.0%	25.6%	23.7%
25-44	39.0%	34.9%	19.9%	13.1%	12.6%	19.6%	28.6%	32.3%
*45-64	26.2%	24.5%	23.4%	10.3%	9.8%	15.1%	40.7%	50.1%

Human Capital Indices

	Overall	2.45	
		Male	Female
All ages		2.53	2.37
16-24		2.36	2.40
25-44		2.69	2.51
*45-64		2.35	2.09

Employment Rates

	Male	Female
All ages	76.7%	64.4%
16-24	54.3%	53.9%
25-44	86.7%	67.4%
*45-64	72.9%	66.1%

REA for the South East, 2000

Avg. Weekly Earnings | £ 362 | 80.2% | Employment Rate
GB = 100 | 105.1

TOTAL EMPLOYMENT
Knowledge Intensity

TOTAL WORKING AGE POPULATION
Human Capital

	K1	K2	K3	K4	
% of Total Employment	33.3%	21.1%	15.7%	29.8%	
Average Earnings	£ 364	£ 383	£ 403	£ 300	
% of Private Sector Employment	20.7%	19.5%	20.7%	39.1%	
Average Earnings	£ 455	£ 386	£ 403	£ 300	

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	14.3%	23.1%	26.5%	17.5%	£ 606
Professional occupations	26.4%	7.8%	4.5%	2.4%	£ 513
Associate prof & tech occupations	17.9%	15.8%	5.2%	3.0%	£ 407
Clerical, secretarial occupations	13.9%	23.7%	18.2%	8.4%	£ 244
Craft and related occupations	2.5%	7.1%	12.9%	21.5%	£ 376
Personal, protective occupations	15.9%	12.3%	2.0%	8.7%	£ 217
Sales occupations	1.4%	3.3%	6.8%	20.6%	£ 216
Plant and machine operatives	1.8%	4.2%	12.8%	8.7%	£ 322
Other occupations	5.8%	2.7%	11.2%	9.3%	£ 205

Business Structure

	K1	K2	K3	K4
Micro (1-10)	25.7%	12.9%	14.4%	47.0%
Small (11-49)	18.4%	14.5%	21.7%	45.4%
Medium (50-199)	23.4%	16.0%	26.0%	34.6%
Large (200+)	31.2%	22.8%	22.1%	24.0%

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	26.4%	25.0%	23.8%	24.8%
Average Earnings	£ 797	£ 613	£ 549	£ 480

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	88.0%	81.9%	81.0%	70.4%
Unemployment Rate	1.9%	2.2%	3.1%	4.1%
Inactivity Rate	10.1%	15.9%	15.9%	25.5%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	28.1%	24.7%	30.1%	19.4%	19.0%	29.1%	22.9%	26.9%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	11.9%	12.0%	31.2%	36.1%	36.7%	36.1%	20.2%	15.8%
25-44	32.4%	29.8%	28.7%	17.4%	18.8%	31.4%	20.0%	21.5%
*45-64	29.4%	23.5%	31.3%	13.8%	11.6%	21.9%	27.7%	40.8%

Human Capital Indices

	Overall	2.53	
		Male	Female
All ages		2.63	2.42
16-24		2.35	2.44
25-44		2.74	2.55
*45-64		2.62	2.20

Employment Rates

	Male	Female
All ages	85.6%	74.3%
16-24	70.4%	68.0%
25-44	94.0%	76.2%
*45-64	81.5%	74.5%

REA for the South West, 2000

Avg. Weekly Earnings £ 313 / GB = 100 90.9 | 78.8% Employment Rate

TOTAL EMPLOYMENT — Knowledge Intensity

	K1	K2	K3	K4	
% of Total Employment	28.3%	23.0%	13.5%	35.2%	
Average Earnings	£ 292	£ 378	£ 336	£ 262	
% of Private Sector Employment	12.8%	21.0%	18.3%	47.8%	
Average Earnings	£ 340	£ 389	£ 336	£ 262	

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	8.8%	21.1%	23.4%	16.1%	£ 515
Professional occupations	24.4%	8.7%	4.7%	1.9%	£ 475
Associate prof & tech occupations	20.3%	14.2%	4.6%	1.8%	£ 379
Clerical, secretarial occupations	13.0%	22.8%	16.1%	9.0%	£ 228
Craft and related occupations	2.5%	10.3%	13.0%	22.3%	£ 346
Personal, protective occupations	21.6%	9.2%	2.1%	8.3%	£ 188
Sales occupations	0.9%	3.8%	6.1%	20.0%	£ 182
Plant and machine operatives	1.8%	7.0%	17.3%	11.0%	£ 305
Other occupations	6.8%	3.0%	12.6%	9.7%	£ 184

Business Structure

	K1	K2	K3	K4
Micro (1-10)	16.0%	12.8%	13.5%	57.7%
Small (11-49)	10.9%	15.6%	18.6%	55.0%
Medium (50-199)	15.1%	18.9%	21.5%	44.6%
Large (200+)	14.7%	33.5%	18.7%	33.1%

TOTAL WORKING AGE POPULATION — Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	24.6%	24.9%	25.0%	25.6%
Average Earnings	£ 492	£ 362	£ 310	£ 275

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	87.4%	81.6%	79.3%	68.6%
Unemployment Rate	2.1%	2.6%	4.1%	5.0%
Inactivity Rate	10.5%	15.8%	16.5%	26.4%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	25.7%	23.4%	30.8%	18.3%	19.6%	30.8%	23.9%	27.4%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	10.7%	10.4%	32.6%	30.6%	37.1%	41.2%	19.6%	17.8%
25-44	29.9%	28.4%	28.2%	18.2%	20.1%	32.7%	21.8%	20.8%
*45-64	27.1%	22.9%	33.1%	12.5%	11.7%	23.2%	28.1%	41.5%

Human Capital Indices

	Overall	Male	Female
Overall	2.49		
All ages		2.58	2.38
16-24		2.34	2.34
25-44		2.66	2.54
*45-64		2.59	2.17

Employment Rates

	Male	Female
All ages	83.2%	73.9%
16-24	69.9%	66.8%
25-44	92.2%	76.8%
*45-64	78.2%	73.3%

REA for Wales, 2000

Avg. Weekly Earnings £ 309 / GB = 100 89.9 | 69.1% Employment Rate

TOTAL EMPLOYMENT — Knowledge Intensity

	K1	K2	K3	K4	
% of Total Employment	25.8%	25.4%	10.8%	38.0%	
Average Earnings	£ 296	£ 313	£ 377	£ 272	
% of Private Sector Employment	5.2%	25.9%	15.3%	53.6%	
Average Earnings	£ 288	£ 308	£ 377	£ 272	

Occupational Structure

	K1	K2	K3	K4	
Managers and administrators	6.5%	18.9%	17.5%	13.9%	£ 505
Professional occupations	27.5%	10.8%	5.3%	2.4%	£ 478
Associate prof & tech occupations	20.1%	12.1%	4.7%	2.2%	£ 355
Clerical, secretarial occupations	10.9%	23.7%	11.7%	9.5%	£ 238
Craft and related occupations	2.2%	6.9%	21.6%	20.9%	£ 344
Personal, protective occupations	23.9%	7.6%	0.2%	8.1%	£ 200
Sales occupations	0.4%	2.9%	6.2%	16.8%	£ 183
Plant and machine operatives	0.8%	8.9%	28.8%	14.5%	£ 316
Other occupations	7.8%	8.1%	4.0%	11.7%	£ 174

Business Structure

	K1	K2	K3	K4
Micro (1-10)	7.6%	18.9%	11.0%	62.4%
Small (11-49)	5.0%	21.8%	15.0%	58.2%
Medium (50-199)	3.8%	27.0%	20.2%	49.0%
Large (200+)	3.2%	32.0%	30.4%	34.3%

TOTAL WORKING AGE POPULATION — Human Capital

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	21.9%	20.8%	24.7%	32.6%
Average Earnings	£ 448	£ 332	£ 309	£ 253

Employment

	NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate	85.0%	75.4%	72.2%	53.4%
Unemployment Rate	2.8%	3.8%	5.5%	6.1%
Inactivity Rate	12.2%	20.8%	22.3%	40.6%

Gender

	Male	Female	Male	Female	Male	Female	Male	Female
	22.3%	21.5%	27.0%	13.8%	19.8%	30.1%	30.8%	34.6%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	11.6%	10.8%	25.7%	24.6%	40.6%	41.5%	22.1%	23.1%
25-44	25.9%	24.3%	27.6%	13.5%	19.0%	32.9%	27.4%	29.3%
*45-64	23.1%	23.4%	27.0%	8.3%	11.1%	20.0%	38.7%	48.3%

Human Capital Indices

	Overall	Male	Female
Overall	2.32		
All ages		2.41	2.22
16-24		2.27	2.23
25-44		2.52	2.33
*45-64		2.35	2.07

Employment Rates

	Male	Female
All ages	73.3%	64.5%
16-24	62.3%	55.8%
25-44	85.0%	69.7%
*45-64	65.0%	61.9%

REA for Scotland, 2000

| | | | | Avg. Weekly Earnings | £ | 321 | 73.2% | Employment Rate |
| | | | | GB = 100 | | 93.2 | | |

TOTAL EMPLOYMENT
Knowledge Intensity

TOTAL WORKING AGE POPULATION
Human Capital

	K1	K2	K3	K4			NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
% of Total Employment	31.5%	16.5%	41.8%	10.1%			25.9%	30.3%	15.4%	28.4%
Average Earnings	£ 337	£ 343	£ 299	£ 319		Average Earnings	£ 463	£ 357	£ 259	£ 271
% of Private Sector Employment	16.0%	12.8%	57.3%	13.9%						
Average Earnings	£ 410	£ 341	£ 299	£ 319						

Employment

							NVQ4+5	NVQ3	NVQ2	NVQ1+no quals.
Employment Rate							86.9%	78.5%	70.1%	57.4%
Unemployment Rate							3.3%	4.5%	7.8%	6.5%
Inactivity Rate							9.8%	17.0%	22.1%	36.1%

Occupational Structure

	K1	K2	K3	K4		
Managers and administrators	8.9%	13.9%	17.4%	16.9%	£	543
Professional occupations	25.7%	7.7%	2.9%	1.7%	£	511
Associate prof & tech occupations	19.7%	15.2%	3.2%	2.4%	£	369
Clerical, secretarial occupations	12.6%	23.4%	12.5%	9.4%	£	232
Craft and related occupations	3.5%	7.1%	17.7%	24.6%	£	356
Personal, protective occupations	18.9%	16.1%	8.0%	1.4%	£	216
Sales occupations	1.1%	4.6%	17.1%	4.1%	£	182
Plant and machine operatives	2.2%	6.5%	10.4%	27.3%	£	309
Other occupations	7.4%	5.7%	10.7%	12.2%	£	182

Gender

	NVQ4+5 Male	Female	NVQ3 Male	Female	NVQ2 Male	Female	NVQ1 Male	Female
	25.3%	26.5%	38.5%	21.4%	11.8%	19.4%	24.4%	32.8%

Age Cohorts

	Male	Female	Male	Female	Male	Female	Male	Female
16-24	15.3%	19.6%	39.1%	37.0%	27.0%	28.7%	18.6%	14.6%
25-44	30.8%	31.6%	35.8%	19.8%	12.1%	21.1%	21.4%	27.5%
*45-64	23.1%	22.3%	41.9%	14.9%	3.9%	11.2%	31.1%	51.6%

Business Structure

	K1	K2	K3	K4
Micro (1-10)	20.6%	7.0%	61.4%	10.9%
Small (11-49)	15.8%	8.4%	62.0%	13.7%
Medium (50-199)	16.6%	9.4%	57.1%	16.8%
Large (200+)	22.9%	18.9%	45.9%	12.4%

Human Capital Indices

	Overall	2.54
	Male	Female
All ages	2.65	2.42
16-24	2.51	2.62
25-44	2.76	2.55
*45-64	2.57	2.08

Employment Rates

	Male	Female
All ages	76.8%	69.3%
16-24	65.6%	62.0%
25-44	86.1%	74.4%
*45-64	70.3%	65.5%