LEARNING FROM OUR PLACE IN THE GLOBAL ECONOMY

FINAL REPORT

March 2012

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Executive Summary

This report sets out the findings of research into Greater Lincolnshire's key industrial sectors: agri-food, manufacturing, engineering, renewable energy and environmental technologies, and logistics.

Key Characteristics

- **Sectors -** Greater Lincolnshire has a disproportionately high representation of employment in agriculture, at 2.7 times the English average, and in manufacturing, at 1.6. Construction is also an important sector for Greater Lincolnshire. By comparison, there is an under-representation of key service sector industries, such as banking, finance, and insurance, at 0.7. The proportion of people employed in the public sector, transport and communications, and distribution, hotels and restaurants, is broadly similar to elsewhere in the country.

- **Business Structure -** Greater Lincolnshire has almost 40,000 businesses, of which the vast majority are SMEs. In line with the national picture, 85% of Greater Lincolnshire businesses are micro businesses, which employ fewer than 10 people. North and North East Lincolnshire have a slightly higher proportion of businesses employing more than 50 people, at around 4% of businesses compared with 3% in Lincolnshire.

- **Workforce -** More than half a million people in Greater Lincolnshire are economically active; that is, in work, studying, or actively looking for work. The economic activity rate, as a proportion of the working age population, is around 79% which is greater than the national average of 76%.

- **Productivity -** In 2009, Greater Lincolnshire contributed £15,496 million to the UK economy, equivalent to 1.5% of total GVA for the UK. This was similar to the total GVA of West Sussex (£15,408m), Oxfordshire (£14,344 million), Cheshire (£14,056m), North Yorkshire (£13,566m) and Northamptonshire (£13,477m). Despite high rates of economic activity in Greater Lincolnshire, productivity per head is significantly lower than the national average. GVA per head is currently 72% of the national average in Lincolnshire and, in England, only Cornwall and Tees Valley/Durham perform more poorly. GVA per head in North and North East Lincolnshire is 85% of the national average, but this has declined since 1997 when productivity per head was greater than the UK average.

English Comparisons

We undertook a sectoral analysis of Greater Lincolnshire alongside three comparator regions: Devon, York/North Yorkshire, and Northamptonshire. Our findings identify:

- Greater Lincolnshire is a leading region for ***agri food***, but it is losing jobs in this sector when other regions are not. These losses are mainly related to the loss of fish processing, and wholesale and processing of fruits and vegetables. Northamptonshire is clearly a key comparator for this sector, having increased employment levels in food wholesale and processing activities. Although Northamptonshire has a natural advantage in its central England location, there may be something to be learned from its intention to retain this advantage through its focus on the transport connectivity around

the 'Northamptonshire Arc' (around Northampton, Daventry, Kettering, and Wellingborough) as well as new road-rail hubs at Corby and Daventry.

- The ***engineering*** sector in Greater Lincolnshire is larger and more stable than in its comparator areas of Devon and Northamptonshire. It has experienced a modest decline in jobs. However, although smaller in scale, this sector has increased in North Yorkshire over the same period. The North Yorkshire Economic Assessment identifies growth in the local engineering sector as being driven by key emerging sectors, such as electrical and optical manufacturing. The Greater Lincolnshire engineering sector has a number of strong growth sectors, such as electrical components, motor vehicles, and precision instruments which could provide the basis for further growth in the sector.

- Similar in scale to engineering***, logistics*** is a fast growing sector across all the regions examined here. North Lincolnshire, in particular, has benefitted from proximity to good motorway links, with strong growth in storage and warehousing. This sector is closely linked to agri food and, just as we have seen strong growth in agri food in Northamptonshire, this pattern can also be observed for logistics.

- Although difficult to measure using standard industrial classification, the data suggests that ***environmental activities*** have grown substantially across all the areas examined here. Greater Lincolnshire has seen increases in the recycling of non-metal waste, and collection and treatment of other waste.

- ***Manufacturing*** is still a key Greater Lincolnshire sector, being larger in scale than its comparator regions. However, this is a sector in decline across almost all manufacturing activities. What the comparisons show, however, is that growth is focused on very specialist and niche areas of activity, which are less subject to international competition. This suggests that the long term resilience of the sector may depend upon moving into more specialist or higher value activities within Greater Lincolnshire's existing manufacturing base.

International Comparisons

We have selected for a brief qualitative comparison three provinces:[1] Rimini, within Emilia-Romagna in Italy, Groningen in the Netherlands and New Hampshire in the US. Groningen and Emilia-Romagna have GDP well above the Dutch and Italian averages, whilst New Hampshire is at the US average; Lincolnshire is well behind. The four provinces are similar in the following ways:

- Agriculture is important though, it employs relatively few people
- Tourism is also important, though very important only in Rimini
- They have no major cities, though there are major cities not too far away
- They are lightly populated compared with adjacent regions
- They are ***<u>very roughly</u>*** comparable in area and population
- They have a powerful sense of history, based on long-established[2] towns and cities

[1] In this section, and except where the context shows otherwise, we use 'province' as a collective term for county, state, province etc; and by Lincolnshire we mean Greater Lincolnshire
[2] Even in New Hampshire, settlements go back to the seventeenth century

- They have at least one historic city with a university, however, higher education is under-represented in each provincial economy compared with the national average
- They have no 'decisive' industries[3], in the way that finance in London or film-making in Los Angeles are decisive.
- They have important industries - but within diversified economies
- Their communications are good without being excellent
- They each have a sea coast with considerable economic significance.

The three comparator provinces each enjoy output per head at or above their national average, but Lincolnshire has output per head well below the UK national average. Moreover, the process of selecting the three comparators ensures that this is not to be explained by any obvious factor, such as the presence in the comparators of unusually large and successful industries or special advantages such as spatial advantages, powerful agglomeration effects or unusually good communications. The three comparators each enjoy far greater autonomy than Lincolnshire. New Hampshire is, like all of the US, quasi-independent; and both Groningen and Emilia-Romagna enjoy substantial autonomy including significant tax-raising powers. It appears, though this conclusion would need to be validated by further research, that greater autonomy[4] has led to more determined efforts to promote what is in the interests of the provincial economy and it is at least plausible that this accounts in part for relatively good performance.

The Effect of the Recession

The analysis of data for this report has focused on a 2000-2008 time series, to ensure use of comparable sector definitions. However, broad comparisons have also been undertaken with 2010 data to identify very recent trends and quantify the effect of the recession on the identified sectors. The detailed comparisons are shown in Appendix 5. These show that the number of jobs across the Greater Lincolnshire area has declined by 3% or almost 12,000 between 2008 and 2010. The worst affected activities have been in construction and property. Employment in finance and insurance activities declined by 26%, property by 24%, and construction by 17% over this time.

In terms of Greater Lincolnshire's key identified sectors, there have been some small losses and even some increases in employment levels across most sectors. Perhaps the exception to this is manufacturing which – although only decreasing by 4% - has seen loss of 2,500 jobs. This provides evidence that these sectors underpin the Greater Lincolnshire economy. Key observations include:

Agri Food: employment in agriculture has declined slightly (by 4%), while food manufacturing has remained stable (+2%).

Engineering/Manufacturing: the manufacturing sector has declined by 4% or 2,500 jobs across the area. Losses have taken place in manufacture of machinery (-39%), motor vehicles (-35%), basic metals (-10%), chemical products (-11%), and printing (-25%). However, manufacture of textiles (+13%) and clothes (+59%) has increased, although only these reflect a small number of jobs. Manufacture of coke and petroleum, rubber and plastic products, electrical equipment and fabricated metal have experienced small increases, at between 4% - 9%, reflecting stability in these sectors.

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[3] Tourism in Rimini is a partial exception
[4] See, for instance http://www.nheconomy.com/business-services/financial-other-incentives.aspx for details of the wide range of services and the favourable tax regime available to businesses locating in New Hampshire

Renewables/Environmental Technologies: there has been an increase of 825 jobs or 54% in waste collection and treatment activities, which reflects growth in the environmental technologies sector in Lincolnshire.

Logistics: there has been little change for the sector overall, with an increase in land transport activities (8%) and water transport (69% or 69 jobs), but a decline in warehouse activities for water transport (-9%).

Other activities: there has been growth across all health and care activities, including human health activities (7%), social work activities (19%) and residential care (13%). Public sector employment has continued to increase during this time, by 7%. Employment in education, including Higher Education, has increased by 3%.

Conclusions and Action Points

Agri-Food - Notwithstanding the employment decline experienced in North East Lincolnshire there are still strong assets within the sector which can be optimised. These include a skilled workforce, a strong supply chain infrastructure and the availability of food processing workspace. **It is important for the LEP to think about how it can maximise these inherent strengths to help maintain the vitality of the sector on an ongoing basis. This could involve brokering cooperation between the Holbeach Food Hub and Humber Sea Food Institute.** Across Lincolnshire there is also a vibrant agri-engineering sector. **This is an area of activity which would be worth further study and engagement by the LEP.**

Logistics - Logistics, is a very significant sector. It also has a significant role to play in terms of its relationship with the renewables sector. The role of Associated British Ports not simply in relation to the operation of Immingham and Grimsby ports but also in terms of their strategic control of the Humber overall makes them really significant player in the logistics agenda for the area. **There is currently very limited engagement between the LEP and ABP and this is an area which should be addressed in more detail by the LEP.**

The role of the Port of Immingham at the mouth of an established energy corridor running up the M180, M18 and M62 incorporating major power stations at Drax, Ferrybridge and in the Trent Valley in Nottinghamshire is strategically massively important for the LEP area and nationally unique. **The LEP should explore in some detail how this corridor currently functions and scope out in more detail the opportunities linked to its evolution.** Discussions with ABP have indicated that co-firing proposals at the power-stations in this corridor means that there is considerable potential around bio-fuels as well as the development of the renewable sector in terms of wind. **A number of studies have been undertaken in the past in the context of the bio-fuels supply agenda, recently they have concentrated on community and small scale supply for local community heating projects. There is clearly significant value in this agenda but there is also new scope to consider the larger supply agendas linked to the established power stations in relation to their evolution of their approach.**

It is important to keep in view the two short sea shipping port facilities at Boston and Sutton Bridge in the South of the County. **There have been some previous considerations of the importance of the Port sector but more work is merited, led by the LEP to consider the potential of these facilities. The proposals for a new rail freight facilities in south Lincolnshire is also important to factor into this element of the work of the LEP.**

The dynamics and functioning of the small companies in the road freight sector is an interesting area of potential further enquiry by the LEP as whilst small and many in number they have a significant underpinning role in relation to the viability of the agri-food and engineering sectors in the LEP area.

Engineering – With the decline of any form of detailed after-care relationships between local authorities and strategic companies, for want of former RDA support, establishing a long term dialogue with those strategic stand alone players in the engineering sector overall should be a priority for the LEP.

Manufacturing - The steel works in Scunthorpe (TATA) and its associated supply chain and strategic relationship with the importing of iron-ore with the Port of Immingham is a really important feature of the LEP economy. The petro-chemical industry on the Humber Bank at Killingholme, although technically in North Lincolnshire is effectively part of the North East Lincolnshire economy. It is almost as large and is as strategically important as steel manufacturing in the LEP area. **When considered alongside the high quality agricultural land in south Lincolnshire and the potential offered around renewables, the steel and petro-chemical activities in the north of the County can be linked to these sectors to support a compelling argument that the LEP economy is about the development and processing of natural resources.**

Renewables - There is a strong south bank context to the renewables agenda linked to the designation of the Able Energy Park as an Enterprise Zone and the wider aspirations of ABP to add value to their current energy freight relationships with the power stations along the M62, M18, M180 corridor. **There is a need to synthesise the messages arising from a range of studies of this sector which have been commissioned previously and to think it through in its broadest manifestations, with wind as one component, if its full potential (including bio-fuels, anaerobic digestion, solar etc) is to be understood.**
Other Key Sectors

Other Sectors -. The LEP should commission a more detailed study about the commercial opportunities arising from the health and social care agenda, focusing particularly on opportunities around: maximising the impact of local authority and NHS procurement (taking account of the enactment of the new Health and Social Care Bill); the formation of social enterprises to address some of the challenges of delivery in rural areas, an examination of the role of the key hospitals in the LEP area as recipients of NHS training placements for medical schools and new development opportunities in the health and social care agenda around concepts such as Care Farms.

It has been impossible not to make at least passing reference to the importance of tourism, defence and Higher Education in Lincolnshire. All three sectors impinge on the areas at the heart of our study for example: in terms of the relationship between small scale food processors in the agri-food sector and the tourism components of “Tastes of Lincolnshire;” the importance of defence as a key underpinning for engineering in relation to areas such as the BAE employees linked to the major RAF bases in the LEP area and the key role of the University of Lincoln in supporting activities such as the development of the Engineering School with Siemens. Spatially in the same way that the relationship between the two complementary food processing clusters in the north and south of the LEP area are an area of real potential created by the new LEP geography, so is the relationship between Cleethorpes, Skegness and Mablethorpe in terms of the seaside tourism offer on the LEP coast. **Whilst accepting that these sectors may not be as significant in size and scale as some of the other key sectors covered in this report**, **the LEP should acknowledge their strategic importance and earmark them for inclusion in a second sectoral focus plan in due course.**

1. INTRODUCTION

Background

1.1 This report sets out the findings of research into Greater Lincolnshire's key industrial sectors. The report has been put together by a team of researchers at the University of Lincoln and Rose Regeneration on behalf of Greater Lincolnshire Local Enterprise Partnership (GLLEP).

1.2 The aim of this study is to develop a better understanding of the sectoral composition of the Greater Lincolnshire economy in order to identify opportunities to support the growth of specific sectors, and target resources more effectively. The findings presented in this report provide a baseline for two further pieces of work conducted for the GLLEP. As such, this report should be read in conjunction with the final reports for these projects. These are:

- *Opportunities for our Supply Chains:* a review of the supply chains within Greater Lincolnshire's key sectors to identify areas of strength and weakness, and identify opportunities for GLLEP, the public and private sector to provide support.
- *Opportunities for Innovation within Greater Lincolnshire Traditional Industries:* a study to analyse current innovative practices within traditional industries, and identify barriers to and opportunities to foster innovation.

Aims and Objectives

1.3 The specific aims of this report are to:

- Present strengths and weaknesses related to the sectoral composition of Greater Lincolnshire.
- Undertake analysis of a number of identified sectors, which include agri-food, manufacturing, engineering, renewable energy and environmental technologies, and logistics.
- Explore, for each identified sector, how Greater Lincolnshire compares with similar regions in the UK and elsewhere in terms of:
  - Relative productivity
  - Drivers and barriers for growth
  - Best practice and key learning points
  - Opportunities for trade and inward investment
- Identify action that GLLEP, the private and the public sector in Lincolnshire can take to support the identified sectors in accessing additional trade and inward investment opportunities
- Identify the funding sources that can assist in this process.

The Research Team

1.4 This report has been produced by a collaboration of Lincoln Business School and Rose Regeneration. The research team comprises:

- Liz Price, Senior Research Fellow at Lincoln Business School
- Ivan Annibal, Visiting Fellow at Lincoln Business School and Director of Rose Regeneration
- Glyn Owen, Visiting Professor at Lincoln Business School and Director of Glyn Owen Associates Ltd

1.5 The team has extensive experience of economic and sector analysis, and has previously managed a number of similar studies in Lincolnshire and the East Midlands. In conducting this research, the team has drawn on its existing linkages with key sector businesses and representatives throughout the county, including via the National Centre for Food Manufacturing at Holbeach, and the Lincoln School of Engineering.

Structure of this Report

1.6 The rest of this report is set out as follows:

Section 2: Our Approach – sets out the data gathered and the method used for the study.

Section 3: Policy Context – sets out the background to the Greater Lincolnshire LEP, and the economic priorities set out by the LEP and constituent authorities

Section 4: Overview of the Greater Lincolnshire Economy – an analysis of the overall composition of the Greater Lincolnshire economy, including consideration of employment, firm population, and productivity.

Section 5: Understanding Greater Lincolnshire's Key Sectors – detailed analysis of each of the six identified sectors, including analysis of locally significant industries, those experiencing growth, and decline.

Section 6: Local Authority Area Characteristics – setting out the industrial characteristics and strengths of each area within Greater Lincolnshire

Section 7: Regional Comparison – how the composition and productivity of the Greater Lincolnshire economy compares with selected comparator areas within the UK, and what can be learned from these.

Section 8: International Comparisons – how the Greater Lincolnshire economy compares with selected international comparators, and lessons to be learned.

Section 9: Action Points and Conclusions - which identify the opportunities and the influences and barriers for each identified sector. This sets out the opportunities for the short, medium, and longer term, for consideration by the Greater Lincolnshire LEP Board.

2. OUR APPROACH

2.1 The approach for this stage of the project was based principally on secondary data sources. The research was undertaken in the following stages:

(ii) Baseline and Latest Trends
(iii) Key Sector Analysis
(iv) Expert Interviews
(iv) Comparator Analysis
(v) Identification of Growth and Inward Investment Opportunities

2.2 **Baseline:** the first stage of the data gathering process involved creating an up-to-date picture of the Greater Lincolnshire economy, how this has changed over time, and how this compares to the national and regional picture. As a new administrative geography, this involved collating and aggregating data for the local authority areas of Lincolnshire, North East and North Lincolnshire.

2.3 To explore the size and scale of the industrial sectors in Greater Lincolnshire, we have analysed the number of firms and employees in each sector and how these have changed over the last 10 years. Sources for this have included the Annual Business Inquiry, produced by the Office for National Statistics (ONS), which provides data to 4-digit Standard Industrial Classification (SIC) groupings. Analytical approaches to identify the relative concentration of key sectors have included Location Quotients (LQs). These reflect the proportion of employment within each sector compared with the national average. The productivity of the key sectors has been explored using Gross Value Added (GVA) for key industrial groupings, also produced by ONS.

2.4 A number of existing documents have been drawn together to maximise use of existing research, and to develop a clear understanding of the current policy priorities for Greater Lincolnshire. These include the Lincolnshire Local Economic Assessment, the North Lincolnshire Economic Assessment, and the North East Lincolnshire 'New Horizons' Regeneration Strategy.

2.5 **Key Sector Analysis:** Following the baseline analysis, a more detailed analysis of the key sectors identified by GLLEP was undertaken. The identified sectors are:

- agri-food,
- manufacturing,
- engineering,
- renewable energy and environmental technologies,
- logistics.

2.6 As these sectors overlap in some areas of activity, a coding frame was established with the agreement of Lincolnshire Research Observatory from the outset. This is included as an appendix 4.

2.7 **Expert Interviews:** a number of interviews were undertaken with policy stakeholders and representatives of the key identified sectors in Greater Lincolnshire. These interviews have been used to explore the global importance of the specific businesses in these sectors. We are very grateful to the following who gave up their time to be interviewed as part of the study:

- Laura Farr and Jackie Tulley, North Lincolnshire Council
- Helen Thompson and David Robinson, North East Lincolnshire Council
- Doug Robinson, Lincolnshire County Council
- Tony Hill, Lincolnshire County Council
- Neil Corner, Siemens

- Andrew Vaughan, Industrial Chaplain for Lincolnshire
- Mark Swainson, Holbeach Centre for Food Manufacturing
- Jill Stewart, Lincoln School of Engineering
- Jeffe Baker, Associated British Ports (ABP)

2.8 **Comparator Analysis:** Comparisons have been undertaken with selected regions within the UK and internationally. The purpose of the comparator analysis is to explore relative performance of the key sectors, and to understand approaches used elsewhere to support sector growth. Comparator areas for Greater Lincolnshire have been selected using the following criteria:

- approximate in population and area and, therefore, in population density
- coastal regions with substantial port and/or logistics facilities
- polycentric – with a small city (ideally historic) but no large cities, and not be in immediate proximity to a very large capital
- more highly productive than Lincolnshire, either generally or in the identified key sectors on which are asked to focus, in order to focus on 'aspirational' targets.

2.9 In England, the selected comparators are Devon, Northamptonshire and North Yorkshire. These are largely rural counties, without the presence of a major conurbation. North Yorkshire and Devon have similar populations and population densities to Greater Lincolnshire. Although lacking port facilities within their county boundaries, North Yorkshire has access to ports at Hull and Teesside, and Devon at Bristol. Northamptonshire has been selected as a leading comparator for food and logistics activities.

2.10 The selected international comparators are Groningen (Netherlands), Rimini (Italy), and New Hampshire (United States). These are all agricultural regions and, in the case of Groningen and Rimini, have substantial port activities. In comparing these regions, we have drawn on statistical data from the OECD and Eurostat, as well as locally produced economic policy documents.

3. POLICY CONTEXT

Local Enterprise Partnerships

3.1 Local Enterprise Partnerships (LEPs) were introduced by the newly elected Coalition government in 2010, following the decision to abolish Regional Development Agencies (RDAs) and Sub-Regional Strategic Partnerships (SSPs). Their role is to drive forward private sector growth and job creation in their area, although the specific objectives of each LEP are locally determined. The introduction of LEPs, as well as changes proposed through the Localism Bill, arguably reflect an economic development policy shift towards local geographies and locally determined decisions.

3.2 Approved by Government in January 2011, Greater Lincolnshire LEP was one of the first partnerships to be established. Key local businesses, such as Lincolnshire Cooperative, Siemens and Lindum Group are represented on the LEP Board along with public sector organisations to drive forward the economic priorities for Greater Lincolnshire. The Greater Lincolnshire LEP covers the areas of Lincolnshire, North and North East Lincolnshire and, as such, reflects a return to the historic boundary of Lincolnshire. This provides the opportunity for joint working and collaboration across an area which is relatively coherent in its geography, transport infrastructure and industrial heritage. North and North East Lincolnshire also fall within the area of the Humber LEP, which provides the opportunity for collaboration on shared priorities.

Economic Priorities

3.3 The economic priorities for Greater Lincolnshire are set out at a LEP level through the *Prosperity for Growth* prospectus and, at local authority level, by local economic development strategies and assessments. This section attempts to draw together some of the key economic themes from these documents for Greater Lincolnshire.

3.4 The GLLEP's *Prosperity for Growth*[5] prospectus sets out a number of priorities for Greater Lincolnshire. These include: the need to drive forward Enterprise and Innovation through business support and improved supply chain opportunities; to oversee the Employment and Skills agenda; and to address infrastructural and physical regeneration. The GLLEP identifies that there are a number of sectors which underpin and drive the economy of Greater Lincolnshire. These include:

- Agri food, with a strong presence of agriculture, horticulture and seafood based production and processing across Greater Lincolnshire. The prospectus emphasises the importance of this sector in ensuring national food security and in contributing to the low carbon agenda.
- Power engineering and environmental technologies, building on the engineering heritage of the area and maximising the potential of new renewable technologies across the land and off-shore area of Greater Lincolnshire.
- Ports and logistics, with the presence of the busiest port by tonnage at Grimsby and Immingham, and the freight sector supporting the agri food sector across Greater Lincolnshire.
- Services, in terms of those provided by the public sector, but specifically healthcare and defence, and the implications of public sector cuts on these activities.
- Visitor Economy, focused primarily on Lincoln and the east coast resorts, and identifying the need for investment in skills, and more coordinated marketing of the tourism offer.

[5] *Prosperity through Growth: A Prospectus for a Local Enterprise Partnership for Greater Lincolnshire*, 2010, Greater Lincolnshire Local Enterprise Partnership

3.5 The *Lincolnshire Local Economic Assessment*[6] highlights the importance of 'traditional' industries to the Lincolnshire economy. The quality of land in Lincolnshire is cited as one reason why agriculture and food processing remains, and is likely to remain, an important source of employment. Tourism is another activity which builds on Lincolnshire's natural advantages, with much activity focused on the coast. Like agriculture, however, the tourism industry is associated with seasonality and low skill/low wage employment.

3.6 The Economic Assessment sets out a number of challenges for the Lincolnshire economy, which include low GVA, relatively low skills and wages, difficult trading conditions for local businesses, and a growing but ageing population. Despite these challenges, the economy is set to grow by 2.3% per year up 2030, in line with the national average, and by 28,000 jobs. The strongest areas of employment growth are expected to be in tourism (29%), retail (23%), and construction (16%). Employment in the agri food sector is expected to decline by 8% by 2030. Despite these changes, it is argued that Lincolnshire will continue to have a similar industrial structure in the future, which will help it to remain resilient to economic crises.

3.7 The *North Lincolnshire Economic Assessment*[7] highlights the diversity of industry that is present in North Lincolnshire, with key activities including metals and engineering, logistics, chemicals and food and drink. The strong focus on manufacturing means that average productivity in North Lincolnshire is higher than in its neighbouring authorities, including Lincolnshire and North East Lincolnshire. The location of North Lincolnshire is cited as one of its key strengths, with proximity to the Humber estuary providing a comparative advantage in terms of oil refining, port activities, power generation, and renewable energy. Despite its strengths in manufacturing, employment in this sector has declined by almost a third in the last 10 years. The Economic Assessment highlights that any further reduction in steel industry employment would have a major impact on the local economy.

3.8 The South Humber gateway is identified as a key future driver of the North Lincolnshire economy. This is a 1,000 hectare site, and is currently a focus for oil and chemicals processing, and port activities at Grimsby and Immingham. Key areas of future growth include attracting wind turbine manufacturers to the site, along with their supply chains, developing the operations and maintenance (O&M) service for the offshore wind turbine sites, and biomass and biofuel activities. It is estimated that these activities could contribute 10,000 new jobs to the North Lincolnshire economy over the next 10 years.

3.9 The *New Horizons Regeneration Strategy*[8] for North East Lincolnshire sets out the dependence of the area on traditional industries such as manufacturing and food processing, with more a third of people employed in food manufacturing. Retail is increasingly important to the local economy and the public sector is key, with North East Lincolnshire District Council the biggest single employer in the area. Many of the employment opportunities in the manufacturing sector are low skilled/low wage, and earnings in the area are 20% below the national average. The Strategy sets out a number of objectives for some of its key industries, which include:

- Tourism, Culture, Sport and Leisure: which is focused around the resort of Cleethorpes, and objectives include improving the visitor experience by enhancing public spaces and consolidating development.
- Chemicals: on which at least 13,500 jobs in the area depend, and which benefits from access to port infrastructure, and strong local sector collaboration.

[6] *Lincolnshire: a Local Economic Assessment 2011*, Lincolnshire Research Observatory
[7] *North Lincolnshire Economic Assessment 2011*, produced by North Lincolnshire Council
[8] *New Horizons: A Regeneration Strategy for North East Lincolnshire 2006-2022*, North East Lincolnshire Council

Objectives include fostering further collaboration with other sectors, and exploring potential for alternative energy sources.

- Ports and Logistics: the ports at Grimsby and Immingham have grown and account for increasing market share over the last 10 years, partly because of the trend of distribution networks moving north. Objectives include making more land available to support port growth, improving road and rail infrastructure, and ensuring local people are able to benefit from the economic opportunities created by the ports.
- Food and Fish: Grimsby accommodates around 70% of the UK's fishing industry, and its estimated that almost half of people involved in fish processing in the UK are based in Grimsby. The sector has seen considerable consolidation over the last 20 years, including the loss of Bird's Eye. Objectives include improving infrastructure for fish processors, which has included the establishment of the Humber Seafood Institute, and building on the 'Food Town of Europe' brand.
- Local Authority and Public Sector: currently the largest employment sector in the area, objectives include improving efficiency and maximising opportunities for European funding.
- Environmental Technology: the area has the opportunity to engage in a number of activities including bio-ethanol production, biomass, and offshore wind. The strategy sets out an objective for the area to become a centre of expertise in environmental technologies.
- Other sectors include digital industries and social enterprise. These are cross-cutting sectors and objectives include growing the knowledge economy and facilitating greater use of ICT within local firms, as well as facilitating social enterprise development and sustainability.

4 OVERVIEW OF THE GREATER LINCOLNSHIRE ECONOMY

The Demography of Greater Lincolnshire

4.1 Comprising the local authorities of Lincolnshire, North and North East Lincolnshire, the Greater Lincolnshire LEP covers an area of more than 7,000 square kilometres. This is similar to the land areas of North Yorkshire and Cumbria. The area is sparsely populated, with an average of 142 people per sq km compared with 257 per sq km across Great Britain. The GLLEP area has just over 1 million residents and is characterised by a polycentric urban structure, with a small number of large towns, around 30 market towns and coastal resorts, and a fairly even distribution of villages across the area. The largest centres of population are Lincoln (89,700), Grimsby (87,574), Scunthorpe (70,000), Grantham (38,000), and Boston (35,000)[9].

4.2 Greater Lincolnshire has a fast growing population, having increased by 14% over the last twenty years, significantly more than the national average of 9%[10]. This growth has been driven primarily by migration from other areas of the UK, although birth rates and immigration have also increased. North Kesteven, West Lindsey and South Holland have experienced the highest rate of growth over the last ten years, at more than double the national average[11]. The local authority area of Lincolnshire has seen a net inflow of those aged 25 and over, with greatest numbers in the 45-64 age group. A concern to local service providers is the growing number of retirees in Greater Lincolnshire; more than a quarter of residents in East Lindsey are aged 65 and over.

Table 1: Population and Size of Greater Lincolnshire and Constituent Local Authorities

	Lincolnshire	North Lincolnshire	North East Lincolnshire	Greater Lincolnshire	Great Britain
Resident Population	703,000	161,300	157,000	1,021,300	
Size (square km)	6,103	876	203	7,182	
Population Density	115/ sq km	184/ sq km	773/ sq km	142/ sq km	257/ sq km

Location and Connectivity

4.3 Greater Lincolnshire is located centrally in England, to the east of the key conurbations of the East Midlands and South Yorkshire. Population centres in the north and west of Greater Lincolnshire, such as Grimsby, Scunthorpe, Lincoln and Grantham, are relatively well connected to other regions by motorway or dual carriageway road. Those in the south and east, such as Boston, Spalding, Skegness and Louth, are more remote from large population centres and served mainly by single carriageway roads.

4.4 The area has good international linkages via the ports of Grimsby and Immingham, and Humberside International Airport. Humberside Airport provides daily scheduled flights to Amsterdam, which enables connections worldwide. It has a growing cargo facility, with a chilled perishables hub. Robin Hood Airport, close to Scunthorpe and Gainsborough, operates charter and scheduled flights to a number of destinations across Europe. Immingham is the busiest UK port by tonnage, at 50m tonnes per year, and has almost daily freight ferry services to Rotterdam, Gothenburg, Esjberg and Cuxhaven. Killingholme (Humber Sea Terminal) has a daily service to the Hook of Holland. The ports of Boston and Sutton Bridge are smaller ports focused around very specific cargo, such as timber and grain.

[9] Sources of Population Data: NOMIS, Census 2001, North East Lincolnshire Council, North Lincolnshire District Council, South Kesteven District Council
[10] NOMIS, Greater Lincolnshire LEP Profile
[11] *Population Trends in Lincolnshire 2010*, Lincolnshire Research Observatory

Table 2: Annual Freight Tonnage by Port

	Tonnes
Immingham	50 million
Killingholme	8.6 million
Grimsby	1.5 million
Boston	0.7 million
Sutton Bridge	0.5 million

Source: ABP and DfT Maritime Statistics, 2008

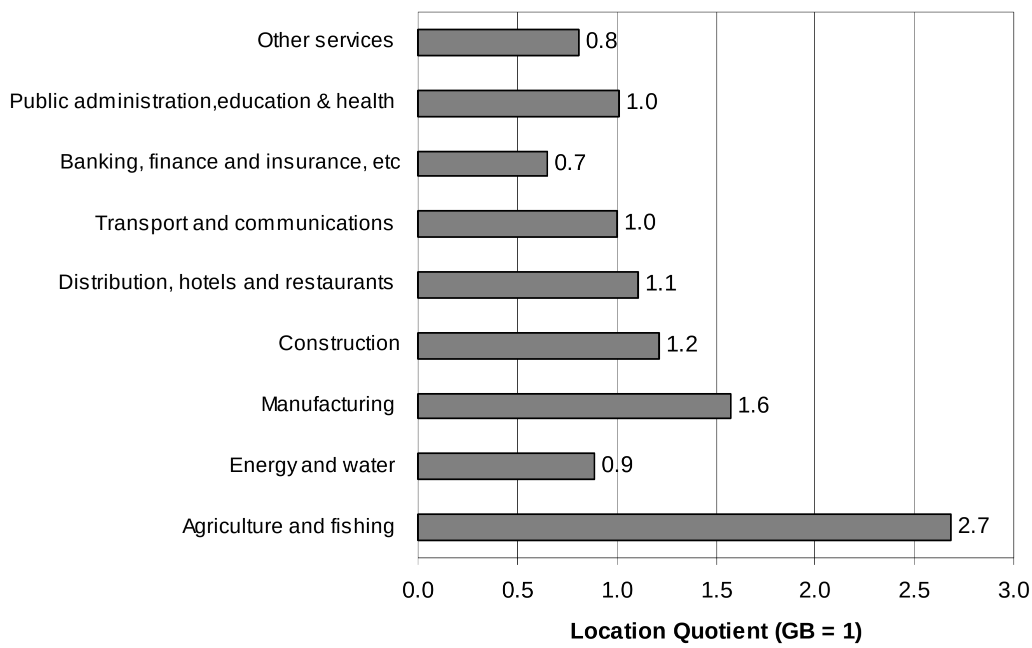
4.5 The area has just one mainline railway station, Grantham, with a frequent and direct service to London. There are a number of other mainline stations within close proximity to Greater Lincolnshire (including Peterborough, Newark, Retford and Doncaster).

The Industrial Composition of Greater Lincolnshire

4.6 Greater Lincolnshire has a relatively diverse economy, with strong representation of 'traditional' sectors. As the location quotients presented in graph 1 suggest, Greater Lincolnshire has a disproportionately high representation of employment in agriculture, at 2.7 times the English average, and in manufacturing, at 1.6. Construction is also an important sector for Greater Lincolnshire. Although employment in this activity has declined since the 2008/9 recession, there is no reason to suppose it will have declined by more than the national average, so the location quotient is unlikely to have changed significantly. By comparison, there is an under-representation of key service sector industries, such as banking, finance, and insurance, at 0.7. The proportion of people employed in the public sector, transport and communications, and distribution, hotels and restaurants, is broadly similar to elsewhere in the country.

4.7 The central feature of the graph 1 below is over-representation in manufacturing and in agriculture. The under-representation of business services is something that is typical of provincial England given the heavy concentration of these industries in London. The analysis presented later in this report suggests that agriculture is still more important in Greater Lincolnshire than the statistics suggest, given the strong link with manufacturing, logistics, and retailing in the area.

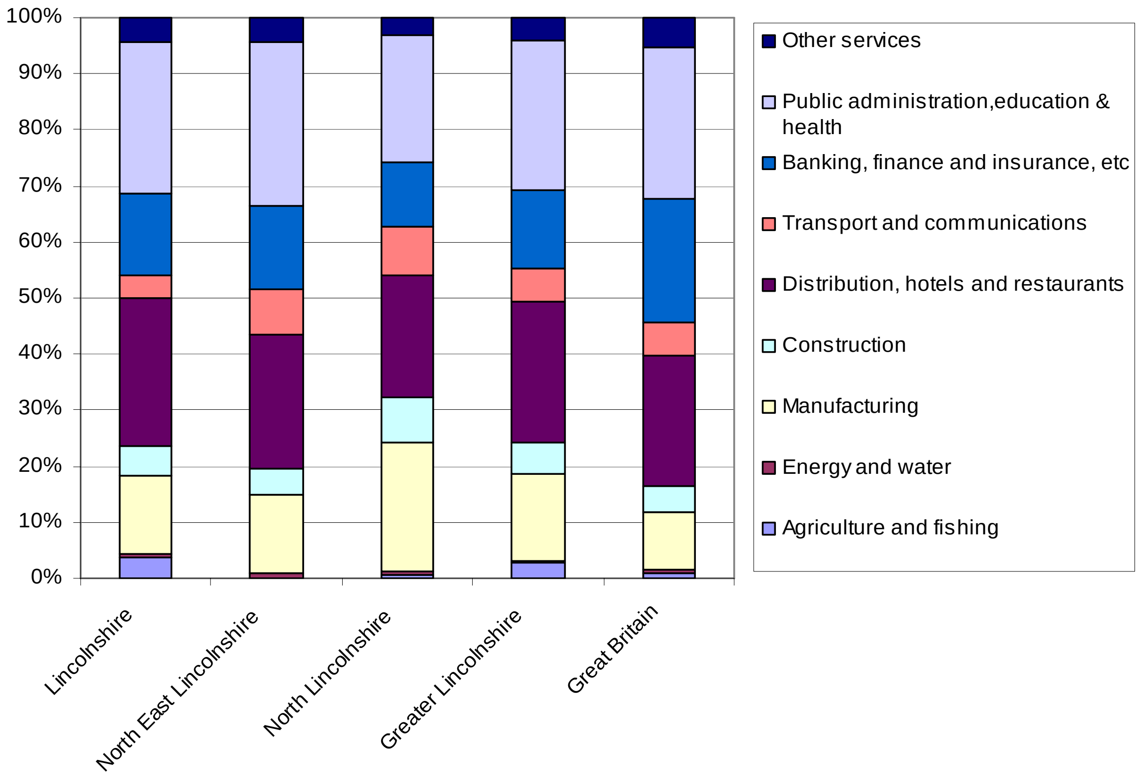
Graph 1: Location Quotients for Employment by Broad Industry Group in Greater Lincolnshire



Source: Annual Business Inquiry, 2008, Office for National Statistics

4.8 There are broad differences in the industrial composition of three upper tier authority areas that make up Greater Lincolnshire. As Graph 2 shows, agriculture is a relatively more important activity in Lincolnshire, where it accounts for at least 4% of employment. Manufacturing accounts for 14% of employment across Lincolnshire and North East Lincolnshire, but plays a more significant role in the North Lincolnshire economy where it accounts for 23% of employment. Transport and logistics are important activities for the North and North East Lincolnshire economies, where they account for 8% of employment, compared with 4% in Lincolnshire. North Lincolnshire shows less reliance on public sector activities, at 22% of employment, compared with North East Lincolnshire (28%) and Lincolnshire (27%).

Graph 2: Employment by Industry for Upper Tier Authorities in Greater Lincolnshire



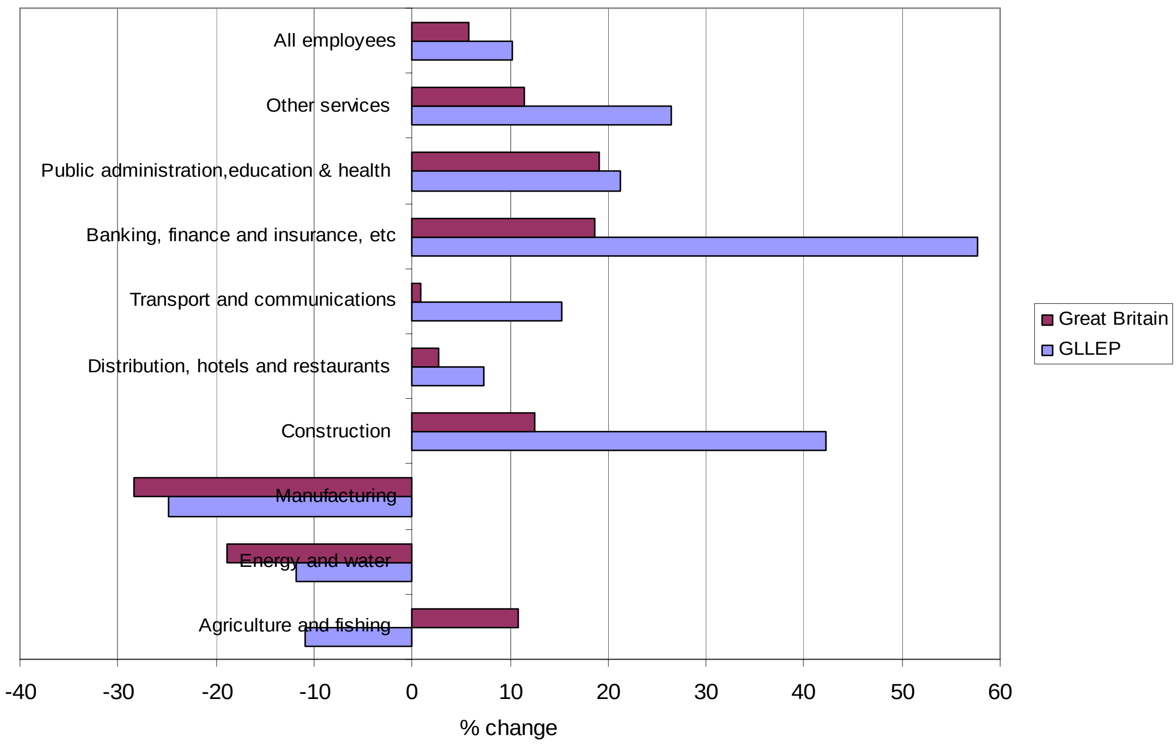
Source: Annual Business Inquiry, 2008, Office for National Statistics

4.9 As in the rest of Great Britain, Greater Lincolnshire has seen a shift away from employment in production and manufacturing activities towards service orientated activities. As Graph 3 shows, Greater Lincolnshire has seen an 11% decline in agricultural employment since 2000. Employment in manufacturing has fallen by 25%, slightly lower than the national average of 28%. The number of people employed in energy and water, a relatively small sector for Greater Lincolnshire, has seen a fall of 12%, compared with a national decline of 25%.

4.10 Since 2000, Greater Lincolnshire has seen significant growth in employment in the banking, finance and insurance sector, which has grown by 58% compared with 19% nationally. This represents an increase of more than 20,000 jobs in a sector that has traditionally been under-represented in Greater Lincolnshire. Further analysis of this sector shows that the strongest areas of growth are labour recruitment and personnel (8,500), business and management consultancy services (2,000 jobs), packaging activities (1,400), and architectural and engineering activities and related consultancy (963). This reflects the increasing outsourcing of specific activities across many sectors, such as provision of personnel, and specialist expertise. Growth in construction over this period, at 42% or almost 7,000 jobs, has also outpaced the national growth rate of 13%. Employment in transport and communications, which has remained static nationally, has increased by 15% in Greater Lincolnshire. Although there has been a 21% increase in public sector employment, this has been in line with the national trend.

4.11 It is important to emphasise that these trends have altered since the 2008/09 recession, which has affected employment in banking and finance and construction across the UK.

Graph 3: Percentage change in employment, 2000 to 2008



Source: Annual Business Inquiry, 2008, Office for National Statistics

Businesses in Greater Lincolnshire

4.12 Greater Lincolnshire has almost 40,000 businesses, of which the vast majority are small and medium sized enterprises (SME's). In line with the national picture, 85% of Greater Lincolnshire businesses are micro businesses, which employ fewer than 10 people. North and North East Lincolnshire have a slightly higher proportion of businesses employing more than 50 people, at around 4% of businesses compared with 3% in Lincolnshire.

Table 3: Business Characteristics in Greater Lincolnshire

	Lincolnshire	North Lincolnshire	North East Lincolnshire	Greater Lincolnshire	Great Britain
Number of firms	27,565	5,967	5,521	39,053	
Number of employees	228,903	65,791	65,619	356,654	
Average firm size	9.8	11.6	12.3	10.4	10.9

Source: Annual Business Inquiry, 2008, Office for National Statistics

4.13 As the Annual Business Inquiry only counts employee jobs, it is also important to consider the rate of self-employment. This is particularly high in Lincolnshire, at 10.5% of the working age population. Self-employment rates in North and North East

Lincolnshire are lower than the national average. The reasons for these regional differences are not clear, but could be related to the presence of larger and long established industries in the north of the area, which could create a stronger culture of employment rather than self-employment. Rates of self-employment are also higher in agricultural and construction-related activities, which are more strongly represented in Lincolnshire.

Table 4: Self Employment in Greater Lincolnshire

	Lincolnshire	North Lincolnshire	North East Lincolnshire	Greater Lincolnshire	Great Britain
Number self employed	51,000	6,600	7,700	65,400	
Self employed as % of working age	10.5%	7.3%	6.5%	9.4%	9.1%

Source: ONS Annual Population Survey, 2011

The Greater Lincolnshire Labour Market

4.14 More than half a million people in Greater Lincolnshire are economically active; that is, in work, studying, or actively looking for work. The economic activity rate, as a proportion of the working age population, is around 79% which is greater than the national average of 76%.

4.15 The jobs density, or the number of jobs per working person resident in the area, is slightly below the national average. In terms of neighbouring areas, Greater Lincolnshire performs better than Humber (0.70) and Derbyshire/Nottinghamshire (0.71), but more poorly than Northamptonshire (0.78) and Peterborough/Cambridgeshire (0.81). This suggests that Greater Lincolnshire may attract in-commuting workers from areas to the north and west of the area, but is likely to lose out-commuting workers to areas with greater jobs density to the south of the area.

Table 5: Economic Activity and Jobs in Greater Lincolnshire

	Lincolnshire	North Lincolnshire	North East Lincolnshire	Greater Lincolnshire	Great Britain
Economically Active Population	353,200	79,700	77,700	510,600	
Economic Activity Rate	79.2%	77%	78.5%	78.8%	76.2%
Jobs Density	0.74	0.74	0.75	0.74	0.78

Source: NOMIS Area Profiles

Productivity in Greater Lincolnshire

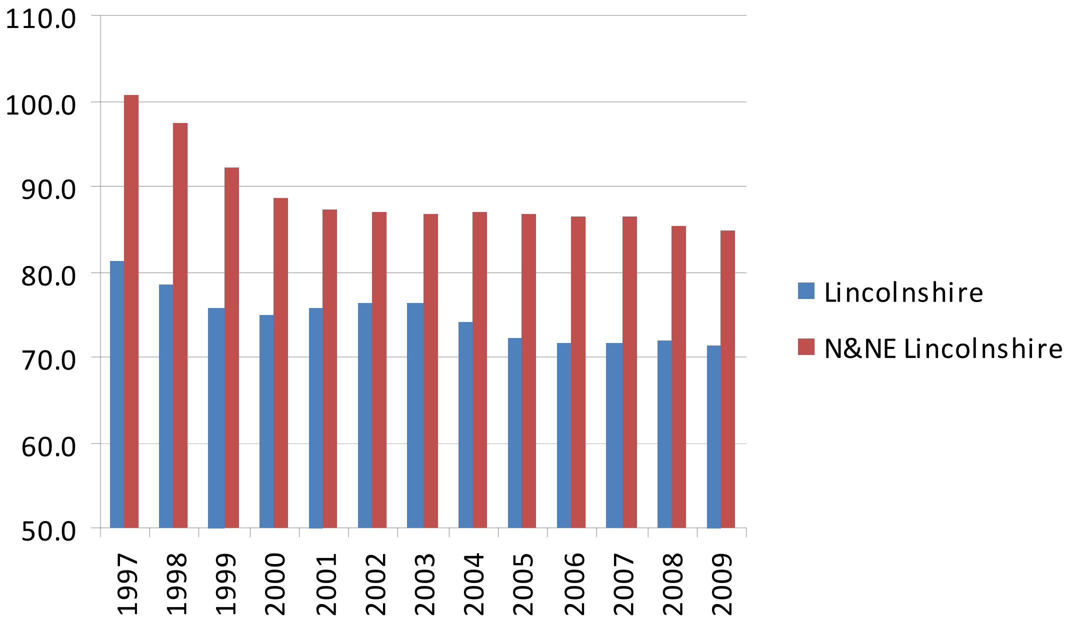
4.16 In 2009, Greater Lincolnshire contributed £15,496 million to the UK economy, equivalent to 1.5% of total GVA for the UK. This was similar to the total GVA of West Sussex (£15,408m), Oxfordshire (£14,344 million), Cheshire (£14,056m), North Yorkshire (£13,566m) and Northamptonshire (£13,477m)[12].

4.17 Despite high rates of economic activity in Greater Lincolnshire, productivity per head is significantly lower than the national average. Lincolnshire has historically demonstrated lower rates of economic productivity compared with the rest of the East Midlands and UK overall. GVA per head is currently 72% of the national average in

[12] Source: GVA for NUTS3 Areas 2009, Office for National Statistics

Lincolnshire and, in England, only Cornwall and Tees Valley/Durham perform more poorly. GVA per head in North and North East Lincolnshire is 85% of the national average, but this has declined since 1997 when productivity per head was greater than the UK average.

Graph 4: GVA per Head for Lincolnshire and North East Lincolnshire (UK=100)



Source: GVA for NUTS3 Areas 2009, Office for National Statistics

4.18 This lower rate of productivity is reflected in the low wages of employees working in Greater Lincolnshire. In Lincolnshire, gross weekly pay is 15% less than the national average. Wages in North and North East Lincolnshire are only slightly lower than those nationally.

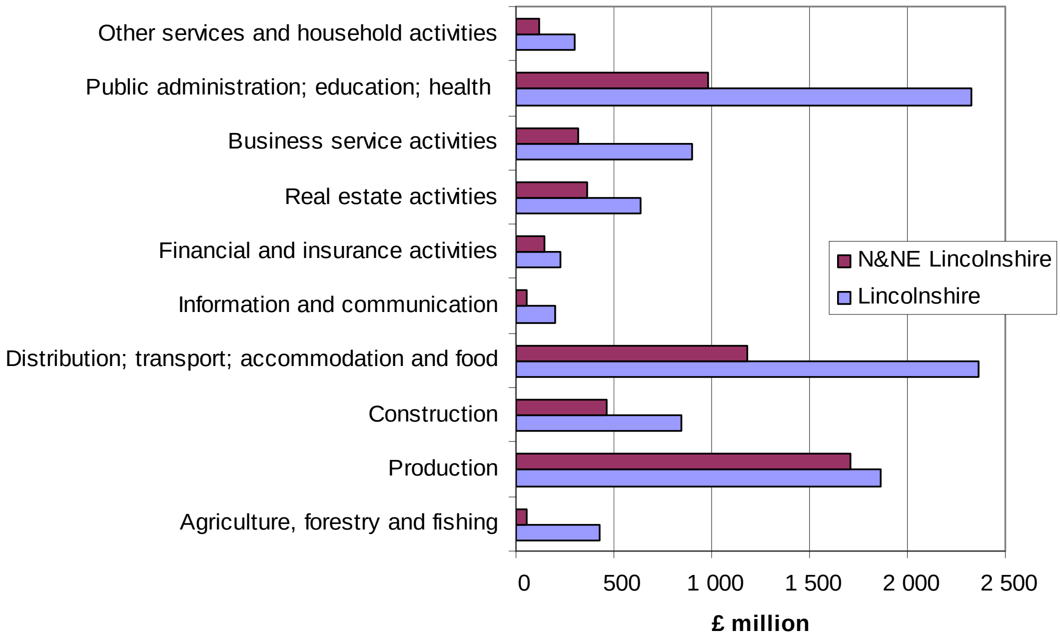
Table 6: GVA and Average Wages in Greater Lincolnshire

	Lincolnshire	North Lincolnshire	North East Lincolnshire	Greater Lincolnshire	Great Britain
Gross Weekly Pay	£425	£496	£482		£503
GVA	£10,101 m	£5,395 m		£15,496 m	
GVA/ head	£14,473	£16,958			
GVA/ head indexed against UK	72.4	84.8			

Source: GVA for NUTS3 Areas, Office for National Statistics and NOMIS Area Profiles

4.19 The history of low productivity in Lincolnshire has been attributed to a range of factors. These include the rural and sparsely populated nature of the area, a comparative low skilled workforce, and poor transport and ICT connectivity. A key factor is thought to be the dominance of traditional industries such as agriculture, horticulture, and basic – rather than advanced – manufacturing. Graph 5 shows that, despite the relatively high number of workers engaged in agriculture in Lincolnshire, the overall value created by the industry is low. The overall GVA for production is broadly similar for Lincolnshire and North/North East Lincolnshire, despite the smaller scale of the industry and labour market in the north of the area. The strong contribution of the public sector and service sector activities such as retail and distribution to GVA in Lincolnshire in particular, is evident.

Graph 5: GVA for Broad Industry Groups at Current Prices (2009)



Source: GVA for NUTS3 Areas, Office for National Statistics

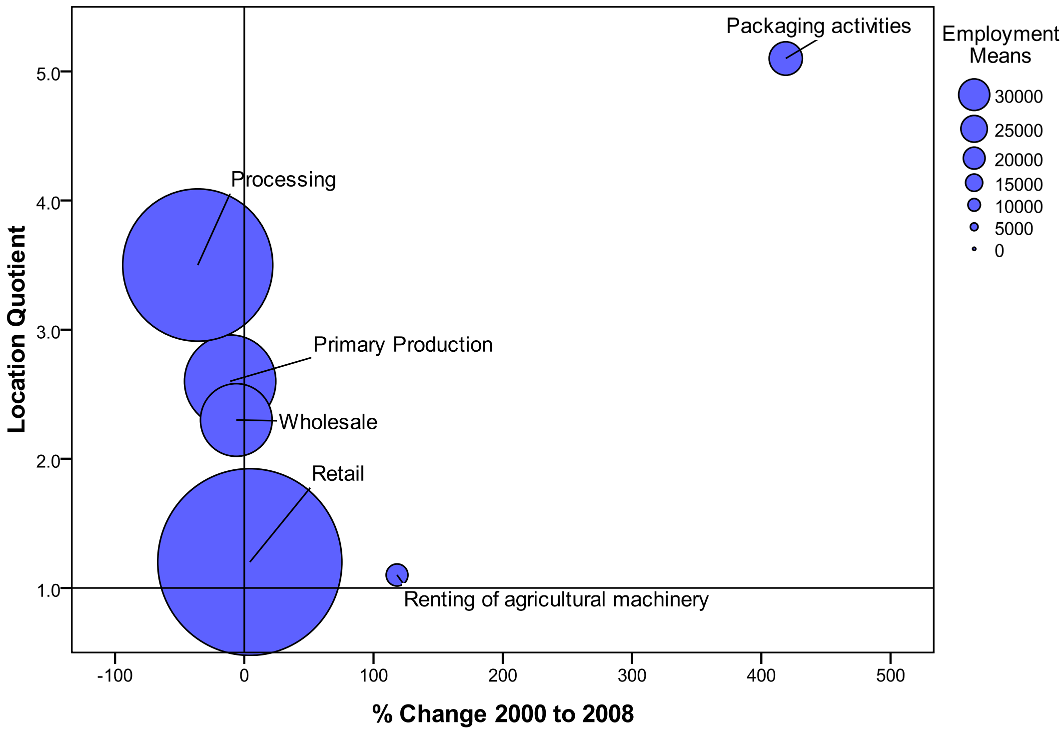
5. UNDERSTANDING GREATER LINCOLNSHIRE'S KEY SECTORS

5.1 This section of the report concentrates on the key sectors identified by the Greater Lincolnshire LEP[13]. It supplements the higher level analysis of the Greater Lincolnshire sectoral profile set out in section 4. The table in appendix 2 to this report summarises the information collated to produce the analysis.

Agri-Food

5.2 The Agri-food sector has a number of components: primary production, food processing, wholesale, and retail, as well as ancillary activities around agricultural engineering and packaging. Graph 7 sets out the scale of employment for each of these activities, together with the percentage change between 2000 and 2008, and the location quotient (LQ)[14].

Graph 7: The Agri Food Sector in Greater Lincolnshire



Source: Annual Business Inquiry, 2008, Office for National Statistics

5.3 The agri food sector is a major employer in Greater Lincolnshire, accounting for 68,000 or 17% of jobs in the area compared with 9.5% in Great Britain. Greater Lincolnshire has a heavier than average distribution, using location quotients, in the areas of primary production, food processing, wholesale and packaging activities. Employment in the retail sector, while the largest sub-sector of agri food activity, is broadly similar to the national average, with an LQ of 1.2. The following provides a more detailed analysis of each of these sub-sectors:

5.4 **Primary production*:*** employs around 12,000 people in Greater Lincolnshire, and is a locally important activity with an LQ of 2.6. Greater Lincolnshire has higher than average employment in the following: farm jobs, farming of poultry, other farming of animals, growing of crops combined with farming animals, agricultural services

[13] The detailed standard industrial classifications for each sectoral grouping are set out at Appendix 4.

activities, animal husbandry service activities, forestry and logging related service activities.

5.5 Between 2000 and 2008, employment within this area has remained relatively stable with a very modest overall decline of just over 1,000 jobs.

5.6 These activities are relatively more important to Lincolnshire than to North and North East Lincolnshire, with the highest distribution of activities in Boston, East and West Lindsey, North Kesteven and South Holland.

5.7 **Food processing:** employs just under 20,000 people in Greater Lincolnshire and, with an LQ of 3.5, is an important local industry. Greater Lincolnshire has higher than average employment in a wide range of food processing activities, including:

- production and processing of poultry meat,
- production of meat and poultry meat processing,
- processing and preserving of fish and fish products,
- processing and preserving of potatoes,
- processing and preserving of fruit and vegetables,
- manufacturing of refined oils and fats,
- manufacturing of ice cream,
- manufacturing of prepared pet foods,
- manufacture of condiment and seasoning,
- manufacture of other food products,
- manufacture of malt.

5.8 South Holland has the highest concentration of food processing activities, with an LQ of 16 for fruit and vegetable processing. Fish processing activity is highest in North East Lincolnshire, with an LQ of 13. North Kesteven has a high concentration of poultry production, with an LQ of 13. However, there is a high level of food processing activity – from fresh produce to ready meals - across the Greater Lincolnshire area.

5.9 Overall employment in this sector has declined significantly (by 9,782 or more than a third) between 2000 and 2008. This has been very pronounced in North East Lincolnshire (6,923) with not insubstantial declines in North Kesteven (813) and South Holland (1,880). Our key informant interviews have suggested a number of specific reasons for this in North East Lincolnshire, which are discussed in the local authority section below.

5.10 One insight in relation to the contrast between the northern sector with its locus in North East Lincolnshire and the southern sector with its locus in South Holland, is that in South Holland much of the processing is based on locally grown produce – creating a comparative advantage for processors, and an ongoing link between producers and processors. In North East Lincolnshire, the truly international nature of the seafood industry means that that the link between fish importers and processors is based mainly on the tradition of the fishing industry rather than on the comparative advantage of Grimsby as a location.

5.11 **Wholesale:** employs around 8,000 people and, with an LQ of 3, is relatively important to the Lincolnshire economy. Greater Lincolnshire has higher than average employment in the wholesale of grains and seeds, flowers and plants, fruit and vegetables, other food including fish, crustaceans and molluscs, and non specialised wholesale of food.

5.12 The localities with the highest distribution of these activities are: Boston, South Holland and North East Lincolnshire. Boston and South Holland forms the southern and North East Lincolnshire the northern hub for the wholesale of the agri-food in the area.

Overall there has been a decline in employment in this sector, mostly focused in South Holland (a decline of 23%), it has remained largely static in Boston and North East Lincolnshire.

5.13 **Retail:** employing 25,000 people across the area, but in a similar proportion as the rest of Great Britain. Activities include retail sale in non specialised food stores, retail sale of fruit and vegetables, retail sale of meat and meat products, retail sale of fish crustaceans and molluscs, retail sale of bread, cakes, flour, other retail sale of food in specialised stores, canteens.

5.14 The local authorities with the highest distribution of these activities are: North East Lincolnshire, East Lindsey and North Lincolnshire. Employment has remained very stable in this sector.

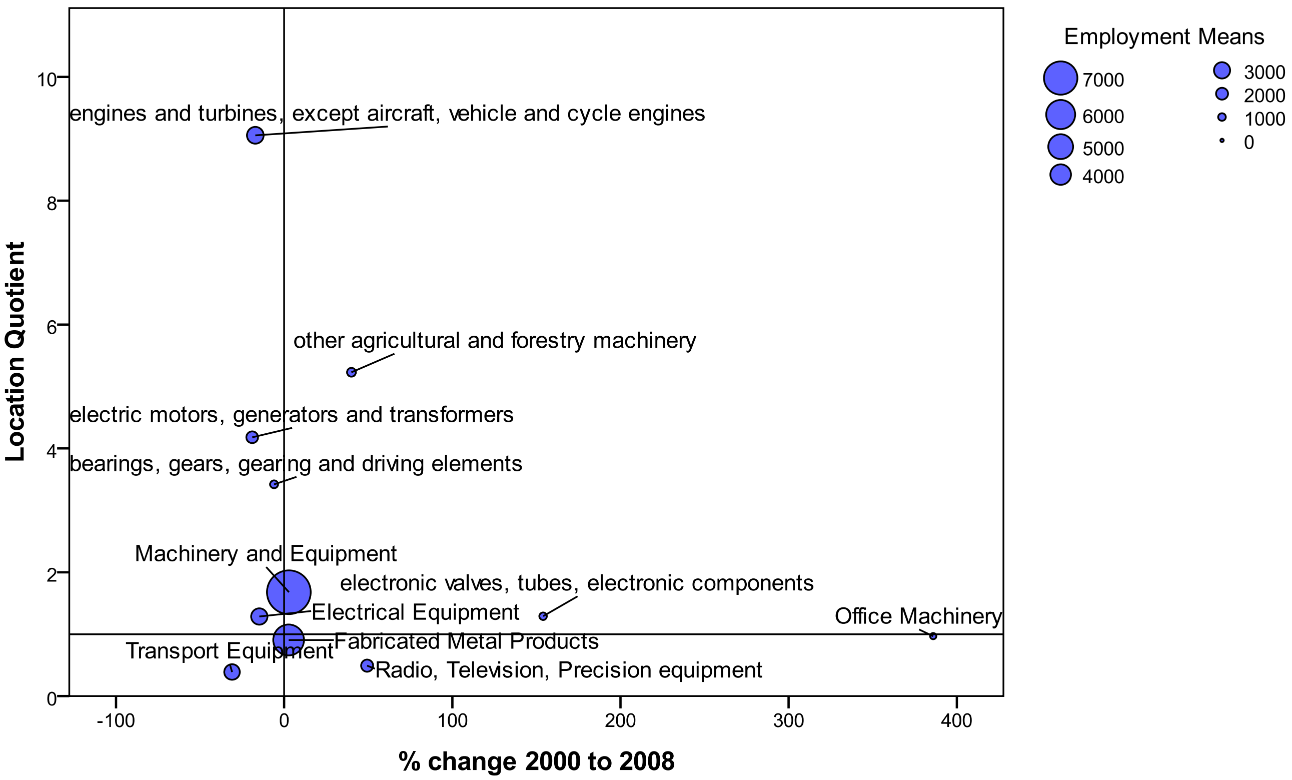
5.15 **Ancillary Areas:** which includes renting of agricultural equipment and packaging activities. Packaging activities employ just under 2,000 people. The high location quotient (5) reflects the concentration of this activity locally and its increasing significance to the food processing sector.

5.16 The local authorities with the highest distribution of these activities are North Kesteven and South Holland. There has been a significant growth in percentage terms in these two sectors, although these are relatively small in the context of all employees in Greater Lincolnshire. This has been mainly driven by the creation of 1,095 jobs in packaging in South Holland.

Engineering

5.17 The Engineering and electronics sector employs more than 16,000 people across Greater Lincolnshire, equivalent to 4% of all jobs. This is slightly lower than the national average of 4.4%. However, there are localised pockets of concentrated activity in areas such as Lincoln, Grantham, and North Lincolnshire.

Graph 8: The Engineering Sector in Greater Lincolnshire



Source: Annual Business Inquiry, 2008, Office for National Statistics

5.18 There are a number of specialised engineering and electronics activities taking place in Greater Lincolnshire. Activities with a high location quotient include manufacture of:

5.19 **Fabricated metal products:** with more than 1,000 people engaged in the manufacture of metal structures, an activity which is concentrated in North Lincolnshire, and over 400 engaged in manufacturing tanks and containers, which has a focus in North East Lincolnshire and West Lindsey.

5.20 **General mechanical engineering:** this employs almost 1,500 people across the LEP area and, with an LQ of 1.1, the representation of this activity locally is similar to the country overall. However, there is a high concentration of employment in North and North East Lincolnshire, and in South Kesteven.

5.21 **Machinery and equipment:** The largest area of activity is the manufacture of engines and turbines, which employs more than 2,000 people and, with an LQ of 9, is the most locally distinctive engineering activity. This activity is focussed in Lincoln, around the Siemens Industrial Turbo-Machinery plant.

5.22 A further key local area of activity is the manufacture of agricultural machinery, which employs more than 700 people across the area. This is concentrated in East Lindsey and North Kesteven, with the presence of Howsham Sprayers and Tong Peel. The manufacture of bearings and gears employs more than 500 people locally, with the majority of jobs in Lincoln and East Lindsey. Manufacture of ‘other special purpose equipment’ is also important, employing almost 900 people across the area, with two thirds of these based in North East Lincolnshire.

5.23 **Electrical machinery:** The manufacture of electric motors, generators and transformers employs almost 1,200 people across Greater Lincolnshire, of which the vast majority are based around Grantham and Stamford.

5.24 **Electronic components:** the manufacture of electronic valves, tubes and other electronic components accounts for 480 jobs across the LEP area. Although the LQ of 1.3 indicates that employment in this activity is similar to elsewhere, more than 95% of these jobs are based in Lincoln, focused around firms such as Dynex Semi-Conductor which have evolved from the GEC legacy.

5.25 **Motor vehicles and transport equipment:** although not very high as a location quotient, there are just over 500 people engaged three areas of motor vehicle activity within South Kesteven: manufacture of motor vehicles, manufacture of coachwork for motor vehicles, and manufacture of parts and accessories for motor vehicles. Greater Lincolnshire has a very high LQ (7) for the manufacture of bicycles, but this reflects just 9 jobs in this activity based in North Lincolnshire.

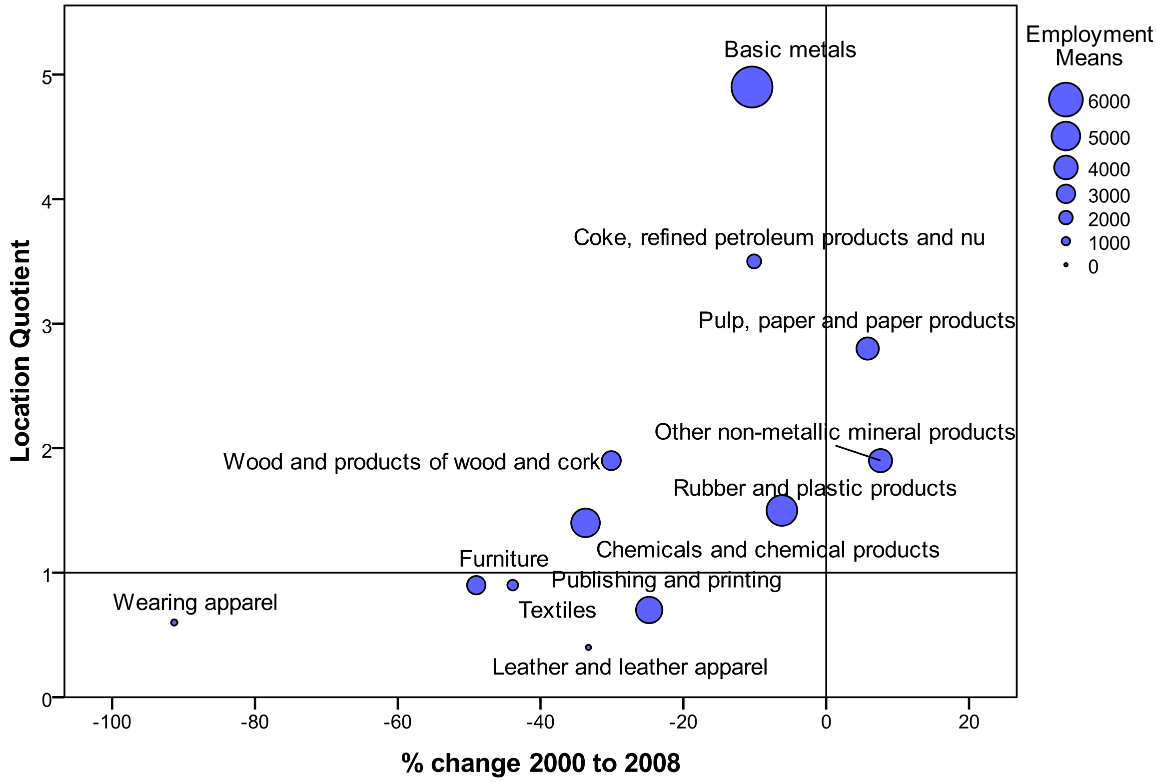
5.26 Engineering is a diffuse sectoral activity across the LEP area with locationally-specific concentrations linked to long term historic trends, such as the manufacture of gas turbines in Lincoln. To put the size of the sector into perspective, there are fewer people employed in the engineering and electronic sector (16,000) in Greater Lincolnshire than in food processing (20,000). However, due to the very specialist nature of some of the engineering activities in Lincolnshire, the average productivity and wages are likely to exceed those for the food processing industries.

5.27 There has been a very slight decline in the number of people employed in this sector, by 1.4% between 2000 and 2008. This is in contrast to the pattern across Great Britain, where there has been a decline of 26% over the same period. This suggests that the local engineering sector is more resilient than that nationally, perhaps because of its specialist nature. However since 2008, Siemens, a landmark employer in this sector has reduced its workforce.

Manufacturing

5.28 For the purpose of this analysis, manufacturing is defined as any manufacturing activity that does not fall within food production or engineering. This is a key area of activity for Greater Lincolnshire, employing around 27,000 or 7% of jobs across the area compared with 4% across Great Britain. Greater Lincolnshire has a significantly high concentration of jobs in manufacturing basic metals, coke and petroleum, and pulp and paper products. It also has concentrations of manufacturing rubber and plastic, wood and wood products, chemicals, and non-metallic mineral products.

Graph 11: The Manufacturing Sector in Greater Lincolnshire



Source: Annual Business Inquiry, 2008, Office for National Statistics

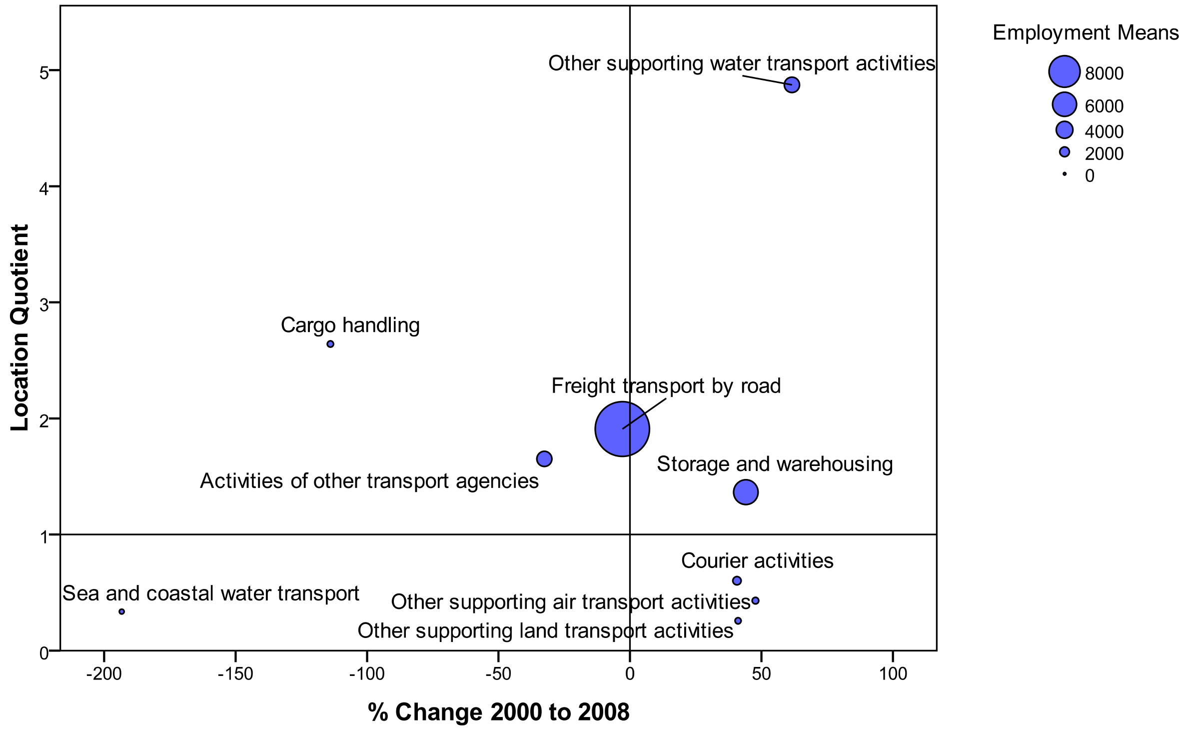
5.29 The largest area of activity is basic metal manufacture, accounting for 5,000 jobs, and focused around the Tata Steel plant in North Lincolnshire. Rubber and plastics account for almost 4,000 jobs, with a concentration around Louth in East Lindsey. Wood products account for around 2,000 jobs, with a focus around Finn Forest, a major wood importing and processing business in Boston. Chemicals and petroleum, which together account for almost 5,000 jobs are both focused around the North and North East Lincolnshire border. A niche area is the manufacture of medical, surgical and orthopaedic equipment, and the related retail of this equipment. Although relatively small in employment terms (around 200), these activities are developing in response to demand from Lincolnshire's ageing population. The health and care sector is analysed in more detail in the 'Opportunities for Lincolnshire's Supply Chains' report.

5.30 Following the trend nationally, the number of people employed in this sector has declined over the last 10 years, by a quarter in Greater Lincolnshire and a third across Great Britain. There are likely to have been further losses since this period, for example, further job losses have since been announced by Tata Steel.

Logistics

5.31 Logistics activity accounts for just almost 16,000 or 3.9% of jobs across Greater Lincolnshire. This is higher than the average for Great Britain, at 2.4%. As graph 9 shows, the area has higher than national average employment in activities such as freight transport by road, cargo handling, storage and warehousing, other supporting water transport activities, and activities of other transport agencies.

Graph 9: The Logistics Sector in Greater Lincolnshire



Source: Annual Business Inquiry, 2008, Office for National Statistics

5.32 Freight transport by road is the largest logistics activity, accounting for almost 8,000 jobs, and with a geographical focus in South Holland and North East Lincolnshire. There is a clear link between logistics and agri food production in these areas. The activity with the highest location quotient is supporting water transport activities, which is concentrated around Grimsby and Immingham. Storage and warehousing is a fast growing activity, increasing by 79% between 2000 and 2008, and concentrated in North Lincolnshire.

5.33 The distinctive features of the logistics sector in Greater Lincolnshire are its port infrastructure, with Immingham a truly international port and part of a network of ports managed by Associated British Ports (including Grimsby, Hull and Goole). There are two far smaller “niche” ports in the south of Lincolnshire in Boston and Sutton Bridge. These have a specific focus on cargo such as timber and grain. Humberside Airport in North Lincolnshire, which has airfreight related to the local seafood industry, is the other distinctive feature of the Greater Lincolnshire LEP logistics sector.

5.34 The number of employees in this sector has risen modestly, with an increase of 12% between 2000 and 2008. The area experiencing the greatest rate of growth in this activity is South Holland, where 485 jobs were created during this period.

Renewable and Environmental Technologies

5.35 The renewable and environmental technologies sector is difficult to measure. Many of the activities taking place within this sector are either relatively new (such as renewable energy generation) or form part of other activities (such as agriculture, engineering, transport, or construction). For this reason, measuring the sector using Standard Industrial Classifications produces an incomplete picture of the overall sector.

5.36 A number of existing studies of the renewables sector have been undertaken which cover all or part of Greater Lincolnshire. These include the *Low Carbon Energy in the East Midlands* report by Land Use Consultants. This shows that, of all the counties in the East Midlands, Lincolnshire has the highest potential for low carbon electricity production, at almost 12,000 MW which is more than the double the potential of any other county. This is mainly based on the potential of onshore wind energy.

5.37 Another study is the *Renewable and Low Energy Carbon Study* undertaken by AECOM for Central Lincolnshire Joint Strategic Planning Committee. For renewable energy generation, this shows that the current leading geographical focus of activity is North and North East Lincolnshire with energy generation from landfill gas, waste, and wind. Another key area is East Lindsey, Boston, and South Holland, which is focused on energy generation from wind and biomass. Lincoln, West Lindsey, North Kesteven and South Kesteven make the lowest contributions to renewable energy generation, with a predominant focus on landfill gas and biomass. The report states that these four districts are in the bottom half of Lincolnshire and surrounding districts for generation of renewable energy. The report highlights a number of areas of strong potential for Lincolnshire. Areas where this exceeds the potential for the East Midlands as a whole include:

- Large scale on-shore wind
- Waste wood
- Energy crops
- Production of straw
- Poultry waste, particularly in North Kesteven and West Lindsey
- Anaerobic digestion, using food and animal waste

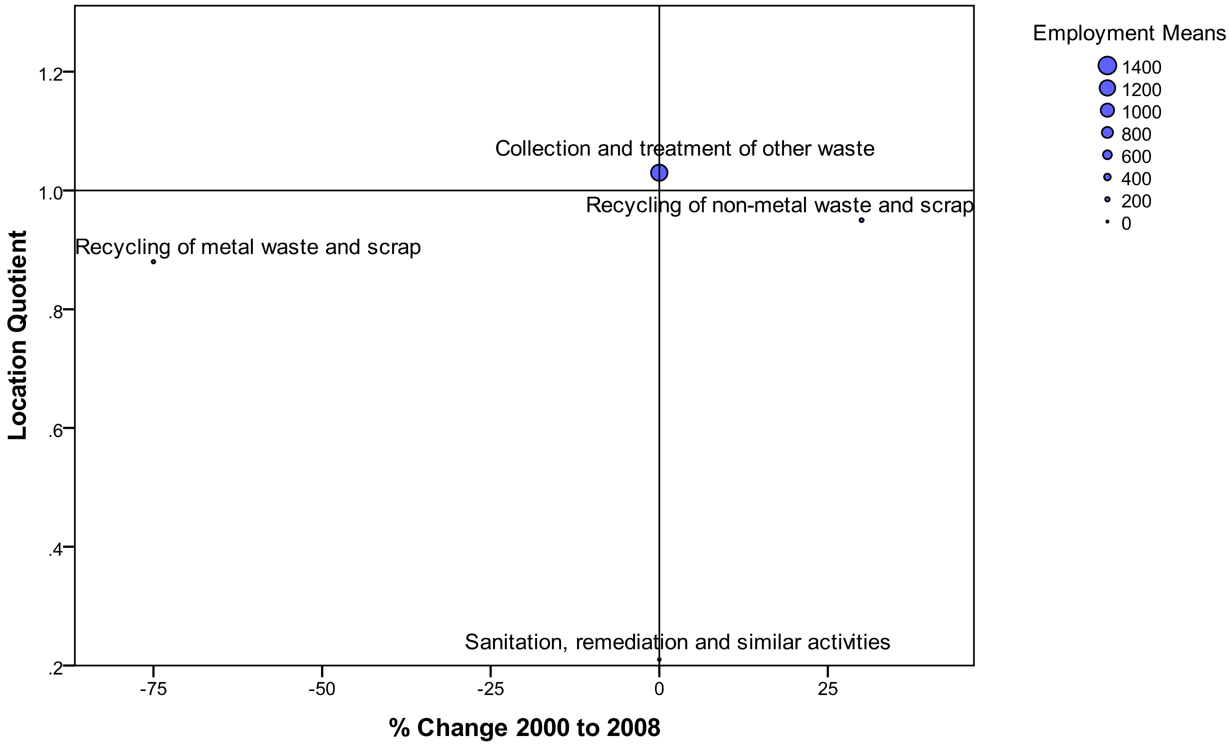
5.38 Greater Lincolnshire, along with the Humber LEP, is in a strong position to benefit from the installation of wind turbines in the North Sea. The Lincs Offshore Wind Farm, one of several sites proposed in the Greater Wash area, is currently under construction. The site is being developed by Centrica and Siemens, both of which are currently based in Grimsby Fish Docks. When completed the site will generate 270 MW. There are proposals for further sites in the area as part of round 2 and, longer term, round 3 which opens up a series of larger sites further into the North Sea. Long term business opportunities exist in the manufacture, and operations and maintenance of these offshore wind sites.

5.39 Interviews with representatives of North and North East Lincolnshire Councils suggest that there is a broad corridor of low carbon energy activity taking place between the ports at Grimsby/Immingham and the coal-fired power stations at Drax and Ferrybridge. This is based around use of biomass which is mixed with coal to reduce the power stations' carbon emissions and use of fossil fuels. Both the coal and biomass are imported at Grimsby/Immingham and transported by rail to the Yorkshire power stations.

5.40 Existing research conducted by the Renewables and Environmental Technologies task group for the Greater Lincolnshire LEP suggests that there are at least 150 companies engaged in renewable energy and environmental activities across the area. These comprise a wide range of activities, from installers of solar PV panels, to plastics recycling and manufacturers of electric car batteries. The *'Opportunities for Greater Lincolnshire Supply Chains'* study, which sits alongside this analysis, explores the activities and supply chains of these companies in more detail.

5.41 Graph 10 presents the employment in the environmental sector as measured by SIC classification. The four activities shown here employ 1,600 people across the LEP area, accounting for just 0.4% of jobs. As discussed earlier, this data reflects a very small proportion of the overall activity that is currently taking place in the renewable and environmental technologies in Greater Lincolnshire. Collection and treatment of other waste, and sanitation activity are shown in the graph with zero growth. This is because data on these categories was not collected in 2000 and so it is not possible provide a rate of change.

Graph 10: The Renewable and Environmental Technology Sector in Greater Lincolnshire



Source: Annual Business Inquiry, 2008, Office for National Statistics

5.42 Across Greater Lincolnshire, the rate of employment in these activities is similar to the average for Great Britain, with the exception of sanitation, remediation and similar activities which has an LQ of just 0.2. Lincoln, South Holland, and North East Lincolnshire have the highest concentrations of activity in recycling of metal waste (113 jobs across Greater Lincolnshire). Boston, North Kesteven, East Lindsey, and West Lindsey have the highest concentrations in recycling of non-metallic waste, although the overall numbers engaged a very small (166 jobs). Collection and treatment of other waste accounts for 1,269 jobs, with activity focused in East Lindsey, North Kesteven, West Lindsey and North Lincolnshire.

6. LOCAL AUTHORITY AREA CHARACTERISTICS

6.1 Economic development is not conditioned by local authority boundaries. It is important therefore to think about the distribution of sectoral activity not just at the individual local authority level but also in terms of its distribution across combined local authority areas where that manifests itself. Notwithstanding this comment most data is still provided at district council level and commentators find it easy to relate to local authorities conceptually. With the caveat about the importance of functioning economic geographies we have therefore organised our description of the sub-geographies of the LEP area around local authorities.

6.2 **Boston:** has significant employment in agri-food sector with particular strengths around primary production, food processing and wholesale. It is strategically important in terms of logistics as the host to the largest port in the south of the LEP area. It also has a key role in relation to its status as a major service centre in terms of health and social care with Pilgrim Hospital located within its boundaries.

6.3 **East Lindsey:** has a very important role in terms of primary production being the second biggest net employer in this context in the LEP area. The district also has strengths in independent food retail and manufacture of plastics but not highly significant areas of economic activity within the distribution of distinctive LEP sectors as a whole. It does however have two other very distinctive sectoral activities outside of the scope of this study in terms of tourism and defence (linked particularly to RAF Coningsby the main UK Euro-fighter base).

6.4 **Lincoln:** has real strengths in engineering with almost 25% (2,766) of all employees in distinctive LEP engineering sectors. It also has a key role in Health and Social Care driven by its role as a principal settlement, and the base for the County Hospital, with 6,674 employees in the distinctive economic Health and Social Care sectors in the LEP area. Lincoln also has a major role as a HE centre a sector out-with the scope of this study.

6.5 **North Kesteven:** has a distinctive role within the food processing element of the agri-food sector and also within the agricultural engineering agenda. The district also has a major defence role as the home to RAF Waddington, Digby and Cranwell – which is outside of the scope of this study.

6.6 **South Holland:** has an internationally significant agri-food sector, it hosts 30% of all those employed in the distinctive agri-food sectors (excluding retail) in the LEP area. The district also has the highest number of individuals employed in logistics in the south Lincolnshire food cluster. Overall its economic boundaries combine powerfully with Boston in the context of this cluster in terms of primary production, food processing, wholesale and logistics. It is also home to a successful but modest (in terms of tonnage) port at Sutton Bridge.

6.7 **South Kesteven:** has strengths in food processing, electrical manufacturing and health and social care (Grantham hospital).

6.8 **West Lindsey:** has significant employment in primary production and some important bright spots in engineering (Wefco in terms of steel fabrication) and food processing, with key companies (Cherry Valley Ducks and Sealord- fish processing). The proximity of these companies to the processing cluster in North and North East Lincolnshire provides an important geographical context for their operation.

6.9 **North East Lincolnshire:** is an internationally significant area in terms of sea-food and fish processing and host to a port of world significance (Immingham). Within the agric-food sector it has significant employment in food processing, wholesale and retail. It is also directly proximate to both a significant petro-chemical employment sector and has the potential to operate as a key hub in relation to the development of the renewable sector in relation to the Humber context of its ports and the development of the new major Enterprise Zone (South Humber Gateway) on its north and western boundaries in North Lincolnshire. The area has experienced a profound decline in the number of employees in food processing from 2000-08 (66%). Local dialogue with companies and business support agencies in the area (including the local authority) has suggested a number of factors underpinning this including: contracting out of logistics activities, introduction of agency workers to replace direct employees and increasing consolidation of the sector leading to larger employers with more mechanised and lower labour based activities. The principal settlement nature of Grimsby also leads to the area having a significant role in terms of health and social care employment.

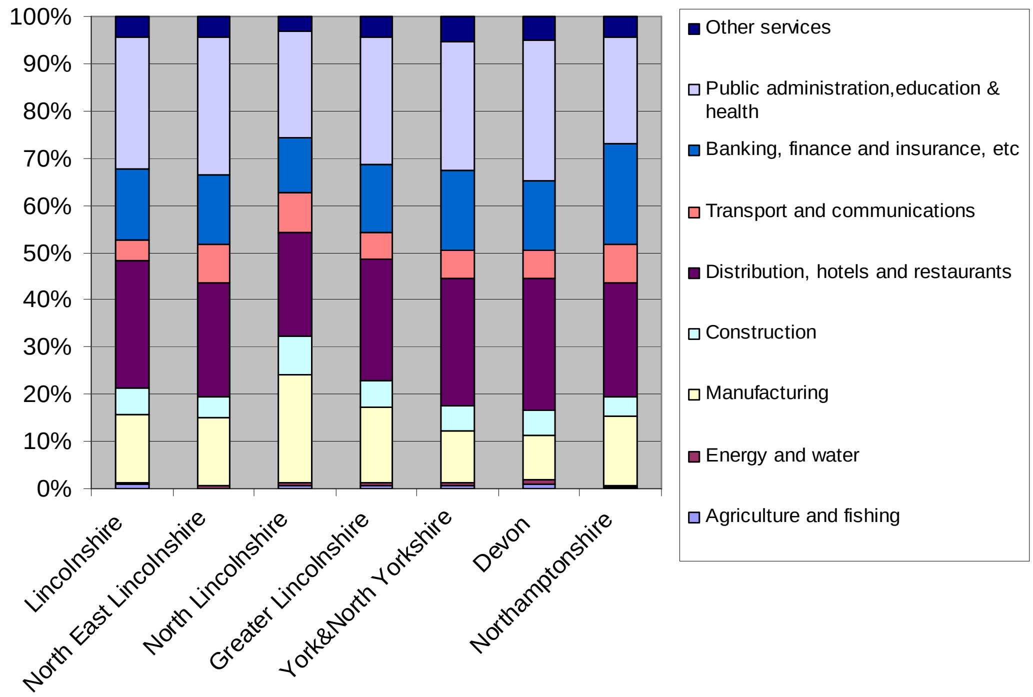
6.10 **North Lincolnshire:** is perhaps the most distinctive and different economy within the LEP area. It has clear links around logistics (including being host to the only international airport in the LEP area) and petro-chemicals with North East Lincolnshire, both of which are distinctive elements of its economy. It is also host to a nationally significant steel manufacturing plant and has a good representation of employment in a number of engineering sectors. The role of Scunthorpe as a principal settlement also means that the area has a significant Health and Social Care sector.

7. REGIONAL COMPARISONS

7.1 This section provides a sectoral analysis of Greater Lincolnshire alongside three comparator regions: Devon, York/North Yorkshire, and Northamptonshire. Graph 13 sets out the employment breakdown by broad industrial group for each of the regions. As the graph shows, the areas show broadly similar employment profiles by industry. There are a number of comparisons to be drawn, however:

- Greater Lincolnshire has similar levels of employment in agriculture to North Yorkshire and Devon, at around 2-3% of employment, although the true extent of employment in this activity is under-represented here as the analysis at this geographical level excludes farm agriculture data. The proportion engaged in agriculture is much lower in Northamptonshire, at less than 1%.
- With the inclusion of North Lincolnshire within its boundaries, Greater Lincolnshire has a similar proportion of employment in manufacturing to Northamptonshire (15%), and a greater proportion than both North Yorkshire and Devon (10%).
- Banking, finance and insurance accounts for a lower proportion of jobs in Greater Lincolnshire (14%) than in Northamptonshire (21%), North Yorkshire (17%) and Devon (15%).

Graph 13: Employment by Industrial Group for Greater Lincolnshire and Comparators, 2009



Source: Annual Business Inquiry, 2008, Office for National Statistics

7.2 Graph 14 sets out the GVA, or the value created, by each industrial group as a proportion of the total for all industries in the area. A detailed breakdown of change in GVA by industry is provided in Appendix 3. The key points of comparison are:

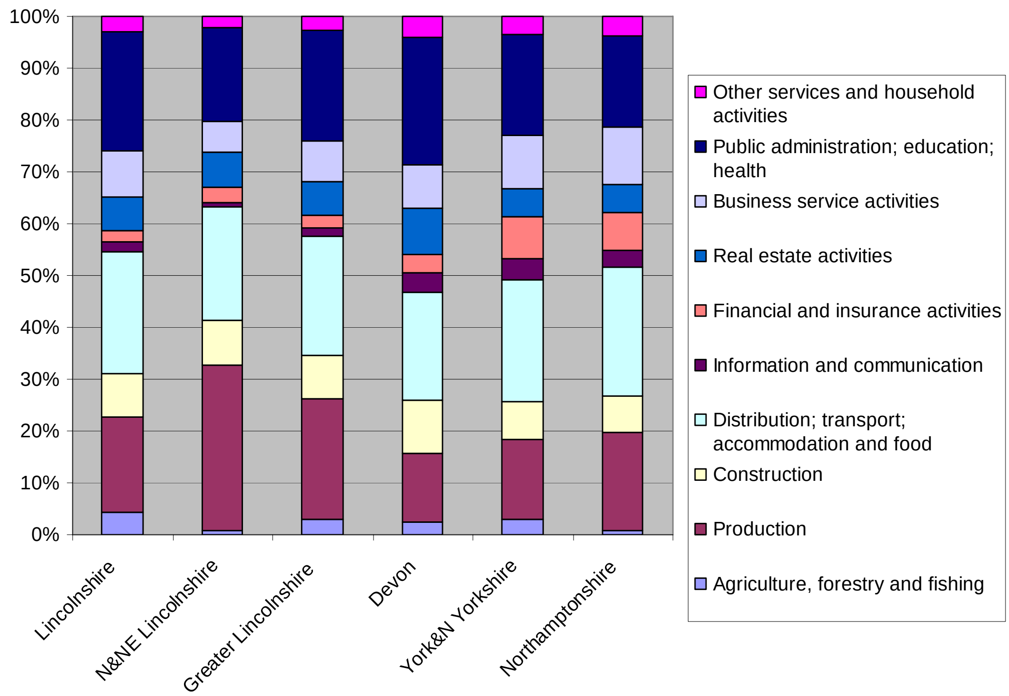
- The contribution of agriculture is greatest in Lincolnshire (£429 m) and Greater Lincolnshire (£479 m) in absolute terms, than in North Yorkshire (£396 m), Devon (£286 m) and Northamptonshire (£100 m). As a proportion of all GVA, it accounts for 3% in Greater Lincolnshire and North Yorkshire, 2% in Devon, and less than 1% in Northamptonshire. So, although regarded as an industry that underpins the

Greater Lincolnshire economy, the overall economic contribution of agricultural activities is low.

- The contribution of production, or manufacturing, is £3,570 m for Greater Lincolnshire, split fairly evenly between Lincolnshire (at £1,861 m) and North & North East Lincolnshire (£1,709 m). At a Greater Lincolnshire level, this exceeds the value of manufacturing in any of the comparator areas: Devon (£1,652 m), North Yorkshire (£2,104 m) and Northamptonshire (£2, 541). As a proportion of overall GVA, this activity accounts for 23% in Greater Lincolnshire, 19% in Northamptonshire, 16% in North Yorkshire, and 13% in Devon. These comparisons emphasise the importance of manufacturing for the Greater Lincolnshire economy.
- Across the three comparator areas, the GVA of service activities is higher than in Greater Lincolnshire. Focusing on the four key areas of information and communication, finance and insurance, real estate and business services, these contribute £2,857 m in Greater Lincolnshire, compared with £3,790 m in North Yorkshire, £3,634 m in Northamptonshire, and £3,045 m in Devon. These are equivalent to 18% of GVA in Greater Lincolnshire, 28% in North Yorkshire, 27% in Northamptonshire, and 25% in Devon.

7.3 Overall, the GVA analysis shows that more than a quarter of the value of the Greater Lincolnshire economy is created by agriculture and manufacturing. This exceeds any of its comparators in terms of the total value and overall proportion of GVA, and reinforces the message that Greater Lincolnshire is reliant on 'traditional' industries. The analysis shows that Greater Lincolnshire is under-represented in service activities such as business services, which add greater value to the economy than agriculture. However, it is also the case that these sectors suffered disproportionately during the recession, and that the diversity of the Greater Lincolnshire economy with its strong representation of agricultural and manufacturing activities helped to make it more resilient to economic crises.

Graph 14: GVA by Industrial Group for Greater Lincolnshire and Comparators, 2009



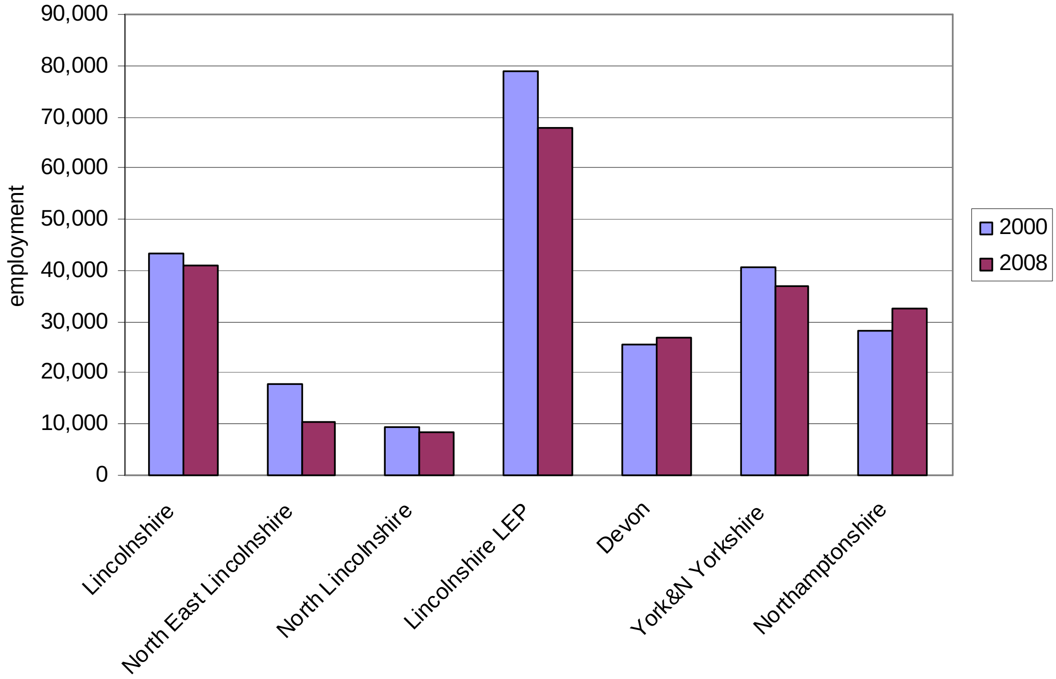
Source: GVA for NUTS3 Areas, Office for National Statistics

7.4 The following section takes a more detailed look at the key sectors identified by the LEP, and analyses the numbers employed and the change in overall employment for Greater Lincolnshire and its comparator regions.

7.5 Graph 15 compares employment in Agri Food for Greater Lincolnshire and its comparators. As the graph shows, overall employment in this sector is high in Greater Lincolnshire, at almost 68,000. Employment in Lincolnshire alone, at 41,000, is higher than for North Yorkshire (37,000), Northamptonshire (33,000) and Devon (26,781).

7.6 The numbers employed in the sector have fallen across Greater Lincolnshire, with substantial losses in North East Lincolnshire and smaller losses in South Holland. Both Devon and Northamptonshire have seen this sector grow over the same period. In Northamptonshire, this growth has been driven increases in fruit and vegetables processing (an increase of 1,134 jobs compared with 2,067 jobs lost across Greater Lincolnshire), manufacture of food products (with 904 new jobs compared with a loss of 389 jobs across Greater Lincolnshire), and wholesale of fruit and vegetables (1,110 jobs compared with a loss of 1,027 jobs across Greater Lincolnshire). This could reflect the increasing consolidation of food wholesalers and producers, and the relative advantage of Northamptonshire as a location, with its strong logistics focus.

Graph 15: Employment in Agri Food for Greater Lincolnshire and Comparator Regions

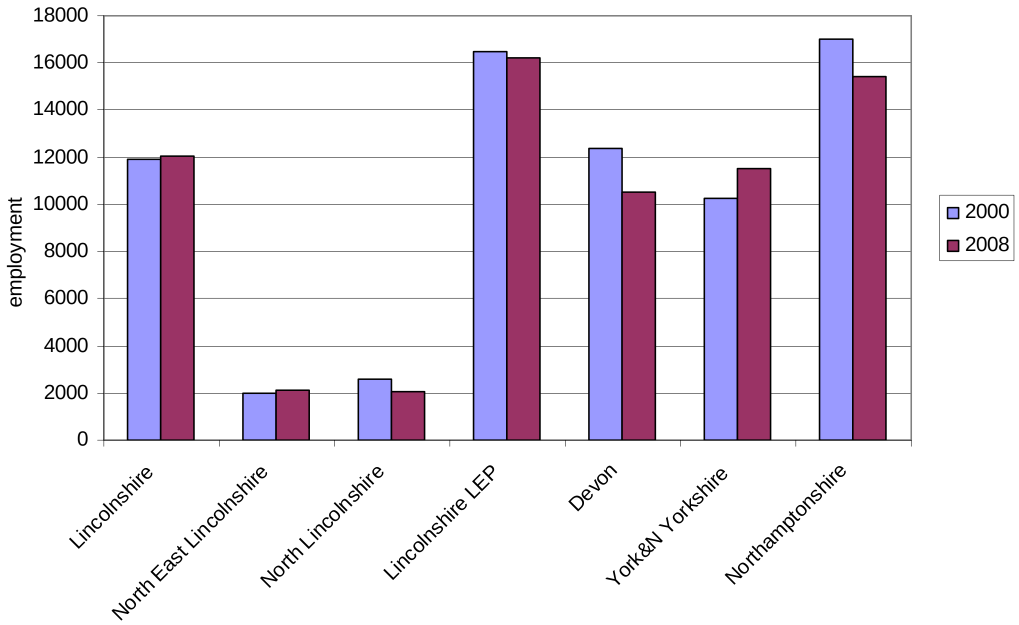


Source: Annual Business Inquiry, 2008, Office for National Statistics

7.7 Graph 16 compares employment in Engineering and Electronics for Greater Lincolnshire and its comparators. Employment in this sector is similar to its comparators, with Greater Lincolnshire employing just over 16,000, Northamptonshire 15,000 and Devon and North Yorkshire 11,000.

7.8 Employment in this sector has remained relatively stable in Greater Lincolnshire, with a decline of just 2%, compared with more significant declines in Devon and Northamptonshire. The growth of this sector in North Yorkshire has taken place across a wide range of engineering activities, including the manufacture of steam generators (811 jobs), and general mechanical engineering (323), fasteners (155), and electrical equipment for engines (157) and building and repairing ships (149). Across many of these activities, Greater Lincolnshire has remained static or has lost jobs.

Graph 16: Employment in Engineering for Greater Lincolnshire and Comparators

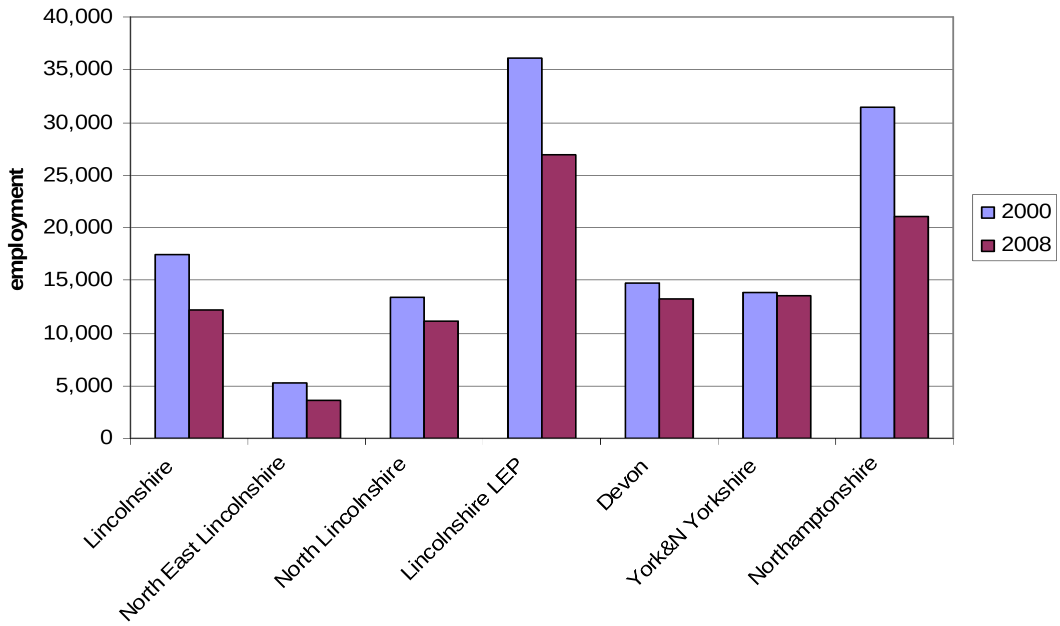


Source: Annual Business Inquiry, 2008, Office for National Statistics

7.9 Graph 17 shows employment in manufacturing activities, except agri food and engineering. All areas have seen a decline, which fits with the national trend. Northamptonshire has seen losses of 33% and Greater Lincolnshire 25%. Devon has seen less significant losses (11%), while North Yorkshire has declined by 2%.

7.10 All areas have experienced declines in the manufacture of textiles, clothes, leather products and footwear, basic metals, and chemicals. Northamptonshire has seen the greatest losses, over 3,000 jobs, in the manufacture of leather products and footwear. Growth has taken place across few activities: publishing, printing and recorded media in North Yorkshire (+2,072 jobs); furniture in Devon (+718 jobs), and non-metallic mineral products (+186 jobs) in Greater Lincolnshire. This trend shows a move away from traditional areas of manufacturing, such as textiles and metals which are subject to increasing international competition, towards more specialist areas of manufacturing.

Graph 17: Employment in Manufacturing for Greater Lincolnshire and Comparators



7.11 Graph 18 shows employment in logistics activities for Greater Lincolnshire and its comparators. Northamptonshire has the greatest number of jobs in this sector, at 20,000 compared with Greater Lincolnshire's 16,000. While all areas have seen a growth in logistics employment, this has been greatest in Northamptonshire which has seen growth of 43% or more than 6,000 jobs. The increase has been more modest elsewhere; 12% in Greater Lincolnshire, 19% in Devon, and 30% in North Yorkshire.

7.12 In Northamptonshire, this growth has been driven by an increase in storage and warehousing (an additional 4,440 jobs compared with 1,373 jobs in Greater Lincolnshire) and freight transport by road (1,984 jobs compared with a loss of 223 jobs in Greater Lincolnshire). As with agri food, these changes reflect the central location of Northamptonshire, and development of new logistics parks along the M1.

7.13 A key logistics development in Northamptonshire is the development of road-rail hubs; Daventry International Rail Freight Terminal (DIRFT) and the newly opened hub at Corby (CIRFT). Since it opened in 1997, DIRFT has undergone considerable growth and is in its third phase of expansion. The site provides rail access to the West Coast Mainline, the Channel Tunnel and Felixstowe, as well as easy road access to the M1, M6, and A14. A clear marketing point for DIRFT is that 98% of the British population is accessible within a 4.5 hour drive. The site is host to a number of logistics companies, such as Eddie Stobart and DHL, as well as retailers Tesco, Asda, and Mothercare. The railport handles 86 trains per weeks and expects this volume to grow by 30% over the next four years. Tesco alone has 8 trains per day, which it estimates takes 100,000 lorries off the road ever year. The case of DIRFT clearly demonstrates a growing demand for multi-model transport by logistics companies and large retailers. However, a clear difference in the development of a road-rail hub for Lincolnshire would be its less than central location, and its focus on fresh produce.

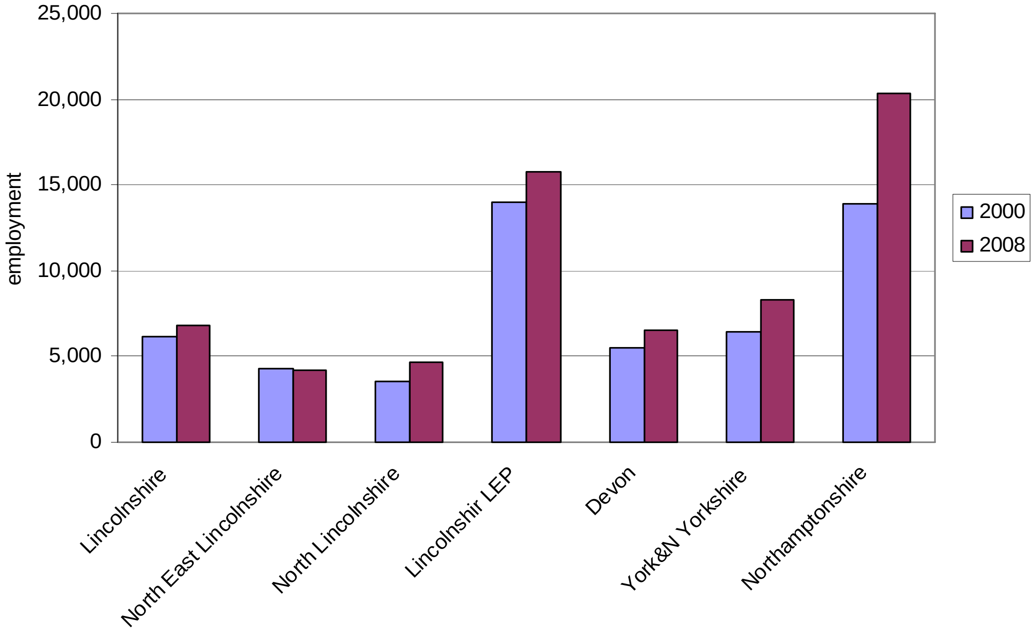
7.14 Freight activity in Greater Lincolnshire airports is limited, although this reflects a wider national pattern. Heathrow and East Midlands airports have the largest volumes of freight nationally, which reflects the process of freight forwarding to a small number of hubs. For the airports that are accessible to our comparator regions, shown in Table 7 below, the relative importance of East Midlands for freight is evident. Freight appears to be a growing activity at Humberside, however, with the opening of a perishables hub in 2008 which has enabled import of Icelandic fish by air.

Table 7: Annual Freight Tonnage by Airport for Greater Lincolnshire and Comparators

	Scheduled Freight (tonnes)	**Charter Freight (tonnes)**
Humberside	1.6	59.1
Doncaster Sheffield	0	0.6
East Midlands	3.1	21,135.8
Exeter	0.4	0
Leeds Bradford	9.9	0

Source: Civil Aviation Authority, 2012

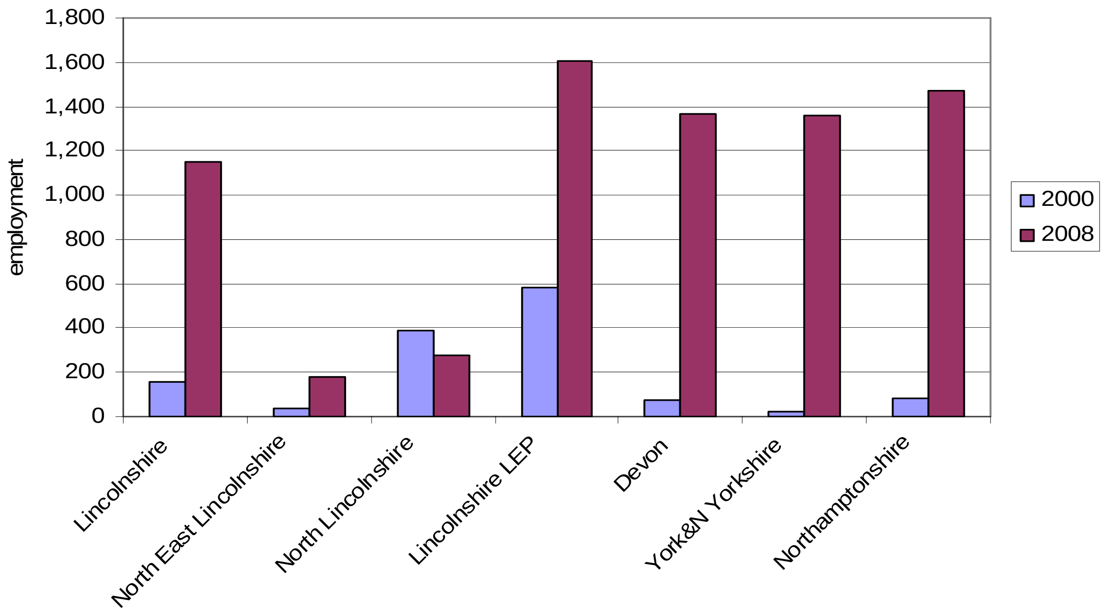
Graph 18: Employment in Logistics for Greater Lincolnshire and Comparators



7.15 Graph 19 shows employment in selected renewables activities for Greater Lincolnshire and its comparators. These do not represent the full extent of employment in this sector, but have been included to provide an indication of overall change. These selected activities employ between 1,200 and 1,600 people in each of the regions.

7.16 As graph 19 shows, there was been significant increase in employment across these selected activities. All areas except Greater Lincolnshire have increased in the recycling of metallic waste (North Lincolnshire saw a decline of more than 250 jobs in this area), and all have increased in recycling of non-metallic waste. Greater Lincolnshire leads on collection and treatment of other waste, with 1,269 jobs compared with Devon (115), North Yorkshire (121) and Northamptonshire (183). Sanitation and remediation activities employ just 59 in Greater Lincolnshire, compared with around 1,000 in each of the comparator areas.

Graph 19: Employment in Renewables for Greater Lincolnshire and Comparators



Source: Annual Business Inquiry, 2008, Office for National Statistics

Conclusions

7.17 Greater Lincolnshire is a leading region for agri food, but it is losing jobs in this sector when other regions are not. These losses are mainly related to the loss of fish processing, and wholesale and processing of fruits and vegetables. Northamptonshire is clearly a key comparator for this sector, having increased employment levels in food wholesale and processing activities. Although Northamptonshire has a natural advantage in its central England location, there may be something to be learned from its intention to retain this advantage through its focus on the transport connectivity around the 'Northamptonshire Arc' (around Northampton, Daventry, Kettering, and Wellingborough) as well as new road-rail hubs at Corby and Daventry.

7.18 Although a fifth of the size of the agri food sector in employment terms, the engineering sector in Greater Lincolnshire is larger and more stable than in its comparator areas of Devon and Northamptonshire. It has experienced a modest decline in jobs. However, although smaller in scale, this sector has increased in North Yorkshire over the same period. The North Yorkshire Economic Assessment identifies growth in the local engineering sector as being driven by key emerging sectors, such as electrical and optical manufacturing. The Greater Lincolnshire engineering sector has a number of strong growth sectors, such as electrical components, motor vehicles, and precision instruments which could provide the basis for further growth in the sector.

7.19 Similar in scale to engineering, logistics is a fast growing sector across all the regions examined here. North Lincolnshire, in particular, has benefitted from proximity to good motorway links, with strong growth in storage and warehousing. This sector is closely linked to agri food and, just as we have seen strong growth in agri food in Northamptonshire, this pattern can also be observed for logistics. The further growth of these activities in Lincolnshire are likely to be constrained by the relatively long distances to customers, compared with more centrally located regions like Northamptonshire where road freight transport and warehousing are both assisted by proximity to principal motorway networks and the development of freight consolidation centres.

7.20 Although difficult to measure using standard industrial classifications, the data suggests that environmental activities have grown substantially across all the areas examined here. Greater Lincolnshire has seen increases in the recycling of non-metal waste, and collection and treatment of other waste. However, these reflect just one sub-sector of a diverse and growing industry in Greater Lincolnshire.

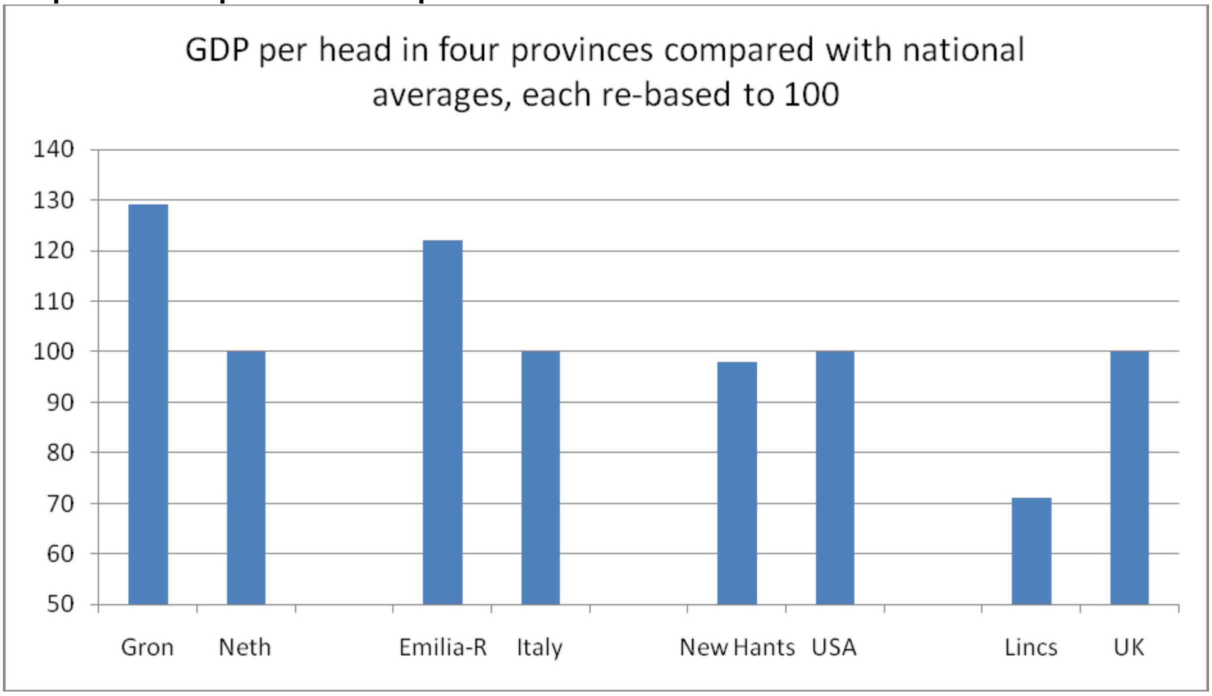
7.21 Manufacturing is still a key Greater Lincolnshire sector, being larger in scale than its comparator regions. However, this is a sector in decline across almost all manufacturing activities. What the comparisons show, however, is that growth is focused on very specialist and niche areas of activity, which are less subject to international competition. This suggests that the long term resilience of the sector may depend upon moving into more specialist or higher value activities within Greater Lincolnshire's existing manufacturing base.

8. INTERNATIONAL COMPARISONS

8.1 We have selected for a brief qualitative comparison three provinces[15] that are in important respects similar to Greater Lincolnshire and are located in countries with about the same GDP per capita as the UK. Each province has GDP equal to or greater than its respective national average, in contrast to Lincolnshire, which has a much lower GDP than the UK average.

8.2 The three provinces are Rimini, within Emilia-Romagna in Italy, Groningen in the Netherlands and New Hampshire in the United States. Graph 20 shows the relationships. Groningen and Emilia-Romagna have GDP well above the Dutch and Italian averages, whilst New Hampshire is at the US average; Lincolnshire is well behind.

Graph 20: GDP per Head Comparisons



Sources: ONS data for UK; Eurostat data for 2009 for Italy and the Netherlands, see: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_r_e2gdp&lang=en; US data for 2010, see: http://www.bea.gov/regional/gdpmap/GDPMap.aspx

8.3 The implicit question is how these provinces have succeeded in maintaining high levels of prosperity whilst Lincolnshire has not. It could rightly be said that some major countries, including the United States and Italy, though not the Netherlands, have provinces that perform worse than does Lincolnshire relative to the national average, for instance Mississippi or Calabria. But those provinces tend not to share the characteristics that we have identified as common features of Lincolnshire and its more successful comparators: for instance, they are very remote from the main centres of national economic life. Moreover, cases like Mississippi and Calabria do not perform much worse, relatively to their national averages, than does Lincolnshire. If they were to be introduced as rather implausible comparators, the question might be posed why Lincolnshire does not significantly out-perform these economic 'disaster areas'.

8.4 International comparisons of GDP per capita are difficult. Two quite different methods[16] are routinely employed by bodies such as the IMF and the World Bank, which produce

[15] In this section, and except where the context shows otherwise, we use 'province' as a collective term for county, state, province etc; and by Lincolnshire we mean Greater Lincolnshire
[16] The 'Purchasing Power Parity' and 'Current Exchange Rate' methods.

very different rankings of countries. But we are mainly concerned here with the fact that the provinces in question are above average, whilst Lincolnshire is below average.

8.5 The four provinces are similar in the following ways:

- Agriculture is important though, in these advanced economies, it employs relatively few people
- Tourism is also important, though very important only in Rimini
- They have no major cities, though there are major cities not too far away
- They are lightly populated compared with adjacent regions
- They are ***very roughly*** comparable in area and population
- They have a powerful sense of history, based on long-established[17] towns and cities
- They have at least one historic city with a university, but although each university is important, higher education is under-represented in each provincial economy compared with the national average
- They have no 'decisive' industries[18], in the way that finance in London or film-making in Los Angeles are decisive, or that potteries in Stoke-on-Trent or cotton in Bolton were decisive
- They have important industries - such as those in Lincolnshire identified for this study - but within diversified economies
- Their communications are good without being excellent: none of the four, for instance, has a major airport, though all have smaller airports
- They each have a sea coast with considerable economic significance, though less so in New Hampshire than in the other three provinces

8.6 Next we present brief portraits of the three comparators.

New Hampshire

8.7 New Hampshire has a population of 1.3m, about 30% greater than Greater Lincolnshire, and is three times larger than Lincolnshire at 9,000 square miles[19]. Making due allowance for differences between the USA and the UK in terms of size, history, climate and so on, there are marked similarities between the two areas: one smallish university city as administrative capital, otherwise rural, a long history of settlement (even leaving to one side native American settlement), relative ethnic homogeneity, a dependence on agriculture and in particular horticulture that runs ahead of the national average, a population older than the national average, a fairly short distance to a major city (Boston cf Birmingham) and not too far from one of the world's main cities (New York cf London).

8.8 The green industries in New Hampshire, as defined in the United States, account for 3.2% of employment[20], the same as the national average. The engineering industry enjoys some prominence, with Segway Inc perhaps the only name that is internationally famous. The logistics industry is primarily local in nature and most manufacturing, following the decline of the historically important textiles industry, is conducted on a small scale.

[17] Even in New Hampshire, settlements go back to the seventeenth century
[18] Tourism in Rimini is a partial exception
[19] None of the few states in the USA smaller than New Hampshire (Rhode Island, Connecticut, Delaware and New Jersey) is comparable to Lincolnshire, except in area
[20] http://carbonsolutionsne.org/resources/reports/pdf/green_jobs_report_final.pdf

Groningen

8.9 Groningen forms the north-east corner of the Netherlands. Unlike the greater part of the country its population density is relatively low, though rather higher than Lincolnshire's. Together with the neighbouring provinces of Drenthe and Friesland[21] (collectively, the 'North Netherlands'), it resembles Lincolnshire in having almost exactly the same area and protruding peninsula-like into the North Sea, though it has a population about 60% greater than Lincolnshire's.

8.10 Groningen enjoys high output per head. The provincial government stresses that this results in part from Groningen being the landfall for major North Sea gas fields, but even allowing for this factor the province is economically successful, though it has rather higher unemployment than the national average.

8.11 Like Lincolnshire, the North Netherlands aims to capitalise on the energy industries, whether gas-related or renewables, but the area has various other specialisms, including water technologies (hydraulics etc), agribusiness, the care industries, and logistics. The city of Groningen is an ancient city (with a very long-established university) that is larger than Lincoln at around 180,000 people.

Emilia-Romagna and Rimini

8.12 The Italian region of Emilia-Romagna is substantially larger than Lincolnshire and has about four times Lincolnshire's population. The province of Rimini, in contrast, is much smaller than Lincolnshire and has around one-third of Lincolnshire's population. This administrative pattern of regions much larger than Lincolnshire and provinces much smaller is usual in Italy, so our comparison focuses especially on Rimini, but draws also on Emilia-Romagna since much of what is true of the region is also true of the province.

8.13 The town of Rimini has a very long history (and architectural legacy) as a Roman naval base and as the mediaeval headquarters of the Malatesta family, but is best known now as a holiday resort catering mainly for Italian families in modest hotels or bed-and-breakfasts, something like the Lincolnshire coast might have been had overseas travel not taken much of its core custom.

8.14 The hinterland of Rimini, running deeper into Emilia-Romagna, is the outer edge of the Po Valley, Italy's most prosperous agricultural region, and also includes elements of the supply chains of the motorsport (Ferrari, Lamborghini and Maserati are all based here) and other engineering industries of the wider province. The various economic activities have made the region one of the most successful in Europe in terms of output per head.

Conclusions

8.15 It is striking that the three comparator provinces each enjoy output per head at or above their national average, but Lincolnshire has output per head well below the UK national average. Moreover, the process of selecting the three comparators ensures that this is not to be explained by any obvious factor, such as the presence in the comparators of unusually large and successful industries or special advantages such as spatial advantages, powerful agglomeration effects or unusually good communications.

[21] A fairly recent profile of the three provinces appears at http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/expost2006/wp4_cs_north_netherlands.pdf. It reveals (a) output per head traditionally below the national average (b) a gradual catching up that by the last data then available (2005) was almost complete

8.16 There must, of course, be explanations of the differential in performance. Further investigation may identify them and there are various avenues that we have not been able to follow up. For instance, we were not able to investigate industrial structure or educational and skills attainment in detail, though we suspect on the basis of a preliminary review that these factors could not explain the performance differential.

8.17 One thing is, however, apparent. The three comparators each enjoy far greater autonomy and freedom of action than does Lincolnshire. New Hampshire is, like all of the United States, quasi-independent; and both Groningen and Emilia-Romagna (and Rimini within the latter) enjoy substantial autonomy including significant tax-raising powers. It appears, though this conclusion would need to be validated by further research, that greater autonomy[22] has led to more determined efforts to promote what is in the interests of the provincial economy and it is at least plausible that this accounts in part for relatively good performance.

8.18 Our policy conclusions are twofold: first, that every possible use should be made of "Lincolnshire's" (whether this means local authority, GLLEP or any other agency) existing powers to the full, and those powers should be expanded if and when possible so as to replicate the greater autonomy enjoyed by the comparators; and second, that further research is needed to establish in greater detail the reasons for the apparent out-performance of the comparators compared with Lincolnshire.

[22] See, for instance http://www.nheconomy.com/business-services/financial-other-incentives.aspx for details of the wide range of services and the favourable tax regime available to businesses locating in New Hampshire

9 CONCLUSIONS AND ACTION POINTS

9.1 The Greater Lincolnshire LEP area has a large spatial context stretching from the Humber to the Wash. It has a number of “signature” sectors as borne out from our work on location quotients. These were understood in general terms before this work put some more detailed flesh on the bones of the broad practitioner overview of these areas. North and North East Lincolnshire have previously been separate from the administrative county of Lincolnshire and another key opportunity which this report has been able to tap into is the potential to consider the economy of the whole LEP area as one integrated entity for the first time.

Agri-Food

9.2 The Agri-Food sector including retail, packaging and agricultural engineering, whilst declining in employment terms, is still an internationally significant sector. It has two key components: a producer/grower component in the south; and significant fish and wider food processing component in the north. The food cluster in North East Lincolnshire also ripples out into the North Kelsey industrial estate in Caistor (West Lindsey) and along the M180 into Scunthorpe. Whilst both components have reduced in employment the most prodigious job loss has been in North East Lincolnshire.

9.3 South Holland now has the largest number of food processing employees in the LEP area and when the figures are combined with its adjoining local authority area – Boston it can genuinely claim to have an internationally significant food processing cluster.

9.4 Key informant interviews and focus group discussions have suggested that there are several causes underpinning the decline in employment, in addition to reducing markets due to the recession – these are: consolidation; technical productivity gains; and, particularly in relation to the fish processing sector, the international nature of raw material supply which has no long term reason to justify processing in Grimsby.

9.5 Notwithstanding the employment decline experienced in North East Lincolnshire there are still strong assets within the sector which can be optimised to support its long term evolution. These include a skilled workforce, a strong supply chain infrastructure and the availability of food processing workspace. **It is important for the LEP to think about how it can maximise these inherent strengths to help maintain the vitality of the sector on an ongoing basis. More widely the challenge of identifying opportunities to integrate the growth of the north and south food clusters is a really interesting challenge. The innovation research developed in parallel with this study has identified the strategic role of the Grimsby Institute in terms of the Humber Sea Food Institute and the University of Lincoln in terms of their Holbeach campus as both underpinning a significant amount of product development. The scope to generate a dialogue between these two organisations in the context of their respective activities and strengths around the agri-food sector should be a further LEP priority.**

9.6 Across Lincolnshire there is also a vibrant agri-engineering sector. Key informant interviews have suggested that at one stage this was a nationally distributed feature but has declined significantly with the internationalisation of the food agenda in most parts of the UK. The maintenance of a world class food sector in Lincolnshire has preserved this area of niche specialism and companies such as Tong Peel in Spilsby have an international order book and employ comfortably over 100 people manufacturing food handling sytems. Simba Great Plains and Househam Sparyers are other examples of key niche operators in this context. **This is an area of activity which would be worth further study and engagement by the LEP. The innovation research project developed in parallel with this study has identified the scope for the Engineering School at the University of Lincoln to reach out to this niche and it is something**

which could be worth considering as a LEP sponsored activity. Packaging has declined as an activity in Lincolnshire but when taken alongside labelling it is still an important engineering related component of the agri-food sector and could be considered for planning purposes to form an intergral part of this agri-engineering agenda.

Logistics

9.7 Logistics, driven in part at least by the large scale agri-food activity in the area is a very significant sector. It also has a significant role to play in terms of its relationship with the renewables sector. The role of Associated British Ports not simply in relation to the operation of Immingham and Grimsby ports but also in terms of their strategic control of the Humber overall in relation to Goole and Hull ports makes them really significant player in the logistics agenda for the area. **There is currently very limited engagement between the LEP and ABP and this is an area which should be addressed in more detail by the LEP.**

9.8 In addition to the development of the renewable sector in terms of wind energy on the north bank of the Humber linked to the prospective Siemens investment, the role of the Port of Immingham at the mouth of an established energy corridor running up the M180, M18 and M62 incorporating major power stations at Drax, Ferrybridge and in the Trent Valley in Nottinghamshire is strategically massively important for the LEP area and nationally unique. **The LEP should explore in some detail how this corridor currently functions and scope out in more detail the opportunities linked to its evolution.**

9.9 Discussions with ABP have indicated that co-firing proposals at the power-stations in this corridor means that there is considerable potential around bio-fuels as well as the development of the renewable sector in terms of wind. It is anticipated at this stage that most of the bio-fuels will be imported but there are clearly opportunities to consider the development of the local supply market in the LEP area. **A number of studies have been undertaken in the past in the context of the potential to grow the bio-fuels supply agenda, recently they have concentrated on community and small scale supply for local community heating projects. There is clearly significant value in this agenda but there is also new scope to consider the larger supply agendas linked to the established power stations in relation to their evolution of their approach.**

9.10 In addition to the role of the Humber ports and their more general significance for the agri-food and renewable sector in the LEP area it is important to keep in view the two short sea shipping port facilities at Boston and Sutton Bridge in the south of the Lincolnshire. Whilst these facilities only have a very small tonnage compared to the Humber operation they do have unused capacity and Boston has a direct rail head. Key informant interviews have suggested that they are not heavily used at all by food processors and have significant potential in this context**. There have been some previous considerations of the importance of the Port sector but more work is merited, led by the LEP to consider the potential of these facilities. The proposals for a new rail freight facilities in south Lincolnshire is also important to factor into this element of the work of the LEP.**

9.11 The road freight sector, driven not just by the renewables and agri-food sectors, but with dynamics in the manufacturing and engineering sectors, is nationally significant in the LEP area. Interestingly over the last decade there has been a marked shift to smaller companies employing under 10 employees in this sector. Key informant interviews have suggested that some of this has come as a consequence of the externalisation of freight transport by companies across the LEP area. This is recognised as a particular trend in the food processing sector and may account for some of the statistically reported loss of processing jobs in that sector. **The dynamics and functioning of the small companies in this sector is an interesting area of potential further enquiry by the LEP as whilst small and many in number they have a significant underpinning role in relation to the viability of the agri-food and engineering sectors in the LEP area.**

Engineering

9.12 As a sector this area employs fewer people in the LEP area than food processing. Although there are pockets of concentrated activity linked to the industrial legacy of key towns in the area, there is no significant cluster in the LEP area. Lincoln has the highest representation of engineering companies and by far its largest and most distinctive company is Siemens with their gas turbine manufacturing activities. In North Lincolnshire, North East Lincolnshire and West Lindsey there are a number of engineering companies, Wefco of Gainsborough for example, which have a long term link to the production of services and products for the petro-chemical and port industries on the Humber Bank. **With the decline of any form of detailed after-care relationships between local authorities and strategic companies, for want of former RDA support, establishing a long term dialogue with those strategic stand alone players in the engineering sector overall should be a priority for the LEP.**

9.13 Research undertaken for the Supply Chains project suggests that there are further opportunities for collaboration between engineering firms in the LEP area, particularly around skills development, supplier opportunities, and R&D. **The University of Lincoln's Engineering School has a potentially strong role to play in leading this agenda.**

Manufacturing

9.14 The steel works in Scunthorpe (TATA) and its associated supply chain and strategic relationship with the importing of iron-ore with the Port of Immingham is a really important feature of the LEP economy. The petro-chemical industry on the Humber Bank at Killingholme, although technically in North Lincolnshire is effectively part of the North East Lincolnshire economy. It is almost as large and is as strategically important as steel manufacturing in the LEP area. **When considered alongside the high quality agricultural land in south Lincolnshire and the potential offered around renewables, the steel and petro-chemical activities in the north of the County can be linked to these sectors to support a compelling argument that the LEP economy is about the development and processing of natural resources. This message could be a key way of differentiating and branding the nature of the Greater Lincolnshire LEP economy.**

9.15 If this approach is deemed to have some validity it provides a unifying context with which to interpret the overall functioning of the LEP area.

Renewables

9.16 It is very difficult to pin down detailed evidence of the operation of the renewables sector in terms of SIC codes. The Humber LEP has set out its stall as a national centre for this sector based on the imminent letting of the tier 3 wind generation tenders and the decision of Siemens to set up a turbine manufacturing facility in Hull. There is a strong south bank context to this agenda as well linked to the designation of the Able Energy Park (principally in North Lincolnshire but with a footprint in North East as well) as an Enterprise Zone and the wider aspirations of ABP to add value to their current energy freight relationships with the power stations along the M62, M18, M180 corridor.

9.17 **There is a need to synthesise the messages arising from a range of studies of this sector which have been commissioned previously and to think it through in its broadest manifestations, with wind as one component, if its full potential (including bio-fuels, anaerobic digestion, solar etc) is to be understood.**

9.18 There is a danger at present that the renewables agenda becomes too heavily diverting an area of study at the cost of investing time and effort in supporting established sectoral strengths and this needs to remain as a challenge on the radar of the LEP in terms of its allocation of scarce resources.

Other Key Sectors

9.19 Whilst this study has necessarily concentrated on the key areas set out by the client, in undertaking an overview of the strategically important sectors in LEP area it has been impossible not to make some reference to the importance of tourism, defence and Higher Education in Lincolnshire. All three sectors impinge on the areas at the heart of our study. This is evident in terms of the relationship between small scale food processors in the agri-food sector and the tourism components of "Tastes of Lincolnshire". Defence provides a key underpinning for engineering, particularly in relation to BAE employees linked to the local RAF bases and the role of the University of Lincoln in supporting activities such as the development of the Engineering School with Siemens. Just as the creation of the LEP provides real potential to explore complementarities between the two food processing clusters in the north and south of the area, there are opportunities to be explored for Cleethorpes, Skegness and Mablethorpe in terms of the seaside offer along the Greater Lincolnshire coast.

9.20 **Whilst accepting that these sectors may not be as significant in size and scale as some of the other key sectors covered in this report**, **the LEP should acknowledge their strategic importance and earmark them for inclusion in a second sectoral focus plan in due course.**

Proposed Actions, Timescale and Sources of Funding

Activity	Time Frame			Source of Funding
	Short	Medium	Long	
Establishing the research capacity of the agri-food sector through a LEP wide strategy working with Holbeach and the Sea Food Institute				ESRC, BIS
Sectoral study into the detailed role and function of the agri-engineering sector in Lincolnshire				Local Authorities, LEP
Engagement with Associated British Ports in relation to the LEP structures and activities				None required
Study of the functioning and opportunities/challenges linked to the M62/18/180 energy corridor				Joint initiative with the Humber LEP
Examination of the evolution of the bio-fuel market in terms of Lincolnshire as a supply centre (taking account of previous studies)				Direct approach to Defra – through Rural LEP Network?
Re-examination of drivers and challenges around the operation of the short sea shipping ports in south Lincolnshire (Boston & Sutton Bridge)				Local Authorities, LEP
Development of an overview of the dynamics of the road-freight sector in the LEP area and the issues facing the very significant number of micro-businesses engaged in it				Local Authorities, LEP
Consideration of a new networked approach to the management of company aftercare activities in context of the new LEP boundaries				Local Authorities, LEP, UKTI
Scoping out of the pros and cons of the Greater Lincolnshire LEP "signature" image being linked to the development and processing of natural resources				LEP
Establish one consistent over-view of the development of the renewables sector from a LEP perspective				Local Authorities, LEP
Establish a clear over-view of the strategic and commercial importance of the health and social care agenda to the LEP area in terms of: procurement, social enterprise, teaching hospital activities and key LEP geography "friendly" areas of work including Care Farms				Local Authorities, LEP, Health Sector
Consider how to most effectively interpret the impact and potential of the: tourism, defence and HE sectors in its economy.				LEP, Local Authorities

APPENDICES

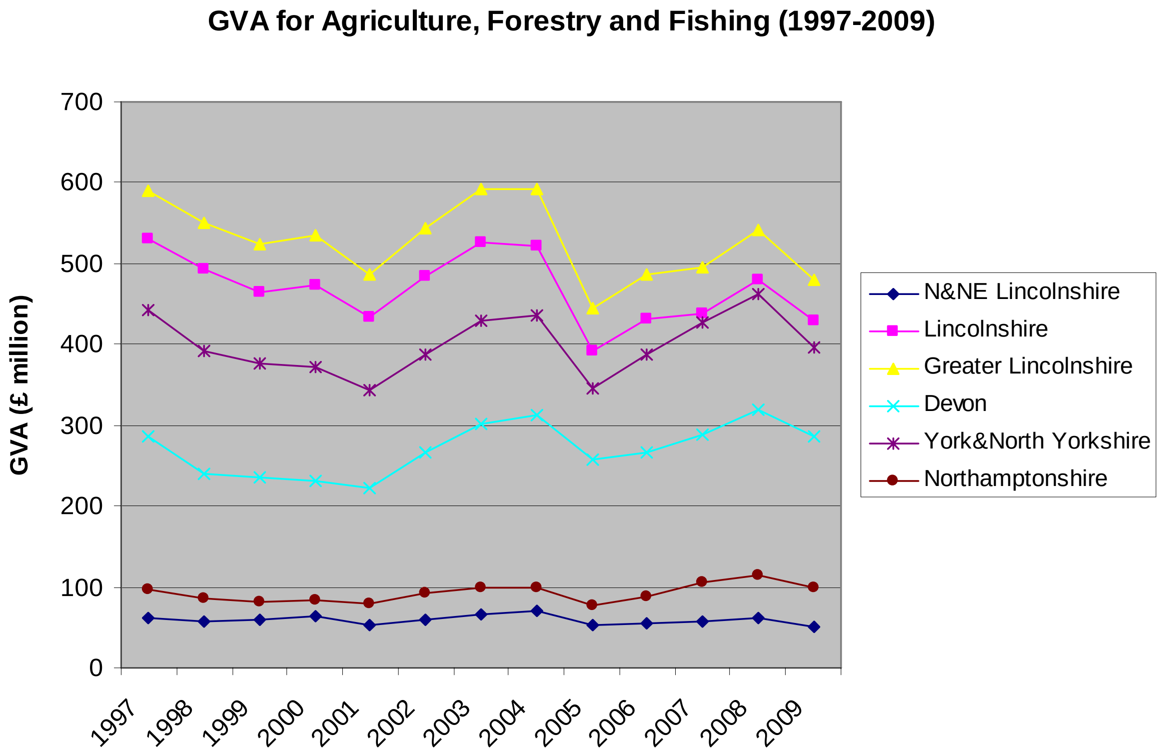
Appendix 1: Employment Location Quotients against GB Average for Broad Industry Group in Greater Lincolnshire (2008)

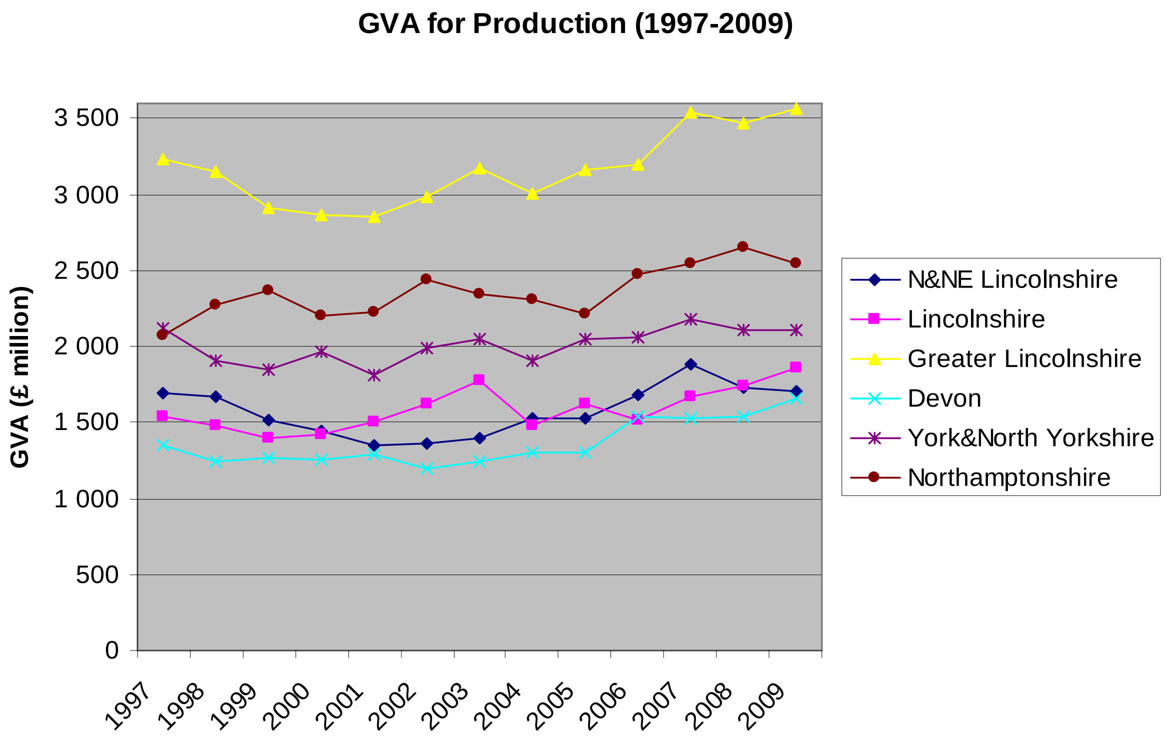
Industry	Boston	East Lindsey	Lincoln	North Kesteven	South Holland	South Kesteven	West Lindsey	Lincolnshire	North East Lincolnshire	North Lincolnshire	Greater Lincolnshire
Agriculture and fishing	7.4	7.5	0.5	6.9	11.6	0.5	7.0	5.3	0.2	0.3	4.5
Energy and water	0.4	0.4	2.1	1.3	0.0	0.8	0.6	1.0	0.5	0.9	0.9
Manufacturing	1.0	1.2	0.8	1.5	1.9	1.6	1.3	1.3	1.8	2.0	1.6
Construction	0.5	0.6	0.9	1.4	0.7	0.7	1.5	0.9	0.9	1.5	1.0
Distribution, hotels and restaurants	1.1	1.3	1.1	0.9	1.1	1.2	1.0	1.2	1.1	0.9	1.1
Transport and communications	0.6	0.5	0.7	0.5	0.9	0.6	0.9	0.7	1.4	1.1	0.9
Banking, finance and insurance, etc	0.4	0.4	0.7	0.5	0.4	0.7	0.5	0.6	0.4	0.4	0.5
Public admin, education & health	1.5	1.0	1.4	1.1	0.6	0.9	1.0	1.1	1.0	0.8	1.0
Other services	0.5	1.0	0.7	0.6	0.6	0.8	0.8	0.8	0.6	0.7	0.7

Appendix 2: Activities with high Location Quotients in Greater Lincolnshire

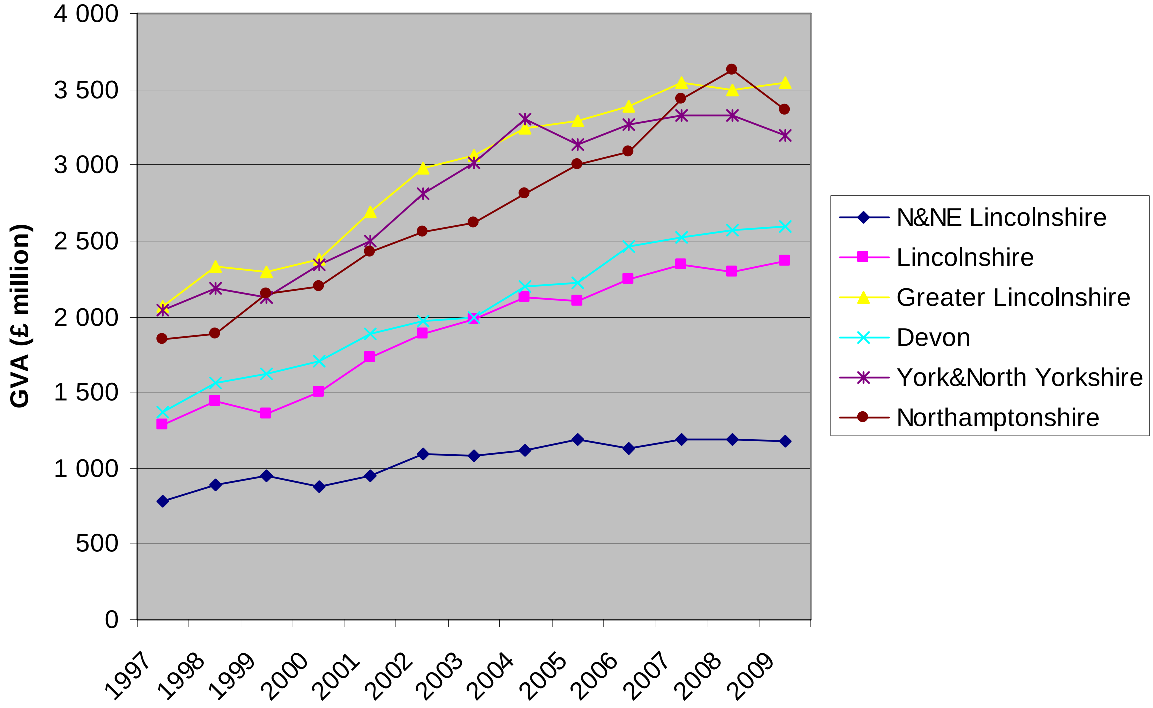
Table setting out location quotients for each of the identified sectors, and sub-sectors, for Greater Lincolnshire and districts. Table to follow…

Appendix 3: Change in GVA for each industrial group in Greater Lincolnshire and comparator regions

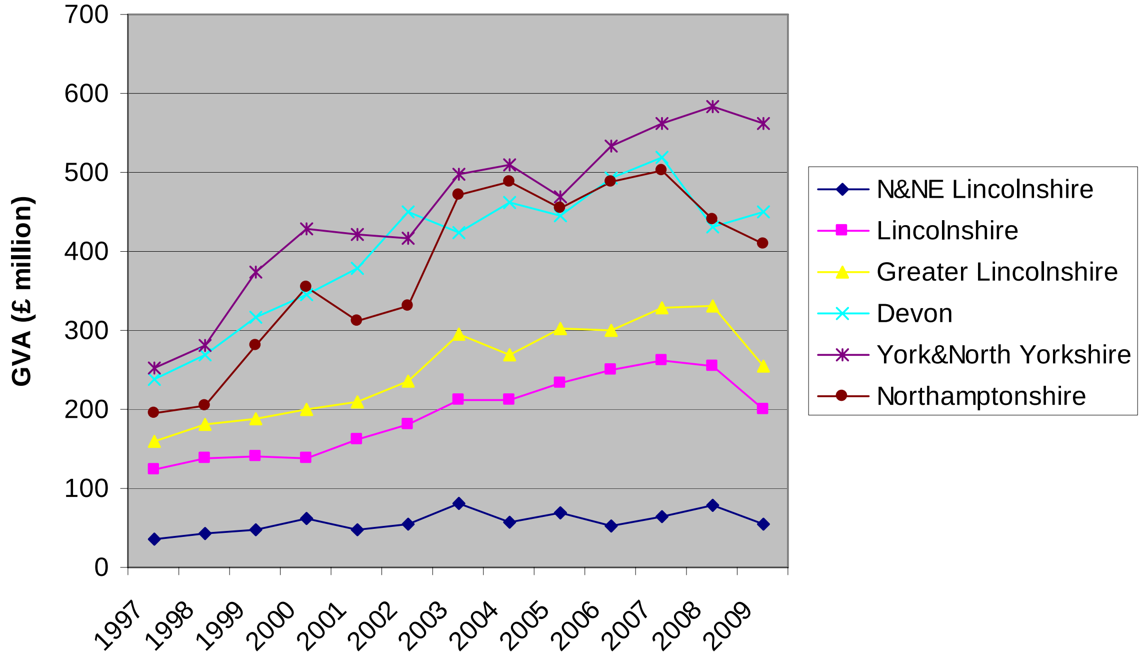




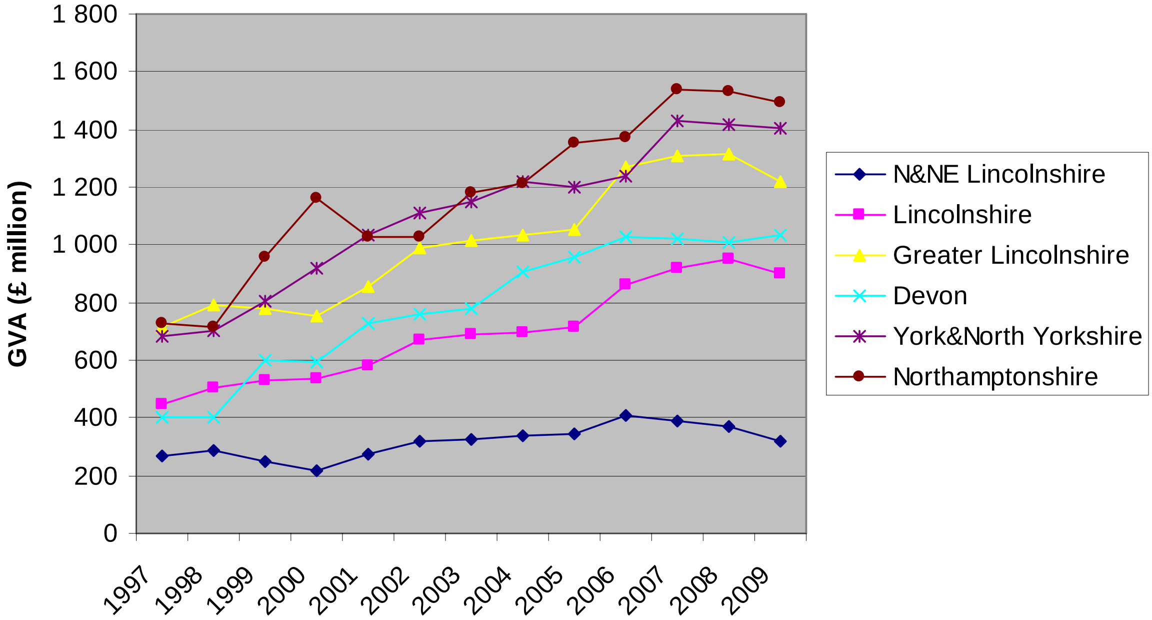
GVA for Distribution, Transport and Food (1997-2009)



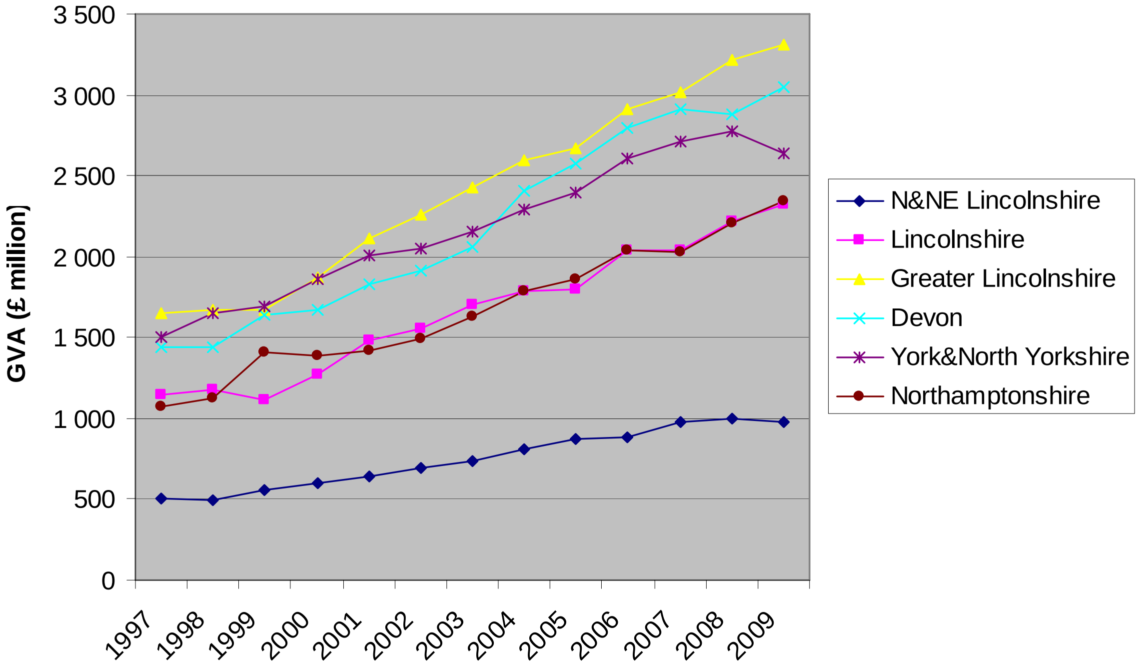
GVA for Information and Communication (1997-2009)



GVA for Business Services (1997 to 2009)



GVA for Public Administration; Education and Health (1997-2009)



Appendix 4: Standard Industrial Classification codes used for each identified sector, (SIC 2003)

Agri Food Definition

0100 : DEFRA/Scottish Executive Agricultural Data
0111 : Growing of cereals and other crops not elsewhere classified
0112 : Growing of vegetables, horticultural specialities and nursery products
0113 : Growing of fruit, nuts, beverage and spice crops
0121 : Farming of cattle, dairy farming
0122 : Farming of sheep, goats, horses, asses, mules and hinnies
0123 : Farming of swine
0124 : Farming of poultry
0125 : Other farming of animals
0130 : Growing of crops combined with farming of animals (mixed farming)
0141 : Agricultural service activities
0142 : Animal husbandry service activities, except veterinary activities
0150 : Hunting, trapping and game propagation including related service activities
0201 : Forestry and logging
0202 : Forestry and logging related service activities
0501 : Fishing
0502 : Operation of fish hatcheries and fish farms
1511 : Production and preserving of meat
1512 : Production and preserving of poultry meat
1513 : Production of meat and poultry meat products
1520 : Processing and preserving of fish and fish products
1531 : Processing and preserving of potatoes
1532 : Manufacture of fruit and vegetable juice
1533 : Processing and preserving of fruit and vegetables not elsewhere classified
1541 : Manufacture of crude oils and fats
1542 : Manufacture of refined oils and fats
1543 : Manufacture of margarine and similar edible fats
1551 : Operation of dairies and cheese making
1552 : Manufacture of ice cream
1561 : Manufacture of grain mill products
1562 : Manufacture of starches and starch products
1571 : Manufacture of prepared feeds for farm animals
1572 : Manufacture of prepared pet foods
1581 : Manufacture of bread; manufacture of fresh pastry goods and cakes
1582 : Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes
1583 : Manufacture of sugar
1584 : Manufacture of cocoa, chocolate and sugar confectionery
1585 : Manufacture of macaroni, noodles, couscous and similar farinaceous products
1586 : Processing of tea and coffee
1587 : Manufacture of condiments and seasonings
1588 : Manufacture of homogenised food preparations and dietetic food
1589 : Manufacture of other food products not elsewhere classified
1591 : Manufacture of distilled potable alcoholic beverages
1592 : Production of ethyl alcohol from fermented materials
1593 : Manufacture of wines
1594 : Manufacture of cider and other fruit wines
1595 : Manufacture of other non-distilled fermented beverages
1596 : Manufacture of beer
1597 : Manufacture of malt

1598 : Manufacture of mineral waters and soft drinks
5121 : Wholesale of grain, seeds and animal foods
5122 : Wholesale of flowers and plants
5123 : Wholesale of live animals
5131 : Wholesale of fruit and vegetables
5132 : Wholesale of meat and meat products
5133 : Wholesale of dairy produce, eggs and edible oils and fats
5134 : Wholesale of alcoholic and other beverages
5136 : Wholesale of sugar and chocolate and sugar confectionery
5137 : Wholesale of coffee, tea, cocoa and spices
5138 : Wholesale of other food including fish, crustaceans and molluscs
5139 : Non-specialised wholesale of food, beverages and tobacco
5211 : Retail sale in non-specialised stores with food, beverages or tobacco predominating
5212 : Other retail sale in non-specialised stores
5221 : Retail sale of fruit and vegetables
5222 : Retail sale of meat and meat products
5223 : Retail sale of fish, crustaceans and molluscs
5224 : Retail sale of bread, cakes, flour confectionery and sugar confectionery
5225 : Retail sale of alcoholic and other beverages
5227 : Other retail sale of food, beverages and tobacco in specialised stores
5551 : Canteens
5552 : Catering
7131 : Renting of agricultural machinery and equipment
7482 : Packaging activities

Engineering and Electronics

2811 : Manufacture of metal structures and parts of structures
2812 : Manufacture of builders' carpentry and joinery of metal
2821 : Manufacture of tanks, reservoirs and containers of metal
2822 : Manufacture of central heating radiators and boilers
2830 : Manufacture of steam generators, except central heating hot water boilers
2840 : Forging, pressing, stamping and roll forming of metal; powder metallurgy
2851 : Treatment and coating of metals
2852 : General mechanical engineering
2861 : Manufacture of cutlery
2862 : Manufacture of tools
2863 : Manufacture of locks and hinges
2871 : Manufacture of steel drums and similar containers
2872 : Manufacture of light metal packaging
2873 : Manufacture of wire products
2874 : Manufacture of fasteners, screw machine products, chains and springs
2875 : Manufacture of other fabricated metal products not elsewhere classified
2911 : Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
2912 : Manufacture of pumps and compressors
2913 : Manufacture of taps and valves
2914 : Manufacture of bearings, gears, gearing and driving elements
2921 : Manufacture of furnaces and furnace burners
2922 : Manufacture of lifting and handling equipment
2923 : Manufacture of non-domestic cooling and ventilation equipment
2924 : Manufacture of other general purpose machinery not elsewhere classified
2931 : Manufacture of agricultural tractors
2932 : Manufacture of other agricultural and forestry machinery
2941 : Manufacture of portable hand held power tools

2942 : Manufacture of metalworking machine tools
2943 : Manufacture of other machine tools not elsewhere classified
2951 : Manufacture of machinery for metallurgy
2952 : Manufacture of machinery for mining, quarrying and construction
2953 : Manufacture of machinery for food, beverage and tobacco processing
2954 : Manufacture of machinery for textile, apparel and leather production
2955 : Manufacture of machinery for paper and paperboard production
2956 : Manufacture of other special purpose machinery not elsewhere classified
2960 : Manufacture of weapons and ammunition
2971 : Manufacture of electric domestic appliances
2972 : Manufacture of non-electric domestic appliances
3001 : Manufacture of office machinery
3002 : Manufacture of computers and other information processing equipment
3110 : Manufacture of electric motors, generators and transformers
3120 : Manufacture of electricity distribution and control apparatus
3130 : Manufacture of insulated wire and cable
3140 : Manufacture of accumulators, primary cells and primary batteries
3150 : Manufacture of lighting equipment and electric lamps
3161 : Manufacture of electrical equipment for engines and vehicles not elsewhere classified
3162 : Manufacture of other electrical equipment not elsewhere classified
3210 : Manufacture of electronic valves and tubes and other electronic components
3220 : Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
3230 : Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods
3310 : Manufacture of medical and surgical equipment and orthopaedic appliances
3320 : Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment
3330 : Manufacture of industrial process control equipment
3340 : Manufacture of optical instruments and photographic equipment
3350 : Manufacture of watches and clocks
3410 : Manufacture of motor vehicles
3420 : Manufacture of bodies (coachwork) for motor vehicles: manufacture of trailers and semi-trailers
3430 : Manufacture of parts and accessories for motor vehicles and their engines
3511 : Building and repairing of ships
3512 : Building and repairing of pleasure and sporting boats
3520 : Manufacture of railway and tramway locomotives and rolling stock
3530 : Manufacture of aircraft and spacecraft
3541 : Manufacture of motorcycles
3542 : Manufacture of bicycles
3543 : Manufacture of invalid carriages
3550 : Manufacture of other transport equipment not elsewhere classified

Logistics

6024 : Freight transport by road
6110 : Sea and coastal water transport
6311 : Cargo handling
6312 : Storage and warehousing
6321 : Other supporting land transport activities
6322 : Other supporting water transport activities
6323 : Other supporting air transport activities
6340 : Activities of other transport agencies
6412 : Courier activities other than national post activities

Renewable and Environmental Technologies

3710 : Recycling of metal waste and scrap
3720 : Recycling of non-metal waste and scrap
9002 : Collection and treatment of other waste
9003 : Sanitation, remediation and similar activities

Manufacturing

16 : Manufacture of tobacco products
17 : Manufacture of textiles
18 : Manufacture of wearing apparel; dressing and dyeing of fur
19 : Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear
20 : Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
21 : Manufacture of pulp, paper and paper products
22 : Publishing, printing and reproduction of recorded media
23 : Manufacture of coke, refined petroleum products and nuclear fuel
24 : Manufacture of chemicals and chemical products
25 : Manufacture of rubber and plastic products
26 : Manufacture of other non-metallic mineral products
27 : Manufacture basic metals
36 : Manufacture of furniture; manufacturing not elsewhere classified

Health and Care

8511 : Hospital activities
8512 : Medical practice activities
8513 : Dental practice activities
8514 : Other human health activities
8531 : Social work activities with accommodation
8532 : Social work activities without accommodation

Annex 4 - Change since the Recession

Table B – Change across BRES Broad Industry Groups, 2008-2010

Broad Industrial Group	2008	2010	% change
1 : Agriculture, forestry & fishing (A)	1,333	1,208	-9.4
2 : Mining, quarrying & utilities (B,D and E)	3,725	4,940	32.6
3 : Manufacturing (C)	59,899	57,398	-4.2
4 : Construction (F)	23,361	19,317	-17.3
5 : Motor trades (Part G)	9,204	8,152	-11.4
6 : Wholesale (Part G)	20,263	19,363	-4.4
7 : Retail (Part G)	46,407	42,821	-7.7
8 : Transport & storage (inc postal) (H)	21,636	21,971	1.5
9 : Accommodation & food services (I)	27,239	24,670	-9.4
10 : Information & communication (J)	5,813	5,023	-13.6
11 : Financial & insurance (K)	5,021	3,731	-25.7
12 : Property (L)	3,959	3,034	-23.4
13 : Professional, scientific & technical (M)	17,132	15,219	-11.2
14 : Business administration & support services (N)	33,594	30,996	-7.7
15 : Public administration & defence (O)	18,766	20,002	6.6
16 : Education (P)	36,435	37,490	2.9
17 : Health (Q)	54,795	60,928	11.2
18 : Arts, entertainment, recreation & other services (R,S,T, U)	15,360	15,996	4.1
Total	**403,944**	**392,259**	**-2.9**

Table B - Changes across ABI Broad Industrial Groups, 2008-2010

	2008	2010	% change
Agriculture and fishing	10,770	1,208	-89
Energy and water	2156	4,940	129
Manufacturing	63,257	57,398	-9
Construction	22,806	19,317	-15
Distribution, hotels and restaurants	102,114	86,854	-15
Transport and communications	22,929	26,994	18
Banking, finance and insurance, etc	56,964	72,982	28
Public administration, education & health	1083,48	118,420	9
Other services	16,868	15,996	-5
Total	**406,212**	**404,109**	**-1**

Table C – Methodology for translating ABI to BRES Broad Industrial Groups

Annual Business Inquiry	Business Register of Employment
Agriculture and fishing	1 : Agriculture, forestry & fishing (A)
Energy and water	2 : Mining, quarrying & utilities (B,D and E)
Manufacturing	3 : Manufacturing (C)
Construction	4 : Construction (F)
Distribution, hotels and restaurants	5 : Motor trades (Part G) 6 : Wholesale (Part G) 9 : Accommodation & food services (I)
Transport and communications	8 : Transport & storage (inc postal) (H) 10 : Information & communication (J)
Banking, finance and insurance, etc	11 : Financial & insurance (K) 12 : Property (L) 13 : Professional, scientific & technical (M) 14 : Business administration & support services (N)
Public administration, education & health	15 : Public administration & defence (O) 16 : Education (P) 17 : Health (Q)
Other services	18 : Arts, entertainment, recreation & other services (R,S,T, U)

Table C – Change in Employment for 2-digit 2007 SIC categories, 2008-2010

	2008	**2010**	**% change**
01 : Crop and animal production, hunting and related service activities	1,038	1,025	-1
02 : Forestry and logging	197	99	-50
03 : Fishing and aquaculture	98	84	-14
05 : Mining of coal and lignite	0	0	0
06 : Extraction of crude petroleum and natural gas	29	119	310
07 : Mining of metal ores	0	0	0
08 : Other mining and quarrying	371	343	-8
09 : Mining support service activities	11	10	-9
10 : Manufacture of food products	19,660	20,007	2
11 : Manufacture of beverages	140	139	-1
12 : Manufacture of tobacco products	0	0	0
13 : Manufacture of textiles	838	948	13
14 : Manufacture of wearing apparel	197	313	59
15 : Manufacture of leather and related products	56	20	-64
16 : Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	1,853	1,690	-9
17 : Manufacture of paper and paper products	1,765	1,466	-17
18 : Printing and reproduction of recorded media	2,118	1,594	-25
19 : Manufacture of coke and refined petroleum products	1,409	1,468	4
20 : Manufacture of chemicals and chemical products	3,158	2,808	-11
21 : Manufacture of basic pharmaceutical products and pharmaceutical preparations	163	136	-17
22 : Manufacture of rubber and plastic products	3,628	3,837	6
23 : Manufacture of other non-metallic mineral products	2,562	1,913	-25
24 : Manufacture of basic metals	5,256	4,739	-10
25 : Manufacture of fabricated metal products, except machinery and equipment	3,964	4,018	1
26 : Manufacture of computer, electronic and optical products	1,424	1,144	-20
27 : Manufacture of electrical equipment	1,650	1,803	9

28 : Manufacture of machinery and equipment n.e.c.	4,024	2,474	-39
29 : Manufacture of motor vehicles, trailers and semi-trailers	1,421	924	-35
30 : Manufacture of other transport equipment	309	680	120
31 : Manufacture of furniture	1,156	752	-35
32 : Other manufacturing	589	1,004	70
33 : Repair and installation of machinery and equipment	2,560	3,523	38
35 : Electricity, gas, steam and air conditioning supply	883	989	12
36 : Water collection, treatment and supply	734	802	9
37 : Sewerage	175	327	87
38 : Waste collection, treatment and disposal activities; materials recovery	1,523	2,348	54
39 : Remediation activities and other waste management services.	0	2	0
41 : Construction of buildings	5,709	4,240	-26
42 : Civil engineering	5,032	4,898	-3
43 : Specialised construction activities	12,621	10,179	-19
45 : Wholesale and retail trade and repair of motor vehicles and motorcycles	9,204	8,152	-11
46 : Wholesale trade, except of motor vehicles and motorcycles	20,263	19,363	-4
47 : Retail trade, except of motor vehicles and motorcycles	46,407	42,821	-8
49 : Land transport and transport via pipelines	11,081	12,020	8
50 : Water transport	100	169	69
51 : Air transport	328	341	4
52 : Warehousing and support activities for transportation	7,407	6,707	-9
53 : Postal and courier activities	2,721	2,734	0
55 : Accommodation	6,104	6,522	7
56 : Food and beverage service activities	21,136	18,149	-14
58 : Publishing activities	1,875	989	-47
59 : Motion picture, video and television programme production, sound recording and music publishing activities	195	217	11
60 : Programming and broadcasting activities	85	140	65
61 : Telecommunications	1,326	1,508	14
62 : Computer programming, consultancy and related activities	2,108	2,113	0
63 : Information service activities	225	56	-75
64 : Financial service activities, except insurance and pension funding	3,211	2,649	-18
65 : Insurance, reinsurance and pension funding, except compulsory social security	112	180	61
66 : Activities auxiliary to financial services and insurance activities	1,698	902	-47
68 : Real estate activities	3,959	3,034	-23
69 : Legal and accounting activities	5,619	4,806	-14
70 : Activities of head offices; management consultancy activities	5,043	4,420	-12
71 : Architectural and engineering activities; technical testing and analysis	4,218	3,829	-9
72 : Scientific research and development	199	167	-16
73 : Advertising and market research	488	624	28
74 : Other professional, scientific and technical activities	1,091	1,004	-8
75 : Veterinary activities	475	369	-22
77 : Rental and leasing activities	3,630	1,568	-57
78 : Employment activities	15,657	15,796	1
79 : Travel agency, tour operator and other reservation service and related activities	679	682	0
80 : Security and investigation activities	1,118	1,217	9
81 : Services to buildings and landscape activities	8,073	7,537	-7
82 : Office administrative, office support and other business support activities	4,436	4,196	-5

84 : Public administration and defence; compulsory social security	18,766	20,002	7
85 : Education	36,435	37,490	3
86 : Human health activities	30,794	33,057	7
87 : Residential care activities	11,123	12,596	13
88 : Social work activities without accommodation	12,878	15,276	19
90 : Creative, arts and entertainment activities	557	1,014	82
91 : Libraries, archives, museums and other cultural activities	1,509	1,305	-14
92 : Gambling and betting activities	1,200	1,237	3
93 : Sports activities and amusement and recreation activities	6,048	5,542	-8
94 : Activities of membership organisations	1,581	1,332	-16
95 : Repair of computers and personal and household goods	282	593	110
96 : Other personal service activities	4,182	4,972	19
97 : Activities of households as employers of domestic personnel	0	0	0
98 : Undifferentiated goods- and services-producing activities of private households for own use	0	0	0
99 : Activities of extraterritorial organisations and bodies	0	0	0
Column Total	**403,944**	**392,259**	-3