NOTTINGHAM BUSINESS SCHOOL
Nottingham Trent University

**Economic Strategy Research Bureau**

# Nottingham City Economic Review

## *An Evidence Base for the Nottingham City Growth Plan*

This report was produced by the ESRB at Nottingham Business School on behalf of Nottingham City Council to support the development of an Economic Growth Plan for Nottingham and to position the city and its wider conurbation within the D2N2 Local Enterprise Partnership (LEP). It summarises the latest available research and data on the spatial economy of Nottingham, recent economic conditions, the sectoral structure of the city's economy, labour market issues, and the challenges and opportunities related to enterprise, innovation, education and skills.

Economic Strategy Research Bureau, Nottingham Business School, February 2012.

# Nottingham City Economic Review

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## Executive Summary

This report was produced by the Economic Strategy Research Bureau (ESRB), at Nottingham Business School, on behalf of Nottingham City Council in order to inform the development of an Economic Growth Plan, which was published for consultation on 3rd February 2012. The report identifies key issues for Nottingham in the context of challenging economic conditions and the objective of increasing private sector job generation.

**Population and Spatial Economy**

Nottingham has a relatively small population compared to other core cities, but has experienced significant growth in recent years. The core Nottingham Unitary Authority is at the centre of a wider conurbation incorporating neighbouring districts and is also an important sub-regional centre in the East Midlands region. Nottingham has the highest levels of in-commuting in the East Midlands, significantly higher than Leicester and several times higher than Derby. However, an analysis of earnings, skills and employment by occupation suggests that residents of Nottingham city face challenges competing with more highly skilled commuters in accessing higher quality, better paid jobs within the city.

The importance of the city as a regional centre and a destination for commuters is reflected by the fact that Gross Value Added (GVA) per head in Nottingham is one of the highest of the English core cities. Compared to similar sized European Cities, Nottingham also has a relatively high level of output per head, but, unlike several centres in northern Europe (such as Wiesbaden in Germany and Utrecht in the Netherlands) this is accompanied with relatively high levels of unemployment.

The nature of commuting patterns, with more highly skilled workers travelling into Nottingham from neighbouring districts such as Rushcliffe and Broxtowe, is reflected in both relatively low earnings for residents of the city and in low Gross Disposable Household Income (GDHI). In stark contrast to the workplace-based measure of GVA per head, the residence-based GDHI measure is lower in Nottingham than many other English core cities.

**Economic Structure**

Manufacturing accounts for a relatively small proportion of Nottingham's economy, with food & drink the largest manufacturing sub-sector in the city. Construction is also a relatively small sector in Nottingham, though there are a number of major companies located just outside the city. Analysis of training activity and skill levels in Nottingham partly reflects the relatively small size of Manufacturing and Construction, with lower take-up of Higher Apprenticeships (often associated with the requirement for technician-level skills in Manufacturing) and lower levels of residents qualified to intermediate levels (Level 3). Nottingham also has a low proportion of residents who have received work-related training, which tends to be higher in areas that have higher employment in Manufacturing (e.g. Derby). However, such training and skills issues also reflect the nature of the service sector in Nottingham compared to elsewhere.

The service sector accounts for a disproportionately large share of Nottingham's economy. Business services is the largest sub-sector, accounting for around one fifth of output in the city. However output growth has been slower than the UK average and is expected to remain so. Retail is a significant sector in Nottingham, but its share of output and employment is smaller than in Leicester or Derby and, as in the case of business services, output growth has been slower than average and is expected to remain so in the future.

The public sector is more significant in Nottingham than the UK. Health (including the life sciences emerging sector identified in the Nottingham Economic Growth Plan) is the most significant sub-sector associated with the public services and is expected to grow at a rate just below the national average. However, this high level of employment in the public services could also indicate relative vulnerability to the impacts of on-going spending cuts.

Due to issues of definition and data availability, it is difficult to assess the strength of creative industries and sub-sectors such as digital content (identified as an emerging sector in the Economic Growth Plan). While the city has some strengths and assets in these areas it is difficult to compare with other areas. This also applies to low carbon and environmental goods and services. There are significant policy drivers behind low carbon and environmental goods and services which mean that the importance of this is likely to increase going forward. There are significant assets both inside the city and out, including research centres in the universities, power generation across Nottinghamshire, and the British Geological Survey in Keyworth.

**Enterprise & Innovation**

Enterprise is an important factor in enhancing the quality of the business stock, driving competition, innovation and new job generation. Nottingham has a lower business birth rate than the UK average and is among the lowest of the core cities. The business birth rate has declined sharply in Nottingham and elsewhere since the recession started in 2008 and has continued to decline during the current slow recovery. Business survival rates in Nottingham are also slightly lower than the national average.

High growth companies, although only a small proportion of the business stock, are important because they account for a significant proportion of employment growth in the economy, around half in the UK between 2002 and 2008. The proportion of the business stock that can be described as high growth (i.e. experiencing 20% growth in employment per annum over a three year period) is similar to the national average in Nottingham.

It is enormously difficult to identify high growth businesses before they grow. Research demonstrates that they can be new or existing firms and are distributed across almost all sectors. It is therefore important for policy makers to understand the shared characteristics of such companies, and thus the factors that will create a supportive environment. These businesses tend to be innovative, which requires four enabling factors which policy makers can address in a local area: access to finance for growth; a skilled workforce; the right infrastructure to allow for the flow of ideas and knowledge and collaboration; and procurement activities, including public procurement, that stimulates demand for innovation.

**Employment, Skills & Education**

Nottingham has consistently had lower than average employment rates and higher unemployment rates, in common with many core cities. However, the impacts of recession on Nottingham's labour market appear to have been more significant than elsewhere. The latest employment rate is lower than all other core cities and the unemployment rate is one of the highest. By the period April 2010-March 2011, the unemployment rate (according to the International Labour Organisation definition) had increased to 14.1% in Nottingham – almost double the national average. This represents an increase of 6.6 percentage points compared to the same period in 2007-2008, which was greater than in any other core city.

Youth unemployment has also increased significantly compared to other cities, although the increase in economically inactive students has contributed to this.

As the Nottingham UA area appears to have been more seriously affected than other English UAs and Metropolitan Districts, it would be reasonable to suggest that elements of Nottingham's employment structure and skills profile have made it more vulnerable than elsewhere. Compared to other core cities, Nottingham has a relatively low proportion of residents working in occupations associated with higher level skills, such as 'Managers and Senior Officials' and 'Associate Professional Occupations' (where Nottingham has the lowest proportion of employment of all the core cities). Conversely, Nottingham has a significant overrepresentation of employment in occupations associated with very low levels of skill, such as 'Elementary Occupations'. Residents of Nottingham City are more likely to be working in low or unskilled jobs compared to the other districts in the GNP area – particularly Rushcliffe - suggesting significant barriers in competing with skilled residents from suburban areas and adjacent towns and villages.

This challenge becomes clearer when levels of qualification held by working residents are assessed. Compared to many other core cities and neighbouring districts in the GNP area (again, Rushcliffe stands out, with over half of working residents qualified to at least a degree level), Nottingham has a higher proportions of residents with very low levels of qualification and a lower than average proportion of residents with higher level qualifications.

Earnings can be interpreted as an outcome of the skills of a local area's workforce, as highly skilled workers are likely to be more productive (thus rewarded through higher wages) and employers who place a high value on skills are more likely to pay higher wages to attract skilled staff. According to the 2011 Annual Survey of Hours and Earnings (ASHE), Nottingham City UA has the lowest earnings of all core cities on the basis of both residence- and workplace-based earnings estimates. The median of earnings for residents of Nottingham is lower than the median for those working in the city – providing further evidence that highly skilled workers commute from elsewhere to occupy more highly paid jobs within the city.

The National Employer Skills Survey (NESS) for 2009 provides an indication of how far workforce skills in an area meet the needs of local employers. Nottingham City stands out compared to other areas in the D2N2 LEP in having a particularly high proportion (29%) of employers who feel they have staff who are 'not fully proficient' in their current jobs. This is 10 percentage points higher than the national average. This is likely to be a function of both the impacts of recession (with staff reductions resulting in remaining employees experiencing increased workloads) and Nottingham's skill profile – indicating the relatively high proportion of employed residents in the city lacking the skills required to progress in the workplace.

In terms of education, Nottingham City has a relatively high level of participation amongst 16 and 17 year olds but compares less favourably on measures of attainment. In the 2009/10 school year, 44% of young people in schools in Nottingham City attained 5 or more GCSE passes at grades A*-C, including English and maths, compared to 55% in England overall. This is the lowest of all the areas in the D2N2 LEP. This attainment is also reflected in the proportion of pupils from maintained schools in Nottingham who progress to Higher Education by the age of 19, which, at 21%, was 12 percentage points lower than the national average in 2009/10.

With the Coalition Government's aim to increase the responsiveness of Further and Higher Education provision to the choices made by individual learners, it is important to understand how far current decisions meet the needs of employers – in order to inform provision of advice and guidance. Analysis of Further Education data for the East Midlands region alongside national survey evidence found that young people (16-19 year olds) were more likely to choose courses that reflected personal interests rather than aspirations for future employment, with a concentration of learners in courses such as creative & arts, fitness & sports, and beauty & hairdressing. Many young people surveyed nationally felt that current provision of advice and guidance was poor and ill-informed by business needs.

There is a risk that young people in FE are particularly disadvantaged compared to HE students, who have access to better-resourced careers advice and are more likely to have engaged in 'work-relevant' learning practices (seminars, group presentations, independent project work, etc.). Evidence for the East Midlands from the 2009 NESS suggests that employers are much more likely to find university graduates to be 'very well prepared for work' (26%), whilst 17% felt that FE leavers were poorly prepared for work and 26% felt that school leavers were poorly prepared for work.

## 1. Introduction

In the context of challenging national and international economic conditions and changes to the way local government is financed, Local Authorities are reconsidering how they can realistically intervene to increase levels of private sector job generation and investment. In recognition of the need to do things differently and most effectively target limited resources, the Rt. Hon. Greg Clark MP, Minister for Cities, wrote to Nottingham City Council in October 2011 to begin a conversation about how the Government can encourage growth in England's Core Cities.

To support the development of a 'City Deal' with the Government, Nottingham City Council has developed an Economic Growth Plan, in consultation with partners. This plan will form the basis for the conversation about Nottingham's priorities and any submissions to the Government's Growing Places Fund.

Although there has been significant research undertaken over the past few years, including the joint Nottingham and Nottinghamshire Local Economic Assessment (LEA), little work has been done to translate this into economic policy. To inform the development of the Economic Growth Plan, Nottingham City Council appointed the Economic Strategy Research Bureau (ESRB) at Nottingham Business School to produce a comprehensive economic baseline for the sub-regional economy. This builds on work the ESRB has delivered to support the strategic development of the D2N2 Local Enterprise Partnership (LEP).

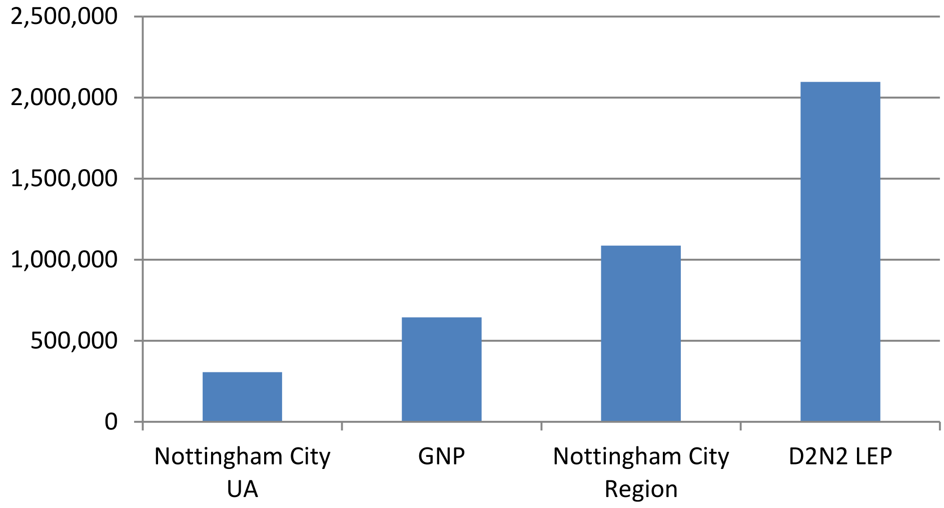
This report investigates the spatial economy of Nottingham, recent economic conditions, the sectoral structure of economic activity, labour market issues, and the challenges and opportunities related to enterprise, innovation, education and skills. The latest available official data has been used throughout the report, alongside a wide range of literature, which is set out in the bibliography at the end of the document.

A flexible approach to benchmarking will be applied throughout this report, to ensure that Nottingham City is compared alongside appropriate areas – in order to support useful observations on possible policy challenges and opportunities. In presenting key economic indicators (e.g. Gross Value Added), Nottingham City NUTS3 area will be used alongside other UK and EU NUTS3 areas (e.g. similar sized Eurostat Urban Audit cities, such as Wiesbaden in Germany and Utrecht in the Netherlands). Within the UK, Nottingham will be benchmarked alongside the other 7 English Core Cities and the national average, using the Unitary Authority (UA)/Metropolitan District area for each. For more local comparisons, the Greater Nottingham Partnership (GNP) area, the wider Nottingham City Region and the D2N2 area will be used alongside the core Nottingham Unitary Authority to explore the city's functional boundaries and its contribution to the LEP area's economy and labour market. The issues associated with these alternative geographies are explored in detail in Annex 1.

### 1.1 Geographic and Demographic Profile of Nottingham

The Nottingham City UA area had a resident population of 306,700 in 2010, which was 47.6% of the wider Greater Nottingham Partnership (GNP) area and 14.6% of the D2N2 LEP. The GNP area includes three districts that are directly adjacent to Nottingham, Rushcliffe to the south (with a population of 112,800), Broxtowe to the west (111,800) and Gedling to the east (113,200). A study by the Centre for Urban and Regional Development Studies (CURDS) to develop a 'city region' [1] that more fully incorporated Nottingham's 'functional economic area' produced a wider boundary, incorporating parts of Derbyshire and north Nottinghamshire, that had a population of 1,086,000, more than half of the population of the D2N2 LEP.

### Chart 1: The Population of Nottingham City UA and Functional Economic and Policy-Based Sub-Regions, 2010




Source: ONS Crown Copyright, *'Mid-Year Population Estimates, 2010'*, from NOMIS, 21st November 2011 – using City Region boundaries described in Nottingham City Council, '*City Regions of the Core Cities: Definitions and Statistics'*, October 2005.

The population of Nottingham City UA has grown strongly between 2000 and 2010, by 13.3% - considerably faster than adjoining districts (Rushcliffe had the next fastest growth, at 7.6%). Much of this growth has been due to the in-migration of younger people (between 2009 and 2010, net-migration added 3,800 to the city's population compared to an additional 2,100 from natural change), which has included international migrants (who tend to have a younger age profile compared to the UK-born population) and students. Also in 2010, there was a net increase of 4,688 in 15-19 year olds migrating from elsewhere in the UK to Nottingham City and north Nottinghamshire, many of whom will be studying at the city's two universities.[2]

Nottingham City UA is relatively small compared to other core cities (as represented by their UAs/Metropolitan District). This is illustrated in Chart 2, which also shows the working age population (16-64 year olds). The total resident population of Nottingham UA in 2010 was similar in size to Leicester (306,600) and Newcastle-Upon-Tyne (292,200), but significantly smaller than other 'medium-sized' English cities – such as Liverpool (445,200) and Bristol (441,300) – notwithstanding boundary issues described in detail in Annex 1.

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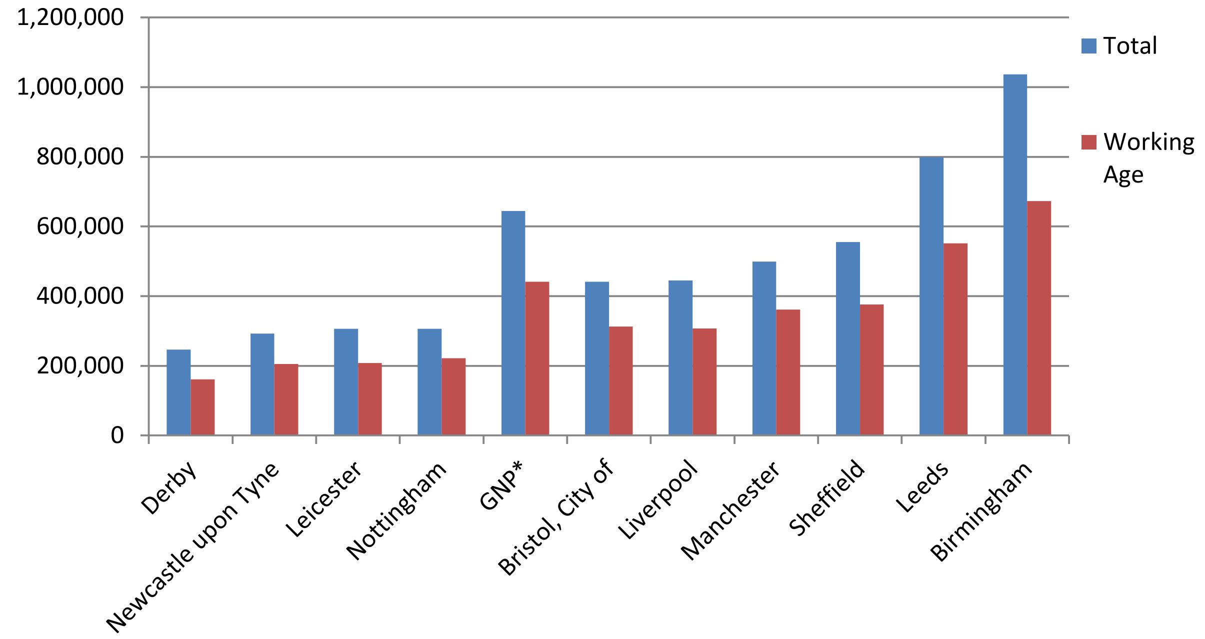
[1] Centre for Urban and Regional Development Studies, University of Newcastle Upon Tyne, '*Core Cities: Key Centres for Regeneration'*, August 1999.

[2] ONS Crown Copyright, '*NHSCR moves within the UK and Isle of Man: Registered during the year ending September 2010*', Table 1, May 2011.

### Chart 2: Total and Working Age (16-64) Populations of Core Cities and Other Comparators, 2010




Source: ONS Crown Copyright, '*Mid-year Population Estimates'*, 2010, from NOMIS 16th December 2011.

* GNP area based on Nottingham City UA and the districts of Rushcliffe, Broxtowe and Gedling.

## 1.2 Key Statistics

| Area | Indicator | | Source |
|---|---|---|---|
| **Total Resident Population (and % in working age group, 16-64), 2010** | | | |
| Nottingham City UA | 306,700 (72.3%) | | ONS Crown Copyright, Mid-Year Population Estimates, 2010. |
| GNP | 644,500 (68.4%) | | |
| Nottingham City Region | 1,086,000 (66.5%) | | |
| D2N2 | 2,097,200 (65.2%) | | |
| Great Britain | 60,462,600 (64.8%) | | |
| **Employment Rate (% resident population aged 16-64) and Unemployment Rate (% economically active population aged 16-64), 2010** | | | |
| Nottingham City | 54.9% | 14.8%* | ONS Crown Copyright, Annual Population Survey, January 2010-December 2010. *Note 'economically active' population excludes full-time students, increasing the unemployment rate in the case of Nottingham. |
| GNP | 65.2% | 10% | |
| Nottingham City Region | 67.5% | 9.3% | |
| D2N2 | 69.3% | 8.4% | |
| Great Britain | 70.3% | 7.8% | |
| **Business Birth Rate, 2010** | | | |
| Nottingham City | 9.9 | | ONS Crown Copyright, Business Demography 2010, December 2011. |
| Liverpool | 11.1 | | |
| Manchester | 12.7 | | |
| Sheffield | 9.6 | | |
| UK | 10.2 | | |

| Area | Indicator | Source |
| --- | --- | --- |
| **Gross Value Added per head (UK=100), 2009** | | |
| Nottingham NUTS3 | 126 | ONS Crown Copyright, Regional, Sub-Regional and Local Gross Value Added, December 2011. |
| Liverpool NUTS3 | 99 | |
| Greater Manchester South NUTS3 | 109 | |
| Sheffield NUTS3 | 88 | |
| North Nottinghamshire NUTS3 | 80 | |
| South Nottinghamshire NUTS3 | 69 | |
| Derbyshire and Nottinghamshire NUTS2 | 86 | |
| UK | 100 | |
| **Employment in Manufacturing (% Full Time Equivalent employees), 2010** | | |
| Nottingham City | 6.2% | Experian, Regional Planning Service Summer 2011. |
| Derby City | 16.6% | |
| D2N2 | 16.7% | |
| UK | 10.5% | |
| **Workforce qualified to Level 4+ (% residents in employment), 2010** | | |
| Nottingham City | 34.4% | ONS Crown Copyright, Annual Population Survey, January 2010-December 2010. |
| GNP | 38.8% | |
| Nottingham City Region | 34.6% | |
| D2N2 | 34.4% | |
| UK | 37.2% | |
| **Workforce qualified below Level 2 (% residents in employment), 2010** | | |
| Nottingham City | 28.2% | ONS Crown Copyright, Annual Population Survey, January 2010-December 2010. |
| GNP | 23.5% | |
| Nottingham City Region | 26.2% | |
| D2N2 | 26.2% | |
| UK | 26.5% | |
| **Earnings (Workplace Based), 2011** | | |
| Nottingham City | £455.90 | ONS Crown Copyright, Annual Survey of Hours and Earnings, median gross weekly pay (Full Time Workers), 2011. |
| Derby City | £620.20 | |
| Liverpool | £498.10 | |
| Manchester | £498.80 | |
| UK | £500.70 | |

### 1.3 Nottingham and European 'Urban Audit' Cities

As described in more detail in Annex 1, Nottingham is a core city and a member of the Eurocities network. It has therefore been included in the 'Urban Audit' of 357 European cities undertaken on behalf of Eurostat (the statistical agency of the European Union) and the European Directorate-General for Regional Policy, in collaboration with the national statistical offices of EU member states.[3] This database provides a useful source for cross-EU comparisons, enabling the identification of similar sized cities which may share some common characteristics with Nottingham, such as similar pathways of historical development or current sectoral strengths.

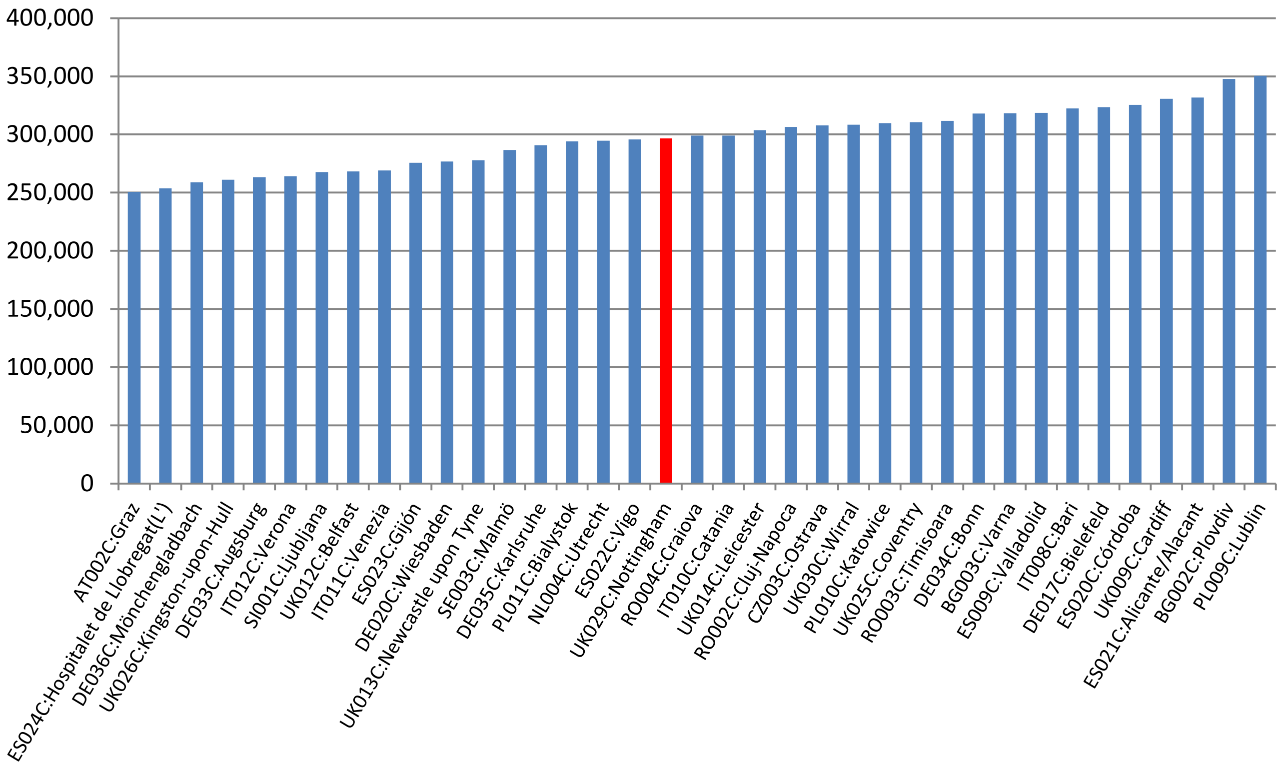
[3] Eurostat, '*Eurostat Regional Yearbook*', 2011.

This section presents an overview of Urban Audit cities with similar sized populations to Nottingham, looking at GDP/GVA per capita and unemployment rates, before exploring Nottingham's relative strengths and weaknesses in more detail through a series of EU city case studies.

Chart 3 illustrates Nottingham's relative size amongst small to medium sized European Cities with populations between 250,000 and 350,000, based on average population estimates for the period 2007 to 2009 (note that the population of Nottingham is therefore lower than the 2010 estimate cited in Section 1.2 Key Statistics). The spatial units shown in the chart are 'core cities', which are based on administrative boundaries in most European countries – such as Unitary Authority/Metropolitan District in the UK – and thus equivalent to NUTS3 regions in most but not all cases (e.g. all but 4 of the 45 Urban Audit cities in Germany are based on NUTS3 boundaries).

This chart shows that that population of Nottingham is at the centre of the distribution of small to medium sized cities, larger than Verona and Belfast, but smaller than Bonn, Cardiff and Lublin.

### Chart 3: Urban Audit Cities (Populations of 250,000-350,000), 2007 to 2009



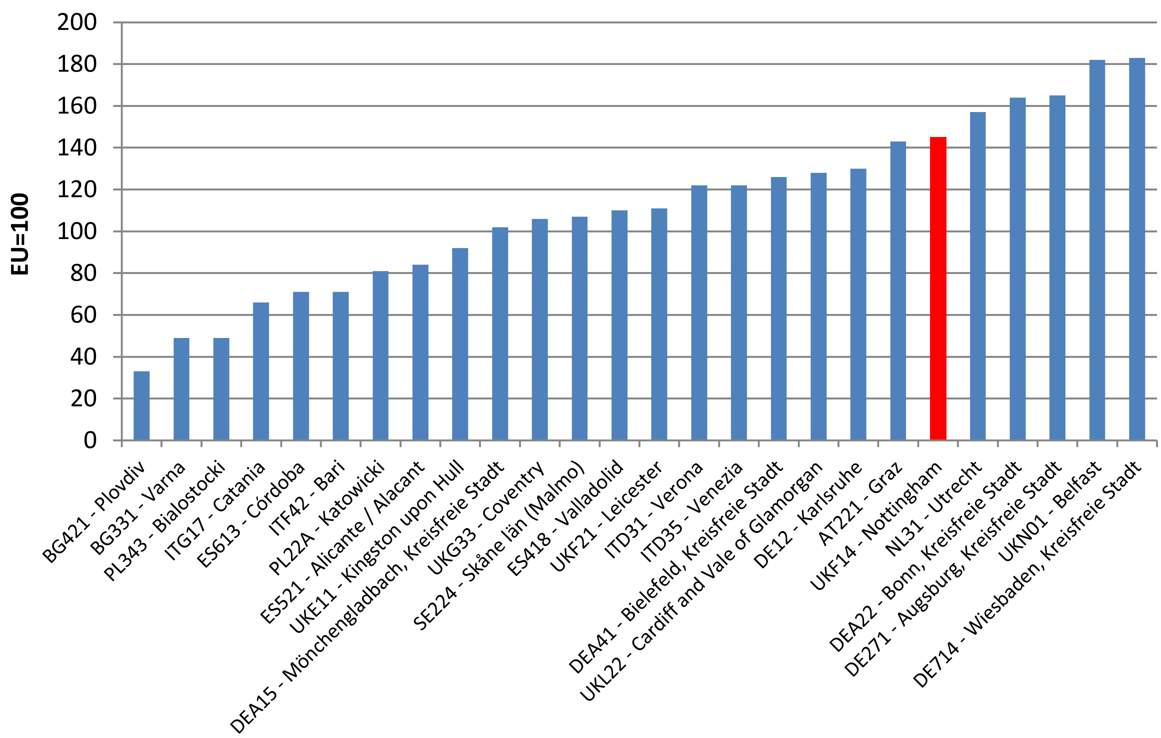

Source: Eurostat, '*Population and living conditions in Urban Audit cities (core cities), 2007-2009*', 2011.

Chart 4 presents estimates of Gross Domestic Product (GDP) per capita (EU average= 100) for 2008, which gives an idea of the relative economic output of these cities. The areas shown on the chart are those cities that are equivalent to NUTS3 sub-regions (the smallest geographical level at which GDP data is available).

GDP per capita for Nottingham was estimated to be 45% higher than the EU average in 2008. A number of small to medium sized German cities have significantly higher levels of GDP per capita, including Wiesbaden (which has a smaller population than Nottingham, as indicated in Chart 3). Wiesbaden has the highest GDP per head of the sample, 83% higher than the EU average. Bonn and Augsburg also have relatively high levels of GDP per capita, at 64% and 65% higher than the EU average respectively.

Nottingham has a higher GDP per capita compared to many similar sized southern European cities, such as those in Italy and Spain (including Verona, Bari, Catania and Córdoba). GDP per capita in Nottingham also exceeds most small to medium sized cities in central and eastern Europe, such as Plovdiv and Varna in Bulgaria and Białystok (Bialostocki) and Katowice (Katowicki) in Poland.

### Chart 4: Output in GDP per capita (PPS[4]) for EU Small to Medium Sized Cities/NUTS3 Areas (EU=100), 2008




Source: Eurostat, '*Gross domestic product (GDP) at current market prices at NUTS level 3'*, 2008 Purchasing Power Standard (PPS) per inhabitant in percentage of the EU average (EU=100), 2011.

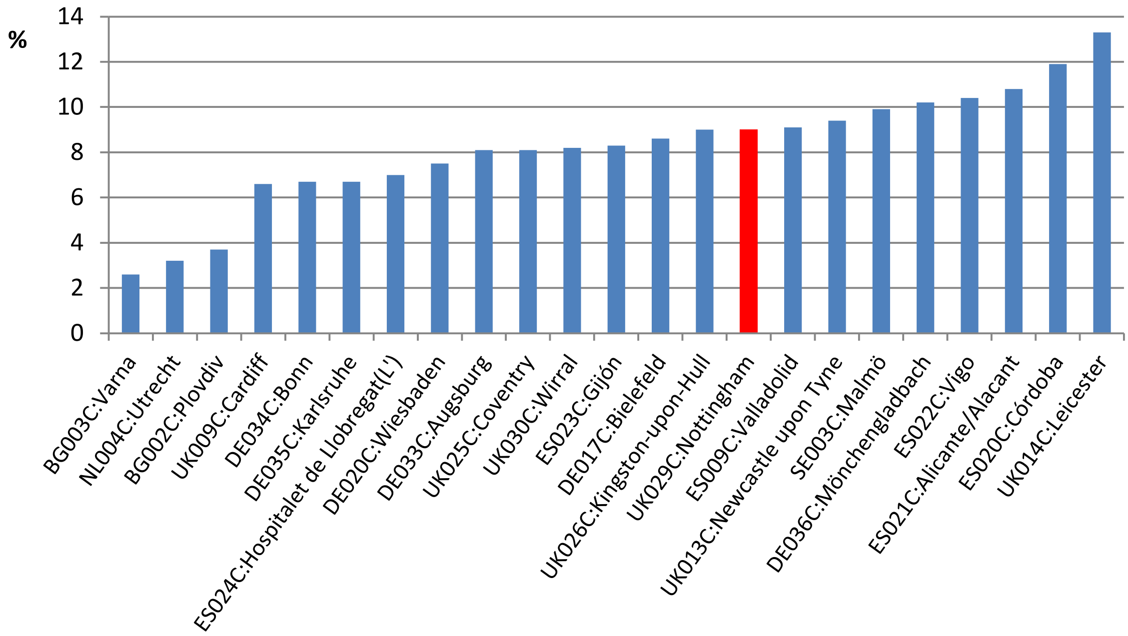
Urban centres tend to have higher unemployment rates for a variety of reasons, such as the existence of concentrations of deprivation in parts of most European cities. Despite the UK having lower unemployment rates nationally compared to most of its EU counterparts, Chart 5 shows that Nottingham City is towards the higher end of the distribution of unemployment for the small to

[4] Purchasing Power Standards (PPS) are artificial currency units that enable standardised comparison across countries and currencies. Euros PPS are based on the EU 25 average and have the same purchasing power over the whole of the EU 25. Their purchasing power is a weighted average of the purchasing power of the national currencies of EU Member States. As such they reflect the average price level in the EU 25 or, more precisely, the weighted average of the price levels of Member States.

medium sized cities for which data is available (average unemployment rates for the period 2007-2009 are not available from Eurostat for cities in Italy, Romania, the Czech Republic, or Slovenia).

Over the period 2007 to 2009[5], the average unemployment rate for Nottingham was 9%. This was significantly lower than in many southern European cities, such as Vigo, Alicante and Córdoba in Spain (with unemployment rates of 10.4%, 10.8% and 11.9% respectively). However, many northern European cities, particularly in Germany, had far lower unemployment rates than Nottingham – including Wiesbaden, with the highest GDP per capita in the sample (Chart 4), where unemployment was 7.5%, and Bonn, where GDP per capita also exceeded Nottingham, at 6.7%. Utrecht, in the Netherlands experiences very low unemployment, at 3.2% between 2007 and 2009. This suggests that some cities in northern Europe have maintained lower levels of unemployment relative to their national averages, whilst most cities in the UK and southern Europe tend to have significantly higher unemployment rates than their equivalent national averages.

### Chart 5: Unemployment Rates (ILO) in Small to Medium Sized Urban Audit Cities (% residents 16+), 2007-2009




Source: Eurostat, '*Labour market in Urban Audit cities, core city - EC1020I:Unemployment rate in Urban Audit cities - %, 2007-2009*', 2011.

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[5] Please note that the unemployment rates used for comparison across EU Urban Audit cities in this section are not comparable to rates cited elsewhere in this report because: they are averaged over the period 2007 to 2009; and they apply to the economically active population aged 16 and over, in contrast to the UK LFS measure which applies to the economically active population aged 16-64 (i.e. 'working age' in the UK).

**Case Study 1: Wiesbaden**

Wiesbaden is the capital of the German federal state of Hessen (Hesse). The city had a smaller population than Nottingham between 2007 and 2009, at 276,700, but had the highest GDP per capita of the sample of Urban Audit cities selected for this report, at 83% higher than the EU average.

Much like Nottingham, Wiesbaden is characterised by its service sector, especially health. As the state capital of Hessen, Wiesbaden has a strong representation in public services, but has also developed expertise in manufacturing sectors such as chemicals, machinery and technical appliances. The city has also established a leading role in new and emerging technologies of relevance to the Nottingham Economic Growth Plan, including data processing and software development (i.e. elements of the digital content sector).

Also like Nottingham, Wiesbaden benefits from its proximity to a regional airport (the Rhein-Main Airport), which has increased the investment potential of employment sites around the city.

The city is part of a Larger Urban Zone (LUZ), as defined by the Urban Audit, of 455,000 inhabitants that expands over an area of 1,015 $km^2$ in the Rhein-Main area, one of Europe's economic centres.

Wiesbaden has achieved a relatively high level of output and economic activity whilst maintaining low levels of unemployment, with an average unemployment rate estimated to be 1.5 percentage points lower than Nottingham during the period 2007-2009.

Source: Eurostat and the Directorate-General for Regional Policy at the European Commission, Urban Audit City Profiles, accessed 30th January 2012, http://www.urbanaudit.org

**Case Study 2: Malmö**

Malmö is the commercial centre of southern Sweden (in the sub-region of Skåne län), and also has a population slightly smaller than Nottingham, at 286,500 in 2007-2009. In common with Nottingham, the city is a centre for public administration for the surrounding area – but, because of the structure of regional and local government in Sweden, Malmö city council enjoys significant flexibility in its policy making and other governance powers.

GDP per capita estimates are not available for Malmö. However, the city accounts for a large share of both the population and economic activity in the Skåne län NUTS3 region, which had a 2008 GDP per head PPS estimate that was only 7% higher than the EU average. Furthermore, the unemployment rate in Malmö is higher than in Nottingham, at 9.9% between 2007 and 2009.

Key sectors in the local economy include logistics, the retail and wholesale trade, construction, and real estate. Of relevance to emerging sectors identified in the Nottingham Economic Growth Plan (i.e. health & life sciences), a number of leading global biotechnology and medical technology companies are based in Malmö. The city also has strengths in the manufacture and provision of low carbon goods and services and digital content.

Source: Eurostat and the Directorate-General for Regional Policy at the European Commission, Urban Audit City Profiles, accessed 30th January 2012, http://www.urbanaudit.org

**Case Study 3: Bonn**

Bonn is located on the River Rhine in the German state of North Rhine-Westphalia. The city is part of a Larger Urban Zone (LUZ), as defined by the Urban Audit, of nearly 880,000 inhabitants that covers an area of 1,295 $km^2$.

In population terms, Bonn is a larger city than Nottingham, with 317,900 residents in the period 2007-2009. Bonn also has a relatively productive economy, with a GDP per capita PPS value that was 64% higher than the EU average in 2008. There are elements of Bonn that make it a useful case study for the Nottingham Economic Growth Plan, but there are also characteristics that are more unique to Bonn. Foremost of these unique characteristics is the fact that Bonn used to be the capital of West Germany prior to reunification. As a legacy of this status, Bonn still hosts a range of UN organisations and non-governmental organisations as well as federal ministries and governmental administrations (including a total of 17 United Nations institutions, such as the the United Nations Framework Convention on Climate Change). It also has a famous university and a newly established UN Campus in the city's former parliamentary quarter on the banks of the Rhine.

Of direct relevance to the sectors identified in the Nottingham Economic Growth Plan is the success of the city's retail centre. Bonn is also an important centre for communications (including TV and radio broadcasting), ICT and logistics (including the headquarters of DHL). Bonn has successfully built on its historical legacy as a former capital to expand in the area of business tourism, and is an important location for international meetings, conventions and conferences. A new conference centre capable of hosting thousands of participants is currently under construction in the immediate vicinity of the UN Campus.

Like a number of small to medium sized cities in western Germany, Bonn has a relatively low rate of unemployment, estimated to be 6.7% during the period 2007-2009, 2.3 percentage points lower than the rate in Nottingham during the same period.

Source: Eurostat and the Directorate-General for Regional Policy at the European Commission, Urban Audit City Profiles, accessed 30th January 2012, http://www.urbanaudit.org

**Case Study 4: Utrecht**

Utrecht is located in the Dutch province of Utrecht and had a population of 294,700 in 2007-2009. Utrecht is the fourth largest city in the Netherlands and had a GDP per capita PPS that was estimated to be 57% higher than the EU average in 2008. It also has one of the lowest unemployment rates in the sample of cities used in this report, at 3.2% between 2007 and 2009.

Utrecht has a number of interesting strengths in light of the priorities set out in the Nottingham Economic Growth Plan, including the high level of R&D activity achieved in the area, which is closely related to the activities of Utrecht University (the largest university in the Netherlands) and a large student and graduate population. Utrecht and its surrounding areas are particularly strong in biotechnology research, development and manufacturing.

Utrecht has also been extremely active in organising and promoting cultural events, including music festivals and public art events, and has the second highest number of such events in the Netherlands (after Amsterdam). As such, Utrecht aims to become a cultural capital by 2018.

Utrecht is part of a Larger Urban Zone (LUZ) of over 1.1 million inhabitants that covers a land area of 1,362 $km^2$, which is part of the urban conurbation called the Randstad (which includes Amsterdam, Rotterdam and the Hague).

Source: Eurostat and the Directorate-General for Regional Policy at the European Commission, Urban Audit City Profiles, accessed 30th January 2012, http://www.urbanaudit.org

## 2. Spatial Economy

The previous section introduced the geographical areas referred to in this study, but it is important to emphasise that flows of economic activity are not constrained by administrative boundaries. An assessment of the linkages within the city and between neighbouring areas is important to understand Nottingham's wider economic role as well as internal economic and labour market dynamics.

There is a body of evidence that suggests that the quality and speed of linkages between areas (connectivity) are key factors that drive economic performance. The role that locations play within a given area are influenced by connectivity. Different places, fulfilling different roles, require a tailored approach to public policy. Nottingham is a regional centre with a critical mass of activity that attracts labour and capital. Links between the city and the surrounding areas are complex and provide challenges to the interpretation of the economic and labour market data that is available at local and sub-regional level.

Nottingham is served by a range of key transport infrastructure. East Midlands Airport is in close proximity and provides a gateway to a range of international destinations. Key rail and road links include:

- East Midlands Trains, CrossCountry and Northern Rail provide direct services to London and the South East, the West Midlands, the North West and Yorkshire;
- The M1 provides access to London, the South East, Yorkshire and the North East; and
- The strategic road network in and around the city includes the A1, which runs to the east of the M1, and the A52 which connects Derby and Nottingham.

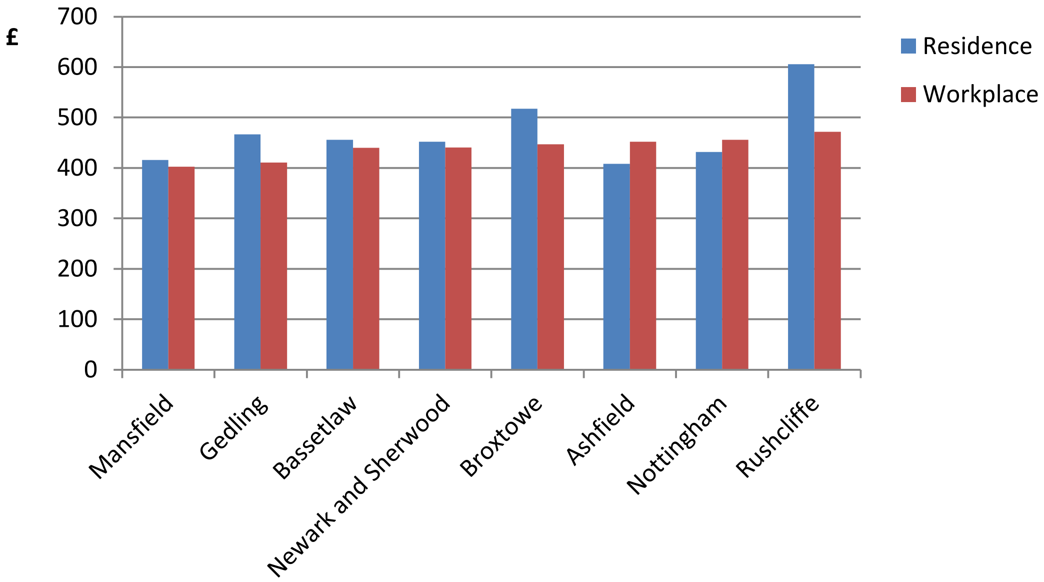
Data is available (now somewhat dated - but nevertheless the story remains relevant) that allows an analysis of commuter flows and flows of people engaged in leisure and retail activities. As the labour market has changed over the past few decades, so have commuting patterns with more people travelling longer distances to access employment opportunities.

Nottingham experiences the highest levels of net in-commuting in the East Midlands. The numbers for Nottingham (+70,000) are significantly higher than Leicester (+43,000) and several times those for Derby (+15,000). Net out-commuting tends to be highest in those districts adjacent to the city, such as Gedling (-21,000) and Broxtowe and Rushcliffe (-16,000 each).

People commute for a number of reasons, the key reasons being opportunities in the labour market and their associated earnings. People are more likely to commute if employment is available that pays a higher wage than that which is available locally and covers the cost of the commute. There is some data to support this. Workplace earnings are generally higher in key commuting destinations, while on a residence basis earnings tend to be higher in those areas of significant out-commuting. This is illustrated in Chart 6 for Nottinghamshire:

- In the case of Nottingham, the most significant destination for commuters, median gross weekly earnings for those in full time employment were £455.90 in 2011 on a workplace basis. On a residence basis, however, the equivalent figure was around 6% lower at £431.80; and
- For Broxtowe and Rushcliffe (key origins for commuting into Nottingham), residence based median gross weekly earnings are significantly higher than the workplace measure, by 13.6% and 22.1% respectively.

### Chart 6: Median gross weekly pay, full time workers 2011 (£)




Source: ONS Crown Copyright, *'Annual Survey of Hours and Earnings',* 2011, from NOMIS, 24th January, 2012.

Data on retail and leisure flows is more limited, but what is available does highlight Nottingham as a key destination in the D2N2 area and the East Midlands for these activities. Nottingham's retail catchment stretches out into Lincolnshire in the east and overlaps with that of Derby in the west. Catchments for leisure activity tend to be smaller, reflecting the more localised nature of the activity, but Nottingham attracts people from outside of the city.[6]

In their work on polycentricty in the East Midlands' urban network, Coombes et al (2005)[7] examine the relationship between Derby and Nottingham and construct travel-to-work areas that cover the D2N2 area. They construct areas that measure containment for the whole of the labour market and for the segment that contains only managerial and professional workers. Containment is defined as

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[6] Experian on behalf of *emda*, '*Commuting flows in the East Midlands'* and '*Retail and Leisure Flows in the East Midlands*,' 2007.

[7] M Coombes, D Charles, S Raybould and C Wymer, Newcastle University, '*City Regions and Polycentricity: the East Midlands Urban Network'*, 2005.

85% of people living and working in an area. Considering the whole labour market, they identify two catchments that cover Nottingham and the surrounding areas:

- One is centred on Nottingham and covers the southern half of Nottinghamshire; and
- In the second, and in the view of Coombes et al (2005), perhaps surprisingly, Derby is part of a wider catchment that includes central and northern Derbyshire, the Nottinghamshire coalfields and South Yorkshire. Within this catchment area Sheffield is the primary employment centre.

Analysis of managerial and professional workers also identifies two catchments that cover Nottingham and surrounding areas. In this case Derby is part of the same catchment as Nottingham:

- There is a catchment area centred on Sheffield that includes the coalfields areas of Derbyshire and Nottinghamshire; and
- A large catchment that covers central and southern areas of Derbyshire and Nottinghamshire. Within this catchment Nottingham is identified as the primary centre on the basis that flows from Derby into Nottingham are twice the size of flows from Nottingham into Derby.

Infrastructure that supports employment - land and property along with electronic infrastructure such as broadband - is key to delivering sustainable economic growth. The adequate provision of quality employment land and property supporting the demands from industry allows economies to prosper. It is, therefore, important that provision of employment land and property remains responsive to industrial demands.

Table A1 in the data annex shows the latest available data on land values and property rentals from the Valuation Office Agency. Whether land values or rentals are assessed, overall Nottingham is one of the least expensive of the core cities and compares favourably in some categories with Leicester.

- Nottingham has the lowest value of residential land among the core cities and the fifth lowest value of industrial land.
- Retail rentals in the city are also relatively low compared to elsewhere. At £2,150 per sqm retail rentals in Nottingham are around 65% of those in Birmingham and Newcastle.
- Nottingham has the lowest office rentals of any of the core cities, at £140 per sqm. This is just over half of Birmingham, the most expensive of the core cities.

## 3. Economic Conditions of Nottingham

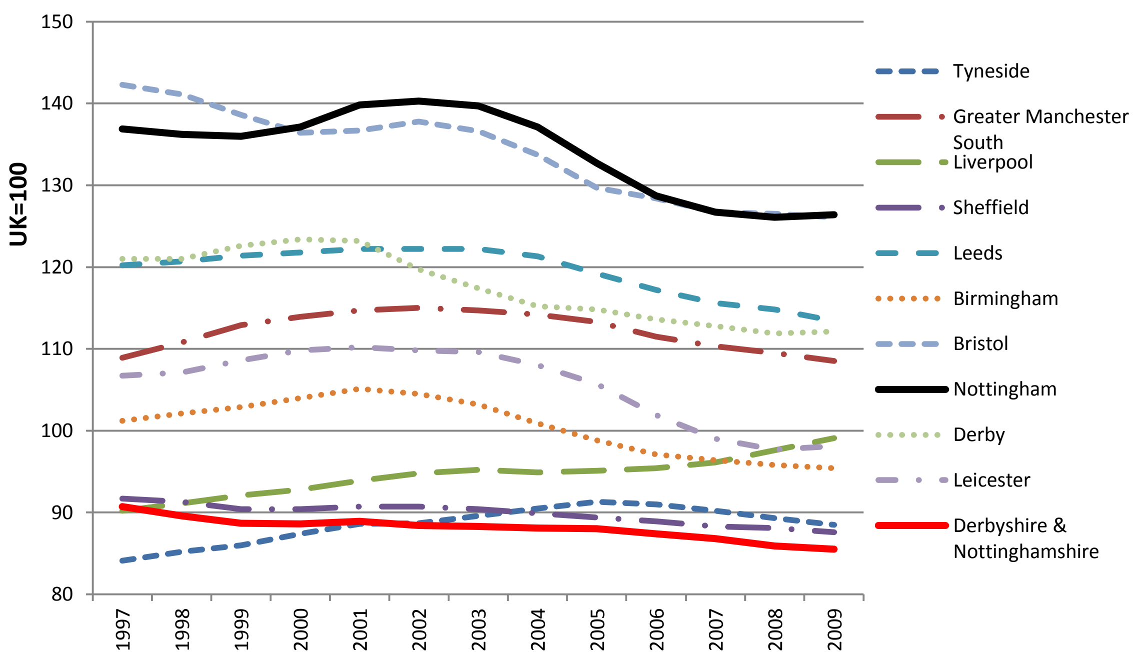
Economic conditions have fluctuated significantly in recent years, with recovery from the recession of 2008-09 now threatened by a further downturn. Recovery among the UK's main trading partners has been, and remains weak, with the Eurozone a cause of acute concern. This has further hampered hopes for the emerging export led recovery of late 2010 and early 2011. In general, most forecasters have been revising down their expectations of how the global and UK economies will perform during the next 18 months. The consensus of forecasts published by HM Treasury is for growth in the UK of

1.2%, down from 1.7% at the start of the year[8]. Some commentators believe that the UK and Europe will enter recession again for a short period. This will have consequences for Nottingham - particularly for those sectors dependent upon consumer spending.

Gross value added (GVA) is the most commonly used measure of economic output. However the most recent data available is for 2009. In 2009, total GVA in Nottingham was £7.6 billion, which was 21.3% of the total for Derbyshire & Nottinghamshire. Chart 7 illustrates GVA per head and shows that Nottingham compares relatively well against the other core cities and Derby and Leicester. It should be noted that this data relates to the most relevant NUTS3 area to each of the cities, which (in most cases) correspond to the UA or Metropolitan District. As the data is published on a workplace basis, the commuting patterns outlined in the previous section need to be borne in mind.

- In 2009, GVA per head in Nottingham was 26% above the UK average. This is similar to Bristol and is currently the joint highest of the core cities. Among the core cities, Sheffield has the lowest level of GVA per head, at 88% of the national average.
- Within the East Midlands, GVA per head in Nottingham is higher than in Derby and Leicester.
- In most of the core cities, GVA per head has fallen relative to the national average since 1997. In those cities where there has been a fall, most of the fall has occurred since 2003. Between 2008 and 2009 there has been some stabilisation in a number of cities, including Nottingham.
- Liverpool is an exception. There has been a significant improvement relative to the national average between 1997 and 2009.

### Chart 7: Gross value added per head, 1997-2009 (UK=100)



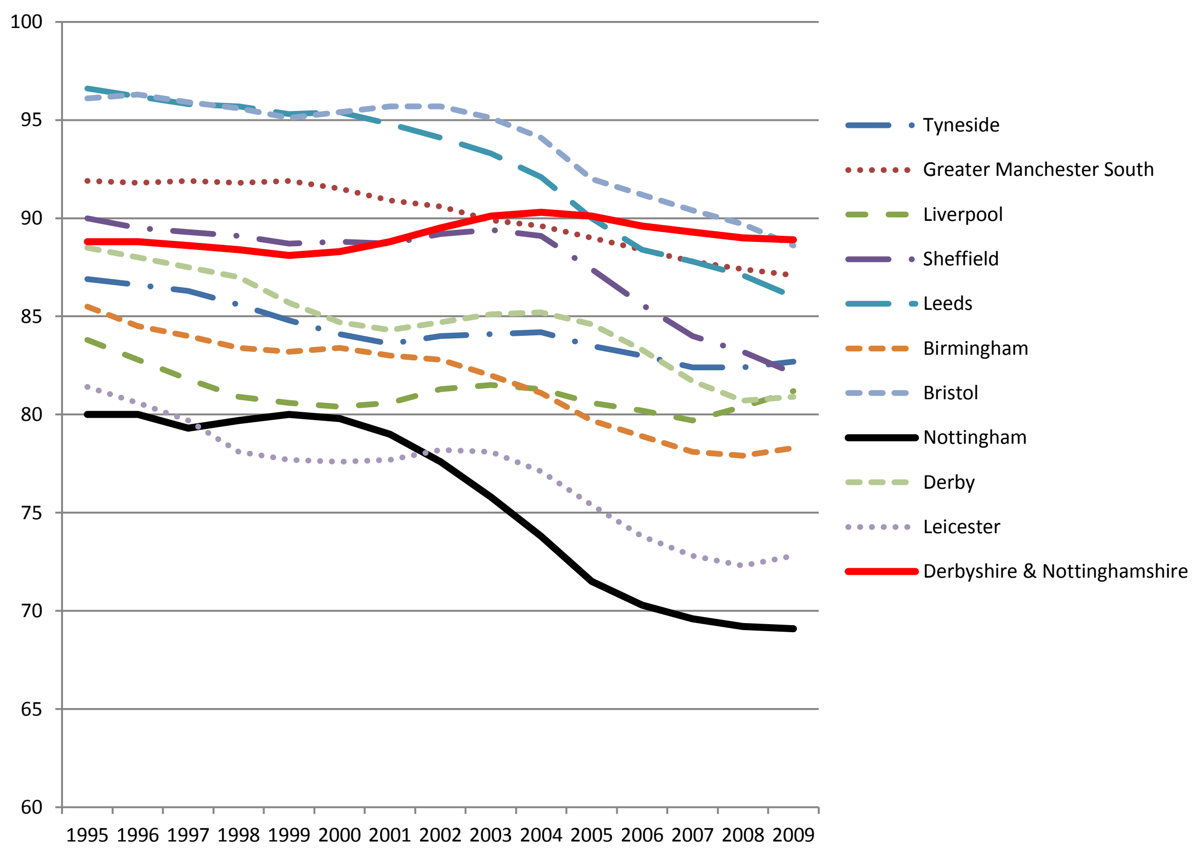

Source: ONS Crown Copyright, *'Regional, sub-regional and local gross value added 2010',* December 2010.

[8] HM Treasury, *'Forecasts for the UK economy: a comparison of independent forecasts',* January, November 2011.

An alternative, and arguably more accurate, perspective on economic conditions within an area is provided by an assessment of data on gross disposable household income (GDHI), which is the money available to households after taxes, expenditure on mortgage interest and other borrowings and pensions contributions. At more disaggregated spatial levels, it is easier to interpret than GVA data because it is a residence based measure. Chart 8 shows that GDHI per head for the NUTS3 approximations to the core cities, along with Derby and Leicester. The key points to note are:

- Unlike GVA per head, GDHI per head is significantly lower than the UK average in Nottingham. At just under 70% of the UK average, Nottingham has the lowest level of GDHI per head among the core cities;
- Within the East Midlands, GDHI per head is lower in Nottingham than in Derby and Leicester;
- Among the core cities, GDHI per head is highest in Bristol at around 89% of the UK average; and
- GDHI per head has fallen relative to the UK average in the core cities since around 2001/02, though in a number of cities, including Nottingham, there was stabilisation in 2009.

### Chart 8: Gross Disposable Household Income per head 1995-2009 (UK=100)



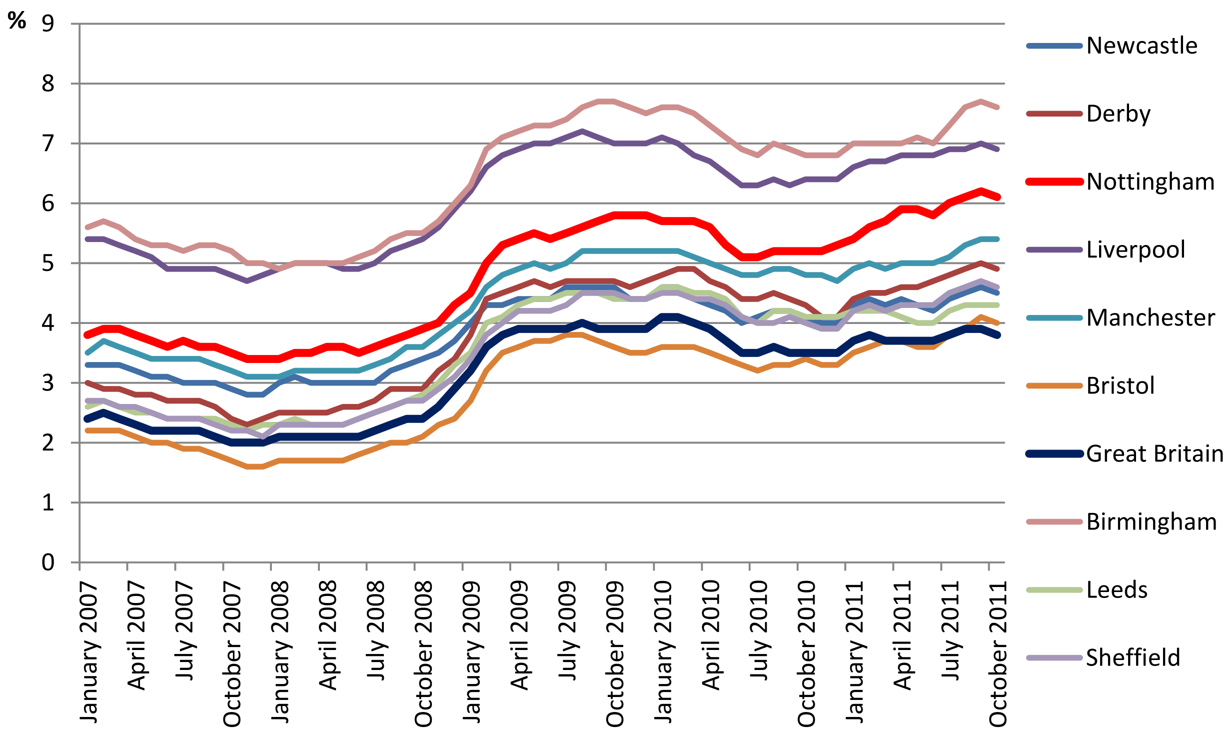

Source: ONS Crown Copyright, *'Regional Gross Disposable Household Income 2009'*, March 2011.

The GVA and GDHI data presented above do not capture the full extent of the impact of the recession in the UK, as 2009 is the latest date for which they are available. A more up to date assessment can be provided through labour market data. The state of the labour market is covered in more detail in Section 6 below. Here we present headlines from the claimant count unemployed, the most up to date information that is available (note that this is district level data).

Chart 9 shows that claimant count unemployment in Nottingham has been consistently higher than other core cities, with the exception of Liverpool and Birmingham. It clearly shows the impact of the recession - with claimant count unemployment increasing sharply through late 2008 and early 2009. It fell back slightly during the first half of 2010 before starting to rise again in all of the core cities. However in Nottingham, the rate has increased more rapidly than average in recent months, narrowing the gap with Liverpool. In January 2007, 7,988 individuals were claiming Jobseekers' Allowance (JSA) in Nottingham, 3.8% of adult residents. By October 2011 this had increased to 13,540 individuals or 6.1% of working age residents. This compares to 3.8% in Great Britain, but below Liverpool (6.9%) and Birmingham (7.6%).

The claimant count unemployment rate in Nottingham increased by 2.3 percentage points between January 2007 and October 2011. This increase is greater than in any other core city. Birmingham had the next highest increase, at 2.0 percentage points, whilst rates increased by 1.4 percentage points in Great Britain.

### Chart 9: Claimant count unemployment 2007-2011 (%)




Source: ONS Crown Copyright, '*Claimant Count with Rates and Proportions*', January 2007-October , from NOMIS, 16th December, 2011.

**Key Points: Spatial Economy and Economic Conditions in Nottingham**

- Nottingham is the most significant commuting destination in the East Midlands.
- Nottingham has lower land values and property rentals compared to other core cities.
- Gross Value Added per head in Nottingham (NUTS3 area) is one of the highest of the core cities. In common with the other core cities in 2009, this had stabilised after falling relative to the UK average for a number of years.
- However, gross household disposable income per head in Nottingham (NUTS3 area) is significantly below the UK average and is the lowest of the core cities. Unlike the GVA measure this is less distorted by commuting patterns.
- Claimant count unemployment in Nottingham has been consistently above the Great Britain average, both prior to and during the recession.

## 4. Economic Structure

The industrial structure of an area has a direct impact on its ability to respond in an efficient and productive manner to economic shocks. This responsiveness has been termed 'adaptive capability' and it is the capacity of an area to 'respond to exogenous forces on the one hand, and on the other, to create new paths of economic development from within'. Adaptive capability provides a way for an area to avoid getting 'locked in' to a path of long term economic decline[9]. Economic shocks can occur in any industry and can originate in local (for example the closure of a major employer), regional, national or global economies (the recession of 2008/09) and can be unpredictable. For this reason it is preferable that an economy should demonstrate resilience and the ability to recover quickly from any kind of shock.

Another key concept that is important to consider when discussing the industrial structure of an area is 'path dependency'. This describes the idea that likely future paths of development are, at least in part, dependent on historic characteristics and trajectories. For example, current strengths in manufacturing in Derbyshire and Nottinghamshire can be seen to reflect historic experiences of industrialisation, the presence of raw materials such as coal and other minerals, alongside accumulations of both human and physical capital. The current industrial structure of the area will therefore have significant bearing on the kind of industrial strengths that are likely to develop and be sustained in the future.

This section will build a picture of the industrial structure of Nottingham through an analysis of the levels of employment by industry in the city to determine their relative importance. Most of the data reported in this section is taken from Experian's latest (summer 2011) Regional Planning Service datasets. We have comparable data for the cities of Nottingham, Derby, Leicester, the D2N2 area and the East Midlands region. The data is benchmarked against the UK to identify sector strengths.

[9] R Martin, University of Cambridge, on behalf of *emda, 'Thinking About Regional Competitiveness'*, 2005.

Table A2 in the data annex shows the proportion of total full time equivalent (FTE) employment by sector and location quotients for each sector (a measure of the relative importance of the sector compared to the UK). This data shows that there is only a small amount of manufacturing activity within the city:

- Manufacturing activity accounts for around 6.2% of total FTE employment and 6.6% of GVA in Nottingham. FTE employment in manufacturing in Nottingham is less than half of that in Derby (16.6%), Leicester (13.7%), the D2N2 LEP (16.7%) and below regional (14.5%) and national (10.5%) averages; and
- The most notable manufacturing activity in the city is the food & drink subsector, which accounts for 1.6% of total FTE employment and 2.5% of total GVA (Pork Farms Ltd is a significant business in the city for example). Paper, printing & publishing, accounts for a further 1.0% of FTE employment. This latter is closely tied to the creative industries activity that exists in the city (see below).

Construction accounts for a relatively small proportion of the city's economy, around 5% of both FTE employment and GVA. This is similar in scale to Derby and Leicester but smaller than the regional and national averages. There are however a number of major construction businesses in the districts to the north of the city.

In contrast, the service sector (private and public sector services) accounts for a disproportionately large share of Nottingham's economy. Overall 87% of total FTE employment and around 80% of total GVA in the city is accounted by the service sector. This is significantly higher than in Derby, the D2N2 area and regional and national averages. The share of GVA accounted for by services is similar to that in Leicester. There are a number of significant services sub-sectors in the city:

- Business Services is by far the largest single sector in the Nottingham economy, accounting for almost 23% of total FTE employment and 19% of GVA in the city. The share of FTE employment in Business Services is significantly higher than Derby and Leicester (both around 17%) and the national average of 15.7%. Location quotients of around 1.5 for FTE employment and GVA in Nottingham indicate the relative importance of this sub-sector compared to the UK (a location quotient of greater than 1 indicates that this sub-sector is relatively more important in Nottingham than in the UK);
- Retailing and Wholesaling together account for around 12% of FTE employment and 11% of GVA. These shares are smaller than those in Derby and Leicester and the regional and national averages; and
- The public sector is more significant in Nottingham than elsewhere. Together Public Administration & Defence, Education and Health account for 31% of FTE employment and 27% of total GVA in Nottingham. These figures are higher than for Derby, the D2N2 LEP and regional and national averages and are similar to those for Leicester. Health (which includes life sciences) is the largest of these public services sub-sectors both in Nottingham and elsewhere. Each of the three public services sub-sectors in Nottingham have location quotients for employment and GVA of 1.3, emphasising the relative importance of these to the city.

The Experian data also allows for an assessment of how sectors of the Nottingham economy have performed over time. There have been significant differences in performance between sectors in the Nottingham economy between 2000 and 2010 and this is expected to continue. Between 2000 and 2010:

- Output in Business Services in Nottingham grew by just under one third, but this was slower than the UK average. Employment growth was slightly faster in Nottingham than in the UK, indicating that productivity growth in this sector in Nottingham lagged the UK;
- The Construction sector grew much more quickly in Nottingham than in the UK. Output grew by almost 40% compared to around 15% for the UK, while employment grew by 18%, twice the national average;
- Growth in the Health sector (which includes life sciences) was below the national average in Nottingham. Both output and employment grew by around one fifth in the city, compared to a third for the UK;
- Retailing has also grown more slowly than the UK average. Output grew by one quarter in Nottingham, compared to around 40% in the UK. Although there was a slight fall in employment in Retailing nationally (-1%), this fall was much more significant in Nottingham, at around -8%;
- Among other sectors, there has been significant employment and output growth in Banking & Insurance and Transport, and declines in Wholesaling and Hotels & Catering.

Looking forward, forecasts suggest that between 2010 and 2026:

- Output and employment in Business Services will grow strongly in the city, but growth in this sector will still lag behind the UK average;
- The Construction sector is expected to continue the strong growth of the last decade, with employment and output both growing significantly more quickly than the UK average;
- The Health sector (which includes life sciences) will grow more quickly than the economy-wide average in Nottingham, and will grow at rates just below the national average for that sector;
- Growth in Retailing is expected to be more subdued than the UK average, with both employment and output growth lagging; and
- Further strong growth is expected in Banking & Insurance, along with Communications. However, after strong growth during the last decade, the Transport sector is expected to slow down. The Wholesaling sector is expected to continue to struggle, but improved performance is expected for the Hotels & Catering sector.

This analysis is based on data that is coded against the Standard Industrial Classification (SIC) and therefore, because of issues around their definition in these terms, this means that tourism, the creative industries (which includes digital content) and low carbon environmental goods & services are not clearly identified. Given the significant policy interest in these sectors, brief profiles are presented here.

*Tourism*

Tourism, like other parts of the economy, has been hit by the recession. Recent (national) survey evidence suggests that, while conditions were reasonable during the summer[10] (with 1/3 of tourism businesses reporting that business was better than in 2010), there is less optimism looking ahead[11]. Although domestic tourism has been sheltered somewhat by the 'staycation' effect- where people holiday in Britain rather than abroad -people are taking fewer and shorter holidays as a result of the difficult economic conditions[12].

Nottingham has a wide ranging tourism offer, with contemporary and historical attractions and a number of major attractions just outside the city. The 2009 English Visitor Attractions Survey suggests that a number of these buildings, parks and monuments are amongst the most visited attractions in the East Midlands. The list of the top 10 most visited attractions in the region includes several in and around the city: Sherwood Forest Country Park, Wollaton Hall and Park and Nottingham Castle & Museum.[13]

Other available data on tourism in the city is limited, but consistent data on visits at county level is available from Visit England. Some of this data is for 2009 and- on the basis of data recently published by Visit England, which showed a small decline in in-bound tourism to the East Midlands in 2010[14] -it might be expected that these figures will have since declined as well.

Between 2006 and 2009 there were, on average, 1.9 million visits per annum to Nottinghamshire (which is 20.2% of the total for the East Midlands region). These visits generated almost £360 million in expenditure. This data suggests that there are very different profiles of visitors to Derbyshire and Nottinghamshire. Ninety per cent of visitors to Derbyshire are domestic visitors and 10% are inbound visitors, while 83% of Nottinghamshire's visitors are domestic and 17% inbound. Inbound visitors have higher levels of average spend than domestic visitors and both types of visitor tend to spend more in Nottinghamshire than in Derbyshire. It is also possible to break domestic visitors down into holidaymakers and business visits. In Derbyshire a much higher proportion of domestic visitors are holidaymakers than in Nottinghamshire.

Data compiled by East Midlands Tourism for Nottingham and Nottinghamshire summarises data from the International Passenger Survey (IPS). In 2009 the IPS reports that there were 290,000 international visits to Nottinghamshire that generated £111 million of expenditure. It reports that Nottingham is the 13th most visited city in the UK (there was no other city in the East Midlands in the sample). Among the core cities, only Sheffield had fewer visitors and associated expenditure. The Nottingham figures are comparable to Newcastle-upon-Tyne but are less than a third of those for Birmingham and Manchester.

[10] Visit England, '*Business Confidence Monitor 2011'*, Wave 4 September 2011.
[11] Visit England, '*Domestic Industry Panel*', Wave 15, July-August 2011.
[12] Visit England, '*The Staycation Effect - 2011 and Beyond?'*, March 2011.
[13] Note that newly established attractions such as Nottingham Contemporary do not appear in this data but are expected to appear in data for later years.
[14] Visit Britain, *'In-Bound Visitor Statistics'*, August 2011.

Although the quantitative analysis of the previous section was limited to the 'Hotels & Catering' sub-sector, which accounts for just 2.3% of GVA and 4.1% of FTE employment, tourism nevertheless plays an important, wider role in the city's economy. Having a range of attractions in the area can attract people and businesses and contribute to the quality of life and wellbeing of residents of the city.

*Creative Industries*

The most commonly used definitions of the creative industries include a mix of sectors and cross-cutting processes and technologies. This makes it even more difficult than tourism to categorise using the SIC and hence provide consistent data for Nottingham and comparator cities. There are a number of reports on the nature and scale of the creative industries but these also suffer from inconsistencies in the definitions that they use. This short profile of the creative industries provides a snapshot of employment in the city and county using a SIC based definition of the creative industries developed by the Department for Culture, Media and Sport[15](DCMS), and then pulls together material from other relevant research. Digital content is a subset of the creative industries.

Using the DCMS definition of the creative industries, data from the Business Register & Employment Survey (BRES) suggest that in 2009 there were 15,300 employees (just over 3% of the total) in the creative industries in Nottingham & Nottinghamshire (this compares to around 12,100 in Derby & Derbyshire). It should be stressed that these numbers are employees only. The DCMS estimate that, in Great Britain overall, employees account for just under three quarters of total employment in the sector, with the remainder being self-employed.[16]

There is some creative industries mapping work from the Organza project[17] that covers Nottingham and Nottinghamshire and we summarize the key findings here. The mapping study makes use both of official data and a small survey of businesses in the creative industries. It should also be noted that the definition of creative industries is different to that used in the previous paragraphs. The study finds that:

- There are over 2,400 creative businesses in Nottingham and Nottinghamshire, roughly evenly split between the city and the county. Major players identified include Speedo International, Paul Smith Ltd., Crytek UK, Courtaulds Plc, Raleigh UK Ltd. and Alliance-Boots Plc;
- There are just under 18,900 people employed in the creative industries, with slightly more (52%) in the city than the county;

[15] This is the first time that DCMS have compiled statistics using the new 2007 SIC. As a result the statistics that they publish are experimental and the definition of the creative industries using these 2007 SIC codes may change. They are not comparable with previous statistics published by DCMS and should be seen as indicative, as some of the categories of the SIC that are included are used as approximations to their definition of the creative industries. The definition is published in '*Creative Industries Economic Estimates*', Department for Culture, Media and Sport, December 2010.

[16] Department for Culture, Media and Sport , *'Creative Industries Economic Estimates'*, December 2010.

[17] The project ORGANZA aims at improving policy-making in the field of creative industries and to strengthen the regional economy by developing and validating new policy instruments, sharing experiences called "good practices" between different European regions and medium-sized cities, including Nottingham.

- The survey reports that around half of the businesses in the sample were large enough to be required to register for VAT, which suggests that any official figures will understate the scale of the creative industries;
- In terms of scale, the largest sub-sectors are the publishing of computer games and printing and service activities. However in terms of relative importance in the Nottingham and Nottinghamshire economy architecture, product design, photography, publishing computer games, music, film & TV and the manufacture of wearing apparel and leather & related products are highlighted as key sub-sectors, a number of which are included in the digital content emerging sector identified in the Nottingham Economic Growth Plan;
- Of the products supplied by the creative industries in Nottingham and Nottinghamshire, 42% are distributed locally, 44% nationally and 14% internationally; and
- Between 2006 and 2008 employment growth was reported in just one sub-sector, architecture, and occurred in the city only. Employment decline was more marked in manufacturing related activities within the creative industries.

The mapping study also highlighted expertise in the two universities in the city. Nottingham University is highlighted as having strengths in more traditional engineering and architectural design activities. Nottingham Trent University is highlighted as having broader technical and vocational expertise in product, fashion, textiles, furniture interior and graphic design, media and theatre related studies and architecture.

*Low Carbon and Environmental Goods & Services*

As with the creative industries, low carbon environmental goods & services (LCEGS) is a mix of sectors and cross-cutting activities that makes definition and data collection very difficult. LCEGS is identified as an emerging sector in the Nottingham Economic Growth Plan. There is published material available that allows us to say something of the nature of LCEGS in and around Nottingham. This profile largely draws on material published by *emda*[18] and provides an assessment of both commercial activity and public sector and key research assets.

Climate change has been identified by the government as the key challenge of the 21st century and it has set ambitious and legally binding targets for carbon reduction by 2050. Potential impacts of climate change include damage to infrastructure, changing patterns of energy demand and impact on human health, and demonstrate the need for action. The importance of this policy agenda presents significant commercial opportunities for all businesses in Nottingham, either through the provision of LCEGS or through savings made via their adoption (e.g. reductions in energy use or waste generated). It also suggests that the sector will grow in coming years.

The following activities are covered by the *emda* material: power generation, hydropower, civil nuclear power, low carbon buildings technology, low carbon capture and storage, low carbon vehicles and fuels and environmental services.

Traditionally power generation has been fuelled by the coalfields of Derbyshire and Nottinghamshire, which led to the development of major power stations in the Trent Valley. Ratcliffe-on-Soar, Cottam

[18] emda, '*A Legacy Handbook for Low Carbon*', April 2011.

and West Burton are all in Nottinghamshire and contribute to a significant proportion of the UK's total generating capacity.

Power generation from renewables is less significant and this is, in part, due to the nature of the terrain. Wind power is limited in Nottinghamshire but there is more hydropower. Beeston Weir on the River Trent is the largest hydropower installation in the East Midlands. The Energy Technology Research Institute at the University of Nottingham is a key research centre for research into biomass and solar technologies.

Low carbon buildings (LCB) is a catch-all term that encompasses all building works and associated power and energy systems that have lower carbon footprints. The Sustainable Technologies Group at the University of Nottingham is focused on research into sustainable building design, photovoltaics, solar thermal systems, earth construction (environmentally responsive alternatives to cement and concrete) and biomass. Nottingham Trent University is also involved in research into the thermal efficiency of buildings through the Sustainable Technology Research Group.

An emerging sub-sector of LCEGS, carbon capture and storage has potential with a number of key research assets in and around Nottingham. These include the British Geological Survey (BGS) at Keyworth, which is recognised as a European centre of excellence in research into carbon dioxide storage, and the University of Nottingham. The University of Nottingham has established the Centre for Innovation in Carbon Capture and Storage and the Energy Technologies Research Institute. The former undertakes research into the technological innovation required to deploy carbon capture and storage techniques more widely, while the latter will focus on clean coal technologies.

Environmental services include activities related to air pollution, environmental consultancy, environmental monitoring, noise and vibration control, contaminated land, waste management, water and waste water, carbon finance and recycling and recovery. The city's universities have research interests in these areas:

- The Centre for the Environment at the University of Nottingham- contaminated land; and
- The Centre for the Environment and Environmental Technology Centre at Nottingham Trent University- waste management.

**Key Points: Economic Structure**

- Manufacturing accounts for a relatively small proportion of Nottingham's economy, and within this food & drink is the largest sub-sector.
- Construction is also a relatively small sector in Nottingham, though there are a number of major companies located just outside the city. Construction has experienced, and is expected to experience, relatively strong growth.
- The service sector accounts for a disproportionately large share of Nottingham's economy.
- Business Services is the largest sector of the Nottingham economy, accounting for around one fifth of output in the city. However output growth has been slower than the UK average and is expected to remain so.

- Retailing accounts for a smaller than average share of Nottingham's economy. During the last decade it has grown more slowly than in the UK.
- The public sector is more significant in Nottingham than in the UK. Health is the most significant sub-sector and is expected to grow at a rate just below the national average.
- Due to issues of definition and data availability it is difficult to assess the strength of creative industries and sub-sectors such as digital content. While the city has some strengths and assets in these areas, it is difficult to compare with other areas.
- There are significant policy drivers behind low carbon and environmental goods and services (LCEGS) which mean that the importance of this is likely to increase going forward. There are significant assets both inside the city and out.

## 5. Enterprise & Innovation

Enterprise and innovation can enhance the business stock and act as a spur to competition. Entrepreneurial and innovative activity can generate new entrants that displace incumbents and force out those who are unable to compete. This process of churn re-allocates resources away from less efficient firms to more efficient ones and is a feature of high performing economies.

Atherton and Frith (2005) propose a framework to characterise an entrepreneurial region.[19] Although developed at regional level, the characteristics are applicable to Nottingham. They propose that entrepreneurial regions:

- Have a culture that recognises, encourages and supports entrepreneurs and entrepreneurial ways of working;
- Have a dynamic business population that is based on i) a healthy start up rate ii) improving levels of survival among newly established businesses iii) a large and rising proportion of businesses that are growing and iv) agglomeration effects that speed up regional growth through clusters, clustering and geographical concentrations of business; and
- Have institutions and infrastructure that explicitly support and enable entrepreneurial activity and wider macroeconomic conditions that support this activity.

Whilst it is not possible to objectively measure all of these characteristics - the third set of characteristics are largely determined at national level - data is available on business births, deaths and survival. A wider measure of business starts and entrepreneurial culture is available through the Global Entrepreneurship Monitor (GEM) survey. Although small sample sizes mean that this data needs to be treated with a degree of caution it does offer an alternative perspective on entrepreneurial activity in Nottingham.

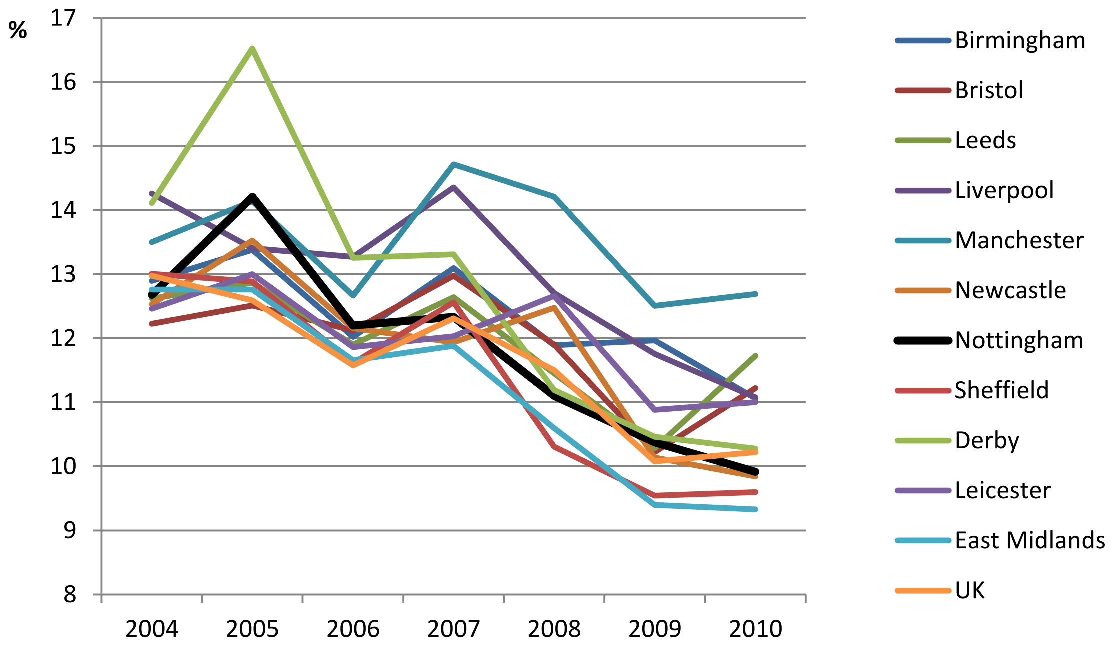
Chart 10 shows business birth[20] rates in Nottingham, the other core cities and Derby and Leicester[21] between 2004 and 2010. In general, business birth rates were relatively stable prior to 2007 and

[19] A Atherton and K Frith, University of Lincoln, *'Creating an Entrepreneurial Region: Exploring the entrepreneurial capacity of the East Midlands'*, 2005.

then declined sharply before stabilising in 2010, though they continued to fall in a couple of cities. The chart shows that:

- In 2010, the business birth rate in Nottingham was 9.9%, the third lowest of the core cities and below the UK average of 10.2%. It was also lower than Derby and Leicester;
- Among the core cities in 2010, Manchester had the highest business birth rate at 12.7%; and
- In Nottingham, the business birth fell by 2.8 percentage points between 2004 and 2010. This fall is in line with the national average. Among the core cities, the largest fall was in Sheffield (3.4 percentage points) and the smallest in Manchester (0.8 percentage points).

### Chart 10: Business birth rates 2004-2010 (%)




Source: Office for National Statistics, '*Business Demography 2010',* December 2011.

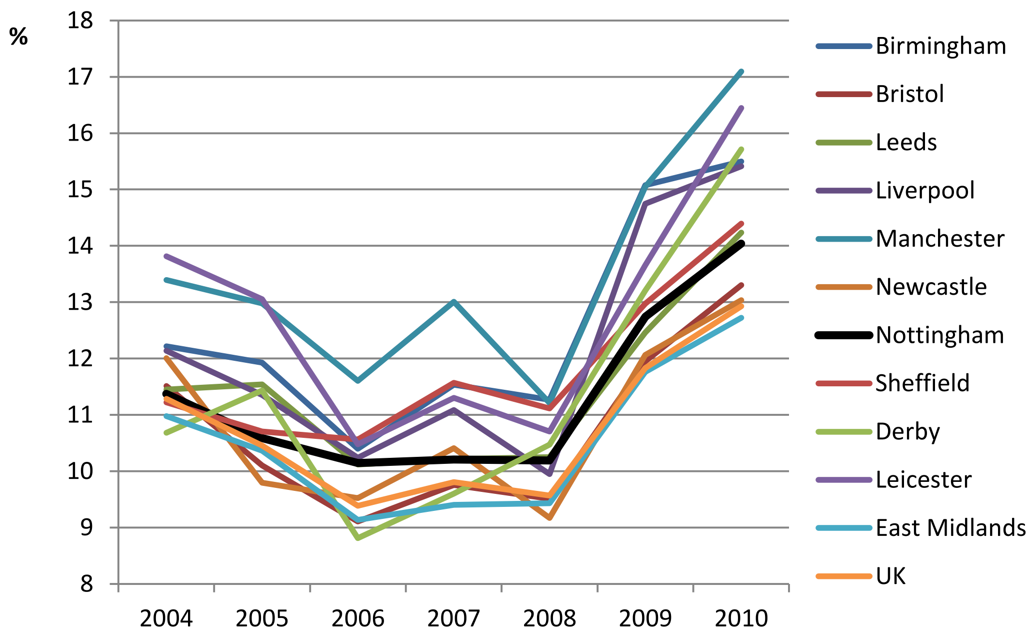
Of course, not all businesses survive and data is available that shows business deaths. Prior to the recession business death rates fell across the core cities, but since 2007 they have increased sharply and, unlike business births, have yet to stabilise. The business death rates for 2004 to 2010 are illustrated in Chart 11, which shows that:

- In Nottingham in 2010, the business death rate was 14.0%, above the national average of 12.9%. Nottingham had the third lowest death rate among the core cities;
- Among the core cities, the highest business death rate was in Manchester (17.1%) and the lowest was in Newcastle (13.0%);

[20] A 'birth' is identified as a business that was present in year t but did not exist in year t-1. A business death is a business that was present in year t but not subsequently. Rates are expressed as the number of births or deaths as a proportion of the total stock of businesses in an area.
[21] Note that this is district level data.

- Between 2004 and 2010, the business death rate in Nottingham increased more quickly than in the UK (by 2.6 percentage points compared to 1.6 percentage points); and
- Among the core cities the business death rate increased most rapidly in Manchester and most slowly in Newcastle.

### Chart 11: Business death rates 2004-2010 (%)

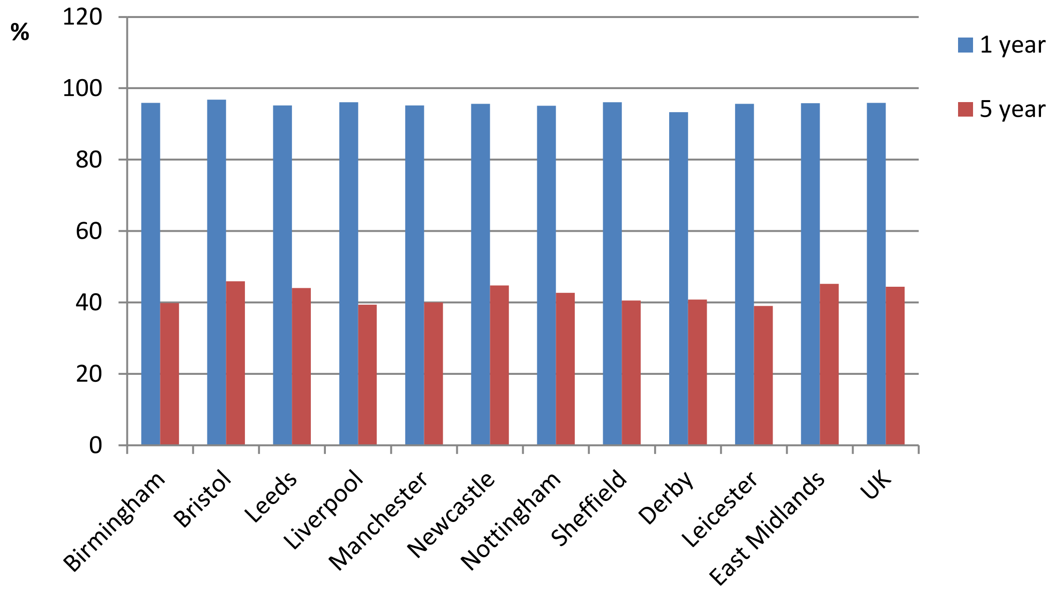



Source: Office for National Statistics*, 'Business Demography 2010',* December 2011.

Business births and business deaths provide a partial picture of the changing business stock. Data on business survival allows for an assessment of how long businesses survive. Chart 12 shows 1 year and 5 year business survival rates for businesses that started in 2005. The proportion of businesses that survive for five years is less than half the proportion that survive for one year. The chart shows that:

- Nottingham has the lowest 1 year business survival rate among the core cities, at 95.1%. However, this is higher than Derby (93.3%);
- The highest 1 year business survival rate among the core cities is in Bristol (96.8%);
- The pattern for 5 year business survival rates is different, with Nottingham having the fourth highest 5 year survival rate among the core cities, at 42.7%. As with the 1 year rate though, this is below the national average; and
- Bristol also has the highest five year business survival rate at 45.9%.

### Chart 12: 1 and 5 year business survival rates for new enterprises in 2005 (%)




Source: Business Demography 2010, *'Office for National Statistics'*, December 2011.

A second perspective on entrepreneurial activity in Nottingham is provided by the GEM survey. The latest available data is for 2009, but at district level the sample sizes are too small in any given year to provide statistically reliable results. However, pooled data for the period 2002-2009 is robust enough to provide some information. GEM provides a wider assessment of business activity than business births and deaths. The key measure derived from the GEM survey is the total entrepreneurial activity (TEA) rate. The TEA rate is the proportion of the working age population who are either a nascent entrepreneur or the owner manager of a new business. Nascent entrepreneurs are those actively involved in setting up a business they will own or co-own and which has not paid salaries, wages, or any other payments to the owners for more than three months. New Business Owners (NBOs) own and manage a running business that has paid salaries, wages or any other payments to the owners for more than 3 months, but not more than 42 months.

For the period 2002-2009 the TEA rate in Nottingham was 5.8%, in line with the UK average of 5.8%. This is higher than in Derby (4.6%), Derbyshire and Nottinghamshire (both 5.5%) but lower than in Leicester (6.9%). However these differences are not statistically significant.

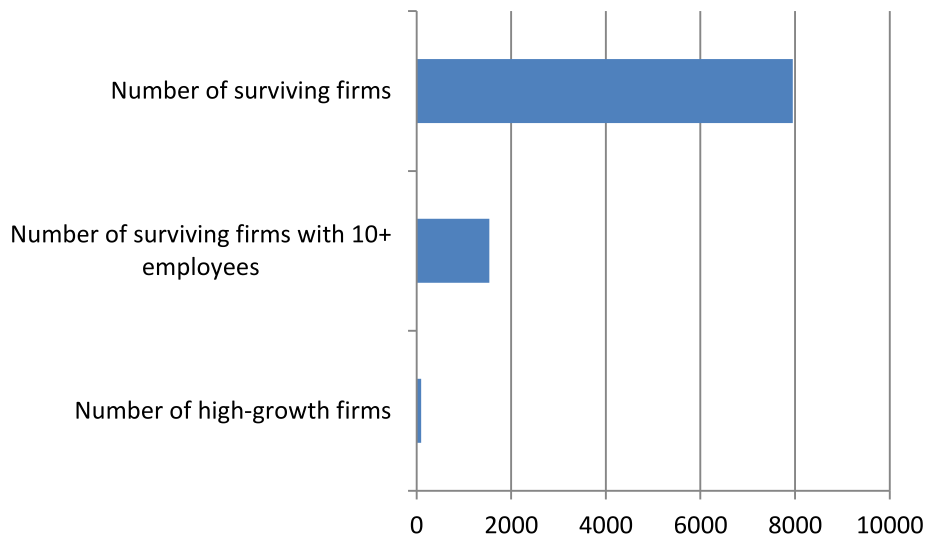
Although business start-up is clearly important, what happens subsequently has arguably a much greater impact on economic growth. Recent research published by NESTA on high growth companies sheds some light on this issue[22]. High growth companies are defined as those that experienced employment growth of 20% per annum over a three year period. High growth companies, although only a small proportion of the business stock, are important because they account for a significant proportion of employment growth in the economy, around half in the UK

[22] NESTA, *'Vital Growth: The importance of high growth businesses to the recovery'*, March 2011.
Note: High growth is defined as employment growth of 20% per annum.

between 2002 and 2008[23]. They are also more resilient- they were less likely than other companies to become insolvent during the recession. However many businesses do not necessarily start with the objective of high growth- many are lifestyle businesses with little in the way of ambition for growth for example- and it is enormously difficult to identify them before they grow. It is also the case that high growth businesses are not always start-ups - it can take time to reach a position where high growth is possible- and it not always possible to maintain high rates of growth.

Between 2007 and 2010, high growth companies in the UK accounted for around 7% of the business stock that survived during this time. This figure is similar to that for the periods 2002-2005 and 2005-2008, illustrating their resilience. Similar data is available for Nottingham, the core cities and Derby and Leicester. Chart 13 shows the data for Nottingham for 2007-2010.

### Chart 13: High growth companies in Nottingham 2007-2010




Source: NESTA, 2011.

Chart 13 shows that almost 8,000 businesses in Nottingham survived through the 2007-2010 period. Of these, just over 1,500 survived with 10 or more employees at the end of the period. Finally just under 100 experienced at least one year of high growth (as defined in footnote 22). This closely reflects the pattern in the available data at national level, although the proportion of high growth businesses in half of a percentage point below the UK average.

Chart 14 shows how the proportion of high growth companies in the period 2007-2010 varies across the core cities. Nottingham is ranked in the middle of this group, with the highest proportion of high growth businesses to be found in Leeds (7.1%) and the lowest in Sheffield (5.1%). Within the East Midlands, the proportion of high growth businesses in slightly higher in Nottingham than in Derby and Leicester.

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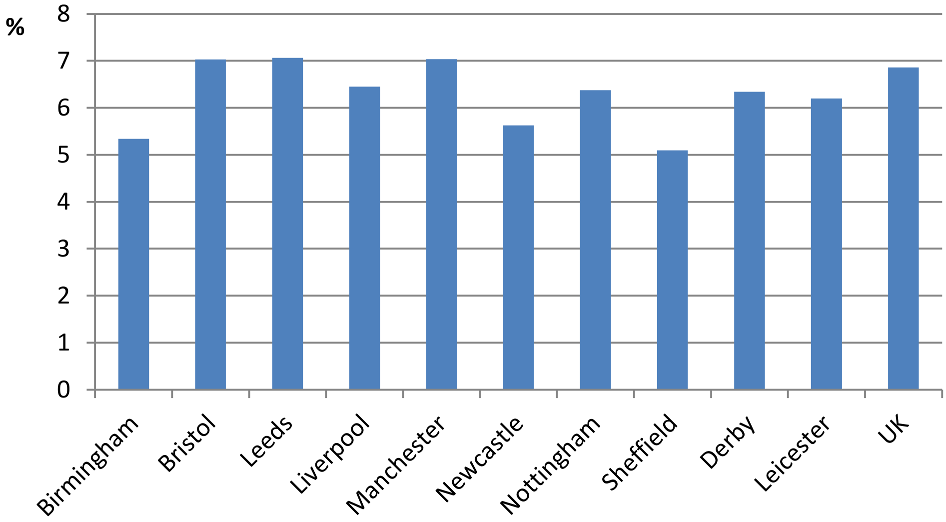
[23] NESTA, , *'The Vital 6 Per Cent'*, 2009.

### Chart 14: High growth businesses as a proportion of the business stock (%), 2007-2010




Source: NESTA, 2011.

NESTA report one characteristics that tends to be shared by high growth companies- innovation. Being innovative increases the likelihood that a company will experience high levels of growth. NESTA suggest that the aim of policy should be to create a supportive environment for innovation and that government can do four things:

- Ensure access to finance for growth;
- Ensure a skilled workforce;
- Ensure that the infrastructure is in place that allows for the flow of ideas and knowledge and collaboration; and
- Stimulate demand for innovation through procurement activities.

Data on innovation in Nottingham is much more limited. The 2010 R&D Scoreboard published by the Department for Business, Innovation and Skills, collects information on the top 1,000 UK companies by the size of their investment in R&D. The ranking is based on R&D expenditure in 2009. National statistics indicate that R&D spend is heaviest in London, the South East and the East of England. This is reflected in the content of the scoreboard. These three regions account for just over 80% of the total R&D spend of the top 1,000 companies in the UK. Twenty six companies in the East Midlands are among the top 1,000 in the UK. Of these, three are in Nottingham. These three companies spent a total of £8.4m on R&D in 2009.

The city's universities are another key source of innovation. The University of Nottingham and Nottingham Trent University both produce research that is designated as 'world leading in terms of originality, significance and rigour' according to the 2008 Research Assessment Exercise (RAE).

Innovation and entrepreneurial activity has to be financed in some way. Businesses in the city, in common with elsewhere, are still raising access to finance as a concern. The Derbyshire and Nottinghamshire Chamber of Commerce's Quarterly Economic Survey in September 2010 reported that a quarter of respondents were concerned over the availability of finance and 10% of respondents identified the terms on which finance is available as a barrier to growth. It remains the case that access to finance continues to be difficult for some businesses.

**Key Points: Enterprise and Innovation**

- The business birth rate in Nottingham is below the UK average and among the lowest of the core cities.
- The business birth rate has declined sharply in Nottingham and elsewhere since the recession started in 2008 and has continued to decline during the current slow recovery.
- Business survival rates in Nottingham are slightly lower than the national average.
- The proportion of the business stock that can be described as high growth- experiencing 20% growth in employment per annum over a three year period- is similar in Nottingham to the national average.

## 6. Employment, Skills & Education

This section describes the labour market of Nottingham City in more detail, complementing the analysis of recent economic conditions presented in Section 3. It looks at how effectively the city utilises its workforce and possible reasons why Nottingham appears to have been more adversely affected by recession than some other cities – notably in structure and utilisation of workforce skills.

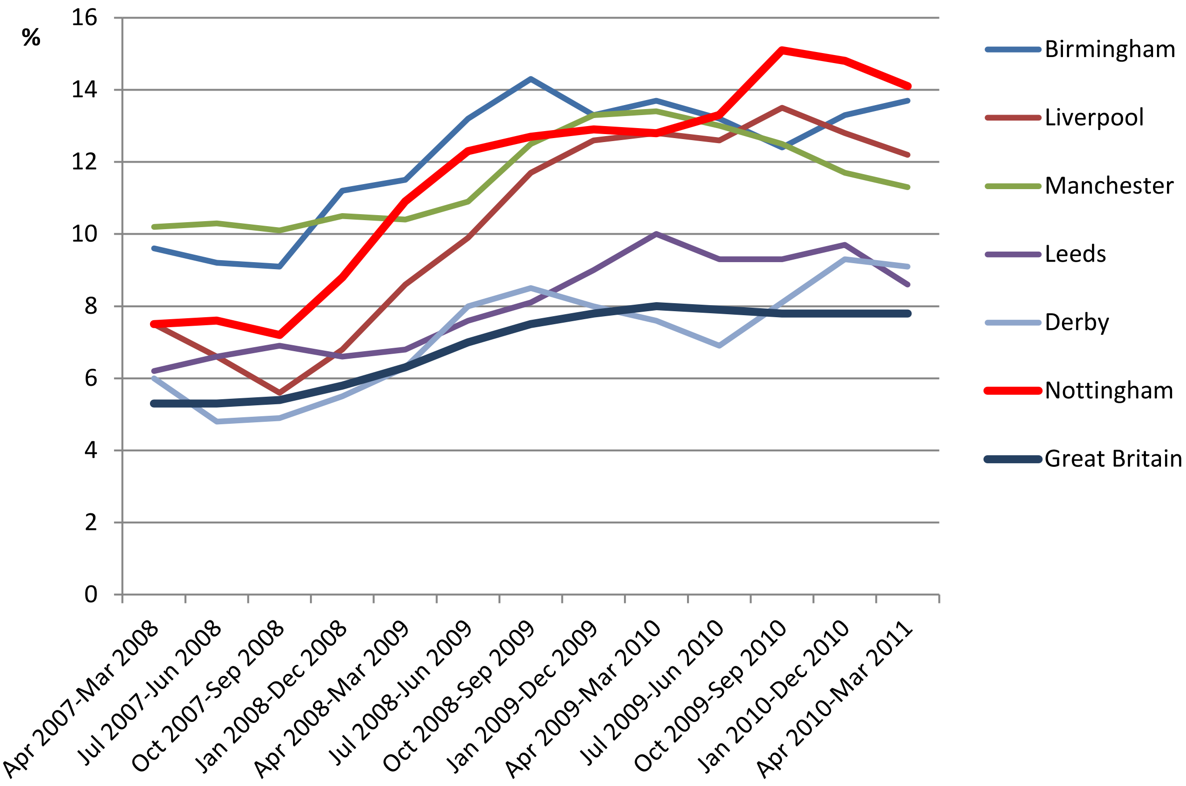
Despite its relatively small population size (see Chart 2, Section 1), Nottingham UA has a particularly large proportion of its resident population in the working age group (72.4%), which is level with Manchester but higher than all other core cities and significantly higher than the smaller cities of Derby (65.2%) and Leicester (67.7%). To an extent this is due to the presence of two large universities within the city, resulting in large numbers of 19-21 year olds resident in the UA, but it is also due to the role the city plays as an economic centre for the surrounding area (described in Section 2), drawing in working age people to live and work in Nottingham.

Although Nottingham City has a high proportion of working age residents, employment rates have been comparatively low, and the gap with other areas has increased in recent quarters. The latest employment rate (April 2010-March 2011) for Nottingham UA is 53.8% of working age residents, significantly lower than the national average (70.3%) and all other core cities, for example: Birmingham (59%), Liverpool (59.6%), Leeds (69%) and Sheffield (66.4%)

Conversely, Nottingham has consistently had higher levels of unemployment compared to other areas of the D2N2 LEP, including Derby City. However, pre-recession levels of unemployment were in line with similar sized core cities (Newcastle and Liverpool) and were significantly lower than the largest cities (Manchester and Birmingham).

The rate of unemployment in Nottingham relative to other areas has been explained through a combination of worklessness related to inner-city deprivation and a high concentration of students. Students are not counted amongst the numbers of people who are unemployed, but because they are not classed as 'economically active'[24], this affects the basis upon which the unemployment rate is calculated.[25] Although this partially explains the higher level of unemployment relative to other core cities prior to the recession, it does not explain the increase in unemployment over time – seen in both the ILO measure and the claimant count rate (as presented in Chart 9) .

### Chart 15: ILO Unemployment rates (% economically active)




Source: ONS Crown Copyright, '*Annual Population Survey*', April 2007-March 2008 to April 2010-March 2011, from NOMIS, 24th January, 2012.

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[24] **Economic activity** describes those who are either in employment (part-time, full-time or self-employed) or unemployed. The economic activity rate is the number of economically active people as a percentage of the working age population (16-64 year olds). This group represents the total stock of potential labour available in a given area.

[25] The internationally recognised definition of unemployment (recommended by the International Labour Organisation) uses the economically active population as the denominator for calculating the proportion (or 'rate') of unemployment, rather than the total working age population. This means any decrease in economic activity can cause an increase in the unemployment rate, even if there has been no change in the actual number of individuals unemployed. The economically active population in Nottingham is particularly affected by the concentration of students within the city boundary – reducing the size of the ILO unemployment denominator. In Nottingham in April 2010-March 2011, students were estimated to account for 50.9% of economically inactive residents, compared to 36.1% in Liverpool and 37.2% in Manchester (and 24.9% in Great Britain overall) - Source: ONS Crown Copyright, '*Annual Population Survey*', April 2010-March 2011.

Chart 15 shows ILO unemployment rates, which increased more rapidly in Nottingham than in any other core city:

- During the period April 2007-March 2008, the unemployment rate in Nottingham was 7.5%, more than 2 percentage points higher than the average for Great Britain (5.3%) and significantly higher than Derby (6%). However, this was in line with Liverpool (also 7.5%) and Newcastle (7.4%), and significantly below Birmingham (9.6%) and Manchester (10.2%);
- As the labour market impacts of recession became evident, unemployment increased particularly sharply in Nottingham, to 12.3% in July 2008-June 2009, compared to 9.9% in Liverpool. Rates continued to increase until late 2010, but have stabilised somewhat in recent quarters. The latest estimate of 14.1% (April 2010-March 2011) exceeds all the other core cities (with the next highest in Birmingham, at 13.7%) and is almost double the national average (7.8%);
- Overall, during the period from April 2007-March 2008 to April 2010-March 2011, unemployment rates in Nottingham increased by 6.6 percentage points, greater than the increase in any other core city (Liverpool experienced the next largest increase, at 4.7 percentage points) and more than double the increase experienced in Great Britain overall (2.5 percentage points); and
- This is equivalent to the absolute number of people estimated to be unemployed almost doubling in Nottingham, from 10,200 in April 2007-March 2008 to 19,300 in April 2010-March 2011.[26]

To an extent, this illustrates the broader trend observed nationally. The impacts of recession appear to have widened labour market inequalities, with areas experiencing more challenged conditions prior to the recession recording larger falls in employment.[27] However, Nottingham appears to have been affected to a greater extent than other cities with similar levels of unemployment prior to the recession, suggesting that elements of its employment structure and the skills profile of its residents have made it particularly vulnerable.

The increasing level of unemployment amongst young people has been of particular concern across the UK, with the number of 16-24 years olds estimated to be unemployed exceeding a record 1 million nationally according to the November and December releases of Labour Market Statistics.[28] As in the case of overall unemployment, the increase in youth unemployment has been particularly marked in Nottingham. Youth unemployment rose steadily in Nottingham in spring 2010 and spring 2011 and is currently estimated to be 27.9%, close to the rate in Liverpool (28.2%), but higher than Manchester (20%) and the national average (19.2%).

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[26] Note: estimates of unemployment cited in this section are drawn from the Annual Population Survey, in order to be consistent with the D2N2 and other core city averages and the estimates of employment and economic inactivity rates. These will not be consistent with the 'model based' estimates of unemployment recommended by the ONS for Local Authority District level estimates.

[27] See: UK Commission for Employment and Skills (UKCES), '*Geographical inequalities in employment and the growth problems faced by under-performing areas – February 2011*', in 'Intelligence: February 2011'.

[28] ONS Crown Copyright, *'Labour Market Statistics: November 2011'* and…. '*December 2011'* Statistical Bulletin, 16th November 2011 and 14th December 2011.

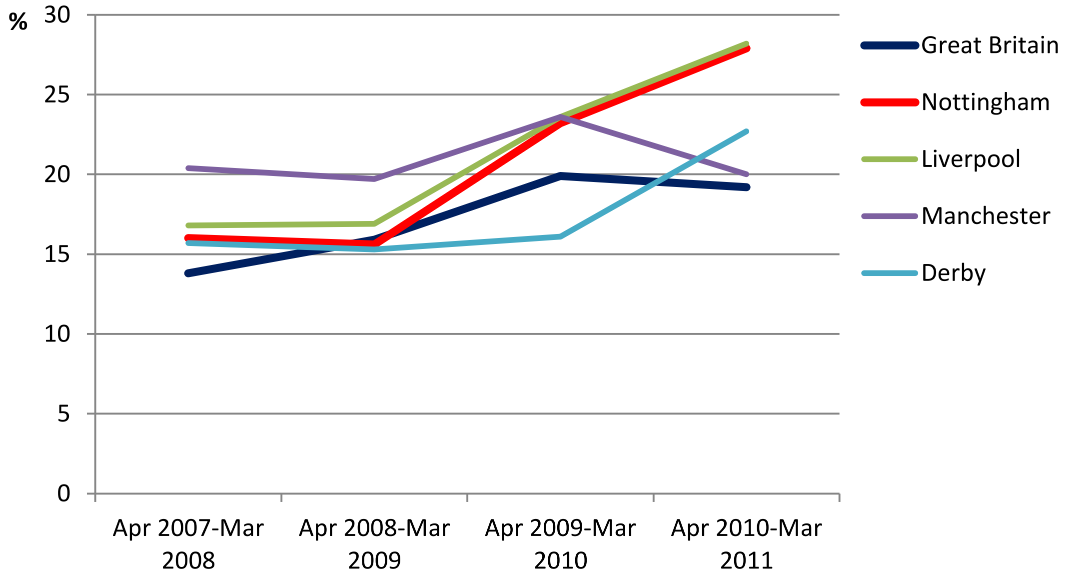
This was due to an absolute increase in the number of young people unemployed (from 4,600 in April 2007-March 2008 to 5,400 in April 2010-March 2011) alongside a steep fall in the number of young people who were economically active (from 28,600 to 19,500) - causing the rate of youth unemployment to increase particularly sharply. The number of students in the inactive adult population (aged 16-64) in Nottingham increased markedly over this time period, from 38.1% to 50.9%. As students are likely to be particularly concentrated in the 16-24 age group, this will have contributed to the rise in youth unemployment rates. However, this should not be over emphasised: the number of inactive adults excluding students increased by 11.5% in the same period - suggesting a growing number of 'discouraged workers'[29] moving from unemployment to inactivity. With wider labour market conditions tightening in Nottingham, there may also be an increasing number of working-age people going into education and training because of a lack of job opportunities. The numbers of university students at the University of Nottingham and Nottingham Trent University[30] has not increased at anywhere near this rate in recent years, suggesting that the vast majority of the increase in economic inactivity due to study has been from individuals in further education and other training – potentially due to a lack of job availability.

The number of vacancies registered with Jobcentre Plus (which represents around a third of total recruitment activity) illustrates the extent of demand for labour from employers. In Nottingham, the total stock of live unfilled vacancies has remained fairly stable, at 1,500-2,500 each month. However, because of the significant increase in the number of unemployed in Nottingham, this has resulted in 5.4 JSA claimants to every one live unfilled vacancy in October 2011, compared to 4.6 in Great Britain. This is significantly higher than the ratio in October 2008, which was 3.8.

[29] A 'discouraged worker' is a widely used term that refers to an individual who is able to work (i.e. working age and without a work-limiting illness or disability), but is currently unemployed and has not attempted to find employment in the last four weeks (and thus would not qualify for the ILO definition of unemployment). Discouraged workers have usually given up searching for a job because they have found no suitable employment options and/or were met with lack of success when applying. They may be long-term unemployment benefit claimants, or may have been moved off JSA to another benefit/combination of benefits.

[30] The numbers studying at the two universities in Nottingham between 2003/4 and 2009/10 increased by only 4.7% (from 60,290 to 60,575) – whilst the numbers in Nottingham City who are economically inactive because they are students increased by 93.4% in the same period (January-December 2004-January-December 2010). This suggests that the increase in economic inactivity due to education/training is not strongly associated with growth in the population in Higher Education Institutions in the City – and is instead related to increases in a wider population (including those aged over 24) going into education or training, such as through an FE institution or a Government supported training scheme, potentially due to a lack of available jobs. Source: HESA, '*Students in Higher Education Institutions*', Table 0a – All Students by institution, mode of study, level of study, gender and domicile, 2003/04 and 2009/10 and ONS Crown Copyright, '*Annual Population Survey*', January-December 2004 and January December 2010.

### Chart 16: Youth unemployment (% economically active, aged 16 -24)




Source: ONS Crown Copyright, '*Annual Population Survey*', April 2007-March 2008 to April 2010-March 2011, from NOMIS, 24th January, 2012.

**Key Points: Employment and Unemployment Trends**

- Nottingham has a large proportion of working-age residents. This is due both to the presence of a large number of Higher Education students within the Unitary Authority boundary, but also because of the city's role as an economic centre for the surrounding area.
- Nottingham has consistently had lower than average employment rates and higher unemployment rates, in common with many core cities. However, the impacts of recession on the city's labour market appear to have been more significant than elsewhere.
- The latest employment rate at the time of writing (April 2010-March 2011) for Nottingham UA was 53.8%, lower than all other core cities.
- The unemployment rate in Nottingham now exceeds many other core cities, despite being in-line with similar sized cities prior to the onset of recession. During the period April 2007-March 2008, the unemployment rate in Nottingham was 7.5%, 2 percentage points higher than the national average, but in-line with Liverpool and Newcastle, and below Birmingham and Manchester. By April 2010-March 2011, it had increased to 14.1% in Nottingham – almost double the national average. This increase of 6.6 percentage points was greater than in any other core city.
- Youth unemployment has also increased significantly compared to other cities, although the increase in economically inactive students has contributed to this.
- Claimant count unemployment has followed a similar trend, increasing at a faster rate than any other core city, from less than 4% through 2007 to over 6% by late 2011. Vacancies have remained fairly stable in Nottingham, but the significant increase in JSA claimants means that there are now 5.4 claimants to every one vacancy advertised through Jobcentre Plus.

- As the Nottingham UA area appears to have been more seriously affected than other English UAs and Metropolitan Districts, it would be reasonable to suggest that elements of Nottingham's employment structure and skills profile have made it more vulnerable than elsewhere.

## 6.1 Skills Demand and Supply

Work-related skills are particularly important in enabling individuals to enter and progress within the labour market, and areas with high proportions of skilled workers are likely to be less vulnerable to economic shocks because:

- Businesses with highly skilled staff may be better able to identify market opportunities, innovate and adapt to new technologies and attract and facilitate investment;
- Employers are less likely to shed skilled workers when attempting to reduce labour costs. They may have invested significantly in training such individuals, who also may be more difficult to replace when demand recovers. This practice was evident during 2009-2010, when transport engineering firms in the D2N2 area, such as Toyota, used a number of strategies to 'hoard' skilled workers in the face of reduced demand, such as shorter hours and site closure days; and
- Skilled workers are also better equipped to access new employment opportunities if they are made redundant.

Skills are therefore an important contributor to the 'adaptive capability'[31] of an area. With greater competition for job vacancies due to increasing unemployment (see Chart 16), it is particularly important for young people – who have more limited labour market experience – to ensure that their choices in education and training contribute to developing the skills that are sought by employers. This is also a concern for local policy makers, in ensuring that public investment in education and training has an impact on the employability and productivity of the workforce in Nottingham.

An analysis of employment by occupational group suggests that residents in Nottingham are more likely to be working in low skilled occupations compared to elsewhere – and less likely to be working in more highly skilled occupations. This is associated with the sectoral structure of employment described in Section 4. Data also indicates that a significant proportion of those in more highly skilled jobs based in the city commute in from elsewhere.

'Occupation' is a useful term to use in assessing the demand for skills in a local area because it describes both the kind of job an individual does and the level of skill required to do it. The Standard Occupational Classification (SOC) used in National Statistics is a hierarchical model that groups individuals' jobs by *skill specialisation* and *skill level*. An example of the *skill level* element is as follows:

[31] See Footnote 9.

- SOC 1 and 2 jobs (Managers and Professionals) are associated with skills that are equivalent to a Level 4 qualification (a first degree etc.)[32]; whilst
- SOC 8 and 9 jobs (Process, Plant and Machine Operatives and Elementary Occupations) are associated with skills that are equivalent to Level 1 qualifications (the competence associated with compulsory, general education).

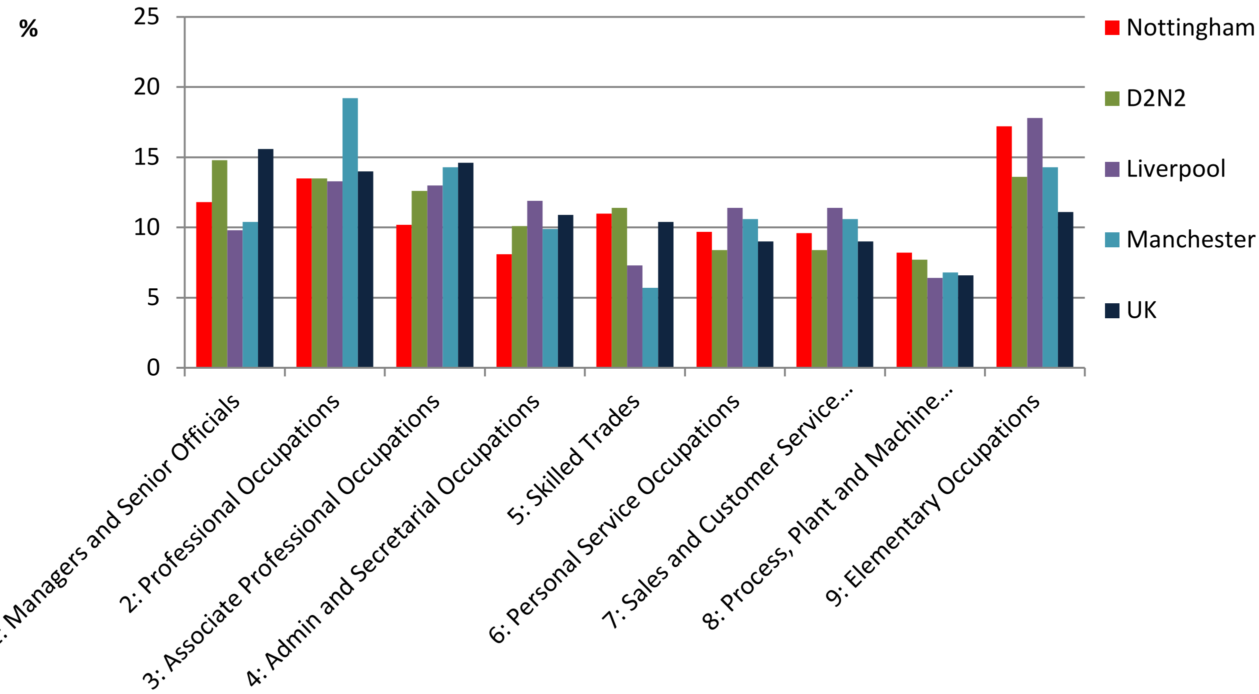
Chart 17 compares the occupational profile of employed residents in Nottingham City to a number of other core cities, the average for the D2N2 LEP, and the national average. This shows that Nottingham has a lower proportion of residents employed as 'Managers and Senior Officials' than either the D2N2 or the UK averages, at 11.8% in 2010 compared to 14.8% and 15.6% respectively (the share of employment in this occupation in Nottingham is also lower than in Bristol, Derby, Birmingham, Leeds and Sheffield – not shown in the chart). However, the proportion is slightly higher than in Manchester or Liverpool – which have a closer occupational profile to Nottingham than the other core cities.

Nottingham is particularly underrepresented in terms of 'Associate Professionals' (e.g. laboratory technicians, science and engineering technicians, etc.), an occupational group associated with qualifications at Level 3 (such as Advanced Apprenticeships), with the lowest proportion out of all the core cities – at 10.2% compared to 12.6% in the D2N2 area, 14.6% in the UK and 17.7% in Bristol. The proportion of residents working as 'Professionals' is close to other core cities and the national average.

Conversely, Nottingham has a significant overrepresentation of residents employed in the lowest skilled group, 'Elementary Occupations', at 17.2%, compared to a UK average of 11.1%. Proportions working in this SOC group in Bristol, Derby, Birmingham, Leeds and Sheffield are all close to, or below, the UK average, whilst only Liverpool has a higher proportion than Nottingham, at 17.8%.

[32] Note that individuals in such jobs do not necessarily hold *qualifications* at these levels, but would reasonably be expected to demonstrate *skills* at an equivalent level (whether or not they can be accredited). A good example is an owner-manager, who needs to use a high level of skill in a number of areas to undertake his/her job effectively, but may not have any formal qualifications. Despite this caveat, qualifications are often used as a proxy measure of skill in labour market statistics because they can be readily measured.

**Chart 17: Occupational Structure - Core Cities and Other Comparators (% residents in employment), 2010**




Source: ONS Crown Copyright, '*Annual Population Survey*', January-December 2010, , from NOMIS, 24th January, 2012.

Chart 18 compares the occupational structure of employment of residents in Nottingham to other parts of the Greater Nottingham Partnership (GNP), which illustrates likely patterns of commuting described in Section 2 . Rushcliffe, to the south of Nottingham, stands out with a very highly skilled occupational profile – with 17% of residents in Managerial and 23.8% in Professional Occupations. Many of these individuals will commute in to Nottingham City, as well as occupying skilled jobs within Rushcliffe – such as in Nottinghamshire County Council (West Bridgford) and the British Geological Survey (Keyworth).

Broxtowe, to the west of Nottingham and also close to Derby, is overrepresented in terms of intermediate skilled occupations, such as the 'Skilled Trades' (15.1% of residents, compared to 11% in Nottingham and 10.4% in the UK) and 'Associate Professional Occupations' (15.9% of residents, compared to 14.6% in the UK). Some of these individuals could be commuting into either Nottingham or Derby whilst others may be working in skilled manufacturing and R&D jobs in Siemens and Alliance Boots (both in Beeston) and well as the University of Nottingham.

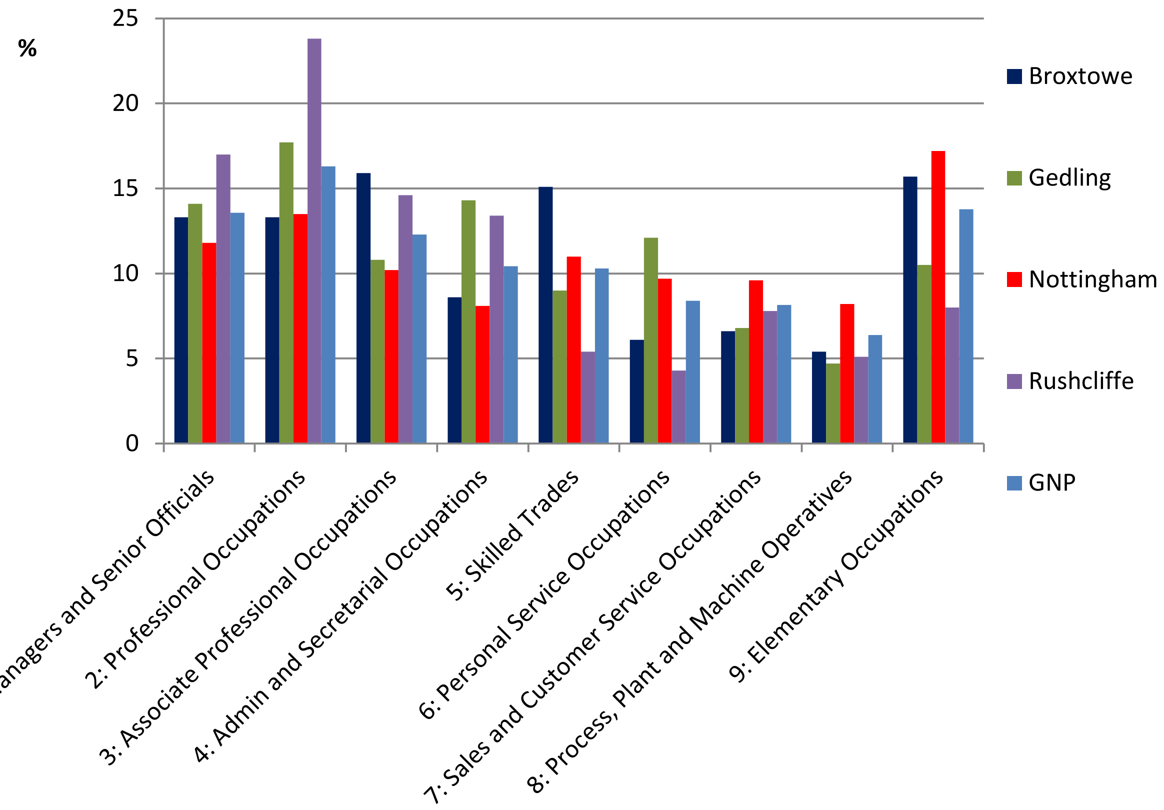
The high proportions of residents working in the lowest skilled occupations in Nottingham City is very clear when compared to Rushcliffe and Gedling. Only 8% of residents in Rushcliffe work in 'Elementary Occupations', less than half the proportion for Nottingham, whilst only 4.7% of Gedling residents work as 'Process, Plant or Machine Operatives' (compared to 8.2% in Nottingham). Nottingham is also relatively overrepresented in lower-skilled jobs related to the services, such as

'Sales and Customer Service Occupations', which accounts for 9.6% of employed city residents compared to 6.8% in Gedling.

This suggests a relatively highly skilled employment profile for residents in the areas surrounding Nottingham City UA, whilst residents within the city are far more likely to be working in low or unskilled jobs. Therefore significant barriers may exist for Nottingham residents to access high skilled job opportunities and to successfully compete against commuters from suburban areas and adjacent towns and villages.

The profile of occupational employment for the GNP conurbation as a whole is very close to the national average, with a slight underrepresentation of 'Managers and Senior Officials' and a slight overrepresentation in the 'Elementary Occupations'.

### Chart 18: Occupational Structure - Local Authorities in the GNP area (% residents in employment), 2010




Source: ONS Crown Copyright, '*Annual Population Survey*', January-December 2010, , from NOMIS, 24th January, 2012.

**Key Points: Skills Demand**

- Compared to other core cities, Nottingham has a relatively low proportion of residents working in occupations associated with higher level skills, such as 'Managers and Senior Officials' and 'Associate Professional Occupations' (where Nottingham has the lowest proportion of employment of all the core cities, at 10.2% compared to 14.6% in the UK).
- Conversely, Nottingham has a significant overrepresentation of employment in occupations associated with very low levels of skill, such as 'Elementary Occupations' (17.2% compared to a UK average of 11.1%).
- Looking within the Greater Nottingham Partnership (GNP) area, Rushcliffe stands out with a relatively highly-skilled occupational profile. Many residents of this district are likely to commute to undertake managerial and professional occupations within Nottingham City. Residents of Nottingham City are more likely to be working in low or unskilled jobs compared to the other districts in the GNP area, suggesting significant barriers in competing with skilled residents from suburban areas and adjacent towns and villages.

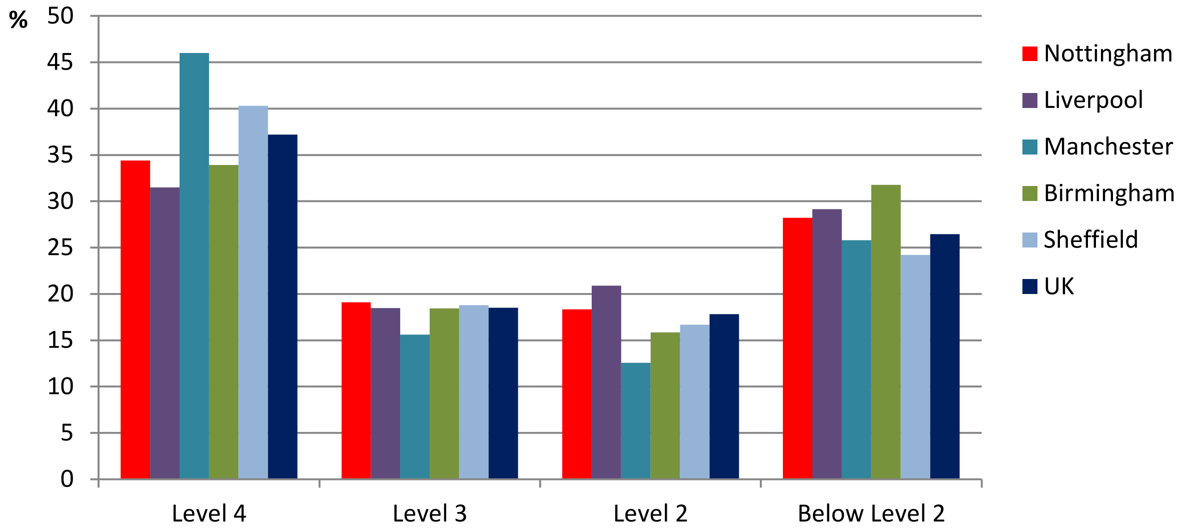
The relative distribution of qualifications provides a useful starting point in investigating possible reasons why residents in Nottingham may be less able to access skilled employment in the city. Qualifications are an important proxy measure of 'skill', but they are imperfect. Many skills valued by employers – such as communication and team working - are not necessarily reflected by qualifications. Robust data is available for the *level* of qualifications held, but very little is available on the course *subject*, preventing judgement on their applicability to available jobs. However, qualifications data have the advantage of comparability over time and between geographic areas. There are also positive associations between qualification levels, employment and productivity - although there is debate on whether gaining a qualification develops the skills that make individuals more employable and productive, or whether a level of qualification simply 'signals' an individuals' innate capability.[33]

Chart 19 shows the highest qualifications held by employed residents in Nottingham compared to a selection of other core cities. The proportion of employed adults educated to Level 4 or above (equivalent to a degree) in Nottingham is lower than the UK average, at 34.4% compared to 37.2%, although it is higher than in Liverpool (31.5%) and slightly higher than in Birmingham (33.9% - which is unlikely to be a statistically significant difference). However, the proportion qualified to the equivalent of a degree in Nottingham is significantly lower than in Manchester (46%), Sheffield (40.3%) and Bristol (42.1% - not shown in the chart).

Conversely, only Birmingham and Liverpool have higher proportions of their resident workforce who lack a Level 2. In 2010, 28.2% of employed adults in Nottingham lacked Level 2 qualifications (equivalent to 5 GCSEs at grades A*-C, the level of qualification usually expected at the end of compulsory education), compared to 26.5% in the UK, 24.2% in Sheffield and 25.8% in Manchester.

[33] For a review of these issues, see: Tamkin, P, Giles, G, Campbell, M, and Hillage, J, Institute for Employment Studies (IES) on behalf of the Sector Skills Development Agency (SSDA – now the UKCES), *'Skills Pay: The Contribution of Skills to Business Success'*, September 2004.

**Chart 19: Highest Qualification - Core Cities and Other Comparators (% residents in employment), 2010**

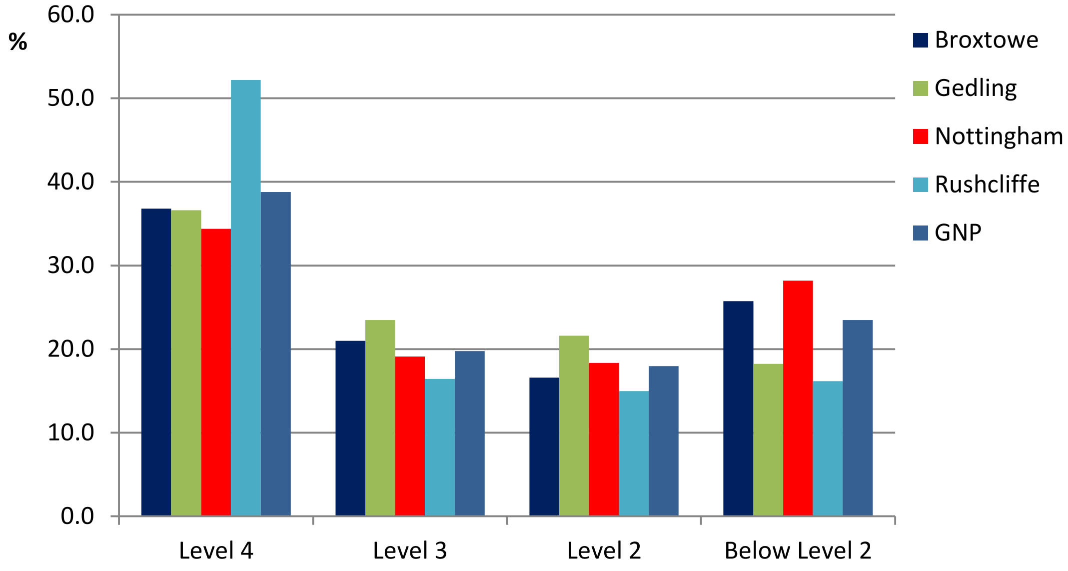



Source: ONS Crown Copyright, '*Annual Population Survey*', January-December 2010, , from NOMIS, 24th January, 2012.

There is a greater contrast in skills profile between Nottingham City and the surrounding districts of the GNP. The proportion of employed residents qualified to a Level 4 and above in Rushcliffe is almost 20 percentage points higher than in Nottingham City, at 52.2%, and significantly exceeds the proportion in other areas of the GNP. The GNP average for employed residents qualified to Level 4 and above is 38.8%, higher than the UK average purely because of Rushcliffe - all other districts in the GNP have a lower proportion than average.

Nottingham also has a slightly lower proportion of employed residents qualified to Level 3 (e.g. an Advanced Apprenticeship or A-levels) than Broxtowe and Gedling and the GNP average (19.8%). Nottingham again stands out in terms of low levels of skill, with higher proportions of residents lacking a Level 2, at 28.2%, compared to 16.2% in Rushcliffe, 18.2% in Gedling, 25.7% in Broxtowe, and a GNP average of 23.5%.

**Chart 20: Highest Qualification - Local Authorities in the GNP area (% residents in employment), 2010**




Source: ONS Crown Copyright, '*Annual Population Survey*', January-December 2010, from NOMIS, 24th January, 2012.

**Key Points: Skills Supply**

- Compared to many other core cities, Nottingham has a higher proportion of residents who lack qualifications at Level 2 (5 GCSEs at grades A*-C, the level of qualification usually expected at the end of compulsory education), at 28.2% compared to 26.5% in the UK. The city also has a lower than average proportion of residents with higher level qualifications (Level 4+, equivalent to at least a first degree).
- However, there is a greater contrast between Nottingham City and the other districts in the GNP. Over half (52.2%) of residents of Rushcliffe are qualified to at least Level 4, compared to 28.2% in Nottingham. Conversely, Nottingham has higher proportions of residents lacking a Level 2 than Rushcliffe, Gedling and Broxtowe.
- This provides further evidence of more highly skilled residents in adjacent areas who are better able to compete for skilled jobs within Nottingham City than residents of the city UA itself.

In order to assess whether Nottingham City's relationship with its surrounding districts is 'typical' for an English core city, it is useful to briefly summarise the spatial labour market dynamics in a selection of other core cities.

The wider Liverpool city-region has a more 'polycentric' structure than the GNP. The area of Halton is relatively independent from central Liverpool, with a strong business base and its own science and technology assets. Sefton, Warrington and Wirral are more closely linked to Liverpool and display similar contrasts to the city as those seen within the GNP area.[34] For example, the proportion of employed residents qualified to Level 4 or above in Sefton, Warrington and Wirral, at 33%, 36.6% and 34.9% respectively, exceed the proportion in Liverpool (31.5%), whilst all these areas have significantly smaller proportions with very low levels of qualification compared to Liverpool. As in the case of Nottingham, this suggests similar patterns of more highly skilled residents living outside the central city boundary commuting in, whilst residents of Liverpool itself have a lower skills profile and are thus less able to access high-skilled, high-paid employment within the city.

With the Leeds city region, however, the opposite appears to be the case to a certain extent. The Leeds city region is more self-contained than Liverpool, with Leeds itself accounting for the largest proportion of net-outward commuting from its surrounding areas. Leeds thus plays a strong role as an employment and service centre and a magnet for commuting flows. However, Leeds compares favourably against surrounding areas in terms of employed residents with higher level qualifications and residents in higher-skill occupations. For example, Leeds has a much lower proportion of residents with very low level qualifications than outlying areas such as Wakefield, Bradford, Barnsley and Kirklees. This suggests that residents within the Leeds Local Authority boundary are more likely to occupy more highly-skilled, high-paid jobs compared to the populations of surrounding areas.[35]

Greater Manchester has quite a clear north-south contrast, with areas to the south of the Metropolitan District of Manchester (e.g. Trafford, Stockport) far more suburban and affluent – supplying a large proportion of the skilled commuters who work in the city centre. The north of the city centre is a mix of old industrial settlements (e.g. Bolton and Rochdale) which had historically been more independent from the core city, although Manchester's strengthening role as a financial and cultural centre has been reflected in increasing commuting flows from the north as well as from the south of the city region.[36]

This can be further explored by looking at earnings estimates, as introduced in Section 2. Earnings can be interpreted as an outcome of the skills of a local area's workforce, based on two assumptions from labour market theory:

- Highly skilled workers are likely to be more productive, and more productive workers are **rewarded** through higher wages; and
- Employers who value/require skills will pay a relative premium to attract skilled staff, thus their **demand is indicated** through higher wages.

The main source for earnings estimates is the Annual Survey of Hours and Earnings (ASHE). Estimates are available based on where individuals live (residence based) and where they work

[34] URC Associates, on behalf of the Merseyside Partnership and the Knowledge Economy Group, '*Liverpool City Region's Knowledge Economy: Delivering New Opportunities for Growth*', 2011.
[35] Leeds City Region Partnership Employment and Skills Board, '*Leeds City Region: Employment and Skills Strategy – Appendices*', 2010.
[36] Robson, B, Barr, R, et al, Centre for Urban Policy Studies (CUPS), Manchester University, and Coombes, M, Centre for Urban and Regional Development Studies (CURDS), University of Newcastle-Upon-Tyne, on behalf of the Office for the Deputy Prime Minister (OPDM), '*A Framework for City Regions: Working Paper 1 – Mapping City-Regions*', 2006.

(workplace based)[37], enabling the discussion of commuting patterns in Section 2, but also enabling assumptions on the comparative skill levels of residents compared to (commuting) workers.

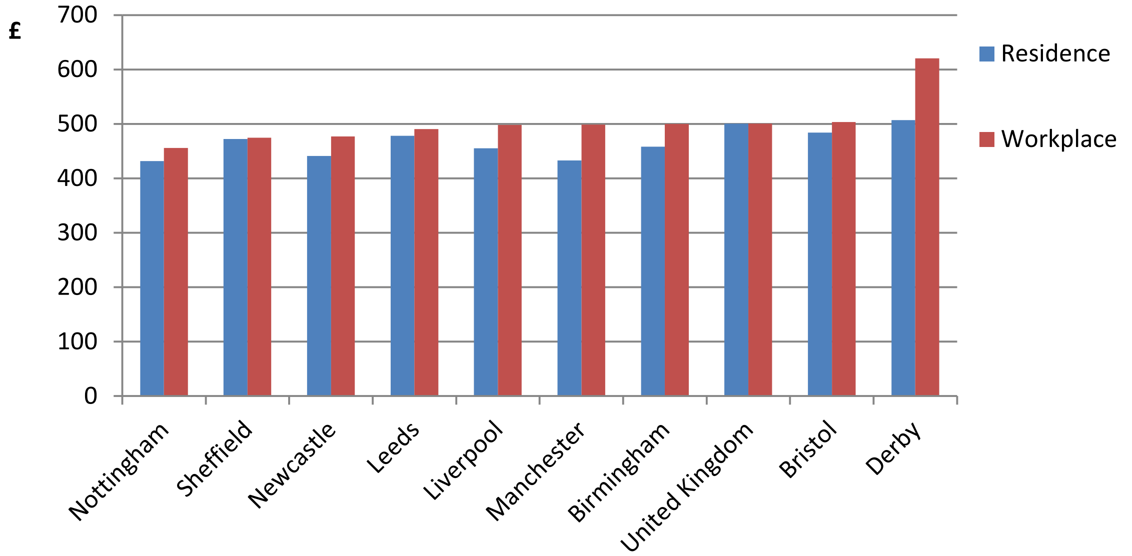
Chart 21 shows that Nottingham City UA has the lowest earnings of all the core city UAs/Metropolitan Districts on both a residence and a workplace-basis:

- In 2011, the median weekly earning for residents in Nottingham was £431.80, 5.6% less than the median earnings for those working in Nottingham (£455.90). Both these estimates were below the UK median of £500.70;
- All core cities have lower residence-based earnings than the national average, although workplace-based earnings are higher than the UK average in Bristol.
- Although Derby City is not classed as a 'core city', the medians for residence and workplace-based earnings are higher than the UK median. Derby has one of the highest workplace-based earnings outside London, at a median of £620.20;
- In Nottingham, there is a relatively large difference between residence and workplace-based earnings estimates – indicative of a high level of commuting from highly skilled/high paid workers from outside the Unitary Authority boundary. However, this difference is significantly greater in the case of Manchester (15.3%), due to the relatively small proportion of the Greater Manchester conurbation covered by the city Metropolitan District; and
- Sheffield appears to be an exception, where residence-based earnings are in line with workplace-based estimates. This may be due to relative 'over-bounding' to the west of the city, which covers a lot of sparsely populated area bordering on the Peak District, including relatively affluent towns and villages.

Looking within Nottinghamshire and the GNP area (see Chart 6, Section 2), earnings estimates closely match the occupational and qualifications analysis above. Rushcliffe has by far the highest residence-based earnings estimates, and also a significant gap between residence and workplace-based measures (a 22.1% difference), suggesting a high level of out-commuting of skilled workers. Broxtowe has similar contrasts, with lower earnings in both cases (reflecting higher proportions of residents working intermediate skilled occupations compared to Rushcliffe). Nottingham has the lowest residence-based earnings estimate of the four Local Authorities, at £173.60 per week lower than for residents of Rushcliffe, whilst the gap between workplace-based earnings is much smaller (£16). This further supports the interpretation that a large proportion of high skilled/paid residents of Rushcliffe work in Nottingham City, whilst Nottingham residents are more likely to be in lower paid jobs.

[37] In presenting data from the ASHE, it is recommended that the median – the value at the centre of the distribution of responses – is cited rather than the mean – the arithmetically calculated average – as the median is not skewed by a small number of very high earners in an area.

**Chart 21: Comparison of Residence and Workplace-based Earnings, Core Cities (gross weekly pay, median for Full Time Workers), 2011**

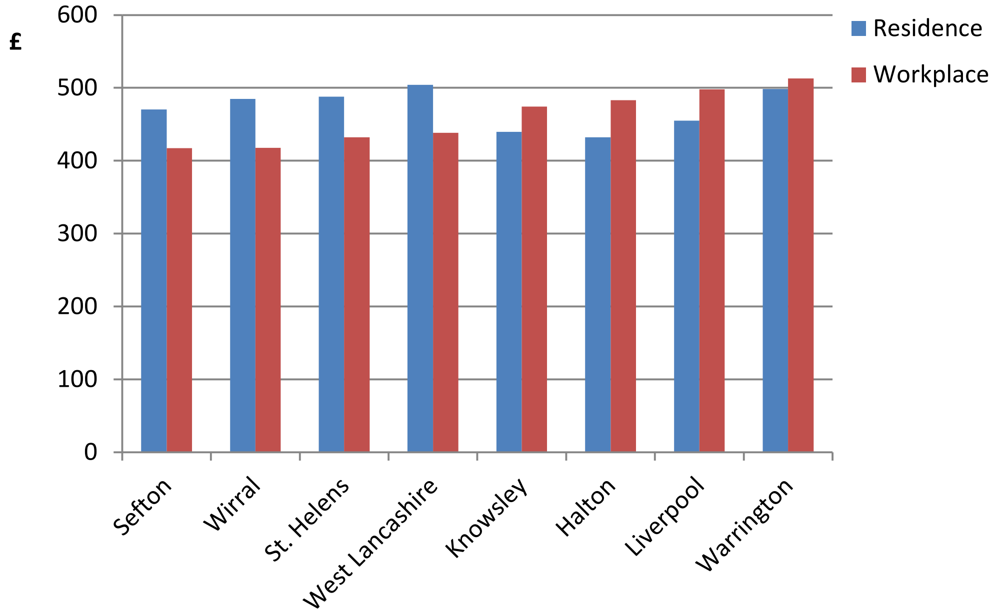



Source: ONS Crown Copyright, '*Annual Survey of Hours and Earnings*', 2011, Median weekly pay – gross, Full Time Workers, Residence- and Workplace-based. From NOMIS, 24th January 2012.

In comparison to differences within the GNP area, Chart 22 shows earnings estimates for Liverpool and a selection of its neighbouring Local Authority districts. Residence-based earnings in Liverpool itself are higher than a number of its surrounding districts (whereas Nottingham has by far the lowest in the GNP conurbation). West Lancashire, St. Helens and Wirral appear to play a similar role to Rushcliffe, Broxtowe and Gedling, with the higher residence-based earnings, suggesting they export skilled workers to elsewhere in the city region.

However, differences between these areas and Liverpool city are not as stark as Nottingham and Rushcliffe. Residence-based earnings in West Lancashire are £49.10 higher than earnings for residents in Liverpool. As suggested in the literature cited earlier, Halton appears to provide its own high-quality employment sites, with earnings on a workplace-basis that are significantly higher than residence-based estimates, indicating that Halton may attract skilled employment from elsewhere.

**Chart 22: Comparison of Residence and Workplace-based Earnings, Local Authorities within Liverpool City Region (gross weekly pay, median for Full Time Workers), 2011**




Source: ONS Crown Copyright, '*Annual Survey of Hours and Earnings*', 2011, Median weekly pay – gross, Full Time Workers, Residence- and Workplace-based. From NOMIS, 24th January 2012.

Evidence is available on employer views on the skills of their current staff, and what kind of skills they believe are most lacking. This is from the 2009 National Employer Skills Survey (NESS), which surveyed almost 80,000 establishments across England on issues related to recruitment, training, and skill needs. Employers who identified staff who were 'not fully proficient' are described as having 'skills gaps'. Skills gaps need to be interpreted with care, as a large proportion tend to be attributed to high staff turnover – with many individuals described as 'not fully proficient' because they are new starters. Skills gaps therefore tend to be higher in sectors with generally low skill requirements (which tend to have high staff turnover).

The proportion of establishments reporting skills gaps has risen from 15% in 2007 to 19% in 2009 in England overall. This could be because companies have controlled their costs by reducing staff during the recession. As a result, the workload of those remaining employees may have increased, affecting their 'proficiency'. Time-series is not available for Nottingham City, but the results for 2009 are striking:

- Although most of the areas of the D2N2 LEP were close to the national average, Nottingham City stands out with by far the highest proportion of employers reporting skills gaps, at 29% - 10 percentage points higher than the national average; and
- This is estimated to be equivalent to 9% of all job holders in Nottingham not being 'fully proficient' at their current jobs, compared to 7% in England overall.[38]

[38] Roe, P, and Godfrey, D, BMG Research, on behalf of YPLA and SFA East Midlands, '*The National Employer Skills Survey 2009: report of results for the East Midlands*', 2010.

This is likely to be a function of both the industrial structure in Nottingham, with a high proportion of skills gaps reported by retail employers and in the health sector, and the skills profile of the city, with higher proportions of employed residents with very low skills levels compared to elsewhere.

**Key Points: Earnings and Employer Skills Issues**

- According to the 2011 Annual Survey of Hours and Earnings (ASHE), Nottingham City UA has the lowest earnings of all core cities on the basis of both residence- and workplace-based earnings estimates.
- As discussed in section 3, the median of earnings for residents of Nottingham is lower than the median for those working in the city – suggesting more highly skilled workers commuting from elsewhere to occupy more highly paid jobs within Nottingham. In 2011, the median of weekly earnings for residents in Nottingham was 5.6% lower than the median for workplace-based earnings.
- This is also for case for all other core cities with the exception of Sheffield.
- Differences in earnings between Nottingham and other areas in the GNP reflect the occupational and qualifications analysis presented earlier in this report. Rushcliffe has by far the highest residence-based earnings estimates, which are 22.1% higher than the median for individuals working in the district- suggesting a high level of out-commuting of skilled workers.
- The National Employer Skills Survey (NESS) for 2009 provides an indication of how far workforce skills in an area meet the needs of local employers. Nottingham City stands out compared to other areas in the D2N2 LEP in having a particularly high proportion (29%) of employers who feel they have staff who are 'not fully proficient' in their current jobs. This is 10 percentage points higher than the national average. This is likely to be a function of both the impacts of recession (with staff reductions resulting in remaining members of staff experiencing increased workloads, thus becoming less 'proficient') and Nottingham's skill profile – indicating the relatively high proportion of employed residents in the city lacking entry-level skills.

## 6.2 Participation in Education and Training

An area's supply of workforce skills is determined by, among other things, the quality of education and training available and the levels of participation and attainment of young people and adults. The relationships between the skills available to employers and education and training provision in a local area are complex, however. The skills of the workforce are a product of a number of generations successively engaging in education and training, meaning that changes in provision can take many years to feed into labour market outcomes. Of course, individuals may also leave an area or an employer after completing a course, meaning that the benefits of that learning may be experienced elsewhere. Despite these issues, a quality education and training offer, and one that is aligned to the needs of local employers, is very important for the economic development of an area – not least because it can help to attract inward investment and build upon existing industry strengths.

Increasing participation and attainment in education and training is also a key objective in tackling exclusion, increasing social mobility and providing individuals with the means to sustain and progress in employment. This is demonstrated by the close association between areas that have high participation and attainment rates in education and low levels of unemployment and inactivity.

Recent data on participation rates in education post-16 alongside the attainment of 16 year olds at GCSE shows that Nottingham City has the highest levels of participation in the D2N2 LEP area but the lowest levels of attainment. Given the gap in attainment levels between young people in schools in Nottingham City and other areas, it is perhaps not surprising that Nottingham also has a lower proportion of young people going on to university by the age of 19:

- In 2009, 91% of 16 and 17 year olds resident in Nottingham City were participating in education or work-based learning, the highest in the D2N2 LEP area and above the national average (89%). Nottingham also had the highest participation rate in the D2N2 area in previous years. Full-time education accounted for the largest share of participating young people;[39]
- However, the proportion of young people in schools in Nottingham City attaining 5 GCSE passes at A*-C was the lowest in the D2N2 area in 2009/10, at 72% for all GCSE subjects and 44% including English and maths, compared to national averages of 76% and 55% respectively;[40]
- Schools and pupils in Nottingham City have achieved a significant improvement in attainment over time, with the proportion of young people attaining 5 GCSE passes at grades A*-C, including English and Maths increasing more than anywhere else in the D2N2 LEP area – by 9.5 percentage points from 35% in 2007/08 (compared to an increase of 7 percentage points in England overall). This means that, although attainment rates in Nottingham were still comparatively low in 2009/10, the gap with the national average and other Local Authority areas in D2N2 has closed significantly; and
- The proportion of pupils from maintained schools in Nottingham City entering Higher Education by the age of 19 was much lower than the national average and all the other Local Authorities in the D2N2 LEP, at 21% in 2008/09, which is 12 percentage points below the national average and 11 percentage points below Derby City. [41]

There are also some important differences in the type and level of course studied by learners in Nottingham City compared to elsewhere. Nottingham City has a lower proportion of learners studying towards a Level 3 (intermediate) qualification compared to elsewhere – both in Further Education and in Apprenticeships. This could reflect two possible issues: that lower attainment at GCSE means that fewer learners are able to go on to intermediate FE courses, instead needing to work towards a first Level 2 (equivalent to 5 GCSE passes at A-C); and/or that the industrial structure

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[39] Department for Education, '*Participation in education and work based learning (WBL) of 16 and 17 year olds*', Local Authority Tables for 2009. 2011.

[40] Department for Education, *'Achievements at GCSE and equivalent for pupils at the end of Key Stage 4'*, 2009/10. 2011.

[41] Source: Department for Business Innovation and Skills, '*Progress on Widening Participation in Higher Education*', Table 2A: Estimated percentage of maintained school pupils aged 15 by Free School Meal status who entered HE by age 19 by Local Authority. Derived from HEFCE data. 2011.

of employment in Nottingham City – especially compared to Derby and Derbyshire – results in a lower demand for intermediate skills, and a higher demand for lower level skills, in Retail, Health etc. (compared to Manufacturing, which drives the high demand for qualifications at Level 3 and above in Derby and Derbyshire). Moreover, there is a higher proportion of learners in Nottingham City working towards basic 'Skills for Life' qualifications compared to elsewhere, reflecting both the lower attainment at school and the higher number of international migrants in the city requiring ESOL provision.[42]

Data is available from the Annual Population Survey/Labour Force Survey on the proportion of adults who have participated in job-related training. Within the D2N2 area, Nottingham City has by far the lowest proportions of adults receiving training in either the last 4 weeks prior to interview or the last 13 weeks prior to interview. Over the period January-December 2010, only 7.9% of adults resident in Nottingham City had received training in the last 4 weeks and 14.1% had received training in the last 13 weeks, which is 1.4 and 4.6 percentage points lower than the UK average respectively. This appears particularly concerning when compared to Derby City, where 19.1% of adults had received job-related training in the 4 weeks prior to interview and 27.7% had received training in the last 13 weeks (almost twice the level in Nottingham in the same period).[43] The proportion of adults receiving training in Nottingham had also fallen significantly over time (between 2005 and 2010), whilst it had increased in Derby.

Associated with concerns about youth unemployment, there has been significant concern recently over increasing numbers of young people who are Not in Education, Employment or Training (NEET). Nationally, the number of 16-18 year olds who are NEET has increased slightly between quarter 3 2008 and quarter 3 2011, from 256,000 to 267,000 (from 13% to 14%). However, the increase for 16-24 year olds was far more significant, showing the impact of the recession on the employment rates of 18-24 year olds, increasing from 971,000 to 1,163,000 in quarter 3 2011 (from 14.2% to 19.2% of all 16-24 year olds). In the East Midlands, there has actually been a slight decrease in the numbers of 16-24 year olds who are NEET – from 86,000 to 81,000 (or 16% to 14.9% of all 16-24 year olds). The East Midlands is the only English region to have experienced a decrease in the numbers of 16-24 year olds NEET over the period.[44]

Quarterly estimates are not available for Local Authorities, and annual estimates are produced through a different method than the national or regional estimates - resulting in significantly lower proportions, so cannot be directly compared.[45] With this in mind, annual NEET data for Nottingham

[42] Skills Funding Agency Data Service, '*Statistical First Release Supplementary Tables: Overall FE and Skills Participation by Government Office and Local Authority*', learner volumes. Enrolments by location of institution/provider. 2011.

[43] Source: ONS Crown Copyright, '*Annual Population Survey*', January 2010-December 2010.

[44] Department for Education, '*Statistical Release: NEET Statistics Quarterly Brief*', Table 1(a) and 1 (b) Number and Percentage of 16-24 year olds Not in Employment, Education or Training (NEET), November 2011.

[45] Locally, NEET estimates are based on records of young people known to the Local Authority. This data records their actual age rather than academic age and does not record as NEET young people who are taking a gap year or are in custody. As a result, the Local Authority measure tends to be significantly lower than that recorded nationally in the Statistical First Release. For this reason, local estimates are not compared with the national average.

City shows considerable improvement between 2009 and 2010, with the proportion of 16-18 year olds who are NEET falling from 5.4% to 4.9%.[46] These are some of the lowest NEET rates in the D2N2 area – although they are insufficiently timely to indicate whether Nottingham has experienced the same recent deterioration seen nationally in the quarterly data for 2011.

**Key Points: Participation and Attainment in Education and Training**

- In terms of education, Nottingham City has a relatively high level of participation amongst 16 and 17 year olds (91% were participating in education or work-based learning compared to 89% nationally). This was the highest level of participation of all the areas in the D2N2 LEP.
- However, the city compares less favourably on measures of attainment. In the 2009/10 school year, 44% of young people in schools in Nottingham City attained 5 or more GCSE passes at grades A*-C, including English and maths, compared to 55% in England overall. This is the lowest of all the areas in the D2N2 LEP.
- This attainment is also reflected in the proportion of pupils from maintained schools in Nottingham who progress to Higher Education by the age of 19, which, at 21%, was 12 percentage points lower than the national average in 2009/10.
- In Further Education, gaps in entry-level and basic skills amongst residents of Nottingham are reflected in high levels of take-up in 'Skills for Life' courses compared to elsewhere, and lower proportions of learners studying towards higher-intermediate Level 3 qualifications.
- Nottingham has a relatively low proportion of resident adults who have received job-related training. In 2010, only 14.1% of Nottingham residents received training in the 13 weeks prior to their Labour Force Survey interview, 4.5 percentage points lower than the national average and half the proportion for residents of Derby.
- According to estimates for young people Not in Education, Employment or Training (NEET), there has been some improvement in Nottingham between 2009 and 2010 – but this may pre-date deterioration suggested by more recent national data.

### 6.3 Learner Choices, Employability and Employer Demand

The above assessment of participation and attainment provides a high-level view of how effectively education and training providers in Nottingham are engaging with young people and adults – but provides little insight on how closely this aligns to employer needs. Therefore, analysis of the subjects chosen by learners is needed to assess the alignment between educational activity and opportunities in the labour market. This is particularly important given the emphasis placed by the Coalition Government on a 'learner-driven' market in Further Education, where providers are able –

[46] Department for Education, based on Local Authority and Connexions data, '*Proportion of 16-18 Year Olds who are NEET, 2009 and 2010*', 2011.

due to the removal of national and regional targets and incentives – to use Skills Funding Agency (SFA) funding to deliver whatever courses they believe reflect learner choices.[47]

Analysis of SFA Further Education data for the East Midlands in 2010 found significant differences between the distribution of course choices of young people (16-18) compared to adults (19+). Whereas adults were more likely engage in subjects that were closely aligned with important employment sectors in the region (e.g. Health, Education, Engineering) or skills needed across the labour market (ICT, customer services), young people's choices were far more heterogeneous. The most popular FE subjects for 16-18 year old learners were creative & arts, fitness & sport and beauty & hairdressing. This suggest that the subject choices of young learners are influenced more by individual interests than an understanding of local and regional labour market opportunities.[48]

This observation from regional analysis has been confirmed by recent primary research carried out nationally by the think-tank DEMOS and by City & Guilds. Both studies interviewed young people engaged in vocational Further Education, including Apprenticeships. The City & Guilds Centre for Skills Development (CSD) investigated the views of young people (aged 15-19) and their parents on the quality of careers guidance available through a survey and a series of follow-up focus groups. The majority of young people surveyed (on both vocational and academic courses) felt that they had received little advice on how their course choices at school and FE would link to future careers or university. Therefore most (74%) stated that they had simply chosen courses in subjects in which they had a personal interest, and found it difficult to connect those interests to viable job prospects.

Perhaps surprisingly therefore, a majority (61%) had a clear idea of what type of job or career they wanted to pursue, but only 23% of respondents who were on vocational learning routes chose their course because it would help them get a job. Many focus group participants felt they had little control over the job they would ultimately end up with.[49]

The DEMOS study specifically looked at young people who were not going down the Higher Education route. Many of the learners, stakeholders and employers DEMOS surveyed felt that the quality of careers advice was poor, often biased against vocational learning routes (and towards attending sixth form and university) and ill-informed on labour market developments and business needs. Little to no information was provided about Apprenticeships at many of the schools surveyed. Only a very small number of school and FE students had met their careers adviser, and no students had developed an on-going productive relationship with him or her.

DEMOS raise a general concern that, although most of the young people in question are outside the NEET group, they may become increasingly at risk from periods of future unemployment in the current climate, and may become trapped in cycles of low-paid, low-skilled work. The report recommends a greater focus on the kind of skills required to progress in the labour market from an

[47] Department for Business, Innovation and Skills (BIS), '*Skills for Sustainable Growth – Strategy Document*', November 2010.

[48] Lawton, C, Altorjai, S, and Haslam, D, emda, '*The East Midlands Regional Skills Priority Statement, 2011/12*', September 2010.

[49] Chrysalis Research, on behalf of the City & Guilds Centre for Skills Development, '*New Directions: Young People's and Parents' Views of Vocational Education and Careers Guidance*', September 2011.

early-age – i.e. 'work-related' learning – and a greater focus on schools and colleges building meaningful relationships with local employers.[50]

Analysis of first destinations data for graduates leaving the two universities in Nottingham, the University of Nottingham and the Nottingham Trent University, shows high proportions accessing employment soon after graduating and similarly high proportions accessing high-quality 'graduate occupations', demonstrating that Higher Education continues to confer considerable advantages for young people in the labour market. This is despite current negative press around instances of graduate unemployment or 'under-employment'.

In 2009/10, the proportion of leavers from Nottingham Trent in employment or further study exceeded the national average, at 91%, with the University of Nottingham level with the national average at 88%. The proportion of leavers from the University of Nottingham and Nottingham Trent 'assumed to be unemployed' was lower than the national average (8%), at 6% in both cases.

To look at the quality of employment, working graduates are categorised as being in 'graduate' or 'non-graduate' occupations (based on work undertaken in 2004 to define appropriate employment for university leavers). In 2009/10, there was a very high proportion of leavers from the University of Nottingham employed in 'graduate occupations', at 80% - over 10 percentage points higher than the national average. Although Nottingham Trent had the highest proportion of leavers in employment overall in 2009/10, the proportion employed in 'graduate occupations' was somewhat lower, at 68% - although this is slightly higher than the national average.[51]

An analysis of the distribution of students by subject indicates a good alignment between course choices for students at Nottingham's two universities and strong employability outcomes compared to the same subjects elsewhere. In 2008/09, 6.7% of students at the University of Nottingham were studying Medicine & Dentistry, compared to 2.5% of students in all English universities. In Nottingham Trent University, 6.6% of students were studying subjects in Architecture, Building & Planning, compared to 2.6% in England overall, whilst Engineering & Technology courses were significantly overrepresented at the University of Nottingham (8.4% of students, compared to 6.1% in England overall). In general, STEM-related subjects were well represented in the two Nottingham universities compared to the national average.[52]

However, it is not just better-informed subject choice that appears to give graduates an advantage in the labour market compared to non-graduates. It is also the level and method of course delivery and assessment. The DEMOS study found that the kind of informal skills that employers value are more likely to be developed through the kind of learning offered in Higher Education (seminars, independent project work, group presentations, etc.), and less likely to be associated with learning at school or Further Education.

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[50] Birdwell, J, Grist, M, and Margo, J, DEMOS, *'The Forgotten Half: a Demos and Private Equity Foundation Report'*, February 2011, www.demos.co.uk

[51] HESA, Destinations of Leavers from Higher Education in the United Kingdom for the Academic Year 2009/10', Statistical First Release 162, and UNISTATs data for individual HEIs, Destination Data – Whole Institution, all levels, all modes, 2009/10.

[52] HESA, '*Students in Higher Education Institutions*', 2008/09.

The relative advantage experienced by young graduates in employment, and, conversely, the disadvantage for non-graduates, is confirmed by employer views of the 'work-readiness' of young people from the 2009 NESS. Because of sample size, data is not available for Nottingham City – but other data suggests that there is little reason for there to be significant differences within the East Midlands (which is itself close to the picture observed nationally). When employers were asked how 'well prepared' young recruits were for work, graduates performed significantly better than other young recruits. Both nationally and in the East Midlands, 26% of employers who had recruited young graduates thought they were 'very well prepared' for work and 58% thought they were 'well prepared'. Of those who had recruited 17-18 year old (FE) college leavers, only 6% of employers in the East Midlands and England thought there were 'very well prepared', whilst 18% and 17% in England and the East Midlands respectively thought they were 'poorly prepared' for work. Perceptions of the preparedness of 16 year old school leavers were worse still. Of those employers who had recruited from this group, 14% in England and 12% in the East Midlands thought they were 'very well prepared' for work, whilst 23% and 26% respectively thought they were 'poorly prepared'.[53]

Together, these observations present serious challenges for policy makers in Nottingham – especially given the growing rate of youth unemployment - in ensuring that young people have access to high quality advice and guidance, especially if they have not had the opportunity to go to university, or choose to take a vocational learning route. This will assist learners to make better decisions, informed by labour market intelligence, resulting in improved employability outcomes from public investment in Further Education.

**Key Points: Learner Choices, Employability and Employer Demand**

- With the Coalition Government's strategy to increase the responsiveness of Further and Higher Education to the choices made by individual learners, it is important to understand how far current decisions meet the needs of employers – in order to inform provision of advice and guidance.
- Analysis of Further Education data for the East Midlands region alongside national survey evidence found that young people (16-19 year olds) were more likely to choose courses that reflected personal interests rather than aspirations for future employment, with a concentration of learners in courses such as creative & arts, fitness & sports, and beauty & hairdressing.
- Many young people surveyed nationally felt that current provision of advice and guidance was poor and ill-informed by business needs.
- There is a risk that young people in FE are particularly disadvantaged compared to HE students, who have access to better-resourced careers advice and are more likely to have engaged in 'work-relevant' learning practices (seminars, group presentations, independent project work, etc.).
- Evidence for the East Midlands from the 2009 NESS suggests that employers are much more likely to find university graduates to be 'very well prepared for work' (26%), whilst 17% felt that FE leavers were poorly prepared for work and 26% felt that school leavers were poorly prepared for work.

[53] Philip Roe and David Godfrey, BMG Research, on behalf of the YPLA and SFA in the East Midlands, '*The National Employer Skills Survey 2009: A Report of Results for the East Midlands*', October 2010.

## 7. Key Challenges and Issues

This concluding section provides a policy relevant overview of the key challenges and issues to which the Nottingham Economic Growth Plan will need to respond. It does not seek to duplicate the research findings detailed throughout this report and outlined in the Executive Summary.

Throughout the Nottingham City Economic Review, the performance of Nottingham has been assessed in relation to a range of national and international city comparators – principally the English Core Cities and a subset of comparably sized European Urban Audit cities. Viewed from this perspective, Nottingham performs extremely well in terms of output per capita, but far less well against indicators of labour market 'health', entrepreneurial activity and innovation. Indeed, when viewed from this perspective, Nottingham could be seen as exhibiting the output performance of a northern European city combined with the labour market characteristics of a southern European city.

This mixed picture of economic performance and labour market conditions is not unrelated to the sectoral balance of the local economy, Nottingham's distinctive role in the spatial economy of the East Midlands and a concentration of relative socio-economic deprivation typical of many inner-urban areas.

Business and public services are both strongly represented in the city. Conversely, and in common with many UK cities, manufacturing is notably less prominent than elsewhere in the region. This concentration of public sector employment (including a strong representation in health services and education) provides good quality skilled employment, but could also be seen as a vulnerability in the face of the fiscal consolidation that is underway. Available productivity data suggests that a number of Nottingham's larger sectors, including business services and retailing, are not performing as well as they might. Similarly, these sectors are not expected to grow as fast in Nottingham as is the expectation elsewhere. The structure of Nottingham's economy is not static. There are new and emerging sectors that are likely to be relevant to the trajectory of Nottingham's future development. Examples of sectors in this category include low carbon and environmental goods and services and digital content production.

The recent recession and slow recovery has affected Nottingham, just as it has affected all parts of the country. In this context, the need to stimulate and support private sector job creation is paramount. Nationally, it is now understood that a large proportion of private sector employment generation is associated with a relatively small number of 'high growth' firms. It is not practicable to identify these firms before they experience exponential growth, but it is known that they tend to share characteristics and face similar barriers to sustaining growth. These firms are innovative and have high requirements for skilled labour. Additionally, they tend to find access to expansion capital problematic and can struggle to find premises that will provide flexible 'grow-on' space. These are all requirements that can be addressed in the Growth Plan and related instruments such as the Nottingham Enterprise Zone. Creating an environment that will be conducive to the establishment and development of 'high growth' firms should be a key priority for the Growth Plan.

Turning to the labour market, it is clear that the impact of the recession on unemployment has tended to bear the hardest on localities that faced more challenging circumstances before the onset of recession (and has particularly affected the young). Nottingham's employment and unemployment rates reflect this. Indeed there is strong evidence that Nottingham has been affected to a greater extent than other comparable cities – suggesting that its employment structure and skills profile may have made it more vulnerable.

Educational attainment in Nottingham schools has improved markedly in recent years, but still lags national and regional comparators. It is therefore no coincidence that progression rates into Higher Education remain stubbornly low. This is a concern due to the relative disadvantage experienced by young people who do not have the opportunity to go to university, especially given the recent increases in youth unemployment. There is evidence that Higher Education provides more opportunities to develop 'soft' skills that are valued by employers, such as through 'work-related' learning activities including group projects, presentations and self-directed learning. As a consequence, employers are more likely to view young graduates as 'well prepared' for work compared to school or college leavers. This has consequences both for the supply of staff who are qualified to an intermediate and higher level in areas relevant to local employers and the life chances of Nottingham's young people.

Significantly more employers in Nottingham report skills gaps within their current workforce compared to elsewhere. This reflects both lower educational attainment and the sectoral/occupational structure of employment in the city, with a relatively high proportion of activities in sectors that experience high labour turnover. This could contribute to the low proportion of residents who are engaging in work-related training. There is consistent evidence that the course choices of young people in Further Education are not well aligned to employer demand or informed by a good understanding of the employment outcomes likely to be associated with these choices. There is clear scope for the Growth Plan to address these issues.

Finally, it is clear that the quality and speed of linkages between areas (connectivity) are key factors that drive economic performance. The role that locations play within a given area is influenced by connectivity. Different places, fulfilling different roles, require a tailored approach to the development of relevant infrastructure. Nottingham is a regional centre with a critical mass of activity that attracts both labour and capital. Maintaining and developing the city's infrastructure is of central importance if Nottingham is to maintain and enhance this role.

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# Annex 1 – Geographical Boundaries

This annex provides some background commentary on the geographical areas and concepts referred to in the Nottingham Economic Review.

## Nottingham City Unitary Authority and NUTS3 Area

Nottingham City is administered by a single Unitary Authority (UA) – Nottingham City Council – responsible for a wide range of services that elsewhere would be administered separately by two councils (i.e. two-tiered areas with district and county councils). Unitary Authorities typically allow large towns to have local authorities that are separate from the less urbanised surrounding counties and provide a single authority for small counties where division into districts would be impractical (e.g. Rutland). During 1997-1998, following the conclusion of the 1992 Local Government Commission for England, Nottingham became a Unitary Authority alongside other urban areas, including Bristol, Hull, Leicester, Derby, Stoke-on-Trent and Plymouth. The establishment of Nottingham as a Unitary Authority was achieved without changing the previous boundary, which had been in place since local government reorganisation in 1974.[54]

In 2010, Nottingham City UA had a resident population of 306,700, which had increased by 13.3% since 2000.

The Nomenclature of Territorial Units for Statistics (NUTS) is a hierarchical classification of areas in the European Union to support comparable sub-national statistics. The Nottingham City UA is classed as a NUTS3 area, which in the UK are usually sub-divisions of Counties or single Unitary Authorities or Metropolitan Districts. NUTS3 areas are the most detailed geographical level for which estimates of Gross Value Added (GVA) are published. The boundary for the Nottingham City NUTS3 area is exactly the same as the UA boundary.

## Core Cities

Nottingham City is one of eight English 'core cities'. This is a self-selected and self-funded group, defined as "the economically most important areas in England outside of London."[55] This group, headed by Local Authority Leaders, was established in 1995 in order to collectively promote their economic development (the core cities have no special status in existing legislation), and excluded cities in the South East and the East of England. The eight cities are also members of a pan European 'Eurocities' network.[56]

The core cities are: Birmingham (in the West Midlands); Bristol (in the South West); Leeds and Sheffield (in Yorkshire and the Humber); Liverpool and Manchester (in the North West); Newcastle (in the North East); and Nottingham (in the East Midlands).

This group provides useful benchmarks for Nottingham City, especially as almost all are affected by similar issues related to how well their administrative areas reflect their 'physical boundaries' and

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[54] Department for Communities and Local Government, '*Local Government Geography and History*', 2009.

[55] www.corecities.com/about-us

[56] The Eurocities network was founded in 1986 by the mayors of Barcelona, Birmingham, Frankfurt, Lyon, Milan, and Rotterdam. In 2011 it includes 135 European cities, with a secretariat based in Brussels, Belgium.

the relationship between the core cities and wider areas of economic influence. With the exception of Leeds and Sheffield (which both have large proportions of undeveloped land within their respective Local Authority boundaries), the core cities tend to be severely 'under-bounded'. This has affected English cities for almost four decades since the 1974 reorganisation of local government, which, alongside the designation of land surrounding urban centres as green-belt, has been criticised for restricting the availability of land for development by 'tightening' urban administrative boundaries. [57] Because of this, many of the administrative boundaries of urban Unitary Authorities or Metropolitan Districts in England fail to fully reflect the urban area's physical extent. This means that statistics based on such administrative areas can understate the size of a given variable (such as total population or employment) within a city's 'real' physical boundaries, or overstate the concentration of activity (such as GVA per head).

It has therefore become increasingly commonplace to talk about core cities within the context of their wider 'city region'. This describes a wider sub-regional area tied to a given city through the central role it plays in economic activity, administration, education, etc. The creation of existing city regions has been informed by boundaries based on commuting patterns[58], such as Travel-to-Work-Areas (TTWAs). The 'under-bounding' of Nottingham Unitary Authority can be illustrated in this context (Chart 1), as the population of the UA only accounts for 28.2% of the total population of Nottingham City Region.

This is not unusual in a core city's relationship with its wider city region. For example, the population of Manchester Metropolitan District accounts for only 16.5% of the total population of Manchester City Region and 20% of the population of the former Greater Manchester Metropolitan County (which had the same boundaries now held by the Greater Manchester LEP).[59] Similarly, the population of Newcastle Metropolitan District accounts for only 16.3% of the Newcastle/Tyne and Wear City Region.[60] Work undertaken by the Centre for Urban and Regional Development Studies (CURDS) to develop a definition of 'city regions' identified two typologies of core cities - those whose population accounted for around a third of the wider city region (Birmingham, Bristol, Leeds,

[57] Centre for Urban and Regional Development Studies, University of Newcastle Upon Tyne, '*Core Cities: Key Centres for Regeneration*', August 1999.

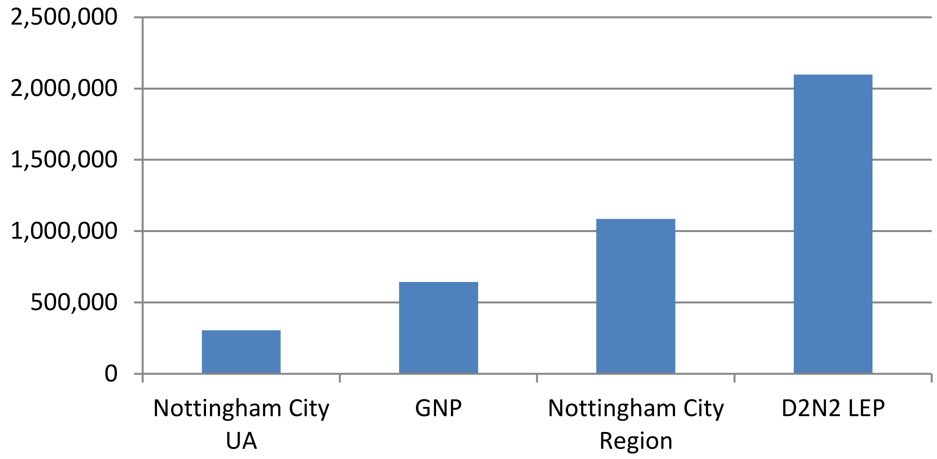
[58] The most readily identifiable form of linkage between core cities and their city-regions is commuting. The advantage of commuting flows is that they have been accurately measured fairly recently. Other forms of linkages, such as migration flows or journeys to shop and to access other services, are known to broadly echo the patterns which are evident in commuting flows. The city regions were defined as having: strong commuting flows between their constituent parts and their core city; a consistent net flow *to* core cities (except that for migration the net flow is *from* cities); and more intense flows among more affluent population groups.

[59] NTU analysis of ONS Crown Copyright, '*Mid-Year Population Estimates, 2010*', from NOMIS, 21st November 2011 – using City Region boundaries described in Nottingham City Council, '*City Regions of the Core Cities: Definitions and Statistics*', October 2005.

[60] Centre for Urban and Regional Development Studies, University of Newcastle Upon Tyne, '*Core Cities: Key Centres for Regeneration*', August 1999.

Liverpool, Sheffield and Nottingham), and those whose population accounted for less than 20% (Manchester and Newcastle).[61]

### Chart 1: The Population of Nottingham City UA and Functional Economic and Policy-Based Sub-Regions, 2010




Crown Copyright, 'Mid-Year Population Estimates, 2010', from NOMIS, 21st November 2011 – using City Region boundaries described in Nottingham City Council, '*City Regions of the Core Cities: Definitions and Statistics*', October 2005.

### Primary Urban Areas and Travel to Work Areas

'Primary Urban Areas' (PUAs) were developed to address issues related to describing core cities in terms of their administrative boundaries. This was undertaken as part of the '*State of the English Cities*' report, originally published in March 2006 by the then-Office of the Deputy Prime Minister (ODPM). This was in response to a commitment to measure and monitor English cities stated in the Urban White Paper of 2000. The PUA boundaries attempted to define major cities by their physical extent rather than administrative boundaries. This work was undertake by the Social and Spatial Inequalities Research Group of Sheffield University, who also generated a range of socio-economic indicators for PUAs which was maintained by the Department for Communities and Local Government (CLG) on the '*State of the Cities*' database, now incorporated into the CLG '*Places Database'*.

Sheffield University identified 56 PUAs in England. They were based on the ONS Main Urban Settlements, refined to cover areas of at least 20 hectares with an associated population of at least 1,000 people and a continuous built-up area of land that contains urban structures within 50 metres of each other. The PUAs described in '*State of the Cities'* all had a population threshold of 125,000 (from the 2001 Census population).

Two methods were used to generate data for PUAs:

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[61] Ibid.

- PUA boundaries approximated to aggregations of Local Authority Districts: This has the benefit of enabling access to a wide range of Official Statistics, but has the disadvantage of including areas within districts that are outside the city's physical boundaries; and
- Aggregations of Local Authority Districts and 'tracts':[62] the creation of an additional geography, similar in size to a ward but designed to be subject to fewer revisions over time. Wards and tracts, being smaller, allow a greater degree of precision in describing physical boundaries, but limit the range and timeliness of available data.

For each of the 56 PUAs, the University of Sheffield also identified a bespoke Travel to Work Area (TTWA). These were defined using the ONS definition, where: "of the resident economically active population, at least 75% actually work in the area, and also, that of everyone working in the area, at least 75% actually live in the area." The TTWAs referred to in this release relate specifically to PUA and should not be confused with the ONS Travel to Work Areas which cover the whole country.[63]

The local authority-based PUA defined for Nottingham covered the districts of Erewash, Broxtowe, Gedling and Nottingham City Unitary Authority.[64] However, for practical reasons established some time before the '*State of the Cities'* work, Nottingham City Council and partners have preferred to use an alternative boundary for the Nottingham conurbation, which uses the Local Authority Districts of Rushcliffe, Broxtowe and Gedling alongside the Nottingham City UA. This means that there are differences in the population and employment estimates between the GNP area and the Greater Nottingham PUA cited in the State of the Cities database. Chart 2 illustrates the differences between the two as population numbers change over time.

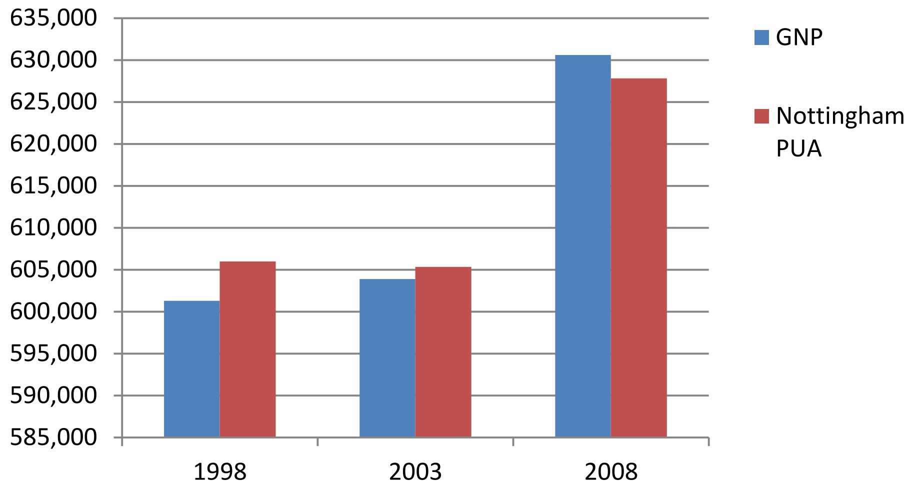
This shows that, for the first two years in the available time-series, the population estimate for the PUA significantly exceed the GNP area, by 4,700 individuals. However, in 2008, the GNP area had a slightly higher estimated population than the PUA, at 630,600 compared to 627,800. This was due to the fact that Rushcliffe district in the GNP, which is not included in the PUA, grew significantly faster than Erewash.

[62] Tracts were aggregations of wards covering the whole of Britain. They were created by the University of Sheffield to produce a set of areas with a similar population and with borders which remain reasonably consistent; this means that the data can be compared through time. Tracts represent standard neighbourhoods averaging at 35,000 residents

[63] Department for Communities and Local Government, '*Statistical Release: Experimental Statistics: Primary Urban Areas and Travel to Work Indicators: Updating the Evidence Base on Cities*', April 2010.

[64] Parkinson, M., et al on behalf of the Office of the Deputy Prime Minister, *'State of the English Cities – A Research Study Volume 2*', 2006.

**Chart 2: Population Estimates for the Greater Nottingham Partnership area and the Nottingham PUA, 1998-2008**




Source: ONS Crown Copyright, '*Mid-Year Population Estimates, 1998-2008*', from NOMIS, 21st November 2011 and CLG, '*Primary Urban Areas and Travel to Work Area Indicators: Updating the Evidence Base on Cities*', Table 26: Mid-Year Population Estimates, April 2010.

## Greater Nottingham Partnership (GNP)

The Greater Nottingham Partnership (GNP) was formed in 1994 by Nottingham City and Nottinghamshire County Councils with the aim of improving partnership working across the Nottingham conurbation and attracting more government regeneration funding into the area. The area covers Nottingham City UA and the entire districts of Rushcliffe, Broxtowe and Gedling. Where data has allowed (i.e. in analysis of the 2001 Census), this area has also included the Hucknall electoral wards from the north Nottinghamshire district of Ashfield. This is not possible for most Official Statistics, especially those based on sample surveys, which are generally not robust below a district level.

The GNP area remains the preferred, pragmatic geography for representing the wider Nottingham conurbation used by Nottingham City Council and partners, given data availability.

# Annex 2 – Data Tables

**Table 1: Land Values and Rentals, Unitary Authority/Metropolitan District, 2011**

| | Land Values (£ha) | | Rentals (£sqm) | | | |
|---|---|---|---|---|---|---|
| | Residential land- suburban site of 0.5ha | Industrial land- cleared site 0.5-1.0ha | Retail rental standard shop unit Zone A | Office rental self-contained office suite over 1,000 sqm | Industrial rental small starter/nursery unit 50-200 sqm | Industrial rental industrial/warehouse unit 1,000-3,000 sqm |
| Newcastle | 1,280,000 | 235,000 | 3,350 | 215 | 63 | 53 |
| Manchester | 1,350,000 | 650,000 | 2,400 | 250 | 77 | 55 |
| Liverpool | 1,500,000 | 450,000 | 1,700 | 175 | 65 | 50 |
| Sheffield | 1,330,000 | 495,000 | 2,400 | 165 | 60 | 48 |
| Leeds | 1,360,000 | 600,000 | 2,750 | 240 | 70 | 55 |
| Birmingham | 1,235,000 | 650,000 | 3,300 | 260 | 50 | 45 |
| Bristol | 2,100,000 | 800,000 | 2,300 | 230 | 65 | 50 |
| Nottingham | 1,200,000 | 500,000 | 2,150 | 140 | 55 | 50 |
| Leicester | 1,580,000 | 400,000 | 1,800 | 150 | 60 | 45 |

*Source: Property Market Report 2011, Valuation Office Agency, January 2011*

## Table 2: Structure of Employment by Industrial Sector 2010

| | Sector shares (%) | | | | | | Location Quotients | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nottingham UA | Derby UA | D2N2 | Leicester UA | East Midlands | UK | Nottingham UA | Derby UA | D2N2 | Leicester UA | East Midlands |
| Agriculture, Forestry & Fishing | 0.0 | 0.1 | 2.7 | 0.1 | 2.2 | 2.0 | 0.0 | 0.1 | 1.4 | 0.1 | 1.1 |
| Oil & Gas Extraction | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.6 | 0.0 | 0.3 |
| Other Mining | 0.0 | 0.2 | 0.5 | 0.0 | 0.3 | 0.1 | 0.0 | 1.4 | 3.6 | 0.0 | 2.6 |
| Gas, Electricity & Water | 2.1 | 1.0 | 0.6 | 0.2 | 0.7 | 0.5 | 4.2 | 2.0 | 1.1 | 0.3 | 1.5 |
| Fuel Refining | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Chemicals | 0.1 | 0.6 | 0.8 | 0.4 | 0.6 | 0.5 | 0.1 | 1.1 | 1.5 | 0.7 | 1.1 |
| Minerals | 0.0 | 0.5 | 1.3 | 0.1 | 0.7 | 0.4 | 0.1 | 1.3 | 3.5 | 0.2 | 1.9 |
| Metals | 0.7 | 0.7 | 2.8 | 2.3 | 1.7 | 1.5 | 0.5 | 0.5 | 1.9 | 1.6 | 1.2 |
| Machinery & Equipment | 0.3 | 0.9 | 1.2 | 0.4 | 1.3 | 1.0 | 0.3 | 0.9 | 1.2 | 0.4 | 1.3 |
| Electrical & Optical Equipment | 0.7 | 1.2 | 0.9 | 1.0 | 1.1 | 1.1 | 0.7 | 1.1 | 0.9 | 0.9 | 1.0 |
| Transport Equipment | 0.0 | 9.7 | 1.7 | 0.5 | 1.6 | 1.1 | 0.0 | 8.9 | 1.5 | 0.5 | 1.4 |
| Food, Drink & Tobacco | 1.6 | 0.6 | 2.6 | 2.3 | 2.8 | 1.5 | 1.1 | 0.4 | 1.7 | 1.6 | 1.9 |
| Textiles & Clothing | 0.2 | 0.2 | 0.8 | 2.7 | 0.8 | 0.4 | 0.7 | 0.6 | 2.2 | 7.1 | 2.1 |
| Wood & Wood Products | 0.2 | 0.2 | 0.4 | 0.1 | 0.4 | 0.3 | 0.6 | 0.6 | 1.4 | 0.5 | 1.4 |
| Paper, Printing & Publishing | 1.0 | 1.1 | 1.2 | 2.3 | 1.4 | 1.3 | 0.8 | 0.8 | 0.9 | 1.8 | 1.1 |
| Rubber & Plastics | 0.2 | 0.7 | 1.8 | 1.0 | 1.2 | 0.7 | 0.3 | 1.0 | 2.6 | 1.5 | 1.8 |
| Other Manufacturing | 1.1 | 0.1 | 1.2 | 0.5 | 0.9 | 0.7 | 1.5 | 0.2 | 1.8 | 0.8 | 1.4 |
| Construction | 4.8 | 4.2 | 8.7 | 4.9 | 7.0 | 7.5 | 0.6 | 0.6 | 1.2 | 0.6 | 0.9 |
| Retailing | 7.2 | 8.4 | 8.9 | 7.2 | 8.7 | 8.2 | 0.9 | 1.0 | 1.1 | 0.9 | 1.1 |
| Wholesaling | 5.1 | 6.0 | 7.0 | 6.8 | 7.3 | 6.3 | 0.8 | 1.0 | 1.1 | 1.1 | 1.2 |
| Hotels & Catering | 4.1 | 4.1 | 5.3 | 3.4 | 4.8 | 5.2 | 0.8 | 0.8 | 1.0 | 0.6 | 0.9 |
| Transport | 3.2 | 3.6 | 5.1 | 2.4 | 4.9 | 4.5 | 0.7 | 0.8 | 1.1 | 0.5 | 1.1 |
| Communications | 1.9 | 1.3 | 1.8 | 1.6 | 1.6 | 1.8 | 1.1 | 0.7 | 1.0 | 0.9 | 0.9 |
| Banking & Insurance | 3.7 | 2.6 | 1.4 | 3.6 | 2.2 | 3.9 | 1.0 | 0.7 | 0.4 | 0.9 | 0.6 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Business Services | 22.9 | 17.3 | 12.1 | 17.0 | 15.3 | 15.7 | 1.5 | 1.1 | 0.8 | 1.1 | 1.0 |
| Other Financial & Business Services | 3.2 | 3.3 | 3.2 | 3.6 | 3.1 | 3.1 | 1.0 | 1.1 | 1.0 | 1.2 | 1.0 |
| Public Admin. & Defence | 6.2 | 3.9 | 4.6 | 6.5 | 4.6 | 5.0 | 1.2 | 0.8 | 0.9 | 1.3 | 0.9 |
| Education | 9.8 | 8.0 | 5.8 | 9.7 | 7.0 | 7.6 | 1.3 | 1.0 | 0.8 | 1.3 | 0.9 |
| Health | 15.1 | 15.5 | 11.0 | 14.8 | 11.0 | 12.0 | 1.3 | 1.3 | 0.9 | 1.2 | 0.9 |
| Other (Mainly Public) Services | 4.6 | 3.9 | 4.8 | 4.5 | 4.6 | 6.1 | 0.8 | 0.6 | 0.8 | 0.7 | 0.8 |

*Source: Regional Planning Service Summer 2011, Experian*

**Table 3: Gross Value Added by Industrial Sector 2010**

| | Sector Shares (%) | | | | | | Location Quotients | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Nottingham UA** | **Derby UA** | **D2N2** | **Leicester UA** | **East Midlands** | **UK** | **Nottingham UA** | **Derby UA** | **D2N2** | **Leicester UA** | **East Midlands** |
| Agriculture, Forestry & Fishing | 0.0 | 0.0 | 0.6 | 0.0 | 0.7 | 0.6 | 0.0 | 0.1 | 1.0 | 0.1 | 1.2 |
| Oil & Gas Extraction | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other Mining | 0.0 | 0.1 | 0.3 | 0.0 | 0.3 | 0.1 | 0.0 | 1.0 | 2.1 | 0.0 | 2.0 |
| Gas, Electricity & Water | 7.8 | 3.7 | 3.5 | 0.6 | 2.8 | 1.8 | 4.3 | 2.0 | 2.0 | 0.3 | 1.6 |
| Fuel Refining | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Chemicals | 0.1 | 1.1 | 1.2 | 0.7 | 1.1 | 1.5 | 0.1 | 0.7 | 0.8 | 0.5 | 0.7 |
| Minerals | 0.1 | 0.5 | 1.1 | 0.1 | 0.8 | 0.4 | 0.1 | 1.3 | 2.7 | 0.2 | 2.1 |
| Metals | 0.6 | 0.6 | 1.8 | 2.0 | 1.5 | 1.3 | 0.4 | 0.5 | 1.4 | 1.6 | 1.2 |
| Machinery & Equipment | 0.3 | 0.8 | 1.0 | 0.4 | 1.3 | 1.1 | 0.2 | 0.8 | 0.9 | 0.4 | 1.2 |
| Electrical & Optical Equipment | 0.7 | 1.1 | 0.9 | 0.9 | 1.0 | 1.3 | 0.5 | 0.8 | 0.7 | 0.7 | 0.8 |
| Transport Equipment | 0.0 | 17.2 | 4.5 | 1.0 | 3.0 | 1.4 | 0.0 | 12.6 | 3.3 | 0.8 | 2.2 |
| Food, Drink & Tobacco | 2.5 | 1.0 | 3.4 | 3.8 | 4.5 | 2.0 | 1.2 | 0.5 | 1.6 | 1.8 | 2.2 |
| Textiles & Clothing | 0.2 | 0.2 | 0.5 | 2.1 | 0.6 | 0.4 | 0.5 | 0.5 | 1.3 | 5.5 | 1.6 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Wood & Wood Products | 0.1 | 0.1 | 0.2 | 0.1 | 0.3 | 0.2 | 0.6 | 0.6 | 1.1 | 0.5 | 1.3 |
| Paper, Printing & Publishing | 1.0 | 1.0 | 1.1 | 2.3 | 1.4 | 1.6 | 0.6 | 0.6 | 0.7 | 1.4 | 0.9 |
| Rubber & Plastics | 0.2 | 0.4 | 1.0 | 0.7 | 0.9 | 0.5 | 0.3 | 0.8 | 1.8 | 1.4 | 1.7 |
| Other Manufacturing NEC | 0.9 | 0.1 | 0.9 | 0.5 | 0.8 | 0.6 | 1.5 | 0.2 | 1.5 | 0.8 | 1.4 |
| Construction | 4.9 | 4.1 | 7.6 | 5.2 | 7.4 | 6.7 | 0.7 | 0.6 | 1.1 | 0.8 | 1.1 |
| Retailing | 5.7 | 6.3 | 6.8 | 5.8 | 7.0 | 6.1 | 0.9 | 1.0 | 1.1 | 1.0 | 1.2 |
| Wholesaling | 5.4 | 6.1 | 6.9 | 7.5 | 7.9 | 6.2 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 |
| Hotels & Catering | 2.4 | 2.3 | 2.9 | 2.1 | 2.9 | 3.1 | 0.8 | 0.7 | 0.9 | 0.7 | 0.9 |
| Transport | 3.2 | 3.5 | 4.6 | 2.5 | 5.1 | 4.5 | 0.7 | 0.8 | 1.0 | 0.5 | 1.1 |
| Communications | 3.0 | 1.9 | 2.8 | 2.7 | 2.7 | 3.0 | 1.0 | 0.6 | 0.9 | 0.9 | 0.9 |
| Banking & Insurance | 6.7 | 4.5 | 3.7 | 6.7 | 4.1 | 8.6 | 0.8 | 0.5 | 0.4 | 0.8 | 0.5 |
| Business Services | 18.6 | 13.4 | 12.4 | 14.3 | 12.8 | 14.2 | 1.3 | 0.9 | 0.9 | 1.0 | 0.9 |
| Other Financial & Business Services | 4.3 | 4.3 | 4.4 | 5.1 | 4.3 | 4.5 | 1.0 | 1.0 | 1.0 | 1.1 | 1.0 |
| Public Admin & Defence | 7.5 | 4.6 | 6.0 | 8.2 | 5.8 | 5.6 | 1.3 | 0.8 | 1.1 | 1.4 | 1.0 |
| Education | 8.4 | 6.6 | 6.0 | 8.7 | 6.1 | 6.3 | 1.3 | 1.0 | 1.0 | 1.4 | 1.0 |
| Health | 11.0 | 10.8 | 9.2 | 11.4 | 8.2 | 8.8 | 1.3 | 1.2 | 1.1 | 1.3 | 0.9 |
| Other Services | 4.4 | 3.6 | 4.5 | 4.5 | 4.5 | 5.3 | 0.8 | 0.7 | 0.9 | 0.8 | 0.9 |

*Source: Regional Planning Service Summer 2011, Experian*

**Table 4: Business Birth Rates 2004-2010, Unitary Authority/Metropolitan District (%)**

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|
| Birmingham | 12.9 | 13.4 | 12.0 | 13.1 | 11.9 | 12.0 | 11.1 |
| Bristol | 12.2 | 12.5 | 12.1 | 13.0 | 11.9 | 10.2 | 11.2 |
| Leeds | 12.6 | 12.9 | 11.9 | 12.6 | 11.5 | 10.3 | 11.7 |
| Liverpool | 14.3 | 13.4 | 13.3 | 14.4 | 12.7 | 11.8 | 11.1 |
| Manchester | 13.5 | 14.1 | 12.7 | 14.7 | 14.2 | 12.5 | 12.7 |
| Newcastle | 12.5 | 13.5 | 12.2 | 11.9 | 12.5 | 10.1 | 9.8 |
| Nottingham | 12.7 | 14.2 | 12.2 | 12.3 | 11.1 | 10.4 | 9.9 |
| Sheffield | 13.0 | 12.9 | 11.6 | 12.6 | 10.3 | 9.5 | 9.6 |
| Derby | 14.1 | 16.5 | 13.3 | 13.3 | 11.2 | 10.5 | 10.3 |
| Leicester | 12.5 | 13.0 | 11.9 | 12.0 | 12.7 | 10.9 | 11.0 |
| East Midlands | 12.8 | 12.8 | 11.7 | 11.9 | 10.6 | 9.4 | 9.3 |
| UK | 13.0 | 12.6 | 11.6 | 12.3 | 11.5 | 10.1 | 10.2 |

*Source: Business Demography 2010, Office for National Statistics, December 2011*

**Table 5: Business Death Rates 2004-2010, Unitary Authority/Metropolitan District (%)**

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|
| Birmingham | 12.2 | 11.9 | 10.4 | 11.5 | 11.3 | 15.1 | 15.5 |
| Bristol | 11.5 | 10.1 | 9.1 | 9.8 | 9.5 | 11.9 | 13.3 |
| Leeds | 11.5 | 11.5 | 10.1 | 10.2 | 10.3 | 12.5 | 14.2 |
| Liverpool | 12.1 | 11.4 | 10.2 | 11.1 | 9.9 | 14.7 | 15.4 |
| Manchester | 13.4 | 13.0 | 11.6 | 13.0 | 11.2 | 15.0 | 17.1 |
| Newcastle | 12.0 | 9.8 | 9.5 | 10.4 | 9.2 | 12.1 | 13.0 |
| Nottingham | 11.4 | 10.6 | 10.1 | 10.2 | 10.2 | 12.7 | 14.0 |
| Sheffield | 11.2 | 10.7 | 10.6 | 11.6 | 11.1 | 13.0 | 14.4 |
| Derby | 10.7 | 11.4 | 8.8 | 9.6 | 10.5 | 13.2 | 15.7 |
| Leicester | 13.8 | 13.1 | 10.5 | 11.3 | 10.7 | 13.7 | 16.4 |
| East Midlands | 11.0 | 10.4 | 9.1 | 9.4 | 9.4 | 11.8 | 12.7 |
| UK | 11.3 | 10.5 | 9.4 | 9.8 | 9.6 | 11.8 | 12.9 |

*Source: Business Demography 2010, Office for National Statistics, December 2011*

**Table 6: Business Survival Rates for Businesses Born in 2005, Unitary Authority/Metropolitan District (%)**

| | 1 year | 5 year |
|---|---|---|
| Birmingham | 95.9 | 39.8 |
| Bristol | 96.8 | 45.9 |
| Leeds | 95.2 | 44.1 |
| Liverpool | 96.1 | 39.4 |
| Manchester | 95.2 | 40.0 |
| Newcastle | 95.6 | 44.8 |
| Nottingham | 95.1 | 42.7 |
| Sheffield | 96.1 | 40.6 |
| Derby | 93.3 | 40.8 |
| Leicester | 95.6 | 39.0 |
| East Midlands | 95.8 | 45.2 |
| UK | 95.9 | 44.4 |

*Source: Business Demography 2010, Office for National Statistics, December 2011*

# Annex 3 – Nottingham Economic Growth Plan Progress Indicators

**Introduction**

This Annex sets out proposed indicators by which the progress towards the objectives set out in the Nottingham Economic Growth Plan can be measured. A long list of indicators is suggested from which a final list will be compiled. Indicators are presented at a number of levels, corresponding to the Growth Plan's case and strategy for change.

Indicators related to the Growth Plan's case and strategy for change are outcome indicators. Outcomes represent top-line indicators that, when viewed alongside each other, measure progress towards the Growth Plan's high level objectives. Outcomes should be consistent and measured over the long-term. However, it must be understood that such long-term characteristics of the Nottingham economy will also be influenced by 'external factors' outside the control of the City Council and its partners. Outcome indicators are often highly susceptible to cyclical variations in macroeconomic circumstances. This susceptibility must be taken into account when assessments of progress are made.

On the other hand, outputs explicitly measure the performance of activities, and can be directly related to inputs - the resources deployed by the City Council and its partners. At this early stage of the Growth Plan's development the output indicators are more indicative than the suggested outcome indicators.

There are two key principles that have informed the selection of indicators proposed in this note. The first is that indicators should be informed by, and related to, the evidence base (i.e. they should be relevant). The Growth Plan's case and strategy for change are relatively broad, so is not possible to cover all aspects of them. Rather the emphasis is on selection of indicators to capture their core essence.

The second principle is that indicators are robust and reliable. Moreover, it is important that attributes of consistency, comparability and continuity mean that they are measurable over time. Ideally, a historical time series should be available to inform any 'target setting', but it is essential that data sources will be available to enable indicator construction in the future.

**Economic Growth Plan Case for Change**

The following table sets out a short list of potential indicators that relate to the Growth Plan's case for change.

| Case for change | Indicator | Source, coverage & availability |
|---|---|---|
| Output | GVA per head | Office for National Statistics.<br>Country, Region, NUTS2, NUTS3.<br>Updated annually. |

| | | |
|---|---|---|
| Income | Gross Disposable Household Income per head | Office for National Statistics.<br>Country, Region, NUTS2, NUTS3.<br>Updated annually. |
| Employment | Employment rate | Annual Population Survey.<br>Country, Region, County, District.<br>Updated annually. |
| Unemployment | Unemployment rate | Annual Population Survey.<br>Country, Region, County, District.<br>Updated annually. |

The geographical coverage of all of these indicators will allow for comparison with similar areas if required.

**Strategy for Change**

The following table sets out a short list of potential outcome indicators that relate to the Growth Plan's strategy for change.

| Strategy for change | Indicator | Source, coverage & availability |
|---|---|---|
| Skills | % Working age population qualified to NVQ4+ | Annual Population Survey.<br>Country, Region, County, District.<br>Updated annually. |
| | % Working age population with qualifications below NVQ2 | Annual Population Survey.<br>Country, Region, County, District.<br>Updated annually. |
| Enterprise | Business Birth Rate | Office for National Statistics.<br>Country, Region, County, District.<br>Updated annually. |
| Innovation | % of employee jobs in medium and high technology sectors | Business Register Employment Survey.<br>Country, Region, County, District.<br>Updated annually. |
| Finance | Availability of finance | Chamber of Commerce Quarterly Economic Survey.<br>County.<br>Quarterly. |
| Infrastructure | Employment land developed | Local authorities.<br>Updated annually. |
| | Commercial and Industrial Floor space | Communities & Local Government.<br>Country, Region, County, District.<br>Updated annually. |

| | | |
|---|---|---|
| Reputation | No of visits to Nottingham | Great Britain Travel Survey.<br>County, district.<br>Rolling average updated annually. |

In addition to these outcome indicators, on the basis of the Growth Plan it is also proposed that the following output indicators be used. Sources for these have not been identified as output indicators are generally based on management information. It will require a discussion between the City Councils and it's Growth Plan partners to assess their feasibility.

| **Strategy for change** | **Indicator** |
|---|---|
| Skills | No of schools and colleges offering enterprise education |
| Transport | NET passenger usage |
| Innovation | No of university-business collaborations |
| Reputation | No of inward investment enquiries/successes |
| | No of significant national/international events in Nottingham |