

Benchmarking the Economy and Labour Market of Nottingham

THE GREAT NOTTINGHAM DEBATE 2014



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Benchmarking the Economy and Labour Market of Nottingham

Executive Summary

This report has been produced on behalf of the Nottingham Post and Nottingham Business School (Nottingham Trent University). It provides an analysis of the latest available official statistics on the population, economy and labour market of Nottingham in order to inform debate on the opportunities and challenges facing the city and its wider conurbation.

The Population of Nottingham City and Greater Nottingham

- The Greater Nottingham Partnership (GNP) area is used by Nottingham City Council and its partner organisations to capture the wider Nottingham conurbation. It consists of the Local Authority Districts of Broxtowe, Gedling and Rushcliffe alongside the Nottingham City Unitary Authority (UA) (and also includes the Hucknall wards in the district of Ashfield where the data sources allow). The Primary Urban Area (PUA), as defined by Centre for Cities, is comprised of the City of Nottingham and the districts of Broxtowe, Gedling and Erewash and is also used for comparison purposes in this report.
- The Nottingham City UA had a resident population of 310,800 in 2013. This is 48% of both the 649,600 residents of the GNP area and the 650,000 residents of the PUA.
- Most of the other administrative areas of the ten Core Cities account for between 35% and 65% of the population of their wider PUA – with Manchester City accounting for only 27% of the Manchester PUA whilst Sheffield City accounts for the highest share, at 68% of its wider PUA area.
- Between 2003 and 2013, the population of Nottingham City UA grew at a significantly faster rate than the other local authorities within the GNP area – at 12.8% compared to 5.4% in Rushcliffe (the next highest rate of population growth in the GNP area).
- Nottingham has a very high proportion of young residents. In 2013, 20% of the population of Nottingham UA were aged between 18 and 24 – a higher share than any of the other Core Cities and more than double the national average (9%). The proportion of residents aged between 18 and 24 in the wider GNP area (14%) is closer to, but still above, the UK average.

- A large proportion of the 18-24 population within the UA are likely to be students at the University of Nottingham and Nottingham Trent University. In the 2012-2013 academic year, there was a total of 35,540 students studying at the University of Nottingham and 26,870 students studying at NTU.

The Nottingham Economy

- In terms of economic output, Nottingham appears to perform well with GVA per head around 26% above the UK average, second only to Bristol. However this is a workplace based figure and Nottingham, like the other Core Cities, experiences significant amounts of in-commuting. The wider area of Derbyshire and Nottinghamshire has GVA per head around 80% of the national average.
- As a measure of living standards, household income per head in Nottingham is just 68% of the national average, the lowest of the Core Cities. There has been a decline in the relative position compared to the national average for most of the Core Cities since 1997 but the decline has been most marked in Nottingham.
- Production activities account for only a small proportion of total employment in Nottingham, as is the case with all of the Core Cities. The service sector dominates the economies of all of these cities. There are, however some significant differences in the industrial structure of Nottingham. While Nottingham is the home to some large service sector employers such as Experian and Capital One, a smaller proportion of employment in Nottingham is accounted for by Financial & Insurance and Professional, Scientific and Technical activities and significantly more by temporary agency activities. A significant proportion of the individuals working for temporary employment agencies may not be working within the city at any given time, but it is not possible to accurately estimate this.
- Levels of business churn (the balance of business births and deaths) are similar to the national average in Nottingham but are some way behind the leading Core Cities on this measure.

The Labour Market of Nottingham and Greater Nottingham

- Labour market indicators show significant differences for Nottingham UA compared to the wider GNP area.
- Nottingham UA appears to have been significantly affected by the recession that started in 2008. By 2011, the employment rate of the Nottingham UA had fallen to a

lower level than any of the other Core Cities - to 54% (down from 65% in 2006), which was almost ten percentage points lower than the average for the Core Cities.

- In absolute terms, Nottingham experienced a very significant fall in employment numbers following the onset of recession. The number of residents employed in Nottingham UA fell by 7% between 2008 and 2011, compared to a fall of less than 1% for all of the Core Cities.
- Although employment has since recovered in Nottingham UA, to a rate of 60% in the 12 months to March 2014. This is level with Birmingham as the lowest of the ten Core City Unitary Authorities/Metropolitan Districts, and is very significantly lower than the UK average (72%).
- The rate of employment for the wider GNP area fell by less between 2008 and 2011, and is currently significantly higher than the Nottingham UA area, at 66% - although this is still lower than the pre-recession rate of employment in the GNP area (70% in 2006). The absolute number employed in the GNP area overall fell by significantly less than the Nottingham UA, by 1% between 2008 and 2011 - as numbers of employed residents in Broxtowe, Gedling and Rushcliffe increased, partly compensating for the steep fall in the number employed in the UA area.
- Unemployment (defined as adults who are currently out of work but are available for and actively seeking employment) increased significantly in Nottingham UA following the onset of recession, whilst in the wider GNP area the trend closely followed the national average. In the twelve months to March 2011, the unemployment rate in Nottingham UA increased at a significantly faster rate than the average for the Core Cities.
- By the latest survey period (the twelve months to March 2014), unemployment in Nottingham UA had fallen significantly but remains well above the pre-recession rate. Unemployment rates in the wider GNP area are significantly lower. This suggests that there are differences in the labour market characteristics of Nottingham UA compared to the neighbouring districts in the GNP – particularly the skills held by residents and the level of occupation they work in.
- Nottingham UA has a relatively low skills profile, with a lower than average proportion of economically active residents qualified to the equivalent of a degree and a higher than average proportion lacking qualifications equivalent to 5 GCSE passes at grades A*-C. However, the wider GNP area has a significantly more highly skilled profile, with an above average proportion of graduates in the workforce (the proportion is almost 60% in the case of Rushcliffe).

- 'Occupation' describes the type of job individuals do and the skill level required to do it. Nottingham UA has the lowest proportion of its employed residents working in the most highly skilled occupations (Managers and Professional) of the ten Core Cities and one of the highest working in low-skilled 'Elementary occupations' or as 'Process, Plant and Machine Operatives' – which require little skill or formal education. Again, in the case of the GNP area, the picture is radically different, with above average proportions of residents working as Managers and Professionals (almost 50% in the case of Rushcliffe).
- As this is a residence-based measure, it does not indicate where these individuals work, but it is likely to represent a highly skilled workforce in neighbouring districts, many of whom commute to work in the city centre, compared to a relatively low skilled workforce resident within the UA boundary (who may find it difficult to compete with commuters for higher pay, higher skill jobs).
- This assumption is supported by earnings estimates. Nottingham UA has workplace-based earnings that are significantly higher than the earnings of residents, suggesting employers in the Nottingham UA area draw in more highly skilled, highly paid commuters from neighbouring areas. Rushcliffe and Broxtowe both have relatively high levels of earnings on a residence basis, suggesting that these districts export a high proportion of more highly skilled workers into the UA area (which is confirmed by commuting data - Nottingham UA is the workplace for over 40% of residents of Rushcliffe district). Gedling has the highest levels of workplace-based earnings in the GNP area, and also draws in residents from Nottingham UA to work in the district.

Benchmarking Nottingham on the UK Competitiveness Indicators and EU Comparators

- The UK Competitiveness Index provides a benchmarking of the UK's localities. It is an integrated measure of competitiveness focusing on both the development and sustainability of businesses and the economic welfare of individuals. In 2014 the level of competitiveness on this measure in Nottingham was below the national average and Nottingham was ranked 208th out of 379 localities in the UK.
- In 2014 on the UKCI Nottingham was ranked in the middle of the Core Cities group. Competitiveness in most of the cities in this group is below the UK average.
- Locally, Nottingham is ranked 4th among the constituent districts of the D2N2 Local Enterprise Partnership, behind Derby, Derbyshire Dales and Rushcliffe.

- Between 2006 and 2014 the indices suggest that Nottingham, while maintaining a stable rank within the Core Cities group, has lost competitiveness relative to the UK.
- The population of Nottingham is comparable with small to medium sized European cities such as Ljubljana, Belfast, Malmö and Utrecht but (in terms of administrative geography) has a significantly smaller population than Bonn, Córdoba, Lublin, and Alicante.
- Nottingham has one of the higher levels of GDP per head of the sample of small to medium sized cities in the EU, 26% higher than the EU average and above many of the larger cities in southern Europe (such as Alicante and Córdoba). Of cities with populations between 280,000 and 350,000, Bonn, Utrecht and Karlsruhe had the highest levels of GDP per head.
- However, Nottingham (and other smaller UK cities and towns such as Leicester and Doncaster) compare less well in terms of unemployment. Although the unemployment rate in Nottingham in 2011 was well below Spanish cities such as Alicante, Córdoba and Vigo (and also slightly lower than Malmö in Sweden), it was significantly higher than a number of similar sized northern European cities, particularly Århus, Utrecht, Bonn and Karlsruhe.
- To inform a discussion about future solutions, three case studies of similar sized European cities are presented, identifying strengths and challenges in common with Nottingham and the initiatives and developments undertaken by partner organisations in these cities.
- Karlsruhe in Germany, which has a smaller population than Nottingham but a higher GDP per head and a lower level of unemployment, is twinned with Nottingham and a key focus of the city's emerging International Strategy. This is due to Karlsruhe's strong Higher Education sector (particularly the Karlsruhe Institute of Technology) and strong linkages to commercial R&D – including within the biotechnology and energy generation sectors.
- Malmö in Sweden has a similar population to Nottingham, but higher unemployment. Malmö also has a similar industrial heritage. It faced significant challenges with the loss of ship building in the 1970s and financial services in the early 1990s (due to the Swedish financial crisis). The loss of skilled and professional jobs contributed to a period of population decline. However, through infrastructure investment, strong partnership working and a shared long-term vision, Malmö has become a centre for knowledge intensive activity and creative and cultural industries – becoming an

international exemplar for the built environment and learning and skills interventions.

- Utrecht in the Netherlands has a similar population but higher GDP per head and lower unemployment. It has a large student population in common with Nottingham, a high level of R&D activity, including in biotechnology, and has a highly ambitious cultural strategy – aiming to become a European cultural capital by 2018.

Conclusions and recommendations

- All of the Core Cities have been hit hard by the recession, Nottingham included. Although there are signs of recovery, challenges remain for the labour market. Unemployment in Nottingham remains well above the pre-recession level, although Leicester City appears to face a similar level of challenge.
- The Nottingham Growth Plan prioritises action on removing barriers to enterprise, addressing workforce skills (and ensuring they are appropriate for new and growing sectors) and developing a modern infrastructure. This report suggests that the level of enterprise activity (in as far as can be measured by available statistics) in Nottingham is in line with the national average, although it lags leading Core Cities. However Nottingham appears to experience significant challenges around both the supply of and the demand for skills.
- The service sector dominates activity in all Core Cities. However, in the case of Nottingham, there appears to be a concentration of employment in relatively low value services, whilst Financial & Insurance and Professional, Scientific and Technical activities are under-represented in Nottingham compared to Core Cities like Birmingham, Manchester and Leeds.
- Higher skill commuters from the wider GNP area are likely to be working in a high proportion of the professional and managerial jobs in the UA area, whilst large proportions of residents of the UA area are relatively reliant on lower skill service-sector jobs. The over-representation in low value activities helps to explain the skills and occupational profile of a large proportion of residents of the Nottingham UA and suggests that supply-side interventions alone (e.g. education and training) will not fully address the problem. This is a challenge not just for the quality of employment and rates of pay, but also vulnerability to future shocks. The experience of the recent recession suggests that low skill jobs are particularly vulnerable across all sectors in the economy.

- The Nottingham Growth Plan identifies a number of sectors where the city has a potential advantage and which have the potential to generate highly skilled employment. It will be important to work with partner organisations, including key ‘anchor institutions’ such as the two universities, the hospital trust, private sector employers and cultural institutions, to build on and implement the Growth Plan in a way that builds on the experiences of similar cities.
- Malmö is recommended as a case study because of the significant economic shocks experienced by the city in the 1970s and 1990s. Through an integrated economic development, skills, infrastructure and housing vision, delivered by a broad range of public and private sector partners, Malmö has since developed strengths in a number of key sectors of interest to Nottingham – including biotechnology and pharmaceuticals, design and the built environment, and digital content and the wider creative industries.
- Karlsruhe and Utrecht, although experiencing consistently low levels of unemployment, provide important examples of the role of Higher Education in supporting private sector innovation, where R&D intensive sectors have become very significant local employers – rather than providing only a small number of specialist jobs. Malmö has also benefited from the establishment of a university in 1998, contributing to reversing its population decline, with students becoming an important part of a young, growing population.
- Nottingham already has a strongly growing population, with a high proportion in the working age group, alongside falling unemployment, and a series of major infrastructure projects, both nearing completion and in the pipeline. Nottingham’s sector strengths are based on both well-established assets (e.g. healthcare and pharmaceuticals, drawing from the QMC hospital trust, research at the two universities, Biocity and the presence of Alliance Boots) and emerging local growth areas (e.g. digital content and game design). Nottingham has to effectively build on these opportunities – with a particular focus on skills as a key challenge – through engaging a broad partnership of both public and private anchor institutions and delivery bodies and both large and smaller employers.

1. Introduction

This report has been produced by the Economics Division of Nottingham Trent University (NTU) on behalf of the Nottingham Post newspaper and Nottingham Business School. Alongside a number of thematic policy and issues papers, it aims to inform and stimulate debate on the opportunities and challenges facing Nottingham's economy and labour market.

Using the latest available official statistics, it compares key indicators for Nottingham, the other UK cities in the Core Cities group, and a selection of comparable cities in the European Union. It also presents new, updated analysis of the UK Competitiveness Indicators (UKCI) (Robert Huggins and Piers Thompson) and estimates and projections provided by Experian.

This report updates and expands on a study published by the NTU Economics Division in February 2012¹ to support '*The Nottingham Growth Plan*', led by Nottingham City Council.² Based on the NTU analysis alongside further research undertaken by the City Council, the Growth Plan argued that many of the key long-term challenge facing the city (and its wider conurbation) are a function of its changing industrial structure. This refers to the transition from significant employment in high-profile manufacturing companies (such as Raleigh and Player's) to the increasing dominance of the service sector, which accounted for almost nine in every ten jobs within the city's administrative boundary at the time of the Growth Plan's publication. In the shorter term, this may have contributed to the relatively significant impact of the recession on Nottingham, with job losses experienced across both public and private sector services – especially in lower skill activities.

The Growth Plan also highlights significant differences between the core Unitary Authority of Nottingham City and the surrounding districts in the wider conurbation (which, depending on the definition, can include Erewash, Rushcliffe, Broxtowe, Gedling and the Hucknall wards in Ashfield). Performance indicators for this wider area suggest a relative concentration of deprivation in and around the city centre compared to a generally more prosperous periphery. High levels of commuting, facilitated by a good transport network, means that many high-skilled, more highly paid workers travel in from neighbouring districts whilst city centre residents are more likely to be reliant on low-pay, low-skilled jobs and are more vulnerable to periods of unemployment. These linkages demonstrate the need to present analysis for both the area covered by the Unitary Authority and a wider area that includes the neighbouring districts.

Based on this analysis, the Growth Plan identified three key Actions for Growth for the City Council and its partners:

- **Fostering enterprise** and providing an environment that supports high growth businesses, addressing both the lower business birth rate in Nottingham City and the perceived need to diversify the city's industrial structure to improve resilience to future shocks;

¹ Economic Strategy Research Bureau, 2012. '*Nottingham City Economic Review: An Evidence Base for the Nottingham City Growth Plan*'. URL: http://www.ntu.ac.uk/nbs/document_uploads/125011.pdf

² Nottingham City Council, 2012. '*The Nottingham Growth Plan*'. URL: <http://www.nottinghamcity.gov.uk/static/nottinghamgrowthplan/files/Nottingham%20Growth%20Plan%20WEB.pdf>

- **Developing a skilled workforce** – especially for residents of the city centre and for young people, in order to better meet employer skill needs and ensure that individuals do not become trapped in a cycle of low paid employment and periods of unemployment; and
- **Building a modern infrastructure** – including improved broadband and wireless connectivity, high quality business accommodation (including in and around the Creative Quarter and the redevelopment of the Boots campus as an Enterprise Zone) and building on the significant and ongoing investment in transport infrastructure (including the extension of the tram network and the improvement of the A453).

This new study will assess the above challenges in the light of Nottingham's progress compared to other areas in the UK and EU, and will seek to identify any additional issues to be considered in discussions facilitated by the Nottingham Post.

2. Population

Nottingham City is one of ten 'Core Cities' in Great Britain. The Core Cities are: Birmingham (in the West Midlands), Bristol (in the South West), Leeds, Sheffield (both in Yorkshire and the Humber), Liverpool, Manchester (both in the North West), Newcastle (in the North East), Nottingham (in the East Midlands), Cardiff and Glasgow.

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 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 administrative areas of the Core Cities tend to represent a centre/periphery relationship with their wider physical extent.

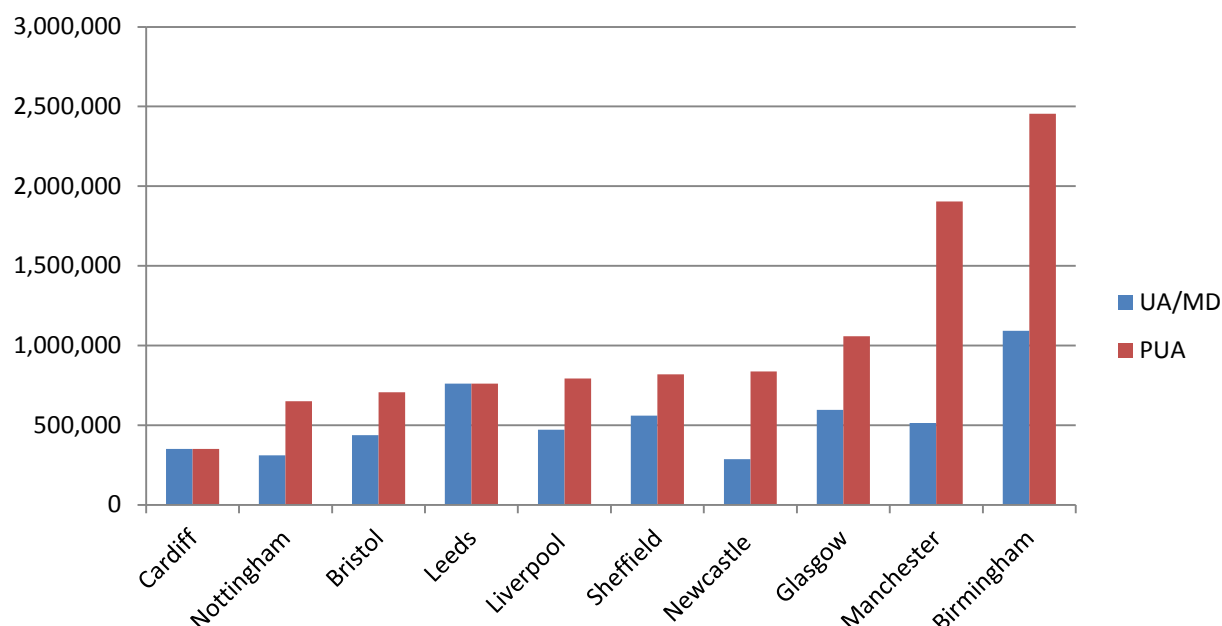
Chart 1 presents the resident population of the Unitary Authority (UA) of Nottingham City (the administrative boundary covered by Nottingham City Council) with its wider Primary Urban Area (PUA)³ compared to the populations in each of the other Core Cities (both respective UA/Metropolitan District⁴ and PUA). This shows that:

- The Nottingham City UA has the second smallest resident population of the 10 Core Cities, at 310,800 in 2013 - larger than Newcastle, with 286,800, and slightly smaller than Cardiff, at 351,700. The Metropolitan Borough of Birmingham has by far the largest resident population, at 1,092,300,
- With the exception of Cardiff and Leeds (which have PUA boundaries that are identical to the administrative boundaries of their respective city councils), all UAs/MDs are significantly smaller in population terms than their wider PUAs;
- The UAs/MDs of Glasgow, Liverpool, Bristol and Sheffield are comparatively more representative of the cities' physical extent, each covering more than 50% of the total population of the PUA. Sheffield covers 68.4% - the city is under-bounded to the east but there is relative over-bounding of the city authority, which includes significant areas of undeveloped land to the west of the conurbation;
- Nottingham UA is fairly typical, covering 47.8% of the total population of the PUA (650,000 residents in 2013) – above Birmingham (also the largest PUA in population terms), where 44.5% of the population of the PUA is covered by the Metropolitan District; and
- The local authority areas of Manchester and Newcastle appear particularly tightly bounded, with the UAs/MDs covering 27% and 34.2% of the wider population in their respective PUAs.

³ PUAs were developed by the University of Sheffield as part of the 'State of the English Cities' programme of work for the Department of Communities and Local Government which started in 2006. They represent the physical extent of UK cities and commuting linkages, and are simplified as aggregations of Local Authority Districts. The Nottingham PUA is Nottingham City UA and the LADs of Erewash, Broxtowe and Gedling – note that this differs from the Greater Nottingham Partnership (GNP) area described overleaf, which is used as the preferred geography to represent the wider physical conurbation of Nottingham city.

⁴ The term Metropolitan District (MD) is the legal term for the 36 Metropolitan Boroughs created by the 1972 Local Government Act.

Chart 1: Resident Population by Unitary Authority/Metropolitan District and Primary Urban Area, 2013



Source: ONS Crown Copyright, 2014. 'Mid-Year Population Estimates, 2013', from NOMIS [accessed on 9th October, 2014].

The Greater Nottingham Partnership (GNP) area is used by Nottingham City Council and its partners to represent the wider conurbation in preference to the PUA.⁵ This uses the Local Authority Districts of Rushcliffe, Broxtowe and Gedling alongside the Nottingham City UA.⁶ This is a different boundary than the PUA for Nottingham because it excludes Erewash in Derbyshire and includes Rushcliffe (to the south of Nottingham UA and within the Nottinghamshire County Council administrative boundary). Chart 2 shows the differences between the two and the wider Local Enterprise Partnership (LEP) area of Derby, Derbyshire, Nottingham and Nottinghamshire (D2N2):

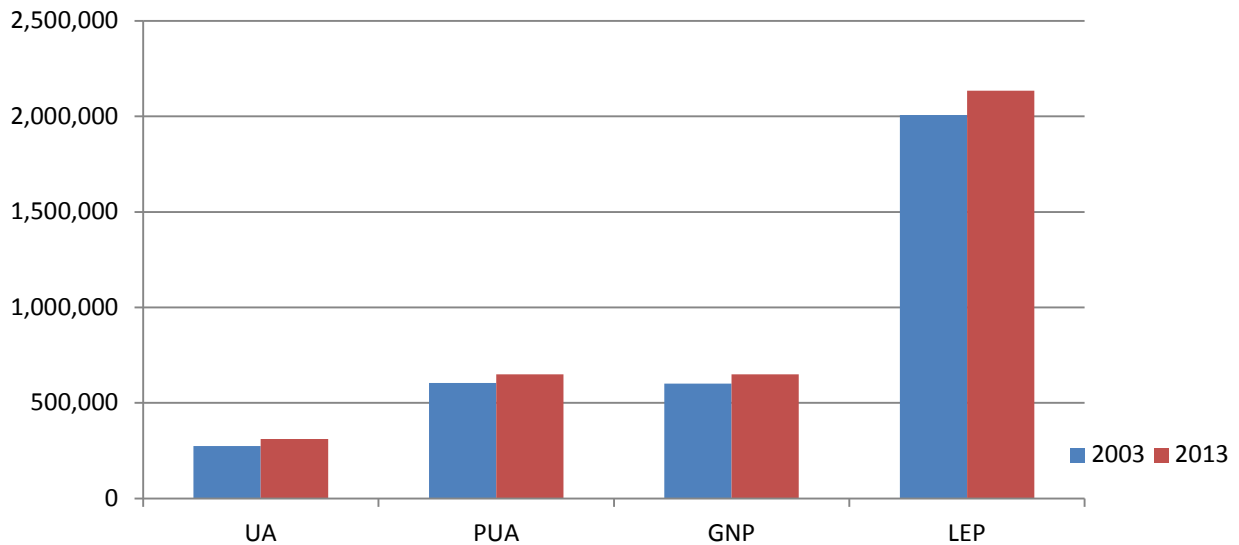
- In 2013, the population of the GNP area was 649,600 – slightly smaller than the population of the Nottingham PUA (650,000);
- Between 2003 and 2013, the population of Nottingham City UA increased at a faster rate than the other Local Authorities in the PUA and GNP – at 12.8%. This means that Nottingham UA's share of the PUA population increased from 45.5% to 47.8%;

⁵ 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.

⁶ In addition to the Local Authority Districts of Rushcliffe, Broxtowe and Gedling – the GNP area also extends into the Hucknall wards in the district of Ashfield. On the basis of small area population estimates produced for 2012, the inclusion of Hucknall would add approximately 32,000 individuals to the GNP resident population – or from 649,700 to 682,100 in 2012. For the purposes of using a consistent geography for survey-based official statistics, the majority of which use LAD as the lowest level of geographical detail, all estimates for the GNP in this report are based only on the 3 full LADs and 1 UA covered by the area.

- The population in the district of Rushcliffe, in the GNP area but not the PUA, increased by the next highest rate (by 5.4%) – meaning that the population of the GNP area grew at a slightly faster rate than the PUA, at 7.9% compared to 7.4%;
- The populations of all 3 definitions of Nottingham – the UA, Greater Nottingham and the PUA – grew at a significantly faster rate than the wider D2N2 Local Enterprise Partnership area (6.4%), meaning that Nottingham’s share (by whatever definition) of the total D2N2 population increased over the decade.

Chart 2: Resident Population in the Nottingham PUA, GNP and LEP areas, 2003 and 2013



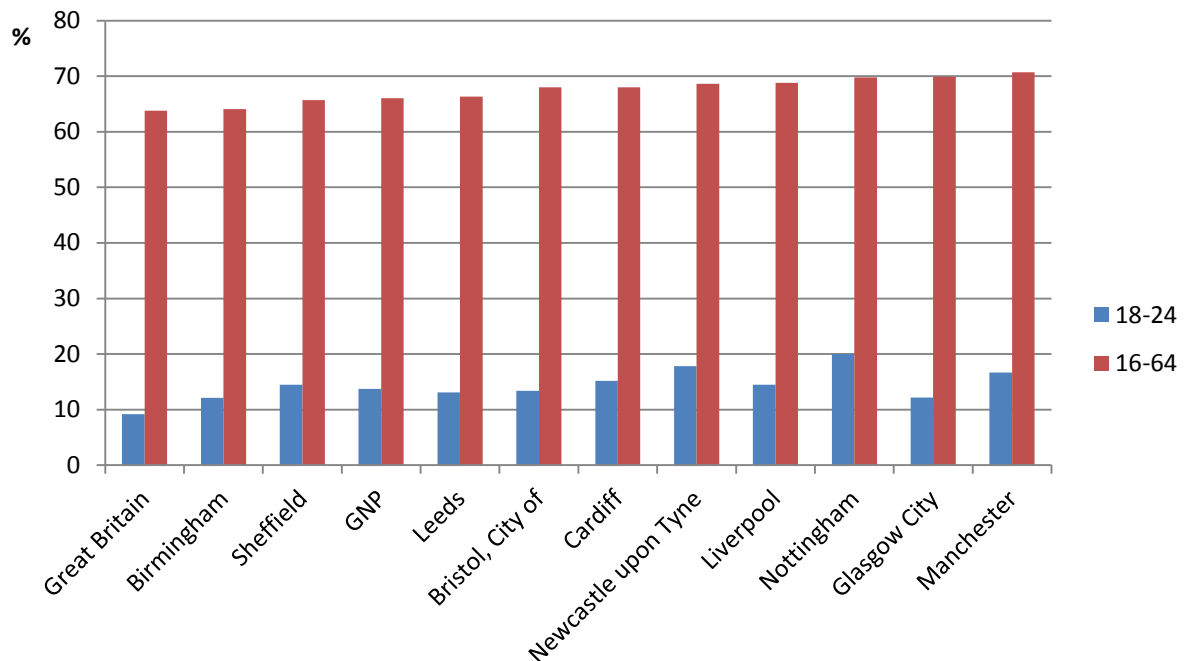
Source: ONS Crown Copyright, 2014. 'Mid-Year Population Estimates', 2003 and 2013, from NOMIS [accessed on 9th October, 2014].

The latest estimates of resident population also illustrate an important demographic characteristic: the high proportion of young people living in Nottingham compared to other Core Cities. Chart 3 illustrates the proportion of the population of Nottingham UA aged between 18 and 24 and between 16 and 64 (i.e. young adults and the wider 'working age' population). This shows that:

- All Core Cities had a higher proportion of both working age residents and young adults than the national average, demonstrating the fact that urban areas are likely to draw in young people to work and study, whilst more rural areas and small towns are likely to have higher proportions of people in the pensionable age group;
- In 2013, Nottingham UA had the third highest proportion of the resident population in the working age group out of the ten Core City UAs/MDs, at 69.8% - only slightly lower than Glasgow (69.9%) and Manchester (70.7%). This is significantly higher than the national average (63.8%);
- Nottingham UA had the highest proportion of young adults, aged 18 to 24, of all ten Core Cities – at 20%, significantly above the next highest proportion, Newcastle upon Tyne (17.8%), and more than double the national average (9.2%); and

- The share of both the working age group and young adults living in the wider GNP area is lower than the Nottingham City UA, although still significantly higher than the national average, at 66% and 13.8% respectively.

Chart 3: Resident Population aged 18-24 (%) and working age (% 16-64), Core City UA/MD and GNP area, 2013



Source: ONS Crown Copyright, 2014. 'Mid-Year Population Estimates, 2013', from NOMIS [accessed on 9th October, 2014].

A large proportion of the 18-24 population within Greater Nottingham (and especially the UA area) are likely to be students at the University of Nottingham and Nottingham Trent University. In the 2012-2013 academic year, there was a total of 35,540 under-graduate and post-graduate students studying at the University of Nottingham and 26,870 studying at NTU.⁷

⁷ HESA, 2014. 'Students in Higher Education Institutions: Table 1 - All students by HE institution, level of study, mode of study and domicile 2012/13.'

The Nottingham Population: Summary

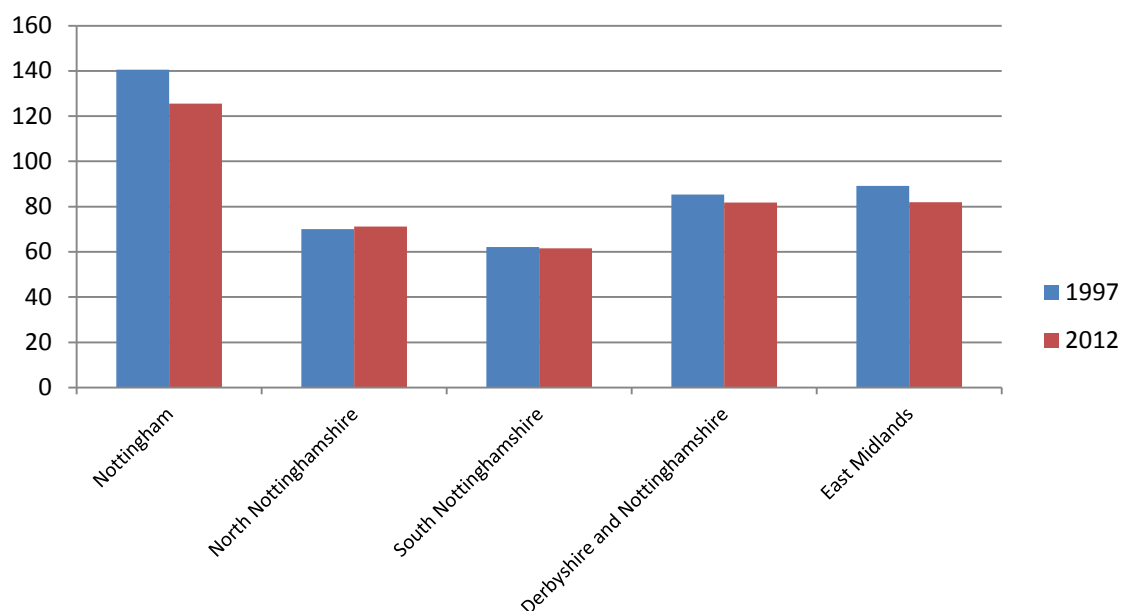
- Nottingham is one of the Core Cities in Great Britain, a group which includes Birmingham, Bristol, Leeds, Sheffield, Liverpool, Manchester, Newcastle, Glasgow and Cardiff.
- Statistics for the Core Cities can be analysed on the basis of their central administrative boundary (the Unitary Authority or Municipal District) or wider Primary Urban Areas (PUAs), which include neighbouring Local Authorities based on the physical extent of the urban area and travel-to-work flows.
- Nottingham City UA is the second smallest of the Core City administrative areas, with 310,800 residents in 2013. This is 48% of the population of the wider PUA, a fairly typical share compared to the other Core City PUAs.
- The Greater Nottingham Partnership (GNP) is used by Nottingham City Council and its partners in preference to the PUA. It includes the districts of Rushcliffe, Broxtowe and Gedling. In 2013, the GNP had a population of 649,600.
- Between 2003 and 2013, the population of Nottingham City UA grew at a significantly faster rate than the districts in the GNP area.
- Nottingham City UA has a particularly high proportion of both working age residents (16-64) and the highest proportion of young adults (18-24) of the Core Cities. This is affected by the large number of students enrolled at the University of Nottingham and Nottingham Trent. The share of young people resident in the GNP area is lower than in Nottingham City, but is still significantly higher than the national average.

3. Economy

Economic Output and Living Standards

Within the region, Nottingham's economy appears to be performing well, with Gross Value Added (GVA) per head, the most widely used measure of the output produced by an economy (imperfect though it is) at 25.6% above the national average. It is also significantly higher than elsewhere in Nottinghamshire (see Chart 4). Chart 4 also shows that there has been a fall in GVA per head in the city, from 40% above the national average in 1997 to its current level in 2012.

Chart 4: GVA per head in Nottingham 1997 and 2012 (UK=100)

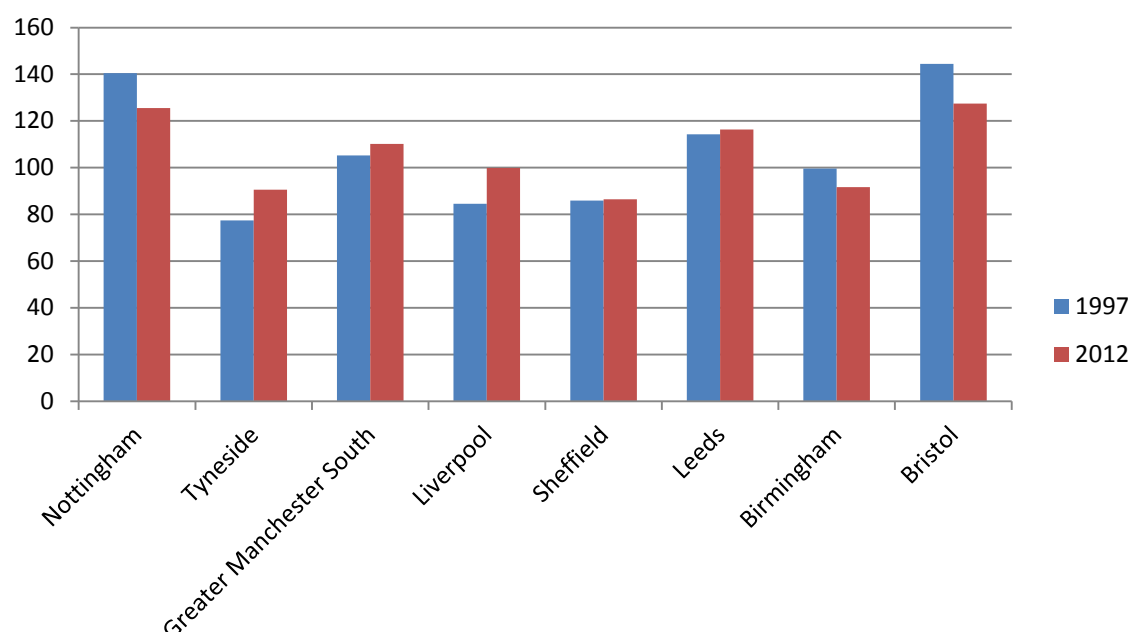


Source: Regional Gross Value Added, Office for National Statistics, December 2013

Chart 5 indicates that on this measure Nottingham also performs well against the other English Core Cities (or their closest approximation at NUTS3 level). In 2012 only Bristol had a higher GVA per head, at 27.5% above the national average.

Chart 5 also shows that there has been large variation in performance among the English Core Cities group between 1997 and 2012. Birmingham, Bristol and Nottingham all experienced declines, while there were modest increases in Tyneside, Greater Manchester, Liverpool, Sheffield and Leeds.

Chart 5: GVA per head in the English Core Cities 1997 and 2012 (UK=100)



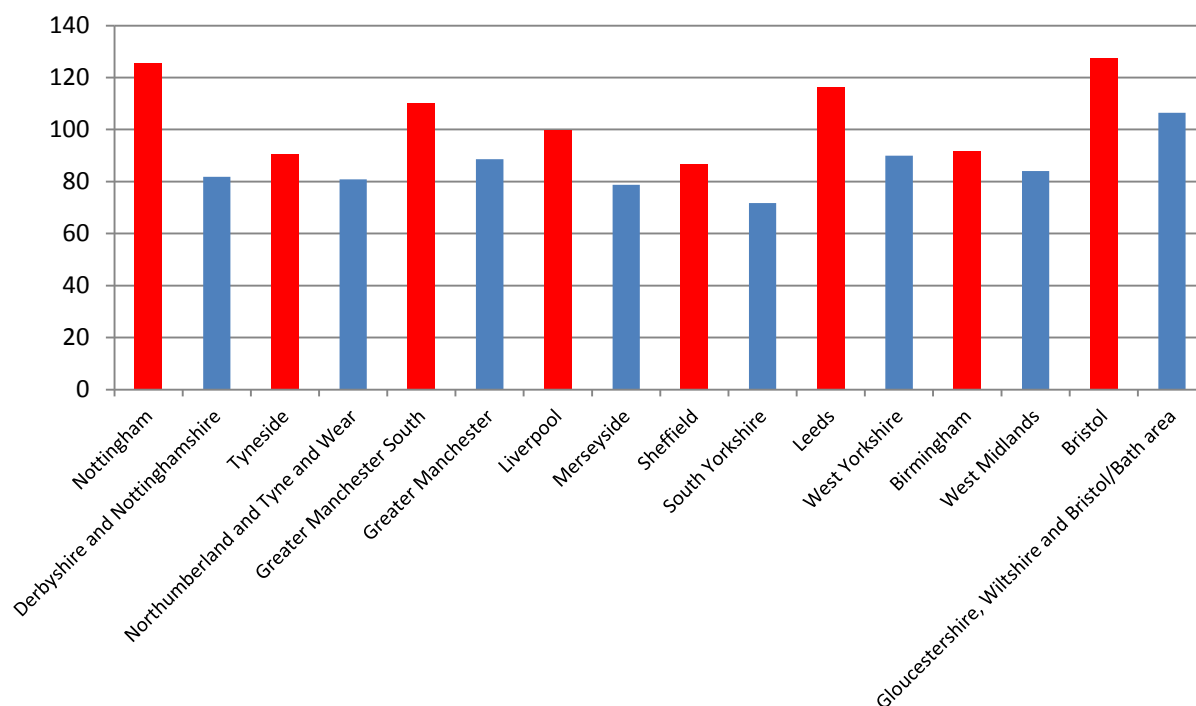
Source: Regional Gross Value Added, Office for National Statistics, December 2013

It should be noted that these GVA per head figures are calculated on a workplace basis. There is discussion of the extent to which cities such as Nottingham are regional centres and attract workers from outside of their boundaries – as demonstrated in the analysis of earnings in the following section. If there is significant in-commuting then GVA per head will be inflated by including the output of those in-commuters in the numerator but excluding those commuters from the population denominator. Chart 6 shows how the Core Cities (or the closest NUTS3 level approximations) compare with the wider NUTS2 level geographies- this will to some extent get around the problem of commuting distorting the interpretation of the NUTS3 data.

Chart 6 shows that all of the Core Cities have higher GVA per head than the wider NUTS2 regions that they are part of. Commuting patterns are a partial explanation of this and it is clear that Nottingham is no different to the other English Core Cities.

Looking ahead, Experian forecast that growth in total GVA and GVA per head in Nottingham will be slightly above the UK average between 2014 and 2018. While this is an encouraging recovery from the Great Recession it is not enough to make up the ground that has been lost during the last 15 years.

Chart 6: GVA per head at NUTS2 and NUTS3 levels 2012 (UK=100)



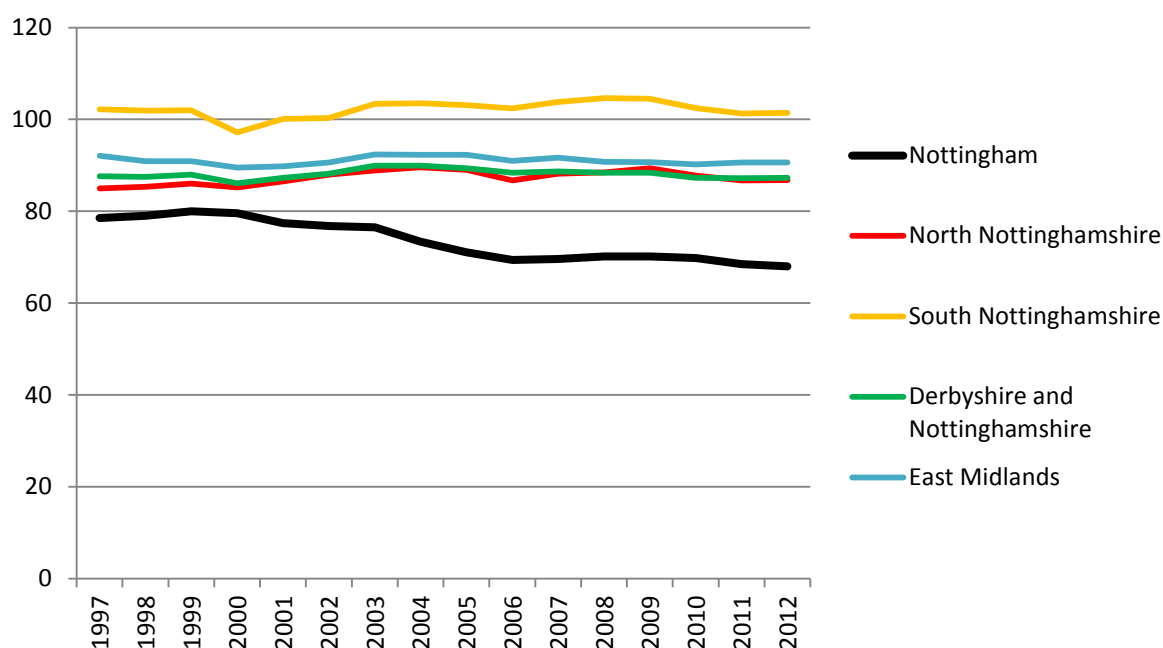
Source: Regional Gross Value Added, Office for National Statistics, December 2013

While GVA is often thought of as an indicator of the standard of living, an alternative, and arguably more accurate, measure is provided by gross disposable household income (GDHI). As this is a household measure of income it does not suffer from the difficulties of interpretation caused by commuting in relation to GVA. The data are published on the same geographical basis as the GVA data so it is relatively straightforward to compare Nottingham's performance on the two measures.

Chart 7 shows GDHI per head for Nottingham and the wider area. In 2012 GDHI per head in Nottingham was just 68% of the UK average. This is a significant fall, from 79% in 1997. This compares unfavourably with the wider area. In North Nottinghamshire GDHI per head was around 87% of the UK average in 2012, while in South Nottinghamshire it was just above the national average. It should also be noted that the sharp downward trend that is observed for Nottingham is not observed for North and South Nottinghamshire.

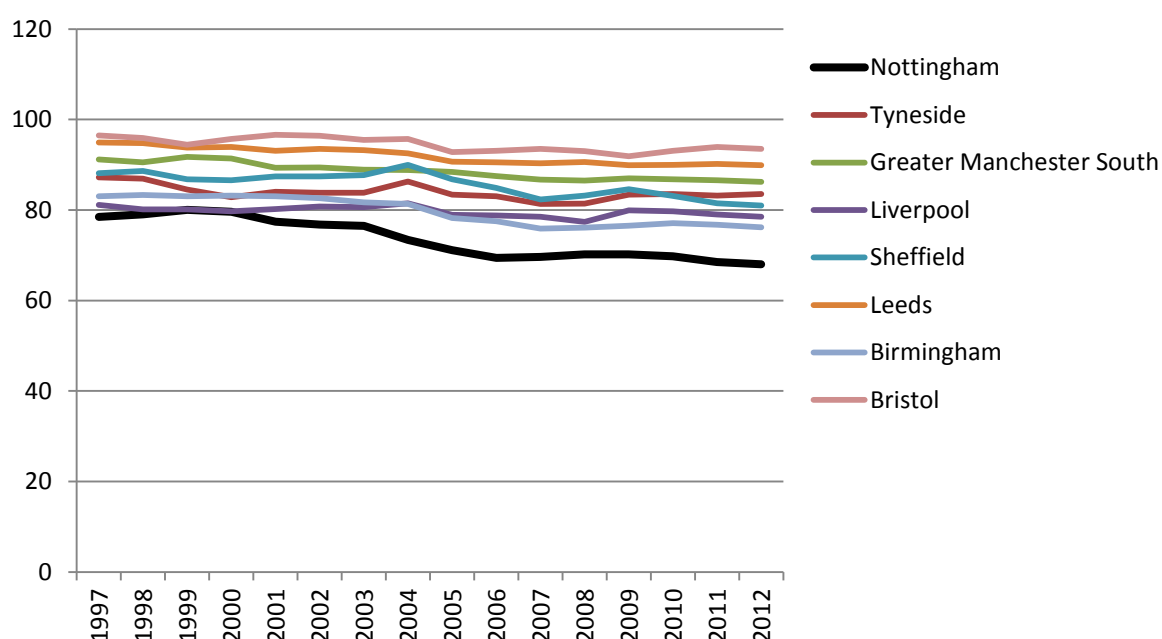
Chart 8 also shows that Nottingham compares unfavourably with the other English Core Cities on this measure. There has been a fall relative to the UK average in a number of the Core Cities (such as Birmingham and Sheffield) but none have fallen so far as Nottingham has. In the leading Core City on this measure, which is Bristol, GDHI per head is around 94% of the UK average.

Chart 7: Gross Disposable Household Income per head 1997-2012 in Nottingham (UK=100)



Source: *Regional Gross Disposable Household Income 2012*, Office for National Statistics, June 2014

Chart 8: Gross Disposable Income per head 1997-2012 in the English Core Cities (UK=100)



Source: *Regional Gross Disposable Household Income 2012*, Office for National Statistics, June 2014

Business Demography

This section presents key data on the business demography of Nottingham and Nottinghamshire and illustrates trends in the rate of business births and deaths. Table 1 shows that there were over 8,200 active enterprises in Nottingham in 2012 and a further 24,200 in Nottinghamshire. Reflecting its

status as the second smallest of the English Core Cities, Nottingham has the second smallest count of active enterprises. Birmingham, the largest of the core cities has an active enterprise count of almost 31,000.

Table 1: Count of active enterprises in the English Core Cities 2004-2012

	2004	2012	% change 2004-12
Nottingham	7,650	8,230	7.6
Nottinghamshire	22,875	24,210	5.8
Newcastle upon Tyne	6,745	7,735	14.7
Manchester	14,075	16,940	20.4
Liverpool	10,835	11,955	10.3
Sheffield	14,880	15,340	3.1
Leeds	22,660	25,100	10.8
Birmingham	28,970	30,860	6.5
Bristol	13,985	16,390	17.2

Source: Business Demography 2012, Office for National Statistics, November 2013

Table 1 also shows how the count of active enterprises has changed between 2004 and 2012. While it is clear that Nottingham is not the worst performer on this measure (Sheffield and Birmingham have experienced lower growth), the change in the count of active enterprises is substantially below that achieved in Bristol and Manchester.

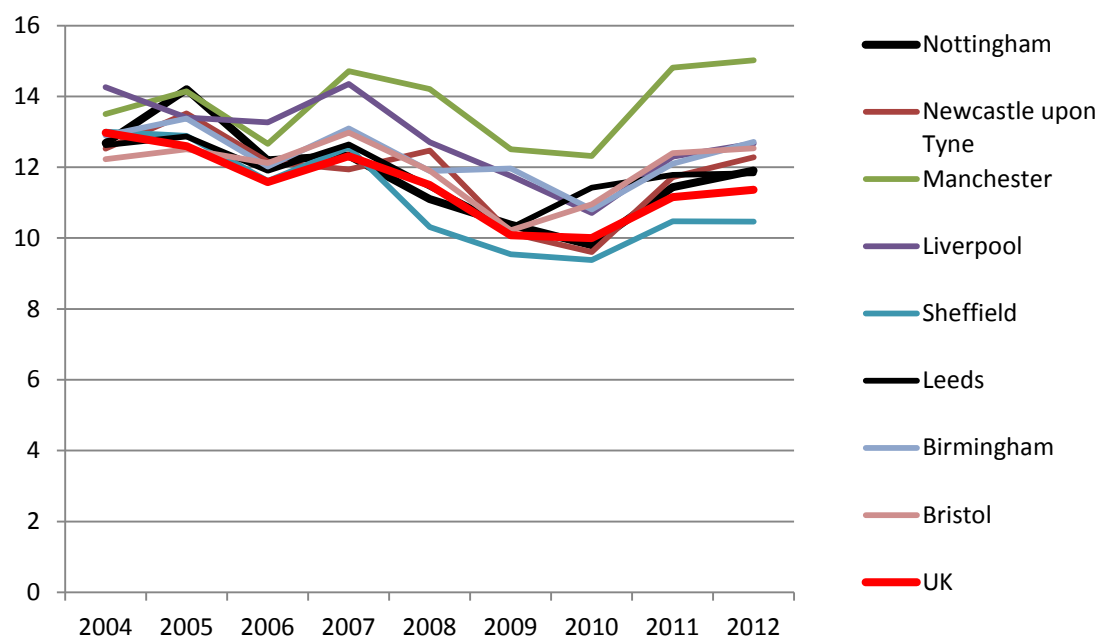
The change in the count of active enterprises is the result of two processes- business births and business deaths. Charts 9 and 10 illustrate the business birth and death rates respectively for Nottingham and the other English Core Cities.

Chart 9 shows that the business birth rate in Nottingham has generally tracked the UK average during the period 2004-2012. In 2012 the business birth rate was 11.9% in Nottingham (compared to 11.4% for the UK). In most of the Core Cities the business birth rate peaked in 2005 and then fell gradually until 2007 when there was a sharper decline. Since 2010 business birth rates have recovered but, with the exception of Manchester, are still some way beneath the earlier peaks.

Chart 10 shows that business death rates have, unsurprisingly, moved in the opposite direction in the English Core Cities. Business death rates were at their lowest in 2006/07 and increased sharply as recession took hold. There was a sharp spike in 2009 and since then they have declined, but not to pre-recession levels. In Nottingham the business death rate was 11.7% in 2012, down from its peak of 12.8% in 2009. As with business births, Manchester recorded the highest business death rate, at 13.3% in 2012.

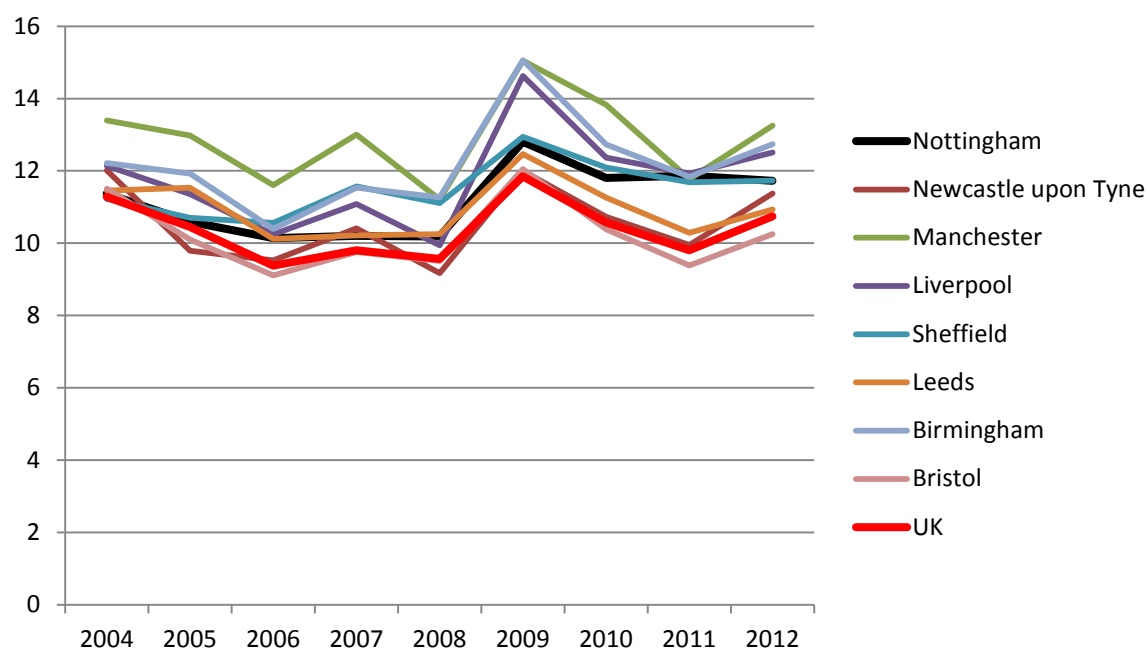
This data indicates that levels of business churn, which can be interpreted as an indicator of how efficiently resources are allocated across the economy, in Nottingham are close to the national average but significantly below the leading core cities on this indicator.

Chart 9: Business Birth Rate in the English Core Cities (%)



Source: Business Demography 2012, Office for National Statistics, November 2013

Chart 10: Business Death Rate in the English Core Cities (%)



Source: Business Demography 2012, Office for National Statistics, November 2013

Industrial Structure

It is also important to understand the structure of the Nottingham economy: its composition and the productivity of each sector drive economic performance. If Nottingham has a large, highly productive sector then this will contribute to economic growth. On the other hand if Nottingham has a large, weak sector then this will act as a drag on growth. While local level productivity data is not available it is possible to use employment data to highlight the scale of each sector in the economy. This employment data is summarised in Table 2.

There are a number of key points to note about the sectoral composition of Nottingham's economy:

- Production activities (defined as primary production, manufacturing and construction) accounts for a relatively small proportion of the economy. In 2013 this accounted for 7.8% of employment in Nottingham, compared to the national average of 14.9%. Among the English Core Cities this proportion is smallest in Manchester (6.5%) and highest in Sheffield (13.1%);
- Retail accounts for a slightly higher than average share of employment in Nottingham (10.3% compared to 10.0%). Retail is most significant in Liverpool;
- Almost a quarter of employment in Nottingham is in Business Administration and Support Services. This is significantly higher than the national average or any of the other English Core Cities (this proportion is almost twice as high as the next city, Leeds). It should be noted that this sector contains a significant amount of temporary agency activity (around three quarters of this sub-sector is accounted for by this and does not include the most productive service sub-sectors). These are Information & Communication, Finance & Insurance, Property and Professional, Scientific & Technical and these include a number of major employers such as Experian and Capital One. The proportion of employment in Nottingham accounted for by these (13.5%) is below the national average (17.3%) and below that for any of the other English Core Cities; and
- Public sector activity (Public Administration and Defence, Education and Health) is a major component of the economy of each of the English Core Cities. In Nottingham this accounts for around 30% of total employment (the national average is 28%). Nottingham is less reliant than some of the English Core Cities on public sector employment (it accounts for 40% of employment in Newcastle and 37% in Liverpool).

As the economy continues to recover from the Great Recession, Experian forecast that employment growth for the period 2014-2018 will be driven by the service sector.

Table 2: Employment by sector in the English Core Cities 2013 (%)

	Nottingham	Newcastle upon Tyne	Manchester	Liverpool	Sheffield	Leeds	Birmingham	Bristol	Great Britain
Agriculture, forestry & fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Mining, quarrying & utilities	0.5	0.1	0.4	0.6	0.7	1.9	0.9	0.7	1.3
Manufacturing	4.3	4.4	4.0	3.8	9.0	7.1	8.2	4.5	8.5
Construction	3.0	2.3	2.1	2.8	3.4	3.9	3.4	3.8	4.4
Motor trades	1.0	1.4	0.5	0.9	2.0	1.6	1.6	1.9	1.7
Wholesale	3.1	1.4	3.4	2.8	4.0	3.9	4.5	4.5	4.0
Retail	10.3	9.4	8.6	10.6	10.3	7.6	8.7	8.5	10.0
Transport & storage (inc postal)	2.5	3.5	6.7	4.9	3.7	3.8	3.7	4.2	4.4
Accommodation & food services	4.9	8.8	8.3	7.9	5.3	5.4	5.6	6.2	7.0
Information & communication	3.9	3.7	3.2	4.8	4.2	3.8	2.3	3.8	4.0
Financial & insurance	2.2	3.3	6.8	3.8	3.7	5.1	5.2	6.9	3.7
Property	1.5	1.6	2.3	2.2	1.5	2.1	1.6	1.7	1.7
Professional, scientific & technical	5.9	6.1	11.4	6.3	6.1	10.8	7.7	9.7	7.9
Business administration & support services	23.8	7.3	10.6	6.7	7.0	12.1	8.6	9.2	8.4
Public administration & defence	5.1	9.3	4.7	7.2	5.6	4.5	7.2	4.8	4.8
Education	9.8	11.7	10.3	11.0	13.0	9.7	11.2	10.1	9.5
Health	15.0	19.6	13.0	18.9	16.5	12.2	15.6	15.5	13.5
Arts, entertainment, recreation & other services	3.1	6.2	3.7	4.8	3.9	4.6	4.1	4.0	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ONS Crown Copyright, 2014. 'Business Register and Employment Survey, 2013', from NOMIS [accessed 2nd October 2014], analysed under Chancellor's

The Nottingham Economy: Summary

- In terms of economic output, Nottingham appears to perform well with GVA per head around 26% above the UK average, second only to Bristol. The wider area of Derbyshire and Nottinghamshire has GVA per head around 80% of the national average.
- As a measure of living standards, household income per head in Nottingham is just 68% of the national average, the lowest of the Core Cities. There has been a decline in the relative position compared to the national average for most of the Core Cities since 1997 but the decline has been most marked in Nottingham.
- Production activities account for only a small proportion of total employment in Nottingham, as is the case with all of the Core Cities. The service sector dominates the economies of all of these cities. While Nottingham is the home to some large service sector employers such as Experian and Capital One, a smaller proportion of employment in Nottingham is accounted for by Financial & Insurance and Professional, Scientific and Technical activities and significantly more by temporary agency activities compared to elsewhere.
- Levels of business churn (the balance of business births and deaths) are similar to the national average in Nottingham but are some way behind the leading Core Cities on this measure.

4. Labour Market

Improving the resilience of the local labour market to future shocks and improving the skills base of the resident population are key priorities set out in the Nottingham Growth Plan.⁸ Charts 11 and 12 show that Nottingham City UA was relatively adversely affected by the recession that started in 2008, but the districts surrounding Nottingham were relatively less affected.

Chart 11 shows the employment rate for the Nottingham City Unitary Authority compared to the equivalent administrative areas for the other Core Cities. The trend in the absolute numbers estimated to be employed during this time period also shows that Nottingham experienced a more significant fall in employment than elsewhere⁹:

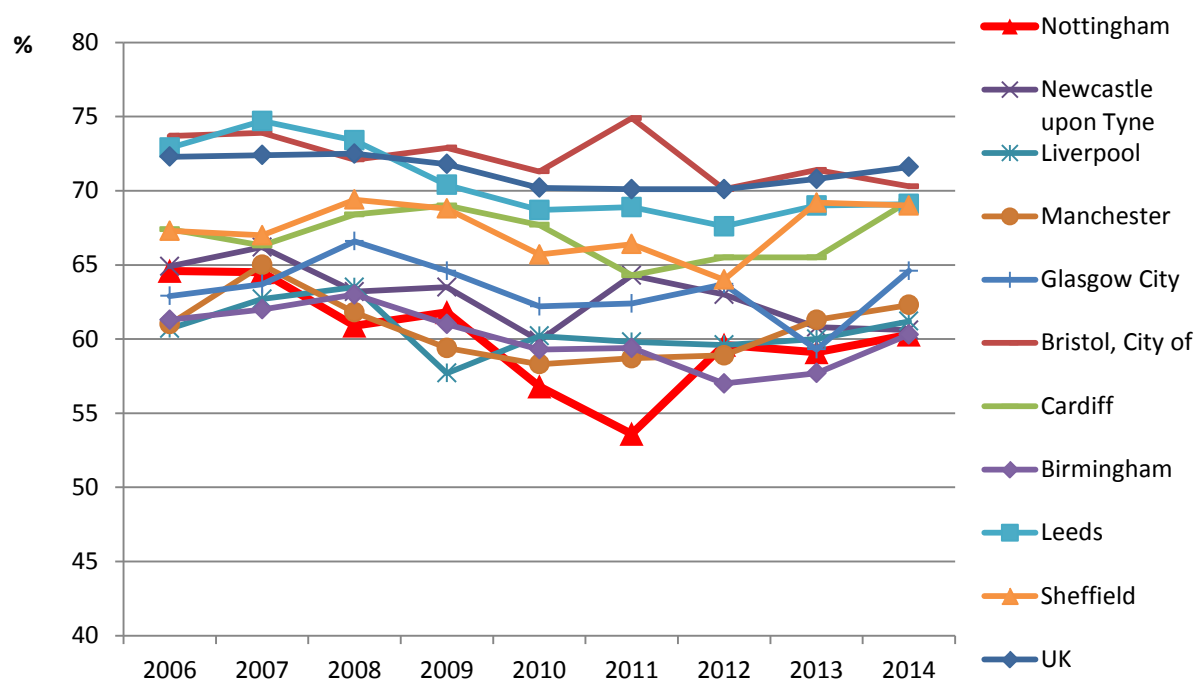
- In the Annual Population Survey (APS) period April 2005 to March 2006, prior to the recession, the employment rate in Nottingham was 64.6% compared to an average of 65.6% for all the Core Cities;
- By the survey period April 2010 to March 2011, employment had fallen at a faster rate in Nottingham - to 53.6%. This was the lowest rate of all the Core Cities and almost ten percentage points lower than the Core Cities average (63.4%);
- From the onset of recession in 2008 to 2011, the absolute number estimated to be employed in Nottingham UA fell from 126,600 to 118,000 - a fall of 6.8%, compared to a fall of only 0.2% in total employment across all of the Core Cities; and
- Although the rate of employment has since recovered in Nottingham, it is currently level with Birmingham – at 60.3% - the joint lowest employment rate for the Core City administrative areas in the latest survey period (April 2013 to March 2014), compared to a Core Cities average of 64.8%.

⁸ Nottingham City Council, 2012. 'The Nottingham Growth Plan'. URL:

<http://www.nottinghamcity.gov.uk/static/nottinghamgrowthplan/files/Nottingham%20Growth%20Plan%20Web.pdf>

⁹ Because of the high concentration of full-time students resident in the Nottingham UA area, it is important to assess the trend in the rate (employed adults as a proportion of the total resident working age population) alongside the trend in the absolute numbers employed, as changes in the estimated number of students in the Annual Population Survey can affect the employment rate.

Chart 11: Employment Rates (% 16-64) for the Core Cities (UAs/MDs), April 2005-March 2006 to April 2013-March 2014

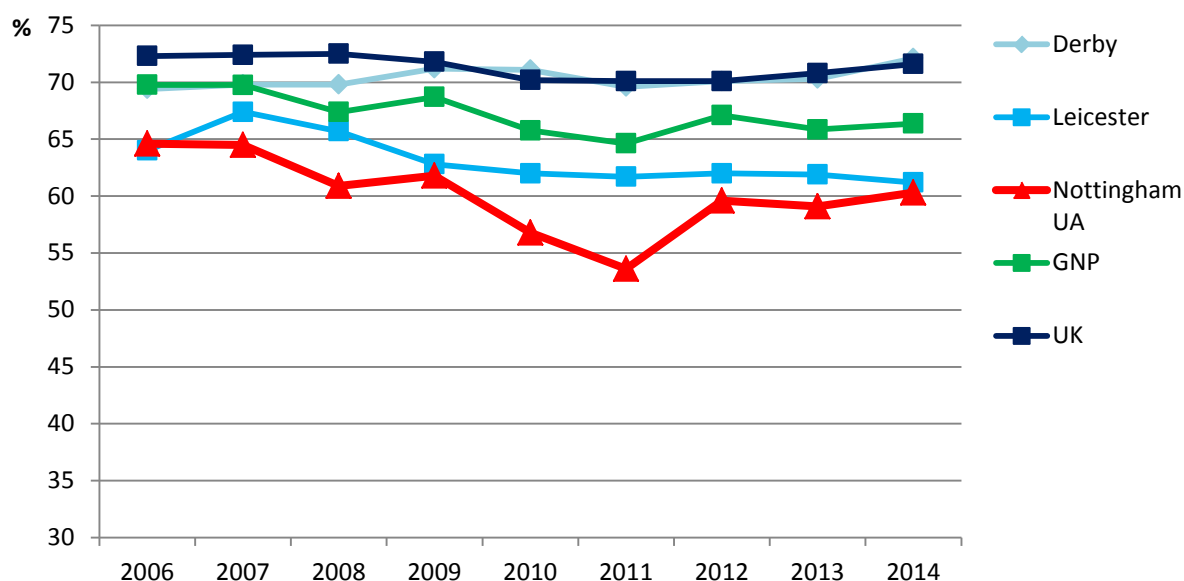


Source: ONS Crown Copyright, 2014. 'Annual Population Survey' April 2005-March 2006 to April 2013-March 2014, from NOMIS [accessed on 9th October, 2014].

Chart 12 compares Nottingham City UA to the wider GNP area, the UK average and the Leicester and Derby UAs. This shows that the employment rates for Nottingham City UA have consistently been lower than the wider GNP area and the other two large cities in the East Midlands:

- In the 12 months to March 2011, the employment rate in the GNP area was 64.6%, which was more than 10 percentage points higher than Nottingham City UA (53.6%) and higher than Leicester City UA (61.7%) – although still significantly lower than the UK average (70.1%);
- The employment rate for the GNP area recovered to 66.4% by the latest survey period (March 2013 to April 2014), although the gap with the UK average (71.6%) and Derby (72.1%) is wider than during the survey periods preceding the onset of recession; and
- Absolute employment in the GNP area also fell between the onset of recession in 2008 and 2011, from 286,300 to 283,500 – a fall of 1%, significantly less than that experienced in Nottingham UA alone. This was because the number of residents in employment in Broxtowe, Gedling and Rushcliffe increased over this period (by more than 4% in both Broxtowe and Rushcliffe).

Chart 12: Employment Rates (% 16-64), Nottingham UA and GNP, compared to Leicester, Derby and the UK, April 2005-March 2006 to April 2013-March 2014



Source: ONS Crown Copyright, 2014. 'Annual Population Survey' April 2005-March 2006 to April 2013-March 2014, from NOMIS [accessed on 9th October, 2014].

There are also significant differences between Nottingham City UA and the wider GNP area in terms of unemployment.¹⁰ The Unitary Authority boundary covers a number of deprived areas which experience high levels of unemployment, including the large post-war council estates in Clifton, Aspley and Bilborough. The unemployment rate is also indirectly affected by the number of students, who are not counted in the number of unemployed, but because they are not classed as 'economically active'¹¹ this affects the basis used to calculate the unemployment rate¹² - as it reduces the size of the available workforce by which the number of unemployed people is divided. Therefore it is important to assess changes in the absolute number estimated to be unemployed as well as the unemployment rate.

Compared to other Core City UAs/MDs, students in Nottingham City UA make up a relatively high share of 'economically inactive' residents (individuals who are neither employed nor actively seeking work). In the APS period April 2013 to March 2014, students were estimated to account for 44.5% of all economically inactive residents. Of the Core Cities, this proportion is slightly lower than

¹⁰ **Unemployment** refers to individuals who are out of work but available for and actively seeking work.

¹¹ **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.

¹² 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.

Newcastle (45%) but is significantly higher than Manchester (34.8%), Liverpool (31.2%) and Leeds (31.7%), and almost 20 percentage points higher than the average for the UK (26.2%).

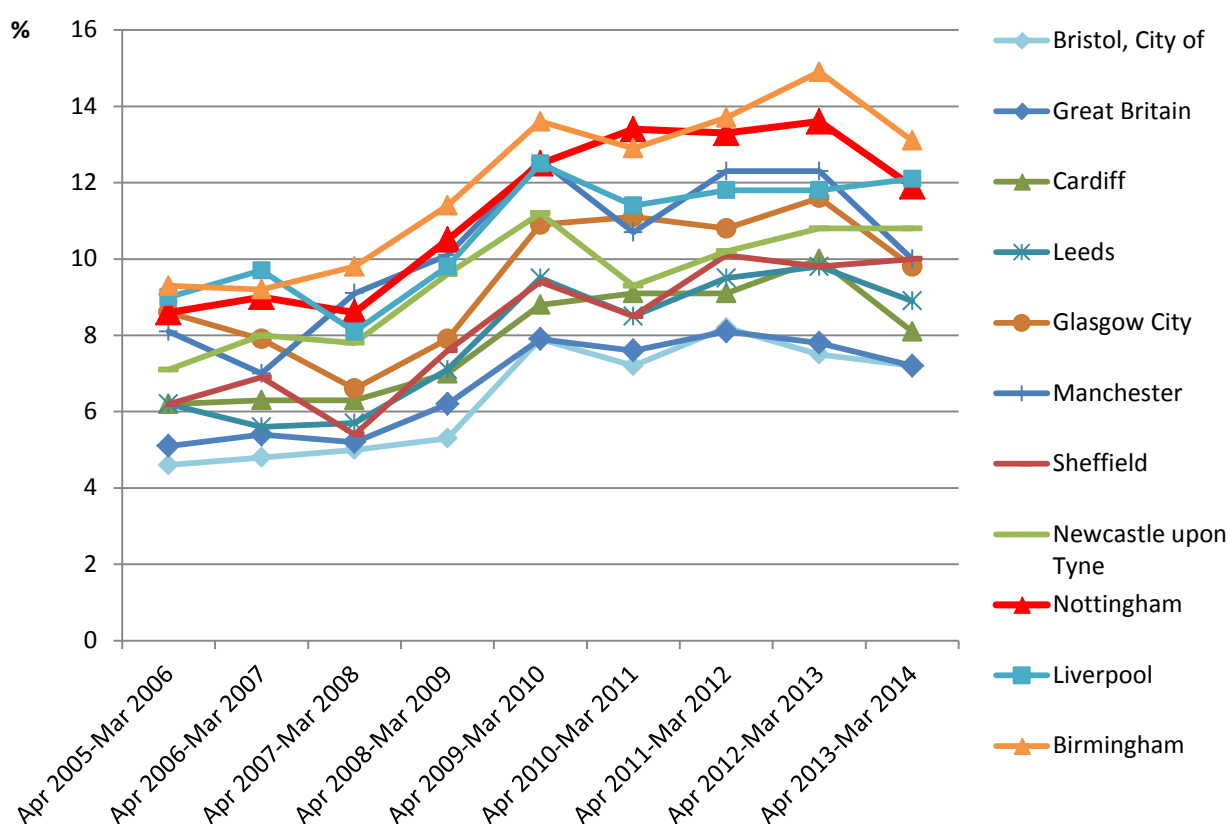
However, the high proportion of students in Nottingham City UA does not explain why unemployment increased at a significantly faster rate than either the national average or the average for the Core Cities, as shown in Chart 13.

Prior to the onset of recession, in the APS period April 2005 to March 2006, the unemployment rate in Nottingham UA was 3.5 percentage points higher than the average for Great Britain – at 8.6%. By the period April 2010 to March 2011, it had increased to 13.4%, 5.8 percentage points higher than the national average, and the highest of the ten Core Cities at that time.

In absolute terms, the number unemployed in Nottingham UA increased with the onset of recession in 2008 from 12,000 (April 2007 to March 2008) to 18,500 (April 2010 to March 2011).

Unemployment in Nottingham has subsequently fallen significantly, to 11.9% according to the latest estimate (April 2013 to March 2014) - below that of Birmingham (13.1%) and Liverpool (12.1%). However, this is still significantly higher than the pre-recession rate, and the gap with the national average (4.7 percentage points) remains wider than at the start of the time series shown in the chart.

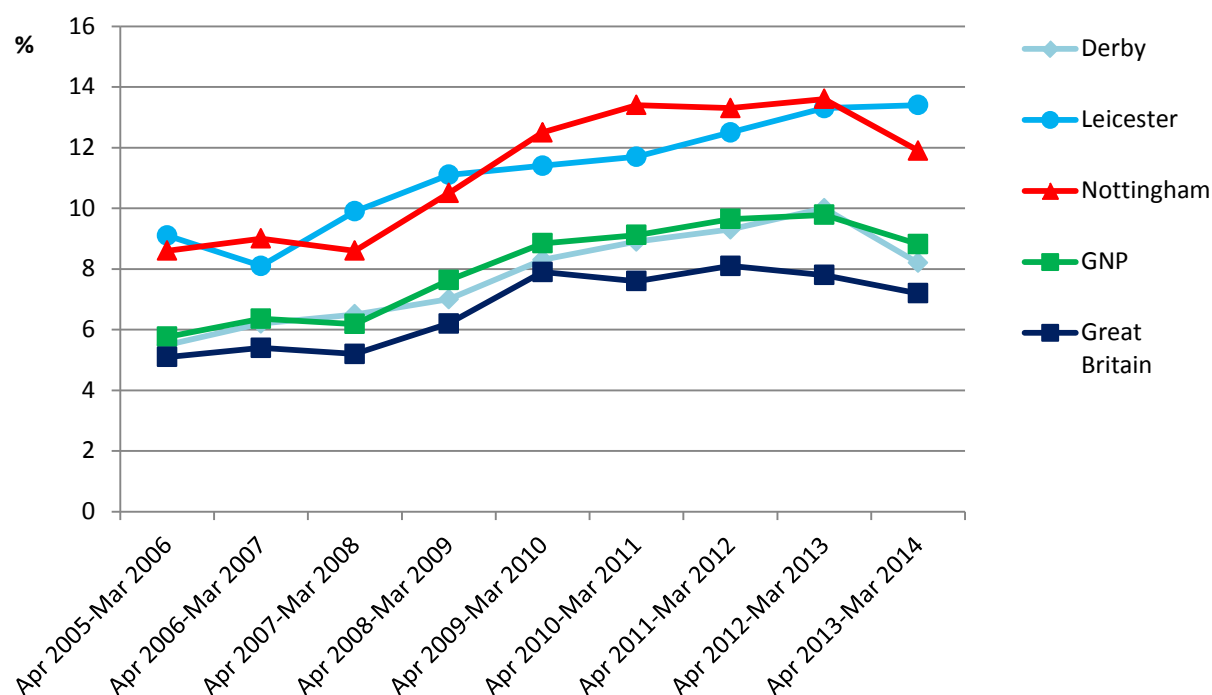
Chart 13: Model-Based Unemployment Rates (% 16+) for the Core Cities (UAs/MDs), April 2005-March 2006 to April 2013-March 2014



Source: ONS Crown Copyright, 2014. 'Model-Based Estimates of Unemployment', April 2005-March 2006 to April 2013-March 2014, from NOMIS [accessed on 9th October, 2014].

Corresponding to the fall in the employment rate shown in Chart 12, Chart 14 shows that Nottingham UA experienced a significantly greater increase in unemployment than the other districts in the wider GNP area, demonstrating the difference in the labour market characteristics between the core and the periphery of the wider conurbation.

Chart 14: Model-Based Unemployment Rates (% 16+), Nottingham UA and GNP, compared to Leicester, Derby and the UK, April 2005-March 2006 to April 2013-March 2014



Source: ONS Crown Copyright, 2014. 'Model-Based Estimates of Unemployment', April 2005-March 2006 to April 2013-March 2014, from NOMIS [accessed on 9th October, 2014].

Unemployment rates in the GNP area closely followed the trend national average, and remained very close to those of Derby. In the period April 2005 to March 2006, the unemployment rate in the GNP area was 5.8% - only 0.7 percentage points higher than the average for Great Britain and 2.8 percentage points lower than the unemployment rate in Nottingham City UA. Although unemployment increased in the GNP area following the onset of recession, peaking at 9.8% in April 2012 to March 2013, this increase was at a slower rate than that experienced in the Unitary Authority area alone (where unemployment was 3.8 percentage points higher than in the wider GNP area in the same period). Unemployment in the GNP area has since fallen to 8.8% in the latest survey period. Although this is higher than the pre-recession rate, and the gap with the national average has widened somewhat (to 1.6 percentage points), it is very significantly lower than the rate of unemployment in Nottingham UA.

The trend in unemployment in Nottingham UA is now falling, whilst it is continuing to increase in Leicester UA. Unemployment rates in Nottingham and Leicester have been very close throughout the time-series, suggesting that the two largest cities in the East Midlands may experience common challenges.

This picture is consistent with trends observed nationally: in many regions across the UK, labour market inequalities appear to have widened following the onset of recession, with areas experiencing more challenged conditions pre-recession recording larger falls in employment.¹³ Nottingham City UA appears to have been affected to a greater extent than some other Core Cities with similar levels of unemployment prior to the recession, whilst the wider GNP area has appeared to be more resilient. This suggests that there are differences in the skills profile and job type of residents of the UA compared to the rest of the GNP.

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:

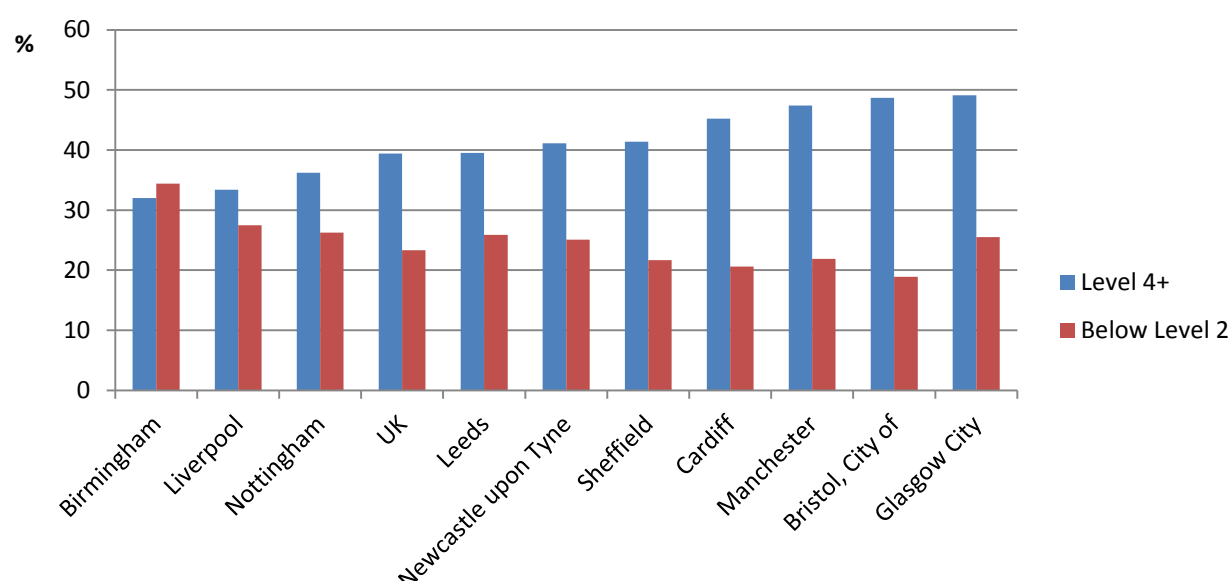
- Businesses with highly skilled staff may be better able to identify market opportunities, innovate and adapt to new technologies and attract and facilitate investment;
- Employers are less likely to shed skilled workers when attempting to reduce labour costs. They may have invested significantly in 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 wider 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.

However, 'skill' is a problematic concept to measure – as it encapsulates a combination of characteristics such as: duration of and attainment in education, extent and nature of training whilst in employment, job-specific or technical 'know how', experience, and personal attributes and values. Therefore skills are generally represented through proxy measures – most commonly the highest level of formal qualification. Although this is an imperfect measure, it has the benefit of being widely available to a relatively detailed level of geography and is comparable nationally and internationally.

Chart 15 shows the proportion of the economically active population (employed plus unemployed) who have a highest level of qualification that is equivalent to a NVQ Level 4 or above (e.g. a first degree or higher), which is comparable to the level of skill required to access professional or managerial roles. Conversely, the chart also shows the proportion with qualifications below the equivalent of an NVQ Level 2 (the level of qualification usually expected of a 16 year-old school leaver, such as 5 GCSEs at grades A*-C). This compares Nottingham City UA to other Core Cities on the basis of highly qualified residents -those who might be key assets in a local area's 'knowledge economy' - and those residents with relatively low levels of qualification, who may be vulnerable to low-skill/low-pay employment and periods of unemployment. By focussing on the economically active population, the chart captures those individuals who are engaged in the labour force (either working or actively seeking work) – and is thus not affected by concentrations of students in city centre universities who are not available to work.

¹³ 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*'.

Chart 15: Highest Level of Qualification (% economically active residents with qualifications equivalent to a Level 4+ or below a Level 2) for the Core Cities (UAs/MDs), January-December 2013¹⁴



Source: ONS Crown Copyright, 2014. 'Annual Population Survey', January to December 2013, from NOMIS [accessed on 22nd October, 2014].

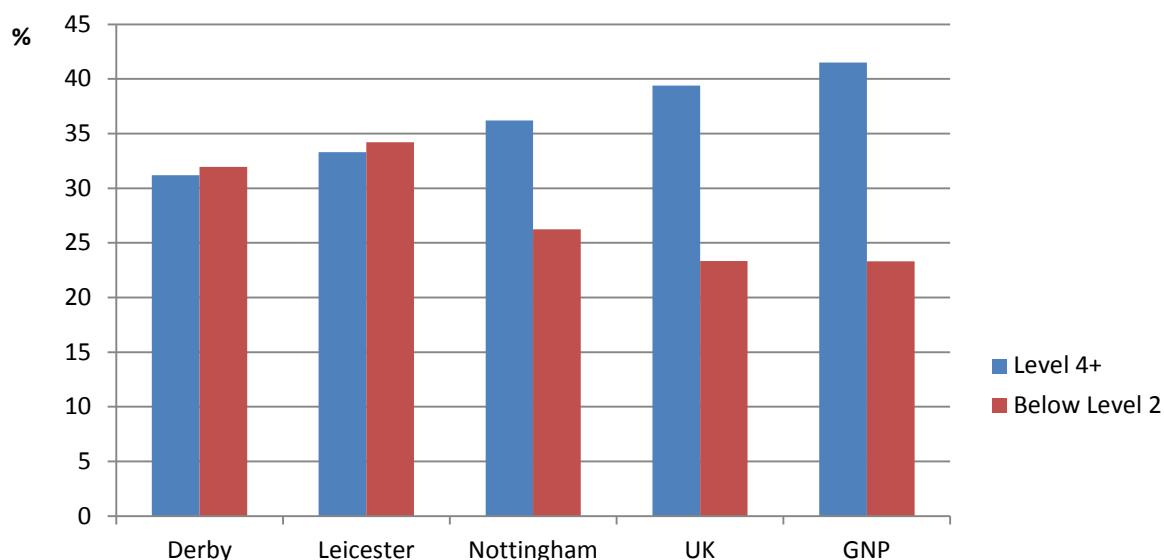
Compared to the other nine Core Cities, Chart 15 shows that Nottingham UA has the third lowest proportion of economically active residents qualified to at least a Level 4 (at 36.2%) and the third highest proportion who have qualifications below the equivalent of a Level 2 (26.2%). Nottingham is fairly close to the UK average, in which 39.4% of the economically active population are qualified to at least a Level 4 and 23.3% lack qualifications at Level 2, but compares less favourably to a number of other Core Cities – notably Cardiff, Manchester, Bristol and Glasgow.

It is important to note that this measure identifies the residents of a Core City administrative geography, rather than those who commute in the city centre but live elsewhere. Chart 16 compares Nottingham UA to the wider GNP area, and also the two other large cities in the East Midlands. This shows that the GNP area has a significantly more highly skilled profile - with a higher proportion of economically active residents qualified to at least a Level 4 (at 41.5%, above the UK average) and a lower proportion lacking qualifications equivalent to a Level 2 (at 23.3%, in-line with the UK average). Within the GNP area, Rushcliffe has by far the highest proportion of the resident labour force educated to at least a Level 4, at 58.3%, and a relatively small proportion lacking qualifications at Level 2, at 17.4%. Broxtowe also has a relatively high proportion of residents with higher level qualifications, at 43.4% qualified to at least a Level 4, but also a relatively high proportion of residents lacking a Level 2, at 26.3% - suggesting a more polarised local skills profile.

¹⁴ The calendar year (January-December) Annual Population Survey/Labour Force Survey release has to be used to analyse qualifications data, as it is not available in the other 3 releases – due to the timing of questions on education and in the survey during the year.

However, Chart 16 also shows that both Nottingham UA and the wider GNP have a more highly skilled labour force than either Derby or Leicester, which both have lower proportions of economically active residents qualified to at least a Level 4 and higher proportions lacking a Level 2.

Chart 16: Highest Level of Qualification (% economically active residents with qualifications equivalent to a Level 4+ or below a Level 2) for Nottingham UA and GNP, compared to Leicester, Derby and the UK, January-December 2013



Source: ONS Crown Copyright, 2014. 'Annual Population Survey', January to December 2013, from NOMIS [accessed on 22nd October, 2014].

'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:

- SOC 1 and 2 jobs (Managers and Professionals) are associated with skills that are equivalent to a Level 4 qualification¹⁵; 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).

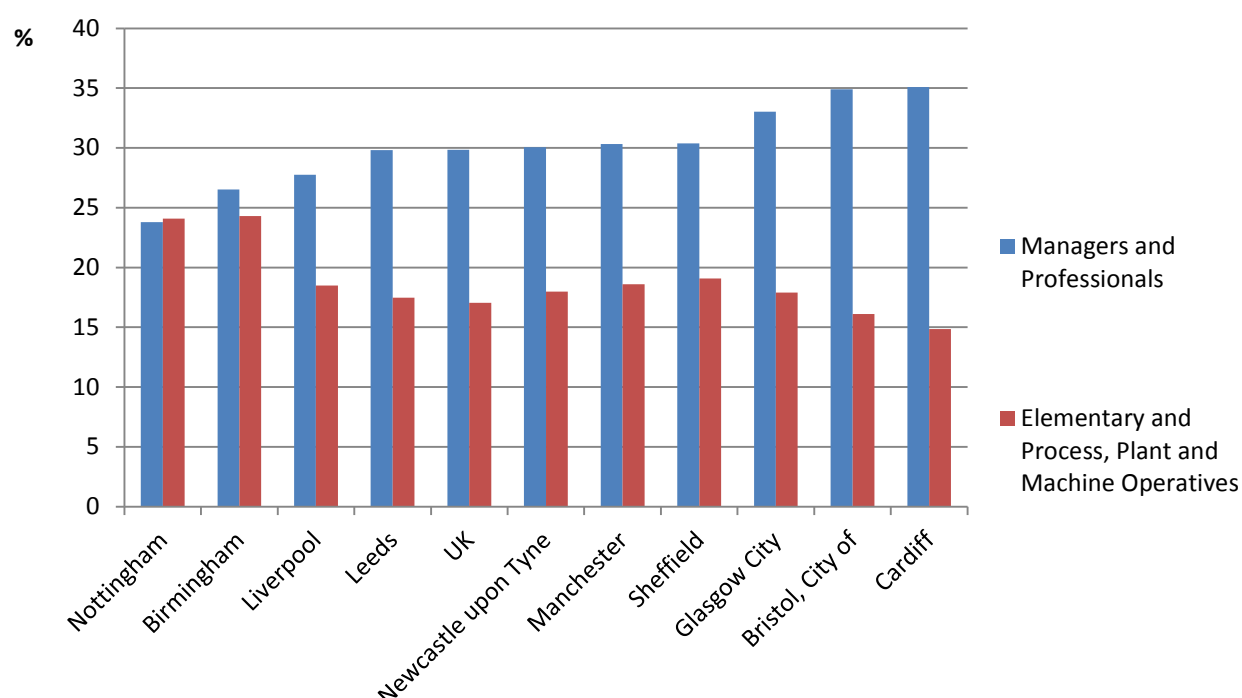
To compare with the profile of the supply of skills amongst economically active residents across the ten Core Cities presented in Chart 16, Chart 17 shows the proportion of employed residents in SOC 1 and 2 (Managers and Professionals) – to represent share of employment in highly skilled activities –

¹⁵ 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.

and in SOC 8 and 9 (Process, Plant and Machine Operatives and Elementary Occupations) – to represent the share of employment in relatively low-skilled activities.

Chart 17 shows that residents of Nottingham City UA have the lowest proportion of employment in the two most highly skilled occupations (23.8% compared to 29.9% in the UK) of the Core Cities, and the second highest proportion of employment in the two lowest skilled occupations (24.1% compared to 17% in the UK overall). Compared to the majority of Core Cities, Nottingham (along with Birmingham) has an occupational profile that is relatively more highly represented amongst the lowest skill occupations. This is compared to Glasgow, Bristol and Cardiff in particular, which have occupational profiles that are skewed towards more highly skilled occupations – conducive to the idea of predominantly ‘knowledge-based’ employment in urban centres.

Chart 17: Employment in SOC 1 & 2 and 8 & 9 (% employed residents) for the Core Cities (UAs/MDs), January-December 2013

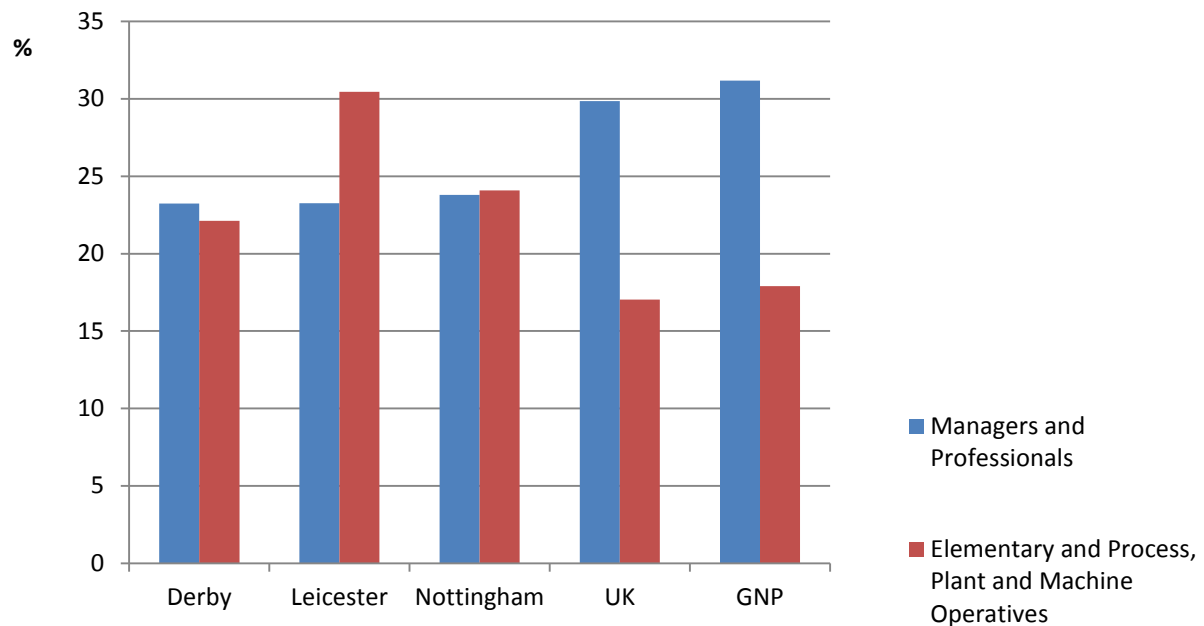


Source: ONS Crown Copyright, 2014. ‘Annual Population Survey’, January to December 2013, from NOMIS [accessed on 22nd October, 2014].

As in the case of the skills profile of economically active residents shown in Chart 16, Chart 18 shows that the wider GNP area has a significantly more highly skilled occupational profile – with a slightly higher proportion of residents working in the 2 most highly skilled occupations than the UK average (31.2% compared to 29.9%). The proportion of residents working in low skilled occupations in the GNP area is very close to the UK average, at 17.9% compared to 17%. Again, Rushcliffe stands out, with almost half of residents (48.7%) working as Managers or Professionals and a very low proportion working in Elementary Occupations or as Process, Plant and Machine Operatives (6.6% - just over a third of the proportion in the UK as a whole).

Compared to Leicester and Derby, Chart 18 shows that Nottingham UA has a relatively similar occupational profile (with a significantly lower proportion of residents working in low-skilled occupations than Leicester). This suggests that the lower demand for highly skilled workers in urban centres may be a phenomena related to the nature of the labour market in the East Midlands, indicative of a ‘low pay low skills equilibrium’, closely associated with the legacy of traditional manufacturing and transition to often relatively low-skilled service activities.

Chart 18: Employment in SOC 1 & 2 and 8 & 9 (% employed residents) for Nottingham UA and GNP, compared to Leicester, Derby and the UK, January-December 2013



Source: ONS Crown Copyright, 2014. ‘Annual Population Survey’, January to December 2013, from NOMIS [accessed on 22nd October, 2014].

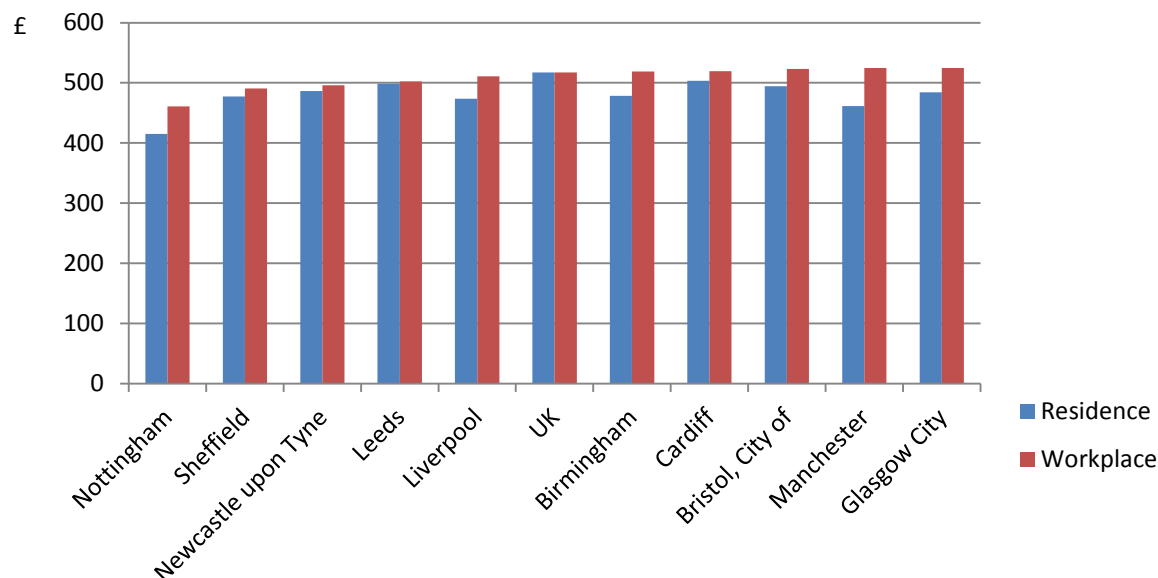
Finally, earnings estimates enable an investigation of the relative skill and productivity of commuters compared to residents of a given area, based on two assumptions:

- 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

(workplace based)¹⁶, enabling the discussion of commuting patterns and also enabling assumptions on the comparative skill levels of residents compared to (commuting) workers.

Chart 19: Earnings by Residence and Workplace for the Core Cities (UA/MD) (£ Median Gross Weekly Pay, full-time workers), 2013



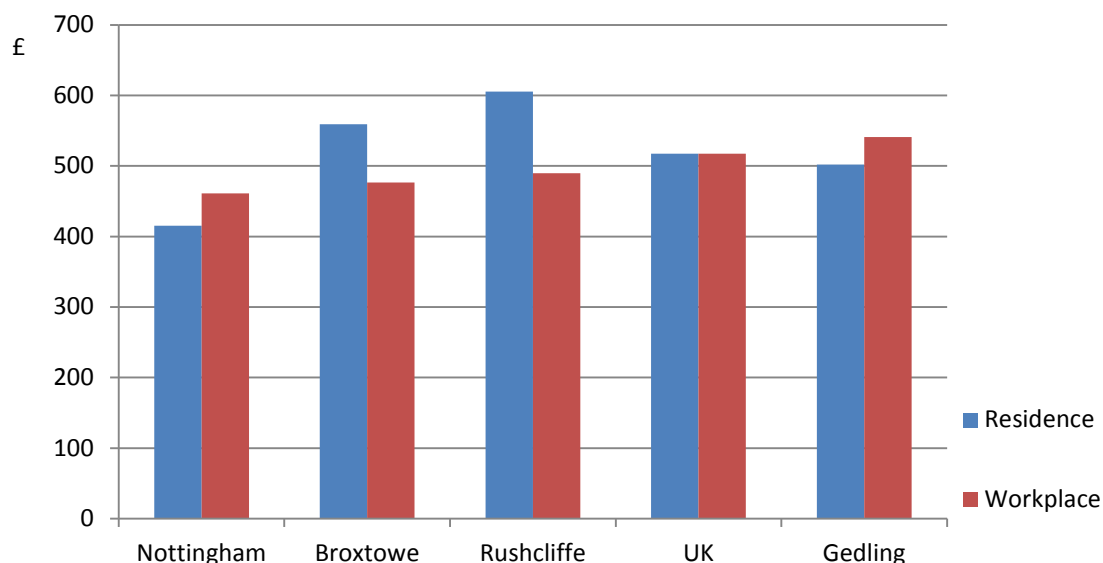
Source: ONS Crown Copyright, 2014. 'Annual Survey of Hours and Earnings – Residence and Workplace analysis', 2013, from NOMIS [accessed on 22nd October, 2014].

Looking across the administrative areas for the ten Core Cities, Chart 19 shows that:

- With the exception of the relatively tightly bounded city of Leeds, residents of all of the Core Cities have lower average earnings than those who work in them - suggesting they draw in significant numbers of more highly paid, highly skilled workers from neighbouring areas, whilst residents may be more reliant on low-pay, low-skill employment; and
- Nottingham UA has the lowest median weekly pay on both a residence- and a workplace-basis, and one of the largest gaps between the two. In 2013, full-time workers were estimated to earn a median of £415.20 per week (gross- in advance of taxes etc.) if living in Nottingham and £460.90 if working in the UA – a gap of £45.70. This compares to median gross weekly earnings of £517.50 in the UK overall. Only Manchester has a larger gap between residence- and workplace-based earnings (with those working in the Metropolitan Borough of Manchester City earning £63.30 more than residents).

¹⁶ 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 20: Earnings by Residence and by Workplace within the GNP area (£ Median Gross Weekly Pay, full-time workers), 2013



Source: ONS Crown Copyright, 2014. 'Annual Survey of Hours and Earnings – Residence and Workplace analysis', 2013, from NOMIS [accessed on 22nd October, 2014].

Chart 20 compares residence- and workplace-based earnings for the Local Authority Districts in the GNP area, clearly illustrating the dynamics of the wider labour market:

- Nottingham UA is clearly an importer of comparatively more highly skilled, highly paid workers, whilst the reverse is true for Broxtowe and Rushcliffe - which both have significantly higher median earnings on a residence basis (i.e. residents who may work outside either district, including in Nottingham UA, earn significantly more than those who work within either district – but who may or may not live elsewhere);
- Rushcliffe has by far the highest residence-based earnings, at £605.20 per week – significantly above the average for the UK and £115.60 more per week than the median for those working within the district. From the analysis of qualifications and occupational employment for residents of Rushcliffe earlier in this section, the district clearly exports significant numbers of highly skilled and more highly-paid commuters to other areas. According to the 'APS Commuter View' product (ONS, 2011), Nottingham was the main destination for commuters from Rushcliffe – accounting for the workplace of 42% of working residents ; and
- Gedling appears to have a stronger local labour market than other districts in the GNP area, with higher workplace-based earnings than the UK average, Rushcliffe, Broxtowe and Nottingham UA, at £541 per week. This also exceeds the earnings for residents of Gedling (£501.90), suggesting that the district draws in more highly skilled and relatively more highly paid workers from elsewhere. The 'APS Commuter View' suggests that Nottingham was the origin for 20% of workers in Gedling and the destination for 11% of residents of Nottingham - i.e. Gedling is the workplace that accounts for the second highest proportion of Nottingham residents, after Nottingham itself.

The Nottingham Labour Market: Summary

- The Core Cities were hit hard by the recession that started in 2008, although most are now showing signs of labour market recovery – including Nottingham.
- Employment in Nottingham City UA fell significantly compared to other Core Cities between 2008 and 2011, both in terms of the rate and the absolute numbers. The employment rate has recovered to 60.3% in the 12 months to March 2014, which is level with Birmingham but lower than the pre-recession rate.
- Employment in the wider GNP area fell by significantly less, although it is still below both the UK average and Derby City in the East Midlands. The employment rate in Nottingham is close to that of Leicester City.
- The unemployment rate and the number unemployed increased significantly in Nottingham City following the onset of recession. The rate has since fallen to 11.9%, below that of Birmingham and Liverpool.
- Unemployment in the wider GNP area remained close to the national average throughout the period. In Leicester City, the trend in unemployment was very similar to Nottingham City – but Leicester does not yet appear to have experienced the same degree of recovery.
- Skills can enable individuals to enter and progress in the labour market. Skilled workers can be less vulnerable to economic shocks.
- Using the proxy measure of highest level of qualification, compared to the Core Cities, Nottingham City has the third lowest proportion of economically active residents qualified to an equivalent of a degree, and the third highest with qualifications below the equivalent of 5 GCSE passes at A*-C. The wider GNP area has a significantly more highly skilled profile. Rushcliffe in particular stands out, with more than half its residents qualified to the equivalent of a degree.
- Employment by occupation provides an indication of skills utilisation. Compared to other Core Cities, Nottingham City has the lowest proportion of residents employed in the two most highly skilled occupations (Managers and Professionals). Occupational employment in the GNP area is significantly more highly skilled, with an above average proportion of residents working as Managers and Professionals.
- This contrast between the Nottingham City UA and the GNP area is reflected in earnings. Earnings for individuals working in Nottingham City are higher than for residents (and are below the UK average in both cases). Earnings for residents living in Broxtowe and Rushcliffe are higher than the UK average – suggesting that a significant number of more highly skilled, highly paid individuals commute from these districts in to Nottingham.

5. Benchmarking Nottingham on the UK Competitiveness Indicators

This section considers the competitiveness of the City of Nottingham as captured by the Unitary Authority area using the UK Competitiveness Index (UKCI) methodology (Huggins, 2004). Comparisons are made with an extended Core Cities¹⁷ and those local authorities also contained in the Derby, Derbyshire, Nottingham and Nottinghamshire Local Enterprise Partnership (D2N2 LEP). Similar analysis has previously been undertaken with an emphasis on the City of Cardiff, but also included Nottingham as a comparator city (Huggins and Thompson, 2010).

The UKCI provides a benchmarking of the competitiveness of the UK's localities¹⁸, and it has been designed to be an integrated measure of competitiveness focusing on both the development and sustainability of businesses and the economic welfare of individuals (Huggins, 2004). The UKCI has been published regularly since 2000, with the UKCI for 2013 being the most recent report covering the whole of Britain (Huggins and Thompson, 2013a; 2013b). This analysis updates the UKCI to provide measures of competitiveness for 2011 and 2014 using the latest data available. Comparisons are also made with the UKCI measures for 2006 contained within the UKCI 2008 report (Huggins and Izushi, 2008). This allows the relative competitiveness of Nottingham to be tracked from before the financial crisis to the current day to allow the relative trajectory of Nottingham and the other cities to be analysed.

Within the UKCI competitiveness is considered to consist of the capability of an economy to attract and maintain firms with stable or rising market shares in an activity, while maintaining stable or increasing standards of living for those who participate in it (Storper, 1997). This makes competitiveness a key measure of the potential for long-run local or regional economic growth (Huggins et al., 2013), but it must be remembered that the ultimate objective of territorial competitiveness should remain ensuring the rising welfare of the population in that area (Aiginger, 2006). In the UK context Huggins and Thompson (2012) find a positive relationship between the competitiveness as captured by the UKCI and various measures of social well-being. Therefore competitiveness is not a zero-sum game, and does not rely on the shifting of a finite amount of resources from one place to another. Malecki (2004) distinguishes between low road and high road competition. The former relates to competing on the basis of low labour and tax costs, while the latter relates to knowledge policies associated with promoting entrepreneurship and skills upgrading associated with the knowledge economy. Where such development can provide positive-sum benefits to all stakeholders in a locality (Leborgne and Lipietz, 1988). Therefore, competitiveness involves the upgrading and economic development of all places together, rather than the improvement of one place at the expense of another. However, competitiveness does involve balancing the different types of advantages that one place may hold over another, i.e. the range of differing strengths that the socio-economic environment affords to a particular place compared to elsewhere.

¹⁷ In the UKCI, 'extended Core Cities' refers to the ten current Core Cities plus the City of Edinburgh.

¹⁸ The UKCI previously benchmarked the UK's regions but these are now included in a new World Competitiveness Index of Regions published in 2014, which covers more than 500 regions globally (Huggins et al., 2014). It should be noted that although the term 'UK' is used, due to lack of compatible data localities from Northern Ireland are excluded from the index.

This report publishes competitiveness indices that incorporate the most up-to-date data available in 2013, as well as an updated version of the indices presented in the 2010 report, which provides a means of comparison and an examination the UK's changing competitiveness landscape

The competitiveness of Nottingham and an extended Core Cities group in 2014

The analysis provided here compares the competitiveness of Nottingham in 2014 with that of an extended group of Core Cities. This group of Core Cities includes the Core Cities of England: Birmingham, Bristol, Leeds, Liverpool, Manchester, Newcastle upon Tyne, Nottingham and Sheffield. In addition, the Welsh capital Cardiff, and the large agglomerations in Scotland, Edinburgh and Glasgow, are included to allow comparison with those cities in regions where more powers have been devolved.

The analysis considers the overall UKCI as well as the three component indices (input, output and outcomes). Through this analysis the overall competitiveness of Nottingham in 2014 can be compared with its peer group of cities, but also the elements that lead to this overall level of competitiveness can be explored. Figures for 2011 are also included to capture any recent changes in competitiveness.

Table 3 below presents the competitiveness for the extended core cities group. In 2014 Nottingham is ranked 8th within this group. The UKCI figure of 90.8 means that Nottingham is lagging the UK average level of competitiveness (UK average UKCI = 100), although the dominance of the localities in London, the South East and parts of the East of England mean that this is the case for a majority of localities outside these 'core' regions. However, Nottingham is ranked 208th out of the 379 localities in Britain, so below the median locality.

Table 3: UKCI Index 2011 and 2014 for Extended Core Cities

Extended Core City UKCI Rank 2014	City	UKCI 2014	Rank 2014 (of 379)	UKCI 2011	Rank 2011 (of 379)
1	Edinburgh, City of	115.6	34	115.6	34
2	Bristol, City of	106.6	72	107.3	68
3	Manchester	102.7	96	101.8	98
4	Glasgow City	100.8	113	101.0	106
5	Leeds	98.9	123	99.5	119
6	Cardiff	96.9	135	96.9	144
7	Newcastle upon Tyne	93.2	173	93.6	173
8	Nottingham	90.8	208	92.0	197
9	Birmingham	90.5	213	90.4	221
10	Sheffield	90.2	218	89.4	232
11	Liverpool	90.2	219	90.4	216

Source: Huggins and Thompson (2013b)

Note: UK average = 100

To put Nottingham's competitiveness into context Table 3 indicates that only four of the cities display competitiveness levels above the UK average. While Edinburgh (UKCI 115.6 ranked 34th) with its capital city functions may not represent a realistic role model for Nottingham, Bristol might

provide an example of a large city outside the dominant London, South East and East of England which has achieved higher levels of competitiveness with a UKCI of 106.6 and ranked 72nd in 2014, which Nottingham could aspire to replicate.

What does seem to be apparent, however, is that five of the core cities are clearly lagging the others. This group in which Nottingham falls also includes, Birmingham, Liverpool, Newcastle upon Tyne and Sheffield. Like all of the core cities and many large cities around the developed world, these cities have suffered from falling manufacturing employment and although to an extent they are recovering as service employment has expanded they continue to face a number of problems associated with their industrial pasts. Power et al. (2010) use Sheffield as a case study and outline in detail the rise and decline of large industrial cities. Although, the cities may have experienced similar declines, the examples of Manchester and Leeds indicate quite different degrees of recovery are present.

The UKCI figures for 2011 suggest that there is little change in the competitiveness of the Core Cities compared to the UK average over the past three years. Nottingham has experienced a worsening of its position with the UKCI figure for 2011 92.0. This has led to Nottingham's ranking falling for 2014 11 places to 208th in 2014 from 197th in 2011.

To understand the relatively low competitiveness of Nottingham compared to the Core cities the component indices of the UKCI are examined. Table 4 shows the rankings of the extended Core Cities on the basis of the 2014 UKCI Inputs index. Nottingham is ranked 10th of the 11 cities. For the long-run prospects for Nottingham's economic performance this is worrying given that this index includes measures of those inputs associated with the growth of more knowledge based industries, such as the presence of skilled labour and business start-up rates, which may create high value employment. The UKCI Input index value of 81.1 for Nottingham, indicates that the city is well below the UK average. A ranking of 271st suggests that Nottingham may lack the resources to improve its competitiveness in the future, although this is slightly surprising given the presence of two large universities within the city that not only act as a source of skilled labour, but also potentially help connect the city to other regions and cities around the world, acting as knowledge arials through their ties to similar institutions (Fritsch and Schwirten, 1999). A potential explanation for this is provided when considering the localities in the D2N2 LEP below.

Table 4: UKCI Input Index 2011 and 2014 for Extended Core Cities

Extended Core City Input Rank 2014	City	UKCI Input Index 2014	Rank 2014 (of 379)	UKCI Input Index 2011	Rank 2011 (of 379)
1	Edinburgh, City of	117.8	66	117.5	66
2	Bristol, City of	111.8	85	112.6	80
3	Manchester	103.4	116	102.8	123
4	Leeds	96.5	148	96.5	157
5	Glasgow City	94.4	164	95.4	162
6	Cardiff	92.5	176	94.4	167
7	Newcastle upon Tyne	85.9	230	87.0	219
8	Sheffield	84.4	248	83.2	247
9	Birmingham	82.6	258	82.1	261
10	Nottingham	81.1	271	82.9	254
11	Liverpool	79.8	283	79.4	279

Source: Huggins and Thompson (2013b)

Note: UK average = 100

As with overall competitiveness the same five cities (Birmingham, Liverpool, Newcastle upon Tyne, Nottingham and Liverpool) appear to lag the other extended Core Cities. All of these cities are outside the top 200 localities in the UK. Edinburgh, Bristol, Manchester and Leeds on the other hand are all within the top 150 localities. Unlike overall competitiveness there is no evidence that Nottingham has improved its position over the last two years with its ranking slipping 17 places from 254th in 2011.

Where Nottingham does appear to perform more strongly is in terms of the UKCI Output index in 2014. This index relates more to the ability of a locality to utilise its inputs effectively to generate outputs. Nottingham has a UKCI Output index value of 98.8, a little below the UK average, but this places Nottingham just outside the top 100 localities on this measure in 2014 (ranked 106th).

Table 5: UKCI Output Index 2011 and 2014 for Extended Core Cities

Extended Core City Output Rank 2014	City	UKCI Output Index 2014	Rank 2014 (of 379)	UKCI Output Index 2011	Rank 2011 (of 379)
1	Edinburgh, City of	124.8	22	127.1	20
2	Glasgow City	108.6	45	110.4	43
3	Bristol, City of	107.7	50	109.7	48
4	Manchester	104.9	71	103.7	74
5	Leeds	102.4	84	103.6	76
6	Nottingham	98.8	106	99.2	103
7	Cardiff	98.8	109	98.2	111
8	Newcastle upon Tyne	96.6	122	96.9	128
9	Liverpool	93.4	145	94.2	148
10	Birmingham	90.7	174	91.4	169
11	Sheffield	89.7	187	88.6	204

Source: Huggins and Thompson (2013b)

Note: UK average = 100

In this regard although lagging the best performing extended core cities, which have UKCI Output index values in excess of the UK average Nottingham is above the other less competitive core cities. However, although changes between 2011 and 2014 are small, Nottingham's relative performance in 2011 was a little stronger. Without the key inputs required in a knowledge driven economy it might be expected that Nottingham might further see its advantages in output becoming eroded over time.

The final component index, the UKCI Outcome index, acknowledges the calls by studies of competitiveness to account for outcomes experienced by the populations of localities (Storper, 1997; Huggins, 2003; Aiginger, 2006). Although, it should be acknowledged this does focus on economic outcomes in the form of employment and wages rather than accounting for broader measures of well-being and broader development (Pike et al., 2007; Huggins and Thompson, 2012).

Unfortunately it is this component that Nottingham performs particularly badly on. Nottingham is the lowest ranked extended core city. A UKCI Outcome index value of 93.2 indicates that Nottingham is performing well below the other cities in this regard, with Sheffield the next worst performing core city (UKCI Outcome index 96.9). Nottingham is the 295th ranked locality in this regard nationally, and is 111 places below Sheffield (ranked 184th in 2014).

Table 6: UKCI Outcome Index 2011 and 2014 for Extended Core Cities

Extended Core City Outcome Rank 2014	City	UKCI Outcome Index 2014	Rank 2014 (of 379)	UKCI Outcome Index 2011	Rank 2011 (of 379)
1	Edinburgh, City of	104.9	55	103.1	70
2	Bristol, City of	100.5	113	99.9	128
3	Manchester	100.0	120	99.0	144
4	Glasgow City	99.9	122	97.5	182
5	Cardiff	99.7	128	98.1	163
6	Birmingham	98.6	151	98.1	164
7	Liverpool	98.2	158	98.5	158
8	Leeds	98.0	162	98.6	157
9	Newcastle upon Tyne	97.4	174	97.1	190
10	Sheffield	96.9	184	96.8	197
11	Nottingham	93.2	295	94.4	268

Source: Huggins and Thompson (2013b)

Note: UK average = 100

The UKCI Outcome index performance of Nottingham is also worsening over time. It has fallen 27 places from 268th in 2011. This compares to most of the other extended core cities, which are maintaining their relative positions or improving them. In the case of Glasgow, for example, the city is now the 4th ranked extended core city in terms of the UKCI Outcome index, and has improved its national ranking by 60 places from 182nd in 2011 to 122nd in 2014. This has left it with an UKCI Outcome index value of 99.9 in 2014, just below the UK average.

The change in competitiveness of Nottingham relative to the extended Core Cities group between 2006 and 2014

The analysis below considers how Nottingham's competitiveness has changed relative to that of the other extended Core Cities between 2006 and 2014. The figures for 2006 are drawn from the UKCI report for 2008 (Huggins and Izushi, 2008). The choice of years is to allow an examination of the change in competitiveness from before the financial crisis to the current time. Although UKCI values and UKCI component index values are reported, which allow comparison with the UK average competitiveness, the main aim is to compare the relative trajectories of the extended Core Cities. This may enable the identification of which cities can give the best guidance for other large cities looking to improve their competitiveness as cases of best practice.¹⁹ Although of course experiences of other cities must be placed within their own individual contexts and successful policies cannot be just 'cut and pasted' in the hope of improving the competitiveness of lagging cities (Hospers, 2005; 2006).

Table 7 below indicates that in terms of the UKCI there has been little change in the relative competitiveness of the extended Core Cities. The cities are listed by change in extended core city rank and then by change in UKCI value. Only Glasgow and Cardiff have seen any change in their

¹⁹ It is not possible to analyse the rankings of the cities on a national basis as rearrangements of administrative boundaries have led to some localities being merged over the period covered making the rankings inconsistent.

extended core city rankings between 2006 and 2014. It is interesting that both of these cities are in devolved regions, but whilst the experience of Glasgow in a devolved Scotland has been positive with a rise of two ranking places from 6th to 4th over the period, the opposite is true of Cardiff with a fall from 4th to 6th over the same period.

Table 7: Change in Extended Core City UKCI Rankings 2006 to 2014

Ranking by Change	City	2014	Extended Core City UKCI Rank 2014	2006	Extended Core City UKCI Rank 2006	Change in Rank
1	Glasgow City	100.8	4	96.5	6	+2
2	Liverpool	90.2	11	84.8	11	0
3	Edinburgh, City of	115.6	1	112.9	1	0
4	Manchester	102.7	3	101.5	3	0
5	Leeds	98.9	5	99.0	5	0
6	Sheffield	90.2	10	90.6	10	0
7	Newcastle upon Tyne	93.2	7	93.9	7	0
8	Bristol, City of	106.6	2	107.7	2	0
9	Birmingham	90.5	9	93.0	9	0
10	Nottingham	90.8	8	93.6	8	0
11	Cardiff	96.9	6	100.9	4	-2

Source: Huggins and Thompson (2013b)

Note: UK average = 100

Nottingham although not changing its position among the extended Core Cities has with the exception of Cardiff, seen the largest fall in its competitiveness relative to the UK average. It is worth noting that although Nottingham is now in a group with cities such as Liverpool in terms of competitiveness, their trajectories suggest that their performance is moving in opposite directions. Liverpool in 2006 lagged all the extended core cities by some margin with a UKCI of 84.8, but if its resurgence continues (Parkinson, 2008), it could surpass Nottingham and other less competitive extended core cities in the near future.

Changes in the individual components of the UKCI will help understand where some of this lost relative competitiveness is attributable to. Table 8 below indicates that Nottingham has not seen a fall in its extended core ranking with regard to the UKCI Inputs index. However, as with the UKCI, Nottingham has seen its position relative to the UK average slip a little with its UKCI Inputs index falling from 83.7 in 2006 to 81.1 in 2014.

Table 8: Change in Extended Core City Input Rankings 2006 to 2014

Ranking by Change	City	2014	Extended Core City Input Rank 2014	2006	Extended Core City Input Rank 2006	Change in Rank
1	Newcastle upon Tyne	85.9	7	84.4	9	+2
2	Glasgow City	94.4	5	89.6	6	+1
3	Leeds	96.5	4	94.6	5	+1
4	Manchester	103.4	3	98.5	3	0
5	Liverpool	79.8	11	75.2	11	0
6	Bristol, City of	111.8	2	110.3	2	0
7	Edinburgh, City of	117.8	1	119.3	1	0
8	Nottingham	81.1	10	83.7	10	0
9	Sheffield	84.4	8	86.3	7	-1
10	Birmingham	82.6	9	85.9	8	-1
11	Cardiff	92.5	6	97.6	4	-2

Source: Huggins and Thompson (2013b)

Note: UK average = 100

Newcastle-upon-Tyne has climbed the most places, climbing from 9th to 7th over the 2006 to 2014 period. However, this reflects falls in UKCI Input index values for cities such as Sheffield (84.4 in 2014 compared to 86.3 in 2006) and Birmingham (82.6 in 2014 compared to 85.9 in 2006) as much as it does its own improvement relative to the UK average (Newcastle-upon-Tyne UKCI Input index in 2014 is 85.9 compared to 84.4 in 2006). Cardiff has seen the largest fall in both extended core city ranking, dropping from 4th to 6th between 2006 and 2014, and its position relative to the UK average (UKCI Input index 2014 is 92.5, but was 97.6 in 2006).

There are been more changes in the UKCI Output index over the last eight years. Three of the extended Core Cities group have improved their position, Glasgow, Liverpool and Nottingham. Nottingham climbs two places from 8th in 2006 to 6th in 2014. However, it should be noted that this does not reflect an improvement in Nottingham's UKCI Output index relative to the UK average as its value actually falls to 98.8 in 2014 compared to 100.2 in 2006 when Nottingham was actually above the UK average. Instead Nottingham has gained relatively at the expense of other cities such as Newcastle upon Tyne and Cardiff which have seen even greater falls in their UKCI Output index values over the period.

Table 9: Change in Extended Core City Output Rankings 2006 to 2014

Ranking by Change	City	2014	Extended Core City Output Rank 2014	2006	Extended Core City Output Rank 2006	Change in Rank
1	Glasgow City	108.6	2	103.5	6	+4
2	Liverpool	93.4	9	84.3	11	+2
3	Nottingham	98.8	6	100.2	8	+2
4	Edinburgh, City of	124.8	1	119.0	1	0
5	Leeds	102.4	5	103.5	5	0
6	Manchester	104.9	4	104.7	3	-1
7	Sheffield	89.7	11	89.7	10	-1
8	Newcastle upon Tyne	96.6	8	101.2	7	-1
9	Birmingham	90.7	10	95.8	9	-1
10	Bristol, City of	107.7	3	113.7	2	-1
11	Cardiff	98.8	7	109.5	4	-3

Source: Huggins and Thompson (2013b)

Note: UK average = 100

With regard to the outcomes enjoyed by the populations of the cities there are considerable changes in the rankings of the extended Core Cities. In the case of Nottingham there has been a large fall in the UKCI Outcome index value from 97.5 in 2006 to 93.2 in 2014. This means that Nottingham has fallen five places from 6th in 2006 to 11th in 2014.

Table 10: Change in Extended Core City Outcome Rankings 2006 to 2014

Ranking by Change	City	2014	Extended Core City Outcome Rank 2014	2006	Extended Core City Outcome Rank 2006	Change in Rank
1	Cardiff	99.7	5	95.9	10	+5
2	Liverpool	98.2	7	95.6	11	+4
3	Glasgow City	99.9	4	96.7	7	+3
4	Edinburgh, City of	104.9	1	101.2	2	+1
5	Bristol, City of	100.5	2	99.3	3	+1
6	Birmingham	98.6	6	97.7	5	-1
7	Newcastle upon Tyne	97.4	9	96.5	8	-1
8	Sheffield	96.9	10	96.2	9	-1
9	Manchester	100.0	3	101.3	1	-2
10	Leeds	98.0	8	99.1	4	-4
11	Nottingham	93.2	11	97.5	6	-5

Source: Huggins and Thompson (2013b)

UK average = 100

It appears that over the 2006 to 2014 period Nottingham has seen a fall in its competitiveness as captured by all three components of the UKCI. In some cases this has led to large falls in rankings compared to other core cities. Even where Nottingham has improved its extended core city rankings (the output index) this has been where other cities have seen a greater fall in competitiveness relative to the UK average. It appears that the relatively weak performance is manifesting itself most strongly in a rapidly declining UKCI Outcome index over the period. This could hinder recovery as high quality well-remunerated jobs are a key element in attracting and retaining creative and skilled workers who are key for the long run success of cities (Mellander et al., 2011).

Interestingly although Liverpool is still the least competitive extended core city it is perhaps the city most clearly on an improving trajectory. Although, care must be taken in accounting for idiosyncratic factors there may be lessons for those less competitive Core Cities as to what actions may increase their competitiveness relative to the UK average.

The competitiveness of Nottingham relative to other localities in the D2N2 LEP in 2014

Something that is common to all large cities is that they will be strongly linked to the localities that surround them. In particular, many of those employed by firms within cities such as Nottingham are likely to live in the less densely populated areas surrounding the city and commute to work each day (see Section 4). This means that considering the competitiveness of Nottingham in isolation may not be appropriate. Equally within the LEP covering Nottingham is another city, Derby. This provides another more local comparator, but there is also a case for complementary resources to be present in the two cities. For example, if the graduates of the Nottingham universities were to find employment in Derby (or the reverse), but live in areas surrounding Nottingham each part of the LEP area will be contributing to the economic development and prosperity of the LEP as a whole.

Table 11 presents the UKCI for 2014 for the D2N2 localities. As a whole the LEP is clearly below the national competitiveness. Huggins and Thompson (2013a) found in 2013 that D2N2 was ranked 28th out of 39 LEPs with a UKCI of 92.1. The World Competitiveness Index of Regions (WCRI) considers regional competitiveness on a global scale (Huggins et al., 2014). It finds that the East Midlands is ranked 144th out of 546 regions examined in developed, emerging and developing economies around the world, which is on a par with other non-capital regions of European and North American economies.

Table 11: UKCI 2011 and 2014 for D2N2 Localities

D2N2 UKCI Rank 2014	City	UKCI 2014	Rank 2014 (of 379)	UKCI 2011	Rank 2011 (of 379)
1	Derby	100.5	115	99.1	125
2	Derbyshire Dales	98.5	125	99.5	120
3	Rushcliffe	98.1	128	96.5	145
4	Nottingham	90.8	208	92.0	197
5	High Peak	90.7	211	92.1	195
6	Newark and Sherwood	88.4	243	90.6	212
7	Amber Valley	88.3	245	87.7	256
8	South Derbyshire	88.1	248	88.9	239
9	Gedling	87.3	258	84.2	300
10	Chesterfield	87.2	259	87.7	255
11	Broxtowe	87.1	260	88.1	252
12	Bassetlaw	85.1	293	86.8	267
13	Erewash	84.9	295	83.3	311
14	North East Derbyshire	80.6	348	82.1	324
15	Bolsover	79.8	358	81.0	340
16	Ashfield	77.5	369	78.6	365
17	Mansfield	76.5	374	76.4	375

Source: Huggins and Thompson (2013b)

UK average = 100

Nottingham is the ranked 4th within the D2N2 localities. The most competitive D2N2 locality is the neighbouring city of Derby. This city, with its strong aerospace and engineering cluster (Smith and Ibrahim, 2006), has a UKCI just above the UK average at 100.5, considerably ahead of Nottingham (UKCI 2014 of 90.8). The second and third most competitive localities are the Derbyshire Dales and Rushcliffe. These localities are more rural and many inhabitants may commute to Derby and Nottingham respectively and therefore their success is tied to those cities they effectively serve. However, it is clear that many localities in the D2N2 LEP are less successful.

Table 12 emphasises the role that Rushcliffe and the Derbyshire Dales may play in providing inputs for the economies of Nottingham and Derby²⁰. These two localities are the only two in the D2N2 LEP with UKCI Input indices above the UK average (Rushcliffe 111.6 and Derbyshire Dales 107.3). This means that both are in the top 100 most competitive localities in terms of the inputs available to the local economy. Derby (UKCI Input index 85.0) and Nottingham (UKCI Input index 81.1) by contrast are both outside the top 200 localities with Derby ranked 239th and Nottingham 271st.

²⁰ The Annual Population Survey (2011) based estimates of commuting flows suggest 20,199 people commute from Rushcliffe to Nottingham, which is nearly as many commute within Rushcliffe 23,158. Only 3511 people were estimated to commute in the other direction from Nottingham to Rushcliffe. This pattern is less pronounced for the Derbyshire Dales, but 3071 commute to Derby. What can't be captured from this data is the type of labour in terms of skills and occupations who are commuting from each area.

Table 12: UKCI Input Index 2011 and 2014 for D2N2 Localities

D2N2 Input Rank 2014	City	UKCI Input Index 2014	Rank 2014 (of 379)	UKCI Input Index 2011	Rank 2011 (of 379)
1	Rushcliffe	111.6	87	109.7	87
2	Derbyshire Dales	107.3	96	111.5	81
3	High Peak	98.1	142	100.3	133
4	Newark and Sherwood	87.7	213	90.9	192
5	South Derbyshire	85.9	231	89.3	202
6	Derby	85.0	239	82.9	253
7	Amber Valley	83.6	251	82.9	255
8	Broxtowe	82.9	254	86.2	223
9	Gedling	82.2	260	84.7	235
10	Erewash	81.2	270	79.0	283
11	Nottingham	81.1	271	82.9	254
12	Chesterfield	80.7	277	81.7	265
13	North East Derbyshire	75.9	314	77.2	297
14	Bassetlaw	75.0	321	81.6	267
15	Bolsover	68.9	353	69.6	350
16	Mansfield	65.6	368	62.1	373
17	Ashfield	59.5	377	60.7	375

Source: Huggins and Thompson (2013b)

Note: UK average = 100

Other localities with smaller urban areas such as Mansfield (UKCI Input index 65.6) and Ashfield (UKCI Input index 59.5) on the other hand have very low UKCI Input indices that are well below the UK average.

The relatively high UKCI Output index for Nottingham found previously can therefore be partly understood in the context of being served by other localities with regard to inputs. However, other extended core cities will probably be similarly served by surrounding areas, but to lesser or greater extents than Nottingham. As Table 13 shows Derby (UKCI Output index 105.7) and Nottingham (UKCI Output index 98.8) perform relatively well in terms of the output component of the overall UKCI. The other localities in the D2N2 LEP lag considerably with the Derbyshire Dales the next best (UKCI Output index 92.5). Nottingham although just outside the top 100 localities nationally (ranked 106th) is still lagging Derby by 45 places and as outlined above appears to be losing its strength in this area over time.

Table 13: UKCI Output Index 2011 and 2014 for D2N2 Localities

D2N2 Output Rank 2014	City	UKCI Output Index 2014	Rank 2014 (of 379)	UKCI Output Index 2011	Rank 2011 (of 379)
1	Derby	105.7	61	105.3	66
2	Nottingham	98.8	106	99.2	103
3	Derbyshire Dales	92.5	153	93.3	155
4	Chesterfield	87.7	213	87.3	219
5	Newark and Sherwood	87.0	220	86.5	225
6	Amber Valley	86.1	227	82.6	281
7	Bassetlaw	85.9	229	85.0	243
8	Rushcliffe	85.8	230	83.5	264
9	Ashfield	84.4	250	84.0	259
10	Broxtowe	82.5	265	83.9	260
11	High Peak	81.4	288	80.7	300
12	Bolsover	80.8	301	82.8	276
13	South Derbyshire	80.7	303	79.1	318
14	Erewash	79.2	319	78.1	336
15	Gedling	78.5	329	78.8	324
16	Mansfield	77.9	332	79.1	319
17	North East Derbyshire	74.1	366	73.3	367

Source: Huggins and Thompson (2013b)

Note: UK average = 100

The biggest difference between Derby and Nottingham found in the UKCI components is in terms of the UKCI Outcomes index. Although Derby achieves a UKCI Outcomes index value of 112.1 ranking it 16th in the UK, Nottingham is only just in the top 300 localities (ranked 295th) with a UKCI Outcome index value of 93.2.

Table 14: UKCI Outcome Index 2011 and 2014 for D2N2 Localities

D2N2 Outcomes Rank 2014	City	UKCI Outcomes Index 2014	Rank 2014 (of 379)	UKCI Outcomes Index 2011	Rank 2011 (of 379)
1	Derby	112.1	16	110.5	22
2	Gedling	102.5	79	89.2	363
3	South Derbyshire	98.4	155	98.9	147
4	Rushcliffe	98.0	161	97.5	181
5	Broxtowe	96.3	208	94.4	264
6	Derbyshire Dales	96.0	211	94.4	262
7	Amber Valley	95.6	224	98.3	162
8	Bassetlaw	95.0	244	94.2	273
9	Erewash	94.8	253	93.4	288
10	Chesterfield	93.5	286	94.5	261
11	Nottingham	93.2	295	94.4	268
12	High Peak	93.2	296	96.2	222
13	North East Derbyshire	92.5	309	97.0	194
14	Ashfield	91.1	340	93.9	279
15	Bolsover	90.6	341	91.6	332
16	Newark and Sherwood	90.4	344	94.4	263
17	Mansfield	87.2	376	89.8	360

Source: Huggins and Thompson (2013b)

Note: UK average = 100

Some of those localities around Nottingham, which may provide labour inputs, such as Rushcliffe (UKCI Outcomes index 98.0), but also Gedling (UKCI Outcomes index 102.5), perform more strongly. However, for those living in Nottingham it is not generating positive outcomes to the same extent.

The analysis of competitiveness of the D2N2 localities shows an interesting pattern. The two cities of Derby and Nottingham have a key role in the competitiveness of other neighbouring localities. This could make the case for economic and development decision making being taken at a larger scale given the interdependencies that are apparent. However, there are also localities in the D2N2 LEP, which are not independently competitive and do not appear to gain much from the core city in their local area. It is unclear to what extent better transport links and other infrastructure investments could strengthen links and widen the cities' area of influence further.

UK Competitiveness Benchmarking: Summary

- The UK Competitiveness Index provides a benchmarking of the UK's localities. It is an integrated measure of competitiveness focusing on both the development and sustainability of businesses and the economic welfare of individuals. In 2014 the level of competitiveness on this measure in Nottingham was below the national average and Nottingham was ranked 208th out of 379 localities in the UK.
- In 2014 on the UKCI Nottingham was ranked in the middle of the Core Cities group. Competitiveness in most of the cities in this group is below the UK average.
- Locally, Nottingham is ranked 4th among the constituent districts of the D2N2 Local Enterprise Partnership, behind Derby, Derbyshire Dales and Rushcliffe.
- Between 2006 and 2014 the indices suggest that Nottingham, while maintaining a stable rank within the Core Cities group, has lost competitiveness relative to the UK.

6. EU Benchmarks

As a Core City, Nottingham is 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.²¹ 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.

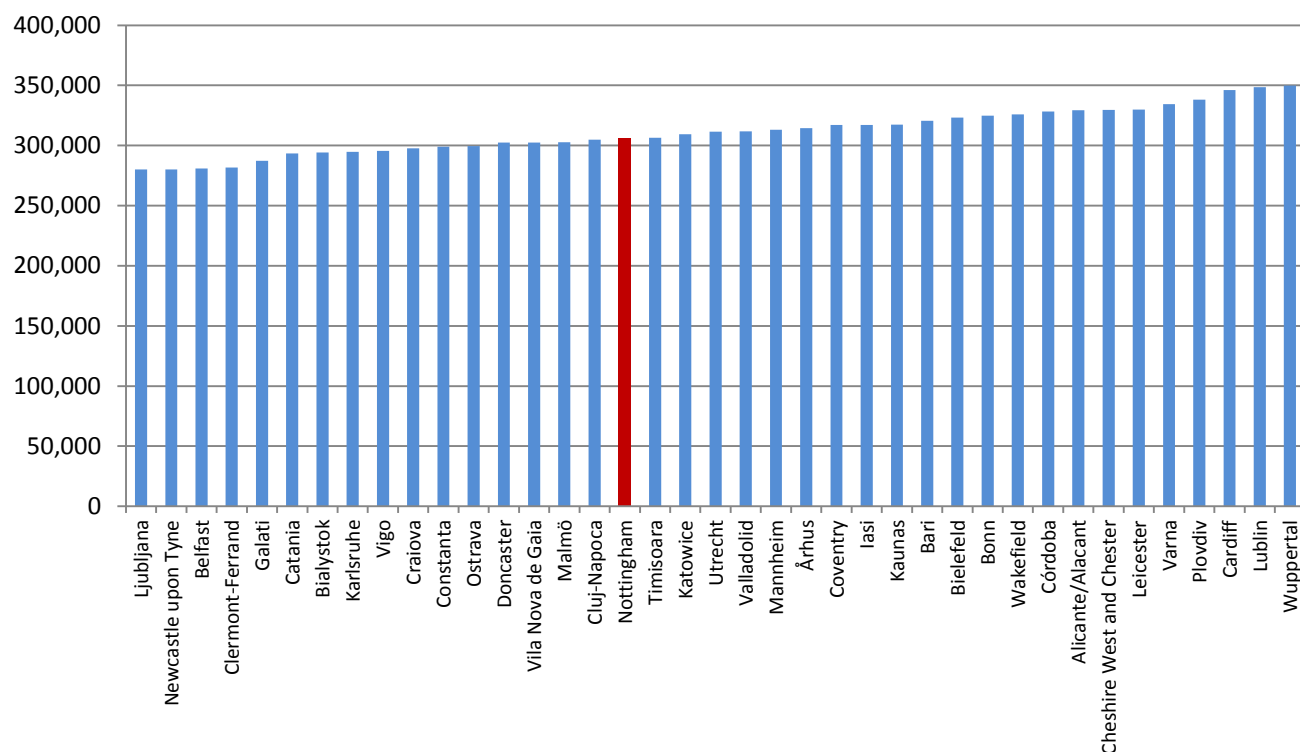
This section presents an overview of Urban Audit cities with similar sized populations to Nottingham, looking at GDP/GVA per capita and unemployment rates, before exploring Nottingham's relative strengths and weaknesses in more detail through a series of EU city case studies.

Chart 21 illustrates the position of Nottingham (Unitary Authority) compared to other small and medium sized European Cities with resident populations between 280,000 and 350,000, based on estimates for 2011 (note that the population of Nottingham is therefore lower than the 2013 estimate cited earlier in this report). The spatial units shown in the chart are 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 Belfast, Karlsruhe and Malmö, but smaller than Bonn, Cardiff and Lublin.

²¹ Eurostat, 'Eurostat Regional Yearbook', 2011.

Chart 21: European Cities (administrative areas with total resident population 280,000-350,000), 2011



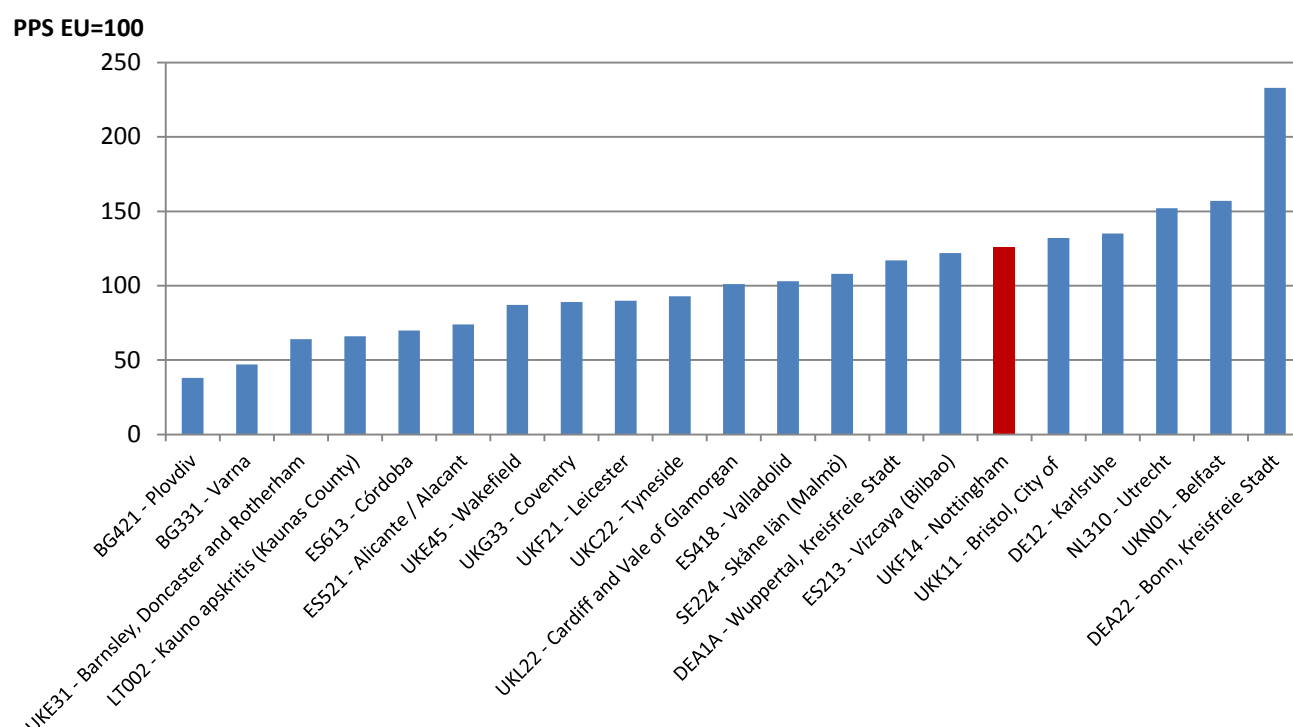
Source: Eurostat, 'Population and living conditions in Urban Audit cities (core cities), 2011', 2014.

Chart 22 presents estimates of Gross Domestic Product (GDP) per capita (EU average= 100) for 2011 in Purchasing Power Standards (PPS)²², which gives an idea of the relative economic output. The areas shown on the chart are equivalent NUTS3 areas for a sample of small and medium-sized EU cities (NUTS3 is the smallest geographical level at which GDP data is available).

GDP per capita for Nottingham was estimated to be 26% higher than the EU average in 2011. A number of small to medium sized German cities have significantly higher levels of GDP per capita, including Karlsruhe (35% higher than the EU average) and Bonn (133% higher). Nottingham has a higher GDP per capita compared to many similar sized cities in Spain (including Córdoba, Alicante, Valladolid and Bilbao) and central and eastern Europe (such as Plovdiv and Varna in Bulgaria and Kaunas in Lithuania).

²² 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.

Chart 22: Output in GDP per capita (PPS) for EU Small and Medium Sized Cities/NUTS3 Areas (EU=100), 2011

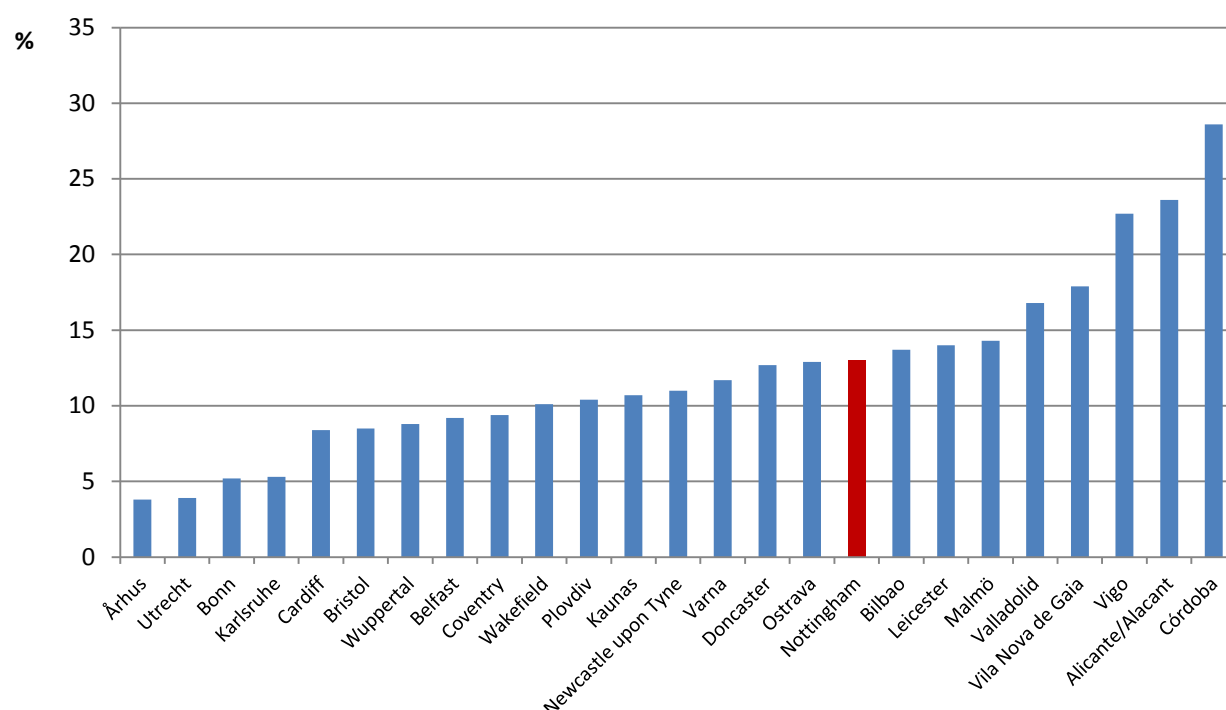


Source: Eurostat, 'Gross domestic product (GDP) at current market prices at NUTS level 3', 2011 Purchasing Power Standard (PPS) per inhabitant in percentage of the EU average (EU=100), 2014.

Despite the UK having lower unemployment rates nationally compared to most of its EU counterparts, Chart 23 shows that Nottingham City is towards the higher end of the distribution for the small to medium sized cities for which data is available.

In 2011, the unemployment rate for Nottingham was 13%. This was significantly lower than in southern European cities, such as Valladolid, Vigo, Alicante and Córdoba in Spain (with unemployment rates of 16.8%, 22.7%, 23.6% and 28.6% respectively). However, many northern European cities, particularly in Germany, had far lower unemployment rates – including Bonn and Karlsruhe, where unemployment was 5.2% and 5.3% respectively in 2011. Aarhus, in Denmark, and Utrecht, in the Netherlands, experienced very low rates of unemployment, at 3.8% and 3.9% respectively in 2011. This suggests that some cities in northern Europe have maintained lower levels of unemployment compared 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 23: Unemployment (% 16+) Small and Mid-Sized European Cities, 2011



Source: Eurostat, 'Labour Market – Cities and Greater Cities, 2011', 2014.

To help inform discussion about possible policy responses to the challenges and opportunities identified, this section provides three cases studies of European cities, drawn from the above sample. The cases have been selected where there are potential learning points for partners interested in Nottingham's development, including common strengths and challenges and specific initiatives or interventions.

Case Study 1: Karlsruhe

In 2009, Nottingham and Karlsruhe celebrated the 40th anniversary of their twinning partnership. Karlsruhe is a medium-sized city on the river Rhine, in the south western German state of Baden-Wurttemberg. It has a slightly smaller population than Nottingham, but a higher GDP per head and very significantly lower unemployment.

The relationship with Karlsruhe is a key part of the European element of the Nottingham International Strategy – which aims to increase economic ties with both the city of Karlsruhe and the wider Baden-Wurttemberg region, particularly as it relates to key sectors of mutual interest: such as digital content; low carbon and environmental goods and services (LCEGS); and biotechnology.

Karlsruhe has a number of well-established specialisms leading to strengths in emerging technologies. For example, Karlsruhe has the largest oil refinery in Germany and has developed related strengths in energy generation and distribution, which lead to strong interests in green energy technologies. A strong Research & Development base, linked to Higher Education specialisms, have led Karlsruhe to be described as the 'heart of Europe's silicon valley'. The world

famous Karlsruhe Institute of Technology (KIT) is one of the largest and most prestigious research and education institutions in northern Europe, with leading academic research in engineering and the natural sciences alongside a pipeline of commercial spin-offs (especially in energy R&D, including applications in automotive manufacturing – Karl Benz, the inventor of the automobile, was a KIT alumni).

Employment in commercial R&D accounts for a significant proportion of overall employment in Karlsruhe. Connections to public sector anchor institutions – such as the city’s four hospitals – contribute to other R&D and manufacturing specialisms, such as biotechnology and medical devices. Other public sector institutions that contribute to the quality of employment in Karlsruhe include the two highest courts in Germany, the Federal Constitutional Court and the Federal Court of Justice.

There are strong collaborative links between Karlsruhe and Nottingham, for example with the University of Nottingham and research in clean energy generation (building on Nottinghamshire’s historic background in coal mining and current strengths in energy generation). Karlsruhe has been the destination for a number of recent UK Trade & Investment and Invest in Nottingham visits and exchanges.

Case Study 2: Malmö

Malmö is the commercial centre of southern Sweden (in the sub-region of Skåne län) and has a population slightly smaller than Nottingham, although it is the third largest city in Sweden. 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 2011 GDP per head PPS estimate that was only 8% higher than the EU average. Furthermore, the unemployment rate in Malmö is higher than in Nottingham, at 14.3% in 2011.

Malmö has a similar industrial heritage to Nottingham. It was one of the first areas in Sweden to industrialise, with important sectors including ship-building and textiles. In the 1970s, Malmö’s manufacturing sectors were heavily affected by recession – with ship-building in particular going into terminal decline: culminating in the closure of the city’s largest employer, Kockums shipyard, in 1986. In the early 1990s, the Swedish financial crisis resulted in further significant job losses (particularly professional jobs) and Malmö experienced a period of population decline.

From the mid-1990s, the city responded to these shocks with strong municipal leadership from the then Mayor and joint-working between the main political parties, public institutions and private sector partners – including in the education, training, architecture and construction sectors. The OECD cites Malmö as an exemplar for collaborative working. ‘Vision 2015’ was a shared development strategy initiated by the Municipal Executive Board in early 1995 and developed and

implemented by a broad partnership. It set out linked actions for inward investment, social inclusion, employment and skills, housing, the physical regeneration of the harbour area, and the establishment of a university.

With the implementation of the Vision 2015 strategy, the foundation of Malmö University in 1998 and the opening of the Øresund Bridge to the Danish capital of Copenhagen in 2000, the city has received major inward investment and has a growing, ethnically diverse and young population – including an increasing number of students. Of relevance to emerging sectors identified in the Nottingham Growth Plan, 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.

Local strengths in graphic design and digital content draw on an increasingly high-profile creative and cultural sector, with a world famous contemporary art museum (the Malmö Konsthall – one of the biggest galleries of contemporary art in Europe) and the innovative Bryggeriet ‘skate school’ – a secondary school built alongside one of the largest skateparks in Europe that teaches mainstream subjects alongside fine art, digital media, photography etc., engaging young people from all over Scandinavia who may struggle to progress in traditional education by embedding academic subjects alongside their interests and passions. Malmö - with its links to Copenhagen via the Øresund Bridge - is also a key location in the international hit television series ‘The Bridge’ (‘Broen’), a Swedish-Danish collaboration that has since been remade as an Anglo-French series.

Case Study 3: Utrecht

Utrecht is located in the Dutch province of Utrecht and has a larger population than Nottingham. Utrecht is the fourth largest city in the Netherlands and had a GDP per capita PPS that was estimated to be 52% higher than the EU average in 2011. It also has one of the lowest unemployment rates in the sample of cities used in this report, at 3.9% in 2011.

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 km², which is part of the urban conurbation called the Randstad (which includes Amsterdam, Rotterdam and the Hague).

7. Conclusions

The analysis in this report demonstrates some common issues for the Core Cities. All have been hit hard by the recession. Most, including Nottingham, appear to be showing signs of recovery. They also share a centre-periphery relationship with their surrounding areas, with significant commuting inflows from those areas. Nottingham is in line with this picture, although the differences between the labour market of the Nottingham City UA and the surrounding districts in the GNP area suggest more significant differences than some other cities – especially in the terms of the skills profile.

Addressing the skills challenge is one of the three ‘actions for growth’ in the Nottingham Growth Plan, alongside removing the barriers to enterprise and developing a modern infrastructure. Nottingham does not appear to lag the national average in terms of key measures of enterprise, and the latest data also suggests that business birth and death rates are recovering. However, levels of enterprise activity in Nottingham do lag leading Core Cities such as Manchester. In the case of skills – both in terms of demand and supply – Nottingham stands out as experiencing significant challenges, despite its relatively young and growing population.

These skills challenges can be closely associated with the current industrial structure of Nottingham. Although the service sector dominates employment in all Core Cities (and all have a relatively low proportion of manufacturing employment), there appears to be a relative concentration of low value services and an under-representation in Financial & Insurance and Professional, Scientific and Technical services – especially when compared to Core Cities like Birmingham, Manchester and Leeds. This is likely to result in a lower overall demand for managerial and professional jobs, and thus a lower demand for higher level skills.

This picture is different for the wider GNP area however. Rushcliffe and Broxtowe in particular have relatively highly skilled resident populations (with more than half of the economically active population of Rushcliffe educated to at least the equivalent of a degree). Commuters from these areas are likely to be working in many of the managerial and professional jobs within the Nottingham UA area. The lower skills profile and occupational structure of residents within the City suggests that they are likely to be relatively more reliant on low skill service sector jobs. Although the range of activities set out in the Growth Plan (education, training, placements, linking unemployed people to job opportunities, etc.) are very important, both to ensure that individuals have the skills necessary to access and progress within employment and to ensure employers get the skills they currently need, supply-side interventions alone will not fully address the problem. The demand for skills, linked to the structure of employment, is a challenge not just for the quality of employment and rates of pay, but also vulnerability to future shocks. The experience of the recent recession suggests that low skill jobs are particularly vulnerable across all sectors of the economy.

In order to increase the city’s overall competitiveness (increasing enterprise, innovation, international investment and trade) and increase the demand for highly skilled jobs, the Nottingham Growth Plan identifies a number of sectors where the city has a potential advantage. These emerging industries are:

- Digital content (including production and publishing/broadcasting of video, film, music, photography and TV and the development of information and analytical products, games and software);
- Life Sciences (including medical technology and devices, biotechnology, pharmaceuticals and healthcare); and
- Clean technology/low carbon environmental goods and services.

All three broad growth sectors combine public sector (e.g. Higher Education and medical) R&D, capital investment and expertise with the presence of appropriately skilled graduates, significant private sector strengths and public-private knowledge networks.

It will therefore be important to work with partner organisations, including key ‘anchor institutions’ such as the two universities, the hospital trust, private sector employers and cultural institutions, to build on and implement the Growth Plan in a way that builds on the experiences of similar cities. The concept of anchor institutions draws from experiences in the US, where the municipal authorities have worked with key public and private sector actors – notably ‘eds and meds’ (universities, large colleges and hospitals) but also major businesses and sports, cultural and heritage assets – to deliver large-scale, joined-up regeneration and development plans. Examples include the University of Pennsylvania and its impact on the Philadelphia economy and the partnership working between the Henry Ford Hospital, Detroit Medical Centre and Wayne State University which have achieved significant impacts on the extremely challenged situation in Detroit.

Comparing similar sized European cities, UK cities tend to have higher unemployment than the national average, in common (although not to the same extent) with cities in southern Europe. Northern European cities, especially in western Germany and the Netherlands, tend to have lower unemployment and higher GDP per head than their respective national averages. Karlsruhe and Utrecht, in Germany and the Netherlands respectively, are useful case studies as they have experienced consistently low levels of unemployment and have strong links between Higher Education and private sector innovation, where R&D intensive sectors have become very significant local employers – rather than providing only a small number of specialist jobs. Both cities also have strengths in all three priority sectors identified in the Growth Plan.

Malmö is recommended as a case study because of the significant economic shocks experienced by the city in the 1970s and 1990s. Through an integrated economic development, skills, infrastructure and housing strategy (‘Vision 2015’), delivered by a broad range of public and private sector partners, Malmö has since developed strengths in a number of key sectors of interest to Nottingham – including biotechnology and pharmaceuticals, design and the built environment, and digital content and the wider creative industries. Malmö has also benefited from the establishment of a university in 1998, contributing to reversing its population decline, with students becoming an important part of a young, growing population. The role of anchor institutions in both the US and Europe, particularly in the case of Malmö, demonstrate that the successful development and implementation of a strategy for change cannot be the sole responsibility of local government – a range of actors have both an interest and a responsibility to engage.

Nottingham already has a strongly growing population, with a high proportion in the working age group, alongside falling unemployment, and a series of major infrastructure projects, both nearing

completion and in the pipeline (the NET Phase II and the Midland Mainline electrification, for example). Nottingham's sector strengths are based on both well-established assets (e.g. healthcare and pharmaceuticals, drawing from the QMC hospital trust, research at the two universities, Biocity and the presence of Alliance Boots) and emerging local growth areas (e.g. digital content and game design). Nottingham has to effectively build on these opportunities – with a particular focus on skills as a key challenge – through engaging a broad partnership of both public and private anchor institutions and delivery bodies and both large and smaller employers.

Appendix: UK Competitiveness Indicators Methodology

The aim of the UKCI is to assess the relative economic competitiveness of regions and localities in the UK by constructing a single index that reflects, as fully as possible, the measurable criteria constituting place competitiveness. The UKCI consider that the competitiveness of localities and the competitiveness of firms to be interdependent concepts. Measuring such competitiveness, however, is no easy matter and, as indicators of national competitiveness have shown, cannot be reduced solely to notions of Gross Domestic Product (GDP) and productivity (Huggins, 2003).

Similarly, place competitiveness cannot be measured by ranking any one variable in isolation, since it is the result of a complex interaction between input, output, and outcome factors. Clearly, not all of these factors are readily measurable, given that as well as consisting of economic variables, they also include political, social and cultural parameters. However, since the focus of the UKCI is on relative competitive performance within the UK, the assumption can be made that these factors will have an identifiable effect on key economic measures. For example, the cultural differences between a traditional manufacturing economy and a knowledge-based economy should have an obvious bearing on their relative economic performance.

The key concern with the design process of the UKCI is to develop a series of indices incorporating data that are available and comparable at the local level, and that go some way towards reflecting the link between macro-economic performance and innovative business behaviour. Consideration also has to be given to the overall 'value' of indicators, and their relative effectiveness as performance measures. In particular, the interrelationships between the 'measure-chain' of inputs, outputs and outcomes, and the underlying ability of the index to be updated as frequently as possible, are of major significance.

Given the methodological parameters, a number of different modes of creating the index, and the variables to be included, have been considered. After testing, the 3-Factor model for measuring competitiveness as shown in Figure 1 is adopted. The 3-Factor model consists of a linear framework for analysing competitiveness based on: (1) input; (2) output; and (3) outcome factors.

In order to achieve a valid balance between each of the indicators, in terms of their overall significance to the composite index, each of the three measures - Measure 1: Inputs; Measure 2: Output; and Measure 3: Outcomes - are given an equal weighting, since it is hypothesised that each will be interrelated and economically bound by the other.

For each measure an index is calculated with a UK average base of 100, and the distribution range for each measure calculated (in the case of unemployment rates these values are inverted). As expected, it is found that some of the ranges have both a skewed and a long distribution range, the result being that these variables would have an overly strong influence on the composite index. Therefore, each datum is transformed into its logarithmic form to produce distributions that are closer to the 'normal' curve, and that dampen out extreme values so that no single variable distorts the final composite score.

It is the case that the untransformed values are no more real or 'natural' than the transformed ones. However, in order to reflect as far as possible the scale of difference in place competitiveness, the composite scores are 'anti-logged' through exponential transformation. This is achieved by

calculating the exponential difference between the mean logged and un-logged index of the fifty localities nearest the overall UK mean of 100. This resulted in a mean exponential difference slightly less than the cubed-mean of the logged index. For example, a logged index of 104 produced an unlogged index of approximately 112.5 (104^3 divided by 100^2) and a logged index of 90 an unlogged index of approximately 73 (90^3 divided by 100^2).

Therefore, bearing in mind the aim of producing a frequently repeatable index, the exponential cube transformation approach is adopted. Given the above criteria and methodology, a composite competitiveness index is calculated for localities in the UK.

Figure A1: The 3 Factor Model Underlying the UK Local Competitiveness Index

Input factors
<p>Economic Activity Rates</p> <p>Business Start-up Rates per 1,000 Inhabitants</p> <p>Number of Business per 1,000 inhabitants</p> <p>Proportion of Working Age Population with NVQ Level 4 or</p> <p>Proportion of Knowledge-Based Business</p>
↓
Output factors
<p>Gross Value Added per head at current basic prices</p> <p>Productivity - Output per Hour Worked</p> <p>Employment Rates</p>
↓
Outcome factors
<p>Gross weekly pay</p> <p>unemployment rates</p>

Source: Huggins and Thompson (2013b)

Local district and authority area level GVA estimates are produced by assuming that the productivity within the corresponding NUTS 3 areas (within which they are situated and for which there is published GVA data) is the same as that for the smaller local areas. The estimates are calculated by multiplying NUTS 3 productivity (expressed as output per worker) by the number of workers within an area. This produces a total output figure from which output per head is calculated by dividing total output by total population.

Output per head = (NUTS 3 productivity*District Employment) /District Population.

In total, 379 local areas are benchmarked across the 11 regions of Great Britain²³.

²³ The Isles of Scilly are not included due to issues of data availability.

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