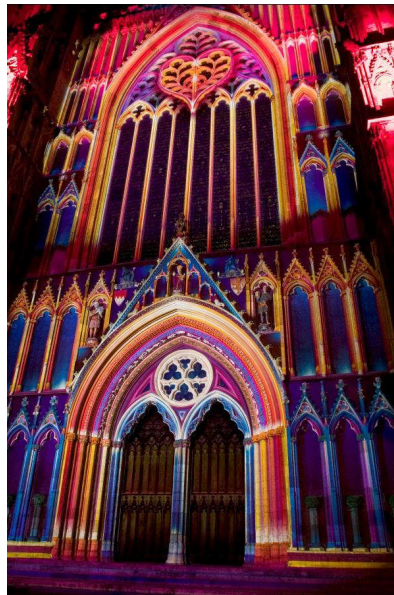


# Economic and Retail Growth Analysis and Visioning Work Economic Baseline Report

A Report by ekosgen for the City of York Council

June 2013



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# 1 Introduction

## Introduction

This report forms part of the 'Economic and Retail Growth Analysis' work commissioned by the City of York Council, and undertaken by Drivers Jonas Deloitte, ekosgen and Oxford Economics. The purpose of the work is to provide the evidence base and an economic vision to underpin the new Local Plan for the City, including the role of the city centre in the York economy of the future. The objectives of the study are to:

- Positively identify the development needs of the City over the plan period, recognising the need to have sufficient flexibility to adapt to change.
- Create the foundation for an economic vision, and within that a vision for the City Centre, to be integrated into the new Local Plan.
- Set out a strategy for the promotion of a competitive City Centre, specifically to maximise the experience and overall dwell time.
- Set out a strategy to promote a diverse commercial / business base which reflects the individuality of York.

This report has been undertaken by ekosgen and provides the economic baseline assessment of York, and forms part of the supporting evidence to this wider piece of work to inform the new Local Plan. The report examines issues relating to population and demographics, the employment base, GVA and skills. It also provides a comparator analysis with a series of other UK cities, and examines some of the lessons learnt from other mid-size European cities. The report also makes use of economic forecasting data developed by Oxford Economics.

## Data used within the Report

The report draws on a variety of published data, including national datasets such as the Census, Mid-year population estimates and the Business Register and Employment Survey. The study examines the economy of the City as a whole, covering the local authority district area. Comparisons are made with the regional (Yorkshire and Humber) and UK where appropriate, and a series of UK and European comparators are also used.

## Structure of the Report

The report is structured as follows:

- Chapter 2 provides an introduction and overview of the York economy;
- Chapters 3–7 provide an assessment of the past performance and key trends in relation to the local economy and its workforce;
- Chapter 8 provides a comparator analysis to examine relative performance and lessons from a series of UK and European comparator cities.

- Chapter 9 provides an assessment of the economic projections for the City of York, and the potential implications in terms of floorspace requirements;
- Chapter 10 provides a summary of the key messages and conclusions from this analysis.

The report forms one of a series of reports as part of the Economic and Retail Growth Analysis study.

## 2 Overview of York Economy

### Introduction

The City of York has a rich heritage dating back to the Roman times. This remains important to this day, with the City's wealth of historic attractions proving the cornerstone of the City's visitor economy. The City grew as a major centre for the wool industry, and during the 19<sup>th</sup> Century its growth was based around the City becoming a hub within the national rail network as well as the growth of manufacturing. In more recent times, the City's economy has moved towards being based on a service industry including tourism and knowledge based industries.

The City has a number of key sector strengths. These include: the healthcare and bioscience sectors, environmental and bio-renewable technologies, IT digital companies, creative industries and financial and professional services. The University of York plays an important role both in terms of being a major employer in its own right and providing a skilled labour pool of graduates to serve the city's science, technology and professional services industries.

The City is now one of the highest skilled cities in the UK and is the country's third fastest growing<sup>1</sup> in population terms. It was also classed as the most resilient in the UK in research undertaken during 2011 by ekosgen, and is one of the UK's most attractive places to live and visit. This provides it with a number of strengths and the potential to become a competitive and leading city economy. It does however face a number of challenges too, particularly in relation to its high reliance on the public sector. Some key facts about the York economy are asset out below:

#### The York Economy – Key Facts

- The City economy now supports 110,000 jobs;
- York contributes £4bn of value to the national economy;
- The City attracts 7 million visitors per year;
- York tends to rank highly in various competitiveness indices – for example 13th out of 64 UK Cities in the Huggins UK competitiveness Index and sixth in the equivalent Centre for Cities index;;
- In York 33% of people are employed by the public sector (above average);
- It has lower than average enterprise and productivity levels, including a small number of business start ups and productivity of 85% of the national average;

<sup>1</sup> Centre for Cities, Cities Outlook (2012)

- Economic growth forecasts are modest - 0.75% GVA per annum by 2015.

In summary, whilst York has displayed a good economic performance in many areas, it now faces challenges including recent employment decline as well as the availability of commercial premises and housing supply.

Within "Reaching Further – York's Economic Strategy 2011-15", ambitious targets are established for York to become a top five UK city and a top ten mid-sized European City. The Economic Strategy sets the following vision for York:

#### Economic Vision for York

Our economic vision is for the City of York to become an international and enterprising city, and in time, the most competitive city of its size, not only in the UK but globally, leading to increased growth in the overall economy and jobs.

It provides five ambitions in order to realise this vision which are based around two underlying themes – international markets and an enterprising approach.

#### Economic Ambitions for York

**A flexible and relevant workforce for the future** – including providing skills to match employers' needs, connecting people to jobs, expanding apprenticeships and work based learning and attracting and making better use of talent.

**A growing and dynamic business base competing on a global stage** - including strengthening enterprise, helping new and existing businesses to grow and access new markets, a more business-friendly council and strengthening supply chains in growth sectors.

**A globally connected, locally integrated knowledge base** – better connecting HE and FE institutions into the city economy, expanding the Science city offer, strengthening links between business and FE/HE and promoting innovation and creativity across sectors.

**A world class place for business, communities, students and visitors** – providing the right environment for businesses and individuals to reach their potential, enhancing the city centre and integrating economic priorities with physical and infrastructure development.

**A coordinated and efficient approach to attracting and retaining investment** – a co-ordinated approach and investment to increase GVA, retain and encourage indigenous investment and promote the city as a location for inward investment.

A series of actions are identified for partners to take forward under each of these ambitions and their associated objectives.

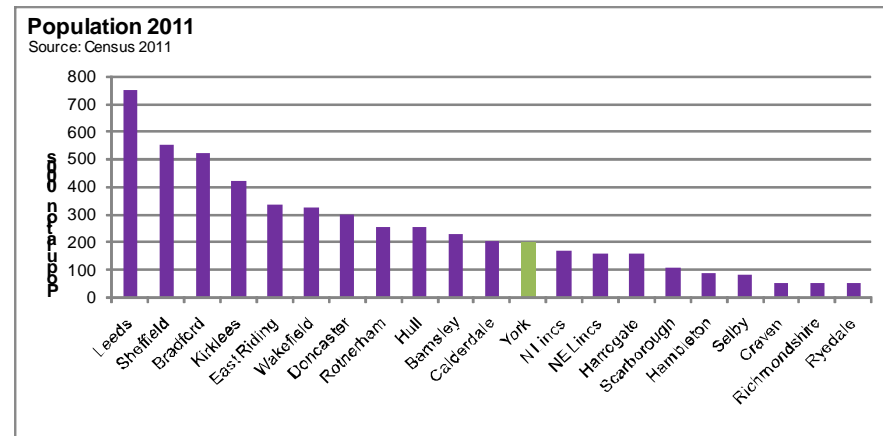
### 3 Population and Demographics

#### Key Facts

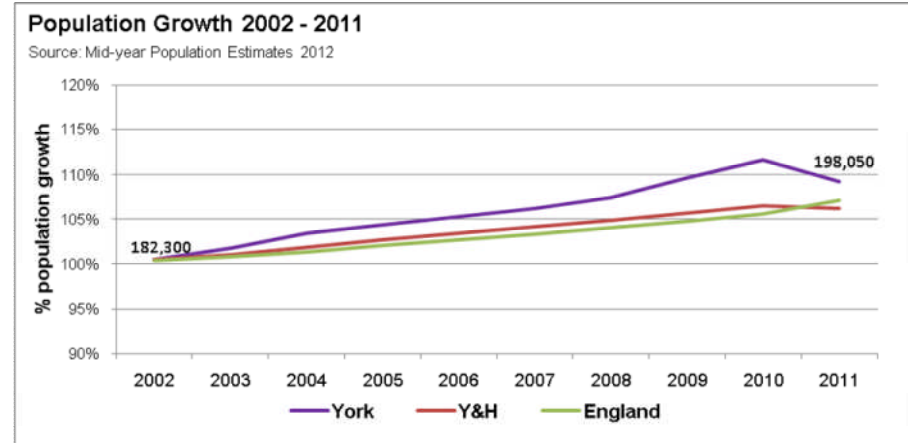
- The City is home to over 198,000 residents (Census 2011);
- Population growth levels in the Local Authority area were within the top 25% nationally and 4<sup>th</sup> in the region (at 9% compared to 6% regionally and 7% nationally);
- York has been successful in attracting young residents, including young professionals, with nearly 40% of the population increase accounted for by those aged 20-34;
- A quarter of the population are now aged 20-34, compared to 21% regionally and 20% nationally, partly reflecting the presence of two Universities;
- The City Centre is the third fastest growing in the UK in population terms (Centre for Cities Report).

#### Population Trends

The latest Census indicates that York had a total population of over 198,000, accounting for 4% of the regional population.

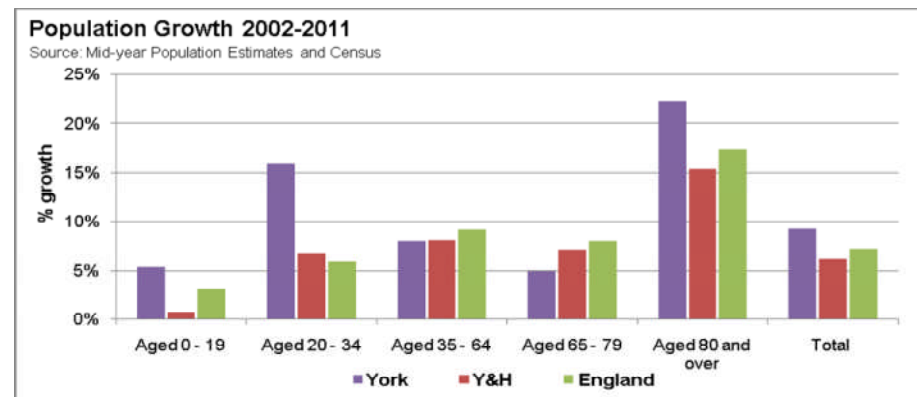


The City has seen strong population growth over the past decade. Between 2002 and 2011, the rate of population growth in York (9%) outstripped the regional (6%) and national (7%) average. This equates to an additional 15,700 residents in the City over this time period.

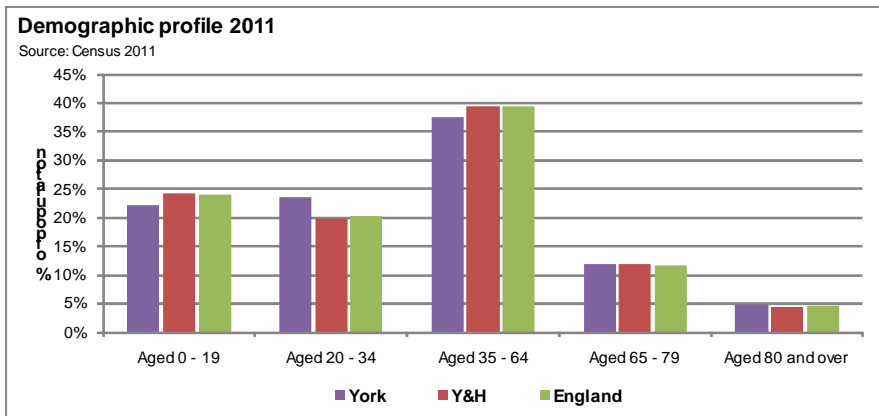


#### Demographics

The City has been successful in attracting younger residents, with 38% of the population increase attributable to those aged between 20-34, compared to 25% regionally and 17% nationally. This group includes students, graduates and young professionals who chose to live close to the city centre. Growth rates across the remainder of the working age population were similar to the regional and national average.



The demographic profile is now similar to the national profile, with main exception being over-representation of those aged 20 to 34 following strong growth in this area.



As elsewhere in England, there has been an increase in the number of people in older ages groups. This trend will continue over the next twenty years and will have implications for both housing provision and social and care services.

## 4 The Employment Base

### Key Facts

- The City now supports over 110,000 jobs when self employment is included, with the majority of growth secured in the 1990s;
- The transport and communications sector is having a major impact on trends in York, reflecting fluctuations in the number of employees in the passenger rail transport sector, and more specifically the major rail companies where the contractors (working within and outside York) will be captured within the York based head office employment numbers;
- When transport is excluded the number of employees fluctuated in a narrow range between 2001 and 2011, as growth in service sectors off-set losses in manufacturing.
- Key sector strengths include: financial and professional services and developing specialisms in healthcare and bioscience sectors; environmental and bio-renewable technologies;
- The public sector and financial, professional and business services are now York's two largest employment sectors;
- Health and social care has been the fastest growing sector with an increase of 40% between 2001 and 2011.

### Total Employment

The Annual Business Inquiry (ABI), which provided details on the number of employees, was replaced by the Business Register and Employment Survey (BRES) in 2008/9. The two datasets use a different methodology to collect employee information and are not directly comparable. Using guidance provided by the Office of National Statistics (ONS), it is possible use BRES employee information and re-scale the ABI data for a specific geography and/or sector to provide an indication of long term trends<sup>2</sup>. The information in this chapter refers to the number of employees rather than total employment (i.e. employees plus working proprietors).

Following a period of significant and sustained economic growth during the 1990s and early 2000s (+40,000 jobs), the number of employees in York declined from

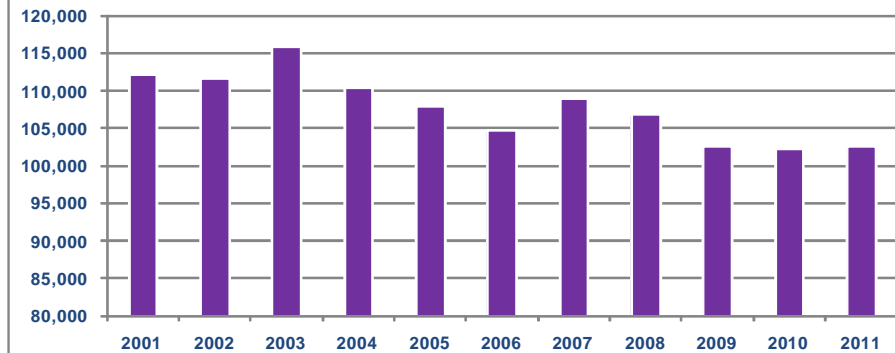
<sup>2</sup> Where required sector data has also been re-coded to account for the differences between Standard Industrial Classification 2003 and 2007. Again this has been done in accordance with ONS guidance.

2004. The overall trajectory shows that the number of employees declined by 13,000 or 11% between 2003 and 2011, with a decline prior to the recession (a loss of 11,000 between 2003 and 2006) and despite some growth during 2007, a further decline of 6% between 2007 and 2010.

The downward trends compare to 3% growth regionally and nationally between 2001 and 2011. The national trend was for growth of 4% between 2001 and 2007 and -1% between 2007 and 2011. Nationally, the latest figures show that the number of employees has started to grow again in 2011 (now 23.1m compared to 22.7m in 2009), although numbers remained relatively static in York and the region.

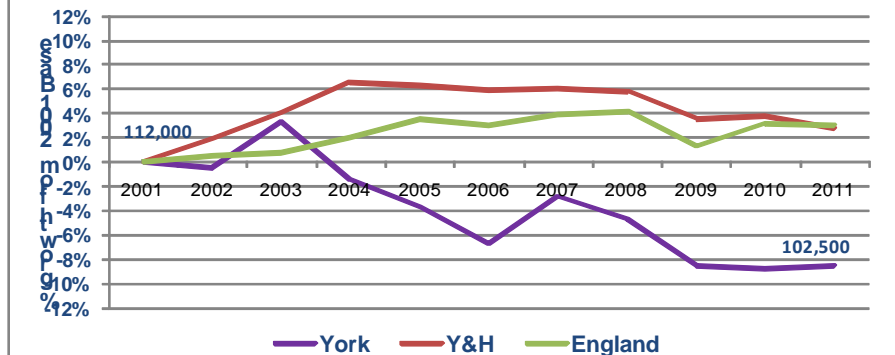
York, Total Employees 2011

Source: ABI/BRES



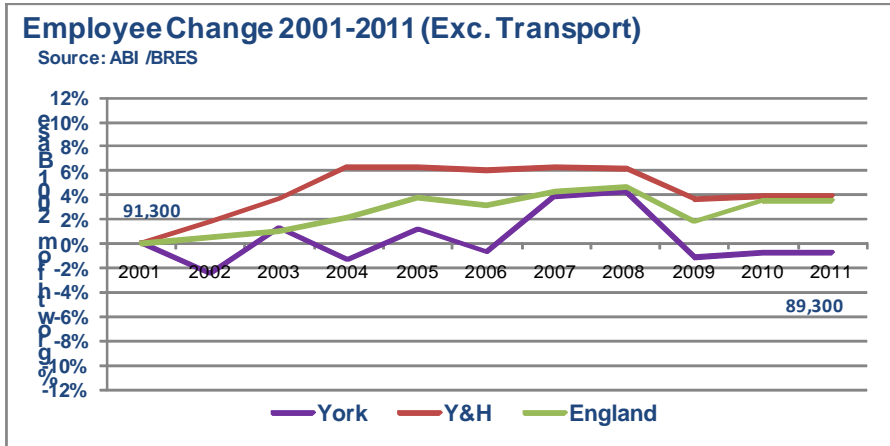
Employee Change 2001-2011

Source: ABI/BRES

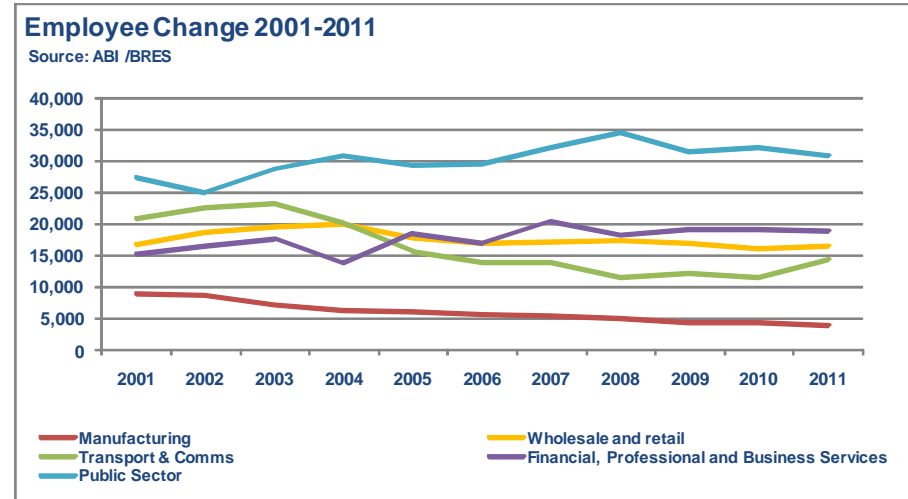


The transport and communications sector has a major impact on overall employee trends within York. This is due to major fluctuations in the number of employees in the passenger rail transport sector. This is likely to reflect patterns in the major rail companies, where employee numbers will include contractors (who may work outside the City despite being registered to the offices main address in York) and which will continuously change depending on activity that year.

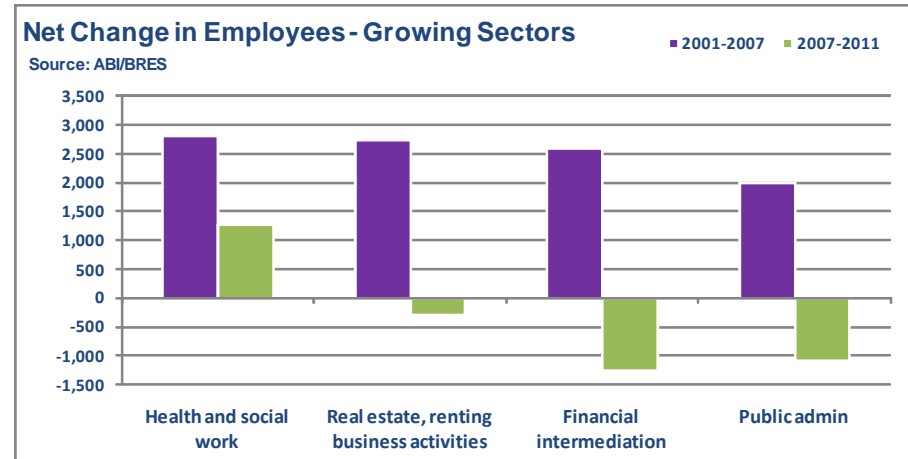
When transport employees are excluded, the York trend changes significantly as set out below. This shows employee growth of +4% between 2001 and 2007 (with decline of 7% between 2007 and 2011). The overall growth trend changes to -3% between 2001 and 2011.



The overall growth trend (once transport is excluded) is influenced largely by trends in the public sector and financial, professional and business services. These are now the two largest employment sectors, with the number of employees in financial, professional and business services overtaking those in wholesale and retail in 2004. There has however been a persistent decline in manufacturing, part of a national trend.

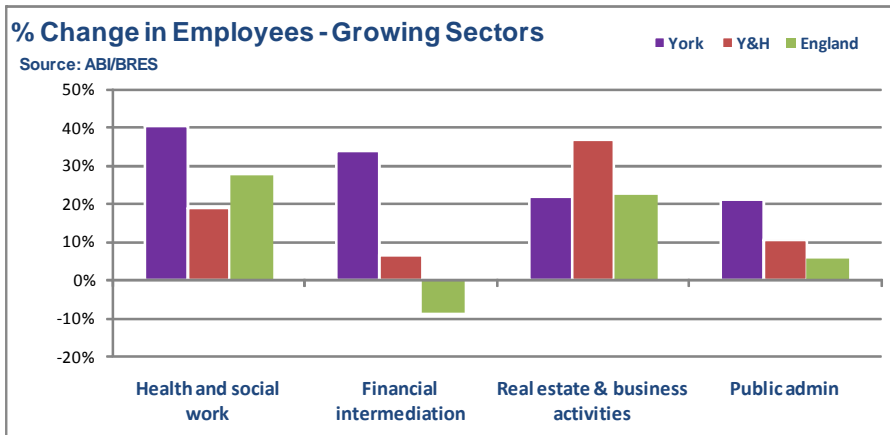


Employee growth over the past decade has been concentrated in two key areas – financial and professional business services and the public sector. Health and social care has been the fastest growing sector with an increase of 40% between 2001 and 2011. While health has experienced growth throughout this period, the number of employees in real estate, finance and insurance and public admin has declined post 2007.

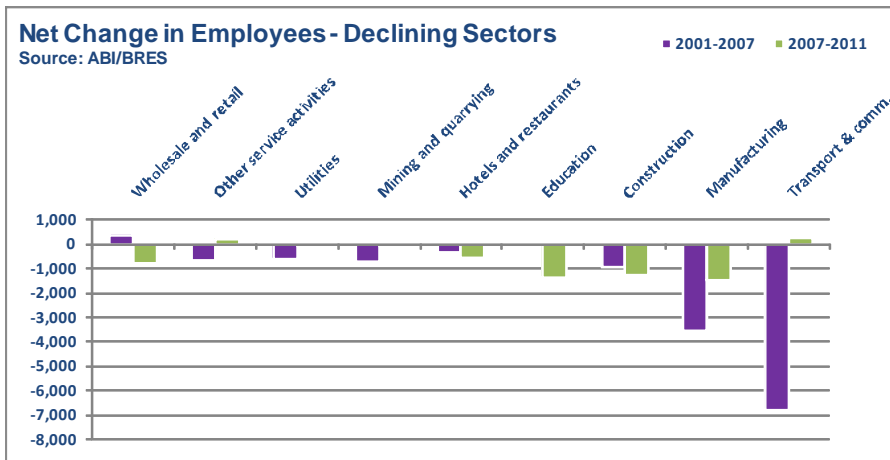




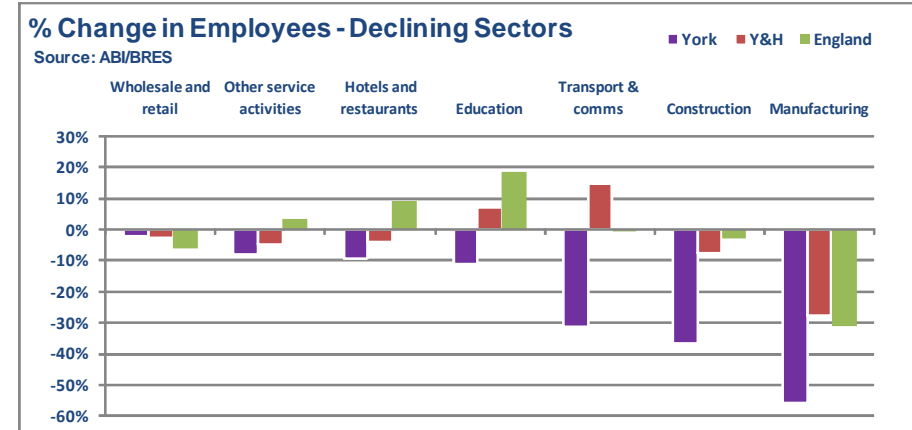
With the exception of property and business services, the growth in these sectors has been ahead of regional and national levels, particularly in the case of finance and insurance.



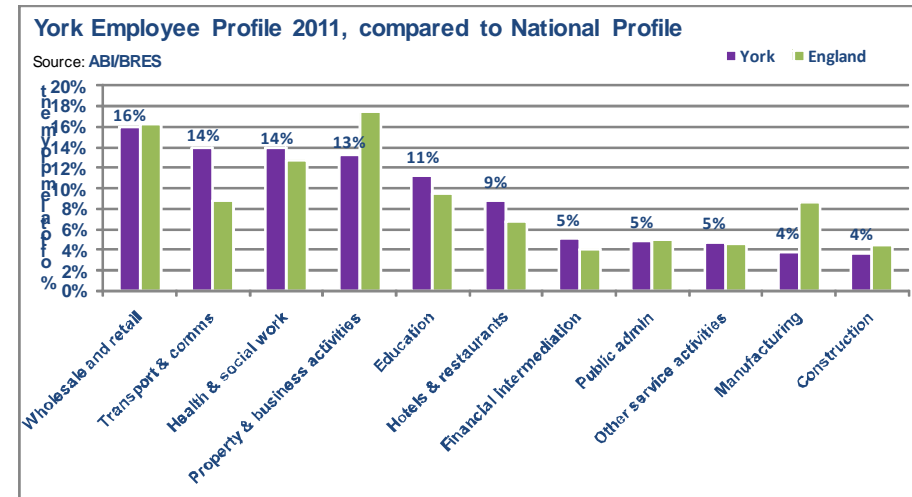
Despite growth in these areas, a number of important sectors have declined over both the periods 2001-2007 and 2007-2011. This includes the decline in the number of employees in transport (as mentioned previously) and the historically important manufacturing base which experienced a total loss of over 5,000 jobs during the past decade. Manufacturing is now significantly underrepresented when compared with elsewhere in the UK.



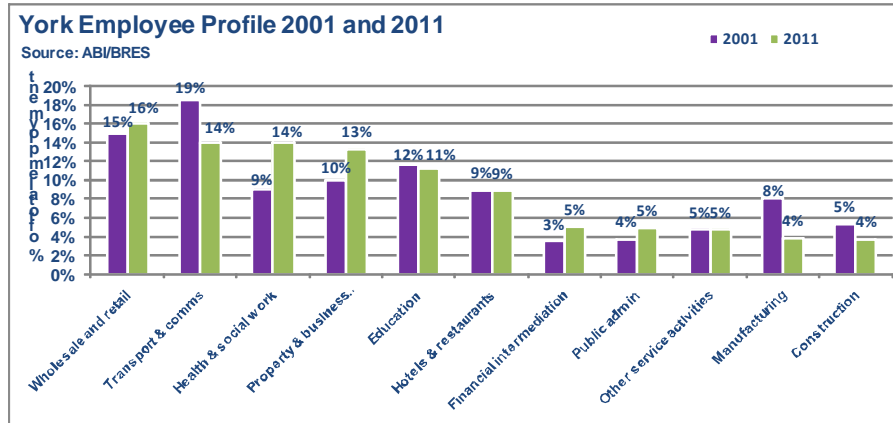
The decline in manufacturing employees has been much more significant (-56%) than the regional (28%) and national average (31%). In addition, the decline in some sectors has been in contrast to growth nationally such as education and hotels and restaurants.



Despite decline, some of these sectors continue to be highly represented in the York economy. In the case of education this is linked to a high level of employees in higher education, while overrepresentation of hotels and restaurants reflects City's role as an important tourism destination within the region. Other key differences include underrepresentation of property and other professional and business services despite growth (13% of total employees compared to 17% nationally).



Overall the key trends in employee growth are the increase in the representation of private sector services and the public sector and the decline of manufacturing (halved in terms of its contribution to the total number of employees).



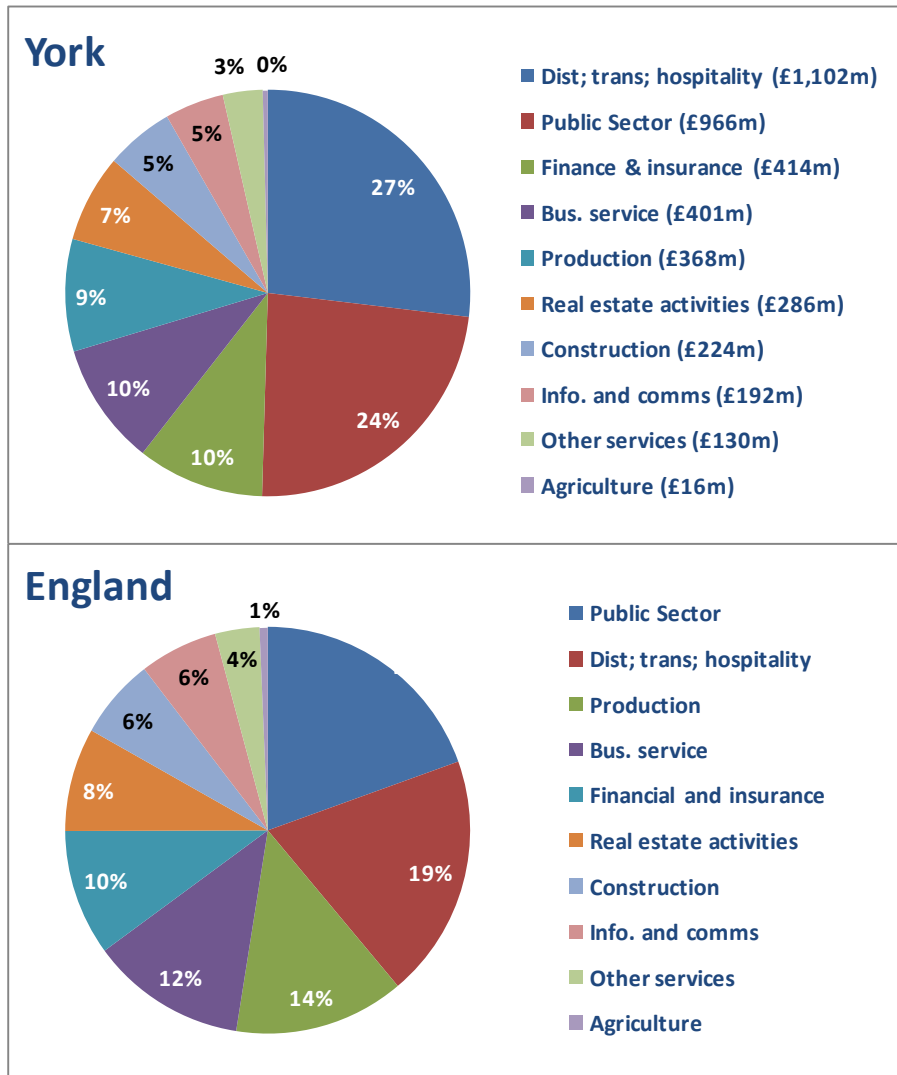
## 5 Gross Value Added

### Key Facts

- York contributes £4bn of value to the national economy (5% of the regional total) following an increase of £900m between 2001 and 2011;
- There are two main issues: (1) the level of GVA growth over this period has been low at 28% (compared to 48% nationally), largely a result of significant decline in the GVA generated by manufacturing activities (in contrast to GVA growth regionally and nationally); and (2) low levels of productivity overall, with the GVA per FTE generated equivalent to 85% of the national average;
- The decline in manufacturing related GVA relates to large scale employee losses rather than productivity levels, which are above the national average reflecting a shift towards higher value, advanced manufacturing. The sector continues to be important accounting for 9% of GVA (compared to 4% of employment);
- Productivity levels relative to the average for the York economy and the average for each sector nationally vary significantly by sector. Despite having one of the highest levels of GVA per FTE, the productivity of the financial and insurance sector is significantly below the national average for the sector;
- With the exception of production and information and communications, the productivity of all other sectors is below the national average. If each sector were to close the gap with national productivity levels over £560m additional GVA would be generated each year.
- Further re-structuring of the City's employment base, and in particular a shift towards private sector services, also has the potential to increase total GVA.

In 2011, York generated over £4bn of Gross Value Added (GVA), approximately 5% of the regional total (equivalent to the City's share of employment). The sectoral profile of York's GVA varies significantly from the distribution of employees, reflecting varying productivity levels and there are marked differences when compared to the national profile. In 2010<sup>3</sup>, distribution, transport and hospitality made the largest contribution of over £1bn followed by the public sector (£966m) – both of the sectors are highly represented and account for half of the City's total GVA compared to 39% nationally. This is however lower than the two sector's share of employment (69%).

<sup>3</sup> The latest year for which sectoral GVA data is available at the NUT3 Level

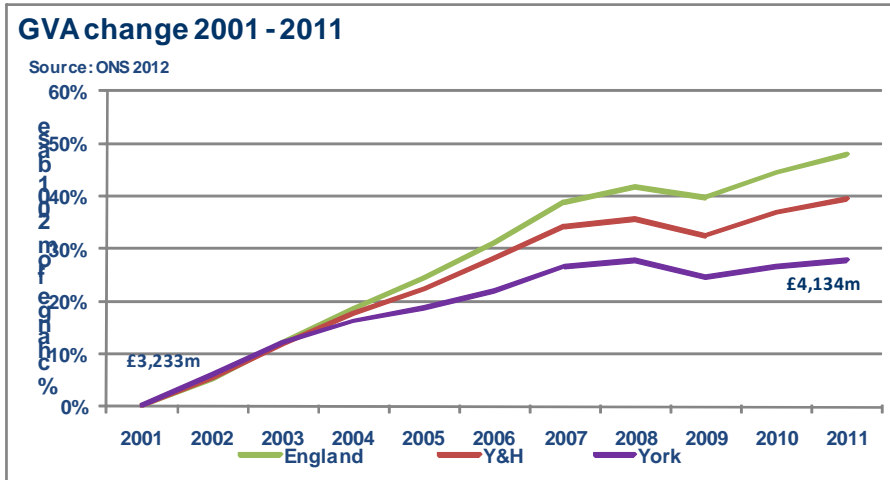


Sectors which are underrepresented include business services (despite significant growth) and production (manufacturing). The latter is largely a result of significant decline in recent years, although high productivity levels means that it continues to account for a higher share of GVA than total employees (9% compared to 4%),

reflecting a shift towards higher value and advanced manufacturing and highlighting the continued importance of the sector in output terms.

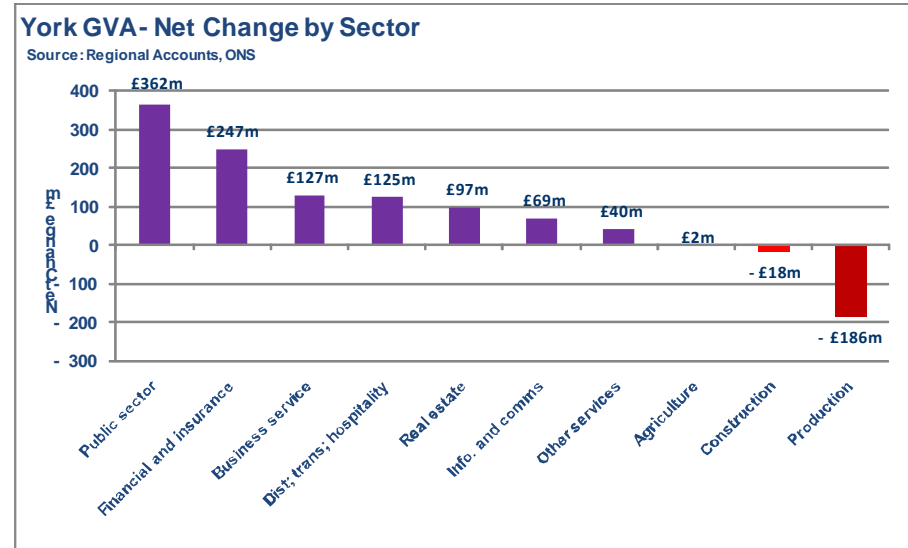
Between 2001 and 2011, there was a significant increase in the GVA generated of over £900m (+28%). The City did not, however, keep pace with both the regional (+39%) and national averages (+48%), with the gap in GVA growth emerging and widening from 2004 onwards. This has continued in the past two years with the gap between York and regional and national growth widening.

If growth had of kept pace with the national average since 2001, York would now generate an additional £644m per annum (equivalent to total GVA of almost £4.8bn).

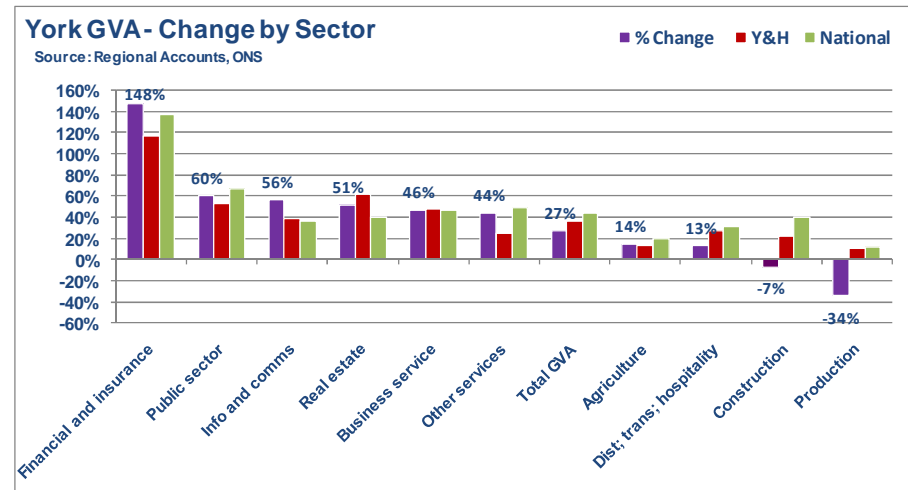


Mirroring employment trends, the increase has been driven by the public sector and financial and insurance sector, with increases of £362m and £247m respectively between 2001 and 2010. Other business services also made contribution of over £120m. Collectively the three sectors account for 85% of the total growth compared to 44% of total GVA and all of the employment growth, reflecting jobless growth and productivity gains in a number of sectors including information and communications, distribution, transport and hospitality.

One of the key factors affecting York's performance has been the significant decline in the GVA generated by production (manufacturing) activities. Between 2001 and 2010, the sector's contribution contracted by approximately £186m or 34% compared to growth regionally (+11%) and nationally (+12%). This is a function of the significant employment losses rather than productivity issues. The sector now accounts for 9% of total GVA compared to 14% nationally.



In York's five fastest growing sectors (illustrated below), growth has been in line or ahead of the regional and/or national average. This includes some of the city's largest sectors including financial and insurance, public sector and business services.

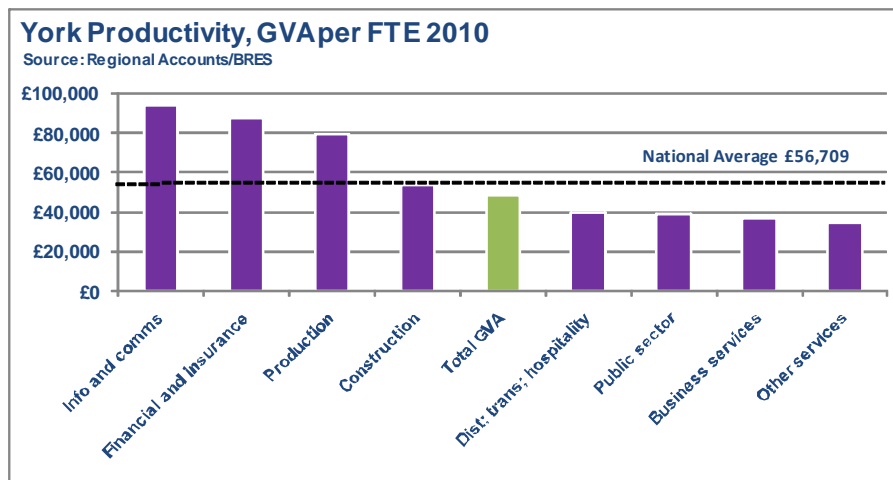


## Productivity

The other key factor affecting York's performance is below average levels of productivity – a long standing challenge for the City's economy. While in 2011 the level of GVA generated per head was only slightly lower than the national average (£20,103 compared to £21,349), it had declined slightly from 2010 levels in York compared to low levels of growth nationally.

When the focus is placed upon the level of GVA generated in the City relative to the number of full time equivalent employees (FTEs), the disparities are further highlighted. In 2011, £49,412 GVA was generated per FTE, equivalent to just 85% of the national average of £58,201. This gap has also started to widen in recent years – in 2009 and 2010 GVA levels were 87% and 86% of the national average respectively.

Productivity levels vary by sector, ranging from £93,979 for information and communication to £34,607 for other services (based on 2010 data<sup>4</sup>). Other large sectors with low productivity levels include professional and business services, the public sector and distribution, transport and hospitality.



When compared to the national average for each sector, production and information and communication are the only two sectors with above average productivity levels (equivalent to 120% and 116% of the national average respectively).

The largest gap relates to the productivity levels in the financial and insurance sector. While it has one of the highest productivity levels (at £87,805 per FTE), this is equivalent to just 66% of the national average, with the sector's contribution to

GVA being in line with the national average (10%) despite higher levels of employment.

Productivity Levels compared to National Levels, 2010			
	York	England	York as % of England
<b>Above Average</b>			
Info and comms	£93,979	£78,622	120%
Production	£79,550	£68,806	116%
<b>Below Average</b>			
Dist & hospitality	£39,530	£41,992	94%
Public sector	£38,735	£42,425	91%
<b>Below Average – Less than 90% National levels</b>			
<b>Total GVA</b>	<b>£48,840</b>	<b>£56,709</b>	<b>86%</b>
Business services	£36,969	£43,826	84%
Construction	£53,524	£71,554	75%
Other services	£34,607	£46,324	75%
Financial & insur.	£87,805	£132,570	66%

Source: Regional Accounts / BRES

The gap between what underperforming sectors could generate and what they actually generate is presented in the table below. If each sector were to close the gap with national productivity levels over £500m additional GVA would be generated each year.

Further re-structuring of the City's employment base, and in particular a shift towards private sector services, also has the potential to increase total GVA.

Productivity Gap: current and potential GVA per FTE – Key Sectors			
	Current Contribution (£m)	Potential Contribution (£m)	Difference (£m)
Financial & insur.	414	625	211
Public sector	966	1 058	92
Construction	224	299	75
Business service	401	475	74
Dist. & hospitality	1 102	1 171	69
Other services	130	174	44
<b>Total GVA</b>	<b>3 237</b>	<b>3 803</b>	<b>566</b>

Source: Regional Accounts / BRES

<sup>4</sup> The latest year for which sectoral GVA data is available at the NUT3 Level

## 6 Business Base and Workplaces

### Key Facts

- There are a total of 5,815 enterprises in York or 42.9 businesses per 1,000 working age residents;
- York has lower than average enterprise levels, with the business density lagging national average - some 2,350 additional businesses are required to match the national business density;
- Start up rates are in line with regional and national average suggesting high levels of churn;
- Sectors with an above average level of businesses include: financial and professional business services, hospitality and, to a lesser extent, health and education.

In 2012 there were a total of 5,815 VAT and/or PAYE enterprises and 8,015 local business units registered in York. Compared to the resident base, this equates to 41.5 enterprises per 1,000 population, which places the City in line with the regional (43.0) figure but below the national (60.6) figure. To reach the national business density average, an additional 2,350 businesses would be required.

### Businesses per 1000 working age population 2011

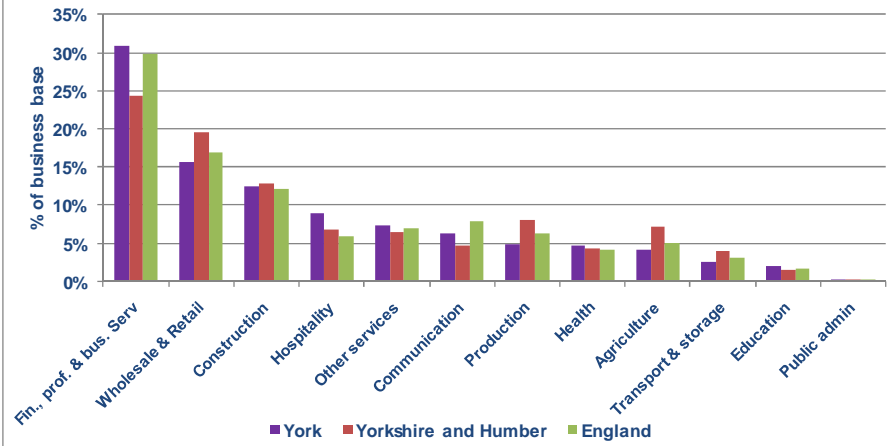
York	42.9
Yorkshire and Humber	43.0
England	60.6
Source: Activity, Size & Location and Census 2011	

### Sector Profile

The financial, professional and business services sector accounts for the largest proportion of businesses in the City (31%), which is greater than the proportion in Yorkshire and Humber (24%) and the UK (30%). Other sectors that account for a greater proportion than the regional and UK average include the hospitality, health and education sectors. The sector profile of workplaces in York broadly mirrors that of the business base.

### Business base by sector 2012

Source: UK Business: Activity, Size and Location 2012



### Business Size

In line with the regional average, the York business base has fewer micro businesses and a greater proportion of small (10 – 49 employees); there are fewer micro and more small workplaces in York compared with both the regional and national average.

### Businesses by employee sizeband 2011, % of business base

	York		YH	England
	Number	%	%	%
Micro (0-9)	5,045	87%	87%	89%
Small (10-49)	630	11%	10%	9%
Medium (50-249)	110	2%	2%	2%
Large (250+)	30	1%	0%	0%

### Workplaces by employee sizeband 2011, % of business base

	York		Y&H	England
	Number	%	%	%
Micro (0-9)	6,270	78%	81%	83%
Small (10-49)	1,435	18%	15%	14%
Medium (50-249)	270	3%	3%	3%
Large (250+)	35	0%	1%	0%

Source: UK Business: Activity, Size and Location 2012

Over four fifths of businesses turnover less than £500,000 per annum (84%), slightly below the regional and national average rate (83%).

<b>Business turnover sizeband (£ thousand) 2011, % of business base</b>				
	<b>York</b>		<b>Y&amp;H</b>	<b>England</b>
	<b>Number</b>	<b>%</b>	<b>%</b>	<b>%</b>
0 - 49	1,055	18%	18%	18%
50 - 99	1,340	23%	23%	24%
100 - 249	1,785	31%	29%	29%
250 - 499	705	12%	13%	12%
500 - 999	430	7%	8%	7%
1,000 - 4,999	385	7%	7%	7%
5,000 +	115	2%	2%	2%

Source: UK Business: Activity, Size and Location 2012

## 7 Workforce and Skills

### Key Facts

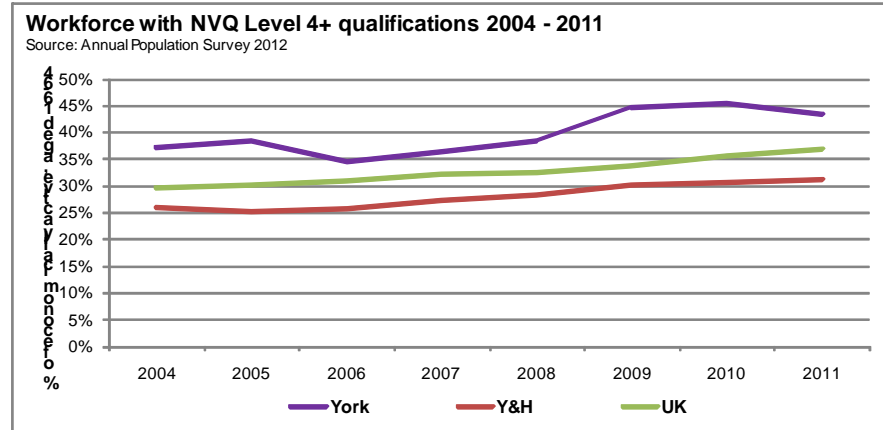
- The York workforce is highly skilled – it is in the top 20% of LA areas and of English cities with regards to the proportion of people with high level skills;
- Around 43% hold qualifications at NVQ Level 4 or above (compared to 31% regionally and 37% nationally);
- The highly skilled workforce has been a long standing feature of the York economy and levels of upskilling have largely kept pace with the national economy;
- The proportion with no qualifications is also low (4% compared to 7% regionally and nationally) as a result of a low base in 2004 and similar rates of upskilling;
- York’s occupational structure is largely in line with the national average, with 44% of workers in higher level occupations;
- There has been a significant decline in process, plant and machine operatives over the past decade reflecting the decline of manufacturing.

York has a highly skilled labour market, with 47,000 individuals qualified to NVQ Level 4 or above. This equates to 43% of the workforce, which is greater than the regional (31%) and national average (37%). There are also fewer members of the workforce with no qualifications.

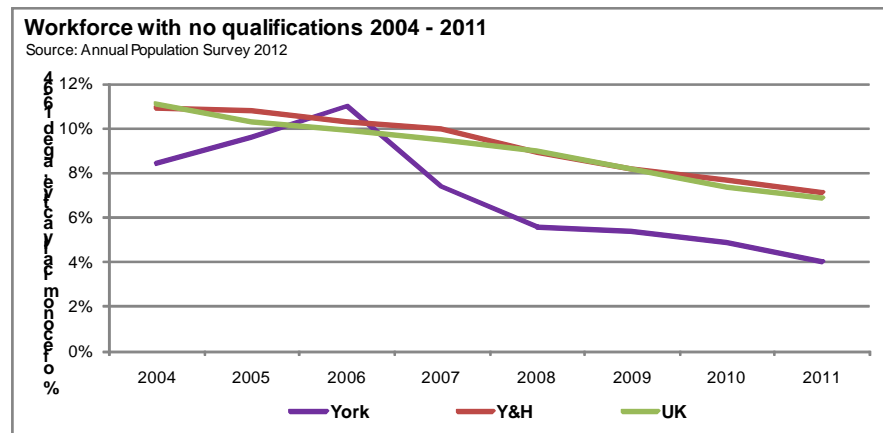
Workforce skills 2011, % of economically active aged 16-64			
	York	Y&H	UK
NVQ4+	43	31	37
NVQ3 only	18	18	17
NVQ2 only	16	19	17
NVQ1 only	12	14	12
No qualifications	4	7	7

Source: Annual Population Survey 2012

As shown in the charts opposite, the proportion of the workforce with higher level qualifications has been consistently increasing and has remained above the UK average over the past decade.



The proportion of the workforce with no qualifications has declined significantly over the past five years to the extent that just 5% of the workforce have no qualifications compared to 11% in 2006. This is lower than elsewhere in the UK.



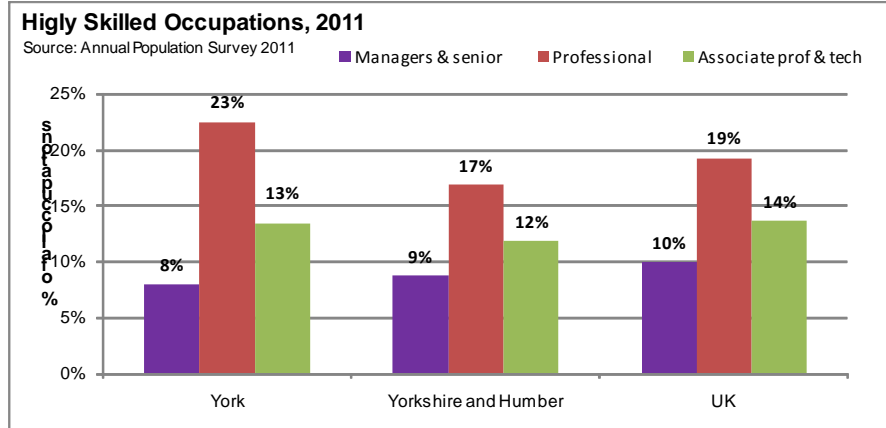


In terms of occupations, the profile of the York workforce is similar to elsewhere in the UK with the following exceptions: a higher proportion of professional and sales and customer service occupations, and lower proportion of personal service occupations. In addition, there is a lower proportion of process, plant and machine operatives, reflecting the under-representation of the manufacturing industry.

Occupational Profile of Workforce by Area, 2011				
		York	Y&H	UK
Managers & senior	8,400	8.0	8.8	9.9
Professional	23,600	22.5	16.9	19.3
Associate prof & tech	14,100	13.4	11.9	13.7
Admin. & secretarial	12,100	11.5	11.0	11.1
Skilled trades	11,500	11.0	11.9	10.9
Personal service	7,400	7.1	9.1	9.0
Sales & customer service	10,200	9.7	9.3	8.2
Process, plant & machine	5,100	4.9	8.3	6.4
Elementary	12,300	11.7	12.4	11.1

Source: Annual Population Survey 2011

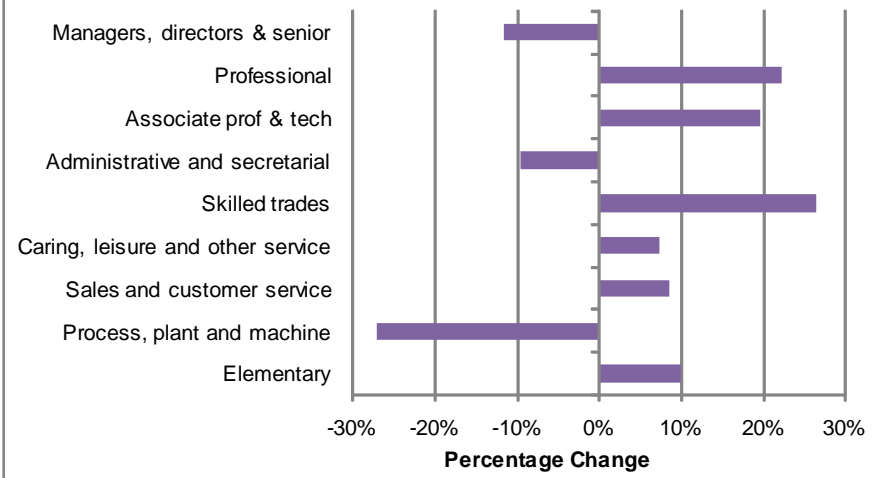
The chart below provides a summary of the higher level skilled occupations in York. This shows that York's overall proportion of higher skilled occupations in is line with the national average and ahead of the regional average.



The chart opposite sets out the changes in York's occupational profile over the past decade. This shows the decline in process, plant and machine operatives (reflecting manufacturing decline), and the significant rise in skilled, professional and associate professional trades.

**Changes in the occupational profile 2004 - 2011**

Source: Annual Population Survey 2011



Average earnings are ahead of both the regional and national average, reflecting the number of highly skilled workers and higher level occupations in the York economy.

**Hours and earnings 2012**

	Weekly hours worked - total	Weekly pay – gross (£)
York	37.5	519.4
Yorkshire and Humber	37.5	512.7
UK	37.5	465.2

Source: Annual Survey of Hours and Earnings 2012

## 8 Comparator Analysis

### Introduction

York's Economic Strategy 2011-2015 sets out an aspiration for York to become a "top European City" compared to European Cities of a similar size.

This section of the report provides an overview of how York compares against a series of UK cities to place it within the UK context. This uses a variety of comparable data sources. In addition, a series of similar European comparators have been chosen. Many of these were within a recent comparator report<sup>5</sup>, but this section provides some of the qualitative lessons which York can learn from these areas in terms of what have been the key success factors or challenges faced by European comparators.

### York's Position against Comparator European Cities

There are an extensive number of comparable cities to York both within the UK and elsewhere in Europe in terms of population size. A recent report used a variety of economic data from the Eurostat Urban Audit to assess York's economic position in relation to comparable European cities examining issues such as private sector business structure and high-skilled labour. This provided a useful benchmarking exercise, with the key findings including:

- York performs well in relation to other similar sized European Cities;
- Key comparative areas of strength include its strong population growth, highly skilled workforce and strong private sector;
- Areas where York performs less well comparatively include gross domestic product per capita and youth unemployment levels.

Whilst a desk based assessment can provide useful evidence on how cities compare against key indicators, it is only through an assessment of the dynamics of the individual economies that key lessons are drawn. The following section provides some of the qualitative messages about five of the cities which have particular similarities to York (e.g. in size, their historic nature, university background and similar key sectors) but where useful lessons can be drawn. These cities are:

- **Utrecht**, a good example of a historic city moving to a medium sized city of European importance helped by university and business collaboration;
- **Oulu**, a technologically advanced economy with business networks and alliances to support the growth of technology based businesses;

- **Malmö**, where well developed infrastructure and advantageous costs levels attract knowledge intensive businesses and individuals;
- **Graz**, an economy that continues to support its established industrial base but has also diversified into knowledge based growth sectors; and
- **Mainz**, a Science City where there is a strong commitment to research and science, supported by a series of practical projects and networks.

### Key Lessons from European Case Studies

The examples provided contain a number of common themes which are of relevance to York as it seeks to develop a new economic vision. These include:

1. The importance placed on maximising the area's research institutions;
2. The delivery of practical projects and interventions based around a bigger idea or sector priority;
3. The major focus placed on networks and collaborative activities amongst the cities' public, higher education and business sectors;
4. The importance of developing international connections, co-operation and joint activities to learn lessons, secure funding and attract investment;
5. The ambition shown by each of the cities and the importance of an image or identity e.g. Science City, City of Culture, City of Research which builds on a city's sector strengths;
6. The importance of adopting business friendly policies to enable companies to grow and expand within the city;
7. The importance that promoting a high quality of life, cultural and leisure opportunities and major infrastructure projects have in attracting high quality individuals and investment to cities.

<sup>5</sup> European Comparator Report: York, Centre for Cities, February 2012.

<b>Utrecht (Randstad, Holland)</b>	
	<p><b>Overview</b></p> <ul style="list-style-type: none"> <li>Ancient city, Holland's fourth largest</li> <li>Population of 316,448</li> <li>Home to largest university in Holland</li> <li>Key sector strengths in IT, Life Sciences and Gaming</li> <li>Important rail and transport hub</li> <li>Aim to be the European Capital of Culture in 2018</li> </ul>
<p><b>Economy Summary</b></p> <p>Utrecht provides a good example of a historic city which is moving from a provincial capital into a medium sized city of European importance. The city's recent policy focus has been to combine physical expansion with a focus on innovation and competitiveness. The City's economy has particular strengths in IT, Life Sciences and Gaming sectors.</p> <p>One of the key success factors of the Utrecht economy is based around its excellence in higher education and how this has been used to develop new economic opportunities for the City. The City's University is the largest in Holland, ranked the best research university in Holland and 11th in Europe. It includes a 300 hectare science park which is home to a wide range of science based businesses, start ups and students. Opportunities to promote the further development of life sciences have been based around the university and the research expertise and talent at the science park. Healthcare and medicine are also seen as very important to the local economy. The City recognised that the organisational capacity of the business community could be improved in this regard which resulted in promoting better cooperation between businesses and healthcare and research associations</p> <p>Utrecht has been proactive in identified its sector strengths and in particular key niches, and then attempting to stimulate innovation through collaboration between R&amp;D, business and both local and national government. The city identified its strengths in the gaming sector, since when policy priorities have focused on increasing the added value of the computer gaming industry. The City has also promoted the crossover between sectors, e.g. supporting a number of crossover sector projects such as those between the healthcare and gaming sectors. Utrecht also has an important financial and professional services industry, where recent support has been focused on supporting smaller businesses within the sector.</p> <p>The city's economy is supported by its excellent transport links. Utrecht is an</p>	

<p>important rail and transport hub for the country, involving a junction of motorways, rail and waterways. The City is also a keen promoter of sustainable transport, including smart transport options and a variety of sustainability projects.</p> <p>The City is an active member of a number of Dutch and European city alliances, including the G4 alliance with other major Dutch cities and the Eurocities Network. It is also renowned for being multi-lingual. These factors have helped the city to learn lessons from other partners, attract foreign investment and secure European funding for various collaborative projects. There are a number of major foreign owned companies within the City (e.g. Oracle, Danone Research and Nintendo). Culture is an important feature of the city, and it is bidding to become European City of culture in 2018. The city learnt lessons from Edinburgh and applied these to the staging of the Utrecht international festival of culture.</p>
<p><b>Key Strengths / Lessons</b></p> <ul style="list-style-type: none"> <li>Ambitious city moving from provincial capital to modern 21<sup>st</sup> Century economy within an ancient city;</li> <li>Ability to recognise key sector and sub sector strengths, and to promote their development and attempt to address any weaknesses which are displayed</li> <li>Promotes crossover and collaborative opportunities between key sectors</li> <li>University and links to business considered of the upmost importance</li> <li>Active in international co-operation and promotion and multilingual city – this has helped it to learn lessons from elsewhere, secure funding and investment</li> <li>City's strengths in innovation and competitiveness supported by sustainable transport focus, cultural events and the promotion of human rights.</li> </ul>

<b>Oulu (Northern Ostrobothnia, Finland)</b>	
	<p><b>Overview</b></p> <ul style="list-style-type: none"> <li>Regional centre in Western Finland</li> <li>University town and research hub</li> <li>Leading technological hub known as 'Finland's Silicon Valley'</li> <li>University research centre in Technology and Science Park</li> <li>High rates of patents granted.</li> </ul>
<p><b>Economy Summary</b></p> <p>Oulu is an important regional centre of Western Finland. The city is a port town, and is home to the University of Oulu and the Oulu University of Applied Sciences as well as VTT (Technical Research Centre of Finland), the biggest organisation of applied research in Northern Europe.</p> <p>Historically the city's economy was based on the production industry with strengths in chemical, wood, paper, leather and food processing. Whilst some large factories remain in such sectors, more recently the city has attracted lots of media attention for becoming a technologically advanced economy and hotbed for innovation and original thinking, including being known as "the Silicon Valley of Finland". Much of this is based on a history of close and effective co-operation between the City's research institutions and businesses. Key sectors are Life Science, ICT, clean technologies and creative industries. Oulu is home to some large companies (e.g. Nokia and Siemens) as well as many smaller start up and growing SMEs.</p> <p>Recognising that the city's remoteness means that it is increasingly unable to compete in manufacturing and production based industries, the City has been proactive in attempting to build on this reputation for innovation and applying technology. This has been achieved through business-friendly policies as well as its research strengths. The City has utilised its research centre and technology park Technopolis, which is located to the north of the city close to the University area and acts as a number of centres of excellence close to office space for start up and growth businesses with access to support and networking services.</p> <p>In 2007 a six year plan was launched to develop Oulu as a global leader in IT, exploiting its untapped potential. This was led by a dedicated innovation agency 'Oulu Innovation' charged with delivering these ambitions. As part of this and other initiatives, the City through its own and external funding (e.g. ERDF) has invested heavily in a series of business development, innovation and networking programmes. These have been delivered to ensure that start up businesses and individuals have the services and infrastructure to make them flourish. The University has also had an important role in working with businesses to foster</p>	

innovation through programmes such as Xpolis which connects local investors to startups. Various projects and programmes have been delivered or continue to serve the needs of local companies, such as:


- Centre of Excellence programme offering networks and services for companies, universities and research institutions
- Arctic Gateway, an international marketing programme targeted at selected European regions with excellent flight connections
- Bothnian Arc Steel and Metal Industry project to develop co-operation between metal and mining companies
- Global Oulu and Kasvumalli, initiatives to support the internationalisation activities of Oulu businesses and individuals
- International Sales Promotion, proactively supporting ICT companies in the region to maintain their presence
- Nordic Business Link, aimed at increasing business between small and medium sized businesses across North Norway, Finland and Sweden
- The protostudio project, providing r & D and prototyping support to individuals and businesses
- The Starttimalli start up model, an individual development programme for target industries e.g. ICT, HealthBio, cleantech, wellness, nano and micro
- Takomo, facilities, training and support for entrepreneurs.

The City also has a number of networks and alliances which have supported businesses to innovate and grow. These include the Oulu Innovation Alliance which aims to enhance co-operation between education and research institutions, businesses and the public sector. Oulu is continuing to invest in the priority areas of logistics, information technology, content production, media, well-being and bio and environmental fields.

Oulu is currently undergoing a municipal restructuring involving the merger of five municipalities to enable it to emerge as a single operational and economic hub of Northern Finland with Oulu at the centre of a successful network of partners.

**Key Strengths / Lessons**

- Focus on building a reputation for innovation and applied technologies;
- Business friendly policies in the fields of innovation and key sectors;
- Delivery of wide range of projects and programmes to ensure that individuals and businesses have the infrastructure and support services to enable them to flourish;
- Variety of business support, networks and alliances to support technology based businesses to grow
- Proactive approach to placing the city at the heart of a much wider operational and economic hub through a network of partners.

<b>Malmo (Scania, Sweden)</b>	
	<p><b>Overview</b></p> <ul style="list-style-type: none"> <li>• Third largest city in Sweden</li> <li>• New university, largest in Sweden</li> <li>• Focus on key businesses areas with high growth potential</li> <li>• Reputation for high quality of life</li> <li>• Growing younger population</li> <li>• Major new developments</li> <li>• Diverse population and industry</li> <li>• Positive growth trajectory</li> </ul>
<p><b>Economy Summary</b></p> <p>Malmo is a major seaport and thriving commercial hub, representing the third largest city within Sweden. The City suffered from industrial decline during the 1990s, but the city has recovered and grown during the past decade due to a number of factors and in part due to two major developments – the delivery of the Oresund Bridge and the establishment of the Malmo University. It now has just 8% of its workforce employed in manufacturing as the economy has become dominated by knowledge intensive service sector businesses.</p> <p>The city provides an example of the role that improved infrastructure can play in strengthening the economic role of a city, establishing a greater labour market and improving economic integration. The delivery of the Oresund bridge which connects the city to Denmark, as well as the City Tunnel has helped to strengthen Malmo's position. This means that it is now less than 30 minutes from Copenhagen Airport and has excellent rail links to the rest of Europe. It also benefits from the role which its port plays in connecting the City to the rest of the Baltic region.</p> <p>The city has an outstanding quality of life, including a good living environment for its residents, a diverse cultural life and a range of sport and leisure opportunities. It has benefitted from a number of new recent developments including the new Malmo University and expanding residential and business districts especially around the harbourside including a major logistics park. Malmo University is Sweden's largest, with 24,000 students. It has also benefitted from becoming part of the Oresund University – a consortium of established universities in the region with the aim to increase collaboration between the institutions as well as with the public sector and the economy. The city also has advantageous cost levels, with easy access to a large and highly skilled workforce and competitive operational costs.</p> <p>Such factors have helped Malmo attract a high level of new companies to the city, particularly new knowledge-intensive companies in biotech and ICT sectors and</p>	

creative businesses. There has been a shift from a focus on larger businesses to smaller companies as well as an increase in foreign owned companies. They have also helped to grow the city's population, particularly amongst the younger population.


The City is placing an increased focus on key business areas with high growth potential. These include:

- Life sciences, including pharmaceuticals, medical devices, biotechnology and healthcare. A marketing organisation Medical Malmo has been established to increase links between medical research and industry in this field;
- Mobile Media and ICT, where there are plans for a Media Evolution City to further develop these creative industries;
- Logistics, where the city is building on its improved transport links to deliver a new logistics centre, ferry quay and developments around the port land.
- Cleantech / environmental technologies, including a new centre where businesses can showcase the latest products and share business ideas;
- The hospitality industry, where Malmo has tried to capitalise on business and leisure based tourism including a new arena, conference facilities and leisure schemes (e.g. major skateboard park);
- Retail, including the development of Scandanavia's largest shopping centre; and
- Attracting head offices, particularly around the city's expansion areas.

The city has made, and continues to make a variety of strategic investments to encourage entrepreneurship, innovation and knowledge exchange. These include new incubator projects, the redevelopment of old exhibition halls, a new concert venue and exhibition centre as well as a variety of other commercial and residential development schemes.

**Key Strengths / Lessons**

- Demonstrates the role that well developed infrastructure and connectivity, and advantageous costs levels can play in attracting knowledge intensive businesses and individuals;
- The city is growing whilst also becoming younger as the quality of life, new residential districts and, commercial and research opportunities are attracting younger residents;
- The city continues to make strategic investments aimed at supporting key business growth sectors, diversifying and restructuring the economy, improving quality of life and enabling companies to thrive.

<b>Graz (Styria, Austria)</b>	
	<p><b>Overview</b></p> <ul style="list-style-type: none"> <li>• Second largest city in Austria</li> <li>• important industrial, cultural and tourist destination</li> <li>• Nearly 45,000 students across 6 universities</li> <li>• Maintains strong industrial sector and exports</li> <li>• Also diversified into growth areas</li> </ul>
<p><b>Economy Summary</b></p> <p>Graz is the second largest City of Austria with a population of nearly 300,000 and just over 10,000 businesses. It is considered the scientific, economic and cultural centre of South East Austria.</p> <p>The city benefits from a high qualified workforce, first class research institutions, a high quality of life and good public transport networks. It has six further education institutions in the city with nearly 45,000 students.</p> <p>Graz is located within a traditional industrial region whose main industries have included paper, steel, electronics and automotive engineering and food production. The automotive sector has been particular important for the City which is the capital of the Austrian automotive industry. It is home to a large number of vehicle manufacturers such as... This drives a strong export industry to markets such as the EU, USA and China.</p> <p>The City's automotive industry is supported by an international research and development centre of excellence for automotive engineering which is located within the City and linked to the Graz University of Technology. The centre focuses on applied research and development and has over 40 research and industrial partners including BMW and Mercedes. The sector also benefits from a successful industrial cluster network of 180 member companies which helps businesses with networking, collaboration and new business opportunities as well as links to training and further education institutions.</p> <p>The City has continued to retain a strong industrial base and it has strengths in electronics, plastics and environmental engineering. The environmental technologies and renewable energy industry sectors is a growing part of the economy, and the City is home to half of Austria's businesses within the sector.</p> <p>The creative industries sector in particular has been a fast growing industry for the City over recent years. Graz was the European Capital of Culture in 2003, helping it to showcase the city to Europe, host events and attract additional visitors. This also</p>	

<p>left a physical legacy including the City's modern art centre, museums, theatres and a new concert hall. The City Centre was designated a UNESCO World Heritage Site in 1999. Partly on the back of this, the city's creative industries sector has grown and generates GVA of 1.5 billion Euros.</p> <p>The City has an economic strategy and vision for 2015, which is primarily based around improving the conditions for businesses in the City to grow. The city has four areas of excellence around which business clusters and networks are encouraged. These are:</p> <ul style="list-style-type: none"> <li>• Automotive engineering;</li> <li>• Human and biotechnology</li> <li>• Renewable Energy and Environmental Technologies; and</li> <li>• Creative industries</li> </ul> <p>The city has a good transport infrastructure including an Airport and it acts as a transport hub to many cities across Austria and the rest of Europe.</p> <p>Given the number of higher education institutions in the City, Graz has also gained a reputation for a major centre of research, skills and learning. The university of Graz is the city's major University and the country's oldest, with specialisms in science and engineering. Businesses in the city benefit from access to a highly skilled workforce.</p> <p>The City has an "Active Knowledge Transfer" programme which is based on promoting Graz as a first class city for knowledge transfer with close cooperation between the research, scientific and economic experts. As part of this the City's economic development team works jointly with a university team of experts to pursue knowledge transfer initiatives and approaching businesses directly to pursue joint projects and feasibility studies.</p> <p>The city's Economic Development and Tourism Department promotes the city as a Green City, a City of Guests, a City of Science and an economic City.</p>
<p><b>Key Strengths / Lessons</b></p> <ul style="list-style-type: none"> <li>• Example of a City economy based on traditional industries, and which continues to actively support these through centres of excellence, networking and collaboration activities;</li> <li>• At the same time the city has also diversified and displays growth trends in diverse sectors such as environmental technologies and the creative industries;</li> <li>• It provides an example of where a major project (The European Capital of Culture) has played a role in giving rise to the development of a high growth sector (creative industries).</li> </ul>

**Mainz (Rhineland-Palatinate, Germany)**



**Overview**

- State capital Rhineland-Palatinate
- Population of 200,000
- Reputation for excellence in science - Germany's Science City in 2011
- Collaborative projects and networks
- Promotion of the city as a knowledge based economy and high quality research environment.

**Economy Summary**

Mainz is the state capital of the Rhineland-Palatine region of Germany, famous for being the origin of the first movable-type printing press.

The city's economy has key strengths in the science sector, as well as the media, with Germany's largest broadcaster ZDF based in the city. Other strengths include information technology businesses, the health care sector and research and development. Mainz is home to a large number of major enterprises such as Siemens, Nestle and Scott Glas. The City's universities house over 35,000 students, and its strong research institutions help to attract knowledge based companies.

The City has developed a specific reputation for being a dynamic city of science. It houses a variety of scientific institutions and research-orientated businesses which employ over 20,000 people in the City. The Johannes Gutenberg University in Mainz is Germany's fifth largest and includes specialisms in science.

Mainz was named Germany's City of Science in 2011, and a variety of events and collaborative research projects were delivered during this year to further develop and promote the City's reputation.

The Mainz Research Alliance was established to encourage research and collaboration activities aimed at promoting the City nationally and internationally and showcasing its knowledge based institutions to maximise the innovation potential of the research environment in Mainz.

The Alliance comprises a network which includes 4,000 scientists and a variety of research facilities and private businesses. The Alliance includes encouraging researchers to work with small and medium based companies as well as some of the large industrial corporations. The Alliance aims to involve a wide range of companies and increase co-operation between business and science to enable new ideas and innovative products to prosper.

*"We're currently experiencing an unprecedented dynamic development in the*

*science and research environment of Rhineland-Palatinate. Initiatives and networks are being created, new institutes established and there is hardly a week without a ground-breaking ceremony, laying of a cornerstone or a topping-out ceremony for a new science and research building. This dynamic development is particularly noticeable in the state capital Mainz, which has occupied an important position on the German scientific map for a long time and is strengthening its position as 'City of Science' this year," Minister of Science D Ahnen.*







Mainz is also the centre of Germany's wine economy, and it has a wine department and minister as well as a successful yearly wine festival which helps to attract tourism to the region. Business tourism is also important to the City and Mainz has also made its name as a venue for congresses and conferences, in particular through the Congress Centrum. Finally, the city benefits from its location close to Frankfurt Airport.

**Key Strengths / Lessons**

- Strong commitment to research and science, supported by practical projects and networks which aim to bring research institutions and businesses together.
- Examples of how a City has actively sought to exploiting the innovation potential of its research environment.
- Successfully positioning the city as a knowledge based economy with a high performing research environment and scientific infrastructure.
- Supporting initiatives to promote business and visitor tourism to the City.

### York's Position against Comparator UK Cities

A series of UK comparators have been selected to assess York's comparative position against its peers within a UK context, drawing on a variety of published statistical data. The areas selected are introduced below.

Introduction to UK Comparators	
Area	Summary
<p><b>Bath</b></p> 	<ul style="list-style-type: none"> <li>• Historic city with World Heritage Site status</li> <li>• Significant tourist destination, attracting 1 million overnight and 3.8 million day visitors a year. Heritage and culture are the primary attractors</li> <li>• Once an important manufacturing sector and now offering strong software, publishing and service-oriented industries</li> <li>• Significant redevelopments in recent years include the Thermal Bath Spa tourism project, redevelopment of the Western Riverside and the phased opening of the SouthGate shopping centre</li> </ul>
<p><b>Chester</b></p> 	<ul style="list-style-type: none"> <li>• Important visitor destination with attractions including the racecourse, historic centre and city walls</li> <li>• Service industries (including tourism, retail and public administration) underpin the economy</li> <li>• The 10 year £1.3bn Chester Renaissance aims to create a must see European destination</li> </ul>
<p><b>Cambridge</b></p> 	<ul style="list-style-type: none"> <li>• Prominent university town, the University of Cambridge is one of the most respected in the world</li> <li>• Total student population estimated at 30,000</li> <li>• A high-technology centre with strengths in software and bioscience, including spin out companies from the university</li> <li>• Home to Cambridge Science Park, the largest R&amp;D centre in Europe</li> </ul>
<p><b>Durham</b></p> 	<ul style="list-style-type: none"> <li>• County town in the North East of England</li> <li>• Home to a World Heritage Site listed cathedral and castle</li> <li>• A highly regarded university</li> <li>• Manufacturing remains an important element of the county economy although fast growth seen in distribution, hotels and restaurants</li> </ul>
<p><b>Edinburgh</b></p> 	<ul style="list-style-type: none"> <li>• Capital city and home of Scottish Parliament</li> <li>• Strong cultural scene and historic centre act as significant tourist draws</li> <li>• Largely service sector economy, particularly tourism, financial services and banking. Other strengths in education and high-tech research</li> <li>• Greenbelt constraints around the city led to developments such as Edinburgh Park to the west of the City housing companies such as JP Morgan, Fujitsu and Lloyds</li> <li>• Recent economic strategy for 2012-2017</li> </ul>
<p><b>Exeter</b></p> 	<ul style="list-style-type: none"> <li>• Historic city and regional capital, with high skills levels and economic activity rates</li> <li>• Identified within the top ten most profitable locations for businesses in the country.</li> <li>• Met Office is a major employer, secured by the city as a relocation in 2004</li> <li>• Benefits from available, strategically important employment sites / office locations with low rents / flexible rates</li> <li>• Planning approval secured to deliver a new £7m 26ha science park</li> </ul>
<p><b>Guildford</b></p>	<ul style="list-style-type: none"> <li>• County town of Surrey</li> <li>• One of the most expensive residential locations outside of the UK</li> <li>• Retail has attracted many high end brands</li> <li>• High levels of business formation and</li> </ul>





attracted inward investment due to factors such as educated workforce, connectivity, range of employment sites and strong past economic performance

- Home to the Surrey Research Park, owned and run by the University of Surrey housing over 100 companies
- Growth sectors include video games production and electronics

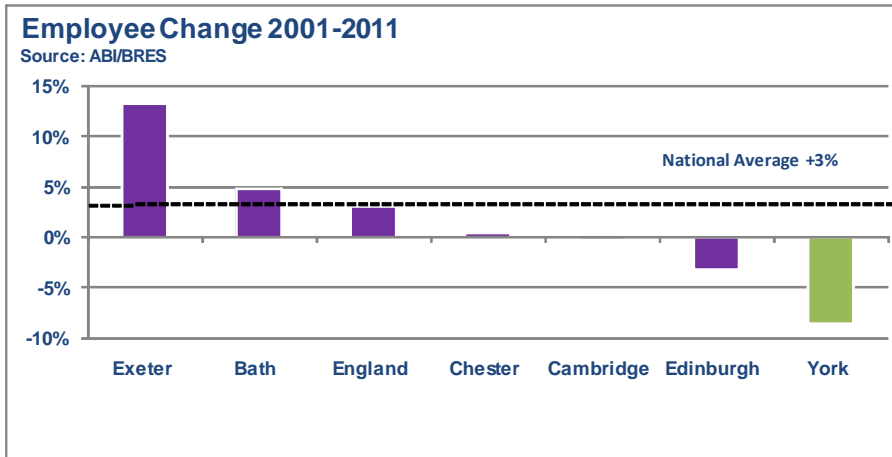
**Lincoln**



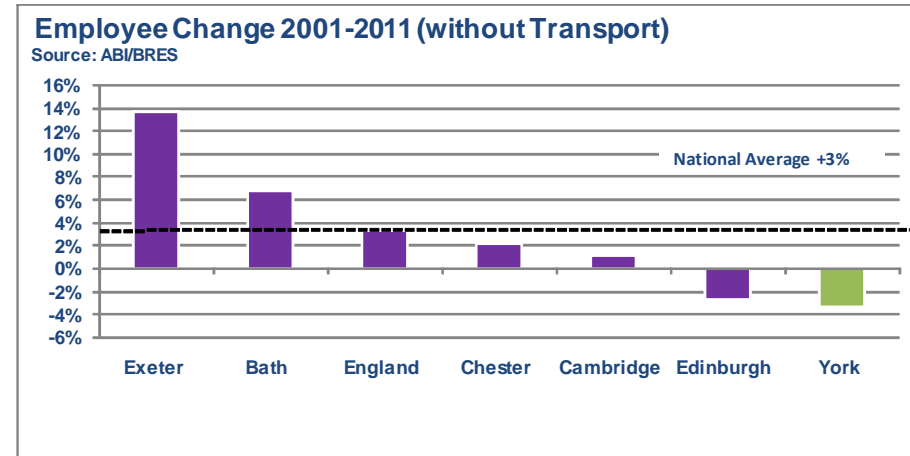
- Historical engineering strengths and growing IT sector, but an economy hit by industrial decline
- University presence used as a means to increase inward investment and establish small businesses
- Various public sector capital schemes delivered in conjunction with the University e.g. innovation centre, creative and digital industries centre and start up schemes

**Employment**

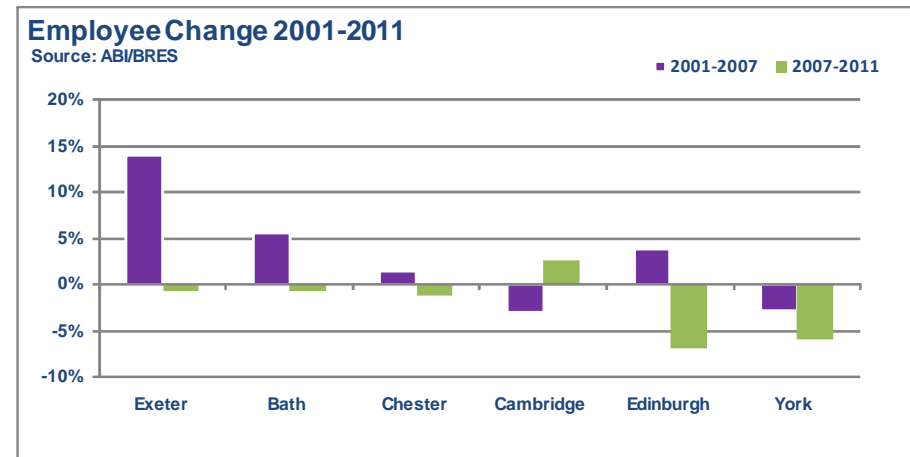
The chart below compares change in the number of employees over the past decade. There was exceptional growth in Exeter (+13%) with Bath also growing strongly (+5%). While Edinburgh experienced decline, this was not as severe as the decline in York as explained previously in the report.



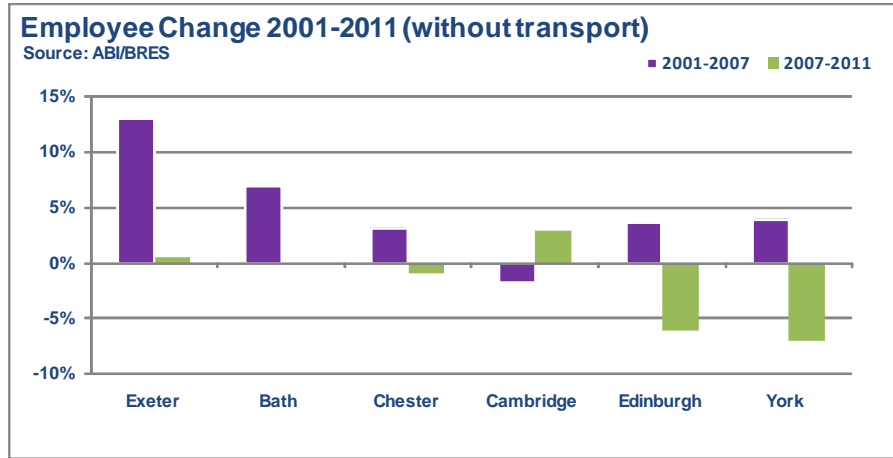
The following chart compares change in the number of employees in each of the comparator areas without transport. Even under this scenario, York has still performed relatively poorly in comparison.



This poor performance is largely linked to the large employee losses experienced between 2007 and 2011, although the growth levels experienced during 2001 and 2007 were also lower than top performing areas. Guildford has been particularly successful at attracting high levels of employee growth, having also experienced growth between 2009 and 2011 which compensated for the decline during the recession and led to employment now exceeding its pre-recession high.



A similar picture is provided, even when transport is excluded as set out overleaf.



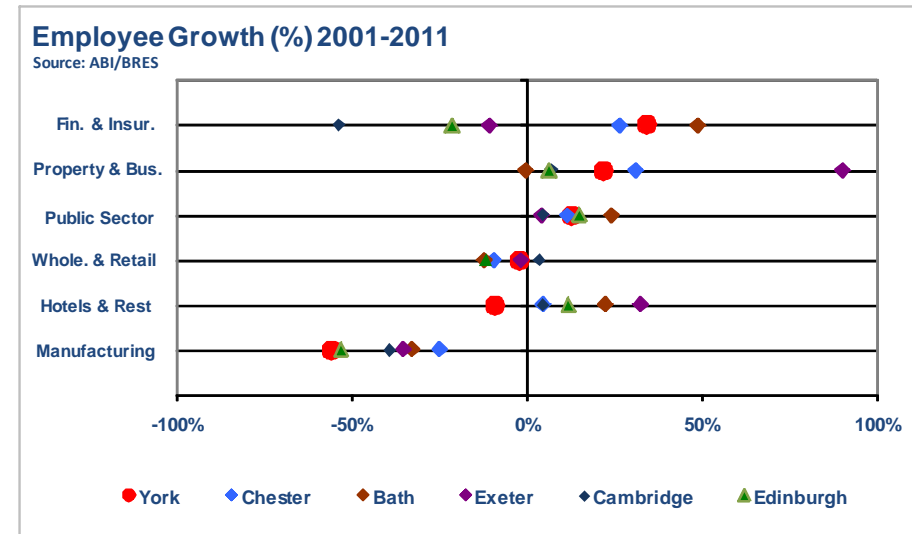
The drivers of the high growth areas are summarised below.

- Exeter:** exceptional growth in property and professional and other business activities (+90% compared to +22% nationally, net increase of over 7,700) – sector now highly represented (highest of comparator areas). Partly reflects low starting base – now employs over 16,000 (20% of total employees) compared to 8,600 (11% of employees in 2001). Also above average growth in hotels and restaurants creating over 1,100 jobs (+32% compared to +9% nationally).
- Guildford:** Growth has been spread across three main sectors – hotels and restaurants (+1,300 or +37% compared to +9% nationally), property and professional and other business services (+3,700 or +38% compared to +22% nationally and health (+2,200 or +32% compared to 28% nationally). Collectively three sectors created over 7,000 jobs.
- Bath:** Driven by high growth in education (+4,400 jobs or +56% compared to +18% nationally). Also above average growth in hotels and restaurants (creating 1,300 jobs – increase of 22% compared to 9% nationally) and net employee growth in health creating over 2,000 jobs (although growth in the sector lagged behind national average (+18% compared to +28%).

**Sectoral Growth**

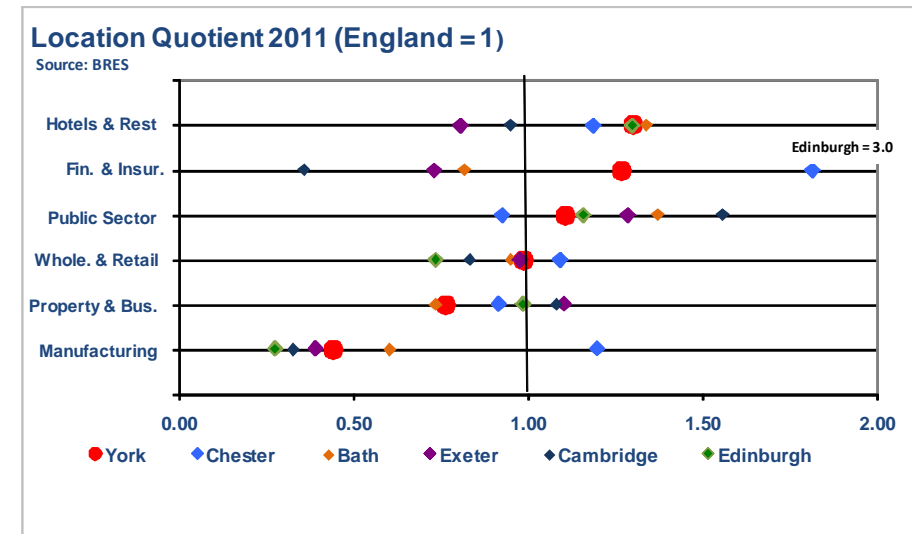
In terms of employee growth by sector, the chart below shows that York had performed relatively well in terms of the financial and insurance sector and the public sector when compared to the other cities. It has performed relatively less well in

hotels and restaurants and property and business services. Manufacturing performance has been particularly poor during this period.



**Sector Representation**

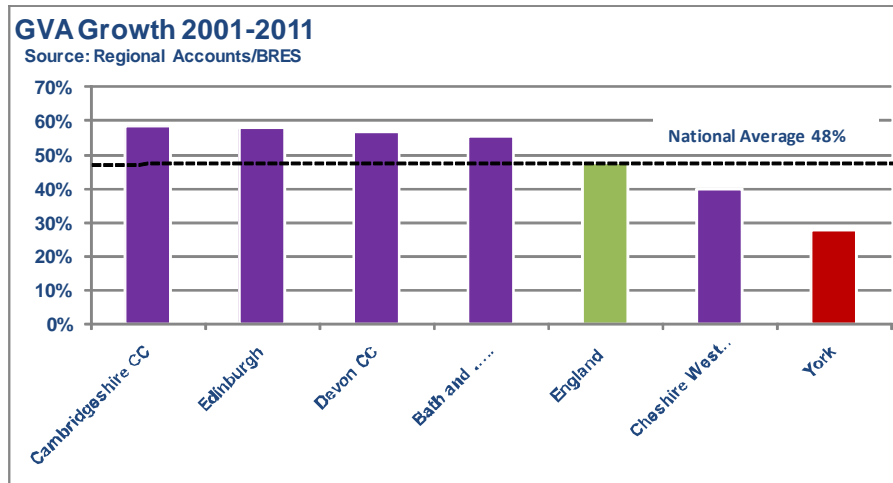
The chart below provides details of the sector breakdown for each of the economies.



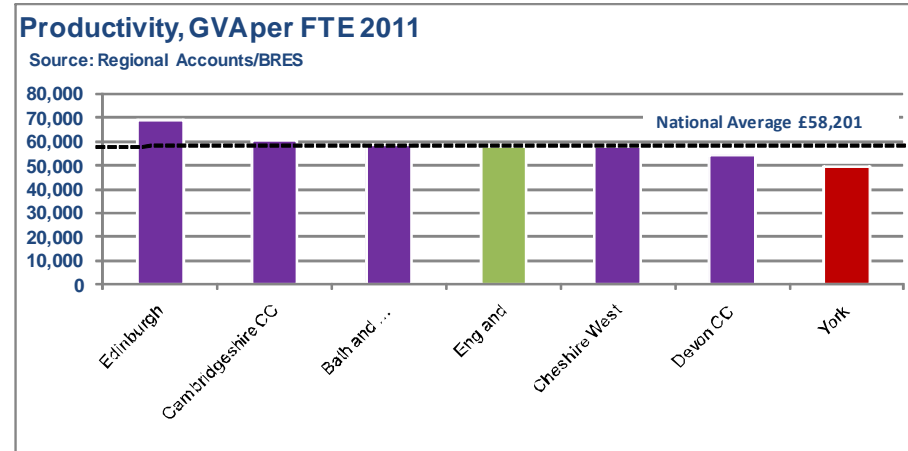
York is over represented in the financial and insurance sector, as well as hotels and restaurants. The number of employees in the public sector is also above the national average, although not to the extent of many of the other comparator areas. The property and business services and manufacturing sectors in particular are under-represented in the York economy.

**Gross Value Added**

The chart below provides a comparison of GVA growth across the comparator areas. For some of the areas the lowest level at which GVA is available (NUTs3) includes some of surrounding area e.g. Exeter (Devon) and Chester (Cheshire West and Chester). The chart demonstrates that York's GVA growth has lagged behind the other comparator areas and the national average during this period.

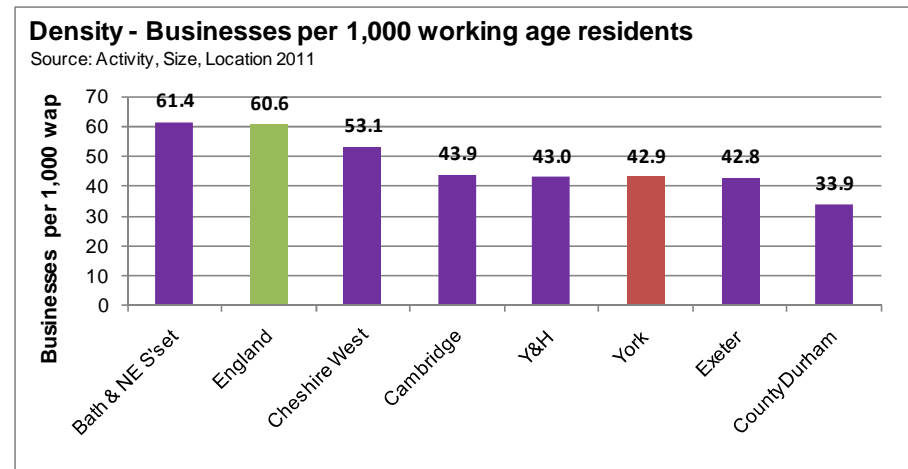


Similarly, York underperforms against these comparators with regards to productivity (GVA per fte).



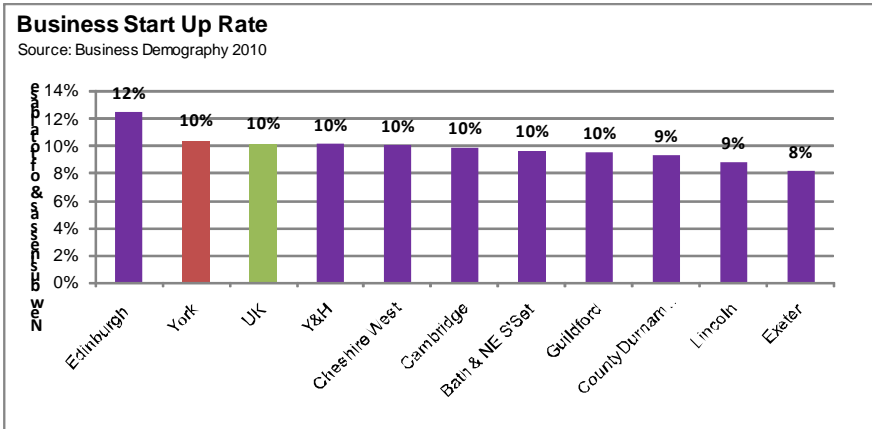
**The Business Base**

Six of the comparator areas, including York, are behind the UK average in terms of business density. York has 42.9 businesses per 1,000 working age population, which places it ahead of County Durham and on a par with Exeter.



**Business Start Up Rates**

York performs in line with the majority of the other comparator areas with regards to business start up rates as set out in the table below.



## 9 Economic Projections

### Introduction

Economic projections provide a useful indication of the scale of economic growth which may be achieved in an economy under different scenarios. This section presents a series of projections for the York, as well as the Regional and UK economy compiled by Oxford Economic Forecasting. Projections are provided through to 2030.

Three scenarios are provided in order to provide an indication of the scale of change involved under different circumstances.

- **The base scenario** - this involves OEF's assessment of global and national changes in the global economy, applied to the York level;
- **Scenario 1** - this is based on a higher level of migration, accompanied by a faster recovery from the current economic downturn;
- **Scenario 2** - this is based on faster growth in the following key growth sectors for York: advanced manufacturing, science and research, financial and professional services, and tourism and leisure.

This section provides an analysis of the projections, covering GVA, employment, the sector dynamics of the change and the skills and occupational structure.

### Key Headlines

The table below summarises the key findings from the economic projections work from 2012 to 2020 and shows;

- Strong employment and GVA in all three scenarios, with the base case resulting in an additional 7,343 jobs, an increase of 6.6%;
- In all three scenarios York outperforms the regional results, while it outperforms national employment growth while matching national GVA growth;
- Faster growth in a number of York key sector, potentially the most likely of the optimistic scenarios, would add a further 800 jobs and £75m GVA by 2020.

Forecast Employment and GVA Change		2012 to 2020			
Scenario		York (No)	York (%)	Y&H (%)	UK%
Base	Employment	+7,343	+6.6	+4.4	+5.6%
1	Employment	+9,790	+8.8	+6.5	+7.9
2	Employment	+8,121	+7.3	+5.2	+6.6
Base	GVA (£m)	+918	+23.2	+20.7	+23.3
1	GVA (£m)	+1,068	+27.0	+24.3	+27.2
2	GVA (£m)	+993	+25.1	+22.8	+25.7

Source Oxford Economic Forecasting

The key findings to 2030 suggests that York will perform very strongly, under all three scenarios. These results are as follows:

- The long term employment projections for York are even more positive – with forecast employment growth of over of nearly 14,500 by 2030 under the baseline scenario;
- GVA is also projected to grow significantly under the base scenario, by £2,482m by 2030;
- This level of projected GVA growth (62.7% by 2030) is in excess of the the national average.

Forecast Employment and GVA Change		2012 to 2030			
Scenario		York Number	York %	Y&H %	UK%
Base	Employment	+14,471	+13.0	+7.5	+8.7%
1	Employment	+20,197	+18.2	+12.4	+13.9
2	Employment	+16,169	+14.5	+10.4	+10.9
Base	GVA (£m)	+2,482	+62.7	+54.2	+59.1%
1	GVA (£m)	+2,934	+74.1	+65.1	+70.6
2	GVA (£m)	+2,702	+68.2	+60.5	+66.2

Source Oxford Economic Forecasting

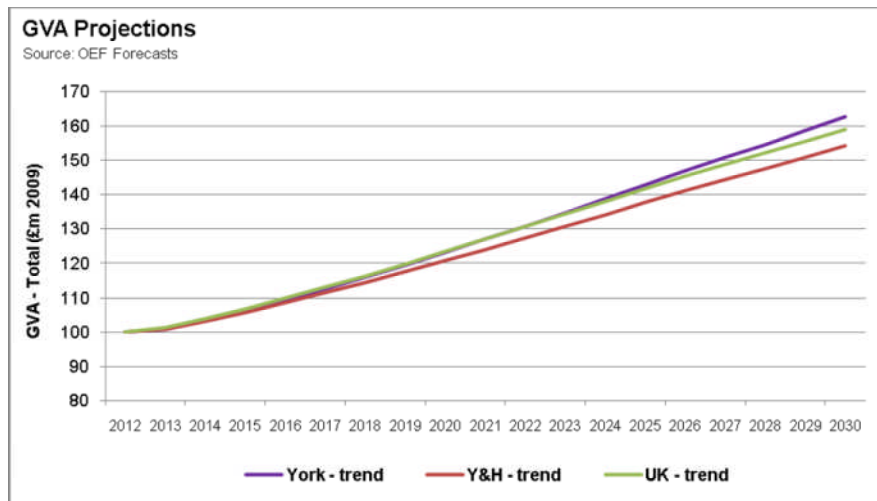
### Gross Value Added

The base economic projections show GVA in York rising to £4.9bn in 2020 and 6.4bn in 2030. This represents an increase of nearly one quarter and two thirds respectively.

Forecast GVA Change York					
	2012	2020	2030	2012-20	2020-30
Base	3,959	4,878	6,441	+23.2%	+62.7%
Scenario 1	3,959	5,028	6,893	+27.0%	+74.1%
Scenario 2	3,959	4,952	6,661	+25.1%	+68.2%

Source Oxford Economic Forecasting

This GVA growth in York is anticipated to be slightly in excess of the UK average through to 2030 as set out in the chart below.



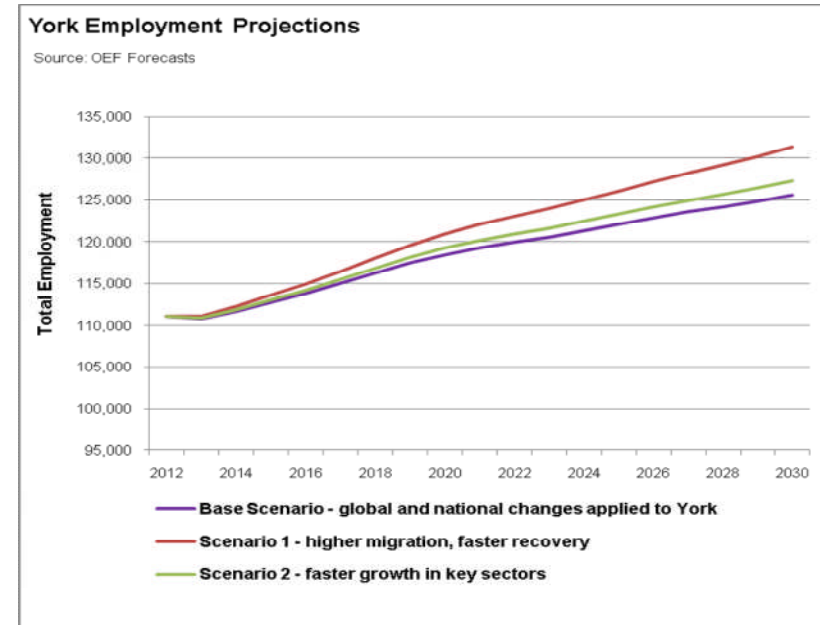
### Total Employment

The economic forecasts project employment growth of between 7,300 and 8,100 to 2020, and 14,500 and 20,200 by 2030 as shown in the table overleaf. This equates to between 913 and 1,103 per annum over the medium term (to 2020) and between 806 and 1,122 per annum over the longer term to 2030. However, these projections

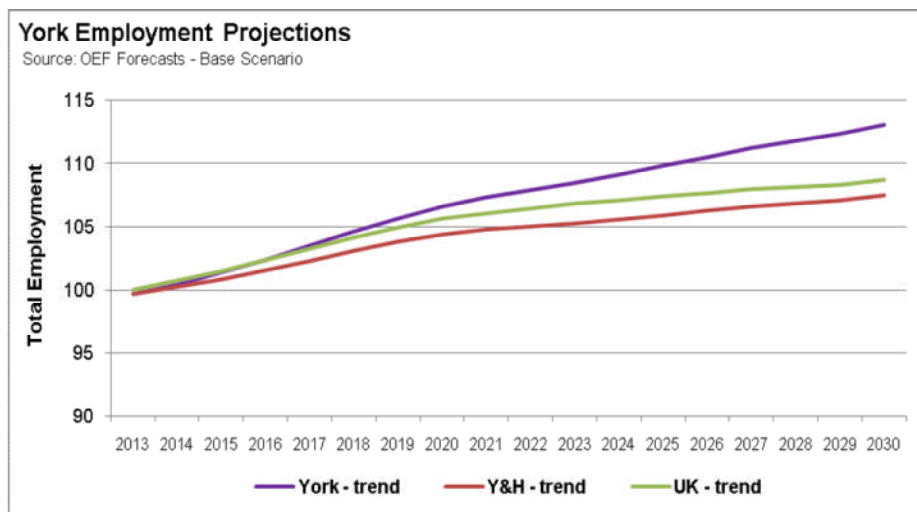
still mean that York will not return to its pre recession employment levels of 119,000 until 2020.

Forecast Employment Change York					
	2012	2020	2030	2012-20	2012-30
Base	111,150	118,493	125,621	+7,343	+14,471
Scenario 1	111,150	120,939	131,346	+9,789	+20,196
Scenario 2	111,150	119,271	127,319	+8,121	+16,169

Source Oxford Economic Forecasting



The chart below shows that relative employment growth over the coming years is anticipated to be in excess of the regional average over the next few years, and in line with the projected UK growth. Longer term, from 2018 the forecasts are for employment growth levels in York to be in excess of the UK average.



### Self Employment

Self-employment is also anticipated to grow over the medium and longer term. There is forecast self-employment growth of nearly 400 (3.6%) by 2020 and nearly 1,000 (9.0%) by 2030.

Forecast Self Employment Change York					
	2012	2020	2030	2012-20	2020-30
Base	10,814	11,200	11,787	+386	+973
Scenario 1	10,814	11,434	12,334	+620	+1,520
Scenario 2	10,814	11,279	11,961	+465	+1,147

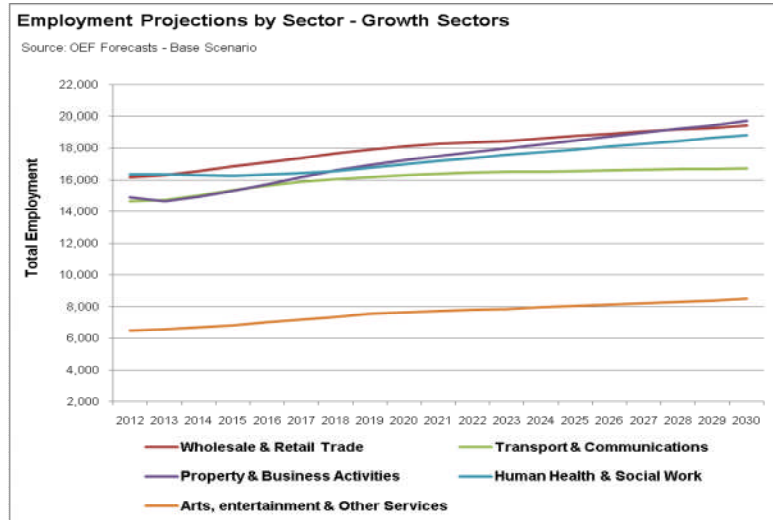
Source Oxford Economic Forecasting

### Sector Dynamics of Change

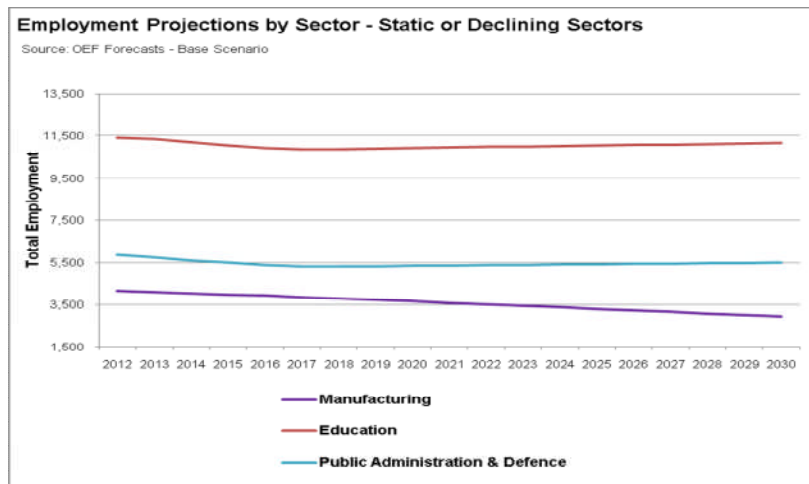
The table below sets out the sector dynamics of the forecast employment change. This demonstrates that the majority of sectors are forecast to grow over this period, with the largest growth in wholesale and retail trade, transportation and storage and professional, scientific and technical sectors.

Sector Dynamics of Change 2012-2020 and 2012-2030 (source: OEF)						
Sector	Change 2012-2030			Change 2012-2030		
	Base	Sc1	Sc2	Base	Sc1	Sc2
Wholesale and retail trade	1,931	2,309	1,973	3,231	4,146	3,324
Retail (assumes 70% of above)	1,352	1,616	1,381	2,262	2,902	2,327
Wholesale (30% of above)	579	693	592	969	1,244	997
Transportation and storage	1,405	1,679	1,485	1,724	2,362	1,903
Professional, scientific and tech	1,157	1,341	1,333	2,424	2,856	2,812
Administrative and support	964	1,138	1,102	1,948	2,353	2,248
Arts, entertainment and rec	682	766	720	1,260	1,463	1,346
Human health and social work	648	1,003	647	2,497	3,336	2,499
Other service activities	501	583	543	774	967	869
Construction	500	624	523	1,001	1,288	1,047
Accommodation and food service	372	570	487	144	581	387
Accommodation (50% of above)	186	285	244	72	291	194
Food services (50% of above)	186	285	244	72	291	194
Financial and insurance	304	432	304	668	977	668
Information and communication	282	345	316	369	512	443
Real estate activities	193	216	207	433	491	466
Mining & Quarrying	0	0	0	0	0	0
Water supply	-13	-6	-13	-24	-7	-24
Electricity, gas, steam and air	-26	-25	-26	-54	-51	-54
Agriculture, forestry & fishing	-48	-37	-45	-107	-83	-101
Education	-494	-281	-494	-254	231	-253
Manufacturing	-501	-436	-428	-1,195	-1,055	-1,042
Public administration and defence	-513	-428	-513	-369	-170	-369
<b>Total</b>	<b>7,343</b>	<b>9,790</b>	<b>8,121</b>	<b>14,471</b>	<b>20,197</b>	<b>16,170</b>

When the sectors are grouped together, the largest employment growth is in the property and business services sector, wholesale and retail trade and transport and communications. The arts, entertainment and other services sector (including tourism) is also anticipated to show strong growth.



Over the long term, there is forecast to be continued decline within York's manufacturing sector.



### Occupational Structure

The chart below demonstrates that the overall occupational structure is unlikely to change vastly over the coming years.

Forecast Occupational Structure (OEF Base forecasts)					
Occupation	Change		% of all jobs		
	2012-20	2012-30	2012	2020	2030
Managers /senior officials	1,637	3,083	14.9	15.3	15.6
Professional occupations	580	1,697	12.6	12.3	12.5
Associate prof. and technical	1,276	3,010	15.9	16.0	16.5
Admin. and secretarial	419	825	12.8	12.3	12.0
Skilled trades occupations	276	301	6.6	6.4	6.1
Personal service occupations	663	1,756	9.2	9.2	9.6
Sales & customer service	1,271	2,121	10.8	11.2	11.2
Process, plant & machine ops	554	728	6.8	6.8	6.6
Elementary occupations	666	949	10.4	10.3	10.0

There is anticipated to be a relatively small increase in all occupations in line with the forecast total employment increase. The greatest increase is anticipated to be in manager/senior officials, associate professional and technical and sales and customer service advisors. The occupational structure of the workforce however is anticipated to be similar over time to the current position, with just a small increase in higher level occupations.



## Floorspace and Employment Land Implications

The following section translates the projected employment growth in York (as set out by the Oxford Economics Forecasts scenario 2) into the total floorspace and employment land which would be required to accommodate this growth across the different sectors. This is undertaken by interpreting the SIC sectors into Use Classes and factoring in employment density calculations.

In order to provide indications of the total floorspace and employment land required to support the scale of growth projected by OEF, the following process was undertaken:

1. Total employment change (based on scenario 2) was converted into fte employment change, using the latest full/part time split by sector according to the 2011 BRES.
2. Using employment density estimates for each sector (drawing on the latest published employment densities guide), the change in fte was converted into net additional floorspace required.
3. In order to provide an indication of how this equates to employment land, further assumptions were made regarding plot ratios (typically 40-60%) and vacancy rates (10%).

The conversion of employment scenarios into floorspace and employment land requirements is not an exact science, indeed there are few studies which have attempted a definitive split of SIC categories into Use Classes. The figures also vary at the local level depending on factors such as the split of full and part time roles by sector, the breakdown of the sector locally by use class, the location and nature of the development (this has implications for plot ratios) and vacancy rate assumptions. The figures also do not take account of the amount and availability of current stock. Some businesses will not need additional space to expand as they may already have this space or could accommodate it through a more efficient use of existing buildings. There is also anticipated to be some churn in the stock. However the analysis provides an indication of the property implications of the forecasts.

A full list of assumptions are provided in annex 1.

## Summary

If the forecast employment growth of 16,348 by 2030 under scenario 2 is to be achieved, there will be implications in terms of floorspace and employment land required. The table overleaf sets out the total potential floorspace and land required to support the growth of each sector under scenario 2 to 2030.

The charts show an additional requirement of 110,146 sq m floorspace by 2030 (split across the different sectors) and 20.7ha employment land (across B1,B2 and B8 uses). The major generator of new space will be the transportation and storage sectors (mainly B8, high land requirements, low employment densities), the wholesale and retail trade sector (mix of B8, A1 and some B2 space) and the professional, scientific and technology sector (mix of space types).

In addition, whilst manufacturing employment is set to decline, there is likely to be considerable churn, with older business being extinguished and new advanced manufacturing sectors growing. This means that despite overall floorspace and land required declining, some new employment space (potentially for between 500 and 700 employees) in labs/clean rooms/light production may be required to meet the changing demand from a number of growth sub-sectors.

City of York Scenario 2 Economic Forecasts: Implications for Floorspace and Employment Land													
Sector	Additional employment to 2030	Additional fte to 2030	Additional Floorspace (sq m)						Additional Land (ha) <sup>6</sup>				
			B1a	B1b	B1c	B2	B8	Other	B1a	B1b	B1c	B2	B8
Manufacturing	-1,042	-1,001	0	0	0	-36,054	0		0.0	0.0	0.0	-9.5	0.0
Construction	1,047	994	1,968	0	0	0	11,827		0.3	0.0	0.0	0.0	2.5
Wholesale & retail trade	3,324	2,434	0	0	0	1,315	20,449	51,730 (A1)	0.0	0.0	0.0	0.3	4.3
Transportation. & storage	1,903	1,852	7,779	0	0	0	45,379		1.4	0.0	0.0	0.0	9.5
Accommodation. & food	387	275	0	0	0	0	0	4,131 (A3-A5) 6,000 A1	0.0	0.0	0.0	0.0	0.0
Info. & communication	443	420	2,770	0	2,466	1,511	3,673		0.5	0.0	0.6	0.4	0.8
Financial and insurance	668	621	3,725	0	0	0	0	4,967 (A2)	0.7	0.0	0.0	0.0	0.0
Real estate activities	466	400	2,402	0	0	0	0	3,203 (A2)	0.4	0.0	0.0	0.0	0.0
Prof., scientific and tech	2,812	2,476	11,884	7,427	0	4,456	0	13,865 (A2)	2.1	1.9	0.0	1.2	0.0
Administ. and support	2,248	1,729	5,186	0	0	0	0	4,321 (A1) 6,914 (A1)	0.9	0.0	0.0	0.0	0.0
Public admin. & defence	-369	-318	0	0	0	0	0	-11,460 (D1)	0.0	0.0	0.0	0.0	0.0
Education	-253	-190	-114	0	0	0	0	-6,493 (D1)	0.0	0.0	0.0	0.0	0.0
Health & social work	2,499	1,819	1,091	0	0	0	0	49,100 (D1) 18,185 (C2)	0.2	0.0	0.0	0.0	0.0
Arts, entertainment & rec.	1,346	1,013	4,011	0	0	0	0	12,153 (D1) 27,007 (D2)	0.7	0.0	0.0	0.0	0.0
Other service activities	869	654	3,924	0	3,073	0	0	6,539 (A1)	0.7	0.0	0.8	0.0	0.0
<b>TOTAL</b>	<b>16,348</b>	<b>13,177</b>	<b>44,626</b>	<b>7,427</b>	<b>5,539</b>	<b>-28,772</b>	<b>81,326</b>	<b>190,163</b>	<b>7.8</b>	<b>1.9</b>	<b>1.5</b>	<b>-7.6</b>	<b>17.1</b>

<sup>6</sup> Estimate for non business uses as follows: A1 8.2ha based on 80% plot ratio; A2 3.8ha based on 80% plot ratio; A3-A5 0.5ha based on 80% plot ratio; 0.8ha based on 80% plot ratio; C2 4.8ha based on 40% plot ratio; D1 7.6ha based on 60% plot ratio; D2 7.1% based on 40% plot ratio. Total = 32.8ha)

## 10 Conclusions

### Summary

This report has provided the economic baseline assessment of York and will form part of the supporting evidence to inform the development of the new Local Plan.

York has experienced **strong population growth** over the past decade, and has been successful in attracting young residents (including young professionals) when compared with elsewhere in the region and nationally. York is the **third fastest growing city in the UK**, a sign of its attraction as a place to study, work, and live.

Following a period of sustained economic growth during the 1990s, **the York economy has flat lined since 2004**. The transport sector is having a major impact on overall employment numbers, although the post 2007 decline has affected a numbers of sectors. The decline in manufacturing has been more significant than the regional and national average during this period. York has depended upon large employers for many years, and has **lower than average enterprise levels**, with some 1,400 additional businesses required to match the national business density.

The city's economy has experienced **significant re-structuring over the past 10-20 years** from an area based on manufacturing, to one which is based on financial, business and insurance services, the visitor economy and a science and knowledge based sector.

There are however a number of positives in employment terms, with **key sector strengths** including healthcare and bioscience, environmental and bio-renewable technologies, IT, creative and digital and financial and professional services. The areas of significant employment growth over the past decade have been concentrated in a limited number of areas – financial and professional business services and healthcare and public administration.

In GVA terms, York contributes £4bn to the national economy. There are however two core issues – **levels of GVA growth during the past decade have been low** following a decline in manufacturing activities, and York has relatively **low levels of productivity**. Further re-structuring of the City's employment base, in particular a shift towards private sector services and growth sectors, has the potential to increase total GVA.

York has a **highly skilled workforce** – this has been a long standing, positive feature of the local economy. The City's occupational structure is largely in line with the national average. Over 40% of workers are in higher level occupations, and there has been a significant decline in process, plant and machine operatives over the past decade reflecting the decline in manufacturing.

In comparison to its UK peers, the City's economy has underperformed in terms of employment change, GVA and productivity and has a low business density. Despite this, **long term employment projections for York are very positive**.

There is forecast employment growth of over 7,300 by 2020 and nearly 14,500 by 2030 under the base scenario. Growth of both employment and GVA is projected to be greater than elsewhere in the region. The **key drivers of change** are anticipated to be the property and business services sector, wholesale and retail trade and transport and communications. In terms of occupations, a large proportion of the increased employment will be in professional and higher skilled categories.

The forecasts also indicate that the population will increase by a further 26,000 by 2030, with considerable implications for the local market. Additional housing will also be required as more people choose to live on their own.

### Implications for Economic and Spatial Policy

York has only recently published its economic strategy for the period 2011-15. The majority of the challenges, priorities and actions set out within the strategy remain valid, notably:

- The city is punching below its weight nationally and internationally in terms of productivity and employment levels. The latest economic growth projections are however encouraging;
- The availability of suitable space for commercial activity is an ongoing issue;
- The continued over-reliance on the public sector for employment opportunities.

The review of the economic baseline and the assessment of UK and European Comparators provide a number of additional implications for the development of the new Local Plan. These include:

1. There is a clear need to expand York's business base. Enterprise, including self-employment and business start ups, can play an important role in delivering private sector growth. This will require an adequate supply of small, flexible and affordable business space.
2. York's ability to attract and retain investment into the City and support business expansion is in part dependent on ensuring the availability and suitability of land, premises and housing. With regard to commercial premises, the attraction and expansion of high growth and medium sized companies in key sectors will require a range of high quality business premises/locations capable of competing with other employment centres.

3. The forecast growth in office based sectors, transport and communication and retail need to be taken into account in new plans for development.
4. The forecast growth in the population and demographic changes will lead to increased demand for housing - (younger people, high skilled occupations, and older people) – and local services including retail.
5. A number of the forecast growth sectors require bespoke or tailored premises and adequate and affordable grow-on space. A number of these sub sectors and niches benefit from close proximity, networking and specialist hubs/centres. These sub-sectors include bio-science and creative and digital.
6. There are a number of key sectors which require a continual up-dating of infrastructure to retain competitiveness. These include creative and digital and superfast broadband, and tourism and the visitor economy, in terms of new attractions and cultural and heritage assets.

Other economic opportunities around renewable energy and the green economy may have implications for spatial planning, although competition from other areas, such as Tees Valley, may restrict the scale of new employment opportunities.

### Key Economic Themes

There are a number of themes and priorities which will contribute to York realising its economic potential over the next twenty years. These include:

- a) The success of many of the European comparators has been linked to portraying a strong business image and identity (either based around a sector, major project or area strength). Many EU cities have shown ambition in this regard (e.g. Science City, City of Culture). York would benefit from consistently conveying its offer as a business location built around key strengths such as the University, a growing population, a talented workforce and supply chain and employment strengths in a number of growth industries.
- b) The delivery of major projects/ interventions based around a small number of big ideas or themes should be a key action for partners, along with a co-ordinated approach to attracting investment.
- c) The City's higher education and science base has expanded over recent years and York benefits from the presence of two Universities. The area's research institutions and science base will continue to have an important role to play in the future economic growth of the City (as has been the case with a number of European cities). Key to this will be to strengthen links

between the research and business base, expanding Science City, developing the European concept of smart specialisation, and promoting the City's strengths in this regard.

- d) York should seek to develop and expand its international connections, co-operation and joint activities in order to learn lessons from other cities, source funding and attract investment.
- e) It will be important to continue to be important to promote the area's high quality of life, cultural and leisure opportunities in order to attract high quality individuals and investment implied by the employment and occupational growth.
- f) The European comparators showed the importance of adopting business friendly policies to enable companies to grow and expand within the city. In York, the public sector has a role to play in supporting business in areas such as:
  - a. Accessing new markets;
  - b. Obtaining finance;
  - c. Ensuring the affordability, availability and suitability of premises;
  - d. Identifying low carbon opportunities.
- g) Ensuring that businesses prioritise the reduction of carbon emissions will continue to prove particularly challenging in a difficult economic climate. However, this also represents opportunities in terms of demand for green technologies.

## Annex 1 – Floorspace Assumptions

There is no set formula for translating employment forecasts into demand for new sites and premises for a variety of reasons. The analysis therefore draws on a variety of assumptions similar to those which would be used for a quantitative assessment as part of an employment land review, combined with local intelligence and sub-sector analysis.

A summary of the process is set out below:

1. OEF have developed economic forecasts for York by headline sector under three different scenarios. The employment land projections for York have been calculated based on scenario 2. This shows a net employment increase of 16,170 over the period to 2030.
2. Figures for four sectors where employment land and floorspace is less relevant have been removed from the analysis. This means that there is a net employment increase of 16,348. The sectors removed are as follows:
  - a. Agriculture, forestry and fishing: Change – 101
  - b. Mining and quarrying: Change 0
  - c. Electricity, gas, steam and air: Change -54
  - d. Water supply: Change -24
3. The employment figures were converted into full time equivalent numbers, drawing on the latest split in full and part time employment by sector. Part time employment has been assumed as 0.5 fte.
4. The figures for each of the sectors used in the economic forecasts was converted into relevant use classes. This drew on the current make up of the sector based on an assessment of the sub-sector employment figures for 2011 in the Business Register and Employment Survey (BRES). An explanation of the split is provided for each sector in table 2.

5. Average employment densities (using the employment Densities Guide<sup>7</sup>) were applied to the economic forecasts. The densities used were as follows:

- B1a = 12 sq m per fte job
- B1b = 20 sq m per fte
- B1c = 47 sq m per fte job
- B2 = 36 sq m per fte job
- B8 = 70 sq m per fte job
- A1 = 25 sq m per fte
- A2 = 16 sq m per fte
- A3, A4 & A5 = 20 sq m per fte
- C2 = 50 sq m per fte<sup>8</sup>
- D1<sup>9</sup> = 36 sq m per fte<sup>10</sup>
- D2 – 80 sq m per fte

6. The following average plot ratios were used to convert employment space into employment land for business use classes (B1, B2 and B8):

- B1a = 60% (assumes 40:60 split city centre / edge of city business parks)
- B1b = 40%
- B1c = 40%

<sup>7</sup> Employment Densities Guide, 2<sup>nd</sup> Edition 2010, Drivers Jonas Deloitte for the HCA and OFFPAT

<sup>8</sup> This is based on a small sample of care home examples as no guidance provided in the Employment Densities Guide

<sup>9</sup> This is based purely on 1 job per 36 sq m for cultural attractions as set out in guidance provided in the Employment Densities Guide. The figures should therefore be treated with caution as they may not be applicable for all D1 uses.

- B2 = 40%
  - B8 = 50%
7. Vacancy rates of 5% were applied to each of the use classes in line with the SQW assumptions in the 2007 York Employment Land Review.
  8. The figures assume that all of the new jobs will require new floorspace and new land. This therefore does not take into account:
    - a. The proportion of current land occupied i.e. current vacant space available to accommodate these jobs; and
    - b. The fact that many of the new jobs will be accommodated by existing businesses expanding into their own premises or into existing premises which are currently available but vacant.

Further assumptions could be provided to take into account the above information if required.

9. The figures do not take into account the location of the likely new jobs, other than the assumed split for B1.
10. Figures for the A1 retail floorspace have been calculated based on the information provided by Oxford Economics relating to employment growth figures. This equates to 51,730 sq m. A more in depth piece of research examining the evidence base for the retail sector specifically places this requirement at 62,000 sq m. Given the additional evidence in the latter study, it is recommended that the 62,000 sq m figure is used for planning policy purposes.
11. Employment densities for hotels are calculated differently to other sectors. For all other sectors employment numbers are driven by the size of development, so it is easier to translate job numbers into floorspace requirements. However for hotels it is driven by the type of development and varies significantly e.g. 1 employee per 3

bedrooms for budget hotels to 1 employee per 1.25 bedrooms for 5 star accommodation. On the assumption that the 69 fte employees may be employed in budget type hotels, this could equate to two 100 bed hotels. On the assumption that an average size 100 bed hotel would be 3,000 sqm, this would give a floorspace requirement of 6,000 sq m. Again as per the point above, caution is advised when using these figures as the demand for future hotel space isn't usually calculated in this way.

## Annex 2 – Sources of Images

Page 17 Utrecht - <http://www.flickr.com/photos/christiaankuun/4544327508/>

Page 18 Oulu - <http://www.flickr.com/photos/52189607@N04/4932448899/>

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