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Planning Design Economics

Oxford City Council

**THE ROLE OF THE HIGHER
EDUCATION, HEALTH AND RETAIL
SECTORS IN THE OXFORD ECONOMY**

MAIN REPORT

CL/10889/GM/JR

March 2008

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Acknowledgements:

NLP gratefully acknowledges the contributions of the numerous institutions and individuals who have assisted in the preparation of this study, in particular Oxford University, Oxford Brookes University, the Oxford Radcliffe Hospitals NHS Trust, the Nuffield Orthopaedic Centre NHS Trust and the Oxfordshire Primary Care Trust.

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1.0 INTRODUCTION

1.1 This economic study has been commissioned by Oxford City Council to examine the economic role and importance of the higher education, health and retail sectors within Oxford. The purpose of this study is to inform the Council's Local Development Framework (LDF), Economic Development Strategy, the West End Area Action Plan and the Council's inputs to the South East Plan.



1.2 Key aims of the study are to assess:

- a) the contribution of each of these sectors to the local economy;
- b) the level of employment and economic value generated by each;
- c) other direct and indirect effects on the local economy; and
- d) future growth prospects and land requirements for the health and higher education sectors.

1.3 For the education and health sectors, the study examines the economic role and importance of these sectors within the City in terms of employment, their needs and sources of local labour, their levels of investment and spending within the City, and their wider contribution to other sectors of the local economy and the business profile and image of Oxford generally. For the retail sector, a general overview is provided of the levels and types of employment this sector supports and how it contributes to the Oxford economy as a whole. The economic importance of each of these sectors within the City is also compared with their levels in other broadly similar UK towns.

1.4 In addition, the study examines the future growth potential of the higher education and health sectors, and the broad implications of this in terms of employment, labour needs and requirements for land. The potential impacts of such growth on other employment generating uses in the City are also considered.

1.5 Whilst each of the sectors considered may also have related activities and economic effects outside of Oxford, the focus of this study is on the impacts within the City of Oxford administrative boundary.

Methodology

1.6 The specific sectors examined by this study are broadly defined as follows:

- a) *Education*: higher/further education including universities, further education colleges, language schools and tutorial colleges, but excluding primary and secondary schools;

- b) *Health*: facilities operated by NHS Trusts, including the Primary Care Trust and the Oxford Radcliffe Hospitals as well as private hospitals and nursing homes; and
- c) *Retail*: convenience and comparison shopping and retail warehousing uses, including the motor trade.

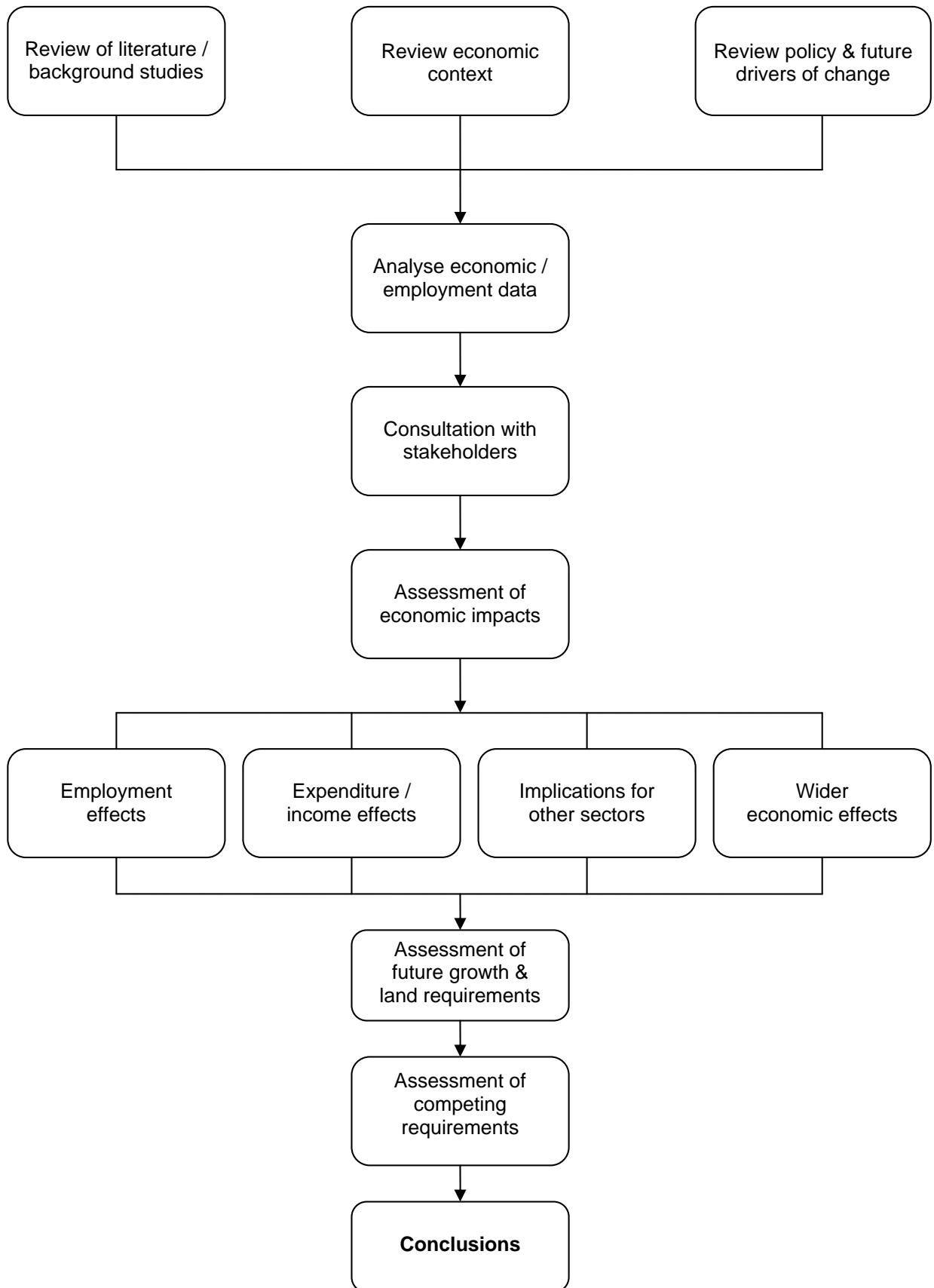
1.7 This study draws upon published economic and employment data available when the study was prepared in early 2007, a review of previous research, and interviews with key stakeholders and relevant organisations in the sectors being examined. Information on future property needs of Oxford University was also obtained from a survey of the 43 colleges by the consultants in October 2007. A full list of those consulted is given in Appendix 1. The timescale available for the study did not permit any extensive survey work on local expenditure patterns by the different sectors.

1.8 The overall methodology followed by the study is illustrated in Figure 1.1.

1.9 The report is structured as follows:

- a brief review of current economic conditions and recent trends in Oxford to provide the context for considering the economic importance of the education, health and retail sectors to the City's economy (Chapter 2);
- a review of recent Government White Papers, spending programmes and other policy documents outlining future growth prospects for the health and higher education sectors, and factors which may drive any future changes in these sectors within Oxford (Chapter 3);
- analysis of the profile and economic contribution of each sector within Oxford's economy (Chapters 4-6), including:
 - ❖ a benchmark comparison with other UK cities of similar scale and characteristics;
 - ❖ assessment of direct effects of each sector, including the broad level of employment directly supported in Oxford, the nature and quality of jobs provided in relation to the skills profile of Oxford's resident workforce, past levels of capital investment, and the contribution to local GDP/GVA;
 - ❖ assessment of indirect effects, including spending with local suppliers, multiplier effects, attraction of businesses and academic spin-outs and start-ups; and
 - ❖ consideration of any wider economic effects of these sectors, including impacts on other economic sectors, competition for labour, and their contribution to Oxford's profile, image and tourism appeal.
- an assessment of the future growth potential and the likely future land requirements for the higher education and health sectors and the implications for other economic sectors in Oxford (Chapter 7).
- Chapter 8 provides overall conclusions.

Figure 1.1: Study Methodology



2.0 ECONOMIC CONTEXT

2.1 This Chapter establishes the economic context for the study by briefly reviewing both past and present economic conditions within Oxford compared to the Oxfordshire sub-region and the South East regional economy. This is important in identifying the strengths and overall characteristics of the Oxford economy, to provide a background against which the economic contribution of the higher education, health and retail sectors to the City's economy can be considered.

Overview

2.2 Oxford is the county town, largest urban area and main economic centre of Oxfordshire, which lies within the South East region, the most prosperous in the UK. Oxford is also one of the UK's most important historic towns, with built heritage of international significance.

2.3 The City also lies within the Thames Valley sub-region, one of the UK's strongest concentrations of business services and knowledge-based activities. It has two universities, is an education centre of international renown, and contains hospitals with an international reputation in medical excellence and research. Other key economic sectors include publishing, automotive engineering, electronics, IT and bioscience activities. With some 30% of all the UK's bioscience companies based there, Oxford is one of the world's leading centres for medicine and bioscience.

Economic Activity

2.4 The main centres of economic activity and employment within the City include:

- the BMW car manufacturing plant at Cowley;
- the Oxford Business Park, which provides mainly office floorspace, at Cowley on the City's southern edge;
- the Oxford Science Park at Littlemore which contains a range of R&D accommodation and incubator units, accommodating bioscience and IT firms;
- the Littlemore Park centre of research & development (R&D) uses; and
- various older established industrial areas such as the Horspath, Osney Mead and Harrow Road industrial estates, the Oxpens Business Centre and the County Trading estate.

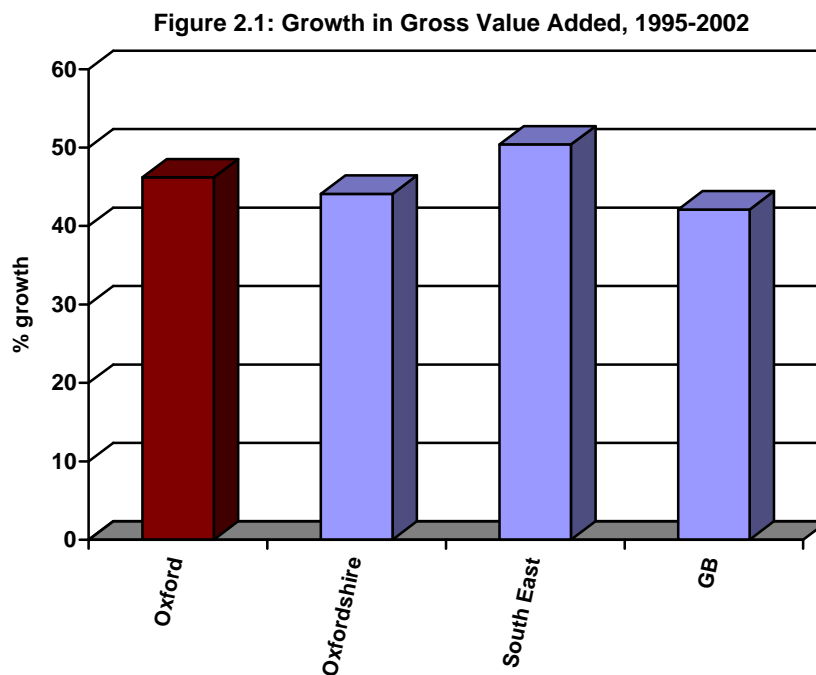
2.5 The largest employers within Oxford itself include the Universities, the Hospitals, car manufacturer BMW (UK), Unipart (a distributor of automotive and other parts) and various publishing firms. There are relatively few large firms with only 3% of Oxford firms having over 100 jobs, although this share is higher than in the South-East region and UK. At the same time, Oxford has a smaller proportion of very small firms (0-9 employees) than regionally and nationally (Table 1).

Economic Trends

- 2.6 Recent economic trends in the City are summarised below, with detailed statistics contained in Appendix 2. These allow the recent performance of the Oxford economy to be compared with other Oxfordshire districts, the South East region, and Great Britain as a whole.

Economic Growth

- 2.7 Between 1995-2002, Oxford's economy grew by 46% as measured by Gross Value Added (GVA), a slightly higher rate than growth in Oxfordshire (44%) and the UK as a whole (42%), but lower than the South East rate (50%) (Figure 2.1).



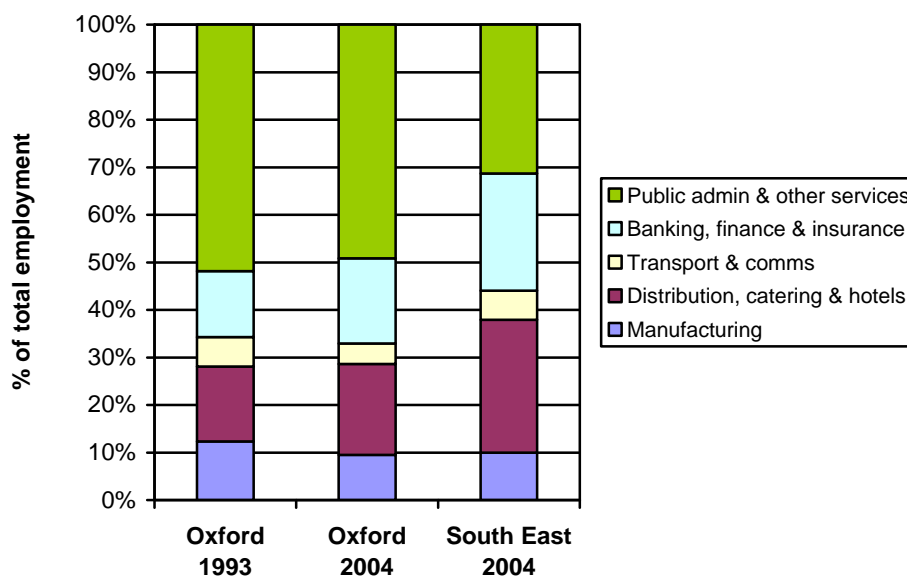
Source: ONS

Employment

- 2.8 In 2005, there were approximately 98,500 jobs in Oxford. Over the period 1997-2005, employment in Oxford grew by 26%, a growth rate well above that in both the South East region (19.3%) and Great Britain (16%) (Table 2).¹ The City's job growth has also been significantly above that in other Oxfordshire districts in recent years (Table 3).
- 2.9 The Oxford economy is dominated by the service sector, which increased its share of the workforce from 86.1% to 88.8% between 1993-2004. Reflecting the City's importance as a centre for education and health activities, representation of public sector administration and other services (48.2%) is considerably higher than both the regional (29.5%) and national (31.5%) averages (Table 4). However, while this sector grew by 4% in Oxford between 1993-2004, in overall terms its share of the Oxford workforce actually fell slightly (Figure 2.2).

¹ During this period, the Oxford administrative boundary was altered to include part of South Oxfordshire, while the method of collection of employment data changed from the Annual Employment Survey to the Annual Business Inquiry. This needs to be taken into account when comparing employment figures over this period.

Figure 2.2: Principal Sectors of Employment



Source: Annual Employment Survey 1993 (rescaled); Annual Business Inquiry 2004

- 2.10 The typically more dynamic sector of banking, finance and insurance accounts for 17.6% of employment in Oxford, lower than the regional (23.2%) and national (20.0%) averages. The distribution, catering and hotel sectors also have a lower share of jobs (18.8%) than the South East region (26.3%) and Great Britain (24.7%) (Table 4).
- 2.11 Manufacturing employment fell from 12.1% of all Oxford jobs to 9.3%, and the current proportion is now lower than both regional (9.8%) and national (12.6%) averages, confirming the City's more limited role as an industrial location (Table 3). However, the rate of decline in Oxford's manufacturing employment (15.2%) has been similar to that seen nationally (Table 5).

Business Growth

- 2.12 The change in stock of VAT-registered firms provides an indicator of the level of entrepreneurship and business activity, in an economy. Between 1994-2005, the number of VAT registered firms in Oxford grew by 28.1%, much higher than the regional (17.7%) and national (11.7%) growth rates (Table 7).

Labour Market

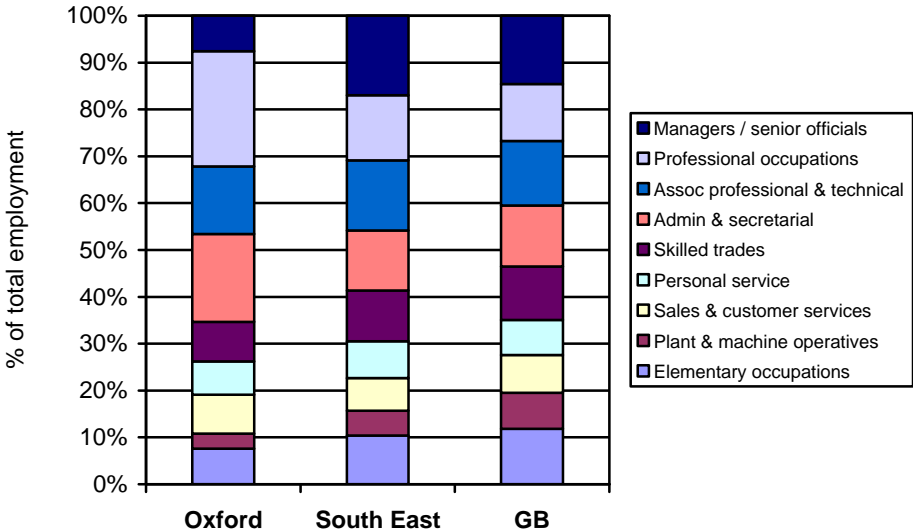
- 2.13 Unemployment in Oxford is low. The current claimant unemployment rate (1.6%) is comparable to the South East average (1.6%), but much lower than nationally (2.5%) (Table 10) and this pattern has prevailed historically (see Figure 2.3). The City also has a tight local labour market. In November 2006, there were 1.5 claimant unemployed workers for every notified job centre vacancy in Oxford. This was lower than the ratios for both the South East (2.1) and GB (2.6) and indicates a low level of labour available to fill jobs (Table 9).

2.14 However, there appears some scope to expand the indigenous local labour supply should employment demand grow further (Table 10). This is reflected in the economic activity rate for Oxford – the proportion of the economically active workforce in employment – which at 75.6% is lower than Oxfordshire (84.6%), and the South-East region (82.3%).

Occupations and Skills

2.15 The Oxford labour force is relatively highly skilled with high levels of workers in professional occupations (22.2%), and fewer in lower skilled groups such as plant and machine operatives (2.9%). Compared with the region, managers/senior officials (6.8%), skilled trades (7.6%), and machine operatives (3%) also have a comparatively low representation in Oxford (Table 11 and Figure 2.3).

Figure 2.3: Occupational Profile of Labour Force



Source: Annual Population Survey 2005-06

2.16 This skills profile reflects the very high proportion of Oxford residents with a degree or higher qualification (35.0%), considerably higher than the national rate (26.5%), while the proportion with no qualifications in Oxford (10.9%) is lower than nationally (14.3%) (Table 12). This is likely to reflect the strong university and health sector presence.

2.17 Despite this highly skilled workforce, average wage levels of working residents in Oxford are 2% lower than the national average, and about 12% below the South East average (Table 13). This suggests a significant number of lower skilled / lower paid jobs exist and are filled locally. At the same time, workplace earnings in Oxford are about 4% higher than the national average, suggesting that many higher skilled / paid jobs are filled by in-commuters from elsewhere, rather than local residents.

Knowledge-based Industries

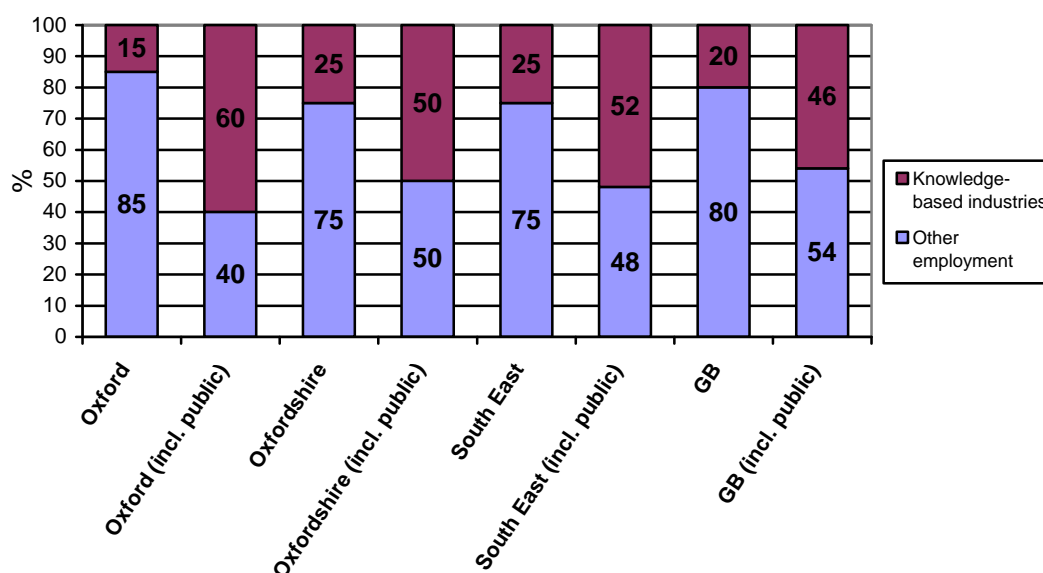
2.18 Knowledge-based industries are those sectors of the economy where value-added is derived from the intensity and accumulation of knowledge, often fostered by the increasing use of

technology. Based on the definition adopted by the Organisation for Economic Co-Operation and Development (OECD)², this includes the following classifications:

- *High-technology manufacturing* (e.g. pharmaceuticals, office machinery and computers, aircraft and scientific instruments);
- *Medium high-technology manufacturing* (e.g. motor vehicles, electrical machinery, chemicals, non-electrical equipment); and
- *Knowledge-intensive services* (e.g. post and telecommunications, financial intermediation, insurance and pensions, computing, research and development).

2.19 Firms within this sector tend to grow faster and have greater future potential than many other sectors. The relative proportion of these knowledge-based activities is considered an important indicator of an economy's competitiveness and skill-base, and of its prospects for future growth. Figure 2.4 illustrates that Oxford has a high proportion of knowledge-based jobs, but only when education and health institutions are included.

Figure 2.4: Proportion of Employment in Knowledge-based Industries, 2004 *



Source: Annual Business Inquiry, 2004 * Note: figures rounded

2.20 Within knowledge-based sectors, Oxfordshire as a whole has experienced substantial growth in high-technology industries, recording the highest rate of growth of high-technology employment amongst all English Counties between 1991-2000, although this has recently fallen behind Berkshire (Figure 2.5).

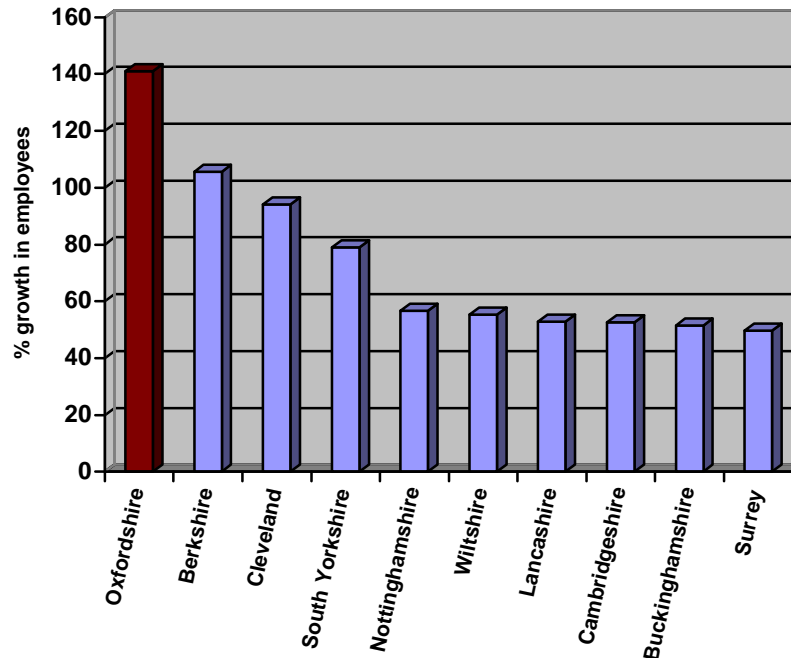
2.21 Despite this, it needs to be noted that Oxford itself, compared with other Oxfordshire districts, has one of the lowest proportions of high technology companies (17.8%) and high technology employees (13.1%) of the County total (Table 14).

2.22 Oxford's specialisms in this area include software, and the biotechnology and pharmaceutical sectors, where strong links exist with the City's teaching and research hospitals and various research institutes. However, only 9% of Oxford's high technology jobs are in biosciences.

² OECD, 2001

Oxford also has proportionally more, very small, high technology firms (under 10 staff) than most of the other districts and the average size of such firms in job terms is among the lowest in the County.³ Few Oxford firms in the IT and science related sectors have grown to any great size, possibly because of problems with premises or higher costs, and some have moved to other Oxfordshire districts to grow.

Figure 2.5: Growth in High-Technology Employees 1991-2000, top ten English Counties



Source: *Enterprising Oxford (Vol. 1)*, Oxford Economic Observatory, 2003

Conclusions

2.23 The above indicators point to Oxford being a prosperous City with a dynamic local economy, particularly strong in software and bioscience growth sectors, with low unemployment and a tight labour market. Other characteristics of the local economy include:

- world class universities and hospitals with an internationally renowned research base;
- overall economic growth which has exceeded the national and County averages, but lower than the regional average;
- a highly-skilled workforce with an on-going supply of graduates and post-graduates from local universities, which contributes to the City's economic growth and competitiveness; and
- high representation in knowledge-based sectors, including an established cluster of innovative high-technology industries.

³ *Enterprising Oxfordshire, Anatomy of the Oxfordshire high tech Economy*, Oxford Brookes University, 2003.

3.0 POLICY OVERVIEW AND FUTURE DRIVERS OF CHANGE

- 3.1 This Chapter reviews the main Government policy and strategy documents relevant to the higher education and health sectors, as well as national funding and other public and private sector initiatives which may influence the way in which these sectors develop within Oxford in the future.
- 3.2 Health and education have been the two main priorities for the current Government since 1997; they have attracted very high levels of Government spending and seen substantial increases in their share of national spending. In a recent statement, the Prime Minister also placed science at the heart of the country's economic future, predicting science would be as important to the UK's economy as stability.⁴

Higher / Further Education

- 3.3 Reform of the education sector has been a major policy priority for Government over the past decade, and particularly higher and further education, which has resulted in a series of policy documents and new funding initiatives.
- 3.4 Between 1997-2006, the proportion of national GDP spent on education generally has risen from 4.5% to 5.6%. Reflecting this, the number of students in further and higher education in the UK has increased steadily from 1.84 million in 1997/98 to 2.42 million by 2004, an increase of 32%. This is likely to increase further as a key Government target is increase the current participation rate of 42% of those aged 18-30 in higher education towards 50% by the year 2010.⁵

The Competitiveness White Paper: Our Competitive Future Building the Knowledge Driven Economy (1998)

- 3.5 This policy document, in the context of aims to improve the competitiveness of the UK economy, noted that "*the most dynamic economies have strong universities, which have creative partnerships with business*". It pointed to a high quality science base as essential for success in the knowledge-driven economy. It also recognised that, in the knowledge-driven economy, universities have a vital role to play in the UK's ability to compete successfully and are powerful drivers of technological change. In addition to supplying graduates with up-to-date skills, they must participate in activities that transfer their knowledge to businesses.

Genome Valley: The Economic Potential & Strategic Importance of Biotechnology in the UK (December 1999)

- 3.6 As one of the earliest studies into the UK biotechnology sector, this report emphasised that a strong bioscience research base is essential to the advancement of this sector nationally, and that universities were a core strength of this. Key areas for action identified included the need to use the UK's world-class education centres as a magnet to attract further research groups and "feed" into industry, encouraging higher education institutions to development more

⁴ 'Our Nation's Future', Speech at Oxford, 2006

⁵ *The Future of Higher Education* White Paper, 2003

specialist courses, and to maintain long-term investment by Government, Trusts and charities in the UK bioscience base.

Science & Innovation Policy for the 21st Century (July 2000)

- 3.7 This DTI policy document confirmed that “*The universities will be at the heart of this effort to build the knowledge economy. Universities can play a central role as dynamos of growth*” (paragraph 4). It acknowledged that “*Our universities are not just creators of knowledge, trainers of minds and transmitters of culture but can also be major agents of economic growth, responding to the influences of globalisation and new technologies and the need to interact with business*”. It noted that the UK has a world-class science base, but needed to sustain scientific excellence and modernise this base, allocate resources to the best institutions and promote the right kinds of research to ensure more economic value is derived from the science base. It also indicated the Government’s establishment of a new Higher Education Innovation Fund (HEIF) worth £140 million over 3 years “*to build on universities’ potential as drivers of growth in the knowledge economy...*”

Business Clusters in the UK - A First Assessment (2001)

- 3.8 This report provided a snapshot of existing economic clusters across the UK to inform the thinking of Lord Sainsbury's Clusters Policy Steering Group and the development of a national clusters policy. It found the largest concentrations in Oxford and Cambridge, the former housing nearly 9,000 people and 65 bioscience firms. It recognised that the impact of higher education institutions in the development of regional clusters was important, but patchy and that Oxford accounted for 30% of the South East region’s R&D employment.
- 3.9 The report also identified a significant body of evidence and economic analysis which demonstrates the importance of clusters to economic growth. Factors that encourage cluster development include a strong science base, leading research organisations, university departments, hospitals/medical schools and charities and a critical mass of researchers and world leading scientists. Quality of life and other non-economic factors were noted as equally important in determining growth but clusters arise from making the most of synergies across and between companies and academic and research based institutions. Oxford and Cambridge were found to have enough of these critical factors to be considered fully functioning clusters.

Regional Economic Strategy for the South East 2006-2016

- 3.10 This economic strategy emphasises the role of the ‘Oxford to Cambridge Arc’ as a leading centre of the knowledge economy, with key assets being its world class universities, high-tech spin-outs, innovation networks and highly-skilled workforce. It is estimated to account for over 5% of national GVA, equivalent to over £50 billion in 2004. It is identified in the Strategy as a focus for collaborative networking between universities, public and private research establishments, coupled with increased levels of R&D spending, technology transfer and inward investment.⁶ While Oxford’s significant contribution to the economic activities within the Arc is noted, the policy aim is for these activities to be supported and intensified further in future to maximise their wider regional economic effects.

⁶ *Regional Economic Strategy for the South East 2006-2016*, South East England Development Agency, 2006

“The Future of Higher Education” White Paper, 2003

- 3.11 This White Paper set out Government plans for investment in universities and higher education colleges. It acknowledged higher education as a great national asset and its contribution to the economic and social well-being of the nation as of vital importance, and the skills, creativity and research developed through higher education as a major factor in creating jobs and prosperity. It also noted that research capacity is strong, and in recent years there had been a dramatic increase in the number of new companies spun out of universities’ innovation.
- 3.12 Substantial investment was committed to education and key elements of the Government’s strategy included:
- increasing spending on higher education from around £7.5 billion in 2002/03 to almost £10 billion in 2005/06, an increase in real terms of over 6% annually;
 - an increase in Government spending on research by £1.25 billion between 2002–06, around 30% growth in real terms;
 - bringing major improvements to the funding of research and knowledge transfer, and strengthening the role of universities in supporting regional economies;
 - increasing spending on leading research departments and universities, enabling them to compete with the world’s best;
 - encouraging and rewarding research in larger units including through collaboration, and
 - strengthening the Higher Education Innovation Fund (HEIF) to encourage universities to work with employers.

Lambert Review of Business-University Collaboration, 2003

- 3.13 Commissioned jointly by the Treasury, Department of Trade and Industry and Department for Education and Skills, this Review aimed to identify the benefits to business of greater interaction with the higher education sector, how this could be promoted, and how any barriers holding back business demand for universities’ knowledge could be addressed.
- 3.14 Key findings were that a wide range of companies have profited from working with academic researchers and the need to increase demand for research from business, rather than increasing the supply of ideas and services from universities. This review expected increased business investment in research in future. It also concluded that increased collaboration between business and university research departments would bring significant economic benefits to the UK, and made recommendations to improve this, including:
- a new funding stream for business-relevant research, along with increased and improved funding for knowledge transfer;
 - encouraging new forms of formal and informal networks between business people and academics; and
 - universities to provide more information on student employability, and businesses to take a greater role in university courses and curricula.

“Further Education: Raising Skills, Improving Life Chances”, White Paper, 2006

3.15 This recent White Paper introduced proposals to enable further education colleges to be the engines of social and economic growth, aimed at providing young people and adults with the right skills to meet the demands of the national economy. This followed a review of national skills which ranked the UK as only 24th out of 29 developed nations in the proportion of young people staying on in education or training after the age of 16.⁷ Specific reforms proposed include:

- placing the skills which underpin economic success at the heart of the sector;
- developing world-class vocational learning, including strengthening Centres of Vocational Excellence;
- responsiveness to employers, such as expanding work-based training to meet employers' needs; and
- new entitlements for free tuition for learners aged 19-25 studying for their first Level 3 qualification, supported by an extra £25 million from 2007/08.

DfES Departmental Report, 2006

3.16 In this document, the Secretary of State confirmed education as one of the Government's top priorities and committed to *“further and higher education that delivers world class standards for everyone...so that we achieve social conclusion, employability and economic prosperity for all.”* It indicated an increase in education spending of over £12 billion in the next three years, up to £65 billion, a 73% rise since 1997. For higher education, spending was to grow by 6.5% annually, an increase of £2.6 billion between 2000-08.

3.17 Another key aim was to increase the share of research & development as a proportion of GDP from 1.9% to 2.5%. This reflects Government recognition that *“excellence in research enables the nation's universities to compete with the best international institutions and benefit from increased business interaction.”* In this context, by 2007/08, the Government is to invest up to £90 million directly in science and research, match research contributions by charities, increase funding for the Higher Education Investment Fund to £110 million annually and fund a third round of the Science Investment Fund (£200 million). Further progress was also to be made on the Prime Minister's initiative to attract more international students to the UK.

The Health Sector

3.18 The main priorities for government health policy over the last 10 years have been increased capital investment in health facilities, training and retaining staff, and opening up healthcare to a wider range of potential service providers, including the private sector. Government investment in the NHS has trebled since 1997 and is predicted to increase by an average of 7.1% annually up to 2008. This would bring total annual expenditure to £92 billion. Of this, £6.1 billion is to be capital expenditure.

⁷ Lord Leitch interim review of the nation's skills

The NHS Plan, 2000

- 3.19 This Plan proposed far reaching changes across the NHS. It outlined a new delivery system for the NHS as well as changes between health and social services. The plan also outlined changes for patients and in the relationship between the NHS and the private sector. A key outcome of this reform was to be major planned investment in new buildings over the next 10 years, including 100 new hospitals, 20 new Diagnostic and Treatment Centres, 500 one-stop primary care centres, and significant refurbishment of GP's surgeries.

The NHS Improvement Plan: Putting People at the Heart of Public Services, 2004

- 3.20 Within the framework of the NHS Plan, this Improvement Plan set out more detailed priorities up to 2008. This was against a backdrop of the NHS budget doubling since 2000 to £67 billion. By 2007/08, Government investment in the NHS was to rise to over £90 billion. This reflected changes such as Primary Care Trusts taking control over 80% of the NHS budget. Patients would also be able to choose between a range of providers, including NHS trusts and treatment centres, be treated at any facility that meets NHS standards, and have access to a wider range of services in primary care nearer to their workplace and closer to home. All this meant a requirement for major new investment in new facilities.

Biotechnology Clusters, 1999

- 3.21 This was the report of a team led by Lord Sainsbury, then Minister for Science. It noted that both Oxford and Cambridge had world renowned research universities, leading research hospitals and a number of important research institutes. Both areas also had well established entrepreneurial cultures with university spin-outs dating from the 1980s, which were a particularly important source of new companies in the biotechnology sector. Despite the relatively high property values, investors were keen for biotechnology companies to locate in either area, in order for the companies to benefit from these factors, and also to associate the company with the image of Oxford and Cambridge as leading scientific centres.

Biomedical Research Centres, National Institute for Health Research, 2006

- 3.1 In November 2006, the Health Secretary announced the creation of 11 new Biomedical Research Centres of Excellence across England, to drive advances in medical research, and to transfer new technologies from the laboratory to patient care. The Oxford Radcliffe Hospitals NHS Trust, in collaboration with the University of Oxford, is to receive a share of £450 million of additional funding to create a new "comprehensive" centre focussing on a range of areas such as bioengineering, genetics and vaccines.

Other Medical Research Funding

- 3.2 Another major factor affecting the growth of medical research and development of facilities is levels of funding from bodies such as the Medical Research Council, charities involved in medical research, and research & development expenditure by the pharmaceutical sector.
- 3.3 The Medical Research Council (MRC), funded by the DTI, works with Health Departments, other UK Research Councils and others in allocating research funding to respond to UK health needs. In 2005/06, the MRC spent more than £224 million on medical research in UK universities and teaching hospitals and nearly £238 million in its own units and institutes. These include the Oxford Centre for Gene Function at Oxford University. The MRC's total expenditure on medical research has grown from £380 million in 2000 to £462 in 2006.

- 3.4 The Wellcome Trust is a charitable body which promotes research to improve health. Between 2000-05, it provided grants totalling £1.4 billion to support bio-medical research at UK universities and over £420 million to help provide new research facilities in UK universities. It expects to spend, on average, around £450 million each year during the next five years, including a major new initiative to further expand clinical research infrastructure in the UK. The Wellcome Trust Human Genetics Centre at Oxford is an example.
- 3.5 Other organisations such as Cancer Research UK spent £150 million in 2005/06 on medical research, an increase of 16% over the previous year. A further £534 million is committed to on-going and future research projects and infrastructure, including a new radio-biology centre in Oxford. The British Heart Foundation's annual research expenditure has grown from £38 million to £54 million over the last 10 years; this body has funded medical research facilities in Oxford. These are just a few of a number of such organisations that fund medical research in the UK and their research spending is following a rising trend.
- 3.6 Research spending by pharmaceutical companies in the UK over the last 10 years has been substantial. It has grown from £1.8 billion in 1995 to £3.3 billion in 2005. A significant proportion of this funding finds its way into research ventures with universities and hospitals.

Conclusions

- 3.7 It is clear that both the higher education and health sectors are at the forefront of Government aims to improve the science base, knowledge-based activities and national competitiveness. Both have been subject to significant funding growth and expansion. Such funding has helped fuel the growth of these sectors in Oxford over the last 10 years, since it is a leading centre in both fields. Continued high levels of spending are likely to result in future growth of capital investment and jobs in these sectors within the City.
- 3.8 In higher education, there is a strong policy emphasis on investing in academic research and knowledge transfer, generally strengthening the role of universities in supporting regional economies and high technology clusters and in helping leading universities compete with the world's best. The 2007 Budget made further commitments in terms of increasing spending on science and technology, including new targets for the Research Councils to increase the amount of collaborative R&D they conduct in partnership with the Technology Strategy Board, and with total investment in the public science base to rise by 2.5% in real terms.⁸ Continuing initiatives of this type should benefit Oxford, which already has core strengths in these areas, but will also mean increasing competition for funding, as other universities develop specialist research units. Aims to increase participation levels and student numbers in further education, and relate it better to the needs of employers and industry, should also lead to further expansion in this sector.
- 3.9 In terms of health, continued spending growth in medical research and facilities is likely nationally, from Government, the pharmaceutical industry and other organisations. Substantial NHS capital investment is also underway nationally. Both factors are likely to affect Oxford. Government emphasis on encouraging the bioscience sector will also support growth in Oxford, which is reinforced by the City's recent designation as a Biomedical Research Centre. However, other UK centres are already strong or aiming to develop in this field and this competition may moderate Oxford's future growth.

⁸ Budget 2007, Press Release, HM Treasury, 21 March 2007

4.0 THE OXFORD HIGHER EDUCATION SECTOR

Overview

4.1 The higher education sector in Oxford consists of its two universities, Oxford University and Oxford Brookes University. The University of Oxford is the oldest English university, founded in 1170 and consisting of 43 self-governing colleges structured in a federal system. Oxford Brookes can trace its origins back to 1865, becoming Oxford Polytechnic in 1970 and then Oxford Brookes University in the early 1990s.

4.2 The further education sector is represented by the Oxford and Cherwell Valley College and Ruskin College, while there are also approximately 30 language schools primarily for overseas students and about 15 tutorial colleges located in the City. These facilities are largely based within the City although some elements (e.g. Begbroke Science Park) lie just outside it.



4.3 In 2006-07, an estimated 36,000 students were registered with higher and further education institutions within Oxford. This comprised about 17,500 students at Oxford University, followed by Oxford Brookes (17,320 students) and Oxford and Cherwell Valley College (580 students).⁹

International and National Context

4.4 At an international level, research demonstrates that the most successful cities build their economic future around core economic assets, in particular universities, research laboratories and medical institutions.¹⁰ These activities are recognised as making an important contribution to knowledge-based sectors generally, and through the supply of higher-skilled, graduate labour.

4.5 This approach is recognised as having improved the competitive position of some US cities such as Boston and Seattle within the emerging knowledge-based economy and, through the concentration and exchange of talent and ideas, helped foster “a *dynamic process of*

⁹ Note: university figures taken from Annual Monitoring Report 2006-07, Oxford City Council, and relate to total students (including part-time, but excluding visiting students). Figures for Oxford Brookes include students based at Wheatley campus located outside of the City boundary.

¹⁰ *State of the English Cities: The State of American Cities*, Brookings Institution Metropolitan Policy Program, DCLG, 2006

*innovation, imitation and improvement.*¹¹ For example, the cluster of research universities in Boston, which includes Harvard and MIT, is noted as providing an anchor for the local economy, driving future economic growth but also providing stability during economic downturns, and acting as a magnet for international companies to locate within the area in order to gain access to the intellectual strength associated with the university sector.¹² More generally, the Milken Institute's annual index of best performing US cities has noted the importance of higher education and research establishments as economic drivers in many of the highest ranked cities.¹³

- 4.6 Elsewhere in Europe, universities are used as the focus for high technology development initiatives. The city of Grenoble in south-east France, with its four universities and six public research institutes, has strong research expertise in energy, micro-electronics, nanotechnology and IT and forms one of seven world class competitiveness clusters designated by the French Government. Here, the universities work in close partnership with research institutes, local / regional government and businesses to develop innovative research projects that will benefit industry. They also work to apply technological innovation to traditional local industries and in turn increase their competitiveness. This research base and the 62,000 students which provide a supply of highly skilled labour have attracted over 300 international companies to the area, in sectors such as micro-electronics, electrical equipment, computers and biotechnology. A similar approach is used in Toulouse which is the centre of an aerospace cluster.¹⁴
- 4.7 Within the UK, the contribution of the higher education sector is widely recognised as creating and transferring knowledge to sustain the national economy through core activities such as teaching and research, but higher education institutions also function as independent business entities, competing to attract research grants, corporate sponsorship and increasingly seeking to create commercial value from their activities.
- 4.8 The 170 higher education institutions in the UK are estimated to employ over 330,000 people in total, and support a further 275,000 jobs in other sectors of the economy through output and expenditure. In terms of annual turnover, the total output of the higher education sector exceeds that of both the UK pharmaceutical and aerospace sectors, while higher education institutions are estimated to spend about £15 billion annually on goods and services produced in the UK. For every £1 million of higher education expenditure, a further £1.5 million is generated in other sectors of the economy. Spending by international students attending UK higher education institutions is estimated to generate £1.5 billion of personal expenditure, equivalent to 9% of total receipts from overseas visitors to the UK.¹⁵
- 4.9 Following this brief overview of the sector's economic importance at a national level, its economic impacts within Oxford are considered below.

¹¹ Hall, P. (1998) *Cities in Civilization: Culture, Innovation, and Urban Order*. New York: Pantheon Press

¹² *Engines of Economic Growth – The Economic Impact of Boston's Eight Research Universities on the Boston Metropolitan Area*, AICUM, 2003

¹³ *Best Performing Cities: Where America's Jobs are Created*, R. DeVol and F. Fogelbach, Milken Institute, Santa Monica CA, 2003

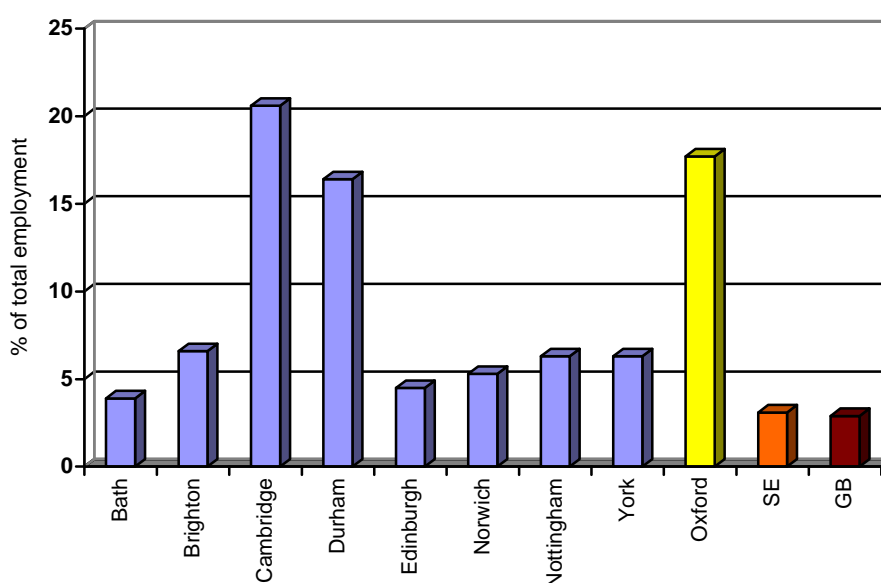
¹⁴ Based on discussions with Agence d'Etudes et de Promotion de l'Isere, Grenoble

¹⁵ Universities UK (2006) *The Economic Impact of UK Higher Education Institutions*, University of Strathclyde.

Employment

- 4.10 The higher education sector is labour-intensive, and so one of the principal economic contributions of the sector to the Oxford economy is employment. The higher and further education sectors employ about 17,200 people within Oxford.¹⁶ The main higher education employers include the University of Oxford (8,600 jobs) and Oxford Brookes (2,700 jobs).¹⁷ These facilities constitute two of the largest individual employers in Oxford. For comparison, the City's largest private sector employer is the BMW plant at Cowley which employs 4,500 people.
- 4.11 There are also significant numbers of jobs based at the City's various language schools and tutorial colleges. Based on a telephone survey in early 2007, these 45 colleges employ an average of 20-30 staff each, and could support up to 1,350 jobs in total.

Figure 4.1: Proportion of Workforce in Higher Education, 2004



Source: Annual Business Inquiry, 2004

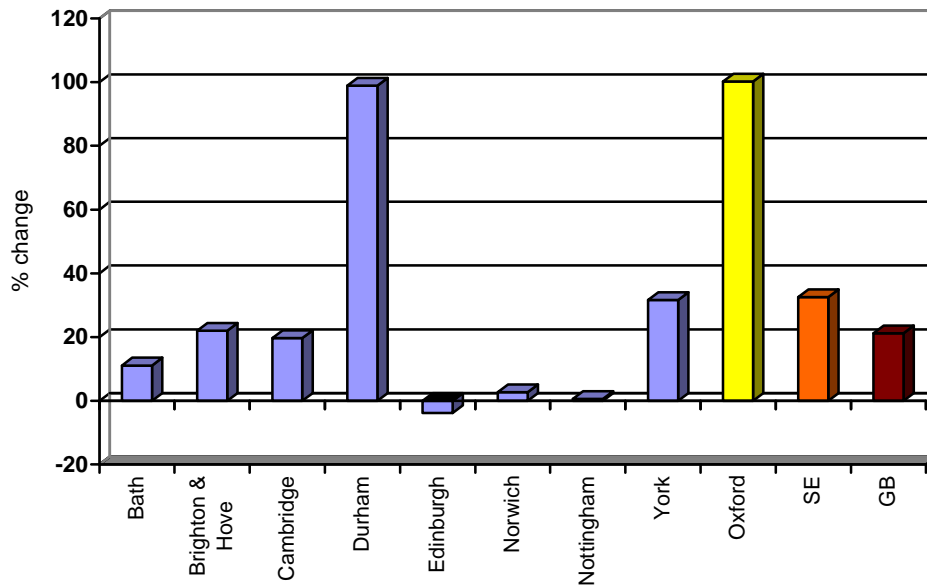
- 4.12 Jobs in higher / further education account for about 18% of the City's total employment. This sector's share of jobs is higher in Oxford than in most other major UK university towns, and well above the regional (3.1%) and national (2.9%) averages. It is, however, slightly lower than in Cambridge (20.6%) (Figure 4.1).
- 4.13 The growth of higher/further education sector employment in Oxford between 1998-2004 (100.2%) has been significantly higher than growth regionally (29.9%) and nationally (32.0%). Oxford's growth in this sector has also been higher than a number of other UK university towns, such as York, Brighton and Cambridge, but similar to Durham (Figure 4.2). Some of Oxford's growth in this sector might reflect that the University of Oxford has undergone a significant increase in staffing levels in recent years, increasing from 6,900 to 8,500 between 1998-2006, in particular research staff.¹⁸ There has also been a high level of new development of educational and research facilities on university sites over this period.

¹⁶ Latest data obtained from the Annual Business Inquiry 2004

¹⁷ Based on latest annual reports, 2005/06

¹⁸ Staff in post (headcount) by funding source, 1977-2006

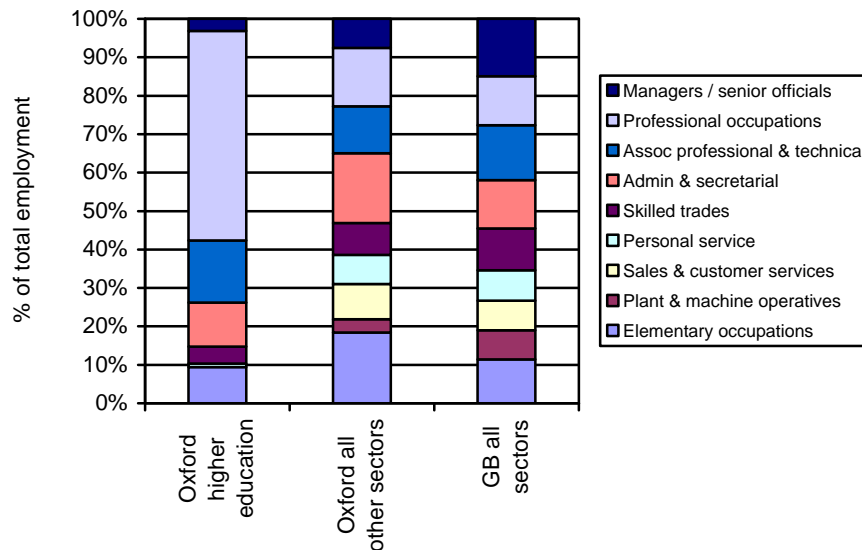
Figure 4.2: Change in Employment in Higher / Further Education, 1998-2004



Source: Annual Business Inquiry, 1998 and 2004

4.14 The sector contains double the proportion (70%) of higher skilled jobs – managerial, professional and technical occupations – than are found in other parts of the Oxford economy (35.0%), a much higher proportion than in the national workforce (42%). However, it also provides a range of other job types - in administrative occupations (11.5%), elementary occupations (9.4%) and skilled trades (4.4%) (Figure 4.3).

Figure 4.3: Occupational Profile of Higher / Further Education Sector Employees



Source: Labour Force Survey / Annual Population Survey, 2006

4.15 Some 68% of jobs in this sector are full-time and only 32% part-time. This mirrors the national split between full and part-time work and generally confirms that this sector provides a high proportion of good quality jobs as well as some flexible types of employment.

- 4.16 Some 54% of jobs in this sector in Oxford are filled by females, a higher representation than the national breakdown of 50% across all economic sectors. Higher education therefore offers employment opportunities suited to different elements of Oxford's highly skilled workforce.

Indirect and Induced Employment

- 4.17 Further indirect and induced jobs are supported by the higher/further education sector in Oxford. Collectively, this is known as 'multiplier' employment. Research suggests that multiplier effects of universities are higher than for industry because of the structure of turnover and the high proportion of staff and student expenditure retained locally.
- 4.18 Indirect employment arises from the spending of the universities, colleges and other institutions on goods, supplies and services from firms within Oxford. The local indirect employment effects of this sector are generally considered greater than many other forms of service sector activities, partly because of its specialist requirements.¹⁹ At the same time, university functions such as cleaning, security, waste disposal and building maintenance are dependent on contracts with locally-based firms.
- 4.19 Induced employment is supported in local shops and services through the spending of wages by those employed in the higher education sector, as well as by wage spending of employees in the supplier firms that service that sector. The level of induced employment is related to the amount of employee spending and how much of it is retained in the local area, or leaks out to other areas. The relatively high skill level of many higher education sector jobs means that average wages are high, and consequently the number of induced jobs supported by them locally would also be expected to be high. A high proportion of wage spending is likely to be captured within the local area as many employees live within university accommodation or elsewhere in Oxford, and there are extensive local retail and leisure facilities present within the city, with some distance to surrounding centres, to help capture such spending. Similarly, a high level of students living within the City and with a high propensity to spend should produce greater multiplier effects in the local economy.
- 4.20 Because of the difficulty in measuring these types of employment directly, the level of indirect and induced jobs is normally estimated using an employment multiplier, in this case related to the level of direct employment associated with the higher education sector as a whole. To select an appropriate multiplier in this case, employment multipliers derived in studies of higher education institutions elsewhere were reviewed.
- 4.21 Based on these sources, and the economic characteristics of Oxford's higher education sector and the local economy, an employment multiplier value of 1.3 has been selected to cover both indirect and induced employment locally. This implies that 30 additional jobs are supported for every 100 directly employed in the higher education sector. Applying this employment multiplier to the total number of direct jobs supported by the higher education sector (in Full Time Equivalents) produces a further 4,300 or so jobs supported within Oxford.

¹⁹ Universities UK (2006) *The Economic Impact of UK Higher Education Institutions*, University of Strathclyde.

Table 4.1: Gross Employment in Oxford Higher / Further Education Sector

Type of Employment	Total *	FTE Jobs *
Direct employment	17,200	14,450
<i>Multiplier of 1.3</i>		
Indirect / induced employment	4,300	4,300
Total	21,500	18,750

Source: NLP *Note: totals rounded

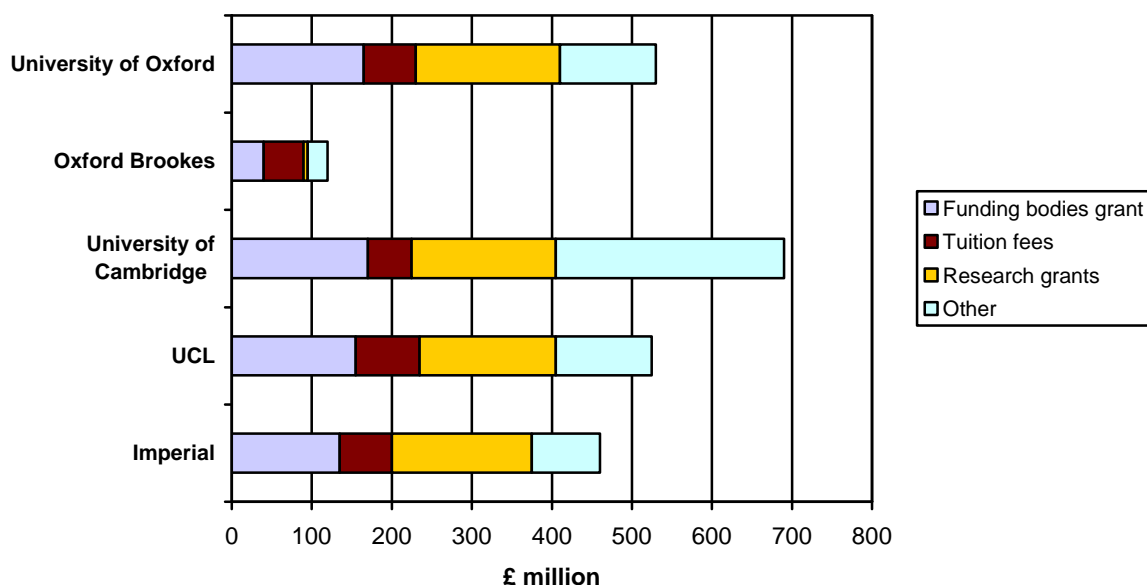
Overall Employment Impacts

- 4.22 Drawing together the employment effects discussed above, as Table 4.1 shows, the total number of jobs attributable to the higher education sector in Oxford currently amounts to some 21,500 job opportunities, equivalent to some 18,750 FTE jobs, and 18% of all jobs in the City.

Expenditure and Income

- 4.23 The higher education sector attracts substantial income into Oxford and also spreads significant amounts of expenditure through the Oxford economy.

Figure 4.4: Income by Source, 2004-05



Source: HEFCE, 2006

Income

- 4.24 Universities receive income from a range of sources, including Government funding, research grants and tuition fees. The ability of universities to attract research grants is an important source of overall income, its sources including national research councils, and funding or sponsorship from industry, charities and trusts. In 2004-05, the University of Oxford attracted

income totalling over £500 million, a figure comparable to other UK universities with large medical science faculties, while Oxford Brookes attracted over £100 million (Figure 4.4).²⁰

4.25 Grants obtained from the HEFCE typically account for about 40% of the income received by higher education institutions in the UK from the Department for Education and Skills. In 2006-07, Oxford and Oxford Brookes Universities, and the Oxford and Cherwell Valley College will obtain over £195 million in total grants from the HEFCE, of which about £100 million is allocated for research (Table 4.2).

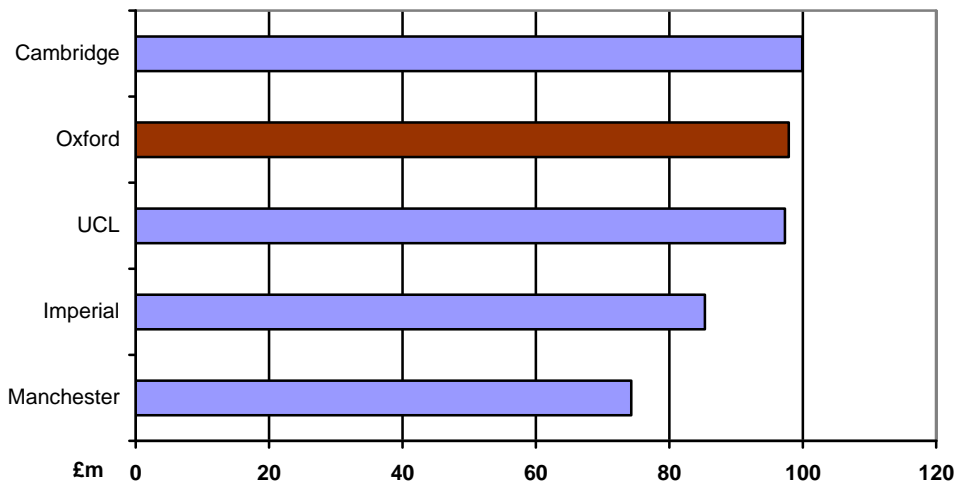
Table 4.2: HEFCE Grants for Oxford 2006-07

Institution	Total grant (£m)	Research grant (£m)
Oxford University	159.6	98.0
Oxford Brookes University	35.4	2.5
Oxford & Cherwell College	0.42	0
Total	195.4	100.5

Source: Recurrent grants for 2006-07, Final allocations, HEFCE 2006

4.26 In terms of such research grants, reflecting its reputation and research strengths, Oxford University ranks as the second highest recipient nationally, attracting nearly 8% of the total research grants made available nationally in 2006/07 (Figure 4.5).

Figure 4.5: HEFCE Research Grants, 2006-07



Source: HEFCE, 2006

4.27 Because Oxford's universities have world class reputations, they are able to attract high levels of demand from overseas students, as well as high tuition fees. Such income from international sources is equivalent to export earnings to the UK, but also brings further external income into Oxford. This effect is increased by the concentration of language schools located in the City, which serve to attract further foreign students to Oxford as well as some university students. Typically, each language school will attract between 100-500 students

²⁰ Based on data from the Higher Education Funding Council for England (HEFCE)

depending on the time of year, which constitutes a further inflow of income to both Oxford and the UK more generally.²¹

- 4.28 The presence of these universities with extensive research activities, along with the various other educational facilities, therefore brings a substantial level of income into the Oxford economy.

Direct Expenditure

- 4.29 A significant proportion of the income coming into the Oxford universities is recycled in the local economy. The University of Oxford's annual wage bill in 2005-06 was some £295.6 million, and £72.3 million in the case of Oxford Brookes.²² It is reasonable to assume that a large proportion of these employees live locally. For example, about 40% of staff at Oxford Brookes live within Oxford, while a further proportion live within Oxfordshire, for which Oxford is the main retail and service centre.²³ Therefore, it can be expected that a high proportion of wage spending by these employees is retained in the local economy.

- 4.30 Based on available information, Oxford Brookes spent in the region of £15 million with local suppliers in 2005/06, accounting for 40% of the organisation's total non-pay expenditure. This included contractors and suppliers based within Oxford, such as cleaning firms, security, CCTV maintenance, fire engineers, equipment suppliers and printers. There is no comparable figure available for the University of Oxford, although the University's non-pay expenditure totalled £265m, while spending by individual colleges totalled an additional £237m, and the University has indicated that a high proportion of this is spent within the local economy. Taken together, total supplier spending in the local area amounts to about £520 million.

Capital Investment

- 4.31 Provision of new research and teaching facilities for the universities, as well construction of student accommodation, has resulted in significant capital investment by the sector within Oxford.
- 4.32 Total spending on capital projects by Oxford University has totalled £340 million over the past five years, and averages nearly £90 million per annum. This figure excludes individual colleges, which in many cases have undertaken their own extensive development activities.²⁴ Major new facilities constructed in that period include the Saïd Business School, the Chemistry Research Laboratory, 270 new units of graduate accommodation at Castle Mill, the Manor Road building for the Social Sciences Division, the new Rosenblatt Swimming Pool, the Oxford Centre for Gene Function, the facility for evaluation of Infectious Particles, and the Vaccinology Centre. There is an on-going development programme with the new Radiation, Oncology and Biology building due to open in 2008.
- 4.33 At Oxford Brookes, capital investment in the order of £78 million has been undertaken over the period 2002-2006, including the new Buckley Building, dedicated entirely to research activities, and the acquisition of the former Milham Ford School to provide new accommodation for the

²¹ NLP survey of language schools, February 2007

²² Information supplied by the University of Oxford / Oxford Brookes

²³ Based on information supplied by Oxford Brookes, 2007

²⁴ Corporate Plan 2005-06 to 2009-10, University of Oxford, September 2005

School of Health and Social Care. Up to 2011, the University has planned capital expenditure totalling £70 million.²⁵

Student Expenditure

- 4.34 Other research has noted that students spend more and create more jobs in a local economy than higher education staff, reflecting high consumption patterns and lower rates of saving, and the fact that typically a higher proportion of students than academic staff will live locally.²⁶ A survey published by the Department for Education and Skills indicated that the average total expenditure of full-time students in England in 2004/05 was £10,270 per academic year, rising to £14,270 for part-time students. More than half of this expenditure was on living costs (e.g. food, personal items, and entertainment) and a further fifth related to housing (e.g. rent, household bills, and council tax).²⁷ In the case of Oxford, most of this spending will be localised with limited spending likely outside of the City during term time, as there are few other centres nearby. Therefore, 'leakage' of student expenditure will be comparatively low.
- 4.35 Therefore, although no specific data is available, the estimated 40,000 resident students who study in Oxford each year are likely to generate a substantial amount of additional spending income and spending in the local economy, much of it from outside of Oxford, and in the case of foreign students, from outside of the UK. If this national spending pattern by students were repeated in Oxford, it would bring at least £400 million to the local economy annually. This creates significant spending flows for local retail outlets, as well as pubs and other entertainment facilities, and so in turn contributes to Oxford's retail and leisure sectors.

Wider Economic Effects

- 4.36 Oxford's higher education sector also produces a number of less quantifiable effects. It makes an important contribution to other sectors of the Oxford economy and to its overall competitiveness. This includes helping create the internationally recognised Oxford "brand" that attracts investment, generating "spin-out" activities, its role as part of an economic cluster, supporting and attracting a skilled local workforce, and contributing to the City's tourism sector.

A World Class Brand

- 4.37 The Oxford name is recognised worldwide and of considerable interest to overseas firms seeking to invest in Europe or the UK. The City's wide recognition and prestige derives from the research strengths and reputation of particular institutions, such as the universities. The University of Oxford consistently ranks as one of the leading universities both nationally and internationally. Its position as a world class university is confirmed by its 46 Nobel Prize winners, a total behind only Cambridge and Harvard Universities.
- 4.38 According to the 2006 world university rankings published by the *Times Higher Educational Supplement*, Oxford was ranked third, behind Harvard (US) and Cambridge (UK), having risen from fourth in 2005. An alternative index is produced by Shanghai Jiao Tong University, based on indicators of research performance. In 2007, Oxford was ranked 10th, behind

²⁵ Annual Accounts 2005-2006, Oxford Brookes University

²⁶ *Economic & Social Impact of the University of Hertford on Welwyn Hatfield*, PACEC, 2005

²⁷ *Student Income and Expenditure Survey 2004/05*, National Centre for Social Research / Institute for Employment Studies. Department for Education and Skills, 2006.

leading US universities and the University of Cambridge (Table 4.3). Oxford and Cambridge Universities are the only UK (and European) universities in the world top 20. In national terms, the 2007 *Times Good University Guide* league table ranked the University of Oxford at 1st, while Oxford Brookes was ranked 49th, the highest ranking 'new' university.

Table 4.3: World University Rankings, 2006/07

Institution	THES Ranking	Shanghai Ranking
Harvard University	1	1
University of Cambridge	2	4
University of Oxford	3	10
Massachusetts Institute of Technology	4	5
Yale University	5	11

Sources: THES, 2006; Institute of Higher Education, Shanghai Jiao Tong University, 2007

- 4.39 To illustrate what underlies these rankings, the Medical Sciences department at Oxford University is one of the leading biomedical institutions in Europe, accounting for 19 of Oxford's 39 highly cited authors in the worldwide Institute for Scientific Information rankings²⁸, and over 2,500 researchers. This has made a significant contribution to the development of Oxford's biotechnology cluster, with recent spin-off firms including Riotech Pharmaceuticals (hepatitis drugs), ReOx (new drugs based on hypoxic response) and Oxford Immunotec (TB tests).²⁹
- 4.40 This reputation not only helps attract further research funding and sponsorship, particularly in the case of medical sciences, but brings considerable international prestige to Oxford. It also helps make the City a world-wide "brand" that is more attractive to overseas businesses in higher technology fields, as well as one which overseas businesses feel would be prestigious enough for a European base.³⁰

Attraction of Investment

- 4.41 The university sector has played a direct role in helping attract high technology firms to Oxford. Universities were among the first founders of science parks seeking to develop stronger links between industry and higher education institutes.³¹ The 23 ha Oxford Science Park was created in 1991 by a joint venture between Magdalen College, Oxford and the Prudential Assurance Company. It is now the fastest growing science park in the country, and some of the world's leading business players are based there, attracted by the quality of research and development facilities available via links with the University of Oxford, Brookes University and Government laboratories.³² Over 40,000 m² of modern, high-quality space has been completed, restricted to research and development uses for a 10-year period, and includes a range of unit sizes to enable start-up firms to grow on site, including the Magdalen Centre which provides incubator units.
- 4.42 The Park now contains over 60 science and technology companies, with the majority in the bioscience and computer hardware/software sectors, including Sharp Laboratories of Europe,

²⁸ <http://www.isihighlycited.com> (2004)

²⁹ Oxford Medical Sciences Division (www.medsci.ox.ac.uk)

³⁰ Based on discussions with SEEDA

³¹ *The Economic Impact of Cardiff University: innovation, learning and job generation*, Huggins R & Cooke P, University of Wales, Cardiff, 1996

³² Speech by Peter Johnson, originator of Venturefest Oxford, Oxford Science Park newsletter

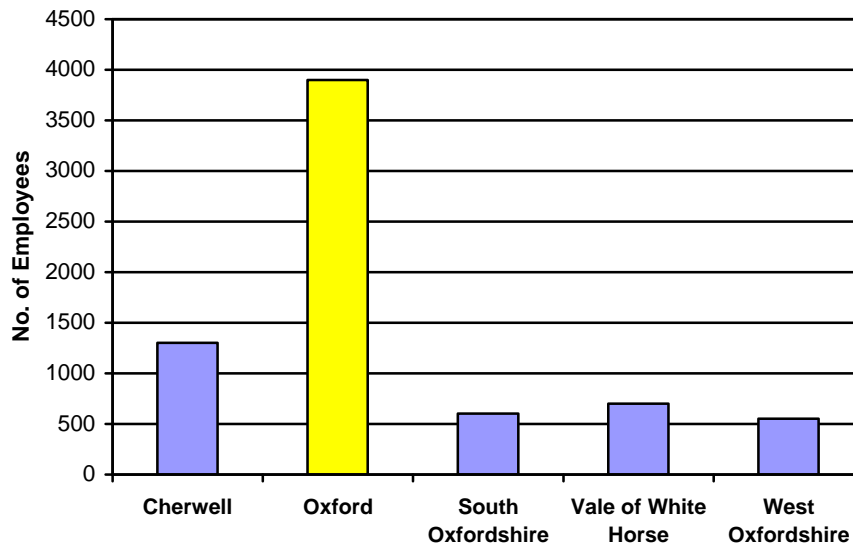
Chiron Vaccines and Oxford BioMedica. Some 1,400 jobs are now based at the Park, and this is expected to increase to 1,800 by the end of 2007 as new occupiers take up premises.³³ Many are overseas firms which have come to Oxford for a combination of reasons – including the City’s international image, linkages with the universities’ research activities and the existence of high quality accommodation on a Science Park.

- 4.43 Science Parks facilitate linkages to universities and other research establishments, providing firms with access to expertise, research and technology as they expand. In this case, it was the University itself that provided the Science Park. While other research did not find strong formal linkages between universities and technology based firms nearby, informal links are important to firm survival.²⁴ On this basis, it is reasonable to argue that without its universities, Oxford would have been much less successful in attracting major higher technology firms and employment to the City.

University “spin-out” activities

- 4.44 Spin-out activity - the application and commercial exploitation of university research and knowledge outside of academic environments - represents a significant contribution to Oxford's wider economy, and encompasses a number of activities. Small, higher technology firms are often more dependent on such external research than large firms with their own R&D facilities.

Figure 4.5: Printing and Publishing Employment in Oxfordshire



Source: Oxfordshire County Council Virtual Business Centre, 2004

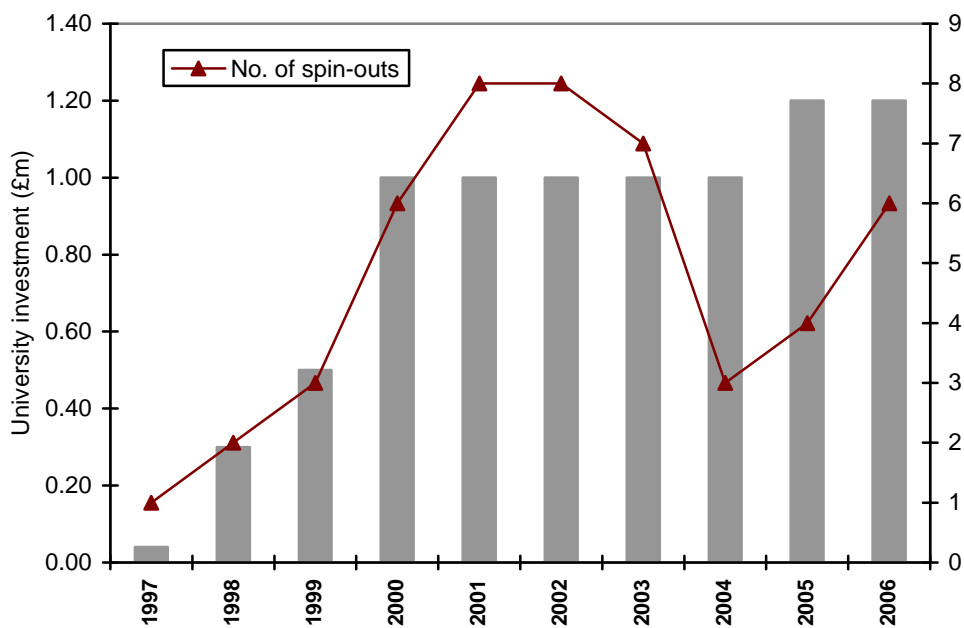
- 4.45 Firstly, this involves the commercialisation of university activities, for example printing and publishing of academic material. Oxfordshire as a whole has the largest concentration of printing and publishing companies in the UK outside of London, most of which is concentrated in Oxford where the sector accounts for nearly 4,000 jobs (Figure 4.5). Oxford University Press is part of the University of Oxford and the largest local employer in this sector, accounting for about 2,000 employees and with a turnover of £450 million in 2006. It is now

³³ Based on discussions with Oxford Science Park

the largest university press in the world, and has a long tradition of academic publishing. Its presence in turn supports a range of designers, freelancers, media companies and other suppliers in the local area, which has served to attract other publishing firms to Oxford, including Harcourt Education, Elsevier Science, Taylor and Francis, Macmillan and Blackwell Publishing. Many of these firms also have strong academic linkages in terms of printing university texts and journals, but are also attracted to Oxford by the established pool of local suppliers and supporting activities, while the International Centre for Publishing Studies located at Oxford Brookes, ensures a local supply of trained graduates.³⁴ Consequently, the publishing sector is now one of the largest local commercial employers in Oxford, the development of which has been largely sustained by the City's academic tradition.

4.46 Secondly, the universities stimulate, both directly and indirectly, research-based innovation and “spin-out” companies through the transfer and commercial application of academic knowledge, for example through a company started by an academic or graduate, or with some element of university ownership. This allows new products and services to be developed, which in turn generates economic activity and employment. Studies have consistently demonstrated that leading universities generate the most spin-offs, and Oxford University in particular has pioneered an entrepreneurial approach to such activities over several decades.³⁵

Figure 4.6: Technology Transfer by Isis Innovations, 1997-2006



Source: Isis Innovations

4.47 Isis Innovations, wholly owned by Oxford University, was specifically founded to exploit and protect the intellectual property generated within the University, and has generated 48 spin-out companies and associated patents since 1997 (Figure 4.6). Along with Southampton University, this is regarded as one of the leading university-industry initiatives of its kind in the

³⁴ 'Publishing in a small Midlands town: the special case of Oxford', Oxford Inspires, December 2003

³⁵ *High-tech spin-offs – measuring performance and growth in Oxford*, Oxfordshire Economic Observatory, 2005

South East³⁶, and has a very high success rate. Over 114 spin-out companies have originated from Oxfordshire universities. These firms, often operating in the most dynamic and innovative sectors of the economy, help stimulate local economic growth in Oxford and beyond. They have a high survival rate and some grow to substantial local employers. One biomedical spin-out, PowderJect, has almost 1,000 employees while the total number of jobs associated with university spin-outs in Oxfordshire is estimated at 9,000.²⁵

- 4.48 The universities also play an important role in promoting enterprise within the local economy. The “Enterprise Said” programme at Oxford University’s Said Business School integrates teaching, research and practice at the University to support new business creation, while the university’s student entrepreneur society, Oxford Entrepreneurs, has attracted 1,200 members in its first two years.³⁷ At Oxford Brookes, the Enterprise Fellows Scheme supports entrepreneurs with an aspiration to start their own business, either during or after completing their studies. Through these mechanisms, the universities support innovation with the Oxford economy, which in turn enhances the City’s competitiveness.
- 4.49 Perhaps less high profile, but equally important in economic terms, are the range of specialist consultancy firms located in Oxford partly because they have been established by university graduates or academics. Many also have strong on-going links with specific university departments, drawing upon specialist skills, research information and library resources, and recruitment of graduates. Examples include Oxford Economics (formerly Oxford Economic Forecasting), OXERA, and Oxford Analytica Ltd, which each employ between 25-50 employees within Oxford. Again, the presence of these firms in Oxford is linked to the City’s status as a leading centre for higher education and research. It is noticeable that a number of firms include “Oxford” in their business names, probably to build on this prestigious reputation.

Supporting the Economic Cluster

- 4.50 Oxford forms the heart of one of the UK’s largest high-technology clusters, focused on IT and bioscience activities. Factors identified as encouraging cluster development include a strong science base, university departments, hospitals / medical schools and a critical mass of researchers and world leading scientists. A major factor in the success of a cluster is whether or not leading researchers and managers are attracted to live in the area. Research has found that *‘the intellectual buzz of the research environment’*, along with proximity to London, a rural setting and access to international airports is an important factor.³⁸
- 4.51 In this context, the presence of two high quality, research-oriented universities in Oxford provides one of the key ingredients to a successful cluster. A recent study of Oxfordshire’s high technology cluster noted that key locational factors for the knowledge economy include an ideas/skills seedbed and that the resources offered by universities are of central relevance. This emphasised that underpinning the key factor of entrepreneurial activity is the science base of Oxfordshire, its universities, government laboratories and hospitals. For example, a continuous stream of specialist research agencies have been established through Oxford University, such as the Wellcome Trust Centre for Human Genetics, the Wetherall Institute for Molecular Medicine, and the Oxford Centre for Vaccinology and Infectious Diseases.³⁹

³⁶ Higher Education – the Economic Impact in the South East Region, Higher Education South East, undated.

³⁷ *Oxfordshire Economic Development Strategy 2006-2016*, Oxfordshire Economic Partnership, May 2006.

³⁸ *Biotechnology Clusters*, Report of team led by Lord Sainsbury, 1999, para 3.6

³⁹ *Oxford Networks – Medical & Biosciences Report*, The Oxford Trust, October 2002

4.52 While Oxford University is seen as pre-eminent in this respect, Oxford Brookes University is also noted as having a strong science base, especially in biotechnology and automotive engineering and provides advanced programmes in these areas.⁴⁰ Oxford Brookes established a world-first degree course in motorsport engineering in the mid-1990s as part of a government sponsored Motorsport Industry Taskforce, and now makes a significant contribution to sustaining the motorsport and automotive technology cluster centred around 'Motorsport Valley', which stretches across North Oxfordshire, Buckinghamshire and the south Midlands. The University has strong links with local motorsport firms (for example Renault, Williams, Prodrive and Honda), providing a continued supply of placement students and skilled graduates, as well as undertaking R&D consultancy for firms, while many of the course lecturers are experienced professionals from the industry. The facilities at Oxford Brookes have been endorsed by the DTI's Motorsport Competitiveness Panel, and receive financial support from the South East of England Development Agency.⁴¹ In 2006, the Motorsport Centre moved into a £10 million new facility as part of the Brookes' School of Technology site in Wheatley, just outside of Oxford.

Human Capital

- 4.53 Oxford benefits from an educated workforce, and a high proportion of residents with degrees. This may partly reflect higher education institutions being major employers in the City, as well as the number of higher technology activities based there, for example at the Science Park. National research studies have identified a skilled workforce as a major source of competitive advantage in an increasingly knowledge-based economy.⁴² Universities are considered to act as centres of attraction for individuals and enterprises, modifying the skills profile of the labour market.⁴³
- 4.54 Oxford's universities and further education colleges contribute directly to the supply of local graduate workers. For example, while many Oxford graduates take positions in London and the wider South East, in recent years approximately 8-10% of graduates from the University of Oxford, and 11% from Oxford Brookes, have obtained their first job within the City. A further 14% of Oxford University graduates continue their studies at either Oxford or Oxford Brookes University.⁴⁴ This supply of skilled graduates entering the workforce each year adds to the overall stock of knowledge and skills in the local economy. In addition, because of their world-class reputation, Oxford's universities are able to attract the best international students and teachers, some of which will stay and contribute to the economy.
- 4.55 Oxford-based businesses are therefore able to benefit from easy access to a pool of skilled labour. Companies that depend on specialist skills, particularly high-technology and other knowledge-based sectors, often tend to cluster around universities to access this pool of labour. The "human capital" effects derived from the significant higher education presence in Oxford – in terms of creating a higher-skilled and more productive workforce – therefore make the City a more attractive business location, and contribute to the competitiveness of the

⁴⁰ 'Defining, Explaining and Managing High-tech Growth: The Case of Oxfordshire', J. Glasson, A. Chadwick and H. Lawton-Smith, *European Planning Studies*, Vol. 14 (4), May 2006.

⁴¹ 'The Motorsport Knowledge Exchange: Forging Links between Education and Industry', Motorsport Knowledge Exchange, http://www.msportknowledge.ac.uk/index.php?option=com_content&task=category§ionid=5&id=23&Itemid=31

⁴² *State of the English Cities: The Competitive Economic Performance of English Cities*, DCLG, November 2006.

⁴³ Huggins, R. and Cooke, P. (1997) 'The Economic Impact of Cardiff University: innovation, learning and job generation', *GeoJournal* 41(4), pp. 325-337

⁴⁴ Destinations of Leavers from Higher Education data, supplied by University of Oxford; information supplied by Oxford Brookes

Oxford economy, as well as potentially attracting other high-skilled (and high earning) workers from elsewhere.⁴⁵

- 4.56 The universities and further education institutions also provide vocational training and foundation courses which help improve the skills of staff available to Oxford-based firms, often linked to priorities defined by the Sector Skills Councils, while the language schools also provide short language training for overseas staff of businesses based in Oxford.
- 4.57 Taken together, these factors give Oxford a competitive advantage in terms of attracting companies operating in higher value-added sectors which require specialist skills, and also support entrepreneurs seeking to establish firms in knowledge-based activities.

Contribution to Tourism

- 4.58 Tourism is an important part of Oxford's economy, with the City receiving over 7 million visitors annually who spend some £250 million⁴⁶ and support around 6,500 jobs.⁴⁷ The higher education sector, primarily through the University of Oxford and its colleges, contributes to Oxford's tourism appeal. The historic University and college buildings and courtyards form a key part of the medieval character of the City and the "dreaming spires" image of Oxford. The 2005 Oxford Visitor Survey noted that 16% of visitors specifically rated the university colleges as important for their visit, while a further 37% cited Oxford's architecture and historic buildings generally. Of the 17 top tourist attractions in the city listed by visitors, 10 are buildings, gardens and parks belonging to the collegiate University.⁴⁸
- 4.59 Conferences organised by the universities, as well as use of their facilities for external events, make an important contribution to Oxford's business tourism sector. About 38 colleges within Oxford provide conferencing facilities, attracting several hundred conferences annually with a high level of repeat business (67%) and an annual turnover of £24 million. Some conferences are academic ones, others organised by corporate bodies. While most Oxford conferences are smaller scale, venues such as the Sheldonian Theatre can accommodate up to 1,000 delegates. Since delegates have access to historic college facilities, there is a view that these facilities attract conferences that other cities could not win.⁴⁹ Together, the colleges contribute towards the funding of "Conference Oxford", a help desk which helps customers looking for a venue.⁵⁰

Quality of Life

- 4.60 University towns tend to have a wider choice of cultural and leisure facilities than other towns. These are supported by a high student population, which also provides part-time staff for such activities and generally contributes to greater vitality in a town, making it a more attractive place to live and work. Such vitality can improve an area's image as a location for businesses to invest in or relocate to, particularly when it needs to persuade its existing workforce to relocate. Research indicates that this is important to certain sectors for which image and

⁴⁵ For general discussion of Human Capital theory, see Becker, G (1993) *Human capital: a theoretical and empirical analysis, with special reference to education*. Chicago University Press.

⁴⁶ *Visit Oxford*, average for 1999-2001

⁴⁷ Annual Business Inquiry, 2005

⁴⁸ Oxford University website, 2007

⁴⁹ Based on discussions with Conference Oxford

⁵⁰ *Market Feasibility Study of Proposed Oxford Conference Centre*, MBA Summer Consulting Project, Said Business School, 2005

lifestyle factors are particularly important to attracting the best staff.⁵¹ In these ways, the higher education sector indirectly supports the Oxford economy more widely.

Conclusions

4.61 Based on the above analysis, the economic contribution of the higher education sector to the Oxford economy can be summarised as follows:

- the sector directly employs about 17,200 in total within Oxford, about 18% of the total workforce, and includes some of the largest employers in the City;
- higher education provides a much higher proportion of skilled jobs in the City than it would otherwise have;
- a further 4,300 indirect and induced employment jobs are supported by the sector in Oxford;
- the higher education sector attracts substantial income to the City in the form of Government spending, research grants and other forms of sponsorship;
- the sector injects an estimated £520 million through spending on supplier goods and services within Oxford, while capital investment in recent years amounts to about £420 million;
- the sector forms the heart of one of the UK's largest high technology clusters and plays a key role in attracting higher technology investment to the City;
- it forms one of the key elements underlying Oxford's international prestige and brand as an investment location;
- it helps generate a steady stream of new higher technology and other enterprises in the City, that contribute to a dynamic and self-renewing local economy; and
- it makes important contributions to the human capital of the Oxford workforce and other sectors such as tourism.

⁵¹ *Spatial Requirements of Key Sectors in the South East*, SEERA, April 2005

5.0 THE OXFORD HEALTH SECTOR

Overview

5.1 Oxford's health sector comprises the Radcliffe Hospitals NHS Trust, which operates the John Radcliffe and Churchill Hospitals, the Nuffield Orthopaedic Centre NHS Trust which operates a specialist facility at Headington, and the Oxfordshire Primary Care Trust (PCT). In addition, there are a number of other more specialist organisations, including Oxfordshire and Buckinghamshire Mental Healthcare NHS Trust, the Oxfordshire Learning and Disability NHS Trust and the Oxfordshire Ambulance NHS Trust. Oxford is also served by one privately-operated hospital: the Manor Hospital (Nuffield Hospitals).



5.2 In addition, the medical faculties at Oxford's universities are an important part of the City's health sector, either by providing specialist medical services in teaching hospitals or other contributions to healthcare delivery, for example trained graduates. The Medical Sciences Division at the University of Oxford, and the School of Health and Social Care at Oxford Brookes are notable in this respect. The health sector also includes some nursing homes within Oxford.

National Context

5.3 In total, the NHS employs over one million people nationally, the largest single employer in the UK, and spends £11 billion per annum on purchasing goods and services. It has embarked on a major capital investment programme to renew and redevelop its facilities, including nearly 150 Private Finance Initiatives, with a capital value of £4.5 billion.⁵² In 2002, total construction work generated by the UK health sector was estimated at some £1.9 billion.⁵³ University hospitals received about £1.25 billion to support education, training and research in 2004/05, and accounted for nearly 30% of the total in-patient workload of the NHS in England.⁵⁴

5.4 Investment in health research and development has also been a Government policy priority. Since 1997, the NHS has spent £4.7 billion nationally on research and development, to support leading-edge research and provide patients with access to new medicines and treatments.⁵⁵

5.5 Following this brief overview of the health sector at a national level, its economic contribution to the Oxford economy is considered below.

⁵² *Claiming the Health Dividend: unlocking the benefits of NHS spending*, King's Fund, 2002

⁵³ *Health and Social Care Industries Study*, SQW Ltd for Northwest Development Agency, Feb 2004

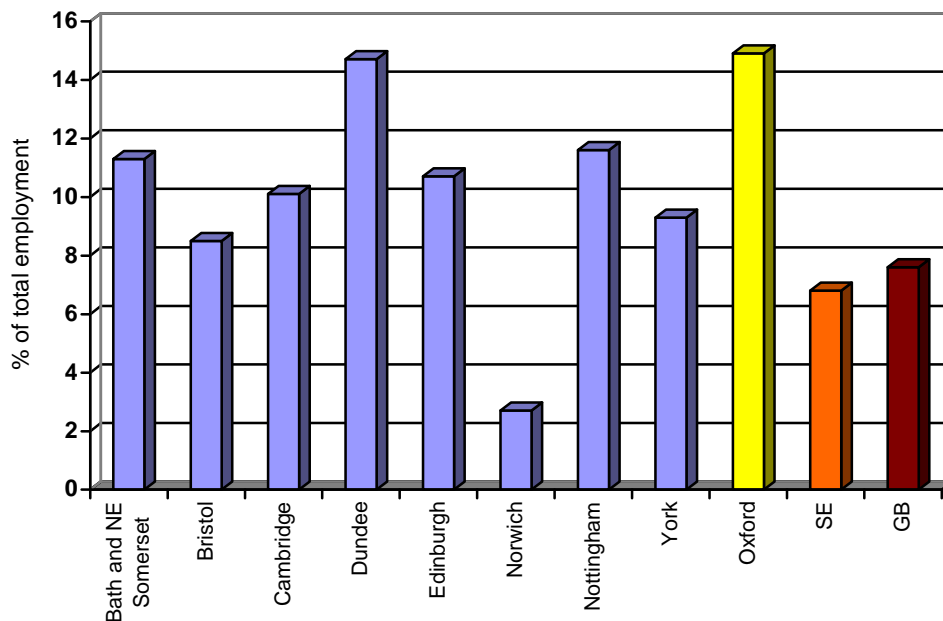
⁵⁴ *The Economic and Social Impact of UK Academic Clinical Partnerships*, Phase 1 report, Association of University Hospitals / Council of Heads of Medical Schools, June 2006.

⁵⁵ 'New Health Research Centres of Excellence Announced', Department of Health, Nov 2006

Employment

- 5.6 The health sector directly employs about 14,500 people within Oxford.⁵⁶ The main employers include the Oxford Radcliffe Hospitals NHS Trust (9,970 jobs) and Nuffield Orthopaedic NHS Trust (850 jobs), and Oxford City PCT (780 jobs).⁵⁷ The Radcliffe Hospitals Trust is one of the largest individual employers within Oxford.
- 5.7 In total, the sector accounts for about 15% of the City's total employment, having grown by almost 50% since 1998. The sector's representation, when measured as a proportion of total employment, is higher in Oxford than many other UK towns of similar size, and double the regional (6.8%) and national (7.6%) averages (Figure 5.1).

Figure 5.1: Proportion of Workforce in Health Activities, 2004



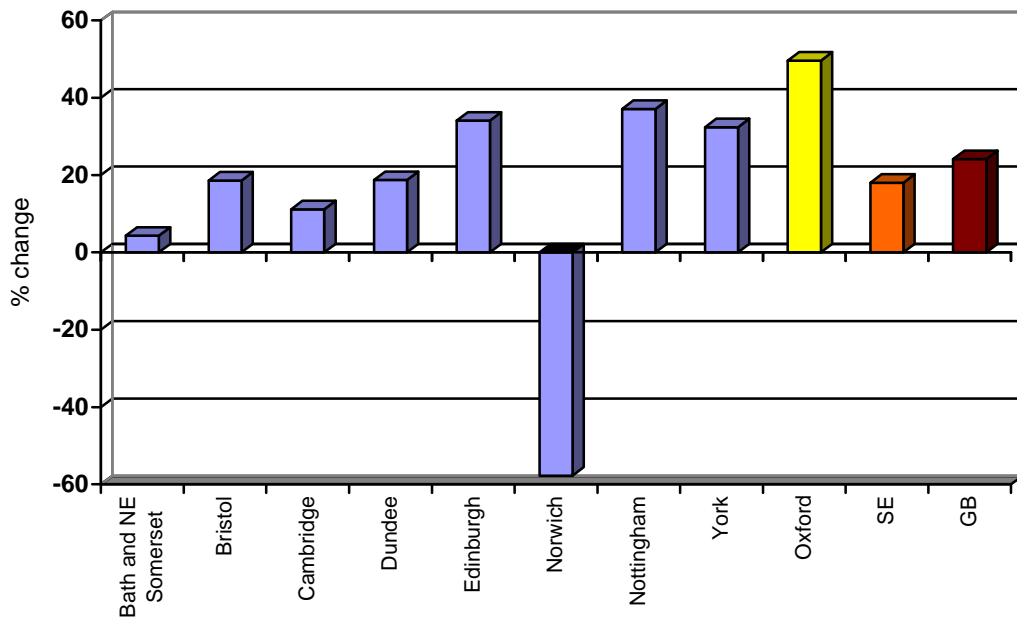
Source: Annual Business Inquiry, 2004

- 5.8 Oxford's growth in health sector employment between 1998-2004 (49.6%) has also been considerably higher than growth regionally (18%) and nationally (24.1%), and more than in many other UK towns and cities with large teaching hospitals or similar facilities (Figure 5.2). Oxford's growth probably reflects high Government spending on health in recent years, the City's pre-eminent role as a centre of medical excellence and its concentration of medical research and specialist facilities.

⁵⁶ 2004 Annual Business Inquiry data

⁵⁷ Based on latest annual reports, 2005/06. Note: Oxford City PCT is now part of Oxfordshire PCT; figure excludes 170 GPs / practice managers

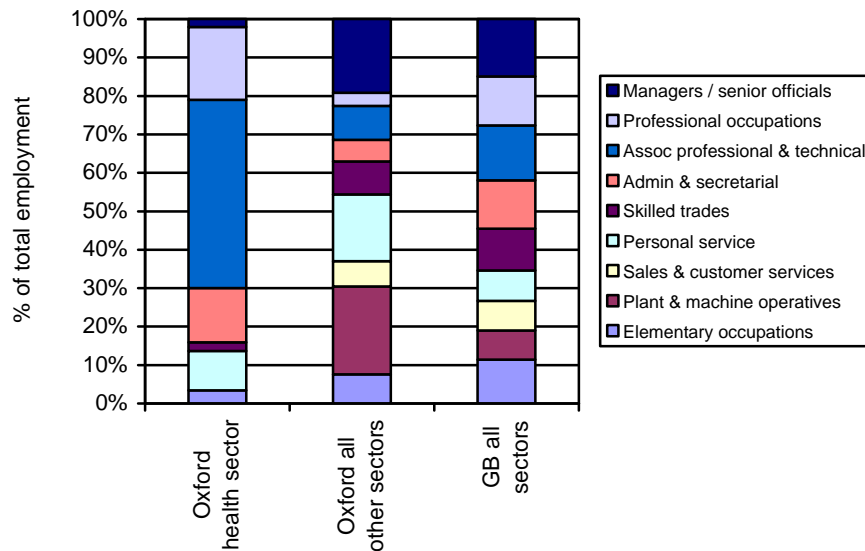
Figure 5.2: Change in Employment in Health Activities, 1998-2004



Source: Annual Business Inquiry, 1998 and 2004

5.9 This sector contains a much higher proportion (nearly 70%) of higher skilled jobs – particularly associate professional and technical occupations – than are found in the rest of the Oxford economy (37%), and the national workforce. It also has a higher proportion of personal service occupations than the Oxford workforce as whole (10.2% compared to 5.7%) (Figure 5.3).

Figure 5.3: Occupational Profile of Health Sector Employees



Source: Labour Force Survey / Annual Population Survey, 2006

Indirect and Induced Employment

5.10 As with higher education, further indirect jobs are supported by the health sector arising from the spending of the hospitals and other NHS trusts on goods, supplies and services from firms

within Oxford. Again, there will be some induced employment linked to wage spending of health sector employees, and the sector's suppliers' employees.

- 5.11 Like higher education, the local indirect employment effects of the health sector are in general more significant than other forms of service sector activities, partly reflecting its specialist nature. Some services such as cleaning, security, waste disposal and maintenance are also dependent on contracts with locally-based firms. Induced employment should be relatively high given the relatively high skill levels of many health sector jobs.
- 5.12 To select an appropriate multiplier in this case, employment multipliers derived in other studies of the health sector elsewhere were reviewed.⁵⁸ Based on these factors, and the economic characteristics of the health sector and the local economy, an employment multiplier value of 1.25 has been selected to cover both indirect and induced employment locally. Applying this to the total number of direct jobs supported by the health sector (in Full Time Equivalents) produces a further 2,765 or so jobs supported within Oxford.

Overall Employment Impacts

- 5.13 Drawing together the employment effects discussed above, Table 5.1 below summarises the total number of existing jobs attributable to the health sector in Oxford. This amounts to almost 17,300 job opportunities in total, equivalent to about 13,800 FTE jobs.

Table 5.1: Gross Employment in Oxford Health Sector

Type of Employment	Total	FTE Jobs
Direct employment	14,500	11,055
<i>Multiplier of 1.25</i>		
Indirect / induced employment	2,765	2,765
Total	17,265	13,820

Source: NLP

Expenditure and Income

- 5.14 The health sector injects significant amounts of expenditure and income into the Oxford economy. This includes capital investment, spending with local suppliers and research grants attracted by the main organisations.

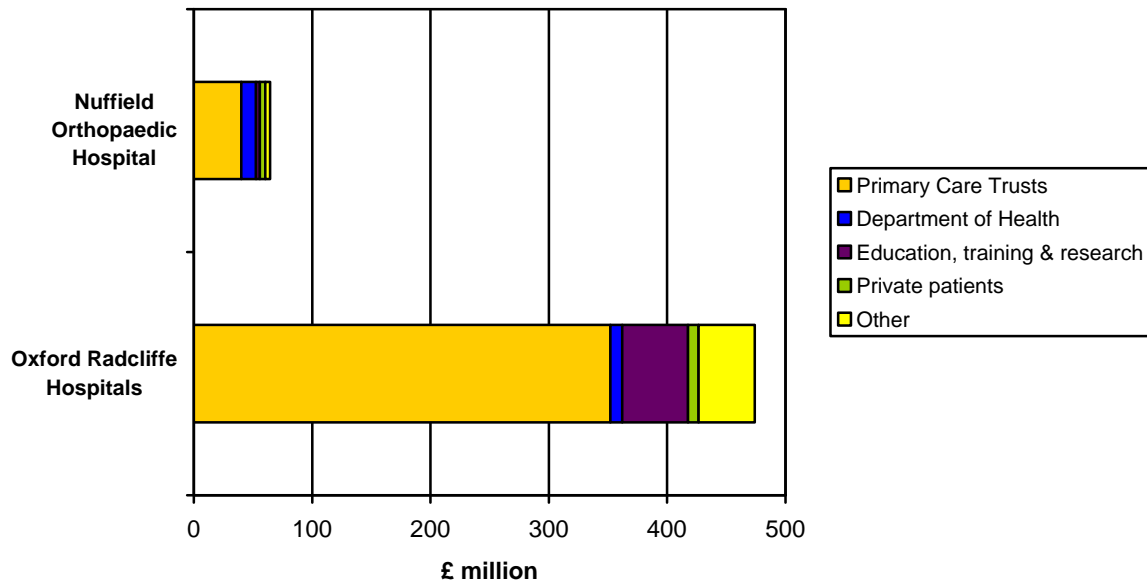
Income

- 5.15 Health organisations typically receive income from a range of sources. These include funds made available by central government (for example the Department of Health modernisation fund), allocations made to Strategic Health Authorities to finance capital investment projects, annual budgets for NHS trusts, the NHS Local Improvement Finance Trust (LIFT) as well as private finance and donations.
- 5.16 In 2005-06, the two main health trusts in Oxford attracted total income of £540 million to Oxford. The Radcliffe Hospitals NHS Trust generated income of nearly £475 million, the

⁵⁸ *Oxford NHS Economic Impact Study*, Impacts Assessment Unit, Oxford Brookes University (1999)

majority of which was from Primary Care Trusts, while education, training and research accounted for nearly 12% of total income. In the same year, the Nuffield Orthopaedic Hospital Trust attracted total income of nearly £65 million (Figure 5.4).

Figure 5.4: Income by Source, 2005-06



Source: Annual accounts 2005/06

Direct Expenditure

- 5.17 A significant proportion of income coming into the health organisations and institutions is recycled in the local Oxford economy. The combined annual wage bill of the Oxford Radcliffe Hospital NHS Trust and the Nuffield Orthopaedic NHS Trust in 2005/06 was £335 million.
- 5.18 Based on available information, in 2005/06 the main health organisations spent £130 million on clinical suppliers, and a further £10.5 million on general suppliers. The majority of more specialist clinical supplies and consumables are sourced via the NHS supply chain on a national basis, while support services such as catering and portering are contracted out to national firms, although these typically employ local workers. However, a proportion of supplier spending does occur within Oxford, with previous studies estimating this to be about 15% of the health sector's total expenditure.⁵⁹ In this case, supplier spending in Oxford would amount to about £20 million.
- 5.19 Information on Oxford businesses holding contracts to supply the NHS with goods and services was obtained from the NHS Purchasing and Supply Agency.⁶⁰ This indicated 10 registered supplier firms within Oxford, including suppliers of clinical devices, pharmaceuticals, as well as catering and specialist recruitment services. There are also a range of suppliers in other Oxfordshire districts. Although not all of these firms may be directly supplying health organisations within Oxford, given the high level of health activity in Oxford, it is reasonable to assume that some of these activities are located there to support this sector.

⁵⁹ Oxford NHS Economic Impact Study, Impacts Assessment Unit, Oxford Brookes, July 1999

⁶⁰ NHS Purchasing and Supply Agency, supplier database, February 2007

Capital Investment

- 5.20 Oxford's health sector has undertaken significant amounts of capital investment in recent years, primarily in refurbishing and developing new, world-class medical facilities. Major construction projects of this type will be undertaken by national construction companies employing some local people, while other work will be sub-contracted to local firms.
- 5.21 In early 2007, health services were transferred by the Oxford Radcliffe Hospitals NHS Trust from the Radcliffe Infirmary site to new facilities developed at the John Radcliffe Hospital in Headington, including a new West Wing housing a range of specialist units and teaching facilities for the University of Oxford, and a purpose-built new Children's Hospital. This total investment was worth £135 million. The former Radcliffe Infirmary buildings are now to provide new accommodation for the Oxford University's Medical Sciences department. Furthermore, a £109 million new Cancer Centre is being constructed on the Churchill Hospital site and due to open in 2008.
- 5.22 The Nuffield Orthopaedic NHS Trust has also recently opened new hospital buildings with a capital cost of £42 million, as well as 91 units of new accommodation for rent to doctors and nursing staff.
- 5.23 One source of health sector investment is the Local Improvement Finance Trust (LIFT), a government initiative between the Department of Health, the local PCT and the private sector. Through this initiative, Oxford Infracare LIFT Ltd will provide £16.5 million to develop two new health centres in East Oxford and Blackbird Leys. There are also proposals to develop an integrated health centre within the city centre.⁶¹
- 5.24 There has also been significant investment in health facilities by private sector operators. For example, the 71-bed Manor Hospital opened in 2004, following a £50 million investment by Nuffield Hospitals on the former Oxford United football ground at Headington.
- 5.25 Collectively, these capital investments amount to about £350 million within Oxford over recent years.

Wider Economic Effects

- 5.26 Oxford's health sector also makes a significant contribution to other sectors of the Oxford economy.

Links with Universities

- 5.27 NHS trusts operating in Oxford have a long-standing partnership with the Oxford universities, including the Medical Sciences Department at Oxford University, and the School of Health Care and School of Biological and Molecular Sciences at Oxford Brookes. Many of the specialist units within the hospitals have been established and operated with University support, and this range of specialist services means that health facilities in Oxford receive referrals from across the UK and overseas. For example, the new West Wing of the John Radcliffe Hospital which opened in 2007 includes dedicated teaching facilities for the University of Oxford. Much of this collaboration is facilitated by the Oxford Research and Development Support Consortium (ORDC), a group of academic units within Oxford funded by

⁶¹ *Building for a Healthy Oxford – Strategic Service Delivery Plan*, Oxford City PCT, 2005

the NHS Research and Development Programme, comprising the four main NHS trusts. This is one of the largest NHS research groups nationally, receiving about £27 million of grant funding and £9 million support funding from the Department of Health, involving approximately 700 researchers.⁶²

- 5.28 Overall, this collaboration provides for a much higher level of specialist healthcare available within Oxford, as well as creating opportunities for clinical trials and the development of pioneering drugs. For example, the Nuffield Orthopaedic Hospital accommodates the Botnar Research Centre which carries out detailed research into musculoskeletal problems and is planning to expand within the next three years, providing the most extensive research into orthopaedic medicine in the country. These forms of collaboration in turn help to ensure that Oxford's universities remain leaders in medical research, and therefore competitive in terms of securing grants and sponsorship. This role will be enhanced through the creation of a national Biomedical Research Centre at the Radcliffe Hospital.
- 5.29 A large number of NHS clinicians and general practitioners contribute to teaching activities at the universities, while the universities contribute to the supply and training of skilled staff that work in the health sector. For example, a high proportion of nursing graduates from courses at Oxford Brookes go on to work in local healthcare organisations. This strong linkage between the health sectors and higher education assists in terms of retaining skilled healthcare staff, as well as serving to attract other specialist staff to Oxford.

Contribution to Oxford's Biotech Cluster

- 5.30 By facilitating medical research in collaboration with Oxford's universities, the health sector has played a significant role in the development of Oxford's cluster of biotechnology industries. The UK represents the single largest contributor to the European biotechnology industry, employing approximately 22,400 people in total and generating revenue of about £3.6 billion per annum. Oxford is recognised as one of the largest, most mature and innovative biotechnology clusters in the UK. In a recent survey, biotech firms based in Oxford were found to have higher activity in terms of scientific publications and new patents, and a clear emphasis on business relationships with local research establishments and service providers.⁶³ Studies of the bioscience and medical sector in general highlight that these activities tend to cluster around centres of major research activity, but also rely heavily on formal and informal networks between individuals and organisations.⁶⁴
- 5.31 The critical mass created by health institutions and teaching hospitals within Oxford, now subject to substantial new investment, has therefore contributed to the development and competitive advantage of the Oxford biotechnology cluster. Recent research on the factors underlying the growth of the Oxfordshire high technology cluster noted that "*Oxford is also a major centre for teaching hospitals (The John Radcliffe, Churchill, Nuffield) which play a pivotal role in the rich medical, biotechnological and pharmaceutical activity in the area.*"⁶⁵ For example, Oxford University has a long track record of establishing specialist research centres (Figure 5.5), while the Nuffield Orthopaedic Hospital has a number of linkages with local drugs

⁶² <http://www.oxfordradcliffe.nhs.uk/research/researchers/consortium.asp>

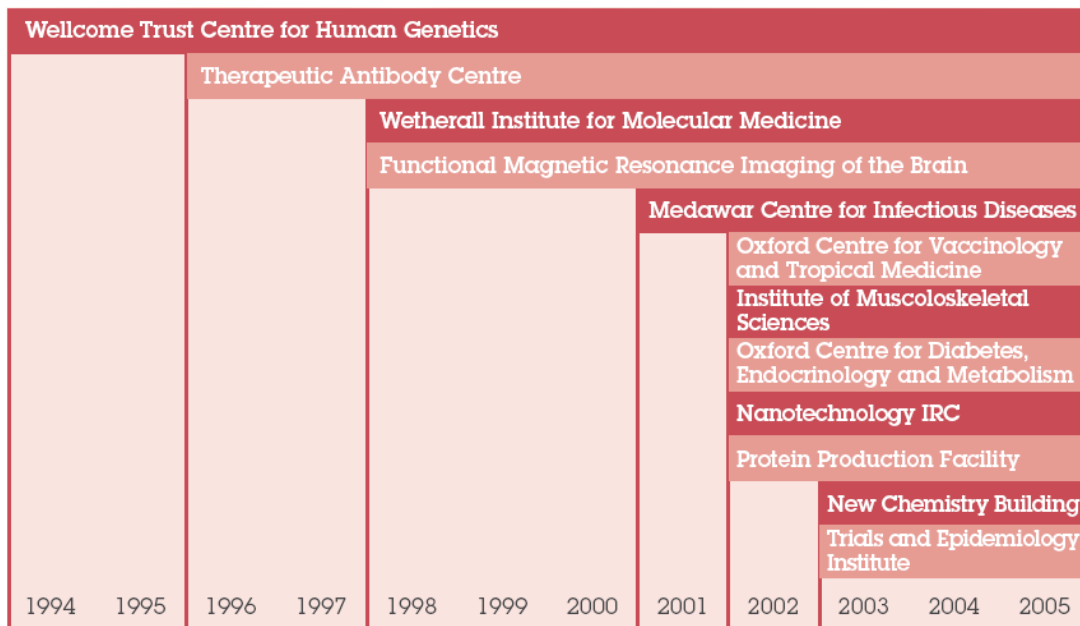
⁶³ *Biotech Clusters in the UK*, Advanced Institute of Management Research, March 2006

⁶⁴ *Oxford Networks – Medical & Biosciences Report*, The Oxford Trust, October 2002

⁶⁵ 'Defining, Explaining and Managing High-tech Growth: The Case of Oxfordshire', J. Glasson, A. Chadwick and H. Lawton-Smith, *European Planning Studies*, Vol. 14 (4), May 2006.

and medical equipment suppliers to either trial or develop variance procedures and appliances.

Figure 5.5: Oxford University Research Centres in Life Sciences and Related Fields



Source: Oxford Networks: Medical & Biosciences Report, The Oxford Trust, 2002

5.32 Overall, these factors serve to make Oxford more attractive to bioscience and pharmaceutical firms, and give it a competitive advantage for attracting high value investment in national terms. For example, a German biotechnology firm recently opened its first facility at the Oxford Science Park as a means of expanding the company’s presence in the local and national biotechnology market, on the basis that *“the Oxford Science Park is the ideal location for Proteros to broaden its European horizons. Not only does the Park provide a superb working environment, but there is also a vibrant local biotech sector, in which Proteros is keen to get involved.”*⁶⁶

Quality of Life

5.33 High quality medical facilities, along with good schools and cultural facilities, are one of the ‘quality of life’ factors that help make an area an attractive place to work and live. This factor is particularly important to overseas investors. In an increasingly competitive environment for new investment, the high quality of Oxford’s facilities may therefore help in attracting footloose businesses to the City. They also give Oxford’s residents a very high quality of healthcare facilities.

Conclusions

5.34 Based on the above analysis, the economic contribution of the health sector to the Oxford economy can be summarised as follows:

- the sector employs about 14,500 people within Oxford, about 15% of the total workforce, and includes some of the largest individual employers in the city;

⁶⁶ ‘German company branches into Oxford’ Oxford Science Park press release, September 2006

- it provides a high proportion of skilled (e.g. professional, technical) and personal services jobs in the city;
- the sector supports a further 2,765 indirect and induced employment jobs are supported in Oxford;
- the sector injects an estimated £20m through spending on supplier goods and services within Oxford, while capital investment by the sector in recent years has amounted to £350m;
- wider economic effects include strong collaboration with the universities for medical research and sharing of resources and staff, and consequently a much higher level of medical facilities and expertise available than would otherwise be the case; and
- the critical mass of health facilities and expertise has served as a strong influence in the growth of Oxford's cluster of biotechnology firms, now recognised as one of the leading such clusters in the country.

6.0 THE OXFORD RETAIL SECTOR

Overview

6.1 The retail sector in Oxford is largely concentrated in the city centre, but also includes a number of district centres and out-of-centre retail warehouse parks.

6.2 Oxford city centre contains about 140,000 m² of retail floorspace, largely contained within a compact retail core around five main streets – the pedestrianised Cornmarket, Queen Street, Broad Street, George Street and High Street. It also contains two covered shopping centres: the Westgate Centre (21,460 m²) developed in 1972 with 37 units, and the smaller Clarendon Centre (11,300 m²) with 26 units, which opened in 1983 and was refurbished in 1995. While these centres, along with Cornmarket and Queen Street are characterised by national multiple retailers, High Street and Broad Street are more specialist secondary retail areas.



6.3 The City's main district shopping centres include Summertown, Headington, Cowley Road and Cowley Centre, which complement the city centre by providing convenience and standard durable goods, and some services and leisure facilities, for local areas. Together these centres provide some 88,000 m² of retail floorspace.

6.4 In addition, six retail warehouse parks lie near the outer edge of the City and together contain a significant amount of retail floorspace. These are the Oxford Retail Park at Cowley (5,100 m²), Seacourt Tower at Botley (7,710 m²), Botley Road retail parks (16,870 m²), Horspath Driftway Retail Park (4,180 m²) and Templars Retail Park (13,000 m²).

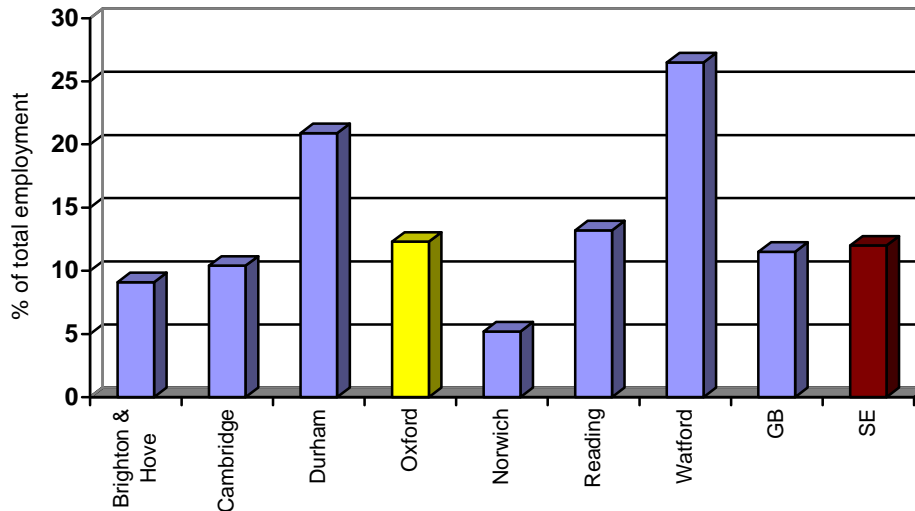
National Context

6.5 The UK retail sector has shown sustained growth over the past two decades, both in terms of the volume and value of retail sales. Because of its linkages with other economic sectors (e.g. manufacturing, distribution), retail spending has been a significant driver of the UK's economic growth over the past five years or so, particularly when other sectors have suffered downturns. The sector now employs over 3 million people nationally, an increase of nearly 50% since the mid-1980s. Against this background, the retail sector's economic impacts within Oxford are considered below.

Employment

- 6.6 The retail sector currently employs about 9,800 people within Oxford and directly accounts for about 10% of the City's total employment.⁶⁷ This share of all jobs is slightly lower than the national (11.6%) and regional (12%) averages but higher than in some other comparably sized towns such as Cambridge, Norwich and Reading (Figure 6.1).

Figure 6.1: Proportion of Workforce in Retail Sector Employment, 2003

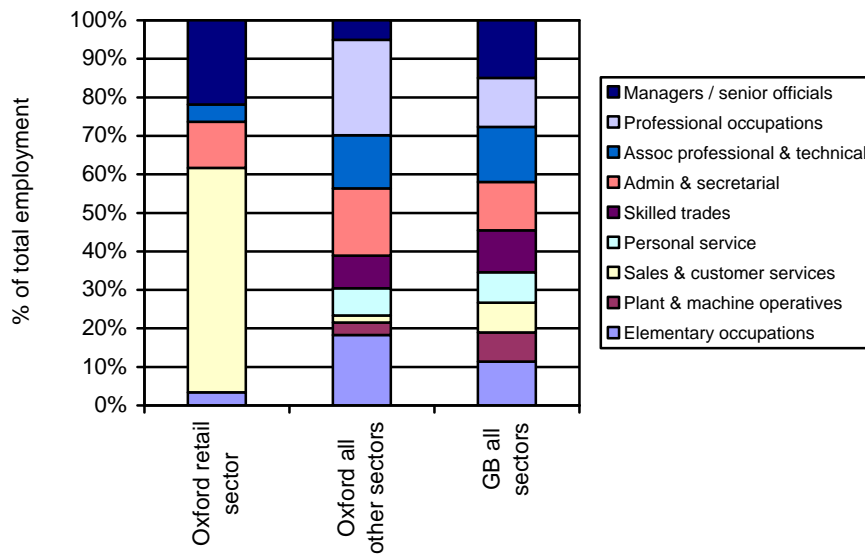


Source: Annual Business Inquiry, 2003

- 6.7 Since 1997, retail employment in Oxford has grown by just 1%, compared to 34% nationally. This low growth and the retail sector's low share of all jobs probably reflects the lack of suitable sites for major new retail development in the City Centre. However, over a longer time period between 1984-2003, retail jobs in the City grew by 54%, slightly higher than the national average (46%).
- 6.8 As might be expected, the Oxford retail sector contains a much higher proportion (nearly 60%) of jobs in sales and customer service occupations, but also relatively more managerial positions (21.9%), than found in other parts of the Oxford workforce (1.8% and 5.1% respectively). At the same time, it provides considerably lower proportions of jobs at professional and technical levels (Figure 6.2).

⁶⁷ Latest data obtained from the 2004 Annual Business Inquiry.

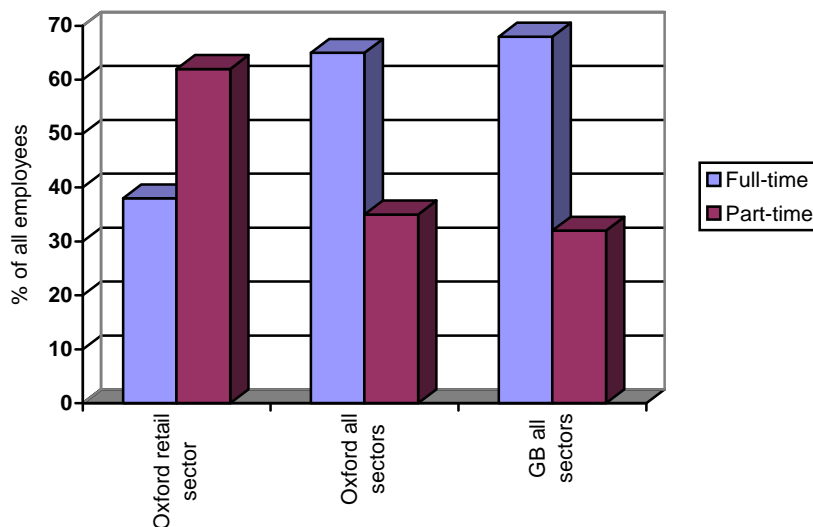
Figure 6.2: Occupational Profile of Retail Sector Employees



Source: Labour Force Survey / Annual Population Survey, 2006

6.9 Reflecting this profile, retail sector employment typically employs a higher proportion of part-time workers than other sectors of the economy. Approximately 62% of Oxford's retail workforce is part-time, compared to 35% of all Oxford workers, and 38% of the national workforce (Figure 6.3). Broadly in line with the national picture of retail employment, just over 60% of the Oxford retail workforce is female.

Figure 6.3: Full and Part-time Split of Retail Sector Employees



Source: Annual Business Inquiry, 2004

6.10 Based on research elsewhere, a high proportion of the retail jobs based in Oxford are likely to be filled by residents of the City, as jobs in the retail sector typically involve lower levels of

long-distance commuting.⁶⁸ This contrasts with other sectors where a high proportion of employees commute in from surrounding districts, adding to traffic congestion in Oxford. A locally-based workforce also means that a higher proportion of wage spending from this sector will be retained within the City's local economy, again supporting local expenditure and employment.

Indirect and Induced Employment

- 6.11 As with other Oxford economic sectors, further indirect and induced jobs (or multiplier jobs) are supported by the retail sector within the local economy. The local indirect employment effects of retailing are in general less significant when compared with some other sectors of the economy. This is partly because national retailers tend to source goods centrally through their UK headquarters, or through national and regional distribution centres, rather than at the local level. However, some retailers will sell products produced locally, while activities such as shop cleaning and security are typically based on contracts with local firms. Induced employment from this sector will be reduced by relatively low wage levels compared to the education and health sectors, although a high proportion of wage spending is likely to be captured locally as most retail employees live close to their place of work.
- 6.12 Based on these factors and research on retail development elsewhere, an employment multiplier value of 1.2 has been selected to cover both indirect and induced employment locally. Applying this employment multiplier to the total number of FTE direct jobs supported by the retail sector produces a further 1,350 or so jobs supported within Oxford.

Table 6.1: Gross Employment in Oxford Retail Sector

Type of Employment	Total	FTE Jobs
Direct employment	9,800	6,760
<i>Multiplier of 1.2</i>		
Indirect / induced employment	1,350	1,350
Total	11,150	8,110

Source: NLP

- 6.13 The total level of employment supported by the retail sector within Oxford is therefore in the order of 11,150 jobs. This is equivalent to about 12% of the City's total workforce.

Retail Expenditure

- 6.14 Recent studies have estimated that the City Centre's comparison retail turnover is in the order of £560 million, with £50 million spent elsewhere in the City. Convenience goods expenditure generated in the City and likely to be mainly captured there amounts to some £162 million.⁶⁹ Oxford's retail sector therefore helps retain in the City a high proportion of spending by both workers and residents that would otherwise be lost to other towns and centres.

⁶⁸ *Retail and the Labour Market*, GLA Economics, March 2006

⁶⁹ *Oxford Retail Needs Study*, Roger Tym & Partners for Oxford City Council, Jan 2004.

Retained Income

- 6.15 A high proportion of retail expenditure in Oxford will leak out of the local economy in the form of purchases from suppliers elsewhere and in company profits of firms based outside the City. However, the great majority of retail employees' wage spending could be expected to be retained within Oxford. Based on an average wage for the retail sector in the South East⁷⁰, an estimated £200 million in retail wages will be an important contribution of the retail sector to the Oxford economy.

Capital Investment

- 6.16 Despite relatively few major developments in the City in recent years, the retail sector does produce a reasonable level of capital investment. The planned Westgate Centre redevelopment in the City Centre will cost an estimated £215 million. In addition, even in the absence of major projects, retailing generally experiences a fairly high level of refurbishment of premises as retailers frequently refresh their image, and existing shops are fitted out for new occupiers. All this will support jobs and some local spending with building contractors and supplier firms.

Future Growth

- 6.17 Continued growth in the retail sector in Oxford is anticipated. Convenience goods expenditure is forecast to grow by about 11%, to £180 million by 2011, while total city centre turnover for comparison goods (including inflows from surrounding areas) is expected to grow by over 30% to just over £800 million.⁷¹ Part of this spending growth will be captured by new retail developments in the City, particularly the Westgate development which will add some 57,600 m² of floorspace and up to 3,300 more jobs in total.

Wider Economic Effects

- 6.18 The Oxford retail sector also plays an important indirect role in other sectors and aspects of the local economy.

Labour Market Effects

- 6.19 The retail sector nationally meets a growing demand in the economy for flexible part-time jobs to provide for the employment needs of an increasingly wide range of lifestyles among prospective workers. While offering relatively more, lower skilled and part-time employment than the health and higher education sectors, retailing in Oxford provides a range of jobs at different skill levels and with flexible working hours that are suited to certain sectors of the community and those that do not want, or cannot take, full-time occupations. These include single parents, others with childcare responsibilities, students, and retired people seeking extra income. In particular, retailing appears to be a significant source of income for the City's student population, since 25% of jobs in the Westgate Centre are estimated to be filled by students.⁷²

⁷⁰ Annual Survey of Hours and Earnings, ONS, 2006

⁷¹ *Oxford Retail Needs Study*, Roger Tym & Partners, January 2004

⁷² Information provided by Westgate Centre Management, Autumn 2005

- 6.20 Retail job opportunities are also a significant factor in reducing unemployment locally and in attracting into the workforce those that might otherwise find it harder to enter the job market. A high proportion of Oxford's unemployed residents are typically lower-skilled. In the early 1980s, retailing traditionally employed up to 20% of school leavers.⁷³ It now accounts for 50% of 16-19 year-old employment in the UK. Nationally, retailing is seen as an important sector in countering long-term and youth unemployment. By recruiting, training and developing a high proportion of the less skilled, the young, female and the elderly, the sector contributes to the reduction of unemployment in the very segments where unemployment tends to be at its highest.⁷⁴ It is therefore likely that the Oxford retail sector has helped maintain unemployment in the City at a lower level than it might otherwise have been.
- 6.21 The retail sector is also a growing source of higher skilled jobs in Oxford. In 2002, there were nearly 200,000 new jobs created in the sector nationally, 33% of them at managerial / supervisory level. Graduate employment in UK retailing almost doubled to 6.5% between 1988-98, while the overall workforce grew just 3% in that period. Retailing recorded the fastest annual salary growth rate amongst graduates in 2004 of some 8.9%.⁷⁵ The sector also provides a regular source of vacancies for graduates. Some 8.5% of national graduate vacancies in 2003 were in the retail industry. Whereas graduate vacancies overall declined by 4% between 2001-2002, retail vacancies for graduates increased by 20%.⁷⁶ These trends are likely to apply in Oxford also.

Contribution to Tourism

- 6.22 Shopping is recognised as one of the UK's most popular leisure activities and its importance in tourism terms is reflected in the numbers of domestic day trips to which it gives rise. Some 16% of day trips out in the UK were specifically to go on non-regular/non-convenience shopping trips, and formed the highest leisure activity after eating out, and visiting friends or relatives. The average spend per tourism day trip is almost £28 per head of which 19% is spent on clothes, and 11% on gifts/souvenirs.⁷⁷ This importance is broadly confirmed by surveys of tourists in the South East, which found that the type of attraction/location which had attracted the highest proportion of visits was shopping centres.⁷⁸
- 6.23 In this context, an attractive range of shopping facilities combined with other visitor attractions is important in attracting both day trippers and tourists to the City. It is particularly important in helping capture a higher level of tourist spending within Oxford. A proportion of such spending will be retained in the local economy, through wages, company profits and purchases from local suppliers, will be circulated through other sectors and indirectly contribute to employment in them.

Quality of Life Factors

- 6.24 Good quality shopping facilities are also one of the "quality of life" factors that can help make a location more attractive to businesses and to highly skilled people as a place in which to live and work. In this context, while other factors such as labour supply, premises and business linkages will be more important, it is reasonable to expect that the retail sector in Oxford

⁷³ DITB, 1981

⁷⁴ CIES (2004), *The Contribution of Food Retailing to the Economy*, Templeton College, University of Oxford

⁷⁵ <http://www.prospects.co.uk>

⁷⁶ Consortium of Retail Teaching Companies (CORTCO) figures.

⁷⁷ Report of 2002-03 Great Britain Day Visits Survey

⁷⁸ Essex Tourist Profiling Study, Laser for Essex County Council Tourism Association, 2002

contributes to some extent to bringing other, higher-level economic sectors to the area and to ensuring it retains its highly-skilled workforce, which also makes Oxford attractive to knowledge-based sectors.

Conclusions

6.25 Based on the above analysis, the economic contribution of the retail sector to the Oxford economy can be summarised as follows:

- it directly employs about 9,800 workers within Oxford, about 10% of the total workforce;
- it supports a further 1,350 indirect and induced employment jobs in Oxford,
- the sector captures in excess of £820 million of retail expenditure annually within Oxford and significant future expenditure growth is forecast; much of this spending comes from outside the City;
- the sector gives rise to a significant on-going level of capital investment in the City, supporting activity among the construction and building maintenance sector;
- while providing more part-time work and fewer professional and technical jobs than other sectors, retailing offers jobs suited to sectors of the community where unemployment tends to be higher; it therefore complements the City's more high skilled sectors.
- the sector is an increasing source of graduate employment and provides flexible working opportunities for those who cannot take full-time work such as single parents, mothers returning to work, retired workers and students;
- the retail sector adds to Oxford's wider tourism offer, and helps capture more tourist spending; and
- good quality retail facilities add to the general attractiveness and quality of life of the City and indirectly aid its role as an investment location.

7.0 FUTURE GROWTH & LAND REQUIREMENTS OF THE HIGHER EDUCATION & HEALTH SECTORS

7.1 This Chapter considers the likely extent of growth of the further / higher education and the health sectors in future, as well as their potential requirements for land within Oxford to accommodate such growth. It also considers any likely conflicts between these and other sectors in terms of competing needs for a scarce supply of land within Oxford.



Higher / Further Education Sector

Future Growth Prospects

7.2 A view of the likely direction and scale of future growth by the main academic institutions in Oxford has been attained based on past growth trends, forecasts of student numbers, future staffing levels, a review of estates strategies where available, and discussions with relevant departments. The analysis differentiates between 'core needs', such as the provision of space for teaching, research and laboratories, and 'ancillary needs' such as off-site student accommodation, document storage and library archiving depositories.

Core Needs

7.3 Over the past 50 years, student numbers at Oxford University have grown by 1.5% per annum, while the overall number of staff has increased from about 450 in 1950 to about 8,400 (7,700 Full Time Equivalents) in 2006. This includes over 3,000 staff who are related to the University but many of which are funded externally, for example in research posts.⁷⁹ It should be noted that of direct employees, only about 1,400 are 'academic' staff, the remainder comprising administrative, library and ancillary staff. Current plans indicate that, in aggregate, academic divisions are promoting annual growth in student numbers of up to 4% in future years. However, individual colleges have expressed concern that growth in excess of 1% would exceed their capacity to provide accommodation for students. Therefore, the University's expectation is that student numbers will level off at about 18,000 students, with growth at 1-2% per annum until this level is reached. Growth in student numbers in certain faculties may be offset by some decline in others.

7.4 Staffing levels are anticipated to remain at broadly current levels, a view supported by the increasing use of 'contract' researchers, some of which contribute to teaching, but have fewer long-term space requirements compared to permanent academic staff.

7.5 In overall space terms, Oxford University has grown significantly in recent years with expansion of its building stock supported by increasing levels of funding from government and other bodies such as the Wellcome Trust. Excluding individual colleges, the estate now

⁷⁹ Staff in post by staff group, Oxford University, July 2006

comprises some 520,000 m², an increase of 34% over 10 years ago.⁸⁰ Most of this is distributed around the centre of Oxford, although new development is also underway at Old Road, Headington, and at the Begbroke Science Park outside the City boundary.⁸¹ These sites are considered in more detail below.

- 7.6 Predicting specific future needs is difficult by virtue of the fact that University research is frequently opportunistic, and a specific funding initiative or donation can affect priorities. The University has identified that medical and clinical research is likely to be the largest single area of future growth, which has requirements in terms of housing large apparatus such as scanners. These types of facilities typically need to be located close to hospitals, and while some recent development has been brought forward at the Churchill Hospital site for this purpose, further research space is likely to be developed at other hospital sites. While the scale of the future requirement is currently unclear, the specific requirements of such facilities may generate some demand for additional land close to the main hospital sites.
- 7.7 In addition to the Collegiate University, the needs of individual Colleges have also been considered.⁸² Colleges are responsible for their own property strategies, and Oxford University Estate's Directorate holds limited information centrally, with Colleges potentially in competition with each other for sites and funding. Based on the consultants' survey, 11 Colleges (85% of those responding) either had planning permission for new development or were contemplating expansion plans in future, primarily for improved teaching accommodation or additional student accommodation (Appendix 3). However, the majority of this appears likely to be accommodated on existing College sites, or acquisitions of sites owned by the Collegiate University.
- 7.8 At Oxford Brookes, student numbers overall are anticipated to increase in line with the historic trend, typically 1-2% per academic year, for the foreseeable future. Staffing levels are expected to remain broadly at current levels. These assumptions underpin the new masterplan currently being prepared for a number of the Oxford Brookes' sites, which places emphasis of intensifying use of the University's existing sites, both within and outside of Oxford. This does not envisage significant development occurring on additional sites for the University's core needs. As with Oxford University, staff numbers are expected to remain broadly similar to current levels.
- 7.9 It is understood that Oxford & Cherwell Valley College is currently formulating a new Strategic Plan which will inform the potential redevelopment of the existing campus site on Oxpens Road although, on balance, future land requirements are likely to be lower than at present. Ruskin College plans to relocate its main facilities to its existing college site in Headington, and dispose of the majority of its existing buildings on Walton Street in the City Centre. The latter is identified for use by Oxford University in the Oxford Local Plan should the College relocate, although this site may not necessarily become available to the University.

Ancillary Activities

- 7.10 Academic institutions also have non-core requirements such as of student accommodation which may have to be provided off-site, and increasingly premises for document storage and archiving.

⁸⁰ Gross External Area based on University functional estate (2006/07), including freehold and leasehold space, and space embedded within hospitals. Note: includes unoccupied space within Radcliffe Infirmary scheduled for replacement.

⁸¹ Corporate Plan 2005-06 to 2009-10, Oxford University, September 2005

⁸² Based on NLP survey of Estate Managers/Bursars of the 43 Oxford University Colleges, October 2007

- 7.11 The Adopted Oxford Local Plan (2005) states that planning permission will only be granted for additional teaching/administrative accommodation where the number of full-time students living outside of Oxford and Oxford Brookes' accommodation does not, for each university, exceed 3,500 up to 2008, and 3,000 after that date. This is likely to create some pressure on the universities to provide additional student accommodation within their existing estates, so as to reduce the need for students to make use of private market housing.
- 7.12 At Oxford University, provision of student accommodation is mostly controlled by individual colleges. In 2006/07 there were 13,799 accommodation units provided by the University and colleges, and 3,144 students residing in non-University accommodation. This meets the Local Plan target up to 2008, but is above the limit of 3,000 for years after that date.⁸³ Overall, the University has indicated that it has capacity to accommodate the majority of its undergraduates, and for most beyond their first year of study. The main issue relates to providing accommodation for post-graduate students, some of whom have families or work as research assistants and currently live in private market accommodation. However, the University has indicated that graduate students frequently opt to live outside of college accommodation, implying that it would be impractical for all graduate students to be housed within university accommodation. At current levels, the University suggests that this would imply a need for between 800-1,000 dwelling units, which would need to be delivered through a combination of university accommodation or private market housing.
- 7.13 At Oxford Brookes, 3,639 student accommodation units were provided in 2006/07, although insufficient data is available to accurately determine the number of students living in private accommodation, and so whether the current Local Plan target was being achieved.⁸⁴ Data provided to the Council by Oxford Brookes University for 2006/07 indicates there to be up to 3,425 students in the private rented sector in the City, which complies with the Local Plan target up to 2008.⁸⁵ The University estimates that to meet the Local Plan target in future years would require an additional 1,000 student units to be provided. About 50% of this might be accommodated on existing sites, but the remainder would likely need to be outside of the University's estate (including possibly in the West End). The University has highlighted that the specific preferences of postgraduate and continuing, as opposed to first year, students, and the fact that the University cannot force students to live in halls, means that even if all this accommodation were developed, this would not guarantee meeting the Local Plan target, as these students may prefer to live in private rented accommodation during their studies in Oxford. The University has committed to use market research to clarify the preferences of different student groups and to take this into account when developing plans for additional student accommodation.
- 7.14 Oxford University is also intending to develop 200 units of staff accommodation on the former Wolvercote Paper Mill site, currently owned by Oxford University Press. Depending on the success of this scheme, the University has indicated that it would consider developing further accommodation for staff elsewhere in the City, such is the shortage of appropriate and affordable housing within Oxford. It has indicated that any further development would likely be on existing sites owned by the University.

⁸³ Annual Monitoring Report 2006-07, Oxford City Council

⁸⁴ Annual Monitoring Report 2006-07, Oxford City Council

⁸⁵ residence of other students is not accurately recorded but could include those living outside the city boundary, those living at home, as well as sandwich course and franchise students

7.15 A number of back-office and cataloguing functions associated with the Bodleian Library of Oxford University have relocated from existing University premises to new purpose-built or converted facilities elsewhere, particularly at the Osney Mead Industrial Estate. Proposals for a 9,500 m² depository facility for books and other library materials are now the subject of a Public Inquiry following refusal of planning permission in late 2007. The Library's status as one of five national copyright libraries and a national archive generates continuing pressures for additional space, while the proximity of Osney Mead to Oxford City Centre ensures efficient exchange of resources between the Library and academic departments. The University has also indicated that, in future, it is possible that some academic faculties with large space requirements (e.g. turbo engineering), will also seek to relocate to Osney Mead, most likely through conversion of existing industrial buildings. These proposals will be assessed in the context of their individual land use and how they relate to the designation of this area in the Local Plan as a Protected Employment Site. **The Council's position is that uses not in the traditional 'employment-generating' classes, such as educational / teaching activities, would lie outside the designated uses and as such would not be supported.**

Implications for Potential Land Requirements

- 7.16 It is important to examine how the growth identified above will be accommodated, including any potential additional land requirements that arise. An estimate is made for how much future growth is likely to be accommodated on existing sites through redevelopment and consolidation.
- 7.17 Since 1998, planning permission has been granted for about 16,500 m² of non-residential educational uses, primarily teaching accommodation, generating a net additional land requirement of about 1.5 ha. The largest was the development of a new 10,155 m² social sciences faculty for the University of Oxford on the former TAVR site, Manor Road. A significant number of permissions were granted for change of use, predominantly of office space, to educational use. In total, these accounted for about 3,000 m² of the permitted space. In addition, some 130,000 m² of academic research space was also permitted, taking up an additional 4 ha of land. If past trends continue, this implies that in total additional land needs are less than 1 ha per annum, but this relatively low amount probably reflects some redevelopment on existing university sites. In future, higher demand for university medical research accommodation which needs to be located in close proximity to hospitals will continue to be accommodated on existing hospital sites (e.g. Headington) where possible, but this may generate some additional demand for other sites in close proximity to Oxford's main hospitals.

Core Needs

- 7.18 The Oxford University Corporate Plan 2005-2010 identifies the following sites as the focus for future development:
- Former Radcliffe Infirmary – to provide the main area for expansion in the centre of Oxford for the next 20-30 years, with new facilities for 'dry' science, humanities and social science activities, as well as a 3,500 m² health centre building for the Oxfordshire PCT⁸⁶ (see para 7.28);

⁸⁶ 'PCT and University Join Forces to Deliver New Health Facilities in Oxford', Oxfordshire PCT press release, 4 December 2006

- Science Area – centred on South Parks Road, where a number of existing buildings are to be redeveloped, and facilities increased to match the planned growth in research activity, but all within the existing occupied area;
- Old Road Campus, Headington – in the process of being developed for new medical facilities, with a masterplan developed to accommodate planned growth on the site;
- Manor Road – now fully developed as a focal point for social science in the centre of Oxford, with some scope for further small-scale redevelopment and refurbishment.

7.19 Taken together, the University anticipates that the capacity on the above sites, and in particular the Radcliffe Infirmary, will be able to meet the University's core needs over the next five to ten years or so, within the context of the broad increase in student numbers identified above. It should be noted however that this excludes any development proposals which come forward separately from individual colleges. For example, in the past five years, planning permission has been granted for several extensions to provide additional teaching and staff accommodation at a number of individual colleges, although these have been relatively small-scale and generally on existing college sites in the City.

7.20 The Radcliffe Infirmary and Science Area sites are now subject to a masterplan exercise to determine how they may be developed in the future.⁸⁷ Further growth is also anticipated at the Begbroke Science Park to accommodate forecast growth in requirements for space-intensive science and science-related activities, although this is outside of the City's boundaries. An extension to the Oxford Science Park is being promoted by Magdalene College / Prudential as part of any review of Green Belt to the south of Oxford, should that option be accepted through the strategic planning process.⁸⁸

7.21 In terms of individual Oxford University Colleges, the information obtained through a survey of Colleges indicates that the majority of existing planning permissions or plans for future expansion relate almost exclusively to existing college sites, although funding shortages were cited as delaying potential implementation at a number of Colleges (Appendix 3). However, in a small number of cases, additional sites have been purchased for future College expansion, some of which involved acquisition of buildings previously owned by the Collegiate University. The survey obtained responses from just over a quarter of Colleges and without detailed information from all it is difficult to accurately assess the extent of future land needs. Based on the partial information available, it appears that most of their future development is likely to be on existing College sites, with any on new sites likely to be on land already owned by the Collegiate University and therefore not generating additional land requirements.

7.22 Oxford Brookes' University is undertaking consultation on a masterplan to substantially redevelop parts of its Headington Campus site. As part of this, the University expects that all its core needs will be accommodated by the intensification and better use of its existing sites. There may be some limited relocation of facilities outside of Oxford, for example the School of Technology has recently moved to the campus at Wheatley (South Oxfordshire), but this is not expected to be significant. The masterplan was broadly endorsed by the City Council in September 2007, subject to a number of detailed design and other caveats.⁸⁹

⁸⁷ Radcliffe Infirmary Site and Science Area Masterplans for Public Consultation, University of Oxford, March 2007

⁸⁸ Based on discussions with Magdalene College

⁸⁹ Strategic Development Control Committee, 26th September 2007

- 7.23 Overall, therefore, the core teaching/research needs of the universities appear unlikely to generate significant additional land requirements over and above their existing commitments and what is available on established university sites and other land holdings within the City. In labour market terms, it is not anticipated that any additional pressure will emerge in the future, reflecting that overall staff levels are anticipated to remain similar to current levels. However, it is worth noting that the sector is generally susceptible to any new research/funding initiatives that might come forward and create need for new facilities or additional recruitment, but which are difficult to anticipate in the longer term.
- 7.24 In the case of both Oxford & Cherwell Valley and Ruskin College, if the planned redevelopment / consolidation noted above proceeds as planned, both of these organisations will have potentially reduced land requirements.
- 7.25 No significant additional land needs have been identified for language schools or tutorial colleges.⁹⁰ The majority of those that have indicated potential expansion needs intend to do so through small-scale additions or remodelling of existing premises, rather than relocation to new buildings or sites. However, this sector is subject to fluctuations in student numbers, and this probably reflects a short to medium-term view.

Ancillary Activities

- 7.26 Since 1995, planning permission has been granted for about 2,950 units of student accommodation in Oxford through large developments, equating to about 250 units on average per annum. In land terms, this required about 17 ha of additional land, or 1.7 ha per annum. About half of these units have been constructed on existing university sites and represent stand-alone student accommodation. The others primarily comprise conversions of existing office space and residential dwellings, and a small number provided as part of mixed-use schemes.
- 7.27 Further development of student accommodation is likely to come forward on a combination of existing university and individual college sites (as noted above), as well as sites outside of university estates. In the case of the latter, about a third of development sites in the Oxford Local Plan (totalling 53 ha) are identified to include at least some element of student accommodation. While student accommodation will be competing with other uses on these sites, they should be able to contribute to meeting some of the future need. Student accommodation is now a high value use in Oxford, not subject to any requirement for an affordable element, and an increase in speculative development could result and increase supply. In terms of staff accommodation, the outlook is less clear, although based on the information available, it is understood that any further developments will come forward on existing university sites and landholdings.

Health Sector

Future Growth Prospects

- 7.28 The broad direction of future growth for the main health organisations operating in Oxford was also examined, based on a review of estates strategies where available, and discussions with

⁹⁰ Based on NLP interviews with about 25% of language schools / tutorial colleges, February 2007

relevant departments. No significant ancillary activities were identified for this sector, other than the need for key worker housing for health sector employees.

- 7.29 The Radcliffe Hospitals Trust intends to undertake substantial new investment in coming years to redevelop and refurbish its main John Radcliffe Hospital site, where many of the existing buildings are several decades old, and unsuitable for modern health requirements. Redevelopment will allow for more efficient use of the existing site, and scope to accommodate any potential expansion of cardiac and elderly care facilities within it, as well as any additional facilities in the future required by the Oxford University Medical Sciences Division. On the Churchill Hospital site, the new Cancer Centre is due to be completed in 2008, and a number of older buildings will be vacated to allow for some redevelopment opportunities. The Trust's overall position is that its current sites within the City are likely to be sufficient for their future needs, although the Estates Strategy is still emerging at this time. Future growth will be constrained by the availability of suitably qualified staff and the public transport access to the existing sites, although the Trust has been involved in a number of recent initiatives to improve the latter.
- 7.30 The Nuffield Orthopaedic Trust is reaching the completion of a major PFI scheme, which will allow the transfer of activities from the Trust's older estate into new facilities within their main site. In turn, this is likely to release land on the existing Nuffield site to accommodate the expansion of facilities if it is required. Therefore, it is not anticipated that this Trust will have significant land requirements over and above its existing estate for the foreseeable future.
- 7.31 The Oxfordshire Primary Care Trust (PCT) has recently developed two new health centres within Oxford, at Blackbird Leys and East Oxford. This reflects a general strategy of having fewer, but larger, health centre facilities which are able to deliver a wider range of primary care services than traditional GP surgeries. A further 3,500 m² health centre development will therefore come forward on the former Radcliffe Infirmary site, allowing the relocation of the existing Jericho Health Centre and consolidation of a number of existing GP practices which are currently located in Beaumont Street. There also remains a general commitment to the development of a similar new facility in the West End, where current provision could be enhanced, and a site of about 0.5 ha is required. There is potential for a similar facility to be developed in North Oxford.
- 7.32 The 2005 Strategic Service Delivery Plan (prepared by the former Oxford City PCT) outlines a number of other potential schemes across the City, the majority of which are extensions to existing facilities on existing Trust sites.⁹¹ The PCT has advised that these are subject to affordability and further refinement before any emerge as a priority within the PCT's planning strategy. It is not anticipated that overall staffing numbers will change significantly, as some existing facilities and services will be redistributed and consolidated within the City.
- 7.33 The Oxfordshire and Buckinghamshire Mental Health Partnership NHS Trust is promoting development on areas of the Warneford Meadows and Park Hospital sites, for a range of medical, academic, and residential (including key worker and student) accommodation. It is understood that these areas represent land surplus to NHS requirements, with the intention that the income raised will be used to fund the refurbishment of the existing mental health

⁹¹ *Building for a Healthy Oxford – Strategic Service Delivery Plan*, Oxford City PCT, 2005. Schemes listed include Rose Hill, Wood Farm, Lake Street, Banbury Road, Botley, Temple Cowley, Barton and Northway.

hospitals.⁹² These sites are already identified within the Oxford Local Plan as development sites.

Implications for Potential Land Requirements

- 7.34 Over the past six years, planning permissions for health-related activities have totalled about 190,000 m². In terms of land requirements, this equated to about 35 ha, although this may be an overestimate. However, the majority of these permissions have been located on existing health sites, and in particular the John Radcliffe and Nuffield Hospital sites.
- 7.35 Based on the above, the implication is that the needs of the major health organisations are likely to be accommodated on existing sites, without need to extend beyond these. The only additional requirement identified is that of the Oxfordshire PCT, which may bring forward the development of two new integrated health centres, in the West End and possibly in North Oxford. Based on the space requirements of the two health centres which have already been developed, and the space allocated on the Radcliffe Infirmary site for the proposed new Jericho Health Centre, the additional health centres would require about 0.2-0.5 ha each, on the assumption that they are similar in format to those already completed elsewhere in the City. These could potentially form part of mixed-use developments and minimise additional land needs. While other development proposals are identified in the PCT's Strategic Service Delivery Plan, these are largely confined to existing Trust sites, or are not sufficiently advanced for any land implications to be accurately identified at this stage.

Competing Requirements

- 7.36 From the above analysis, there appears to be quite limited demand for additional land in Oxford to meet the future needs of these sectors, and therefore limited pressures on other users of land are likely to result. The health sector can develop largely on its own established sites. The core education uses can also accommodate most of their future growth on existing sites and landholdings or, to some extent, outside the City.
- 7.37 Some degree of competition will arise from development of new student accommodation, and potentially some university staff accommodation. The extent of this should be minimised by the fact that about a third of the development sites in the Oxford Local Plan 2005 are already identified for student accommodation, either exclusively or as part of mixed-use developments. However, reflecting that many of these sites are designated for a range of uses, often including employment, community and healthcare uses, it may be that such lower value uses are not brought forward because of the values and certainty of occupancy that student accommodation can deliver. The proposal to develop staff accommodation on the former Oxford University Press site at Wolvercote indicates some threat to employment uses, but the future extent of this appears unlikely to be large.
- 7.38 A similar situation may arise in terms of providing key worker accommodation for health sector workers. In this case, about eight sites within the Local Plan are identified for the purposes of key worker housing associated with the health sector, some of which are part of existing hospital sites. Some key worker housing has recently been brought forward above the new East Oxford Health Centre, and in combination with the identified development sites, such an approach would reduce any potential competition for land with other uses.

⁹² Sale of surplus land at Warneford Hospital, Oxfordshire & Buckinghamshire Mental Health Trust, January 2007

7.39 The main pressure on other land uses identified is the transfer of some existing industrial premises and sites to academic and related uses. This is principally occurring at Osney Mead Industrial Estate, where Oxford University has a significant land holding and is relocating a number of library depository and archiving facilities to meet ongoing and future needs. This location offers good proximity to Oxford City Centre, enabling easy distribution of library materials to academic departments, and so is preferred to relocating such facilities outside of the City. It is understood that the latest proposals for a document storage facility is intended to provide capacity for the next 25 years, and so the extent of this requirement is limited. The University has also indicated that a number of large-scale academic users could locate to this estate in the future, although the extent of such requirements is not yet clear. While some storage use of existing distribution premises does not require planning permission, conversion of industrial buildings to storage or academic uses could be controlled by the planning system. While such uses may provide a viable alternative use of surplus space in a declining industrial sector, the short supply of employment land in Oxford highlights the need for carefully managed control over such change in future.

Conclusions

- 7.40 The growth expectations of these sectors do not appear to require any significant increase in labour requirements.
- 7.41 Most of the future development needs of the Oxford health sector can be accommodated within established hospital and health trust sites. There will be some need for to new health centres elsewhere in the City, but their land requirements are likely to be relatively small.
- 7.42 For the higher education sector, it is anticipated that the space requirements of core academic activities can similarly largely be met on established university campus sites, although it is possible that increased need for medical research facilities may generate some demand for additional land nearby. Planned redevelopment and consolidation by both Oxford & Cherwell and Ruskin College may have the effect of reducing their overall land needs. For ancillary uses, such as student and staff accommodation, there will be a need for sites elsewhere in the City, although many of the designated development sites are already identified to provide some student accommodation.
- 7.43 The extent to which health and higher education growth will compete for land with other sectors therefore appears relatively limited. Student accommodation needs may compete with other lower value uses on development sites and may prevent some community or employment uses coming forward on them. The conversion of older City Centre office space to student accommodation can be seen as a viable use of premises that are difficult to let for modern office needs, and helps add vitality to the centre. A recent appeal decision allowing conversion of City Centre office space to student accommodation suggests that this approach may be appropriate in certain circumstances.⁹³
- 7.44 Some industrial land and premises on older estates are already being converted to university related uses, including document storage and library archiving, and there is potential for some teaching uses to seek space on such sites, although this is generally limited to one location. However, where such proposals come forward on protected employment sites, such as Osney Mead, most of these can be resisted through the planning process.

⁹³ APP/G3110/A/01/1071815, 17-19 St Michael's Street, Oxford.

8.0 OVERALL CONCLUSIONS

- 8.1 The purpose of this study is to identify the economic role and importance of the higher education, health and retail sectors within the Oxford economy, as well as to understand the future growth prospects of these sectors and their likely land requirements.



Oxford's Economic Context

- 8.2 The role of these sectors needs to be looked at in the context of strengths and weaknesses of the Oxford economic situation. This is a dynamic local economy, particularly strong in knowledge based and higher technology activities, including software and bioscience sectors. The City is known for its world class universities and hospitals with an internationally renowned research base. Recent economic growth has exceeded the national and County averages, although below the regional average. Unemployment is low and the City has a highly-skilled workforce, which contributes to its economic growth and competitiveness.

Policy Overview and Future Drivers of Change

- 8.3 It is also important to understand the key factors which have driven the growth of these sectors in Oxford in the past, and whether these will continue in future. Both the higher education and health sectors have been fuelled by significant funding growth and expansion, reflecting Government aims to improve the science base, knowledge-based activities and national competitiveness. This has supported the growth of these sectors in Oxford over the past decade, since it is a leading centre in both fields, while continued investment is likely to result in some future growth of capital investment, and to a more limited extent jobs, in these sectors within the City.
- 8.4 Government higher education policy emphasises investment in academic research and knowledge transfer, and the role of universities in supporting economic growth and high-technology clusters. Continuing initiatives of this type should benefit Oxford, which already has core strengths in these areas, but also potentially increase competition for funding, as other universities develop their own specialist research units. Aims to increase participation levels in further education, and better reflect the needs of employers and industry, should also generate further expansion of this sector.
- 8.5 In the health sector, medical research spending is likely to continue to increase nationally, through Government, the pharmaceutical industry and other organisations, in combination with substantial NHS capital investment. Both of these factors will affect Oxford. Government emphasis on encouraging the bioscience sector will also support growth in Oxford, reinforced by the City's recent designation as a Biomedical Research Centre. However, other UK centres are emerging in this field, and this competition may moderate Oxford's future growth in this area.

Higher Education

8.6 The Oxford higher education sector comprises Oxford University and Oxford Brookes University, Oxford and Cherwell Valley College and Ruskin College, 30 language schools and about 15 tutorial colleges. The contribution of this sector to the Oxford economy is substantial as these headline factors indicate:

- it directly employs about 17,200 in total within Oxford, about 18% of the total workforce, and includes some of the largest employers in the City;
- it provides a much higher proportion of skilled jobs than the City would otherwise have;
- it supports a further 4,300 indirect and induced employment jobs in Oxford;
- it attracts substantial income to the City in the form of Government spending, research grants and other forms of sponsorship;
- it generates an estimated £520 million of spending on supplier goods and services within Oxford, while capital investment in recent years amounts to about £420 million;
- it forms the heart of one of the UK's largest high technology clusters and plays a key role in attracting higher technology investment to the City;
- it is one of the key elements underlying Oxford's international prestige and brand as an investment location;
- it helps generate a steady stream of new higher technology and other enterprises in the City, that contribute to a dynamic and self-renewing local economy; and
- it makes important contributions to the human capital of the Oxford workforce and to other sectors such as tourism.

Health

8.7 Oxford's health sector mainly comprises the Radcliffe Hospitals NHS Trust, including the John Radcliffe and Churchill Hospitals, the Nuffield Orthopaedic Centre NHS Trust, the Oxfordshire Primary Care Trust, and more specialist organisations such as Oxfordshire and Buckinghamshire Mental Healthcare NHS Trust, the Oxfordshire Learning and Disability NHS Trust and the Oxfordshire Ambulance NHS Trust. It also includes the university medical schools. The health sector also makes a major contribution to Oxford's economy since:

- it directly employs about 14,500 people, about 15% of the total workforce, and includes some of the largest individual employers in the city;
- it provides a high proportion of skilled (e.g. professional, technical) and personal services jobs in the city;
- it supports a further 2,765 indirect and induced employment jobs;
- it injects some £20 million into the local economy through spending on supplier goods and services, while capital investment in recent years has exceeded £350 million;
- wider economic effects include strong collaboration with the universities for medical research and sharing of resources and staff, and consequently a much higher level of local medical facilities and expertise available than would otherwise be the case;

- the critical mass of health facilities and expertise has served as a strong influence in the growth of Oxford's cluster of biotechnology firms, now recognised as one of the leading such clusters in the country; and
- the City's excellent medical facilities form one of the quality of life factors that make Oxford an attractive place to live for highly-skilled workers and firms.

Retail

8.8 The City's retail sector comprises the city centre shopping facilities, district shopping centres at Summertown, Headington, Cowley Road and Cowley Centre, and four retail warehouse parks near the outer edge of the City. Although less significant than these other two sectors in employment terms, the retail sector's contribution to the Oxford economy is important in other ways, by:

- directly employing about 9,800 workers, about 10% of the total workforce;
- supporting a further 1,350 indirect and induced employment jobs in Oxford;
- capturing over £820 million of retail expenditure annually within Oxford with significant future expenditure growth forecast, much of it from outside the City;
- supporting the City's tourism role and helping it gain a higher level of tourist spending;
- bringing a significant on-going level of investment in new retail development, upgrading and refitting of shops, supporting construction and building maintenance activities; and
- providing more flexible, part-time work than other sectors, particularly jobs suited to sectors of the community where unemployment tends to be higher.

Future Growth & Land Requirements

- 8.9 The growth expectations of the higher education and health sectors do not appear to require any significant increase in labour requirements.
- 8.10 Most of the future development needs of the Oxford health sector can be accommodated within established hospital and health trust sites. There will be some need for new health centres elsewhere in the City, but their land requirements are likely to be relatively small.
- 8.11 For the higher education sector, the space requirements of core academic activities can largely be accommodated on established university sites. Planned redevelopment and consolidation by both Oxford & Cherwell and Ruskin College may have the effect of reducing their overall land needs. For ancillary uses, such as student and staff accommodation, there will be a need for sites elsewhere in the City, although many of the development sites designated in the Local Plan are already identified to meet some of these needs.
- 8.12 The extent to which health and higher education growth will compete for land with other sectors therefore appears relatively limited. Some competition may arise where student accommodation competes with other lower value uses on development sites. In addition, while some industrial land and premises are being converted to university-related land uses, the City Council's position is generally not to support teaching / educational uses on such sites, particularly on Protected Employment Sites.

The Way Forward

- 8.13 It is clear that both the higher education and health sectors, and the wider activities generated by them, together make a significant economic contribution to both the growth and competitiveness of Oxford's economy more generally, and to employment and economic development. These sectors, in which the City has established particular strengths, represent key drivers of the knowledge-based economy, and perform a significant role at both local and regional levels.
- 8.14 Cities elsewhere use the higher education and health sectors to spearhead economic growth. Maximising and accommodating the economic potential of the existing universities, medical institutions and research laboratories, should represent a key element of the City's economic future and the strategies that support it. While both sectors have potential to grow further in the future, this will be in the context of competing facilities and initiatives emerging elsewhere. This implies a need to proactively manage the City's existing competitive advantage in these sectors.
- 8.15 Although this study has found that fairly limited land requirements are likely to arise from the higher education and health sectors specifically, some future spatial growth requirements linked to them may need to be accommodated. In this context, the South East Plan Panel Report noted the wider international importance of Oxford's science base, to which these sectors make a significant contribution, and its relationship to the Oxford / Central Oxfordshire '*Diamond for Investment and Growth*' initiative contained in the Regional Economic Strategy. The Panel concluded that some new employment land could be required at Oxford to avoid undue constraint on its economic potential.⁹⁴
- 8.16 In addition, the 2006 Oxford Employment Land Study highlighted the benefits of bringing forward additional land provision specifically to accommodate growth related to R&D and science-related activities in order to build on the City's existing strengths in these sectors and maintain a diversity of employment.⁹⁵ Planning positively for such growth will be important in helping to maintain Oxford's existing competitive strengths in the higher education and health sectors.

⁹⁴ Panel Report, Draft South East Plan, August 2007

⁹⁵ *Oxford Employment Land Study*, Nathaniel Lichfield and Partners, March 2006

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APPENDIX 1

ORGANISATIONS CONSULTED

ORGANISATIONS CONSULTED

Higher / Further Education Sector:

Oxford Brookes University	Aspect College, Oxford
University of Oxford	Education aBc, Oxford
Ruskin College	Health Sector:
Oxford & Cherwell Valley College	Oxford Radcliffe Hospitals NHS Trust
British Study Centres, Oxford	Nuffield Orthopaedic Hospital NHS Trust
College of International Education, Oxford	Oxfordshire Primary Care Trust
Embassy Language School, Oxford	Others:
Gornall School of English, Oxford	Conference Oxford
Eckersley Language School, Oxford	South East England Development Agency
Lake School of English, Oxford	Oxford Science Park
Regent Language School, Oxford	Professor James Simmie, Oxford Brookes University
Oxford English Centre	Charles Gordon, Senior Bursar, Magdalene College
ISIS Oxford School of English	Agence d'Etudes et de Promotion de l'Isere, Grenoble
Oxford House School of English	

APPENDIX 2

ECONOMIC STATISTICS

ECONOMIC STATISTICS

Table 1: Enterprises by size group, all industries

	0-9 employees	10-49 employees	50-99 employees	100-249 employees	250 + employees	Total No. Firms
Oxford	84.7%	11.2%	1.2%	1.9%	1.1%	2,850
South East	89.0%	9.0%	0.9%	0.6%	0.5%	252,450
GB	88.1%	9.7%	1.0%	0.7%	0.5%	1,607,675

Source: ONS, 2004

Table 2: Change in Employment 1993–2005

District	1993	2005	% Change
Oxford	87,610	98,500	+ 12.4
Oxfordshire	237,642	309,100	+ 30.1
South East	2,861,367	3,762,900	+ 31.5
GB	21,105,321	26,503,200	+ 25.6

Source: Annual Employment Survey 1993 (rescaled); Annual Business Inquiry 2004

Table 3: Change in Employment in Oxfordshire Districts 1995–2005

District	1995	2005	% Change
Oxford	90,166	98,500	+ 9.2%
Cherwell	51,106	66,700	+ 30.5%
South Oxfordshire	44,348	54,600	+ 23.1%
Vale of White Horse	47,092	53,900	+ 14.5%
West Oxfordshire	29,164	37,200	+ 27.6%
Oxfordshire	261,875	309,100	+ 18.0%

Source: Annual Business Inquiry 1995 & 2004

Table 4: Employment by Industrial Sector (%)

Sector	Oxford (%)		South East (%)	Great Britain (%)	
	1993	2004	2004	1993	2004
Agriculture	-	-	1.1	1.6	0.9
Energy & Water	-	-	0.5	1.3	0.6
Manufacturing	12.1	9.3	9.4	18.1	11.9
Construction	1.7	1.7	4.1	4.0	4.5
Distribution, Catering & Hotels	15.5	18.8	26.3	22.3	24.7
Transport & Communications	6.1	4.2	5.8	6.2	5.9
Banking, finance & insurance	13.6	17.6	23.2	16.3	20.0
Public Administration/ Other Services	51.0	48.2	29.5	30.3	31.5
All Sectors	100.0	100.0	100.0	100.0	100.0

Source: Annual Employment Survey 1993 (rescaled); Annual Business Inquiry 2004

Table 5: Change in Employment Structure in Oxford

Sector	Oxford			Great Britain
	1993 (000s)	2004 (000s)	% change	1993 – 2004 (% change)
Agriculture	-	-	-	- 29.0
Energy & Water	-	-	-	- 45.3
Manufacturing	10.5	9.0	- 14.3	-19.0
Construction	1.4	1.6	+ 14.3	+ 40.0
Distribution, Catering & Hotels	13.5	18.4	+ 36.3	+ 36.6
Transport & communications	5.3	4.1	- 22.6	+ 18.9%
Banking, finance & insurance	11.8	17.0	+ 44.1	+ 51.2%
Public Administration/Other Services	44.6	46.4	+ 4.0	+ 28.2%
Total	87.6	96.8	+ 10.5	+ 23.3%

Source: Annual Employment Survey 1993 (rescaled); Annual Business Inquiry 2004

Table 6: Sector Employment Trends 1997-2004

	Education	Health	Retail
Oxford			
1997	15,372	4,020	9,704
2004	17,162	14,485	9,759
% change	+ 11.6%	+ 260.3%	+ 0.6%
South East			
1997	85,710	205,136	418,266
2004	111,324	248,869	551,115
% change	+ 29.9%	+ 21.3%	+ 31.8 %
Great Britain			
1997	568,583	1,623,753	2,848,130
2004	750,386	1,975,169	3,762,155
% change	+ 32.0%	+ 21.6%	+ 32.1%

Source: Annual Business Inquiry 1997, Annual Business Inquiry 2004

Table 7: Change in Number of VAT Registered Firms

Area	1994	2005	1994-2005 (%)
Oxford	2,545	3,260	+ 28.1
Oxfordshire	19,280	23,745	+ 23.2
South East	244,015	287,175	+ 17.7
United Kingdom	1,629,120	1,819,870	+ 11.7

Source: DTI / Small Business Service: Business Start-ups and Closures: VAT registrations and de-registrations, 1994 / 2005

Table 8: Unemployment Rates

Area	No. of Claimant Unemployed	Claimant Unemployment Rate (%)
Oxford	1,687	1.6
Oxfordshire	4,238	1.1
South East	79,195	1.6
Great Britain	895,833	2.5

Source: NOMIS, ONS Nov 2006

Table 9: Job Vacancies and Unemployment Indicators

Area	Live Unfilled Vacancies	No. of Claimant Unemployed	Unemployed/ Vacancy Ratio
Oxford	1,133	1,687	1.5
Oxfordshire	3,165	4,238	1.3
South East	38,475	79,195	2.1
Great Britain	347,079	895,833	2.6

Source: NOMIS, Nov 2006

Table 10: Economic Activity & Income Support

Area	Economic Activity rate (%)
	2005 / 06
Oxford	75.6
Oxfordshire	84.6
South East	82.3
Great Britain	78.3

Source: Annual Population Survey 2005-06

Table 11: Occupational Profile of Oxford Residents

Occupational Group	Oxford *	South East (%)	Great Britain (%)
Managers/senior officials	4,700 (6.8%)	17.1	14.6
Professional occupations	15,300 (22.2%)	14.0	12.1
Associate professional & technical	8,900 (12.9%)	15.0	13.8
Administrative & secretarial occupations	11,700 (16.9%)	12.9	13.0
Skilled trades	5,300 (7.6%)	10.9	11.4
Personal service occupations	4,400 (6.4%)	7.9	7.5
Sales & customer service occupations	5,200 (7.5%)	7.0	8.0
Process plant & machine operatives	2,000 (2.9%)	5.4	7.7
Elementary occupations	11,600 (16.8%)	10.4	11.8

Source: Annual Population Survey 2005-06 Note: * totals rounded

Table 12: Qualifications of Working-Age Population

Area	% of working-age population with no qualifications	% of working-age population with degree or higher qualification *
Oxford	10.9%	35.0%
South East	10.1%	29.5%
Great Britain	14.3%	26.5%

Source: Annual Population Survey 2004-05

* Note: NVQ 4 equivalent and above

Table 13: Average Gross Weekly Earnings of Full Time Employees

Area	Workplace (£ per week)	% GB average	Residents (£ per week)	% GB average
Oxford	559.3	103.7	528.7	97.8
Oxfordshire	542.6	100.6	593.4	109.8
South East	567.1	105.2	598.5	110.7
Great Britain	539.3	100.0	540.5	100.0

Source: Annual Survey of Hours and Earnings, 2006

Table 14: Representation of High-Technology Sector in Oxfordshire Districts, 2001

	High-technology companies	% of total	High-technology employees	% of total
Cherwell	265	19.5	7,373	20.1
<i>Oxford</i>	242	17.8	4,740	13.1
South Oxfordshire	282	20.7	4,888	13.5
Vale of White Horse	331	24.3	14,126	38.9
West Oxfordshire	240	17.6	5,243	14.5
Oxfordshire total	1,417	100.0	36,682	100.0

Source: Glasson et al, 2006 (based on Oxford Economic Observatory data)

APPENDIX 3

NLP SURVEY OF OXFORD UNIVERSITY COLLEGES

NLP SURVEY OF OXFORD UNIVERSITY COLLEGES, OCTOBER 2007

In October 2007, NLP contacted the Estate's Bursar / Manager at each of the 43 individual colleges of Oxford University. Information was obtained by email or telephone discussion.

The aim was to establish in general terms the extent of any plans or strategies to develop new accommodation, in particular general teaching and seminar space, but also student accommodation. Of the 43 colleges contacted, responses were received from 13, a response rate of 30%.

The main findings were as follows:

- Six colleges had current planning permissions for extensions to existing buildings to provide more teaching space and some student accommodation (about 150 units in total), all of which are contained on their existing sites. However, some colleges identified funding shortages as constraining their ability to implement these permissions;
- A further five colleges had firm plans for future development, including a particular need to provide additional student accommodation, with between 500-750 additional units implied by current proposals. It was acknowledged that any future increase in provision will depend on achieving planning permission for increases in University or college-owned accommodation.
- Two colleges had no plans for future development or expansion, describing themselves as 'steady-state'.
- Three colleges had either purchased or identified additional sites / premises in order to meet their future needs. In one case, this involved acquisition of buildings owned by the Collegiate University.
- No other responses indicated a specific need to acquire additional land to accommodate their future needs, although one suggested that this may be necessary pending difficulty in achieving new development on their existing site due to conservation issues.

