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UNIVERSITY OF LEEDS
Institute for Transport Studies

ITS Working Paper 537

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**BUSINESS SECTOR PROFILES FOR CAMBRIDGE, YORK
AND NORWICH. HISTORIC CITIES PROJECT TASK 4**

Ben Still

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TABLE OF CONTENTS

1. Introduction	1
2. Demographic comparison	2
3. Employment and earnings comparison	5
4. Cambridge Business Sector Profile.....	8
Table 4.1: Firm size aggregations.....	8
Figure 4.1: Firms in the Cambridge City Centre by no. of employees: current 1999 data	9
Figure 4.2: Firms in the Cambridge City Ring by no. of employees– current 1999 data.....	10
Table 4.6; Aggregated sector breakdown of Cambridge City Employment	12
5. York business sector profile.....	13
Figure 5.1: Firms in York City centre by no. of employees: current 1999 estimate	14
Figure 5.2: Firms in York City inner ring by no. of employees: current 1999 estimate	14
Figure 5.3: Firms in York City outer ring by no. of employees: current 1999 estimate	14
6. Norwich business sector profile	17
Table 6.1: Norwich Business Link Database.....	17
Figure 6.1: Firms in Norwich City core by no. of employees: current 1999 estimate	18
Figure 6.2: Firms in Norwich inner ring by no. of employees: current 1999 estimate	18
Figure 6.3: Firms in Norwich outer ring by no. of employees: current 1999 estimate	18
7. Summary	20
Acknowledgements.....	21
References.....	22
Annex: Postcode zone maps	23
Cambridge	23
York.....	24
Norwich	25

1. INTRODUCTION

The Historic Cities project is examining the potential impacts of transport demand management strategies on several case study 'historic' cities in England. These cities are York, Cambridge and Norwich, all of which have the following characteristics;

- they are cities which pre-date motorised transport, and thus tend to have city centres dominated by narrow streets;
- they are all members of the Historic Towns Forum;
- they have a high architectural and historic heritage, and attract many tourists each year;
- they have severe congestion and congestion related problems;
- the city authorities are faced with the problems of maintaining the environmental quality of the city, while allowing the most efficient use of the transport infrastructure.

The Historic Cities project is examining how transport restraint policies, particularly parking, pricing and road-space reallocation, can contribute to the last bullet above. It is examining this via a series of surveys and modelling of the city traffic patterns under different policies. The main 'tasks' (work packages) are as follows;

- 1 Travel choices; using a stated preference experiment on mode choices from various traffic demand policies;
- 2 Traffic effects; Modelling of policies in the various cities using network traffic models;
- 3 Environmental effects; using the outputs from (2)
- 4 Urban economy effects; using a survey of businesses
- 5 Public attitudes; using a survey of resident's attitudes and anticipated responses;

Task 4 in the Historic Cities project is examining the perceived and predicted effects on the urban economy from four transport instruments that attempt to restrain car use. It is thought that a major barrier to the implementation of these projects is their detrimental impacts on the local economy. This task examines whether this hypothesis is correct by examining the impacts on, and attitudes of, businesses in the case study cities.

This paper presents background information on the cities, building up a business profile of each. The data sources are mostly published information, although city specific business databases were analysed to obtain a cross classification of the business profile.

This is the first of a series of Working Papers on Task 4. The next Working Paper will outline the survey of firms that was undertaken, its initial results. It will use the business sector profile to determine how generally representative the samples are of the cities business sectors.

2. DEMOGRAPHIC COMPARISON

This analysis of demographic indicators for Cambridge, Norwich and York is conducted at the district level¹, although some analysis is presented at the wider city-postcode or travel to work area level, depending upon data availability.

The cities have similar levels of **population** (table 2.1), although Cambridge is smaller than the others, and has a slightly lower population density. York is the most compact city in terms of persons per sq km (although that is probably less true after recent local government reorganisation, which extended the cities boundaries). Over the last twenty years the level of growth has been very different, with Cambridge growing the fastest, while Norwich has remained relatively static. This high growth in Cambridge is almost entirely due to in-migration, indicated by the population age structure having more people within the economically active age group relative to the other cities. The age distribution of York is closest to the UK average figures for 1995. These figures illustrate that the cities are similar in terms of their population characteristics.

Table 2.1: Population data

	Cambridge (district)	Norwich (district)	York (district)*
Urban Area (sq km)	41	39	29
Population 1971	98,840	122,085	104,782
Population 1981	90,400	125,800	99,800
Population 1988	97,800	N/A	100,600
Population 1991	107,967	127,249	104,448**
Population 1995	115,000	126,000	N/A
Population 1999 (est)	117,589	130,654	104,633*
population change 1988-1995	17.6%	N/A	3.4%
population change 1981-1995	13.70%	0.01%	2.30%
Population density 1988 (per/sq km)	2,403	3,009	3,414
Population density 1995 (per/sq km)	2,821	3,247	3,543
Population density % change	17.4%	7.9%	3.8%
Age distribution (for 1995)			
under 5	5.4	5.4	6.1
5-15	10.6	13	13
16 to pensionable age	68.1	60.3	61.8
pensionable age or over	15.9	21.4	19.1

Sources: Regional Trends, Vol. 32, Regional Trends CD ROM, Locally supplied data

*note that 1996 local Government re-organisation resulted in the formation of the York Unitary Authority, with enlarged boundaries; thus the 1996 population of the York UA is 175,000 (RS, 1999).

** : re-based for new boundaries

The analysis of **households** shows Norwich to be slightly larger than the other two cities (table 2.2). However, it is Cambridge which has the highest growth in households since 1981, at 14% relative to York and Norwich both at about 9%. All the cities are similar in showing the general fall in household size since 1981.

The **socio-economic group** in table 2.2 shows Cambridge to be very different from Norwich and York. Cambridge has a higher proportion of non-manual workers, and several times the professional and managerial households of either Norwich or York. The latter two cities thus have higher numbers of manual workers, reflecting the larger industrial history of these cities. Care must be taken in interpreting these figures however, as they represent the SEG of the stated head of

¹ The boundaries for York changed substantially after local Government reorganisation in 1996. York Unitary Authority now has significant numbers of households from Ryedale, Selby and former East Yorkshire (now the UA of East Yorkshire).

household only, not the proportions of actual workers. However, these figures certainly suggest that Cambridge has a higher skilled workforce, in relative terms, compared to the other cities.

Table 2.2: Household data

	Cambridge (district)	Norwich (district)	York (district)
Households, 1991	40826	53759	42827*
Households 1999 (est)	45695	57824	45114
% change in households	14.9	9	9
Average household size 1981	2.45	2.47	2.53
Average household size 1988	2.27	2.21	2.41
Average household size 1995	2.3	2.2	2.29
1991 proportion hhds in SEG1	0.19	0.08	0.05
1991 proportion hhds in SEG2	0.35	0.29	0.32
1991 proportion hhds in SEG3	0.34	0.45	0.45
1991 proportion hhds in SEG4	0.12	0.18	0.18

Source: Regional Trends on CD ROM, TEMPRO for 1999 estimates
YORK UA now has 73,700 hhds, with 2.33 av. hhd size (RS, 1999).

Note: SEG1 = professional and managerial workers
SEG2 = other non manual workers
SEG3 = skilled and semi-skilled manual workers
SEG4 = other manual workers
hhds = households

Perhaps unsurprisingly, Cambridge also has a higher level of **car ownership** than the other cities, particularly in the low number of households without a car at all (table 2.3). However, the dominant trend of increasing car ownership over time is clearly shown in all the cities. Figures from the HETA trip end model TEMPRO, show that this trend has continued to the present day, particularly in the number of two car households. Although there is no case study evidence that higher car ownership is resulting in higher car use, this is very likely to be the case.

Table 2.3: Car ownership data

	Cambridge (district)	Norwich (district)	York (district)
% change 1981-91 with no car	-5.44	-6.01	-8.96
% change 1981-91 with 2+ cars	5.21	4.46	5.23
1991 hhds with no car	35.6%	40.1%	43.1%
1991 hhds with 1 car	47.4%	46.4%	44.5%
1991 hhds with 2+ cars	16.9%	13.5%	12.4%
1999 hhds with no car	30.1%	33.9%	37.1%
1999 hhds with 1 car	49.1%	49.3%	48.0%
1999 hhds with 2+ cars	20.7%	16.7%	15.0%

Source: Regional Trends, 1991 Key Statistics for Local Authorities, OPCS and TEMPRO, DETR, 1998 (estimates for 1999) Key: hhds = households.

However, the relative growth in population and households is not reflected in the relative growth of **dwellings**. In particular, Cambridge has a lower percentage growth in new house starts than either York or Norwich (table 2.4). Without additional data, it is difficult to say whether there has been expansion of the towns beyond their 1981 boundaries. However, given the large rise in population density, especially in Cambridge, it appears that in-filling and brownfield developments have dominated recent housing starts. Table 2.4 also shows that Cambridge has had a slightly higher proportionate rate of new house starts relative to the other cities, although in all the cities the number of new starts has fallen during the 1990s.

Table 2.4: Housing stock data

	Cambridge (district)	Norwich (district)	York (district)
Dwelling stock 1988	40600	53900	42900
Dwelling stock 1995	42000	56000	45000
% change	3.4%	3.9%	4.9%
Housing starts in 1988 as % of 1988 stock	1.0%	0.7%	0.7%
Housing starts in 1995 as % of 1988 stock	0.6%	0.6%	0.3%

Source: Regional Trends on CD ROM

3. EMPLOYMENT AND EARNINGS COMPARISON

Table 3.1 shows the jobs in each city district. Clearly the absolute numbers depend upon the extent of the city district, but the change over time is interesting. York actually has seen a small decline in the number of jobs, while the other cities have had growth. Employment growth in Cambridge has been around 3% per annum in the 1980s, with a slowing during the recession between 1990-93. This is highest growth of the three cities. Information from the authorities of the other cities generally quote lower levels of growth, but the same trend of a slow down during the widespread recession in the early 1990s. Since 1994 growth in Cambridge has risen back to the 3% figure, with around 800 vacancies advertised per month².

All of the cities have more jobs than workers, to be expected from their employment focused centres. Again, York has a declining number of workers 1991-99 whereas the other cities have growth. The level of growth is broadly in line with the population overall, and does not suggest that significant growth in city-centre living has occurred over the last ten years.

Table 3.1: Employment, workers and income

Employment, workers and earnings	Cambridge (district)	Norwich (district)	York (district)
Employment (jobs) in district in 1991	74496	96280	61878
Employment (jobs) in district in 1999 (est)	79376	98795	61008
Employment density 1995 (employees/sqkm)	1397.6	1292.3	1472.4
Workers 1991	45171	54164	46460
Workers 1999	47502	55362	45648
Unemployment % in 1987	6.40%	9.60%	8.70%
Unemployment % in 1995	6%	8%	6.30%
Long term unemployment in 1997 (% of total unemployed)	39.7	35.1	32.7
Average annual earnings in 1995 (£)	15135	13546	13328
Weekly income of f/t males 1987	216.5	200.2	193.7
Weekly income of f/t males 1994	351.6	318.5	315.7
Household income (UK index: av UK =100) 1995	106.2	102.2	108.3

Source: Regional Trends 27, 1991 Key Statistics for Local Authorities, OPCS, TEMPRO

The unemployment rates in the cities show a pattern in the late 1980's of Cambridge having lower levels than either Norwich or York. However, while Cambridge levels have remained relatively constant into the 1990s, York especially has seen unemployment fall. The reason underlying this is the higher than average growth that Cambridge experienced during the 1980s, meaning that the unemployment contains more long term unemployed, which find it more difficult to get back into work when labour market conditions improve. Cambridge has a higher long term unemployed proportion than either York or Norwich. This can also be interpreted as meaning there is less 'slack' in the labour market relative to the other cities. As with employment data, estimates of figures vary. For example, City Council data has the Cambridge employment total as high as 10% in 1993 and 7% in 1996³. By 1998, male unemployment in Cambridge city was estimated at 5.3%⁴. It is also important to point out that unemployment within areas of the city of Cambridge are much higher

² Cambridge City Council press release. Note that later employment estimates for Cambridge City at 75,000 in 1996 (Annual Employment Survey)². It is difficult to explain this difference, although one difference is the inclusion, for the first time, of companies who do not operate PAYE schemes in the 1996 data.

³ Cambridge City Council planning information pages, May 1997

⁴ The Cambridgeshire Economy; Annual Review 1997-1998, page 40.

than the Cambridge Travel to Work area as a whole, where the 1996 TTW unemployment level was around 4%⁵.

Data for Norwich has the number of long term unemployed also rising since 1991, and the overall level of unemployment is quoted at around 6% in 1996⁶. Again, this local source is lower from that published in national statistics (and shown in table 3.1). The York City Council estimate of unemployment for 1995 and 1996 is more consistent with national data, and has a 1996 unemployment figure of 5.9%⁷. The unemployment for the York travel to work area is very slightly higher (cf. Cambridge) at 6.2%.

The last four rows of Table 3.1 present some figures on **income and earnings** in the three cities. Cambridge has the highest level of earnings per worker in 1995, and this gap appears to be slightly growing given the figures of weekly income of males in 1987 and 1994. However, in terms of household income, adjusted to a UK index, the data shows that York has the highest household income. Although York has a slightly higher average household size, this is still a surprising statistic (it was expected that Cambridge would have the highest levels), and warrants further investigation.

More complex are the patterns of **employment by sector**. The first block of table 3.2 shows the difference in employment structure. **Cambridge** district has fewer people employed in the manufacturing sector (around 13%) relative to the other cities, but many more employed in the Government and other services. This includes the University, which employs over 7,100 people, either academic or support staff⁸, and accounted for 23% of employment. More recent figures for Cambridge (from the 1993 Census of Employment) put the manufacturing figure at closer to 10%. This decline in 'traditional' industries is well illustrated by the second block in Table 6, which shows manufacturing declining by over 5% between 1981 and 1991, with the banking and finance sector being the fastest growing. The City Council estimated that in 1993, 88% of all jobs were in the service sector.

Norwich had 20% of its employment in manufacturing in 1991, of which 8% was in engineering⁹. Local data estimated that 75% of the workforce was employed in the service sector, and that Norwich has an above average proportion of self-employed people, at 20%. The employment sector trends since 1981 show declines in manufacturing and construction, similar to Cambridge, but more severe in the manufacturing sector.

York has a similar pattern to Norwich, although it is even more dependent upon manufacturing and construction industries for employment. York does not seem to have the proportion in banking and finance that the other cities do, presumably due to local competition from surrounding northern cities (particularly Leeds), but also because of its historical focus upon manufacturing industry (see Section 3.5). Also its growth in banking and finance employment is lower than the other cities. Forecast data for York to 2006 indicates that the city authorities expect the manufacturing sector to fall to around 11%, and the finance and other service sectors to rise to 44%¹⁰. This may seem an extremely large fall, but is related to the 1992 SIC categorisation, which includes fewer activities within the 'manufacturing sector'. Nevertheless, it is still a large decline in the traditional economic base of York. Some examples of this are occurring, for example the closure of ABB rolling stock in 1995.

⁵ Cambridge City Council planning information pages, May 1997

⁶ Norwich City Council Economic Development: 'The Norwich area economy', 1993.

⁷ data taken from <http://www.york.gov.uk/business>

⁸ University Annual Report, 1996-97

⁹ Norwich Area Economy, Summary Report, 1996

¹⁰ York: <http://www.york.gov.uk/business-> Information on Employment: 1999

Table 3.2: Employment by SIC

Employment by SIC91 in 1991 %	Cambridge	Norwich	York
0 – agriculture / forestry / fish	0.41	0.44	0.73
1 – energy	0.69	1.21	2.04
2 - 4 manufacturing	13.25	20.08	57.93
5 -7 construction / dist / retail / trans	27.87	34.76	37.73
8 – banking, finance	11.97	12.63	8.61
9- Govt and other services	44.86	30.08	29.97
Change in SIC91 in 1981-1991 %working	Cambridge	Norwich	York
0 – agriculture / forestry / fish	-0.03	0.16	0.46
1 – energy	-	-	-
2 - 4 manufacturing	-5.60	-9.06	-8.15
5 -7 construction / dist / retail / trans	-2.00	-0.96	-0.33
8 – banking, finance	5.70	4.09	3.80
9- Govt and other services	3.04	4.87	3.79

Source: 1991 Census: key statistics for local authorities

Table 3.3 shows the GDP per head for the three cities, indexed for the UK average. This shows that the highest productivity per head was obtained in Cambridge, well above the national average, and higher in 1991 than 1981. York was very close to the UK average, but appears to be increasing productivity faster than the average. Norwich on the other hand, has the lowest productivity, although this is still reasonably close to the UK average, and again is growing faster than the average. This paints a picture of a much stronger local economy in Cambridge than in the other cities.

Table 3.3: GDP per head

	Cambridge (district)	Norwich (district)	York (district)
GDP per head 1981 (UK index)	104.4	93.5	96.5
GDP per head 1991 (UK index)	108.7	94.8	99

Source: Regional Trends on CD ROM

4. CAMBRIDGE BUSINESS SECTOR PROFILE

The City of Cambridge Planning information pages estimate the **number of businesses** in Cambridge was around 6550 in 1996. South Cambridge district, which surrounds the City district, has a further 8400. The County Council holds a database of firms, and this was obtained for the district of South Cambridgeshire (which encloses the city and much of its travel to work area)¹¹. This contained information on 3419 firms, collected by return of a form. It is therefore likely to underestimate the total number of firms, but suggests that the Planning information figures are probably too high, and include firms no longer trading etc. However, assuming that there is no particular bias in the non-returns, the firm database provide a general picture of the size and sector profile of firms in Cambridge.

The data was analysed in ACCESS, and disaggregated into two spatial areas, a core and surrounding ring, on the basis of postcodes. The zoning is discussed in the attached annex. The size and sector aggregations are common for all the analysis in this task, and are shown in tables 4.1 and 4.2.

Table 4.1: Firm size aggregations

Employment Categories
0-10
11 to 50
51 to 200
over 200

Table 4.2: Sector aggregations (1992 SIC)

	Name	92 Groupings	Code
a	Agriculture / energy / utilities	01,02,05, 40-41	a/e/u
b	Manufacturing	15-37, 45	man
c	Distribution / retail / hotels / transport/ communications	50-52, 55, 60-64	d/r/h
d	Financial / property and business services	65-67, 70-74	fbser
e	Other public and private services	75,80, 85, 90-93, 95	oser
f	Not included	99	N/A

Table 4.3 shows a cross classification of the spatial, sector and employment categories from the Cambridge city firm database.

This shows that of all the firms in the database, 15% were within what was defined as the city centre or core. A further 41% were within the ring, which basically amounts to the extended built up area of Cambridge and surrounding satellite villages (see map in Annex). The dominant business sectors are distribution/retail and financial and business services, which together account for over 60% of all the firms in the database. Manufacturing and other services account for 35%, which includes a large number of 'high tech' firms.

Table 4.3 also shows that 65% of all the firms in this Cambridge study area have 10 employees or less, and a further 25% have less than 50 employees. There is a clear skew towards large numbers of smaller firms, as would be expected.

¹¹ 18/6/99: Cambridgeshire County Council CETD database.

Table 4.3: Cambridge County Council Business Database; current 1999 data

Area	Employment	Total	a/e/u	man	d/r/h	fbser	oser	N/A	Area total
Core	0-10	315	0	46	100	122	47	0	469
Core	11-50	120	1	12	41	46	20	0	
Core	51-200	29	0	4	8	11	6	0	
Core	200+	5	0	0	2	2	1	0	
Ring	0-10	806	12	176	268	234	115	1	1249
Ring	11-50	307	0	82	98	92	33	2	
Ring	51-200	107	0	32	30	23	22	0	
Ring	200+	29	0	12	9	7	1	0	
Total		1718	13 1%	364 21%	556 32%	537 31%	245 14%	3 0%	1718

Notes:

Core = postcode areas CB1 1, CB1 2 and CB2 1

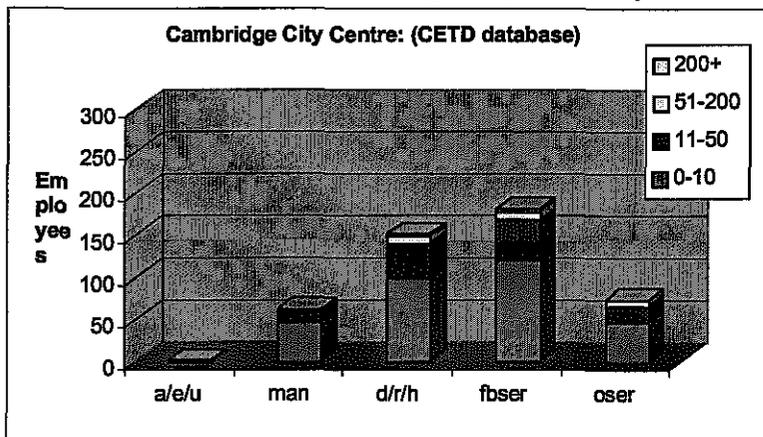
Ring = postcode areas CB1 3, CB1 4, CB2 2-5, CB3 0, CB3 9, CB4 1-4, CB4 6 and CB5 8

For Cambridge, given the postcode areas, it was not practical to define an inner and outer ring, cf. Norwich and York.

Of the 3025 firms in the database, 1718 were within the above postcodes.

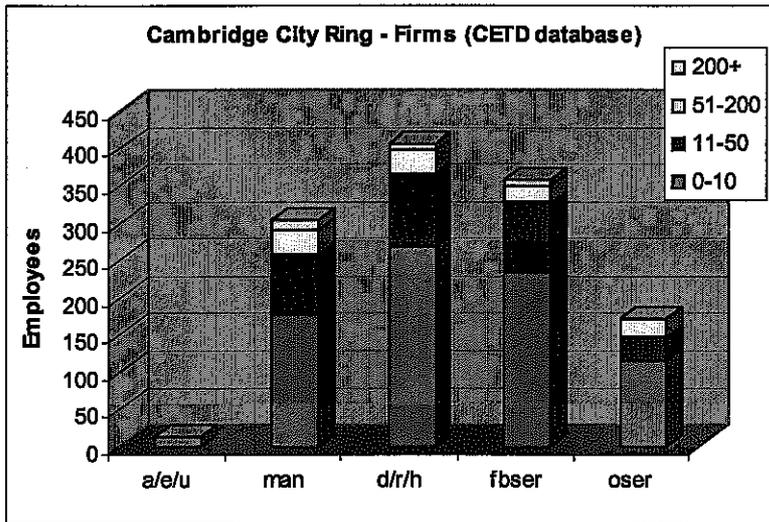
Figures 4.1 and 4.2 examine the database by spatial area. The centre has mostly retail/hotel and financial and business services, and around 50 manufacturing firms (mostly out to the west and south of the centre in Barnwell). For the surrounding ring the pattern is different, with many more retail/distribution/hotel firms and a larger percentage of manufacturing firms and other services, which includes much of the technology based companies.

Figure 4.1: Firms in the Cambridge City Centre by no. of employees: current 1999 data



Notes: centre defined as CB11,12 and 21.
source chart from *Cam_profile_summary.xls*

Figure 4.2: Firms in the Cambridge City Ring by no. of employees– current 1999 data



Notes: Ring = postcode areas CB1 3, CB1 4, CB2 2-5, CB3 0, CB3 9, CB4 1-4, CB4 6 and CB5 8
 source chart from *Cam_profile_summary.xls*

Data on VAT registrations can also provide a guide to the trends in businesses. These are particularly important in giving an indication of trends in smaller businesses (which tend to be missed from databases of firms collected by business monitoring organisations or local Chambers of Commerce). It is estimated that around 95% of all UK businesses are 'small' in the sense of 0-25 employees¹², which is clearly a higher proportion than represented in the CETD database used in this section. Table 4.4 shows that the 1980s were a period of high growth in net registrations, particularly for the district surrounding the city. However, there was a minor decline in the early 1990's, corresponding to the recession at this time. Note that this shows that the CETD database, based upon firms responding to a council survey form, seems to be capturing only half of all the firms registered for VAT. However, given that VAT data is likely to quickly go out of date (as firms dissolve, more, or are registered at Cambridge but operate somewhere else, the VAT data may itself be an overestimate.

Table 4.4: Stock of VAT Registrations in Cambridge

	1979	1989	1991	1993	1996	% change 79-93
Cambridge City	2230	2983	2892	2872	3040	+29%
South Cambs.	3032	4748	4909	4860	5030	+60%

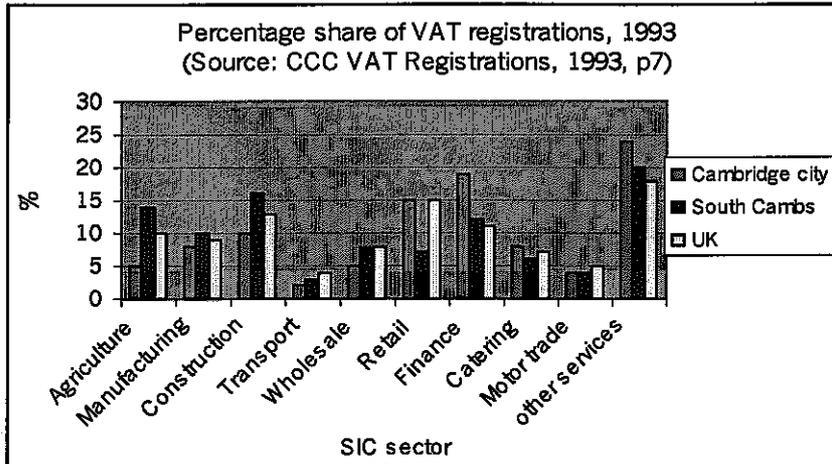
Data on VAT registrations by sector is also available¹³. This sector profile shows (Figure 4.3) that the city has, in particular, a higher proportion of retail, finance and other service firms than the surrounding South Cambridgeshire district. The absolute values are 420, 550 and 700 firms registered respectively. Of all the sectors, it is the other service category that has the highest percentage changes in the number of firms, but this was also the fastest growing sector, (9.8%) in terms of percentage change relative to the UK as a whole¹⁴.

¹² Cambridge Economic Statistic Series, No1: VAT registrations and deregistrations

¹³ Commissioned by Cambridge County Council from the DTI.

¹⁴ Cambridge VAT Registrations and Deregistrations, 1993, p.22

Figure 4.3 Cambridge VAT registrations by sector



The examining changes in the number of businesses does not necessarily reflect changes in the output or activity, as changes in the structure of firms (mergers etc) can explain decreases in company numbers.

Most published information that purports to be about the economy relates to **employment** rather than to firms. As outlined above, available data indicates that the service sector dominates, with a considerable emphasis in education and 'high tech' research and development. This is well illustrated by several 'Science parks' (including, Trinity, the first in the UK), where only firms with a high proportion of research and development are permitted. Currently, over 150 firms are located in such science parks around the fringes of the city.

Tourism is also a significant sector in Cambridge, with the city attracting nearly 4 million tourists a year. This supports over 6600 jobs, and tourist spend accounts for over 8% of city centre retail turnover.

A more detailed analysis of the current pattern of sector breakdowns by employment is given in table 4.5. Note that of the 74,910 total employed persons, 5760 were self employed, with a high proportion in the construction sector. Table 4.6 has the same data aggregated into the study specific sectors. The 'other sector' employment category is the largest here, as it contains public sector and University employment as well. For comparison with other datasets, the second version of this aggregated table has removed the health, public sector and education components.

Comparison of this table with table 4.3 shows that manufacturing, while accounting for 21% of firms, is only just under 16% of employment. Retail / distribution / transport and communications has 40% of employment and 32% of firms, while financial, property and business services has 20% of employment and 31% of firms. This data is informative when considering whether sector performance should be measured by employment, number of firms, or other financial measures.

A recent report on the Cambridgeshire Economy outlines an alternative source of data on company growth, that from press release data from *Industrial News*. This re-iterates what has already been discussed, namely that there has been strong growth in business service and distribution sectors (in terms of the number of new or expanding companies), as well as growth in the R&D sector.

Table 4.5: Sector Breakdown of Cambridge City employment, 1996 using the 1992 SIC¹⁵

	Absolute	Percentage
Agriculture	130	0.2%
Quarrying	10	0.0%
Manufacture	5800	7.7%
Water and energy	160	0.2%
Construction	1250	1.7%
Distribution	9770	13.0%
Hotels and catering	3230	4.3%
Transport and telecoms	5140	6.9%
Financial	2540	3.4%
Property management	1100	1.5%
Computer consultants	2160	2.9%
Research and development	2670	3.6%
Other business services	7520	10.0%
Public administration	3570	4.8%
Education	17430	23.3%
Health	9610	12.8%
Recreation	1300	1.7%
Other services	1520	2.0%
Total	74910	100.0%

Source: -CCC Research Group, 1996 Employee Estimates for Cambridgeshire
-processing undertaken in spreadsheet Cam_profile_summary.xls

Table 4.6; Aggregated sector breakdown of Cambridge City Employment

Aggregated Sector	Original data Absolute	Percentage	Non company removal Absolute	Percentage
a/e/u	300	0.4%	300	0.7%
Man	7050	9.4%	7050	15.9%
d/r/h	18140	24.2%	18140	40.9%
Fbser	8470	11.3%	8470	19.1%
Oser	40950	54.7%	10340	23.3%
N/A	0	0.0%	0	0.0%

Source: -CCC Research Group, 1996 Employee Estimates for Cambridgeshire
-processing undertaken in spreadsheet Cam_profile_summary.xls

¹⁵ The 1992 SIC differs from the 1980 SIC by having a wider agriculture definition (now including gardening retail), a wider construction sector remit (including servicing industries), separate finance and related services, distinct R&D grouping. See Appendix II of CCC (1998).

5. YORK BUSINESS SECTOR PROFILE

The York Quarterly Economic Bulletin attempts to keep track of the number of firms in the York area. It draws its boundaries wider than the district, although is unspecific about the exact area. It estimated that there were 5681 firms in York in 1997 (City of York Council, 1999). York UA Economic Development department also hold a database of firms based in York and surrounding area compiled by Business Link Ltd. A hard copy of this was provided, which contains records of some 5167 firms¹⁶. The VAT stock of firms is estimated to be 2470 in York City, before local authority re-organisation in 1996¹⁷. It is thought therefore, that this database is more comprehensive than that for Cambridge.

The data were aggregated by sector and employees as for Cambridge and Norwich, with the postcode aggregations¹⁸ shown in the Annex. The resulting cross tabulations are shown in table 5.1 below.

Table 5.1: York Business Link database, current records 1999

Area	Employees	Total Of ID	a/e/u	man	d/r/h	fbser	oser	N/A	Total firms in area	
1: City	0 to 10	733	2	65	409	135	120	2		
1: centre	11 to 50	202	0	6	109	45	42	0		
1	51 to 200	28	0	1	17	7	3	0		
1	over 200	6	0	3	0	2	1	0		
1	not stated	162	0	12	81	20	49	0	1131	24%
2: Inner	0 to 10	1442	11	243	640	224	317	7		
2: ring	11 to 50	298	0	38	125	28	107	0		
2	51 to 200	44	0	3	12	6	23	0		
2	over 200	8	0	2	3	1	2	0		
2	not stated	427	16	92	147	46	124	2	2219	47%
3: Outer	0 to 10	905	64	205	328	143	158	7		
3: ring	11 to 50	195	3	50	75	21	46	0		
3	51 to 200	32	0	5	11	5	11	0		
3	over 200	7	0	2	2	0	3	0		
3	not stated	278	84	57	71	23	43	0	1417	30%
Total		4767	180	784	2030	706	1049	18	4767	
			3.8%	16.4%	42.6%	14.8%	22.0%	0.4%		

Notes:

Core: = YO1 6, YO1 7, YO1 8, YO1 9

Inner ring: = YO24 (all sectors), YO26 4, YO26 5, YO30 6, YO10 3-5, YO30 7, YO31 (all sectors)

Outer ring: = YO32, YO19, YO23, YO30 4-5.

The overall database contained 5167 firms. Of these 400 were outside the postcode areas identified above.

Of the 4767 firms in the study area, 24% were in the urban core, again with more firms in suburban rather than central locations. As with Cambridge, some 65% of firms have 10 or less employees, and a further 15% have 50 or fewer employees. The retail / distribution / hotels sector has over 42% of all firms, which reflects the large shopping and tourist industry in York. The number of firms engaged in financial and business services and manufacturing is a lower proportion than Cambridge.

¹⁶ This data (ref; letter from York 30/6/99) was manually entered into ACCESS; file YORKHIST.mdb

¹⁷ Regional Studies, 1999, page 189.

¹⁸ The postcode aggregations was greatly complicated by the change in York postcodes in 1998. Over 1000 of the records in the database still had old postcodes attached to them. This may be a sign that these companies are not operational, but there was no evidence to suggest this, only that their records have not recently been updated. Therefore, a old-to-new postcode matcher was obtained from York City Council and the data updated in EXCEL (York_Muz.xls).

Figure 5.1: Firms in York City centre by no. of employees: current 1999 estimate

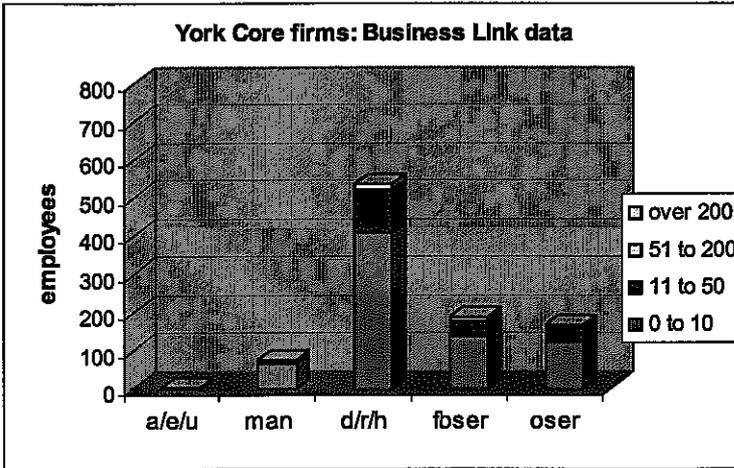


Figure 5.2: Firms in York City inner ring by no. of employees: current 1999 estimate

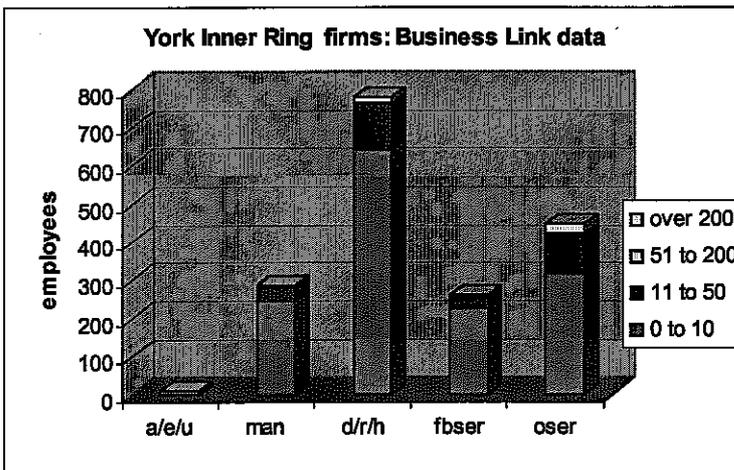
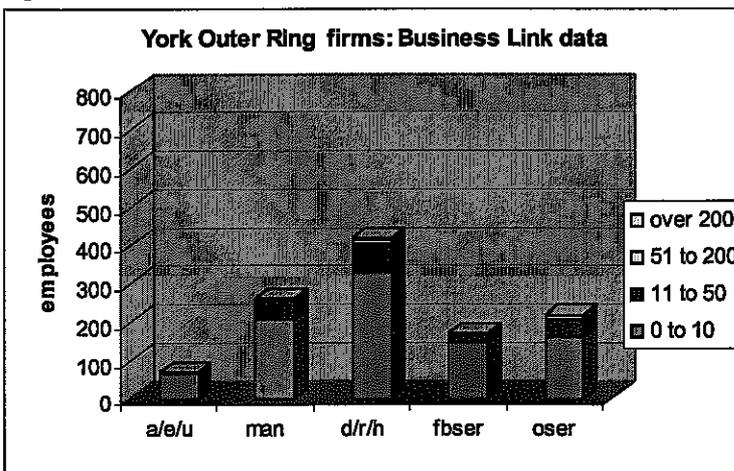


Figure 5.3: Firms in York City outer ring by no. of employees: current 1999 estimate



Note: source york_profile.xls

Figure 5.1 shows the dominance of retail in the city centre with large numbers of small firms (under 50 employees). In the inner ring the picture is very different. Figure 5.2 shows that although retail still dominates, there are many more 'other service' firms (typically community and personal services, education and health). There is also a much stronger manufacturing presence. This pattern

is repeated in the outer ring, but with a larger share of manufacturing and agricultural firms relative to the inner ring, but lower numbers of firms in total.

As with the Cambridge CETD database, there is reason to treat this firm based data with some caution. The York data dates from 1998, and therefore there is no guarantee that the firms are still operational. There is also the risk of errors in the database. However, perhaps of most concern are the presence of 'holding companies' that exist in name only, for example companies registered at their accountant, but employing no-one in the area, or indeed no one at all. This issue was a serious problem when sampling from firm databases, and is discussed in more depth in Working Paper 538.

Unfortunately there is little additional VAT data available for York.

In terms of **employment**, the City of York has been a centre of manufacturing industry to a much greater extent than the other case study historic cities. This is particularly the case for railway and confectionery industries. The largest city employers largely illustrate the industrial heritage of the city¹⁹;

- City of York Council (5500)
- Nestlé (3000-5000)
- York Health Services Trust (3000-5000)
- The University of York (1000-3000)
- CGU (1000-3000)
- Shepherd Building Group (1000-3000)
- British Telecom (1000-3000)
- Terry's Suchard (300-1000)
- MAFF, (300-1000)
- GNER (the railway operators employ over 1000 people in total),
- Railtrack,
- British Sugar (300-1000)

York is attempting to encourage tourism and high tech, 'knowledge based' industries such as bioscience, although the companies involved in such enterprises tend to be small. A report on York Labour market²⁰ found the following key points:

- since 1981 the % of males in the labour market has declined, due to early retirement, and an increase in unemployment in the young and the low skilled;
- more women have entered the job market, particularly those who are well qualified, but note that this is lower for York than for North Yorkshire as a whole;
- there has been a growth in part-time jobs with low skill requirements;
- most industries appear to be increasing the proportion of skilled labour that they employ, and those industries using skilled labour are growing faster than those that employ unskilled labour.

The May 1999 City of York Economic Bulletin commented that in the first quarter of 1999;

- firms were generally reporting a downturn in turnover, and a fall in investment, especially when compared with 1998, but operations running at a level close to full capacity (80% of firms using 75% or more of capacity).
- Business confidence was reasonably high, certainly an increase over 1998.

¹⁹ We now have a list of the 150 largest employers in York, their address and employee numbers

²⁰ The York and North Yorkshire Labour Market: Draft Chapter 2, University of York, 1998

6. NORWICH BUSINESS SECTOR PROFILE

As for York, data on numbers of live businesses was difficult to obtain. A Business Link database did exist, but access to it was prohibitively expensive. Therefore, Norfolk and Waveney Business Link were commissioned to undertake sector and employee firm analysis by postcode²¹. The resulting data were aggregated into a similar zoning system as York, with a core and two surrounding rings. The resulting cross tabulation is shown in table 6.1.

Table 6.1: Norwich Business Link Database

Area	Emp	Total	a/e/u	man	d/r/h	fbser	oser	Total	%
1 City	0-10	1136	0	79	562	246	249		
1 Centre	11.-50	311	0	18	127	98	68		
1	51-200	79	1	5	24	31	18		
1	200+	25	0	5	7	6	7	1551	32%
2 Inner	0-10	1152	4	173	563	175	237		
2 Ring	11.-50	317	2	73	103	41	98		
2	51-200	55	0	10	15	8	22		
2	200+	24	0	11	3	5	5	1548	32%
3 Outer	0-10	1255	35	302	525	201	192		
3 ring	11.-50	370	7	83	142	29	109		
3	51-200	83	0	26	26	12	19		
3	200+	26	0	10	6	4	6	1734	36%
Total	SUM	4833	49 1%	795 16%	2103 44%	856 18%	1030 21%		

Notes:

as only certain postcodes were requested, no data was outside the study area

Core = NR2 1, NR3 1, NR1 4, NR1 1, NR1 3

Inner ring = NR1 2, NR2 2, NR2 3, NR2 4, NR3 2, NR3 3, NR3 4, NR7 9, NR7 0

Outer ring = NR13 5, NR4 6, NR4 7, NR5 8, NR5 9, NR5 0, NR6 5, NR6 6, NR6 7, NR7 8, NR8 6, NR9 3, NR8 5

The database extends beyond the city district, and contains some 4833 firms. This is greater than the number of city-based VAT registrations in 1996 of 3040, although North and South Norfolk have a further 6000 VAT registrations combined.

The sector profile is broadly similar to the other cities, particularly York, although the larger proportion of Norwich firms involved in financial and business services is apparent. Again both York and Norwich have over 40% of firms in the retail / distribution / hotels sector, over 10% more than in Cambridge.

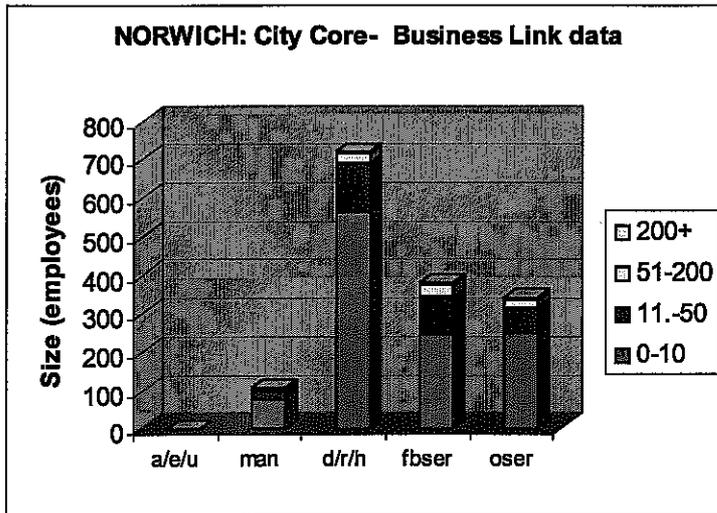
The postcode pattern in Norwich means that the centre is more extensive than in the other cities, and this is reflected in the larger proportion of firms within the area. It is not felt that Norwich has a greater density of firms in its centre than the other cities.

Norwich does appear to have more smaller firms than the other cities, with 73% of the database firms having 10 or less employees, and a further 21% having less than 50 employees.

Figures 6.1 to 6.3 give the profile for each spatial area. As with York, the retail/ distribution sector is the largest in each area. Also similar to York is the larger number of financial and business services in the centre relative to other services, whereas the reverse is true for the surrounding rings. As for York the number of primary sector firms is larger in the outer ring than elsewhere. However, in contrast to York, the manufacturing sector is larger in the outer ring, whereas for York it is smaller.

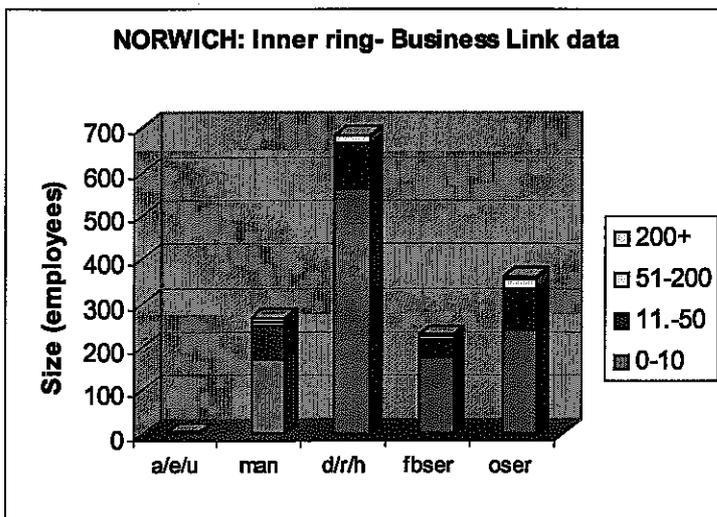
²¹ see letter from Business Link, July 20, 1999.

Figure 6.1: Firms in Norwich City core by no. of employees: current 1999 estimate



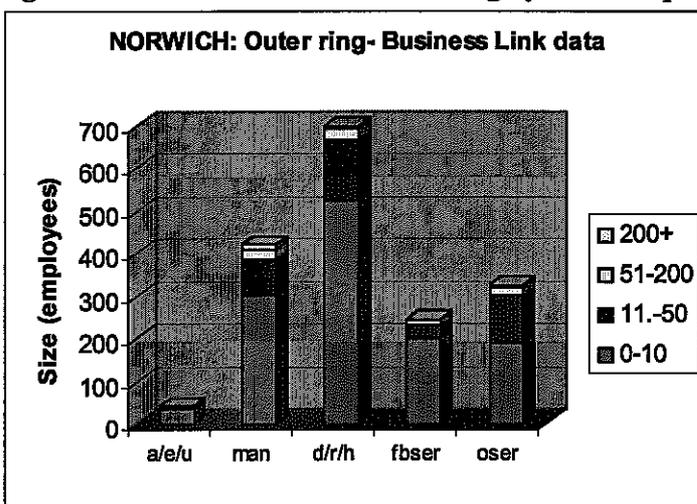
Source: businesslinkdata.xls

Figure 6.2: Firms in Norwich inner ring by no. of employees: current 1999 estimate



Source: businesslinkdata.xls

Figure 6.3: Firms in Norwich outer ring by no. of employees: current 1999 estimate



Source: businesslinkdata.xls

For **employment**, the Norwich area economy study²² examined the economy almost entirely in terms of employment numbers. As discussed above, employment by SIC showed an urban economy with growing employment in financial services, and some growth in tourism and retail. However, the media sector, agriculture and food processing are not increasing the numbers they employ, and in the case of engineering, are declining. The major employers in Norwich are: Norwich Union (5600 employees), Lotus, Virgin Direct and Anglia Television.

Norwich has a larger proportion of self-employed people (c.9%), which is higher than the UK average (c.5%), and most prevalent, as in Cambridge, in the construction industry, where 1 in 5 are self employed. As with York (see below), Norwich faces a skills miss-match, with shortages in skilled occupations such as IT and senior management.

²² Norwich City Council Economic Development Department (1993) the Norwich area economy

7. SUMMARY

Sections two and three of this working paper illustrated that there are significant similarities between the case study Historic Cities.

- They are of similar size (around 100,000 population), although Norwich has slightly more households (c.57,000) than York and Cambridge (at around 45,000).
- They are all reflecting the national trends of declining household size and a growing urban population during the 1990's.
- They have similar levels of one car ownership, although Cambridge has a higher proportion of households with two or more cars.
- They have similar employment densities.
- The historical changes in employment by sector over time show that all the cities exhibit the patterns of decline in primary and manufacturing employment, and increases in the tertiary and service sectors.

However, there are also some important differences between them;

- Cambridge has a more highly skilled workforce, with more workers in professional and managerial jobs. Perhaps unsurprisingly therefore, it also has a higher average level of income per worker compared to York and Norwich.
- Norwich is a larger employment centre, having nearly 100,000 jobs, compared to Cambridge's 80,000 and York's 60,000. However, it also has a higher level of unemployment than the other two (8% compared to 6%).
- The employment by sector is also very different, with York having more employment in manufacturing, Norwich having the largest financial and business sector, and Cambridge having the most 'other services', which includes both the academic sector and some of the high tech sector.

The business sector profiles are a little limited in their usefulness for comparison by the lack of comparable data. Each firm profile was put together using local information, which differed in its reliability and coverage. However, it is not known where more comprehensive data could be obtained. In particular, determining the absolute number of firms is very difficult, dependent upon how the data is collected (e.g. via firm survey responses, active searching, directories or VAT returns), and the spatial area considered (e.g. district, TTW area or arbitrary survey).

Several points do come across clearly;

- a large majority of the firms are very small; over 65% in all cities having less than 10 employees²³.
- there is not a great concentration of firms in the historic city centre cores. Although centre densities will be higher, it is clear that there are just as many firms in the built up urban rings as in the city centres, and many more in the satellite towns.

The proportion of firms by sector from the respective databases paints a very different picture from the employment by sector discussed above. Partly this is due to the data in table 7.1 using the 1992 SIC, whereas table 3.2 used the 1981 SIC. This explains the relatively smaller sizes of the 'other service' sectors, if the assumption is made that each sector has a complete distribution of firms by employee numbers. However, it would appear that Cambridge has a larger number of small manufacturing firms, relative to York and Norwich. It would also suggest that Norwich's financial sector comprises a number of larger firms, as it does not have as large a number of firms given the large employment in the sector. This is not immediately obvious from the data, but is intuitively sensible given (for example) the presence of Norwich Union and Virgin Direct.

²³ However, note that this is likely to include anomalies in the data such as holding company addresses, where no one may be employed in the local area.

Table 7.1: Summary of proportion of firms by sector (1998/9 database data)

	A/e/u	Man	D/r/h	Fbser	Oser
Cambridge	1	21	32	31	14
York	4	16	43	15	22
Norwich	1	16	44	18	21

See table 4.2 for sector codes

Therefore, it is clear that the business profile of each city is unique, particularly in the sector profiles, and less so in the size and location distribution. There is no simple relationship between the sector distribution and employment distribution, which probably warrants further investigation.

This profile of the three cities will provide two main functions. Firstly it provides an important background for Task 4 and the other tasks in the Historic Cities project. Secondly it will allow an assessment of any bias in the business sampling in the next stage of the business surveys.

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- John Payne at Cambridgeshire County Council for access to the Cambridge Economic Database (charge).

REFERENCES

City of York Council, Economic Development Group (1999) *Economic Bulletin*; Issue 15, May 1999.

Office for National Statistics (1999) Standard Industrial Classification of Economic Activities 1992 (<http://www.ons.gov.uk/daa/cu/cu.htm>)

Office for National Statistics (1998) Regional Trends 33, HMSO

Office for Population and Census Statistics (1993) Key Statistics for Local Authorities from the 1991 Census, HMSO

University of York (1998) The York and North Yorkshire Labour Market. *Draft Chapter 2.*

Cambridgeshire County Council Research Group (1998) 1996 Employee Estimates for Cambridgeshire

Cambridgeshire County Council Research Group (1999) The Cambridgeshire Economy, July 1997 to June 1998

Cambridgeshire County Council Research Group (1995) VAT Registrations and De-registrations, 1993 (data source; DTI)

Cambridgeshire County Council Research Group (1994) The Cambridgeshire Economy, 1981 to 2006; An Overview

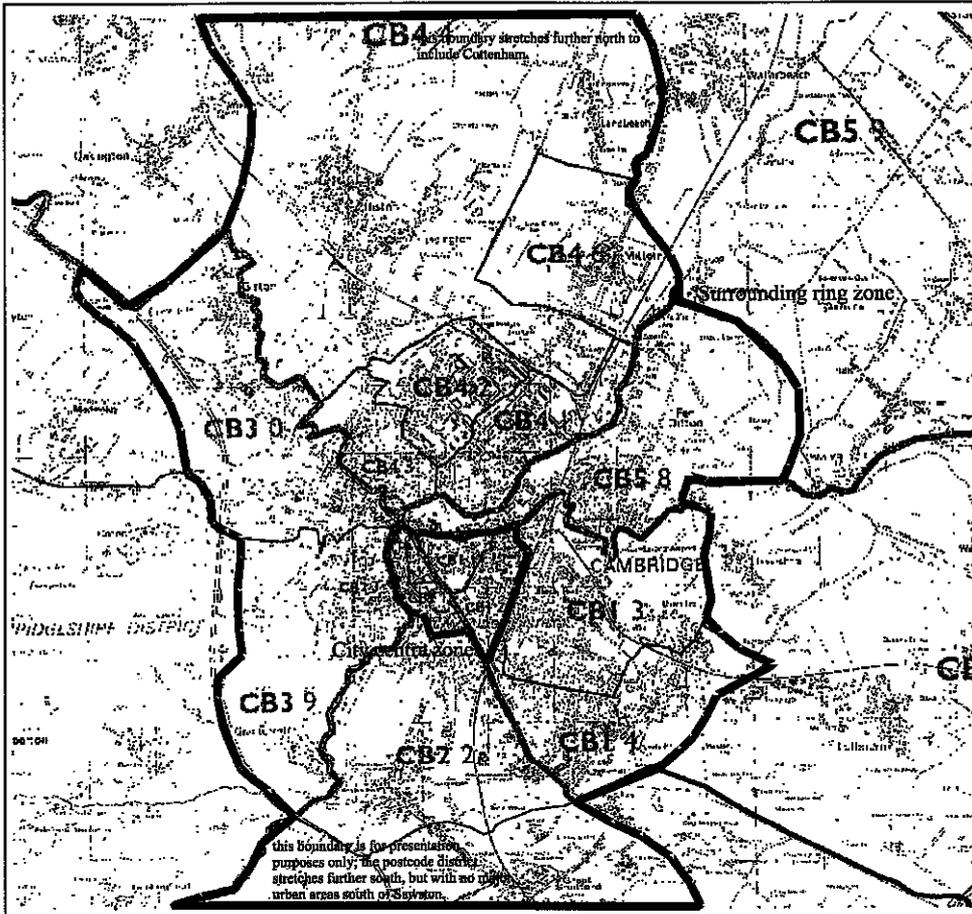
Norwich City Council (1993) The Norwich Area Economy; Executive Summary

Norwich City Council (1997) The Norwich Area Fact File

University of Cambridge (1997) Annual Report 1996-97

ANNEX: POSTCODE ZONE MAPS

CAMBRIDGE

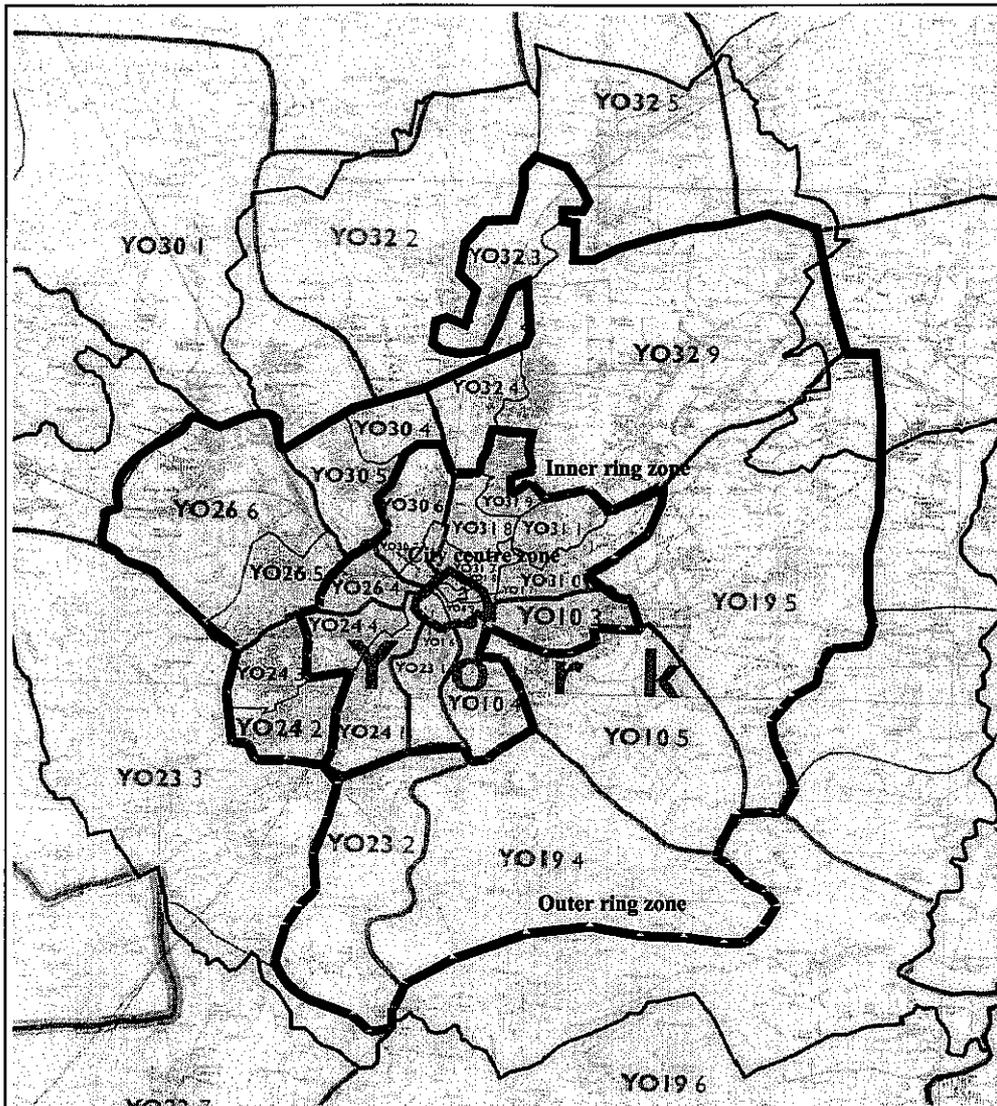


Core = postcode areas CB1 1, CB1 2 and CB2 1

Ring = postcode areas CB1 3, CB1 4, CB2 2-5, CB3 0, CB3 9, CB4 1-4, CB4 6 and CB5 8

Cambridge postcodes are very small around the city, but rapidly expand in size at the suburbs. This means that zoning a centre and two concentric rings was not possible. Only two zones were therefore defined. The ring (marked in blue) was designed to include firms both inside and outside the outer ring road. The centre city zone is bounded on three sides by the River Cam.

YORK



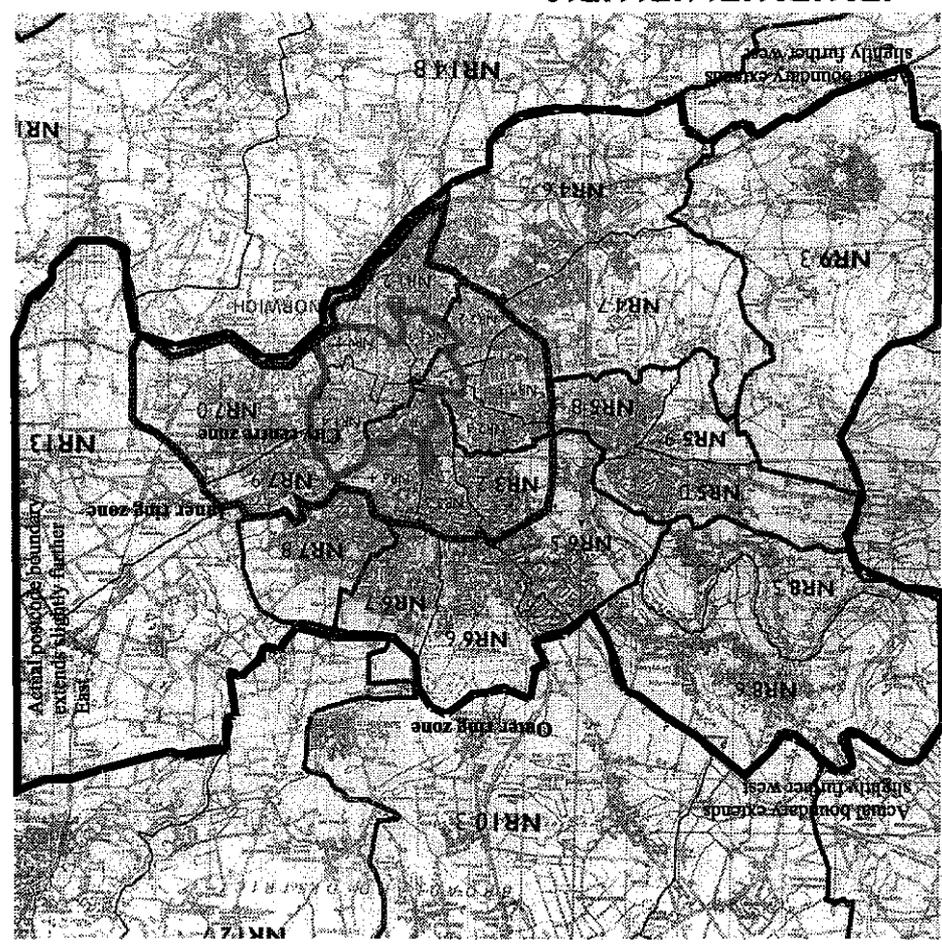
Core: = YO1 6, YO1 7, YO1 8, YO1 9

Inner ring: = YO24 (all sectors), YO26 4, YO26 5, YO30 6, YO10 3-5, YO30 7, YO31 (all sectors)

Outer ring: = YO32, YO19, YO23, YO30 4-5.

Postcode zoning for York was considerably complicated by the change in postcodes in 1998, with all the databases containing a mixture of records with old and new codes. However, the change in postcode boundaries made zoning possible in that the radial 1994 postcodes were replaced with the concentric pattern as shown above. The inner ring largely covers the built up area, the outer ring comprises the outer ring road and satellite towns.

Norwich



Core = NR1, NR2, NR3, NR4, NR10, NR11, NR12, NR13, NR14
 Inner ring = NR1, NR2, NR2.1, NR2.2, NR2.3, NR2.4, NR3, NR3.1, NR3.2, NR3.3, NR3.4, NR7, NR9, NR10
 Outer ring = NR1, NR5, NR6, NR7, NR8, NR9, NR10, NR11, NR12, NR13, NR14

Although the Norwich postcode sector arrangement was sufficiently concentric to allow two rings, the pattern was no so useful as the York aggregations. Firstly the inner ring, especially to the west, cuts rather arbitrarily through the city, and secondly the inner and outer rings combine to the South East, where the passage of the river constrains development.