

## Corporate sectors – Cambridge

This report aims at assessing the specialness of the Cambridge economy by examining the key features characterising the corporate sectors in the area. The first part of the report provides an overview of the size of the corporate sectors in terms of number of companies, total employment and total turnover, while the second part focuses on the analysis of growth in employment and turnover over time. All data refer to Cambridge Ahead data produced by Dr Andy Cosh at the Centre for Business Research unless otherwise indicated.

### 1. Size

Table 1 reports the distribution of employment by sector (in levels as well as in percentage terms with respect to the total for all sectors in the area and to the total for each sector in the Combined Authority) for 2016-17.<sup>1</sup>

Table 1 Distribution of employment by sector in 2016-17

	Cambridge			Combined Authority	
	Total employment	% of total	% of Combined Authority	Total employment	% of total
<b>KNOWLEDGE INTENSIVE SECTORS</b>					
Information Technology and Telecoms	8,620	22.6%	44.4%	19,419	8.2%
Life science and healthcare	1,077	2.8%	7.6%	14,106	6.0%
High-tech manufacturing	3,017	7.9%	13.9%	21,651	9.2%
Knowledge intensive services	1,699	4.5%	23.8%	7,148	3.0%
<i>TOTAL KI SECTORS</i>	<i>14,413</i>	<i>37.8%</i>	<i>23.1%</i>	<i>62,324</i>	<i>26.4%</i>
<b>OTHER SECTORS</b>					
Primary	417	1.1%	3.5%	12,020	5.1%
Manufacturing	1,227	3.2%	6.3%	19,465	8.2%
Wholesale and retail distribution	2,355	6.2%	9.5%	24,839	10.5%
Construction and utilities	1,042	2.7%	5.6%	18,600	7.9%
Transport and travel	224	0.6%	2.2%	10,305	4.4%
Property and finance	3,120	8.2%	11.7%	26,771	11.3%
Other business services	5,707	15.0%	20.8%	27,502	11.6%
Other services	2,897	7.6%	21.2%	13,677	5.8%
Education, arts, charities, social care	6,750	17.7%	32.4%	20,843	8.8%
<i>TOTAL NON-KI SECTORS</i>	<i>23,739</i>	<i>62.2%</i>	<i>13.6%</i>	<i>174,022</i>	<i>73.6%</i>
<i>TOTAL ALL SECTORS</i>	<i>38,152</i>	<i>100.0%</i>	<i>16.1%</i>	<i>236,346</i>	<i>100.0%</i>

The largest share of employment is found in the Information Technology and Telecoms sector, which represents 22.6% of total employment in Cambridge and 44.4% of total employment in the sector for the Combined Authority. Within Information Technology and Telecoms, the largest sub-sectors are IT & Computer Services (3,187), Computer Consultancy (2,430) and Software Development & Publishing (2,182). Taken together, the knowledge-intensive (KI) sectors constitute 37.8% of total employment in the area, well above the corresponding figure for the Combined Authority as a whole

<sup>1</sup> The distribution of the number of companies by sector for 2016-17 is included in Table A.1. A comparison of employment estimates by sector between Cambridge Ahead data and BRES data is presented in Table A.3.

(26.4%). Other sectors with relatively high employment numbers are Education, Arts, Charities, Social Care (17.7% of total employment in Cambridge and 32.4% of total employment in the sector for the Combined Authority) and Other Business Services (15.0% and 20.8%, respectively).

Table 2 presents the distribution of turnover by sector (in £,000 as well as in percentage terms with respect to the total for all sectors in the area and to the total for each sector in the Combined Authority) for 2016-17.

Table 2 Distribution of turnover by sector in 2016-17

	Cambridge			Combined Authority	
	Total turnover £,000	% of total	% of Combined Authority	Total turnover £,000	% of total
<b>KNOWLEDGE INTENSIVE SECTORS</b>					
Information Technology and Telecoms	2,251,311	31.8%	56.3%	4,001,051	8.8%
Life science and healthcare	227,975	3.2%	7.9%	2,876,583	6.4%
High-tech manufacturing	1,424,194	20.1%	24.2%	5,895,454	13.0%
Knowledge intensive services	125,869	1.8%	11.6%	1,088,008	2.4%
<b>TOTAL KI SECTORS</b>	<b>4,029,348</b>	<b>56.8%</b>	<b>29.1%</b>	<b>13,861,095</b>	<b>30.6%</b>
<b>OTHER SECTORS</b>					
Primary	132,333	1.9%	6.5%	2,027,805	4.5%
Manufacturing	160,767	2.3%	3.5%	4,609,590	10.2%
Wholesale and retail distribution	582,460	8.2%	6.8%	8,608,794	19.0%
Construction and utilities	316,872	4.5%	7.4%	4,294,229	9.5%
Transport and travel	34,663	0.5%	0.9%	3,834,353	8.5%
Property and finance	417,797	5.9%	13.7%	3,054,435	6.7%
Other business services	696,608	9.8%	25.1%	2,779,856	6.1%
Other services	193,295	2.7%	22.1%	876,403	1.9%
Education, arts, charities, social care	526,038	7.4%	40.0%	1,315,213	2.9%
<b>TOTAL NON-KI SECTORS</b>	<b>3,060,833</b>	<b>43.2%</b>	<b>9.7%</b>	<b>31,400,678</b>	<b>69.4%</b>
<b>TOTAL ALL SECTORS</b>	<b>7,090,181</b>	<b>100.0%</b>	<b>15.7%</b>	<b>45,261,773</b>	<b>100.0%</b>

Similar to the results illustrated in Table 1, the largest sector in terms of total turnover is Information Technology and Telecoms (31.8% of total turnover in Cambridge and 56.3% of total turnover in the sector for the Combined Authority). Significant shares of turnover are also observed in the High-Tech Manufacturing sector (20.1% and 24.2%, respectively) and in the Other Business Services sector (9.8% and 25.1%, respectively). It is also worth noting that almost 60% of turnover in Cambridge is generated in the KI sectors, compared to a figure of 30.6% for the Combined Authority.

Table 3 shows employment and turnover location quotients (LQs) with respect to the Combined Authority, the LEP and the UK for 2015-16. A similar analysis based on BRES data instead of Cambridge Ahead data is included in Table A.2.

Table 3 Employment and turnover location quotients in 2015-16 – Cambridge Ahead data

	Employment			Turnover		
	LQ (Comb. Auth. = 1)	LQ (LEP = 1)	LQ (UK = 1)	LQ (Comb. Auth. = 1)	LQ (LEP = 1)	LQ (UK = 1)
<b>KNOWLEDGE INTENSIVE SECTORS</b>						
Information Technology and Telecoms	2.69	4.38	4.92	3.94	4.56	5.72
Life science and healthcare	0.45	1.22	1.54	0.48	0.60	1.81
High-tech manufacturing	0.91	1.06	1.88	0.98	0.96	2.09
Knowledge intensive services	1.41	2.41	3.10	0.77	1.39	1.67
<i>TOTAL KI SECTORS</i>	<i>1.41</i>	<i>2.18</i>	<i>3.07</i>	<i>1.65</i>	<i>1.84</i>	<i>3.42</i>
<b>OTHER SECTORS</b>						
Primary	0.24	0.25	0.28	0.68	0.66	0.25
Manufacturing	0.41	0.34	0.36	0.21	0.17	0.25
Wholesale and retail distribution	0.59	0.65	0.33	0.52	0.57	0.47
Construction and utilities	0.31	0.38	0.58	0.54	0.40	0.41
Transport and travel	0.07	0.06	0.04	0.03	0.05	0.06
Property and finance	0.73	1.18	0.84	1.01	1.56	0.51
Other business services	1.24	0.77	1.00	1.73	1.37	1.48
Other services	1.33	0.58	0.56	2.02	0.89	0.84
Education, arts, charities, social care	2.14	2.37	3.17	3.04	3.10	4.96
<i>TOTAL NON-KI SECTORS</i>	<i>0.85</i>	<i>0.75</i>	<i>0.71</i>	<i>0.72</i>	<i>0.69</i>	<i>0.59</i>

The analysis of employment LQs suggests that there is particular concentration in the KI sectors, especially in Information Technology and Telecoms (4.38 relative to the LEP and 4.92 relative to the UK) and in Knowledge Intensive Services (2.41 and 3.10, respectively). All in all, if LQs with respect to the UK are considered, the share of employment in KI sectors for Cambridge is more than three times the share of employment in KI sectors for the Combined Authority as a whole. Among non-KI sectors, employment is shown to be highly concentrated in Education, Arts, Charities, Social Care (2.37 and 3.17, respectively), while relatively low LQs are found for e.g. the Transport and Travel sector (0.06 and 0.04, respectively) and the Primary sector (0.25 and 0.28, respectively).

A similar picture can be seen in relation to turnover, with all KI sectors having an LQ with respect to the UK greater than 1. Again, the sectors with the greatest concentration are Information Technology and Telecoms (4.56 and 5.72, respectively), Education, Arts, Charities, Social Care (3.10 and 4.96, respectively) and Knowledge Intensive Services (1.39 and 1.67).

Table 4 illustrates the distribution of the number of companies that are based in the area (in both absolute and relative terms) by firm size for 2016-17. The groupings used in Table 4 and in the other tables below are defined as follows: (i) micro firms = 1-9 employees; (ii) small and medium-sized firms (SMEs) = 10-249 employees; (iii) large firms > 250 employees. A detailed disaggregation of the number of companies by firm size is included in Table A.4.

Table 4 Distribution of number of companies by firm size in 2016-17 – Broad summary

	Cambridge		Combined Authority	
	No. of companies	%	No. of companies	%
Micro firms	3,600	89.0%	22,214	90.4%
Small and medium-sized firms	421	10.4%	2,224	9.1%
Large firms	24	0.6%	123	0.5%
All firms in area	4,045	100.0%	24,561	100.0%

The distribution of companies by firm size in the area appears to be broadly in line with that for the Combined Authority. The overwhelming majority of companies in the district are micro firms (3,600), followed by SMEs (421). There are 24 firms that are based in Cambridge and have more than 250 employees.

Table 5 reports the distribution of employment by firm size for 2016-17. A detailed disaggregation of the figures presented below is included in Table A.5.

Table 5 Distribution of employment by firm size in 2016-17 – Broad summary

	Cambridge		Combined Authority	
	Total employment	%	Total employment	%
Micro firms	7,685	20.1%	46,737	19.8%
Small and medium-sized firms	16,014	42.0%	80,499	34.1%
Large firms	14,453	37.9%	109,110	46.2%
All firms in area	38,152	100.0%	236,346	100.0%

With 16,014 employees in 2016-17, SMEs account for the largest share of employment in the district (42.0%). This figure is significantly higher than the corresponding figure for the Combined Authority (34.1%), where almost half of total employment is found at firms with more than 250 employees. Over a third of employment in Cambridge is at large firms, whereas micro firms contribute around 20% of total employment in the district.

Table 6 shows the distribution of turnover by firm size for 2016-17. A detailed disaggregation of the figures presented below is included in Table A.6.

Table 6 Distribution of turnover by firm size in 2016-17 – Broad summary

	Cambridge		Combined Authority	
	Total turnover £,000	%	Total turnover £,000	%
Micro firms	1,302,032	18.4%	7,706,187	17.0%
Small and medium-sized firms	2,232,609	31.5%	13,536,479	29.9%
Large firms	3,555,540	50.1%	24,019,107	53.1%
All firms in area	7,090,181	100.0%	45,261,773	100.0%

Half of total turnover in Cambridge is accounted for by large firms, whilst turnover generated by SMEs represents around a third of total turnover in the district. Among SMEs, the highest turnover is originated by firms with 10-49 employees (14.1%). The lowest share of turnover is found for micro firms (18.4%), broadly in line with the corresponding figure for the Combined Authority (17.0%).

Table 7 lists the largest companies that are based in Cambridge, among those with more than 100 employees, by their turnover in 2016-17.

Table 7 Largest Cambridge-based companies (100+ employees) by turnover in 2016-17

Company name	Sector	Employment 2016-17	Turnover 2016-17 £,000
Arm Limited	Information Technology and Telecoms	1,671	1,179,625
Aveva Group PLC		1,692	215,831
Autonomy Systems Limited		111	92,775
Jagex Limited		323	74,424
The Mathworks Limited		192	45,159
Microsoft Research Limited		130	38,846
Centrica Hive Limited		261	32,481
Carl Zeiss Ltd	Life Science and Healthcare	209	72,372
Leica Microsystems (UK) Limited		145	57,841
Qualcomm Technologies International, Ltd.	High-tech manufacturing	704	1,157,712
Multimatic Ltd.		621	84,789
Inca Digital Printers Limited		204	41,749
Carl Zeiss Microscopy Limited		105	37,118
Elektron Technology PLC		974	32,700
Proquest European Holdings Limited	Manufacturing	413	44,112
Ridgeon Group Limited	Wholesale and retail distribution	841	160,277
Murkett Brothers (Holdings) Limited		113	37,323
Bidwells LLP	Property and finance	480	43,199
Bluestone Consolidated Holdings Limited		253	38,305
Cambridge & Counties Bank Limited		105	35,261
Mills & Reeve LLP	Other Business Services	706	87,679
Booking.Com Limited		142	54,708
Booking.Com Customer Service Center (UK) Limited		863	34,349
Cambridge Education Group Limited	Education, arts, charities, social care	1,096	108,587
Oxford Cambridge And RSA Examinations		519	78,000

Some of the largest companies in Cambridge are found in the KI sectors, namely Information Technology and Telecoms, Life Science and Healthcare, and High-Tech Manufacturing. Among these companies are Arm Limited and Aveva Group PLC, which – taken together – account for more than a third of total employment in the Information Technology and Telecoms sector. A number of large companies also operate in the High-Tech Manufacturing sector, for instance Qualcomm Technologies International, Ltd. and Elektron Technology PLC. Other large companies, particularly in terms of total employment, belong to the Education, Arts, Charities, Social Care sector (e.g. Cambridge Education Group Limited) and to the Other Business Services sector (e.g. Booking.Com Customer Service Center (UK) Limited and Mills & Reeve LLP).

Table 8 provides a list of the largest companies that are active in Cambridge, among those with more than 100 employees, by their turnover in 2016-17.

Table 8 Largest Cambridge-active companies (100+ employees) by turnover in 2016-17

Company name	Sector	Employment 2016-17	Turnover 2016-17 £,000
Vodafone Limited	Information Technology and Telecoms	12,228	5,843,900
Telefonica UK Limited		6,488	5,241,000
Glaxosmithkline PLC	Life Science and Healthcare	99,827	27,889,000
Astrazeneca PLC		61,500	18,643,000
Esso Petroleum Company,Limited	Primary	1,304	4,882,000
Tesco Stores Limited	Wholesale and retail distribution	456,728	40,134,000
Asda Stores Limited		104,680	21,408,500
Marks And Spencer P.L.C.		84,939	10,622,000
John Lewis Partnership PLC		88,000	10,026,200
Co-Operative Group Limited		25,460	9,301,000
Aldi Stores Limited		30,116	8,744,385
Waitrose Limited		56,330	6,121,300
DSG Retail Limited		20,290	4,237,900
Argos Limited		28,139	3,956,100
Booker Limited		9,701	3,700,500
Royal Mail Group Limited	Transport and travel	138,693	7,651,000
Barclays Bank PLC	Property and finance	98,100	27,224,000
Lloyds Bank PLC		77,726	20,900,000
HSBC Bank PLC		55,346	20,041,000
The Royal Bank of Scotland Public Limited Company		75,200	15,101,000
Santander UK PLC		18,150	8,098,000
National Westminster Bank Public Limited Company		15,700	7,975,000
Travelex Limited	Other Business Services	51,381	8,822,000
Hays PLC		9,253	4,231,400
British United Provident Association Limited(The)	Other Services	66,669	11,047,900

A number of large companies that are active in the Cambridge district operate in some of the main KI sectors, including Life Science and Healthcare, and Information Technology and Telecoms. Key examples are Glaxosmithkline PLC and Astrazeneca PLC in the Life Science and Healthcare sector as well as Vodafone Limited and Telefonica UK Limited in the Information Technology and Telecoms sector.<sup>2</sup> Among non-KI sectors, large companies that are active in Cambridge are found in Wholesale and Retail Distribution (e.g. Tesco Stores Limited), Property and Finance (e.g. Barclays Bank PLC), Other Services (e.g. British United Provident Association Limited), Other Business Services (e.g. Travelex Limited), and Transport and Travel (e.g. Royal Mail Group Limited).

<sup>2</sup> ASTRAZENECA PLC has been classified as Cambridge-active, while its wholly owned subsidiary MEDIMMUNE LIMITED has been treated as South Cambridgeshire-based.

## 2. Growth

Table 9 reports the annualised growth rates in employment by sector over the three- and six-year periods to 2016-17.<sup>3</sup>

Table 9 Three-year and six-year employment growth (% pa) by sector

	Cambridge		Combined Authority	
	3 years to 2016-17	6 years to 2016-17	3 years to 2016-17	6 years to 2016-17
Information Technology and Telecoms	6.8%	9.7%	6.9%	7.3%
Life science and healthcare	9.9%	7.2%	7.4%	6.7%
High-tech manufacturing	-2.6%	-0.1%	1.6%	1.9%
Knowledge intensive services	16.0%	9.3%	8.6%	5.9%
<i>TOTAL KI SECTORS</i>	<i>5.6%</i>	<i>6.8%</i>	<i>5.2%</i>	<i>4.9%</i>
OTHER SECTORS				
Primary	4.3%	6.5%	5.9%	4.9%
Manufacturing	2.4%	-8.0%	4.7%	3.2%
Wholesale and retail distribution	6.9%	1.8%	6.6%	4.3%
Construction and utilities	-1.0%	0.9%	5.4%	4.6%
Transport and travel	39.2%	20.3%	11.7%	5.6%
Property and finance	11.0%	6.0%	8.6%	9.0%
Other business services	7.1%	5.8%	5.3%	5.9%
Other services	8.5%	10.3%	8.4%	8.7%
Education, arts, charities, social care	5.9%	7.1%	8.2%	13.8%
<i>TOTAL NON-KI SECTORS</i>	<i>6.8%</i>	<i>4.9%</i>	<i>6.9%</i>	<i>6.5%</i>
<i>TOTAL ALL SECTORS</i>	<i>6.4%</i>	<i>5.6%</i>	<i>6.4%</i>	<i>6.0%</i>

Cambridge has witnessed relatively high growth in total employment over time, ranging from 5.6% (six-year growth) to 6.4% (three-year growth). However, throughout the entire period total employment growth in the district has been lower compared to the Combined Authority, which has seen employment growing at 6.0% pa. Among the sectors that have contributed the most to overall employment growth are a number of KI sectors, i.e. Information Technology and Telecoms (9.7% during the six years to 2016-17), Knowledge Intensive Services (9.3%) and Life Science and Healthcare (7.2%). Importantly, employment growth for all the KI sectors taken together in Cambridge has been remarkably higher than that for the Combined Authority (6.8% and 4.9%, respectively, when the six-year growth is considered). Another sector that has grown somewhat substantially, yet less than the Combined Authority, is Education, Arts, Charities, Social Care (7.1%). At the same time, employment throughout the entire period has declined in the Manufacturing (-8.0%) and High-Tech Manufacturing (-0.1%) sectors.

<sup>3</sup> A comparison of employment growth rates by sector between Cambridge Ahead data and BRES data is presented in Table A.8.

Table 10 presents the annualised growth rates in turnover by sector over the three- and six-year periods to 2016-17.

Table 10 Three-year and six-year turnover growth (% pa) by sector

	Cambridge		Combined Authority	
	3 years to 2016-17	6 years to 2016-17	3 years to 2016-17	6 years to 2016-17
Information Technology and Telecoms	10.4%	10.9%	10.4%	9.7%
Life science and healthcare	7.0%	8.3%	9.0%	8.7%
High-tech manufacturing	20.8%	13.2%	3.4%	3.9%
Knowledge intensive services	4.5%	5.0%	6.1%	6.9%
<i>TOTAL KI SECTORS</i>	<i>13.2%</i>	<i>11.3%</i>	<i>6.6%</i>	<i>6.6%</i>
<i>OTHER SECTORS</i>				
Primary	33.0%	20.9%	3.2%	6.6%
Manufacturing	1.0%	-4.9%	4.8%	5.1%
Wholesale and retail distribution	14.2%	7.0%	11.3%	8.0%
Construction and utilities	12.3%	8.2%	9.3%	7.2%
Transport and travel	34.3%	17.8%	-0.2%	0.3%
Property and finance	12.8%	10.5%	9.6%	11.6%
Other business services	11.8%	1.5%	6.9%	5.5%
Other services	17.8%	14.3%	9.5%	9.3%
Education, arts, charities, social care	1.3%	6.8%	5.6%	14.3%
<i>TOTAL NON-KI SECTORS</i>	<i>10.7%</i>	<i>5.9%</i>	<i>7.0%</i>	<i>6.5%</i>
<i>TOTAL ALL SECTORS</i>	<i>12.1%</i>	<i>8.8%</i>	<i>6.9%</i>	<i>6.5%</i>

Turnover growth in the district has been particularly high among the KI sectors, with Information Technology and Telecoms as well as Life Science and Healthcare performing either above or close to the Combined Authority. Interestingly, while employment growth has been negative for High-Tech Manufacturing, total turnover in the sector has increased significantly over time (13.2% if the six-year growth is considered). For the non-KI sectors, high growth rates in turnover are observed – among others – in the Construction and Utilities sector (8.2%), while turnover growth in the Education, Arts, Charities, Social Care sector has been lower relative to the Combined Authority (6.8% and 14.3%, respectively).

Table 11 illustrates the absolute change in employment and turnover LQs (calculated with respect to the Combined Authority) by sector over the three- and six-year periods to 2016-17. A similar analysis for employment based on BRES data instead of Cambridge Ahead data is included in Table A.7.

Table 11 Change in employment and turnover location quotients (Combined Authority = 1) – Cambridge Ahead data

	Employment		Turnover	
	3 years to 2016-17	6 years to 2016-17	3 years to 2016-17	6 years to 2016-17
Information Technology and Telecoms	0.00	0.41	-0.56	-0.22
Life science and healthcare	0.03	0.03	-0.11	-0.08
High-tech manufacturing	-0.11	-0.09	0.43	0.50
Knowledge intensive services	0.27	0.29	-0.15	-0.19
<i>TOTAL KI SECTORS</i>	<i>0.02</i>	<i>0.18</i>	<i>0.07</i>	<i>0.23</i>
OTHER SECTORS				
Primary	-0.01	0.02	0.19	0.19
Manufacturing	-0.03	-0.37	-0.06	-0.24
Wholesale and retail distribution	0.01	-0.07	-0.03	-0.09
Construction and utilities	-0.07	-0.07	-0.03	-0.03
Transport and travel	0.07	0.07	0.03	0.03
Property and finance	0.05	-0.11	-0.05	-0.17
Other business services	0.07	0.03	-0.01	-0.68
Other services	0.01	0.14	0.10	0.19
Education, arts, charities, social care	-0.13	-0.81	-0.78	-1.78
<i>TOTAL NON-KI SECTORS</i>	<i>0.00</i>	<i>-0.06</i>	<i>-0.03</i>	<i>-0.10</i>

With regard to employment, concentration has increased over time in Information Technology and Telecoms (0.41 during the entire period), Knowledge Intensive Services (0.29) and Life Science and Healthcare (0.03). All in all, employment in the KI sectors in Cambridge has become more concentrated over time, with a change of 0.02 during the three years to 2016-17 and of 0.18 during the six years to 2016-17. Conversely, the relative concentration of employment in the area has been decreasing over time in a number of non-KI sectors, e.g. Education, Arts, Charities, Social Care (-0.81 when the six-year window is taken into account), Manufacturing (-0.37) and Property and Finance (-0.11).

Somewhat similar results are obtained if one looks at turnover. Concentration in the KI sectors taken together has increased throughout the period to 2016-17, although the positive change in LQs appears to be driven by the higher degree of concentration in the High-Tech Manufacturing sector. In line with the findings based on employment, turnover LQs have declined significantly for Education, Arts, Charities, Social Care (-1.78), Manufacturing (-0.24), and Property and Finance (-0.17). In terms of turnover, concentration has also decreased for Other Business Services (-0.68).

Table 12 shows the annualised growth rates in employment by firm size over the three- and six-year periods to 2016-17. A detailed disaggregation of the figures presented below is included in Table A.9.

Table 12 Three-year and six-year employment growth (% pa) by firm size – Broad summary

	Cambridge		Combined Authority	
	3 years to 2016-17	6 years to 2016-17	3 years to 2016-17	6 years to 2016-17
Micro firms	6.6%	6.3%	6.6%	6.4%
Small and medium-sized firms	4.5%	4.3%	5.1%	5.7%
Large firms	8.5%	6.8%	7.4%	6.2%
All firms in area	6.4%	5.6%	6.4%	6.0%

Total employment growth in the district appears to be driven by the growth of large firms, which have grown by 8.5% over the three years to 2016-17 and by 6.8% over the six years to 2016-17. Somewhat fast rates of growth are also exhibited by micro firms (6.6% and 6.3%, respectively), whereas the lowest growth rates are observed for SMEs (4.5% and 4.3%, respectively). It is also worth highlighting that large firms in Cambridge have witnessed higher growth rates relative to the Combined Authority, particularly when the three-year rates are considered (8.5% and 7.4%, respectively).

Table 13 shows the annualised growth rates in turnover by firm size over the three- and six-year periods to 2016-17. A detailed disaggregation of the figures presented below is included in Table A.10.

Table 13 Three-year and six-year turnover growth (% pa) by firm size – Broad summary

	Cambridge		Combined Authority	
	3 years to 2016-17	6 years to 2016-17	3 years to 2016-17	6 years to 2016-17
Micro firms	13.0%	9.9%	10.2%	8.2%
Small and medium-sized firms	7.4%	2.9%	6.1%	4.0%
Large firms	15.1%	13.5%	6.4%	7.6%
All firms in area	12.1%	8.8%	6.9%	6.5%

The conclusions reached in relation to employment are broadly confirmed if turnover figures are examined instead. The fastest rates of growth are found among firms with more than 250 employees, followed by the rates for those with 1-9 employees. Again, the lowest rates of growth are observed for SMEs, which appear to be the only group of firms in Cambridge to have seen lower growth rates in turnover throughout the six-year period compared to the Combined Authority.

## Appendix A

Table A.1 Distribution of number of companies by sector in 2016-17

	Cambridge		% of Combined Authority	Combined Authority	
	No. of companies	% of total		No. of companies	% of total
<b>KNOWLEDGE INTENSIVE SECTORS</b>					
Information Technology and Telecoms	671	16.6%	23.9%	2,805	11.4%
Life science and healthcare	114	2.8%	29.7%	384	1.6%
High-tech manufacturing	65	1.6%	12.4%	526	2.1%
Knowledge intensive services	159	3.9%	22.3%	712	2.9%
<i>TOTAL KI SECTORS</i>	<i>1,009</i>	<i>24.9%</i>	<i>22.8%</i>	<i>4,427</i>	<i>18.0%</i>
<b>OTHER SECTORS</b>					
Primary	54	1.3%	8.2%	657	2.7%
Manufacturing	124	3.1%	10.6%	1,174	4.8%
Wholesale and retail distribution	269	6.7%	10.9%	2,468	10.0%
Construction and utilities	240	5.9%	8.1%	2,952	12.0%
Transport and travel	49	1.2%	5.5%	895	3.6%
Property and finance	620	15.3%	20.7%	2,991	12.2%
Other business services	843	20.8%	17.9%	4,720	19.2%
Other services	505	12.5%	16.6%	3,039	12.4%
Education, arts, charities, social care	332	8.2%	26.8%	1,238	5.0%
<i>TOTAL NON-KI SECTORS</i>	<i>3,036</i>	<i>75.1%</i>	<i>15.1%</i>	<i>20,134</i>	<i>82.0%</i>
<i>TOTAL ALL SECTORS</i>	<i>4,045</i>	<i>100.0%</i>	<i>16.5%</i>	<i>24,561</i>	<i>100.0%</i>

Table A.2 Employment location quotients in 2016 – BRES data

	LQ (Comb. Auth. = 1)	LQ (LEP = 1)	LQ (GB = 1)
High-tech manufacturing	0.34	0.34	0.44
Life sciences manufacturing	0.18	0.17	0.19
ICT	1.29	1.71	1.53
R&D	1.32	2.16	9.01
Knowledge intensive services	1.35	1.63	1.89
<i>Sub-total - KI sectors</i>	<i>1.08</i>	<i>1.36</i>	<i>1.68</i>
Primary	0.04	0.03	0.01
Other manufacturing	0.12	0.09	0.12
Property and construction	0.58	0.49	0.49
Utilities	0.74	0.76	0.74
Publishing	1.73	2.44	4.30
Transport and travel	0.36	0.30	0.35
Wholesale distribution	0.31	0.27	0.32
Retail distribution	0.91	0.87	0.91
Hotels, pubs and restaurants	1.35	1.14	1.02
Other business services	0.68	0.72	0.70
Public services	1.05	1.10	0.84
Other Services	1.19	1.19	1.16
Education	2.08	2.35	2.53
Finance and professional services	1.04	1.12	0.70
Health services	1.25	1.30	1.15
<i>Sub-total - Other sectors</i>	<i>0.99</i>	<i>0.95</i>	<i>0.93</i>

Table A.3 Comparison of employment by sector in 2016 – Cambridge Ahead vs. BRES data

	Total employment		% of total	
	Cambridge Ahead data	BRES data	Cambridge Ahead data	BRES data
High-tech manufacturing	3,100	1,085	8.1%	1.0%
Life sciences manufacturing	321	45	0.8%	0.0%
ICT	8,249	6,015	21.6%	5.8%
R&D	1,333	4,225	3.5%	4.1%
Knowledge intensive services	2,457	4,730	6.4%	4.6%
<i>Sub-total - KI sectors</i>	<i>15,460</i>	<i>16,100</i>	<i>40.5%</i>	<i>15.5%</i>
Primary	414	10	1.1%	0.0%
Other manufacturing	565	650	1.5%	0.6%
Property and construction	2,923	3,290	7.7%	3.2%
Utilities	17	1,420	0.0%	1.4%
Publishing	675	1,750	1.8%	1.7%
Transport and travel	601	2,150	1.6%	2.1%
Wholesale distribution	1,211	1,275	3.2%	1.2%
Retail distribution	911	9,245	2.4%	8.9%
Hotels, pubs and restaurants	1,327	7,840	3.5%	7.6%
Other business services	3,721	9,225	9.8%	8.9%
Public services	115	3,600	0.3%	3.5%
Other Services	1,981	5,655	5.2%	5.5%
Education	4,752	22,550	12.5%	21.8%
Finance and professional services	2,033	3,450	5.3%	3.3%
Health services	1,446	15,460	3.8%	14.9%
<i>Sub-total - Other sectors</i>	<i>22,692</i>	<i>87,570</i>	<i>59.5%</i>	<i>84.5%</i>
<i>Total Employment</i>	<i>38,152</i>	<i>103,670</i>	<i>100.0%</i>	<i>100.0%</i>

*Note:* For a detailed comparison of employment estimates between Cambridge Ahead data and BRES data, please see the report titled “Comparison of the employment growth from the corporate database with BRES data”.

Table A.4 Distribution of number of companies by firm size in 2016-17 – Detailed summary

	Cambridge		Combined Authority	
	No. of companies	%	No. of companies	%
<i>Micro firms</i>				
1 employee	1,905	47.1%	11,662	47.5%
2-4 employees	1,322	32.7%	8,369	34.1%
5-9 employees	373	9.2%	2,183	8.9%
<i>Small firms</i>				
10-49 employees	340	8.4%	1,848	7.5%
<i>Medium-sized firms</i>				
50-99 employees	46	1.1%	189	0.8%
100-249 employees	35	0.9%	187	0.8%
<i>Large firms</i>				
> 250 employees	24	0.6%	123	0.5%
<i>All firms in area</i>	<i>4,045</i>	<i>100.0%</i>	<i>24,561</i>	<i>100.0%</i>

Table A.5 Distribution of employment by firm size in 2016-17 – Detailed summary

	Cambridge		Combined Authority	
	Total employment	%	Total employment	%
<i>Micro firms</i>				
1 employee	1,905	5.0%	11,662	4.9%
2-4 employees	3,397	8.9%	21,260	9.0%
5-9 employees	2,383	6.2%	13,815	5.8%
<i>Small firms</i>				
10-49 employees	7,148	18.7%	37,818	16.0%
<i>Medium-sized firms</i>				
50-99 employees	3,343	8.8%	13,451	5.7%
100-249 employees	5,523	14.5%	29,230	12.4%
<i>Large firms</i>				
> 250 employees	14,453	37.9%	109,110	46.2%
<i>All firms in area</i>	<i>38,152</i>	<i>100.0%</i>	<i>236,346</i>	<i>100.0%</i>

Table A.6 Distribution of turnover by firm size in 2016-17 – Detailed summary

	Cambridge		Combined Authority	
	Total turnover £,000	%	Total turnover £,000	%
<i>Micro firms</i>				
1 employee	247,945	3.5%	1,642,977	3.6%
2-4 employees	645,761	9.1%	3,442,876	7.6%
5-9 employees	408,326	5.8%	2,620,334	5.8%
<i>Small firms</i>				
10-49 employees	999,449	14.1%	6,854,090	15.1%
<i>Medium-sized firms</i>				
50-99 employees	371,655	5.2%	2,100,819	4.6%
100-249 employees	861,505	12.2%	4,581,570	10.1%
<i>Large firms</i>				
> 250 employees	3,555,540	50.1%	24,019,107	53.1%
<i>All firms in area</i>	<i>7,090,181</i>	<i>100.0%</i>	<i>45,261,773</i>	<i>100.0%</i>

Table A.7 Change in employment location quotients – BRES data

	3yrs 2013-2016			6yrs 2010-2016		
	Comb. Auth. = 1	LEP = 1	GB = 1	Comb. Auth. = 1	LEP = 1	GB = 1
High-tech manufacturing	0.00	-0.02	-0.11	-0.13	-0.16	-0.38
Life sciences manufacturing	0.05	0.04	0.05	-0.21	-0.38	-0.43
ICT	-0.02	-0.02	-0.05	-0.26	-0.31	0.00
R&D	0.08	0.13	0.58	-0.05	-0.14	0.12
Knowledge intensive services	-0.05	-0.14	-0.10	0.41	0.45	0.32
<i>Sub-total - KI sectors</i>	<i>0.08</i>	<i>0.09</i>	<i>0.04</i>	<i>0.08</i>	<i>0.09</i>	<i>-0.01</i>
Primary	-0.08	-0.07	-0.01	-0.04	-0.05	-0.01
Other manufacturing	-0.02	-0.01	-0.02	-0.04	-0.03	-0.03
Property and construction	0.02	0.00	0.02	-0.06	-0.09	-0.13
Utilities	0.06	0.07	0.00	0.31	0.22	0.04
Publishing	-0.18	-0.18	0.78	-0.02	-0.10	1.06
Transport and travel	-0.07	-0.06	-0.04	-0.12	-0.08	-0.06
Wholesale distribution	-0.05	-0.04	-0.05	-0.08	-0.09	-0.15
Retail distribution	-0.09	-0.07	-0.06	-0.17	-0.13	-0.09
Hotels, pubs and restaurants	0.12	0.08	0.04	0.18	0.17	0.17
Other business services	-0.09	-0.09	-0.13	-0.18	-0.17	-0.12
Public services	0.25	0.26	0.21	0.33	0.37	0.25
Other Services	0.24	0.28	0.42	0.19	0.23	0.23
Education	-0.03	-0.02	-0.18	-0.15	-0.06	-0.11
Finance and professional services	0.01	0.02	0.04	0.18	0.14	0.14
Health services	0.08	0.09	0.07	0.10	0.13	0.08
<i>Sub-total - Other sectors</i>	<i>-0.01</i>	<i>-0.01</i>	<i>-0.01</i>	<i>-0.01</i>	<i>-0.01</i>	<i>0.00</i>

Table A.8 Comparison of employment growth by sector – Cambridge Ahead vs. BRES data

	3yrs 2013-2016		6yrs 2010-2016	
	Cambridge Ahead data	BRES data	Cambridge Ahead data	BRES data
High-tech manufacturing	-2.1%	-7.3%	-0.1%	-8.9%
Life sciences manufacturing	0.3%	8.7%	3.9%	-19.9%
ICT	6.2%	4.1%	9.6%	4.5%
R&D	11.3%	9.1%	7.1%	2.6%
Knowledge intensive services	17.5%	6.7%	10.7%	9.6%
<i>Sub-total - KI sectors</i>	<i>6.0%</i>	<i>5.1%</i>	<i>6.9%</i>	<i>3.6%</i>
Primary	7.3%	-30.7%	7.9%	-10.9%
Other manufacturing	-1.0%	-2.7%	-12.5%	-2.9%
Property and construction	4.3%	4.4%	1.9%	-1.4%
Utilities	41.5%	1.6%	11.2%	1.9%
Publishing	5.6%	5.3%	-2.3%	2.6%
Transport and travel	15.1%	2.1%	3.3%	1.4%
Wholesale distribution	5.2%	-3.0%	1.4%	-5.0%
Retail distribution	6.9%	-1.4%	4.0%	-0.6%
Hotels, pubs and restaurants	13.3%	6.3%	13.5%	7.7%
Other business services	6.9%	-0.3%	5.6%	2.2%
Public services	66.3%	9.4%	75.0%	3.9%
Other Services	9.1%	19.4%	5.4%	5.9%
Education	3.0%	-1.2%	7.0%	0.6%
Finance and professional services	10.0%	4.0%	9.5%	5.6%
Health services	9.8%	4.3%	9.8%	3.6%
<i>Sub-total - Other sectors</i>	<i>6.6%</i>	<i>2.4%</i>	<i>4.7%</i>	<i>2.1%</i>
<i>Total Employment</i>	<i>6.4%</i>	<i>2.8%</i>	<i>5.6%</i>	<i>2.3%</i>

*Note:* For a detailed comparison of employment growth rates between Cambridge Ahead data and BRES data, please see the report titled “Comparison of the employment growth from the corporate database with BRES data”.

Table A.9 Three-year and six-year employment growth (% pa) by firm size – Detailed summary

	Cambridge		Combined Authority	
	3 years to 2016-17	6 years to 2016-17	3 years to 2016-17	6 years to 2016-17
<i>Micro firms</i>				
1 employee	-3.4%	1.3%	-2.2%	1.8%
2-4 employees	9.4%	8.8%	10.1%	9.9%
5-9 employees	13.3%	7.9%	10.7%	6.1%
<i>Small firms</i>				
10-49 employees	9.0%	4.6%	9.6%	6.7%
<i>Medium-sized firms</i>				
50-99 employees	2.3%	6.1%	-2.2%	1.4%
100-249 employees	0.8%	2.9%	3.7%	6.6%
<i>Large firms</i>				
> 250 employees	8.5%	6.8%	7.4%	6.2%
<i>All firms in area</i>	6.4%	5.6%	6.4%	6.0%

Table A.10 Three-year and six-year turnover growth (% pa) by firm size – Detailed summary

	Cambridge		Combined Authority	
	3 years to 2016-17	6 years to 2016-17	3 years to 2016-17	6 years to 2016-17
<i>Micro firms</i>				
1 employee	-2.9%	1.3%	-1.7%	1.3%
2-4 employees	18.2%	12.3%	12.3%	11.1%
5-9 employees	19.1%	13.9%	17.9%	10.3%
<i>Small firms</i>				
10-49 employees	8.9%	5.7%	12.1%	8.3%
<i>Medium-sized firms</i>				
50-99 employees	-4.6%	3.5%	-6.6%	-7.2%
100-249 employees	13.0%	0.0%	5.7%	6.3%
<i>Large firms</i>				
> 250 employees	15.1%	13.5%	6.4%	7.6%
<i>All firms in area</i>	<i>12.1%</i>	<i>8.8%</i>	<i>6.9%</i>	<i>6.5%</i>