

# Greater Cambridge Employment Update October 2021

## *Cambridge business now looking beyond the pandemic*

### Highlights:

#### *Overview*

- The current business environment makes it important to have timely data on employment changes. This is the fourth of a series of updates that bring up-to-date information about what is happening to corporate employment in the Greater Cambridge area.
- This update covers accounting year ends between October 2020 and April 2021 (the median year end is December 2020). It is based on a sample of companies covering 68% of corporate employment in Greater Cambridge. This median period captures the impact of the first and second Covid lockdowns in England and we compare it with the previous year before the pandemic began.
- Corporate employment growth in the Greater Cambridge area has slowed down from 4.8% in 2019-20 to 3.7% in 2020-21 – the latter is still a significant rate of growth considering the unprecedented challenges brought about by Covid. However, there is variation in these growth rates across both industry sectors and firm sizes.
- The slowdown in employment growth over the last two years is due to a weaker performance of non-KI sectors, suggesting that they have been hit the hardest by Covid-related restrictions.
- Whilst employment growth in KI sectors has remained unchanged at 8.0%, non-KI sectors have seen employment growth declining from 1.6% in 2019-20 to -0.8% in 2020-21. The rate of employment growth to 2021 in non-KI sectors has been negative in both Cambridge and South Cambridgeshire (-1.0% and -0.8%, respectively).

#### *Sectors*

- The Covid pandemic has had a varied impact across sectors. Sectors like Life Sciences are involved in supporting the fight against the virus and future outbreaks. Information technology and telecoms have benefited as a consequence of the increase in remote communications, gaming and internet security, which have more than offset the reduction of demand in other areas. Hospitality, travel and tourism, and some business services companies have been severely affected by lockdowns and other restrictions.

- Consistent with these observations, we find that ‘Life science and healthcare’ (+11.9%) and ‘Information technology and telecoms’ (+11.2%) have been the fastest growing sectors during 2020-21.
- Many service sectors have suffered reduced demand from their customers as a result of the impact of Covid on their businesses. Employment growth to 2021 has either declined or remained unchanged in seven of the nine non-KI sectors, with the largest decline occurring in ‘Other services’ – e.g. hotels, pubs and restaurants (-3.6%).
- ‘Life science and healthcare’ and ‘Information technology and telecoms’ have seen employment growth accelerating despite the Covid lockdowns. Among non-KI sectors, employment growth in 2020-21 has been higher than in 2019-20 only in ‘Manufacturing’ (i.e. low- and med-low-tech manufacturing) and ‘Education, arts, charities, social care’.
- The sectors with the largest fall in employment growth relative to 2019-20 are ‘Transport and travel’, ‘Other services’ and ‘Property and finance’. Employment growth has also slowed down in ‘High-tech manufacturing’, reaching -0.3% in 2020-21 compared with 0.7% in 2019-20.

#### *Size groups*

- One-person businesses have grown by 4.3% in the latest year, a rate that is in line with total employment growth across all size classes. However, their small size means that they have played a minor role in employment growth – only 113 extra employees compared with the addition of 2,614 employees by other businesses.
- Whilst 1-9 employee businesses tend to have been the fastest growing companies in sectors such as ‘Knowledge intensive services’, ‘Primary’ and ‘Other services’, businesses with 10+ employees have achieved particularly fast growth in ‘Information technology and telecoms’, ‘Life science and healthcare’ and ‘Education, arts, charities, social care’.
- The group of 10+ employee businesses tends to dominate employment changes given its large aggregate size. These businesses are significant contributors to the decline in employment observed in sectors such as ‘High-tech manufacturing’ (e.g. world-leading manufacturer of industrial inkjet printheads Xaar) and ‘Other business services’ (e.g. contract cleaning services company Nightingale Cleaning).
- Employment growth of 1-9 employee businesses has increased from 0.5% in 2019-20 to 1.9% in 2020-21. This growth has been driven primarily by KI sectors.

- The picture looks different for 10+ employee businesses. While employment growth has remained virtually unchanged for KI sectors, the drop of -1.5% in non-KI sectors has slowed down employment growth from 5.7% in 2019-20 to 4.1% in 2020-21.
- Employment growth to 2021 has held up better in KI sectors (+3,029 employees) than in non-KI sectors (-302 employees) and this is the case in both size classes.

#### *Comparison of employment and turnover growth*

- We complement the findings from the employment update by examining a sample of 185 companies with accounting year ends between October 2020 and April 2021 which have provided both employment and turnover data for the last three years.
- Within this group, we find that annual turnover growth fell rather modestly from 9.3% to 1.5% in the last year compared with a fall from 7.7% to 5.5% for employment. This fall in turnover growth was driven primarily by a weaker performance of non-KI sectors.
- The finding that turnover fared worse than employment partly reflects the role of the Government's furlough scheme in holding up employment in sectors with declining sales. Therefore, our results suggest that the end of this unprecedented support package could have implications for employment changes.
- However, the overall picture might be less positive than the modest decline in turnover that we have found for the corporate sector, since this decline is likely to be felt more by a number of in-person service businesses (e.g. consultants, hairdressers, gyms, pubs and restaurants) many of which are not incorporated.

#### *Stop press*

- We provide a snapshot of the impact of events in the Greater Cambridge corporate economy by considering a small sample of companies with interim results for the six-month periods ending between May 2021 and June 2021. The gain from focusing on interim results is that all of the activity reported in the accounts is since December 2020.
- Total turnover for this group of companies (all knowledge intensive) rose by 14% in their latest six months compared with a decline of 8% in the first half of 2020 (when the pandemic first hit).
- Therefore, we find evidence of a strong recovery and an upturn in business confidence.

### *Concluding remarks*

- Overall, the results highlight the continued strong performance of the Greater Cambridge corporate economy despite the unfolding of the Covid-19 pandemic. The impact of the first and second lockdowns in England on Greater Cambridge-based businesses was mitigated by the resilience of KI sectors, particularly the Life Science and ICT clusters. In turn, non-KI sectors have been hit the hardest by Covid-related restrictions and would have suffered larger falls in employment without the support of the furlough scheme.

## 1. Tracking Greater Cambridge corporate employment – the October 2021 update

The Centre for Business Research (CBR) at Cambridge University has developed three methods for tracking the employment and turnover of companies based in the wider Cambridge region (for further details see Appendix A4).

The first is the **annual draw** of all companies within the region.<sup>1</sup> It is comprehensive and also examines company births and deaths along with company location changes. This gold standard work does suffer from being less timely. The results of the 2020-21 annual draw will be made available in February 2022 and examine employment in the accounting years ending from 6<sup>th</sup> April 2020 to 5<sup>th</sup> April 2021. Since December and, to a lesser extent, March dominate companies' choice of year ends, the modal year end for the annual draw is early December 2020. For comparison, the ONS Business Register and Employment Survey (BRES) provisional annual employment data that will be published in November 2021 has September 2020 as its latest information (and we will have to wait another year before these are confirmed as final).

The second method involves an **update** of companies in the Greater Cambridge area achieved by sampling the annual corporate database in February, June and October. On each occasion a large sample is drawn (over 40% on average) of companies that have reported in recent months. This brings more timely information about what is happening to employment, but does not take account of births and deaths or location changes. For example, this October 2021 update includes companies with a financial year end between October 2020 and April 2021 and has a modal year end of December 2020. All of the companies have had some experience of the Covid epidemic, varying from nine to twelve months. The final update sample is 6,409 companies representing about 68% of corporate employment in the Greater Cambridge area.

We use this sample to provide estimates of employment for those companies with a year end between October 2020 and April 2021 that have not yet reported. We then use this larger sample to compare the performance of this sample in 2020/21 with their performance a year earlier (2019/20). On average the companies in the sample will reflect the impact Covid has had on their performance during the last eleven months of their financial year. A sample of this size, with good coverage of all sectors and company sizes, should give a very accurate picture of what is happening to continuing businesses in the region.

The third method has a much smaller sample since it also examines recent changes in turnover growth. This sample is restricted to 185 companies in Greater Cambridge with accounting years ending between October 2020 and April 2021 which have provided both employment and turnover data for 2018/19, 2019/20 and 2020/21. Since large businesses provide both employment and turnover figures, the sample is quantitatively significant, with total employment over 20,000 and total turnover of £7bn. This allows us to examine their employment and turnover growth in the last, Covid-affected, year with the growth one year earlier. The comparison between these two measures allows us to speculate about the impact of the furlough scheme on employment in the corporate sector in Greater Cambridge.

The fourth method is a more timely **snapshot** that draws on a very small sample and should be regarded as merely indicative. It considers only the largest businesses (top 100 by

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<sup>1</sup> The underlying core corporate database has been established and maintained with the ongoing support of Cambridge Ahead, and is currently sponsored by Arm, Marshall of Cambridge and the Cambridgeshire and Peterborough Combined Authority.

employment or turnover) and examines those that have filed interim reports for six-month periods ending between May 2021 and June 2021. The eleven companies in the snapshot sample do not provide employment figures in their interim reports, but together they represent a combined annual turnover of about £0.9bn. The gain from focusing on interim results for six-month periods is that all of the activity reported in these interim accounts is since December 2020.

The remainder of this report is structured as follows. Section 2 presents the results of the October 2021 employment update, drawing on a set of charts that we developed specifically for this study. The section examines growth of Greater Cambridge-based companies by area, industry sector and firm size. Section 3 complements the findings from Section 2 by discussing the results of the sample that includes both employment and turnover growth. Section 4 presents the findings of the snapshot sample, while Section 5 offers some concluding remarks. Appendices A1-A3 provide a summary of employment growth rates by sector for Greater Cambridge as a whole, as well as for Cambridge and South Cambridgeshire separately. Appendix A4 explains the methodology underpinning the Greater Cambridge Employment Update.

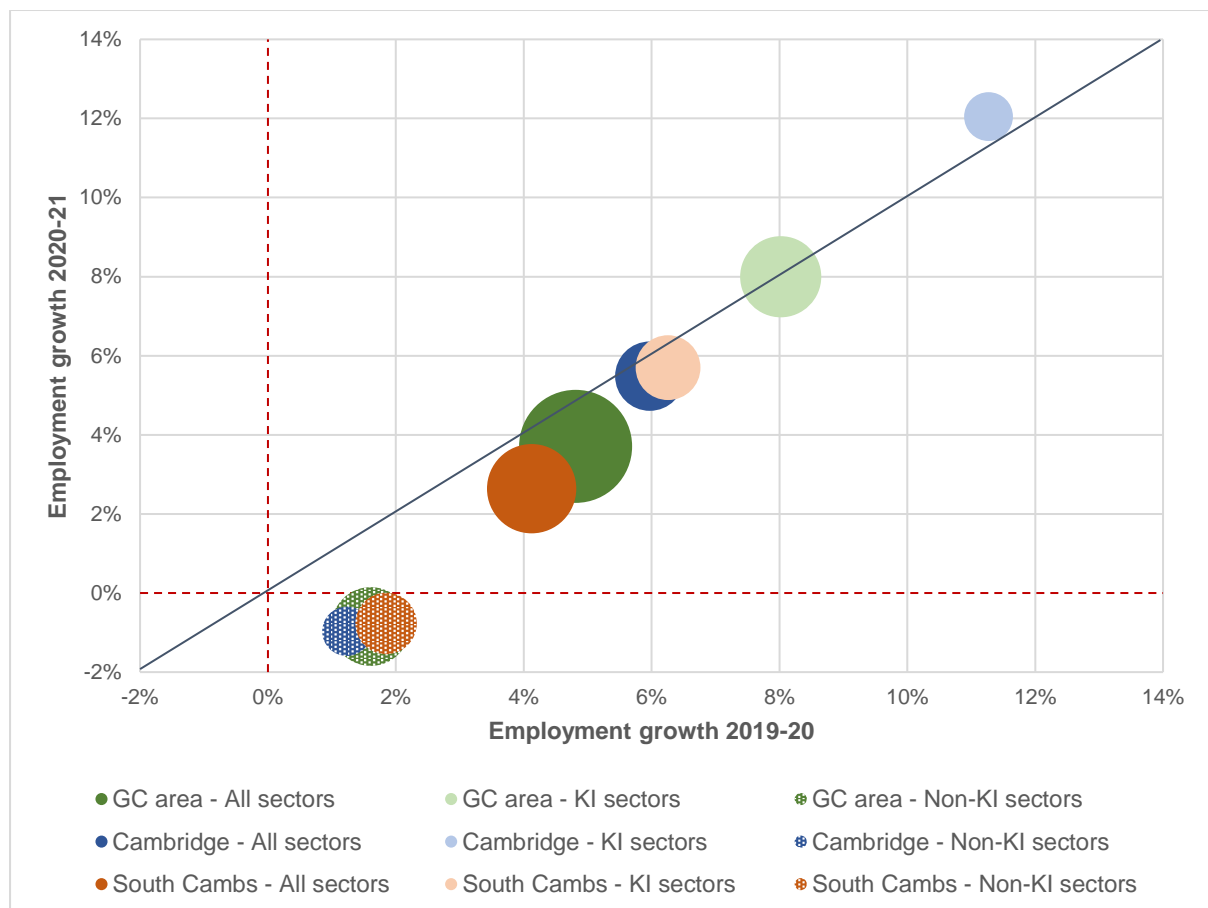
## 2. October 2021 employment update results

In this section, we present the results of the October 2021 employment update, the fourth of a series of updates aimed at providing a timely picture of the performance of the Greater Cambridge corporate economy. This update captures the impact of the first and second Covid lockdowns in England.

### 2.1. Analysis by area

Figure 1 depicts employment growth in KI and non-KI sectors during 2019-20 (horizontal axis) and 2020-21 (vertical axis) by area. It is drawn from a sample of companies with accounts for the years ending between October 2020 and April 2021. The position of the area marker relative to the 45° line indicates whether a given area has grown more or less fast than last year. It shows growth for KI, non-KI and all sectors for Cambridge, South Cambridgeshire and for Greater Cambridge overall. This chart allows us to compare the performance of each area over time. A summary of employment growth rates by sector for each area is reported in Appendices A1-A3.

**Figure 1 Employment growth by area – 2020-21 vs 2019-20**



*Note:* The size of each bubble is proportionate to the number of employees in 2019-20 on a continuous scale.  
*Source:* Cosh & Caselli, CBR.

Figure 1 portrays a picture of continued but lower overall employment growth in the Greater Cambridge area during 2020-21. Growth in the area has slowed down from 4.8% in 2019-20 to 3.7% in 2020-21, partly reflecting the impact of the first and second Covid lockdowns in England. However, this is still a significant rate of growth considering the unprecedented challenges brought about by Covid.

Our data show that this slowdown in total employment growth in the area is due to a weaker performance of non-KI sectors during the latest year compared with one year earlier. Whilst employment growth in KI sectors has remained unchanged at 8.0%, non-KI sectors have seen employment growth declining somewhat markedly from 1.6% in 2019-20 to -0.8% in 2020-21.

In each of the charts the size of the bubble is proportional to total employment in that area or sector. The bubble that identifies KI sectors is to the right of the bubble for non-KI sectors – showing that KI sectors have been growing faster than non-KI sectors.

Employment growth in Cambridge has slowed down slightly from 6.0% in 2019-20 to 5.5% in 2020-21. Employment growth in Cambridge has been almost twice that of South Cambridgeshire, which has exhibited a more marked slowdown from 4.1% to 2.6%.

The KI sectors have held up better in Cambridge, increasing from 11.3% growth in the previous year to 12.0% this year. This has been helped by the performance of Arm and Astrazeneca, who have added 435 and 355 employees respectively.

The growth of the KI sectors in South Cambridgeshire has decreased from 6.3% to 5.7%, despite the addition of 202 and 168 employees by GW Pharmaceuticals and CMR Surgical respectively.

We found a rather different picture for non-KI sectors, which have witnessed negative employment growth to 2021 in both districts.

Despite the strong performance of Fauna & Flora International (+109 employees) – the world's oldest international wildlife conservation organisation based at The David Attenborough Building in central Cambridge, the slowdown in employment by several other companies (e.g. Atkins Gregory, a company providing contract cleaning services to the commercial and industrial sectors) has brought employment growth in non-KI sectors in Cambridge to -1.0% in the latest year compared with 1.2% one year earlier.

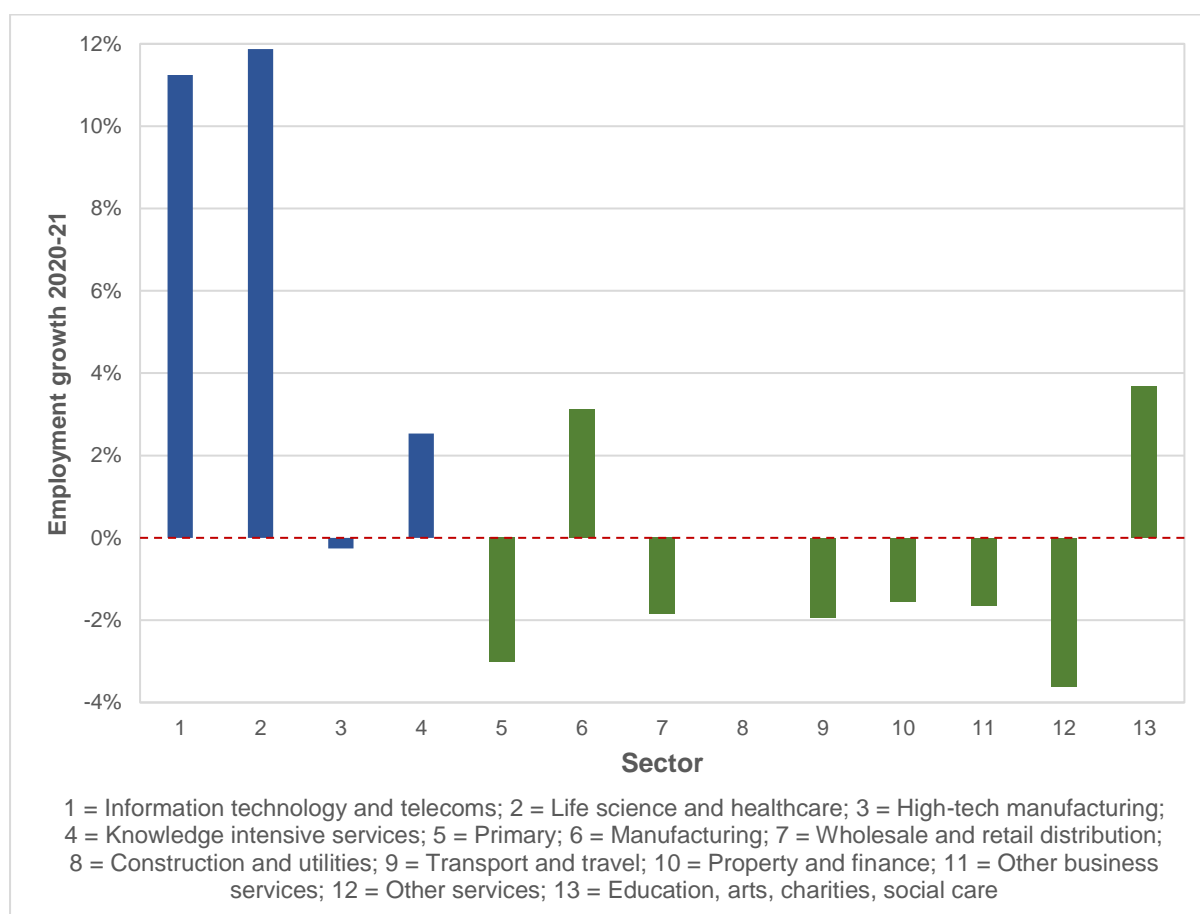
Non-KI sectors in South Cambridgeshire have shown a similar decline from 1.8% in 2019-20 to -0.8% in 2020-21, with companies such as Marshall Motor Holdings' employees in the Cambridge area (-44 employees) and Nightingale Cleaning (-29 employees) – a leading provider of commercial cleaning and other specialist services – experiencing a decrease in their employee numbers.

## **2.2. Analysis by sector**

Figure 2 compares the 13 industry sectors used in the analysis based on their employment growth during 2020-21 (on average the year to December 2020), the latest year covered by this work. It is drawn from a sample of companies with accounts for the years ending between October 2020 and April 2021.



**Figure 2 Employment growth 2020-21 by sector in the Greater Cambridge area**



*Note:* Blue bars identify KI sectors, whereas green bars are for non-KI sectors.

*Source:* Cosh & Caselli, CBR.

'Life science and healthcare' (+11.9%) and 'Information technology and telecoms' (+11.2%) have been the fastest growing sectors during 2020-21.

The strong performance of these two KI sectors despite the unfolding of the pandemic testifies to the resilience of the Life Science and ICT clusters in Greater Cambridge. Whilst some companies in these sectors have been hampered by Covid (e.g. Bourn Bioscience and Quixant), others have positively benefited from it (e.g. AstraZeneca).

'High-tech manufacturing' is the only KI sector to have experienced negative employment growth in 2020-21. This drop, which is due primarily to Xaar ceasing its Thin Film activities in September 2019, is in stark contrast to the stable performance of the low- and med-low-tech manufacturing sectors ('Manufacturing') – up by 3.1% from the previous year. This has been helped by the 4.1% employment growth of Cambridge University Press.

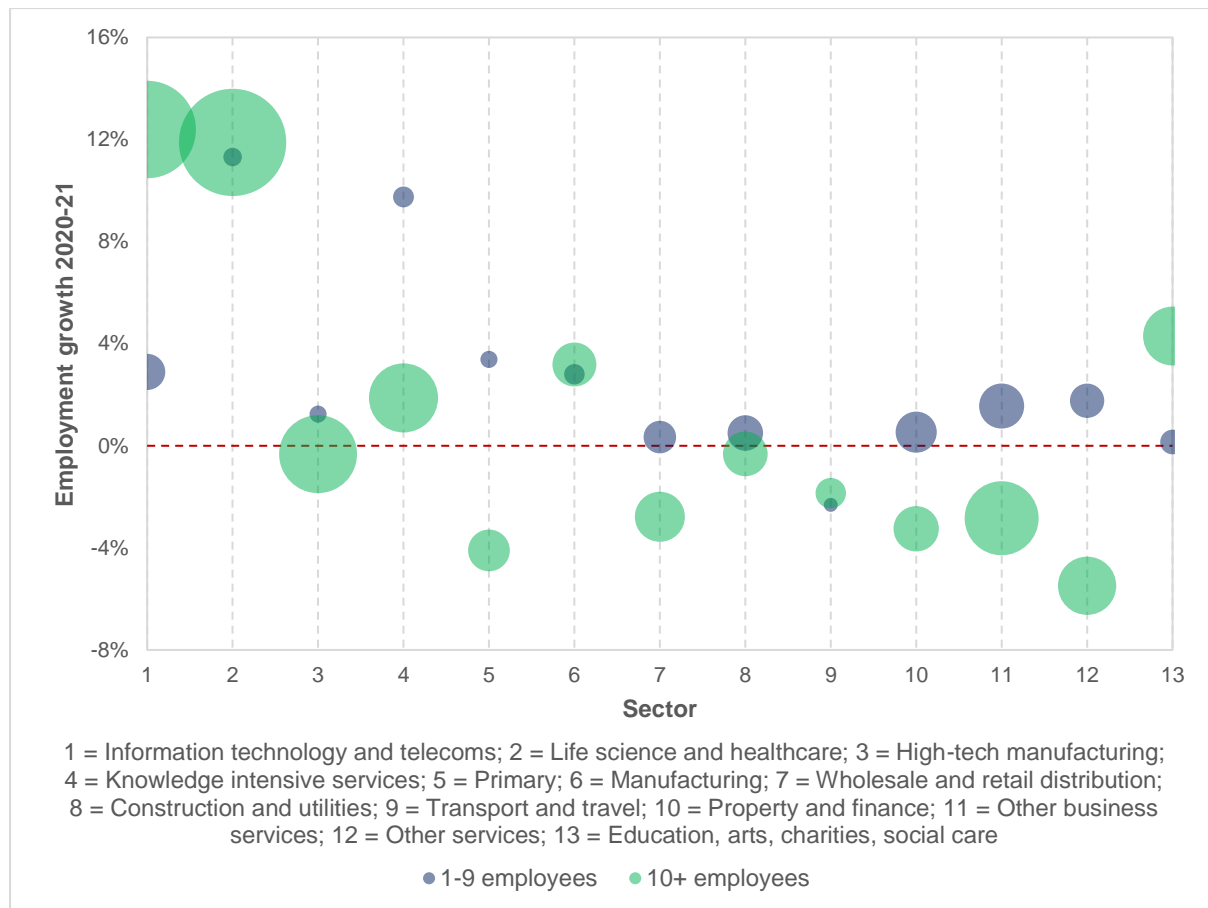
Employment growth to 2021 has either declined or remained unchanged in seven of the nine non-KI sectors. 'Other services' (-3.6%) – which includes hospitality businesses – 'Primary' (-3.0%), 'Transport and travel' (-1.9%) and 'Wholesale and retail distribution' (-1.9%) have seen the largest decline in employment growth.

The 'Education, arts, charities, social care' sector has achieved the fastest rate of growth among non-KI sectors, largely reflecting the increase in employee numbers by Fauna & Flora International (+109 employees).

Employment growth has been faster in KI sectors (+8.0%) than in non-KI sectors (-0.8%). Among the fastest growing KI companies are CMR Surgical (+44.6%), GW Pharmaceuticals (+23.9%) and Amazon's Evi Technologies (+23.6%).

Figure 3 expands on the results from Figure 2 presented above by providing a breakdown of employment growth to 2021 by both industry sector and firm size. It is drawn from a sample of companies with accounts for the years ending between October 2020 and April 2021. Companies were assigned to two size classes: 1-9 employees; 10+ employees.

**Figure 3 Employment growth 2020-21 by sector and firm size in the Greater Cambridge area**



*Note:* The size of each bubble is proportionate to the number of employees in 2019-20 on a continuous scale.  
*Source:* Cosh & Caselli, CBR.

The results from Figure 2 pointed to 'Life science and healthcare' and 'Information technology and telecoms' as the fastest growing sectors during 2020-21, whereas negative employment growth was observed for several non-KI sectors. Figure 3 qualifies these results by suggesting that there is variation in employment growth rates across both industry sectors and firm sizes.

Looking at percentage growth rates for small businesses can be problematic. Most small businesses do not grow and the median growth is uninformative at 0%. However, a few small businesses can grow very fast in percentage terms (e.g. from 2 to 8 employees). It is these rare businesses that create the overall growth of smaller businesses.

Businesses with 1-9 employees tend to have been the fastest growing companies in sectors such as 'Knowledge intensive services', 'Primary' and 'Other services'. However, the

relatively small size of their bubbles shows that their impact on total employment growth has been somewhat limited.

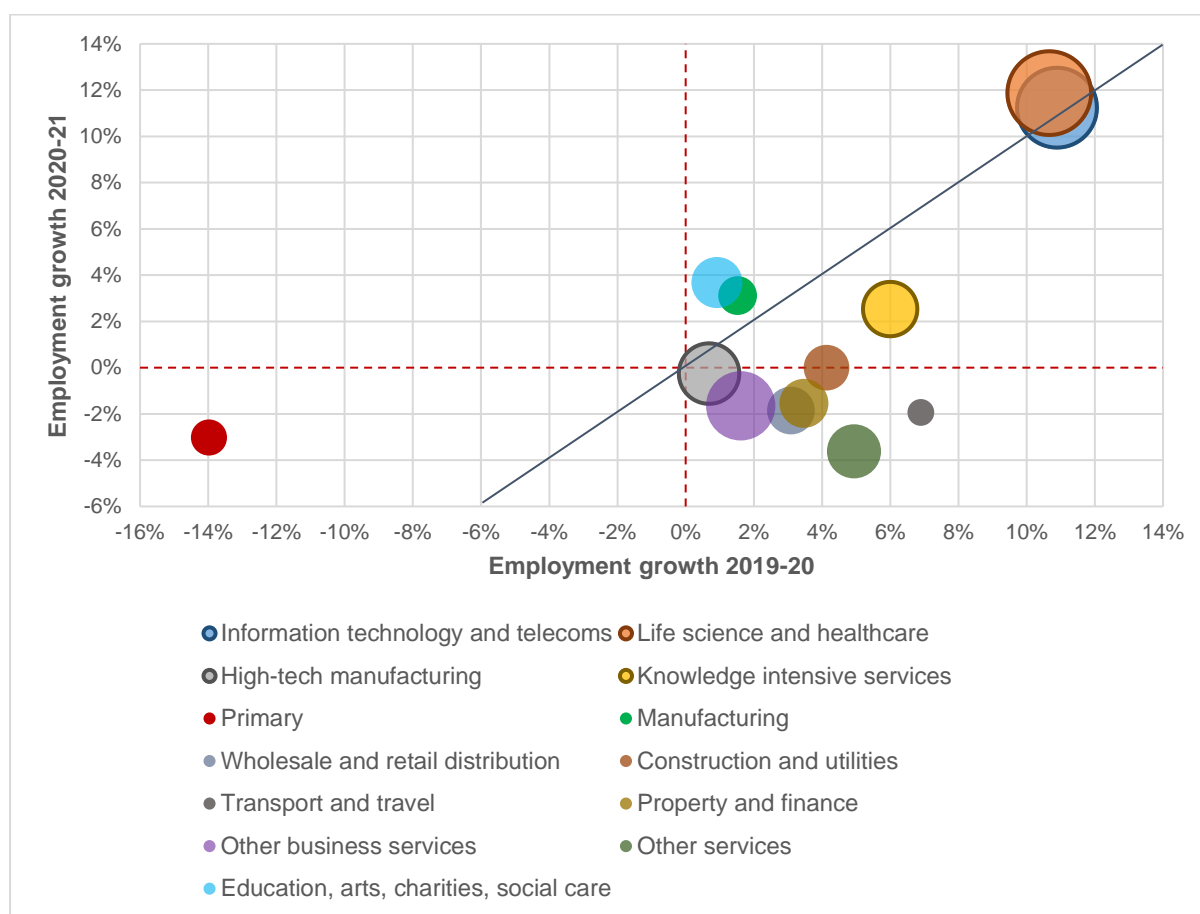
Good examples of fast growth in the 1-9 employee businesses are Riverlane, a University of Cambridge spinout that develops software and algorithms for quantum computers, and Omnigen Biodata, an R&D start-up building real-world health and genomic data.

In turn, 10+ employee businesses have achieved particularly fast growth in 'Information technology and telecoms', 'Life science and healthcare' and 'Education, arts, charities, social care'.

The group of 10+ employee businesses tends to dominate employment changes given its large aggregate size. These businesses are significant contributors to the decline in employment observed in sectors such as 'High-tech manufacturing' (e.g. world-leading manufacturer of industrial inkjet printheads Xaar) and 'Other business services' (e.g. contract cleaning services company Nightingale Cleaning) – which includes employment agencies, legal services providers and other business support services companies.

Figure 4 compares the 13 industry sectors according to their employment growth during 2019-20 (horizontal axis) and their employment growth during 2020-21 (vertical axis). It is drawn from a sample of companies with accounts for the years ending between October 2020 and April 2021. The position of the sector marker relative to the 45° line shows whether the sector has grown more or less fast than last year. This chart allows us to compare the performance of sectors over time.

**Figure 4 Employment growth by sector in the Greater Cambridge area – 2020-21 vs 2019-20**



*Note:* The size of each bubble is proportionate to the number of employees in 2019-20 on a continuous scale. Bubbles with an outline identify KI sectors.  
*Source:* Cosh & Caselli, CBR.

‘Life science and healthcare’ and ‘Information technology and telecoms’, the largest KI sectors in Greater Cambridge, have seen employment growth accelerating during 2020-21 despite the Covid lockdowns.

Employment growth in ‘Life science and healthcare’ has reached 11.9% in 2020-21 up from 10.7% in 2019-20, driven by the strong performance of CMR Surgical (+44.6%), GW Pharmaceuticals (+23.9%) and Astrazeneca (+11.4%). This result is all the more encouraging if one considers that our October 2021 Update sample covers almost 80% of corporate employment in the Life Science sector in Greater Cambridge (see the fourth data column of Appendices A1-A3).

Similar figures are found for ‘Information technology and telecoms’, where employment growth has gone up from 10.9% in 2019-20 to 11.2% in 2020-21. Among the companies contributing to this growth are Amazon’s Evi Technologies (+23.6%) and Arm (+17.9%).

‘Manufacturing’ (i.e. low- and med-low-tech manufacturing) and ‘Education, arts, charities, social care’ are the only two non-KI sectors to have witnessed an increase in employment growth relative to 2019-20.

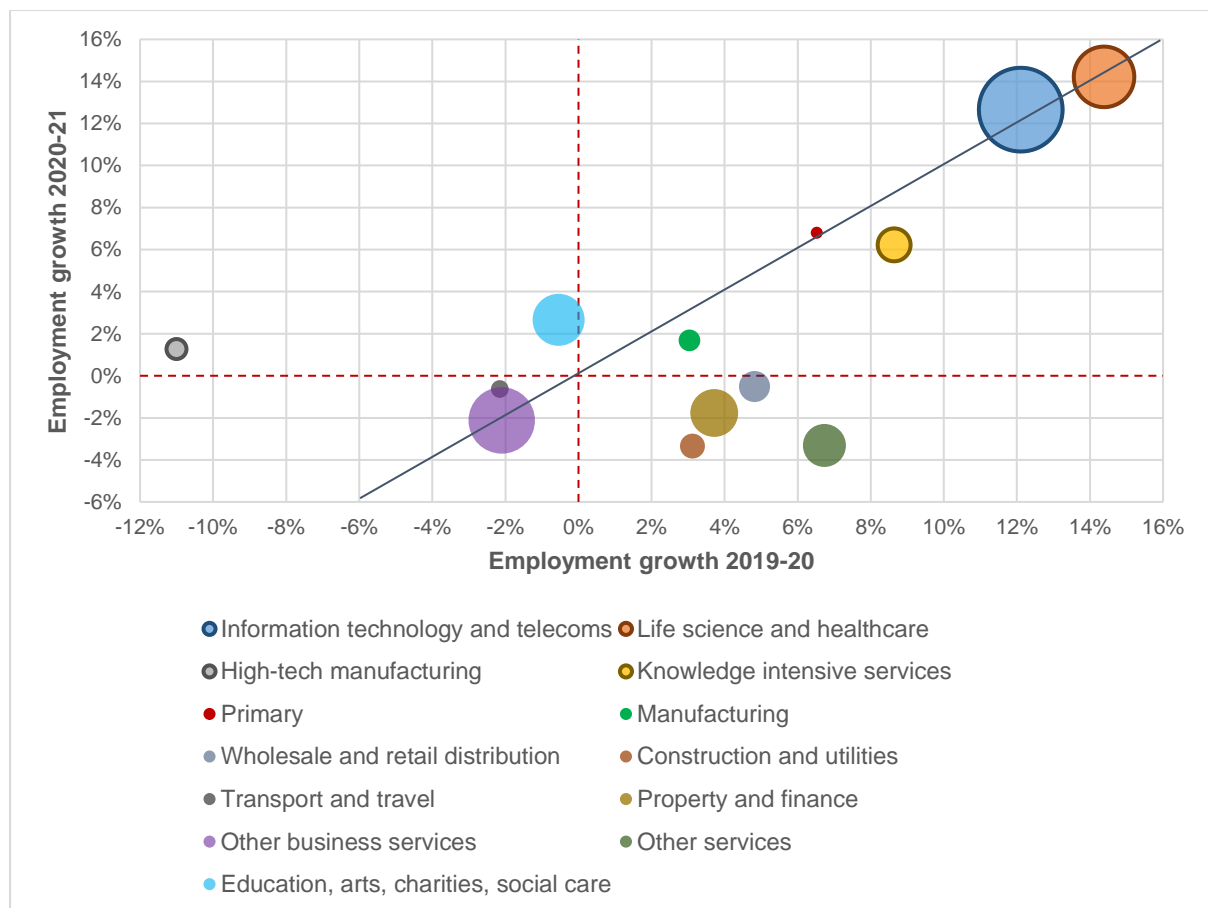
The sectors with the largest fall in employment growth compared with 2019-20 are ‘Transport and travel’, ‘Other services’, ‘Property and finance’ and ‘Wholesale and retail distribution’, suggesting that non-KI sectors have been hit the hardest by Covid restrictions.

A slowdown in employment growth has also occurred for 'Knowledge intensive services', which includes a number of engineering and science consultancies (e.g. Cambridge Consultants, Science Group and Z-Tech Control Systems). Employment growth in the sector has gone down to 2.5% in the latest year from 6.0% one year earlier. The Covid-19 pandemic might pose some challenges for 'Knowledge intensive services' businesses, as clients tighten their belts as a consequence of the impact of Covid on their businesses.

Employment in the 'Primary' sector has fallen by -3.0% during 2020-21, after experiencing a larger drop of -14.0% during 2019-20. This drop was caused by a considerable decline in the number of staff employed by leading agricultural business Spearhead International over the course of 2019, following the divestiture of some of its Poland operations and severe drought affecting crop yields. Spearhead International is also behind the fall in employment growth observed for the 'Primary' sector in the latest year.

Figure 5 compares the 13 industry sectors based on their employment growth during 2019-20 (horizontal axis) and their employment growth during 2020-21 (vertical axis), this time focusing on Cambridge. It is drawn from a sample of companies with accounts for the years ending between October 2020 and April 2021. The position of the sector marker relative to the 45° line shows whether the sector has grown more or less fast than last year. This chart allows us to compare the performance of sectors over time.

**Figure 5 Employment growth by sector in Cambridge – 2020-21 vs 2019-20**



*Note:* The size of each bubble is proportionate to the number of employees in 2019-20 on a continuous scale. Bubbles with an outline identify KI sectors.

*Source:* Cosh & Caselli, CBR.

Employment growth in Cambridge has been driven by the strong performance of 'Life science and healthcare' and 'Information technology and telecoms', which have achieved virtually the same growth rate during 2019-20 and 2020-21.

Employment growth has been particularly fast in 'Life science and healthcare', where it has reached 14.2% in the latest year (close to the 14.4% rate observed one year earlier). This largely reflects the addition of 355 employees by Astrazeneca (+11.4% on the previous year).

'Information technology and telecoms' has seen employment growing by 12.7% in 2020-21, up slightly from 2019-20 (12.1%). Amazon's Evi Technologies (+23.6%) and Arm (+17.9%) have been the main contributors to this growth.

Employment growth has remained high, although somewhat lower in the latest year relative to one year earlier, also in 'Knowledge intensive services' (6.2% and 8.6%, respectively).

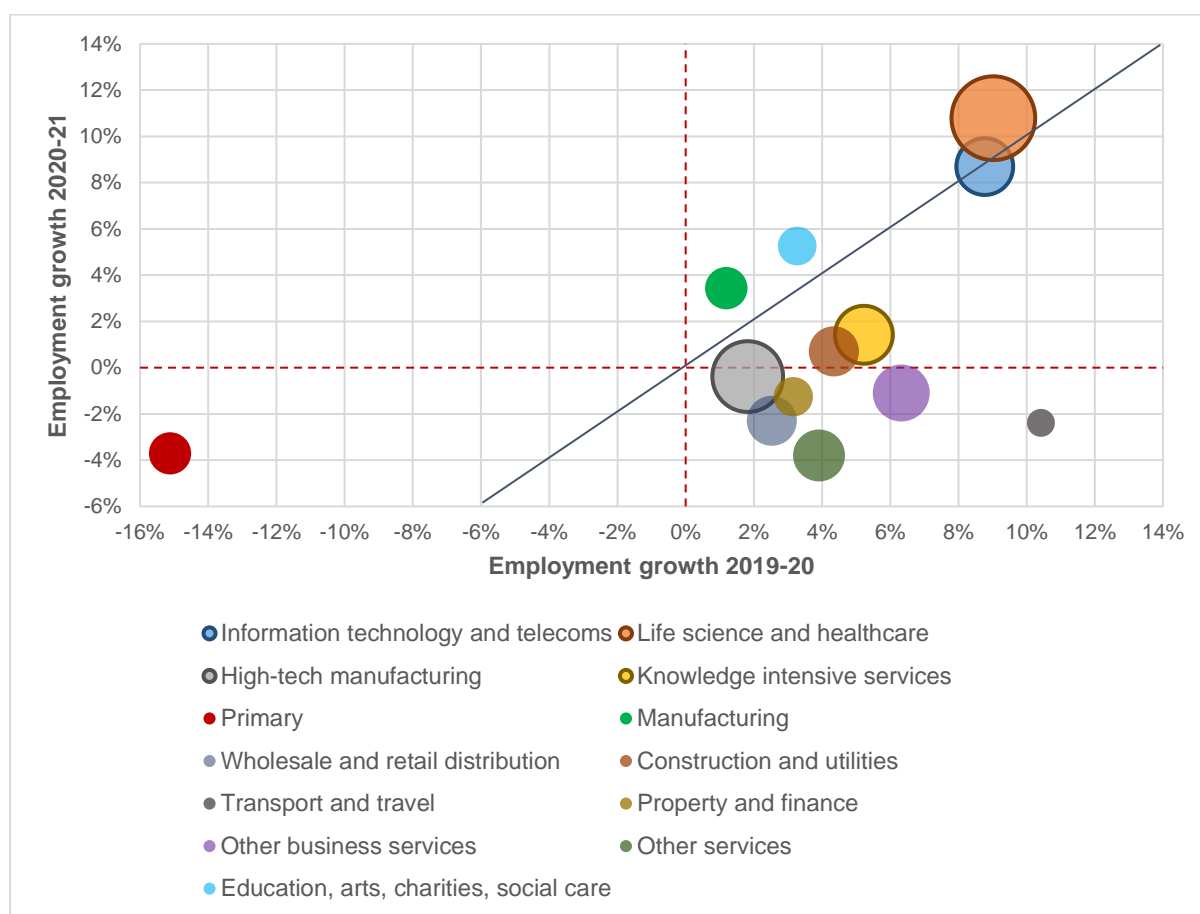
After a decline of -11.0% in 2019-20 – caused primarily by digital inkjet printers manufacturer Inca Digital Printers and leading manufacturer of electrical switches and connectors Bulgin restructuring their business – 'High-tech manufacturing' has recorded a growth rate of 1.3% in 2020-21.

Among non-KI sectors, the only sector to have experienced a noticeable increase in employment growth in 2020-21 compared with 2019-20 is 'Education, arts, charities, social care' (2.7% and -0.5%, respectively). Employment growth in the sector has benefited from the increase in employee numbers by Fauna & Flora International (+109 employees).

Conversely, we find evidence of a considerable slowdown in employment growth in several non-KI sectors. 'Other services' (-3.3% in 2020-21 compared with 6.7% in 2019-20), 'Construction and utilities' (-3.3% and 3.1%, respectively), 'Property and finance' (-1.8% and 3.7%, respectively) and 'Wholesale and retail distribution' (-0.5% and 4.8%, respectively) have all seen their employment growth turning negative in 2020-21.

Figure 6 focuses on South Cambridgeshire and compares the 13 industry sectors based on their employment growth during 2019-20 (horizontal axis) and their employment growth during 2020-21 (vertical axis). It is drawn from a sample of companies with accounts for the years ending between October 2020 and April 2021. The position of the sector marker relative to the 45° line shows whether the sector has grown more or less fast than last year. This chart allows us to compare the performance of sectors over time.

**Figure 6 Employment growth by sector in South Cambridgeshire – 2020-21 vs 2019-20**



*Note:* The size of each bubble is proportionate to the number of employees in 2019-20 on a continuous scale. Bubbles with an outline identify KI sectors.  
*Source:* Cosh & Caselli, CBR.

Similar to Cambridge, South Cambridgeshire-based companies in ‘Life science and healthcare’ and ‘Information technology and telecoms’ have shown robust employment growth in the year to December 2020.

Employment growth to 2020-21 in ‘Life science and healthcare’ has been faster than in the previous year (10.8% and 9.0%, respectively), driven by a considerable increase in the number of staff employed by GW Pharmaceuticals (+202 employees) and CMR Surgical (+168 employees). Overall, the sample for our October 2021 Update represents over three-quarters of corporate employment in the Life Science sector in South Cambridgeshire.

‘Information technology and telecoms’ has reached 8.7% employment growth in 2020-21, the second highest rate after ‘Life science and healthcare’. Behind this fast employment growth is the increase of 93 employees by Huawei Technologies Research & Development, Huawei’s contract R&D provider for the UK based on Cambridge Science Park.

As is the case for Cambridge, employment growth in ‘Education, arts, charities, social care’ has accelerated from 3.3% in 2019-20 to 5.3% in 2020-21. ‘Manufacturing’ is the only other non-KI sector to have witnessed faster employment growth in the latest year relative to one year earlier (3.4% and 1.2%, respectively).

The results for the ‘Manufacturing’ sector, which includes low- and med-low-tech manufacturing, contrast with those for the ‘High-tech manufacturing’ sector. Employment

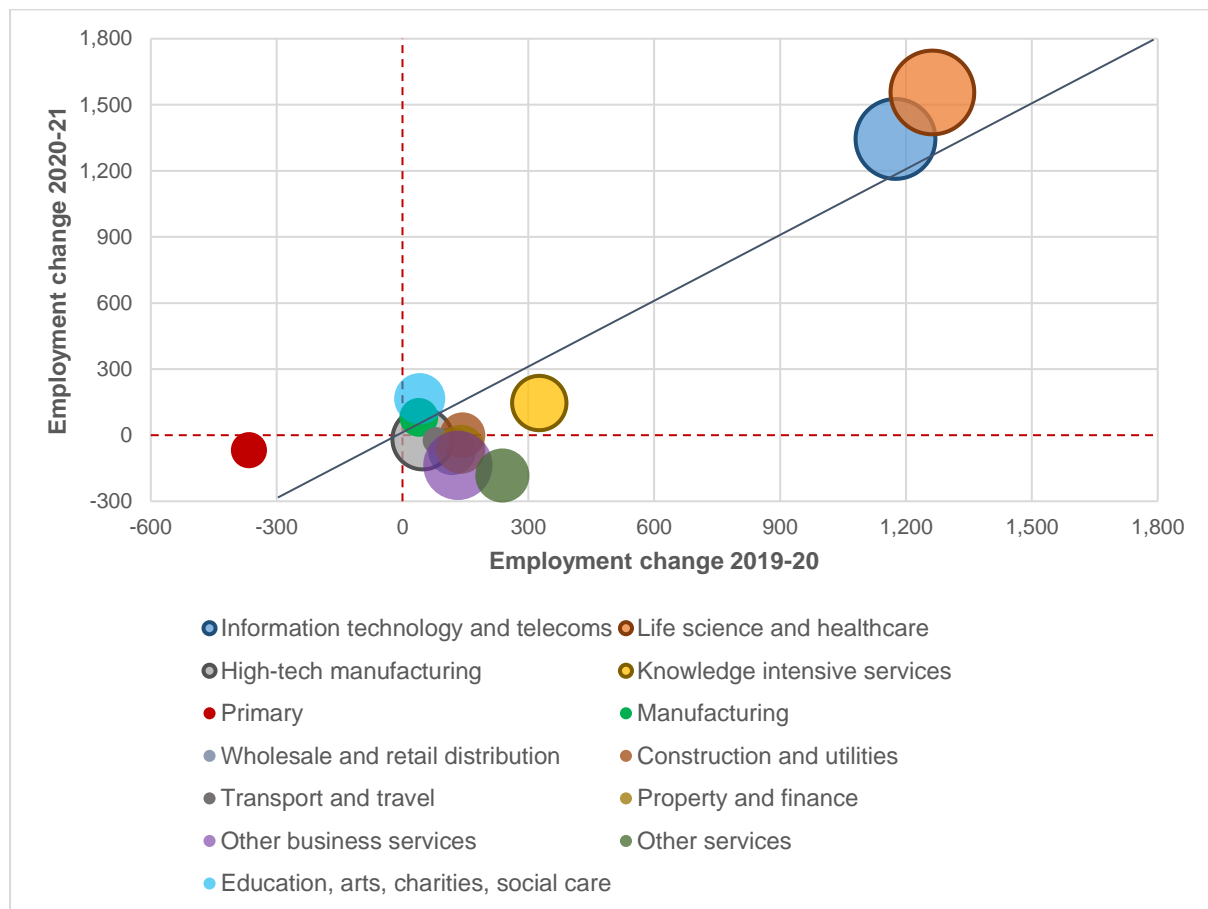
growth of 'High-tech manufacturing' companies has dropped from 1.8% in 2019-20 to -0.4% in 2020-21, largely because of a fall in the number of employees by Xaar (-72 employees).

The largest slowdown in employment growth is observed in 'Transport and travel' (-2.4% in 2020-21 compared with 10.4% in 2019-20), 'Other services' (-3.8% and 3.9%, respectively) and 'Other business services' (-1.1% and 6.3%, respectively).

Two other non-KI sectors that have exhibited negative growth in 2020-21 are 'Primary' and 'Wholesale and retail distribution'. After suffering a fall of -15.1% during 2019-20 as a result of divestitures made by Spearhead International, employment in the 'Primary' sector has gone down by -3.7% during 2020-21 – reflecting a continued decline in Spearhead's employee numbers. In turn, employment growth in 'Wholesale and retail distribution' has dropped by -2.3%, mainly due to a decrease of 44 employees by Marshall Motor Holdings.

Figure 7 offers another comparison of the 13 industry sectors, this time looking at their employment change (rather than their employment growth) during 2019-20 (horizontal axis) and 2020-21 (vertical axis). It is drawn from a sample of companies with accounts for the years ending between October 2020 and April 2021. The position of the sector marker relative to the 45° line indicates whether employment change in the sector has been higher or lower than last year. Similar to Figures 4-6, this chart allows us to compare the performance of sectors over time.

**Figure 7 Employment change by sector in the Greater Cambridge area – 2020-21 vs 2019-20**



*Note:* The size of each bubble is proportionate to the number of employees in 2019-20 on a continuous scale. Bubbles with an outline identify KI sectors.

*Source:* Cosh & Caselli, CBR.



Since % changes can sometimes be misleading, Figure 7 examines changes in employment in terms of the number of people employed. In this case, the findings from Figure 7 largely confirm those from Figure 4.

The performance of the 'Life science and healthcare' and 'Information technology and telecoms' sectors stands out when examined in terms of absolute employment changes.

There has been a change of +1,556 employees in 'Life science and healthcare' in 2020-21 compared with +1,263 in 2019-20, almost half of which is associated with increased employee numbers at Astrazeneca (+355 employees), GW Pharmaceuticals (+202 employees) and CMR Surgical (+168 employees).

'Information technology and telecoms' has had the second largest employment change in 2020-21 after 'Life science and healthcare', adding 1,345 employees in the latest year up from 1,175 one year earlier. Arm (+435 employees) and Amazon's Evi Technologies (+111 employees) have contributed over a third of the employment change to 2021.

Among non-KI sectors, employment change in 2020-21 has been higher than employment change in 2019-20 only in 'Manufacturing' and 'Education, arts, charities, social care'.

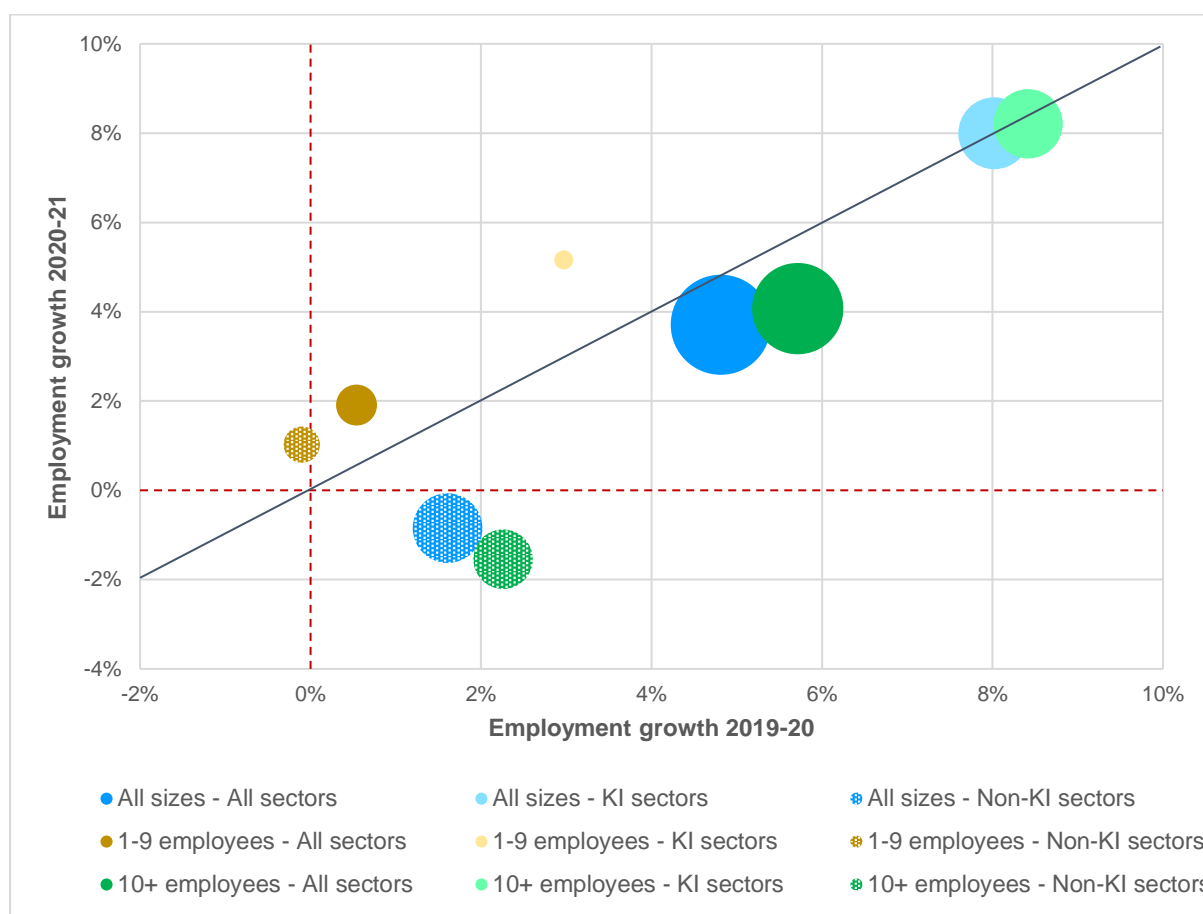
All of the other non-KI sectors – except for 'Construction and utilities', where employment has remained stable over the last two years – have reported a negative employment change in 2020-21. The largest drop is observed in 'Other services' (-183 employees), 'Other business services' (-137 employees) and 'Wholesale and retail distribution' (-73 employees).

Collectively, KI sectors have added 3,029 employees during 2020-21, whilst non-KI sectors have lost 302 employees as the pandemic unfolded.

### **2.3. Analysis by firm size**

Figure 8 shows employment growth in KI and non-KI sectors during 2019-20 (horizontal axis) and 2020-21 (vertical axis) by firm size. It is drawn from a sample of companies with accounts for the years ending between October 2020 and April 2021. The position of the size marker relative to the 45° line indicates whether the size class has grown more or less fast than last year. This chart allows us to compare the performance of size classes over time.

**Figure 8 Employment growth by firm size in the Greater Cambridge area – 2020-21 vs 2019-20**



*Note:* The size of each bubble is proportionate to the number of employees in 2019-20 on a continuous scale.  
*Source:* Cosh & Caselli, CBR.

Employment growth of 1-9 employee businesses has increased from 0.5% in 2019-20 to 1.9% in 2020-21. This growth has been driven primarily by KI sectors, which have seen employment growing by 5.2% in the latest year compared with 3.0% one year earlier. Non-KI sectors in this size class have grown less fast than KI sectors, reaching 1.0% in 2020-21 up from -0.1% in 2019-20.

The picture looks different for 10+ employee businesses. While employment growth has remained virtually unchanged for KI sectors (8.2% in the latest year compared with 8.4% in the previous year), the drop of -1.5% in non-KI sectors has slowed down employment growth in this size class from 5.7% in 2019-20 to 4.1% in 2020-21.

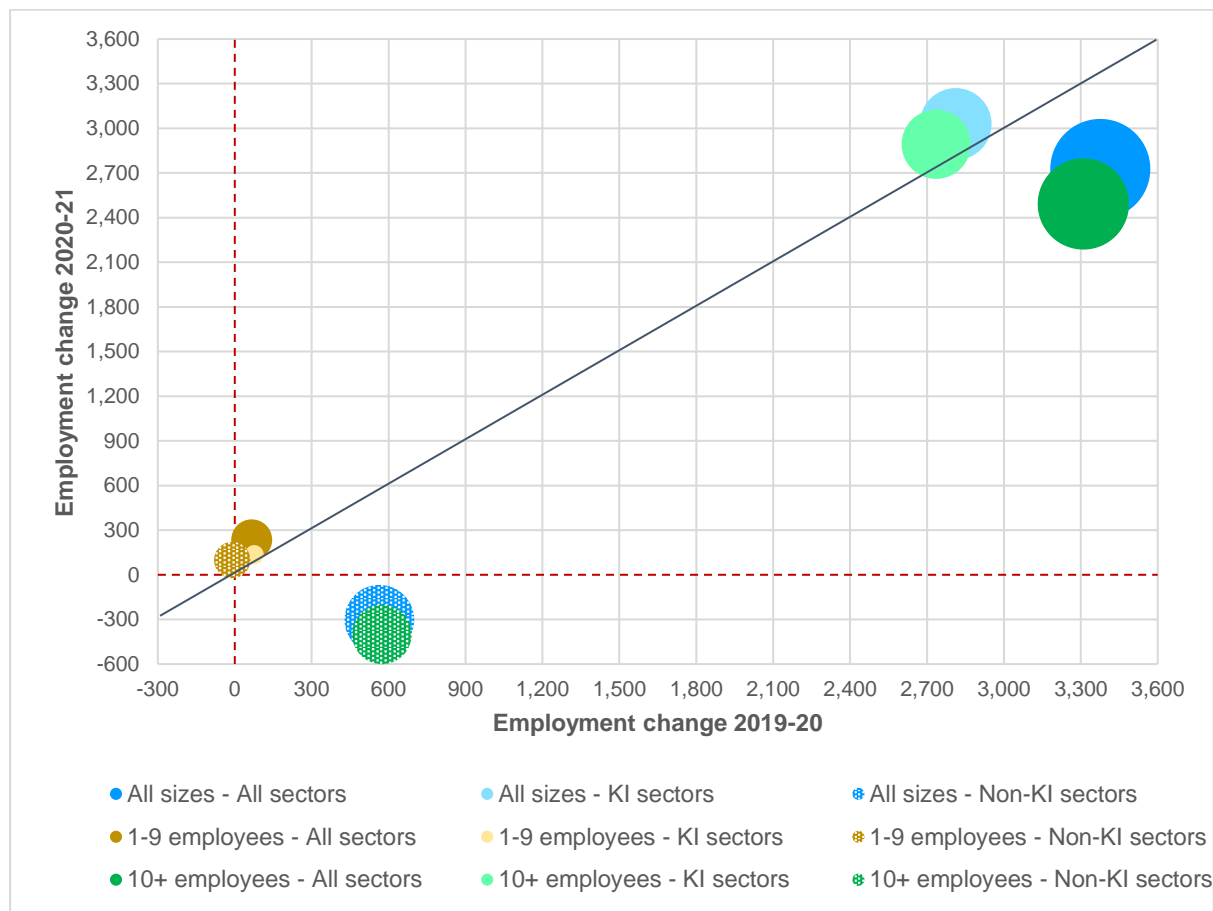
Employment growth to 2021 has held up better in KI sectors than in non-KI sectors in both size classes.

Given the large aggregate size of non-KI businesses employing ten people or more, corporate employment in Greater Cambridge has been growing less fast – albeit still significantly given the restrictions associated with the first and second Covid lockdowns in England – during 2020-21 (+3.7%) compared with 2019-20 (+4.8%).

Figure 9 compares size classes based on their employment change during 2019-20 (horizontal axis) and 2020-21 (vertical axis). It is drawn from a sample of companies with accounts for the years ending between October 2020 and April 2021. The position of the size marker relative to the 45° line indicates whether employment change in the size class

has been higher or lower than last year. Similar to Figure 8, this chart allows us to compare the performance of size classes over time.

**Figure 9 Employment change by firm size in the Greater Cambridge area – 2020-21 vs 2019-20**



*Note:* The size of each bubble is proportionate to the number of employees in 2019-20 on a continuous scale.  
*Source:* Cosh & Caselli, CBR.

The picture obtained from employment change data largely supports the conclusions drawn from employment growth data.

Employment change at 1-9 employee businesses in 2020-21 (+235 employees) has been almost four times higher than the employment change in 2019-20 (+66 employees). This larger employment change has originated primarily in KI sectors (+136 employees in the most recent year compared with +76 one year earlier).

On the contrary, the employment change in 2020-21 (+2,492 employees) has been lower than employment change in 2019-20 (+3,310 employees) for businesses with 10+ employees. This reduction has been caused by non-KI sectors, which have seen employment change falling from +574 in 2019-20 to -401 in 2020-21. Employment change in KI sectors has been +2,893 in the latest year up slightly from +2,736 in the previous year.

Overall, corporate employment change to 2021 across all size classes has been +2,727 compared with +3,376 in 2019-20.

The next section presents the results of the sample that includes both employment and turnover growth.

### 3. October 2021 employment and turnover update results

So far we have examined only changes in employment because of better sample coverage, but we have turnover data for a sufficiently large subset of the companies to make turnover analysis worthwhile. We look at Greater Cambridge-based companies with three years of actual turnover and employment data, which gives us a sample of 185 companies (representing over 27% of total employment of the companies analysed in Section 2). Table 1 provides a comparison of employment and turnover growth rates over the past two years for this group of companies.

**Table 1 Comparison of employment and turnover growth rates over the past two years in the Greater Cambridge area (October 2021 Update)**

Greater Cambridge area Sample of companies with both employment and turnover for the last three years	Turnover growth %pa		Employment growth %pa	
	2020	2019	2020	2019
<b>ALL COMPANIES</b>				
Number of companies	185	185	185	185
Totals in 2020 and 2019	£6,977m	£6,871m	20,616	19,539
Median growth	4.1%	8.0%	0.0%	3.8%
Weighted average growth	1.5%	9.3%	5.5%	7.7%
<b>KI COMPANIES</b>				
Number of companies	95	95	95	95
Totals in 2020 and 2019	£5,907m	£5,763m	15,548	14,621
Median growth	4.3%	8.0%	1.7%	7.3%
Weighted average growth	2.5%	9.6%	6.3%	9.1%
<b>NON-KI COMPANIES</b>				
Number of companies	90	90	90	90
Totals in 2020 and 2019	£1,071m	£1,108m	5,068	4,918
Median growth	2.3%	7.3%	0.0%	0.0%
Weighted average growth	-3.4%	7.4%	3.1%	4.0%

Source: Cosh & Caselli, CBR.

Total employment of these 185 companies grew by 5.5% in 2020 down from 7.7% in 2019 – still surprisingly fast considering the restrictions associated with the first Covid lockdown in England. This slowdown in total employment growth is in line with the pattern observed for the broader update sample, where employment increased by 3.7% in the latest year relative to 4.8% one year earlier. This sample of companies has a much higher proportion of KI companies than the update sample reported in Section 2.

Employment growth for these companies providing both employment and turnover data was notably stronger among the 95 KI companies, which saw employment increasing by 6.3% during 2020 compared with a 3.1% rate for the 90 non-KI companies.

These results confirm our findings for the larger update sample, which revealed that the growth of KI sectors remained significantly faster than that of non-KI sectors (+12.0% in Cambridge and +5.7% in South Cambridgeshire).

The effects of the pandemic on employment have been masked to some extent by the provision of furlough support. Business turnover provides a more direct measure of the impact of the pandemic on businesses and of what might have happened to employment in the absence of the furlough scheme. The results presented in Table 1 enable us to compare what has happened to turnover and employment in the last year. We can see that turnover fared worse than employment, partly reflecting the role of the Government's furlough scheme in holding up employment in sectors with declining sales. However, the decline in turnover for the corporate sectors represented by this subset of the companies is not as large as one may expect given the unfolding of the pandemic. Turnover growth fell from 9.3% in 2019 to 1.5% in 2020, with both KI and non-KI sectors exhibiting lower turnover growth in the latest year compared with one year earlier. This fall in turnover growth was driven primarily by a weaker performance of non-KI sectors, where turnover fell by 3.4% in 2020 compared with a growth of 7.4% in 2019.

For the whole sample of 185 companies, turnover growth in 2019 was 9.3%, but employment growth was 7.7%. In the latest year turnover grew by 1.5% so we would have expected employment to have fallen by more than that due to productivity growth in normal circumstances. Instead, employment in this sample grew by 5.5% so we can infer a powerful impact of the furlough scheme on holding up employment. The unwinding of that scheme will lead to employment loss in the corporate sector unless there is a rapid upturn in demand.

In addition, the decline in demand during the pandemic was felt more strongly by a number of in-person service businesses (e.g. consultants, hairdressers, gyms, pubs and restaurants), many of which are not incorporated. The impact of the pandemic on national chain restaurants and retailers such as Nando's and Debenhams is also not reflected in our figures. Therefore, the overall picture might be less positive than we have found for the Greater Cambridge corporate sector alone.

We now turn to the results of the October 2021 snapshot.

## 4. October 2021 snapshot results

This section summarises the results of the October 2021 snapshot. Having seen in Section 3 the results for employment and turnover data, this section uses just the eleven companies that have presented interim results for the six-month periods ending between May 2021 and June 2021. The companies are all knowledge intensive and together employ about five thousand employees. Only turnover data is available from the interim reports and together they represent a combined annual turnover of about £0.9bn. The gain from focusing on interim results for six-month periods is that all of the activity reported in the accounts is since December 2020, a period including the third lockdown.

### 4.1. Turnover growth

Total turnover for this group of companies **rose** by 14% in their latest six months compared with a **decline** of 8% in the first half of 2020 (when the pandemic first hit). The interim reports do not give us information on employment levels so we cannot see the furlough effect for this group.

An alternative view of growth comes from looking at the median turnover growth rate of these eleven companies which was 21% in the latest six months compared with 7% in the previous year. Eight of the eleven companies improved their sales growth in the first half of 2021 compared with the same period the previous year. The reason for the differences between the total weighted average growth and the median is caused by the larger companies exhibiting lower growth performance.

Whichever way we measure it, these companies are performing better during the third lockdown than they were during the first. This is partly due to demand for their products returning and partly due to companies learning how to manage the effects of the pandemic. Providing the pandemic does not take hold again triggering a further lockdown and fall in demand, we can expect this growth recovery to continue; and this is reflected in the comments of the companies below.

### 4.2. Companies' comments on the impact of the Covid-19 pandemic

We report below some comments from the companies' interim reports that we examined above. They offer some further insights into the impact of the Covid-19 pandemic on their businesses. We noted above that the impact of Covid has varied across businesses in different sectors. However, these comments show that Covid has had a significant effect (whether positive or negative) on these businesses. These interim reports were published in recent weeks and so present an up-to-date picture of business sentiment. They appear to show a marked improvement in business confidence compared with a year ago.

*In the first half of 2021, the Medical Sector continued to be particularly strong, with the other sectors, which were more affected by the pandemic, reflecting their respective market sector environments. Most sectors are now seeing the initial signs of global economic recovery.*

#### **Science Group: Science and technology consultants**

*We are delighted to report overall revenue growth of over 30 per cent, fueled by a buoyant recovery in the global gaming market and continued success through our strategic positioning of Densitron. Component shortages and price inflation remain a challenge and we do not anticipate significant improvement in the short term. While our customers have*

*been accepting of essential price rises, nonetheless we expect a period of continued margin volatility. However, our strong cash position and good relationship with suppliers, built up over many years, help to mitigate the impact.*

**Quixant PLC: Makes products for the global gaming and broadcast industries**

*As lab activity recovers, quarterly revenue is returning to trend. Growth accelerated across all product categories and geographic areas.*

**Abcam PLC: Provides biological and tools for drug discovery**

*Despite continued business disruption caused by the Covid-19 pandemic, IQGeo performed well against all our key metrics with strong financial performance, product innovation and go-to-market strategies.*

**IQGeo Group: Provides geospatial software for the telecoms and utilities**

*The Group has made a good start to the second half, in line with management's expectations. The high levels of recurring revenue and opportunities to grow our fleet operations in the UK, USA, France and the rest of Europe underpin our confidence for the rest of the year and beyond. We will continue to use the financial strength of the business to invest in our core fleet operations.*

**Quartix Technologies: Vehicle GPS tracking**

*Our foundations remain strong, as we continue to gain new customers and positively re-engage in our core markets. The COVID-19 pandemic continues to cause disruption for business, however we are determined to minimise interruption to the supply of printheads, and we are well-positioned to withstand further volatility caused by the pandemic.*

**Xaar PLC: Digital inkjet printing technology**

*We enter the second half of the year with a clear strategy, building recurring revenues and a strong balance sheet to support software focussed M&A. The Board remains confident in the Group's ability to meet current full year expectations and in our future prospects as we execute our 2025 strategy.*

**Aferian (Amino Technologies) PLC: Global media and entertainment technology**

*Bango delivered another period of strong growth during the first half of 2021 finishing the period ahead of our plan. Compared with 1H20, revenue grew 49% and adjusted EBITDA almost doubled - giving us confidence that we are comfortably on track to meet market expectations for the full year.*

**Bango PLC: Technology and services helping global businesses to grow**

*We continue to make significant progress towards becoming a leading US hospital pharmaceutical company. During the first half, our team has done an exceptional job*

*executing on our corporate objectives, despite the challenging operating environment posed by the global pandemic. The commercial launches of both Barhemsys and Byfavo are making excellent progress in terms of formulary access, the most important measure of success in this early phase of their commercialization. Given this strong performance, we remain on track to meet our annual formulary goals for both products.*

**Acacia Pharma Group: Develops products to help patients having invasive treatment**

*The Company had a strong and profitable first half, delivering revenues of £4.5 million, a 50% year-on-year growth. Order intake was above the Board's expectations at £8.6 million and this included two substantial orders outside the Company's core area of focus that totalled £3.6 million. The Company is now delivering more clinical trial contracts than at any time in its history, which is reflected in a contracted order book at 30 June 2021 of £15.2 million, up 36% from 31 December 2020 and more than double the value at 30 June 2020.*

**Cambridge Cognition Hldgs PLC: Digital solutions to assess brain health**

*Our established portfolio of genre-leading games, supported by our nurturing approach to post-release development, delivered record financial results in FY21, through continued strong engagement with our games and our downloadable content on new and existing platforms.*

**Frontier Developments PLC: Developer and publisher of videogames**



## 5. Concluding remarks

The October 2021 update is the fourth of a series of updates that provide timely data on corporate employment changes in the Greater Cambridge area. The findings in this report are drawn from a sample of over 6,400 Greater Cambridge-based companies with accounting year ends between October 2020 and April 2021. This sample, which represents over two-thirds of corporate employment in the area, has a modal year end of December 2020 and captures the impact of the first and second Covid lockdowns in England. All of the companies have had some experience of the pandemic, ranging from nine to twelve months.

The picture that emerges is one of continued but lower employment growth in Greater Cambridge. This slowdown in employment growth was due to a weaker performance of non-KI sectors during 2020-21 compared with 2019-20, whilst employment growth in KI sectors remained unchanged. The impact of Covid-related restrictions on Greater Cambridge corporate employment was mitigated by the Life Science and ICT sectors – the largest KI sectors in the area – which have seen employment growth accelerating in the latest year despite the unfolding of the pandemic. By contrast, we find that employment growth in 2020-21 either declined or remained unchanged in seven of the nine non-KI sectors, with the largest drop observed for ‘Other services’ – e.g. hotels, pubs and restaurants.

We complement these findings by studying the performance of a smaller sample of companies for which we have both employment and turnover data over the past three years. Our analysis reveals that turnover suffered larger falls than employment, mostly reflecting a weaker performance of non-KI sectors. These results point to the benefits of the Government’s furlough scheme in protecting employment in sectors with declining sales. We qualify the results for turnover by providing a snapshot for companies with interim accounts ending between May 2021 and June 2021. These companies are all knowledge intensive and showed robust turnover growth in their latest six months, generally performing better during the third lockdown compared with the first. The perusal of their interim reports suggests an overall improvement in business confidence compared with a year ago.

However, it must be noted that the overall picture might be less positive than the modest decline in turnover that we have found for the corporate sector, since many service businesses that are likely to have experienced a substantial decline in sales throughout the pandemic are not incorporated. The inclusion of the non-corporate sector might also change the picture for employment. For this reason, we intended to include in our October 2021 update an analysis of the latest corporate and non-corporate employment data from BRES, which was initially due to be released by ONS in September 2021. However, we have not yet been able to carry out this analysis as ONS delayed twice the publication of BRES data (the release is now scheduled for 9<sup>th</sup> November 2021). The results of our analysis will be made available as a separate note in November.

At the same time, the Government’s furlough scheme came to an end on 30<sup>th</sup> September 2021. If the end of this unprecedented support package will lead businesses to reconsider whether they will retain their furloughed staff, there could be implications for employment changes. This is happening at a time when it is still highly uncertain how the pandemic will unfold. Our next updates will cast light on these and other related issues.

*Andy Cosh*  
*Giorgio Caselli*  
Centre for Business Research, University of Cambridge  
October 2021

## Appendix A1. Employment growth by sector in the Greater Cambridge area

October 2021 Update	Number of companies	Total empl 2020-21	Total empl 2019-20	% of GC total 2019-20	Empl growth 2020-21	Empl growth 2019-20
<b>KNOWLEDGE INTENSIVE SECTORS</b>						
Information technology and telecoms	875	13,310	11,965	73.1%	11.2%	10.9%
Life science and healthcare	236	14,664	13,108	79.3%	11.9%	10.7%
High-tech manufacturing	239	7,022	7,040	81.5%	-0.3%	0.7%
Knowledge intensive services	258	5,908	5,762	88.0%	2.5%	6.0%
<b>TOTAL KI SECTORS</b>	<b>1,608</b>	<b>40,904</b>	<b>37,875</b>	<b>78.8%</b>	<b>8.0%</b>	<b>8.0%</b>
<b>OTHER SECTORS</b>						
Primary	120	2,184	2,252	75.5%	-3.0%	-14.0%
Manufacturing	249	2,680	2,599	65.8%	3.1%	1.5%
Wholesale and retail distribution	477	3,868	3,941	55.3%	-1.9%	3.1%
Construction and utilities	627	3,605	3,605	68.0%	0.0%	4.1%
Transport and travel	117	1,216	1,240	69.6%	-1.9%	6.9%
Property and finance	916	4,083	4,147	72.3%	-1.5%	3.5%
Other business services	1,271	8,170	8,307	67.3%	-1.6%	1.6%
Other services	670	4,876	5,059	60.4%	-3.6%	4.9%
Education, arts, charities, social care	354	4,676	4,510	35.2%	3.7%	0.9%
<b>TOTAL NON-KI SECTORS</b>	<b>4,801</b>	<b>35,358</b>	<b>35,660</b>	<b>59.0%</b>	<b>-0.8%</b>	<b>1.6%</b>
<b>TOTAL ALL SECTORS</b>	<b>6,409</b>	<b>76,262</b>	<b>73,535</b>	<b>67.8%</b>	<b>3.7%</b>	<b>4.8%</b>

Source: Cosh & Caselli, CBR.

## Appendix A2. Employment growth by sector in Cambridge

October 2021 Update	Number of companies	Total empl 2020-21	Total empl 2019-20	% of Camb total 2019-20	Empl growth 2020-21	Empl growth 2019-20
<b>KNOWLEDGE INTENSIVE SECTORS</b>						
Information technology and telecoms	380	8,660	7,687	86.9%	12.7%	12.1%
Life science and healthcare	89	4,732	4,143	75.4%	14.2%	14.4%
High-tech manufacturing	44	557	550	42.7%	1.3%	-11.0%
Knowledge intensive services	99	1,416	1,333	73.6%	6.2%	8.6%
<b>TOTAL KI SECTORS</b>	<b>612</b>	<b>15,365</b>	<b>13,713</b>	<b>78.6%</b>	<b>12.0%</b>	<b>11.3%</b>
<b>OTHER SECTORS</b>						
Primary	24	157	147	73.1%	6.8%	6.5%
Manufacturing	62	483	475	60.8%	1.7%	3.0%
Wholesale and retail distribution	152	974	979	37.2%	-0.5%	4.8%
Construction and utilities	159	607	628	64.6%	-3.3%	3.1%
Transport and travel	36	316	318	69.0%	-0.6%	-2.2%
Property and finance	410	2,276	2,317	69.7%	-1.8%	3.7%
Other business services	509	4,378	4,473	66.6%	-2.1%	-2.1%
Other services	271	1,809	1,871	50.4%	-3.3%	6.7%
Education, arts, charities, social care	160	2,815	2,742	36.3%	2.7%	-0.5%
<b>TOTAL NON-KI SECTORS</b>	<b>1,783</b>	<b>13,815</b>	<b>13,950</b>	<b>52.9%</b>	<b>-1.0%</b>	<b>1.2%</b>
<b>TOTAL ALL SECTORS</b>	<b>2,395</b>	<b>29,180</b>	<b>27,663</b>	<b>63.2%</b>	<b>5.5%</b>	<b>6.0%</b>

Source: Cosh & Caselli, CBR.

### Appendix A3. Employment growth by sector in South Cambridgeshire

October 2021 Update	Number of companies	Total empl 2020-21	Total empl 2019-20	% of S Cambs total 2019-20	Empl growth 2020-21	Empl growth 2019-20
<b>KNOWLEDGE INTENSIVE SECTORS</b>						
Information technology and telecoms	495	4,650	4,278	56.9%	8.7%	8.8%
Life science and healthcare	147	9,932	8,965	81.3%	10.8%	9.0%
High-tech manufacturing	195	6,465	6,490	88.3%	-0.4%	1.8%
Knowledge intensive services	159	4,492	4,429	93.5%	1.4%	5.2%
<b>TOTAL KI SECTORS</b>	<b>996</b>	<b>25,539</b>	<b>24,162</b>	<b>78.9%</b>	<b>5.7%</b>	<b>6.3%</b>
<b>OTHER SECTORS</b>						
Primary	96	2,027	2,105	75.7%	-3.7%	-15.1%
Manufacturing	187	2,197	2,124	67.0%	3.4%	1.2%
Wholesale and retail distribution	325	2,894	2,962	66.0%	-2.3%	2.5%
Construction and utilities	468	2,998	2,977	68.8%	0.7%	4.3%
Transport and travel	81	900	922	69.8%	-2.4%	10.4%
Property and finance	506	1,807	1,830	75.9%	-1.3%	3.2%
Other business services	762	3,792	3,834	68.2%	-1.1%	6.3%
Other services	399	3,067	3,188	68.4%	-3.8%	3.9%
Education, arts, charities, social care	194	1,861	1,768	33.6%	5.3%	3.3%
<b>TOTAL NON-KI SECTORS</b>	<b>3,018</b>	<b>21,543</b>	<b>21,710</b>	<b>63.8%</b>	<b>-0.8%</b>	<b>1.8%</b>
<b>TOTAL ALL SECTORS</b>	<b>4,014</b>	<b>47,082</b>	<b>45,872</b>	<b>70.9%</b>	<b>2.6%</b>	<b>4.1%</b>

Source: Cosh & Caselli, CBR.

## **Appendix A4. Greater Cambridge Employment Update methodology**

This appendix describes the purpose and methodology of regular updates of the corporate database.

### **Annual draw**

Dr Cosh and Dr Caselli at the CBR hold a corporate database of local companies with data going back ten years. The current database goes from 2010-11 to 2019-20 audited company data and covers the accounting periods of companies ending in the 2019-20 financial year. The results of the 2020-21 annual draw will be made available in February 2022. The reasons for the delay in publication relative to the accounting periods are:

- The need to wait until most companies have filed their accounts at Companies House.
- The incorporation of all company births and deaths.
- The careful checking of any changes in ownership, or corporate structure.
- The investigation of changes of location by companies into and out of the area.

This yields a comprehensive picture each year of the total employment of all companies that are based in the Cambridgeshire and Peterborough Combined Authority, Greater Cambridge, or Cambridge Ahead areas. It enables us to analyse the composition of growth split into growth of continuing businesses, less the decline due to companies dying or moving out of the area, plus the contribution to growth of company births and businesses moving into the area.

A full description of the methodology used can be found at:

<https://www.cambridgeahead.co.uk/media/1927/cbr-database-methodology-2021-rev.pdf>

Various analyses can be found at:

<https://www.cbr.cam.ac.uk/research/research-projects/the-cambridge-corporate-database-regional-growth/#item2>

### **Updates**

#### *Timings*

The current circumstances for business make it important to attempt to have more timely data. This can be achieved by using a sampling approach drawing upon the most recently published accounts.

We carry out an update every four months, spread evenly over the year and this can be seen in Table 1. If we look at 2022, we propose February, June and October updates which will yield estimates of growth for the years to end April 2021, August 2021 and early December 2021. These periods will capture: the effects of all three Covid lockdowns in England (February update); and the impact of coming out of lockdowns and any further developments (June and October updates). However, it must be remembered that the update takes no account of births or deaths, or of changes in location.

**Table 1 Summary of Greater Cambridge Employment Updates**

<b>Draw Name</b>	<b>Sample or All</b>	<b>Accounting year ends within:</b>	<b>Median growth period</b>	<b>Release date</b>	<b>Relation to Covid</b>
<b><i>Update October 2021*</i></b>	Sample	October 2020 to April 2021	Year to December 2020	November 2021	Impact of 1 <sup>st</sup> and 2 <sup>nd</sup> lockdowns
<b><i>Annual draw 2020-21**</i></b>	All companies	6 <sup>th</sup> April 2020 to 5 <sup>th</sup> April 2021	Year to early December 2020	February 2022	Impact of 1 <sup>st</sup> and 2 <sup>nd</sup> lockdowns
<b><i>Update February 2022*</i></b>	Sample	March 2021 to August 2021	Year to end April 2021	March 2022	Impact of all three lockdowns
<b><i>Update June 2022*</i></b>	Sample	April 2021 to December 2021	Year to August 2021	July 2022	Impact of coming out of lockdowns
<b><i>Update October 2022*</i></b>	Sample	October 2021 to April 2022	Year to December 2021	November 2022	Impact of coming out of lockdowns

*Notes:* \* commissioned and sponsored by the Greater Cambridge Partnership and Cambridge Ahead; \*\* commissioned and sponsored by Cambridge Ahead, Arm, Marshall of Cambridge and the Cambridgeshire and Peterborough Combined Authority.

### *Update Sample (using October 2021 update example)*

We download data from FAME for any company in Cambridge, South Cambridgeshire, Huntingdonshire, or East Cambridgeshire that has available Accounts for the periods ending between October 2020 and April 2021. We then check 2019-20 and 2020-21 employment data against the existing figures on the database. Differences can occur for a number of reasons and are corrected to ensure that consistency and accuracy are maintained across the years under review.

We eliminate companies from the update sample that do not have actual employment data for the last two years. Finally, we create a file with the following information for those remaining in the update sample (**3,767** companies this time representing total employment of **60,988**):

- Company name
- Company registration number
- LA District
- Sector
- KI or non-KI
- Size class in 2020 – 1 = 1 employee, 2 = 2-9 employees, 3 = 10 or more employees
- Latest employment 2020/21 (on average December 2020)
- Employment 2019/20 (on average December 2019)
- % change in employment over last year (i.e. on average to December 2020)

Next, we produce a table showing the number of companies in each of the four KI sectors and nine non-KI sectors and their total employment in the latest and previous year. This table is then reproduced separately for our three size classes.

We then create three measures of growth over the latest year: the unweighted arithmetic mean, the median and the weighted mean. The first suffers from extreme values and also attaches the same importance to a large company as that for a small company. The second will often have the values of zero since a large proportion of companies do not change size. Therefore, it is the latter that we use for the next stage of the work.

### *Updating the corporate database for the Greater Cambridge area*

We take from our corporate database all companies currently alive that are based in Cambridge or South Cambridgeshire. We select a sample of those companies that have accounting periods ending between October 2020 and April 2021 (whether, or not, they have yet reported). For companies that were included in the update sample we enter their employment data for the last three years. For the remaining companies that have not yet reported in 2020 we next download the latest FAME data and check employment data for the last three years against the existing figures on the database. Following this, we create a file with all the companies based in the Greater Cambridge area (**6,409** companies representing total employment of **76,262**) with the following information:

- Company name
- Company registration number
- Local Authority District
- Sector
- KI or non-KI
- Size class in 2020 (as above)

- Employment 2019/20
- Employment 2020/21
- % change in employment over this year

We now use the estimates of growth by size and sector from the update sample to create an estimate of the size of each company and sector in 2020/21. This allows us to compare the most recent growth of each sector and size class over the most recent year 2020/21 in comparison with the year 2019/20 for this sample of companies. The resulting sample is shown in Appendices A1–A3 and these tables show how significant they are, representing 68% of total corporate employment in Greater Cambridge.

The sample has a greater coverage of total employment in this draw because large businesses tend to have a December year end and so are captured in this update.

Since we include only companies that have a reporting date between October 2020 and April 2021, their performance reflects a significant impact of the Covid epidemic varying from nine to twelve months.

### *Analyses*

Using the methodology described above we can compare the performance of our sectors over time and identify those sectors most impacted by Covid. A powerful tool for doing this is one that has as the horizontal axis the sector's employment growth rate in the year 2019/20 and as the vertical axis the annual growth shown in the update sample for 2020/21 – see Figure 4 above for an example. The position of the sector marker relative to the 45° line shows those growing more or less fast than last year. This can be shown more informatively by having the size of the marker related to the total employment in that sector.

This type of chart can be used to examine different sectors, company sizes or districts. It is reinforced by an appendix that provides detailed tables (see Appendices A1-A3).