

# Greater Cambridge Employment Update June 2021

## *Cambridge business shows robust response to the pandemic*

### Highlights:

#### *Overview*

- The current business environment makes it important to have timely data on employment changes. This is the third 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 6<sup>th</sup> April 2020 and 31<sup>st</sup> December 2020 (the median year end is 31<sup>st</sup> August 2020). It is based on a sample of companies covering 72.0% of corporate employment in Greater Cambridge. This period captures the impact of the first Covid lockdown in England.
- Corporate employment growth in the Greater Cambridge area has slowed down from 5.0% in 2018-19 to 3.9% in 2019-20 – 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.
- Employment growth in Greater Cambridge has been five times faster in KI sectors (+6.9%) than in non-KI sectors (+1.3%).
- The reduction in the rate of growth of employment over the last two years has occurred in both KI and non-KI sectors in both Cambridge and South Cambridgeshire, but the growth of KI sectors has remained notably stronger than that of non-KI sectors (8.8% in Cambridge and 6.0% in South Cambridgeshire).

#### *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. Logistics companies have been in high demand as the pattern of consumer spending has changed.
- Consistent with these observations, we find that 'Life science and healthcare' (+10.6%), 'Information technology and telecoms' (+10.0%) and 'Wholesale and retail distribution' (+5.8%) have been the fastest growing sectors during 2019-20.

- Many service sectors have suffered reduced demand from their customers as a result of the impact of Covid on their businesses. A relatively large decline in employment has occurred in 'Property and finance' (-1.5%) and 'Other services' – e.g. hotels, pubs and restaurants (-0.8%).
- 'Life science and healthcare', 'Wholesale and retail distribution' and 'Manufacturing' (i.e. low- and med-low-tech manufacturing) are the only sectors to have seen employment growth accelerating in 2019-20 despite the unfolding of the pandemic.
- The sectors with the largest fall in employment growth relative to 2018-19 are 'Knowledge intensive services', 'Other services' and 'Property and finance'. Employment growth in Greater Cambridge has also slowed down in 'High-tech manufacturing', reaching -1.2% in 2019-20 compared with 1.0% in 2018-19.

### *Size groups*

- One-person businesses have grown by 4.1% 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 101 extra employees compared with the addition of 3,074 employees by other businesses.
- Whilst 1 employee businesses tend to have been the fastest growing companies in sectors such as 'Life science and healthcare', 'Transport and travel' and 'Wholesale and retail distribution', 2-9 employee businesses exhibit relatively high growth rates in 'Education, arts, charities, social care'.
- Companies with 10+ employees have achieved particularly fast growth in 'Information technology and telecoms', 'Life science and healthcare' and 'Wholesale and retail distribution'.
- 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 'High-tech manufacturing' (largely due to South Cambridgeshire-based Xaar discontinuing some of its operations) and 'Other services'.
- Employment growth to 2020 has slowed down in both 1-9 employee and 10+ employee size classes. This slowdown has been caused primarily by non-KI sectors.
- Employment in KI sectors has grown by 1.7% for 1-9 employee businesses and by 7.3% for 10+ employee businesses, adding a total of 2,584 employees.
- Employment growth has held up better among 10+ employee businesses relative to 1-9 employee businesses (4.5% and 0.5%, respectively).

### *Comparison of employment and turnover growth*

- We complement the findings from the employment update by examining a sample of 169 companies with accounting year ends between April 2020 and March 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 8.2% to -3.4% in the last year compared with a fall from 6.6% to 5.1% for employment.
- 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 extension of the furlough scheme announced in the March 2021 Budget will benefit employment levels.
- 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 June 2020 and March 2021. The gain from focusing on interim results is that all of the activity reported in the accounts is after January 2020.
- Total turnover for this group of companies fell by 5% in their latest six months compared with a growth of 4.7% in the previous year.
- We cannot establish the furlough effect for this group by a comparison of employment and turnover changes as interim reports do not give us information on employment levels.

### *Concluding remarks*

- Overall, the results emphasise the strong performance of the Greater Cambridge corporate economy despite the unfolding of the Covid-19 pandemic. The impact of the first lockdown in England on Greater Cambridge-based businesses was mitigated by the resilience of KI companies, particularly those operating in the Life Science and ICT sectors. In turn, non-KI companies exhibited modest employment growth but would have suffered falls in employment without the support of the furlough scheme.

## 1. Tracking Greater Cambridge corporate employment – the June 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. It was published at the end of January and examined employment in the accounting years ending from 6<sup>th</sup> April 2019 to 5<sup>th</sup> April 2020. 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 2019. For comparison, the ONS Business Register and Employment Survey (BRES) provisional annual employment data published in November 2020 has September 2019 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 June 2021 update includes companies with a financial year end between April and December 2020 and has a modal year end of August 2020. All of the companies have had some experience of the Covid epidemic, varying from two to ten months. The final update sample is 6,042 companies representing about 70% 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 April and December 2020 that have not yet reported. We then use this larger sample to compare the performance of this sample in 2019/20 with their performance a year earlier (2018/19). On average the companies in the sample will reflect the impact Covid has had on their performance during the last six 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 169 companies in Greater Cambridge with accounting years ending between April 2020 and March 2021 which have provided both employment and turnover data for 2018, 2019 and 2020. Since large businesses provide both employment and turnover figures, the sample is quantitatively significant, with total employment over 22,000 and total turnover of £4.6bn. 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 employment or turnover) and examines those that have filed interim reports for six-month periods ending from June 2020 onwards. The nine companies in the snapshot sample do not provide employment figures in their interim reports, but together they represent a combined

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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.

annual turnover of about £2.5bn. The gain from focusing on interim results for six-month periods is that all of the activity reported in these interim accounts is after January 2020.

The remainder of this report is structured as follows. Section 2 presents the results of the June 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.

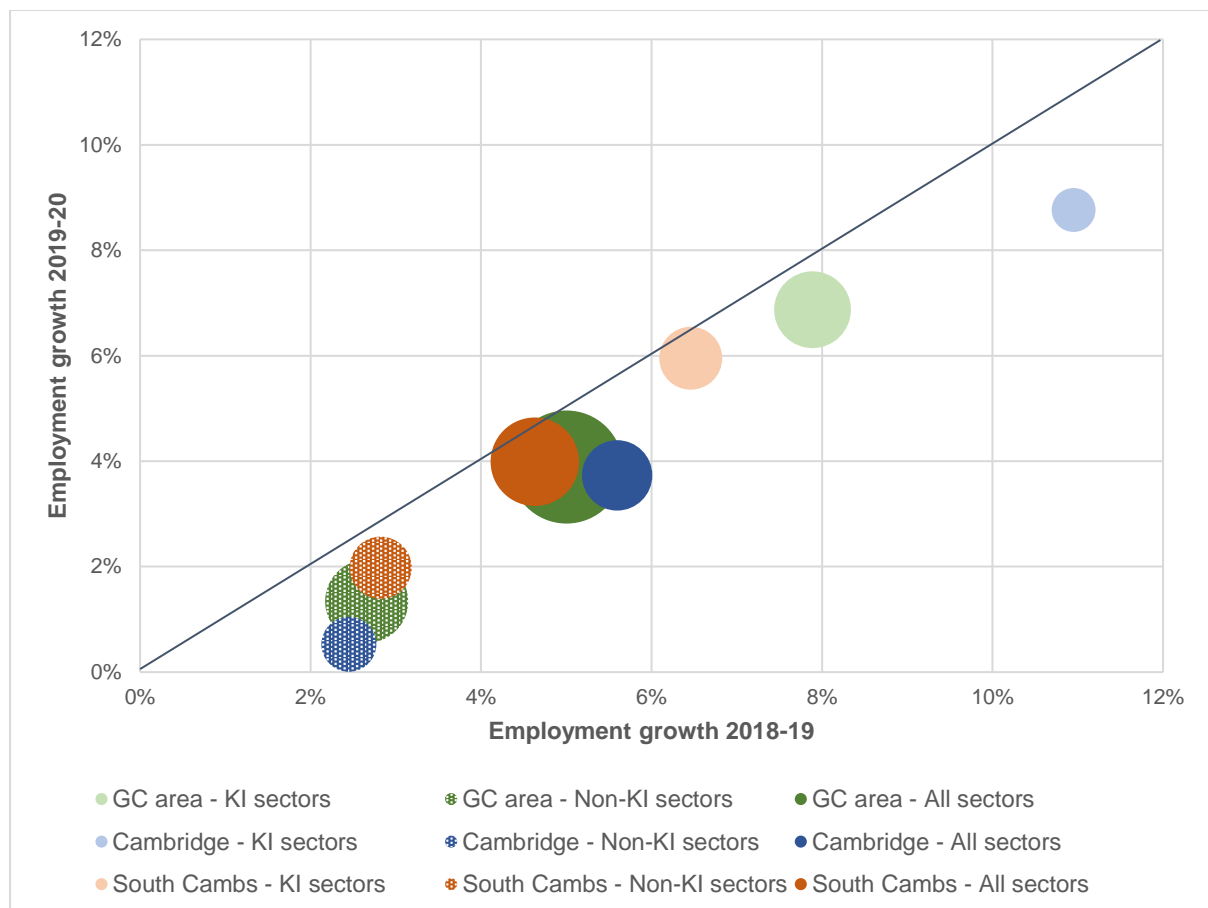
## 2. June 2021 employment update results

In this section, we present the results of the June 2021 employment update, the third 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 Covid lockdown in England.

### 2.1. Analysis by area

Figure 1 depicts employment growth in KI and non-KI sectors during 2018-19 (horizontal axis) and 2019-20 (vertical axis) by area. It is drawn from a sample of companies with accounts for the years ending April-December 2020. 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 – 2019-20 vs 2018-19**



*Note:* The size of each bubble is proportionate to the number of employees in 2019 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 2019-20. Growth in the area has slowed down from 5.0% in 2018-19 to 3.9% in 2019-20 – still a significant rate of growth considering the unprecedented challenges brought about by the Covid-19 pandemic.

Our data show that this slowdown in total employment growth in the area is due to a weakening performance of both KI and non-KI sectors during the latest year compared with one year earlier. While employment growth in KI sectors has fallen from 7.9% in 2018-19 to 6.9% in 2019-20, non-KI sectors have seen employment growth declining somewhat more markedly from 2.7% in 2018-19 to 1.3% in 2019-20.

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 from 5.6% in 2018-19 to 3.7% in 2019-20. South Cambridgeshire exhibited a more limited slowdown from 4.6% to 4.0%.

The KI sectors have held up better in Cambridge, falling from 11.0% growth in the previous year compared with 8.8% this year. This has been helped by the performance of AstraZeneca and Abcam, who have added 355 and 179 employees respectively.

The growth of the KI sectors in South Cambridgeshire has decreased from 6.5% to 6.0%, despite an increase of 301 and 86 employees by Darktrace and Genome Research.

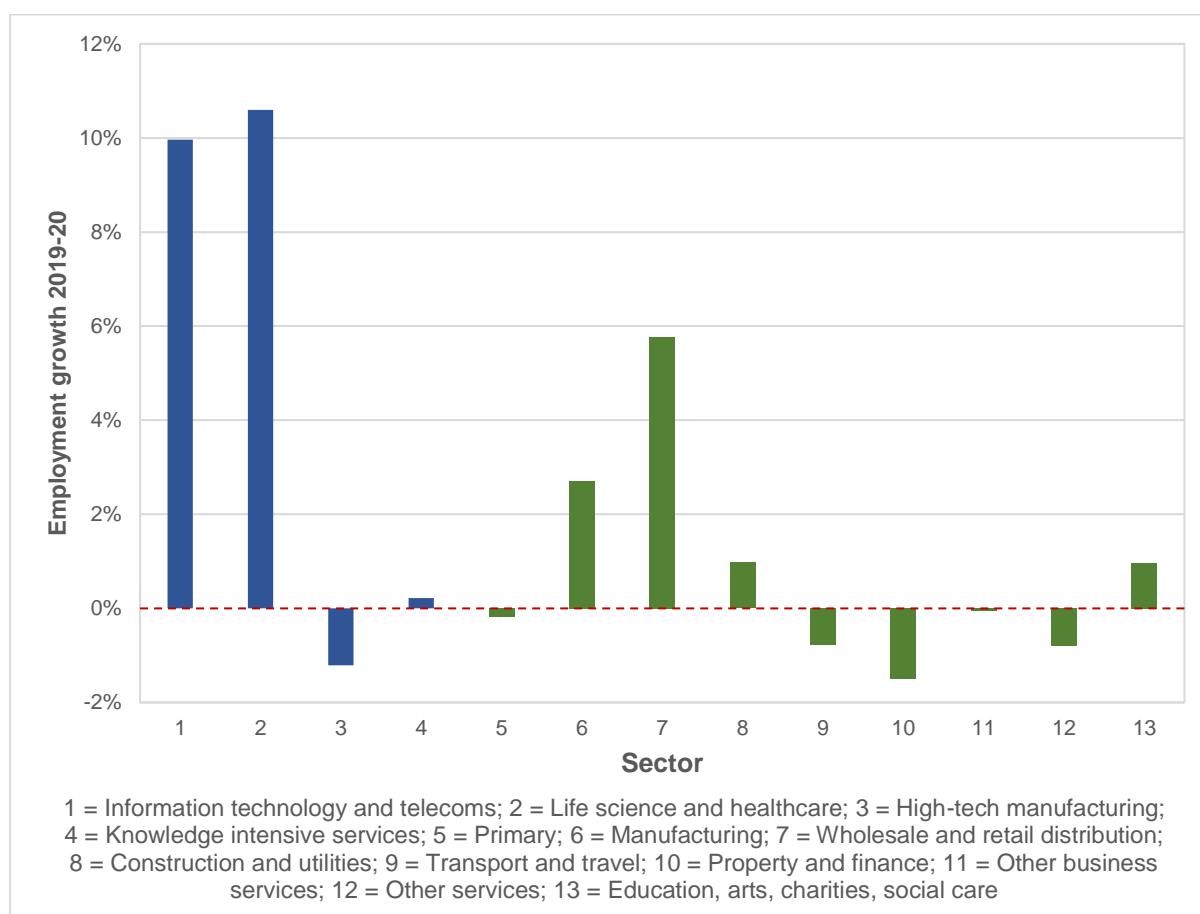
We found the opposite picture for non-KI sectors. Despite the stable performance of Oxford Cambridge and RSA Examinations (+28 employees) – a leading UK examination board part of Cambridge Assessment – and Mills and Reeve (+16 employees), the slowdown in employment by several other companies (e.g. Atkins Gregory, a company providing contract cleaning services to the commercial and industrial sectors) has brought employment growth in non-KI sectors in Cambridge to 0.5% in the latest year compared with 2.4% one year earlier. As a result, Cambridge exhibits the largest difference in employment growth to 2020 between KI and non-KI sectors.

Non-KI sectors in South Cambridgeshire have grown somewhat faster than those in Cambridge, with companies such as Marshall Motor Holdings and The Cam Academy Trust (Comberton Village College and others) witnessing a steady increase in their employee numbers. Overall, non-KI growth has dropped from 2.8% to 2.0%.

## **2.2. Analysis by sector**

Figure 2 compares the 13 industry sectors used in the analysis based on their employment growth during 2019-20 (on average the year to August 2020), the latest year covered with this work. It is drawn from a sample of companies with accounts for the years ending April-December 2020.

**Figure 2 Employment growth 2019-20 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' (+10.6%) and 'Information technology and telecoms' (+10.0%) have been the fastest growing sectors during 2019-20.

The strong performance of these two KI sectors during the Covid-19 pandemic testifies to the resilience of the Life Science and ICT clusters in the Greater Cambridge area. Whilst some companies in these sectors have been hampered by Covid (e.g. Quixant), others have positively benefited from it (e.g. AstraZeneca).

Among non-KI sectors, employment growth to 2020 has been relatively high in 'Wholesale and retail distribution' (+5.8%) and 'Manufacturing' (+2.7%) – which comprises low- and med-low-tech manufacturing.

The sectors that have seen a somewhat marked decline in employee numbers are 'Property and finance' (-1.5%), 'High-tech manufacturing' (-1.2%), 'Transport and travel' (-0.8%) and 'Other services' (-0.8%) – which includes hospitality businesses.

At first glance, the results for 'Transport and travel' seem at odds with the results from our February 2021 Update, which showed an employment growth rate of 5.9% for the sector in the year through April 2020. This is largely explained by differences in the sample composition between the two updates. The sample for the June 2021 Update is made up by some large travel agents and companies operating in the transport of people (e.g. Premier Holidays), which have suffered from Covid-related restrictions to both national and international travel. Conversely, the sample for the February 2021 Update included primarily

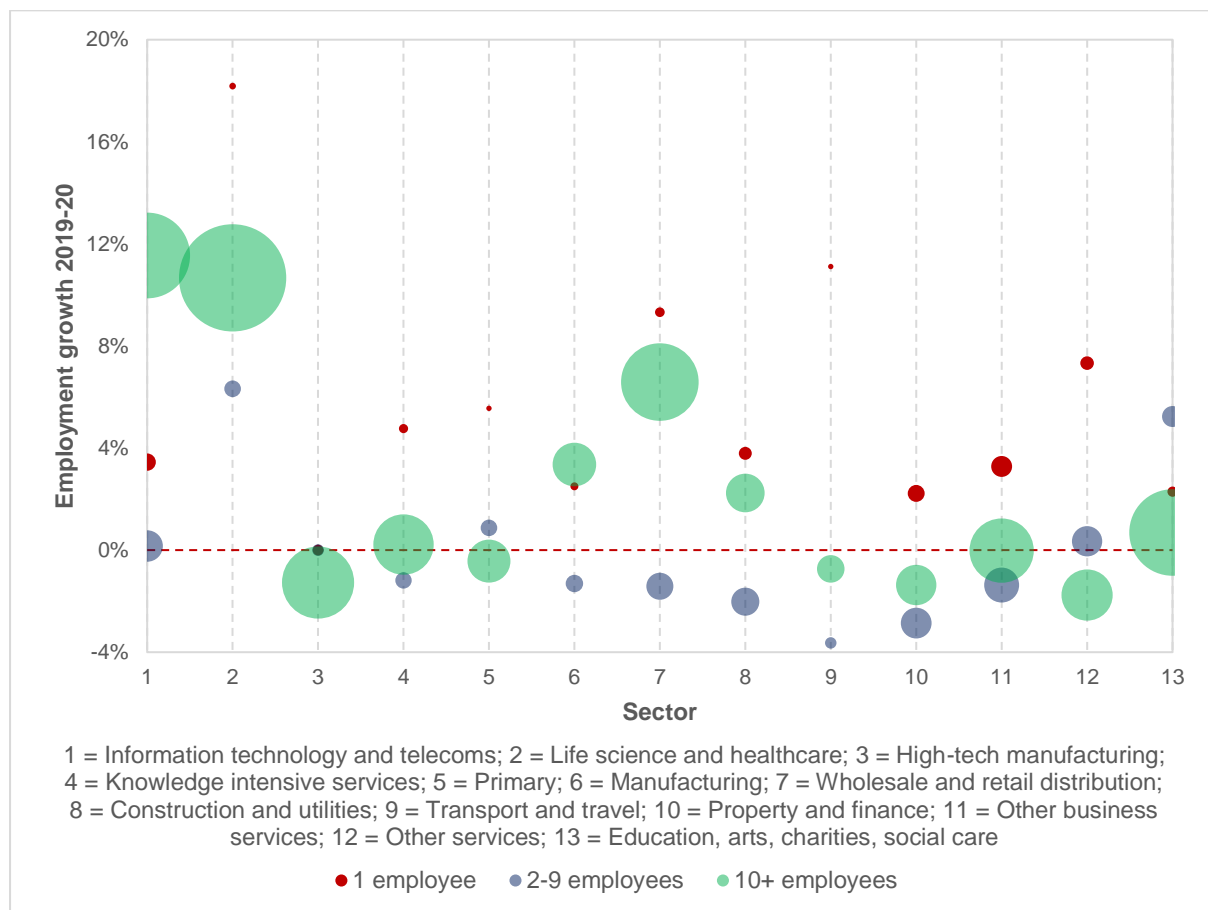


companies involved in the transport of goods (e.g. The Courier Company Nationwide and Halls Distribution), which have benefited from the rise in home deliveries. Differences in sample coverage between the two updates also play a role. While the February 2021 Update sample covered 48.7% of corporate employment in 'Transport and travel' in Greater Cambridge during 2019, the sample for the June 2021 Update accounts for 68.6% of corporate employment in the sector.

Employment growth has been faster in KI sectors (+6.9%) than in non-KI sectors (+1.3%). Among the fastest growing KI companies are Darktrace (+36.5%) and Frontier Developments (+18.1%).

Figure 3 expands on the results from Figure 2 presented above by providing a breakdown of employment growth between 2019 and 2020 by both industry sector and firm size. It is drawn from a sample of companies with accounts for the years ending April-December 2020. Companies were assigned to three size classes: 1 employee; 2-9 employees; 10+ employees.

**Figure 3 Employment growth 2019-20 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 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 2019-20. 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.

Whilst 1 employee businesses tend to have been the fastest growing companies in sectors such as 'Life science and healthcare', 'Transport and travel' and 'Wholesale and retail distribution', 2-9 employee businesses exhibit relatively high growth rates in 'Education, arts, charities, social care'. However, the relatively small size of their bubbles shows that their impact on total employment growth is somewhat limited.

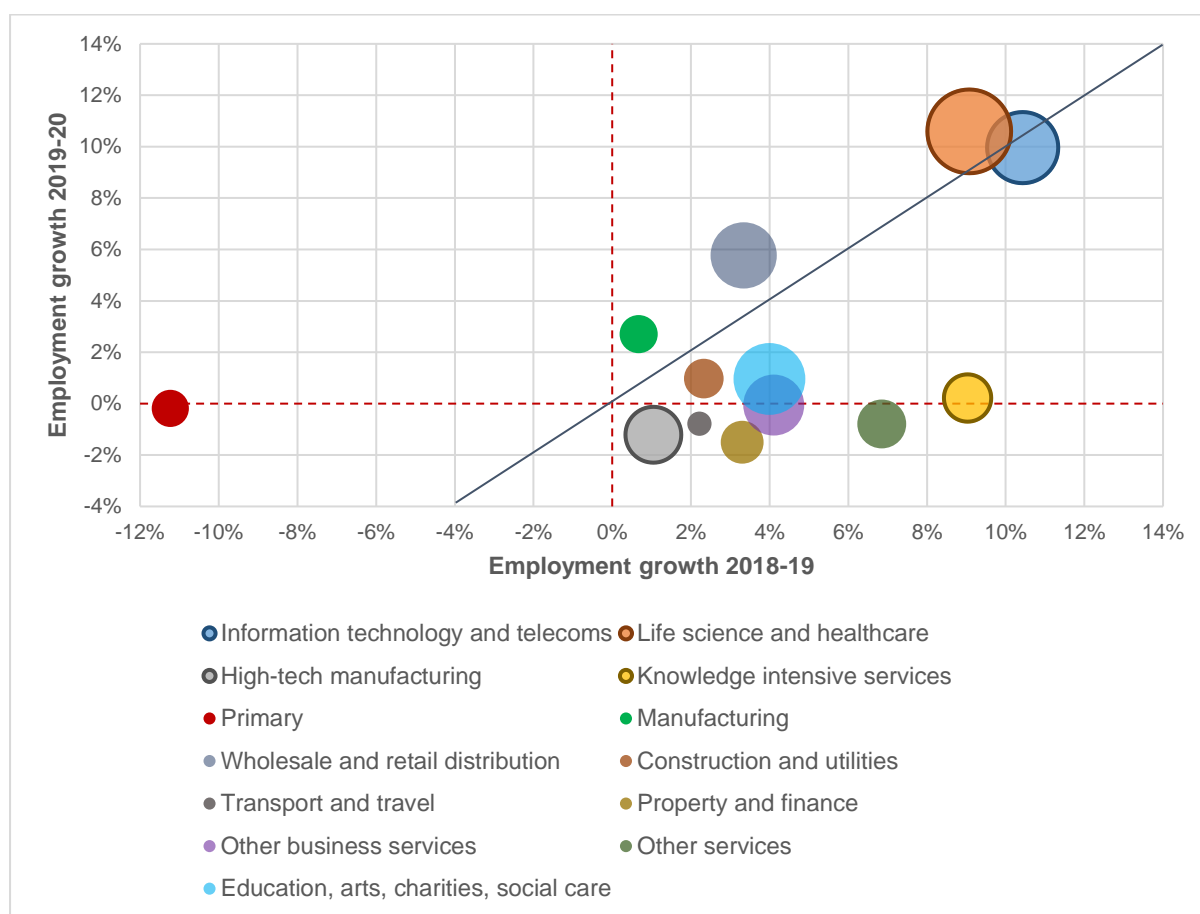
Good examples of fast growth in the 2-9 employee businesses are Riverlane, a University of Cambridge spinout that develops software and algorithms for quantum computers, and Omnigen Biodata, an R&D start-up building real-world health and genomic data.

In turn, 10+ employee businesses have achieved particularly fast growth in 'Information technology and telecoms', 'Life science and healthcare' and 'Wholesale and retail distribution'.

The group of 10+ employee businesses tends to dominate employment changes given its large aggregate size. These businesses appear to be significant contributors to the decline in employment observed in 'High-tech manufacturing' (e.g. world-leading manufacturer of industrial inkjet printheads Xaar) and 'Other services' (e.g. Cambridge-based eatery Aromi) – which includes hotels, pubs and restaurants.

Figure 4 compares the 13 industry sectors according to their employment growth during 2018-19 (horizontal axis) and their employment growth during 2019-20 (vertical axis). It is drawn from a sample of companies with accounts for the years ending April-December 2020. 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 – 2019-20 vs 2018-19**



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

'Life science and healthcare', 'Wholesale and retail distribution' and 'Manufacturing' (i.e. low- and med-low-tech manufacturing) have seen employment growth accelerating during 2019-20 despite the unfolding of the pandemic.

Employment growth in 'Life science and healthcare' has reached 10.6% in 2019-20 up from 9.1% in 2018-19, driven by the strong performance of Abcam (+15.5%) and AstraZeneca (+11.4%). This result is all the more encouraging if one considers that our June 2021 Update sample covers 84.4% of corporate employment in the Life Science sector in Greater Cambridge during 2019.

The sectors with the largest fall in employment growth relative to 2018-19 are 'Knowledge intensive services', 'Other services' and 'Property and finance'.

For example, employment growth in 'Knowledge intensive services', which includes a number of engineering and science consultancies (e.g. Cambridge Consultants, Science Group and Z-Tech Control Systems), has gone down from 9.0% in 2018-19 to 0.2% in 2019-20. 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.

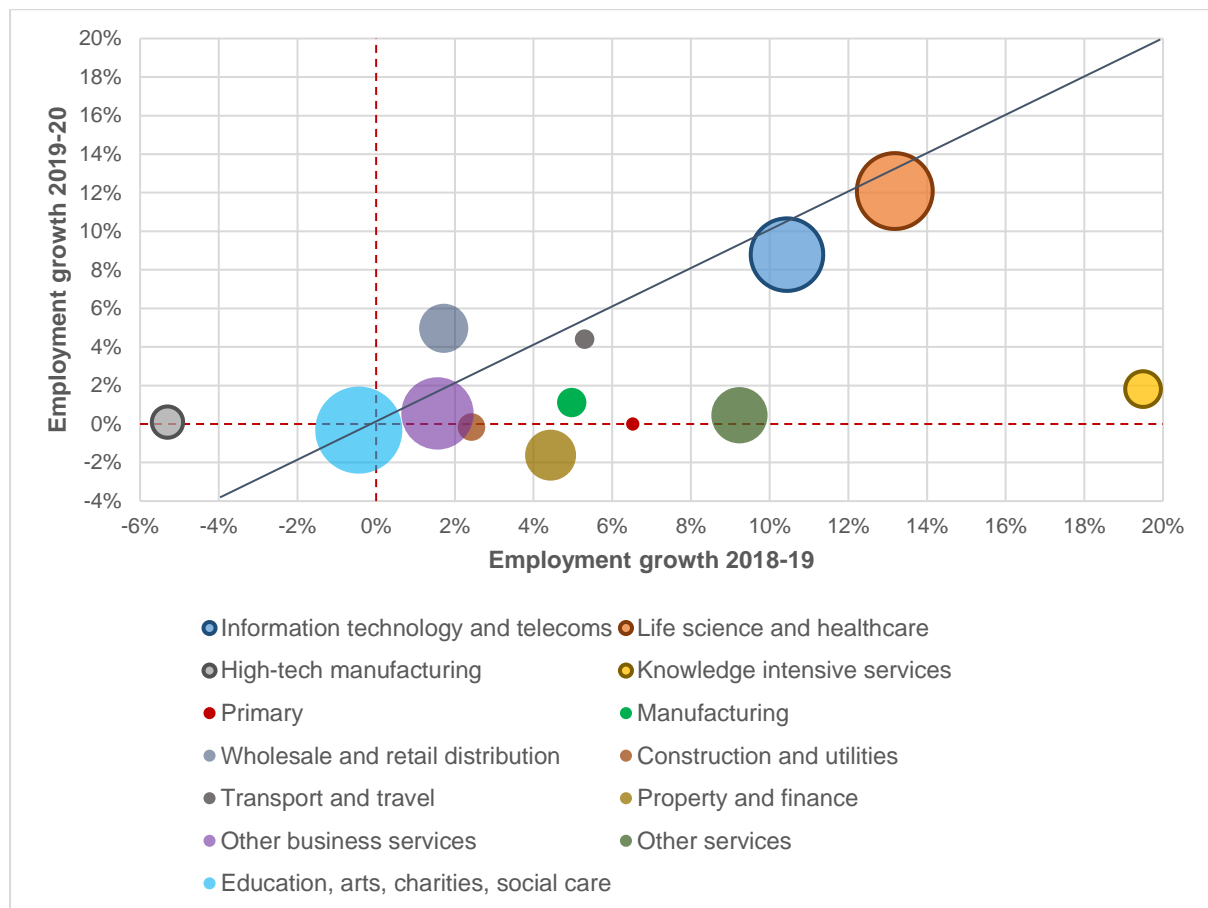
Employment growth in Greater Cambridge has also slowed down in 'High-tech manufacturing', reaching -1.2% in 2019-20 compared with 1.0% in 2018-19. This slowdown,

which is largely due to Xaar ceasing its Thin Film activities in September 2019, is in stark contrast to the strong performance of the low- and med-low-tech manufacturing sectors ('Manufacturing') – up to 2.7% in the latest year from 0.7% one year earlier. This has been helped by the stable performance of Cambridge University Press (up 4.1% on the previous year).

Employment in the 'Primary' sector has remained virtually unchanged during 2020, after witnessing a fall of -11.2% between 2018 and 2019. This fall was caused by a considerable decline in the number of staff employed by leading agricultural business Spearhead International during 2019, following the divestiture of some of its Poland operations and severe drought affecting crop yields.

Figure 5 compares the 13 industry sectors based on their employment growth during 2018-19 (horizontal axis) and their employment growth during 2019-20 (vertical axis), this time focusing on Cambridge. It is drawn from a sample of companies with accounts for the years ending April-December 2020. 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 – 2019-20 vs 2018-19**



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

Employment growth has accelerated only in 'Wholesale and retail distribution', increasing from 1.7% in 2018-19 to 5.0% in 2019-20. However, employment has either grown or remained unchanged in ten of the sectors despite the pandemic.

Employment growth has been particularly fast in 'Life science and healthcare', where it has reached 12.1% in the latest year (slightly down from 13.2% one year earlier). This largely reflects the strong performance of AstraZeneca (+355 employees) and Abcam (+179 employees).

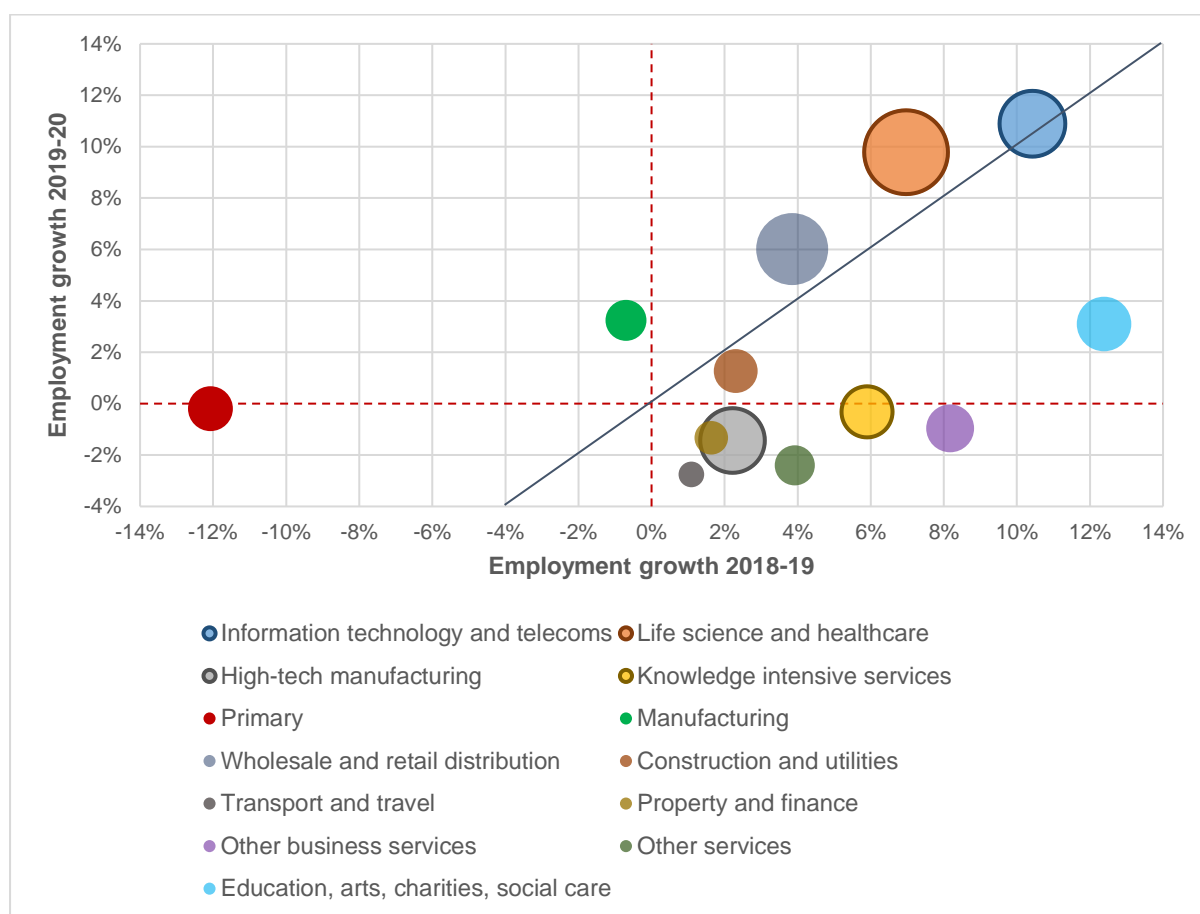
Employment growth has remained high, although somewhat lower in the latest year relative to one year earlier, also in 'Information technology and telecoms' (8.8% and 10.4%, respectively).

Among non-KI sectors, 'Transport and travel' has seen the largest employment growth rate after 'Wholesale and retail distribution', with growth reaching 4.4% during 2019-20 compared with 5.3% during 2018-19. Employment growth in 'Wholesale and retail distribution' has been supported by the strong performance of bike retailer Rutland Cycling (+6.1% on the previous year).

Conversely, we find evidence of a considerable slowdown in employment growth in 'Knowledge intensive services' (1.8% in 2019-20 compared with 19.5% in 2018-19), 'Other services' (0.5% and 9.2%, respectively) and 'Property and finance' (-1.6% and 4.4%, respectively).

Figure 6 focuses on South Cambridgeshire and compares the 13 industry sectors based on their employment growth during 2018-19 (horizontal axis) and their employment growth during 2019-20 (vertical axis). It is drawn from a sample of companies with accounts for the years ending April-December 2020. 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 – 2019-20 vs 2018-19**



*Note:* The size of each bubble is proportionate to the number of employees in 2019 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 two largest KI sectors in South Cambridgeshire, have seen employment growth accelerating in the year to August 2020.

Employment growth in 'Life science and healthcare' has reached 9.8% in 2019-20 up from 7.0% in 2018-19. Behind this faster employment growth is the strong performance of Genome Research, which has added 86 employees during 2020.

'Information technology and telecoms' has shown the highest employment growth rate across all sectors, driven by a considerable increase in the number of staff employed by Darktrace (+301 employees) and Frontier Developments (+76 employees). Overall, the sample for our June 2021 Update represents 83.2% of corporate employment in the ICT sector in South Cambridgeshire.

As is the case for Cambridge, employment growth has accelerated in 'Wholesale and retail distribution'. Employment growth in the sector has gone up from 3.8% in 2018-19 to 6.0% in 2019-20, following a considerable increase in the number of employees by Marshall Motor Holdings (+304 employees).

'Manufacturing' is another non-KI sector to have witnessed faster employment growth in the latest year relative to one year earlier (3.2% and -0.7%, respectively).

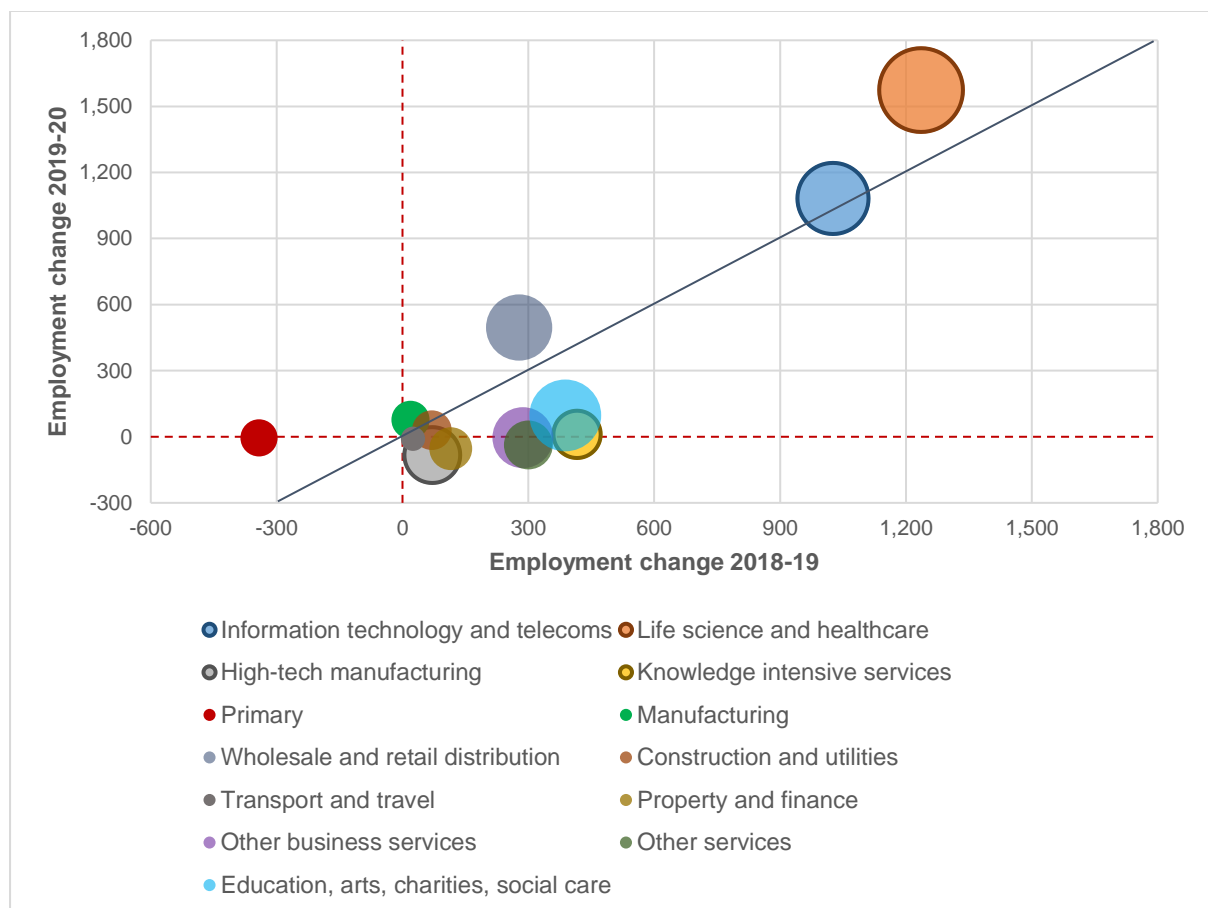
The results for the 'Manufacturing' sector, which includes low- and med-low-tech manufacturing, contrast with those for the 'High-tech manufacturing' sector. Employment growth in the latter has fallen from 2.2% in 2018-19 to -1.4% in 2019-20, largely reflecting a decline in the number of employees by Xaar (-72 employees).

Among non-KI sectors, the largest slowdown in employment growth is observed in 'Education, arts, charities, social care' (3.1% in 2019-20 compared with 12.4% in 2018-19) and 'Other business services' (-1.0% and 8.2%, respectively) – which includes employment agencies, legal services providers and other business support services companies.

After suffering a fall of -12.1% between 2018 and 2019 mainly as a result of divestitures made by Spearhead International, employment in the 'Primary' sector has remained stable during 2020.

Figure 7 offers another comparison of the 13 industry sectors, this time looking at their employment change (rather than their employment growth) during 2018-19 (horizontal axis) and 2019-20 (vertical axis). It is drawn from a sample of companies with accounts for the years ending April-December 2020. 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 – 2019-20 vs 2018-19**



Note: The size of each bubble is proportionate to the number of employees in 2019 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' sector stands out when examined in terms of absolute employment changes. There has been a change of +1,574 in 2019-20 compared with +1,236 in 2018-19, largely reflecting the additions of 355 and 179 employees by Astrazeneca and Abcam respectively.

'Information technology and telecoms' has had the second largest employment change between 2019 and 2020 after 'Life science and healthcare', adding 1,082 employees in the latest year compared with 1,026 one year earlier. Darktrace (+301 employees) has contributed over a quarter of the employment change to 2020.

Employment change in 2019-20 has been higher than employment change in 2018-19 also in 'Wholesale and retail distribution' and 'Manufacturing'.

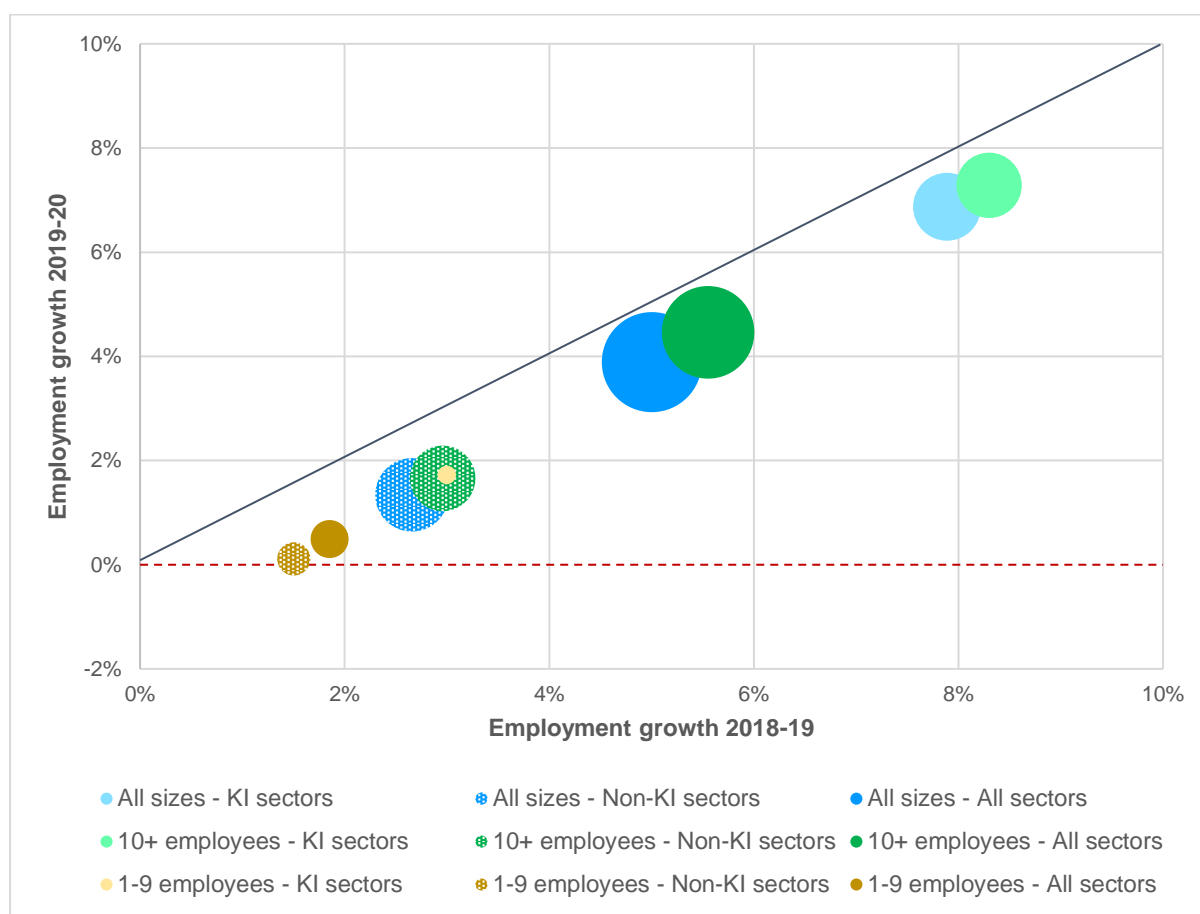
'High-tech manufacturing' (-83 employees) has seen the largest drop in employment in 2019-20 among all sectors, mostly as a result of the operations discontinued by Xaar (-72 employees). Other sectors with a significant slowdown in employment during the latest year are 'Knowledge intensive services' and 'Other services'.

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

Figure 8 shows employment growth in KI and non-KI sectors during 2018-19 (horizontal axis) and 2019-20 (vertical axis) by firm size. It is drawn from a sample of companies with accounts for the years ending April-December 2020. 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 – 2019-20 vs 2018-19**



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

Employment growth to 2020 has slowed down in both 1-9 employee and 10+ employee size classes.

Employment growth of 1-9 employee businesses has declined from 1.9% in 2018-19 to 0.5% in 2019-20. This decline has been caused primarily by non-KI sectors, which have seen employment growing by 0.1% in the latest year compared with 1.5% one year earlier. The rate of employment growth to 2020 has been higher for KI sectors in this size class (+1.7%), albeit below the 2018-19 rate (+3.0%).

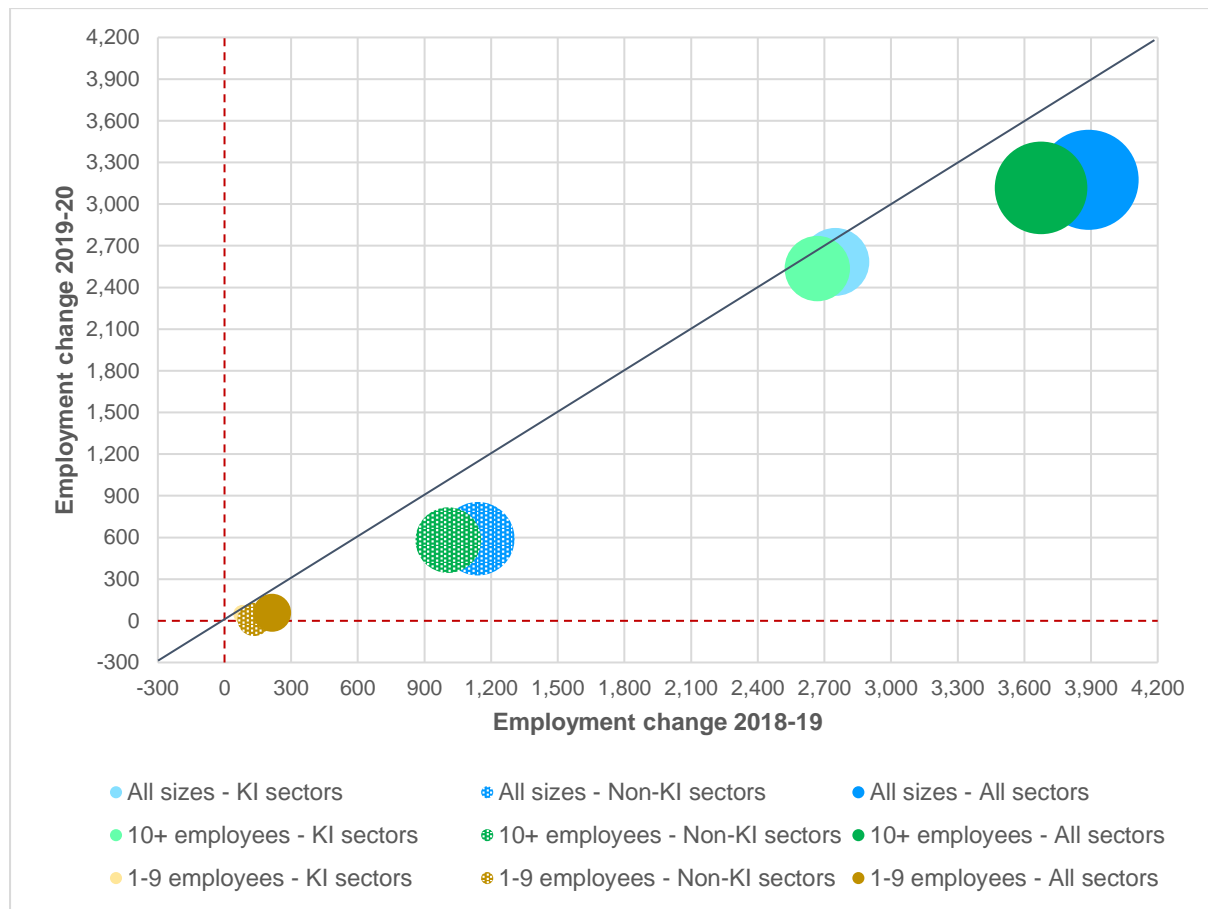
The picture looks similar for 10+ employee businesses. Employment growth for these businesses has decreased in the most recent year for both KI sectors (7.3% this year down from 8.3%) and non-KI sectors (1.7% down from 3.0%). However, employment growth has held up better among 10+ employee businesses relative to 1-9 employee businesses (4.5% and 0.5%, respectively).

As a result of the slowdown in employment growth across both size classes, total employment in the Greater Cambridge area has been growing less fast – albeit still significantly given the restrictions associated with the first Covid lockdown in England – in 2019-20 (+3.9%) compared with 2018-19 (+5.0%).

Figure 9 compares size classes based on their employment change during 2018-19 (horizontal axis) and 2019-20 (vertical axis). It is drawn from a sample of companies with accounts for the years ending April-December 2020. 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 – 2019-20 vs 2018-19**



*Note:* The size of each bubble is proportionate to the number of employees in 2019 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 2019-20 (+58 employees) has been almost four times lower than the employment change in 2018-19 (+214 employees). This lower employment change has been driven mainly by non-KI sectors (+10 in the most recent year compared with +133 one year earlier).

Similarly, the employment change in 2019-20 (+3,117 employees) has been lower than employment change in 2018-19 (+3,675 employees) for businesses with 10+ employees. This reduction appears to have originated primarily in non-KI sectors, which have seen employment change falling from +1,007 in 2018-19 to +581 in 2019-20. A lesser reduction is observed for KI sectors (+2,536 in the latest year compared with +2,668 one year earlier).

Total employment change to 2019-20 in the Greater Cambridge area as a whole has been +3,175 compared with +3,889 in 2018-19.

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

### 3. June 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 169 companies (representing over 26% 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 (June 2021 Update)**

Greater Cambridge area Sample of companies with both employment and turnover for the last three years	Turnover growth %pa		Employment growth %pa	
	2019-20	2018-19	2019-20	2018-19
<b>ALL COMPANIES</b>				
Number of companies	169	169	169	169
Totals in 2020 and 2019	£4,607m	£4,767m	22,357	21,264
Median growth	-5.0%	8.1%	0.0%	0.0%
Weighted average growth	-3.4%	8.2%	5.1%	6.6%
<b>KI COMPANIES</b>				
Number of companies	46	46	46	46
Totals in 2020 and 2019	£1,444m	£1,443m	8,624	7,995
Median growth	-3.8%	16.1%	1.3%	0.4%
Weighted average growth	0.1%	17.1%	7.9%	7.9%
<b>NON-KI COMPANIES</b>				
Number of companies	123	123	123	123
Totals in 2020 and 2019	£3,163m	£3,324m	13,733	13,269
Median growth	-5.0%	6.2%	0.0%	0.0%
Weighted average growth	-4.8%	4.8%	3.5%	5.9%

Source: Cosh & Caselli, CBR.

Total employment of these 169 companies grew by 5.1% in 2019-20 down from 6.6% in 2018-19 – 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 3.9% in the latest year relative to 5.0% one year earlier.

Employment growth for these companies providing both employment and turnover data was notably stronger among the 46 KI companies, which saw employment increasing by 7.9% during 2019-20 compared with a 3.5% rate for the 123 non-KI companies. In addition, whilst employment growth fell in non-KI sectors (+3.5% in the latest year down from +5.9% in the previous year), KI sectors achieved virtually the same growth rate in both years (+7.9%).

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 (+8.8% in Cambridge and +6.0% in South Cambridgeshire).

The results presented in Table 1 enable us to investigate what has happened to turnover 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 8.2% in 2018-19 to -3.4% in 2019-20, 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 4.8% in 2019-20 compared with a growth of 4.8% in 2018-19.

In the previous year turnover growth was 8.2%, but employment growth was 6.6%. In the latest year turnover fell by 3.4% 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 5.1% 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 the modest decline we have found for the Greater Cambridge corporate sector alone.

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

## 4. June 2021 snapshot results

This section summarises the results of the June 2021 snapshot. Having seen in Section 3 the results for employment and turnover data, this section uses just the nine companies that have presented interim results for the six-month periods ending between June 2020 and March 2021. Only turnover data is available and together they represent a combined annual turnover of about £2.5bn. The gain from focusing on interim results for six-month periods is that all of the activity reported in the accounts is after January 2020.

### 4.1. Turnover growth

Total turnover for this group of companies fell by 20% in their latest six months compared with a growth of 4.2% in the previous year. In the previous year employment grew by 3.1%, but interim reports do not give us information on employment levels so we cannot see the furlough effect for this group.

We can instead look at the median turnover growth rate of these nine companies which was -5.9% in the latest six months compared with -0.3% in the previous year. The reason for the differences between the total weighted average growth and the median is caused by the presence of Marshall Motor Holdings which is both large and significantly impacted by the pandemic.

If we exclude Marshall Motor Holdings the total turnover for this group of companies was £0.7bn and their employment in the previous year was 4,000 employees. Turnover growth for these companies fell by 5% in their latest six months compared with a growth of 4.7% in the previous year. The median turnover growth rate of these companies was -2.6% in the latest six months compared with -0.6% in the previous year.

The advantage of studying turnover data is that, unlike employment data, it receives no direct benefit from the furlough scheme. On the other hand our samples are smaller (but do include the largest businesses). The findings of the previous section are reinforced for this sample which has data that falls entirely within the period of the pandemic. However, and whichever way you measure it, the average effect has been a modest decline, buoyed up by the overall stronger performance of the KI sector.

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

We report below some comments from the companies' accounts that we examined as part of the June 2021 analyses, which offer some further insights into the impact of the Covid-19 pandemic on their business. 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.

*The COVID-19 pandemic significantly impacted the Group's financial performance during the Period and its effects are likely to continue to be felt for at least the remainder of the year. With the support of our brand partners, funders and other business partners, together with careful management of costs and cash, combined with our people-centric approach to our colleagues and with the support provided by Government, we have been able to successfully navigate the initial challenges presented by this crisis. The period following the reopening of showrooms in June has been encouraging with an improvement in like-for-like order take throughout June, July and the early part of August. Our key September order bank is also building well.*

**Marshall Motor Holdings: Motor dealer group**

*Revenue decline is largely due to rapid reduction of academic research work caused by COVID-19 pandemic.*

**Horizon Discovery Group: Provides gene editing to accelerate drug development**

*The Company had two clinical trials under way when the pandemic was declared and the pandemic did cause some delays to the trials. However these delays had little impact on the Company's performance in the year. The impact on future operations of a continued Covid-19 pandemic is uncertain. Kymab continues to be an essential business but Kymab's ability to move projects rapidly through clinical development may be impacted by a continued pandemic.*

**Kymab Ltd: Biotechnology company sold to Sanofi for £1.1bn in 2021**

*In summary, the performance of the Group in the first half of 2020 has been ahead of the Board's pre-Covid-19 expectations, despite the operational challenges resulting from the pandemic. While actively recruiting for key roles to strengthen the Group and to position the organisation in a post-Covid-19 world, the Board recognises the inherent uncertainty and lack of predictability in the months ahead and will therefore remain prudent.*

**Science Group: Science and technology consultants**

*Despite the COVID-19 pandemic's stark impact on revenue, prompt action to contain costs resulted in an adjusted pre-tax loss of \$1.2m (2019 H1: Profit of \$3.4m). The global COVID-19 pandemic in H1 2020 resulted in a slowdown of product movement in the Group, which has seen inventory levels increase. We expect this to unwind over the coming months as deliveries resume. The global pandemic has caused significant disruption in electronic component production such that we are experiencing volatile pricing, unpredictable lead times and unexpected end-of-life notices served on us by our suppliers.*

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

*Undoubtedly, COVID-19 has brought in a level of uncertainty with respect to the near-term outlook, however the Group's plans remain unchanged, reflecting our confidence in the long-term opportunity.*

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

*Our core markets of telecoms and utilities have proven to be resilient throughout the pandemic.*

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

*The year started strongly, but new subscriptions fell in March and April as a result of the Covid-19 pandemic, before starting their recovery in May. Performance in the second half of the year was particularly encouraging; new subscriptions were 9.9% ahead of the prior year and roughly 60% of the year's growth in the size and value of the base were achieved in that period.*

#### **Quartix Holdings: Vehicle GPS tracking**

*Whilst our order books remain relatively strong, we are aware that the full effect of the pandemic may not have filtered through the entire supply chain, and we could still be impacted by a second wave.*

#### **Xaar PLC: Digital inkjet printing technology**

*We have a clear strategy: in the long term, to focus on software-led business, and in the near term, to place the needs and wellbeing of customers and employees above all else. This has supported a resilient performance during Covid-19, with significant growth in software-led and recurring revenues, and an excellent improvement in gross margins given the macro backdrop. However, it is possible that new business wins in H2 2020 may be impacted by any further negative Covid-19 impacts on the global economy and potential knock on impact for our customers and our supply chain.*

#### **Amino Technologies PLC: Global provider of media and entertainment technology**

*When people spend more time at home they spend more time online and spend more online. 45% increase in users in 1H20 vs 1H19. Surge in users converted to buying apps, subscriptions and physical goods with DCB.*

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

*The long-term impacts of the outbreak are unknown and continue to evolve rapidly. Like other healthcare businesses throughout the world, Acacia Pharma had to adjust its commercialisation plans to accommodate for travel restrictions, reduced elective surgeries, the shift in priorities for healthcare institutions and restricted access to healthcare settings. Whilst the situation has created certain challenges in accessing decision makers in hospitals and ambiguity around the timing of their formulary committee meetings, the COVID-19 situation has led to increased interest in our products, which are designed to deliver better patient outcomes and enhance recovery post-surgery. This interest has been further elevated by the drug shortages of the most commonly used antiemetics as well as procedural sedatives. The COVID-19 situation has also created procedural backlogs and pent-up demand for products that can help improve procedural throughput as hospitals.*

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

## 5. Concluding remarks

The June 2021 update is the third 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 6,000 Greater Cambridge-based companies with accounting year ends between 6<sup>th</sup> April 2020 and 31<sup>st</sup> December 2020. This sample, which represents over two-thirds of corporate employment in the area, has a modal year end of August 2020 and captures the impact of the first Covid lockdown in England. All of the companies have had some experience of the pandemic, ranging from two to ten months.

The picture that emerges is one of continued but lower employment growth in Greater Cambridge during the last year. Although employment growth slowed down in both KI and non-KI sectors, employment increased five times faster in KI sectors than in non-KI sectors. The slowdown in employment growth was mitigated by the strong performance of the Life Science and ICT sectors. We find that employment growth of Life Science companies accelerated despite the unfolding of the pandemic, reflecting their important role in supporting the fight against the virus and future outbreaks.

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, pointing to the benefits of the Government's furlough scheme in protecting employment in sectors with declining sales. These findings are confirmed by a snapshot for companies with interim accounts ending between June 2020 and March 2021, which shows that turnover slowed down during the last six months.

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. Therefore, our October 2021 update will provide an analysis of the latest corporate and non-corporate employment data from BRES, which will be released by ONS in September 2021 and will have September 2020 as the reference date.

At the same time, employers must now pay part of their furloughed staff's wages for the first time, with the Government's contribution reducing to 70% from July and 60% from August. If these changes will lead businesses to reconsider whether they will retain their furloughed staff, there could be implications for employment changes. Our next updates will cast light on these and other related issues.

*Andy Cosh*

*Giorgio Caselli*

Centre for Business Research, University of Cambridge

June 2021



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

June 2021 Update	Number of companies	Total empl 2020	Total empl 2019	% of GC total 2019	Empl growth 2019-20	Empl growth 2018-19
<b>KNOWLEDGE INTENSIVE SECTORS</b>						
Information technology and telecoms	895	11,943	10,861	60.2%	10.0%	10.4%
Life science and healthcare	236	16,431	14,857	84.4%	10.6%	9.1%
High-tech manufacturing	251	6,775	6,858	82.9%	-1.2%	1.0%
Knowledge intensive services	256	5,033	5,022	78.0%	0.2%	9.0%
<b>TOTAL KI SECTORS</b>	<b>1,638</b>	<b>40,182</b>	<b>37,598</b>	<b>74.6%</b>	<b>6.9%</b>	<b>7.9%</b>
<b>OTHER SECTORS</b>						
Primary	143	2,698	2,703	79.1%	-0.2%	-11.2%
Manufacturing	238	2,924	2,847	66.4%	2.7%	0.7%
Wholesale and retail distribution	436	9,094	8,598	80.5%	5.8%	3.3%
Construction and utilities	559	3,107	3,077	56.7%	1.0%	2.3%
Transport and travel	105	1,144	1,153	68.6%	-0.8%	2.2%
Property and finance	775	3,543	3,597	66.3%	-1.5%	3.3%
Other business services	1,137	7,274	7,278	61.5%	-0.1%	4.1%
Other services	638	4,642	4,679	59.1%	-0.8%	6.9%
Education, arts, charities, social care	373	10,195	10,098	81.9%	1.0%	4.0%
<b>TOTAL NON-KI SECTORS</b>	<b>4,404</b>	<b>44,621</b>	<b>44,030</b>	<b>69.9%</b>	<b>1.3%</b>	<b>2.7%</b>
<b>TOTAL ALL SECTORS</b>	<b>6,042</b>	<b>84,803</b>	<b>81,628</b>	<b>72.0%</b>	<b>3.9%</b>	<b>5.0%</b>

Source: Cosh & Caselli, CBR.

## Appendix A2. Employment growth by sector in Cambridge

June 2021 Update	Number of companies	Total empl 2020	Total empl 2019	% of Camb total 2019	Empl growth 2019-20	Empl growth 2018-19
<b>KNOWLEDGE INTENSIVE SECTORS</b>						
Information technology and telecoms	395	5,224	4,802	44.6%	8.8%	10.4%
Life science and healthcare	84	5,861	5,229	89.9%	12.1%	13.2%
High-tech manufacturing	36	1,001	1,000	72.0%	0.1%	-5.3%
Knowledge intensive services	103	1,292	1,269	75.3%	1.8%	19.5%
<b>TOTAL KI SECTORS</b>	<b>618</b>	<b>13,378</b>	<b>12,300</b>	<b>62.6%</b>	<b>8.8%</b>	<b>11.0%</b>
<b>OTHER SECTORS</b>						
Primary	22	147	147	70.4%	0.0%	6.5%
Manufacturing	79	726	718	93.2%	1.1%	5.0%
Wholesale and retail distribution	143	2,114	2,014	76.6%	5.0%	1.7%
Construction and utilities	162	633	634	54.6%	-0.2%	2.4%
Transport and travel	32	332	318	73.2%	4.4%	5.3%
Property and finance	388	2,132	2,167	69.6%	-1.6%	4.4%
Other business services	482	4,390	4,366	64.2%	0.5%	1.6%
Other services	294	2,650	2,638	75.5%	0.5%	9.2%
Education, arts, charities, social care	221	6,303	6,323	84.3%	-0.3%	-0.4%
<b>TOTAL NON-KI SECTORS</b>	<b>1,823</b>	<b>19,427</b>	<b>19,325</b>	<b>74.0%</b>	<b>0.5%</b>	<b>2.4%</b>
<b>TOTAL ALL SECTORS</b>	<b>2,441</b>	<b>32,805</b>	<b>31,625</b>	<b>69.1%</b>	<b>3.7%</b>	<b>5.6%</b>

Source: Cosh & Caselli, CBR.

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

June 2021 Update	Number of companies	Total empl 2020	Total empl 2019	% of S Cambs total 2019	Empl growth 2019-20	Empl growth 2018-19
<b>KNOWLEDGE INTENSIVE SECTORS</b>						
Information technology and telecoms	500	6,719	6,059	83.2%	10.9%	10.4%
Life science and healthcare	152	10,570	9,628	81.6%	9.8%	7.0%
High-tech manufacturing	215	5,774	5,858	85.1%	-1.4%	2.2%
Knowledge intensive services	153	3,741	3,753	79.0%	-0.3%	5.9%
<b>TOTAL KI SECTORS</b>	<b>1,020</b>	<b>26,804</b>	<b>25,298</b>	<b>82.4%</b>	<b>6.0%</b>	<b>6.5%</b>
<b>OTHER SECTORS</b>						
Primary	121	2,551	2,556	79.6%	-0.2%	-12.1%
Manufacturing	159	2,198	2,129	60.5%	3.2%	-0.7%
Wholesale and retail distribution	293	6,980	6,584	81.7%	6.0%	3.8%
Construction and utilities	397	2,474	2,443	57.3%	1.3%	2.3%
Transport and travel	73	812	835	67.0%	-2.8%	1.1%
Property and finance	387	1,411	1,430	61.9%	-1.3%	1.6%
Other business services	655	2,884	2,912	57.8%	-1.0%	8.2%
Other services	344	1,992	2,041	46.1%	-2.4%	3.9%
Education, arts, charities, social care	152	3,892	3,775	78.2%	3.1%	12.4%
<b>TOTAL NON-KI SECTORS</b>	<b>2,581</b>	<b>25,194</b>	<b>24,705</b>	<b>67.0%</b>	<b>2.0%</b>	<b>2.8%</b>
<b>TOTAL ALL SECTORS</b>	<b>3,601</b>	<b>51,998</b>	<b>50,003</b>	<b>74.0%</b>	<b>4.0%</b>	<b>4.6%</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 2019-20 annual draw were made available at the beginning of March 2021. 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/#item-2>

### **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 2021, we propose February, June and October updates which will yield estimates of growth for the years to end April 2020, August 2020 and early December 2020. These periods will capture respectively the effects of: the first three months of Covid; the impact of the first lockdown (six months); and the impact of the first and second lockdowns (nine months). 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 November 2020*</i></b>	Sample	30 November 2019 to 31 May 2020	Year to end December 2019	November 2020	Little impact
<b><i>Annual draw 2020**</i></b>	All companies	6 <sup>th</sup> April 2019 to 5 <sup>th</sup> April 2020	Year to early December 2019	February 2021	Little impact
<b><i>Update February 2021*</i></b>	Sample	March 2020 to August 2020	Year to end April 2020	March 2021	3 months Covid impact
<b><i>Update June 2021*</i></b>	Sample	April 2020 to December 2020	Year to August 2020	July 2021	Impact of first Covid lockdown
<b><i>Update October 2021</i></b>	Sample	October 2020 to April 2021	Year to early December 2020	November 2021	Impact of 1 <sup>st</sup> and 2 <sup>nd</sup> 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 June 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 6 April 2020 and 31 December 2020. We then check 2019 and 2018 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. We then create final employment figures for each of the following years ending April to December: 2020 (if available), 2019 and 2018. Finally, we create a file with the following information for those remaining in the update sample (**4,249** companies this time):

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

Next, we produce a table showing the number of companies (excluding any companies born in the latest year) 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 April 2020 and December 2020 (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 2019 and 2018 employment data against the existing figures on the database. Following this work we create a file with all the companies based in the Greater Cambridge area (**6,042** companies) with the following information:

- Company name
- Company registration number
- Local Authority District
- Sector

- KI or non-KI
- Size class in 2019 (as above)
- Employment 2019
- Employment 2018
- % 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. This allows us to compare the most recent growth of each sector and size class over the most recent year 2019/20 in comparison with the year 2018/19 for this sample of companies. The resulting sample is shown in Appendices A1–A3 and these tables show how significant they are, representing 72% 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 April 2020 and December 2020, they have all had some experience of the Covid epidemic varying from two to ten months. On average the companies in our sample will reflect the impact Covid has had on their performance during the last six months of their year.

### *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 to 2019 and as the vertical axis the annual growth shown in the update sample (in this case effectively the year to August 2020) – 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).