

Greater Cambridge Employment Update October 2022*

Andy Cosh

Giorgio Caselli

Centre for Business Research, University of Cambridge

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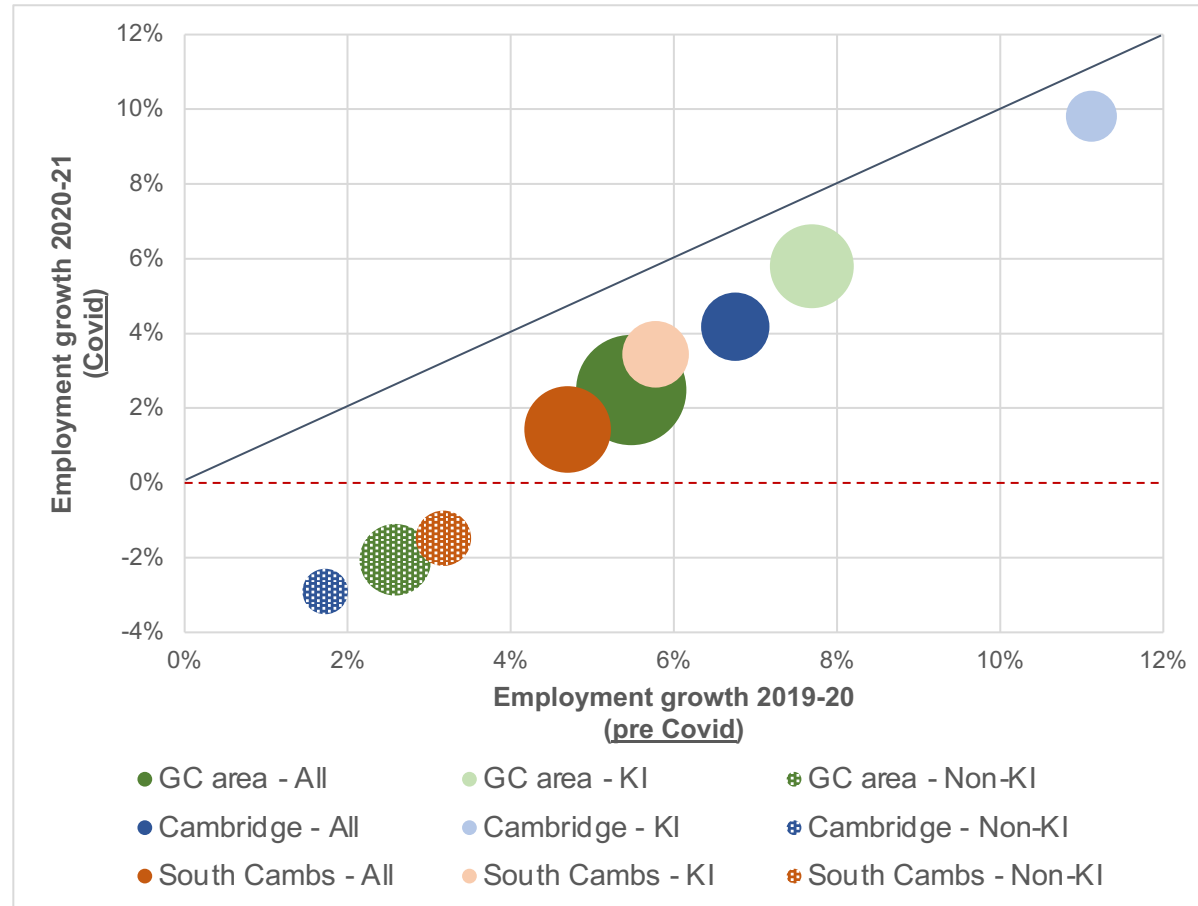
* Commissioned and sponsored by the Greater Cambridge Partnership and Cambridge Ahead.



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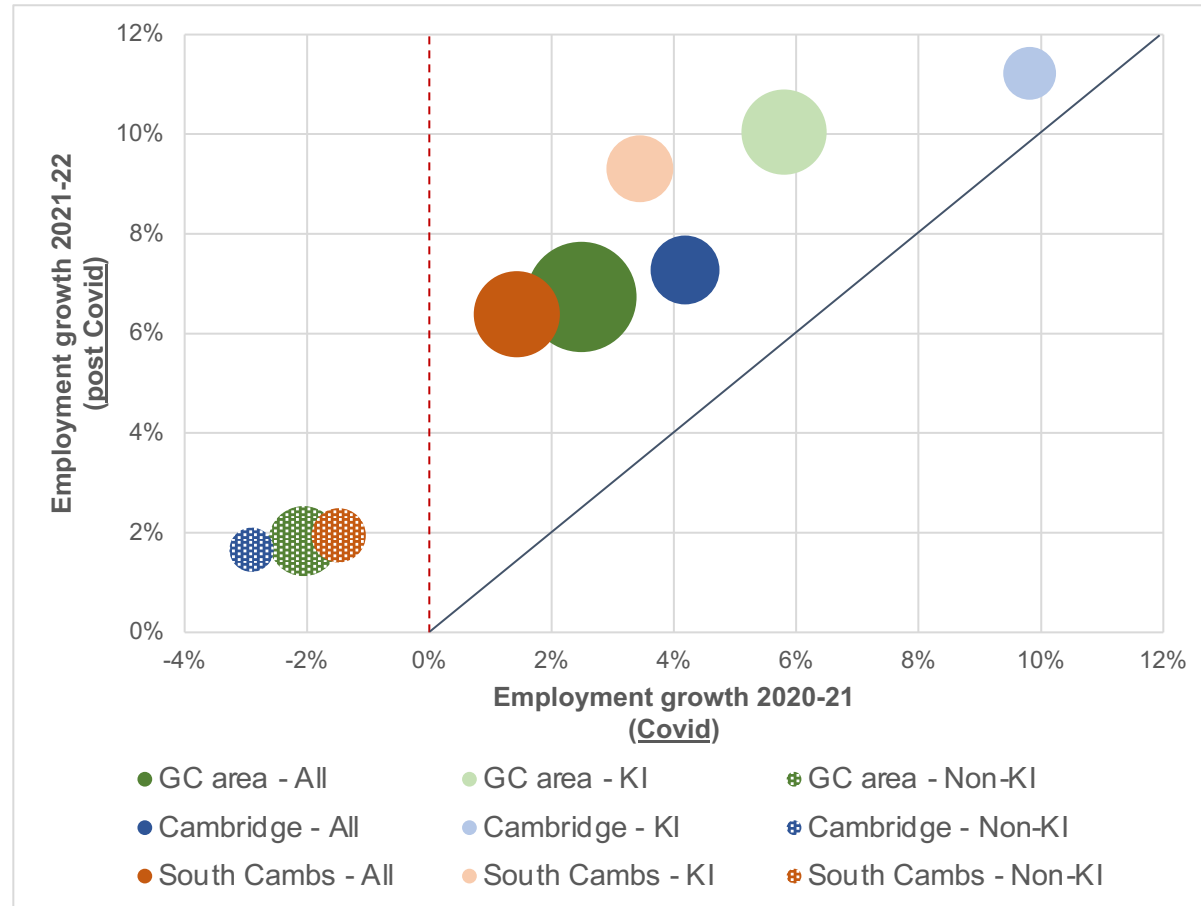
Figure 1 Employment growth by area: 2020-21 (Covid) vs 2019-20 (pre Covid)



Note: The size of each bubble is proportionate to the number of employees in 2019-20 on a continuous scale.

Source: Cosh & Caselli, CBR.

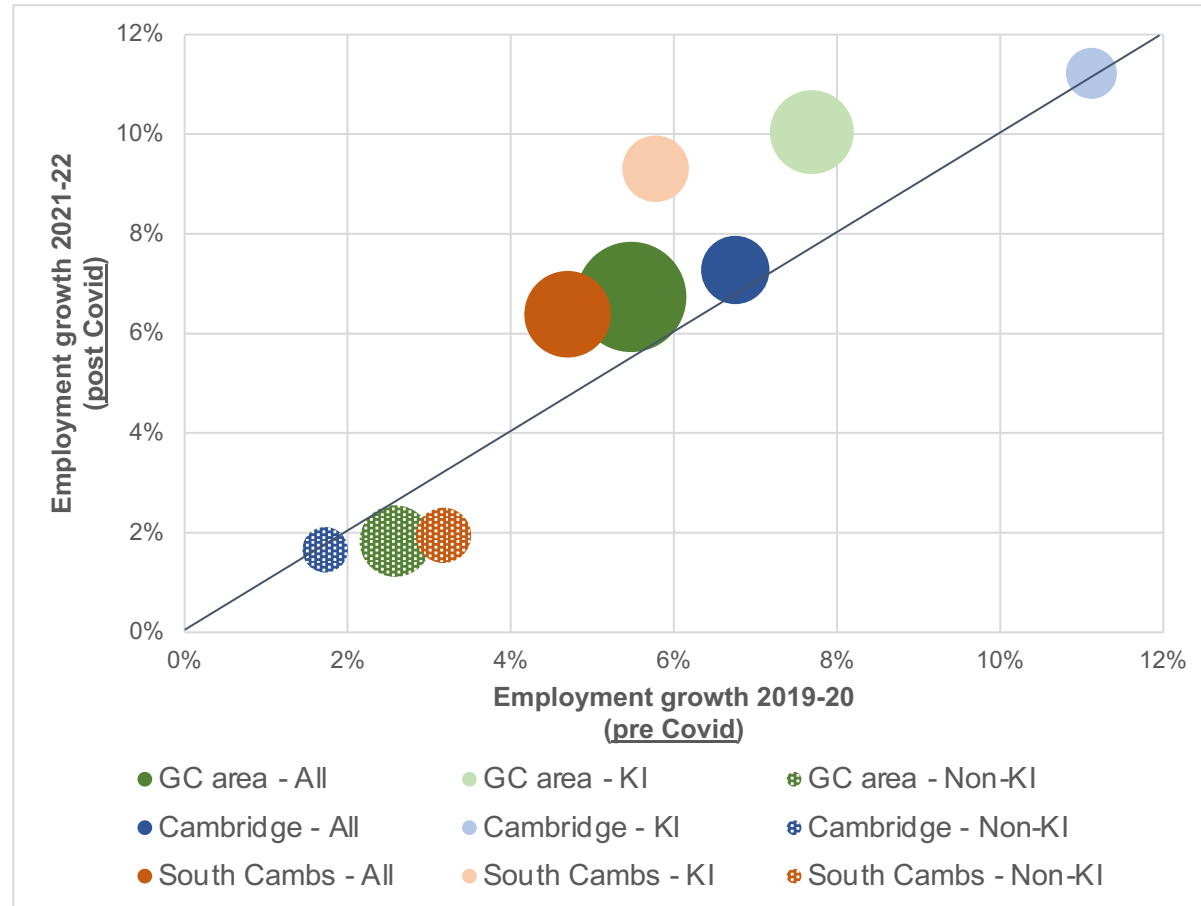
Figure 2 Employment growth by area: 2021-22 (post Covid) vs 2020-21 (Covid)



Note: The size of each bubble is proportionate to the number of employees in 2020-21 on a continuous scale.

Source: Cosh & Caselli, CBR.

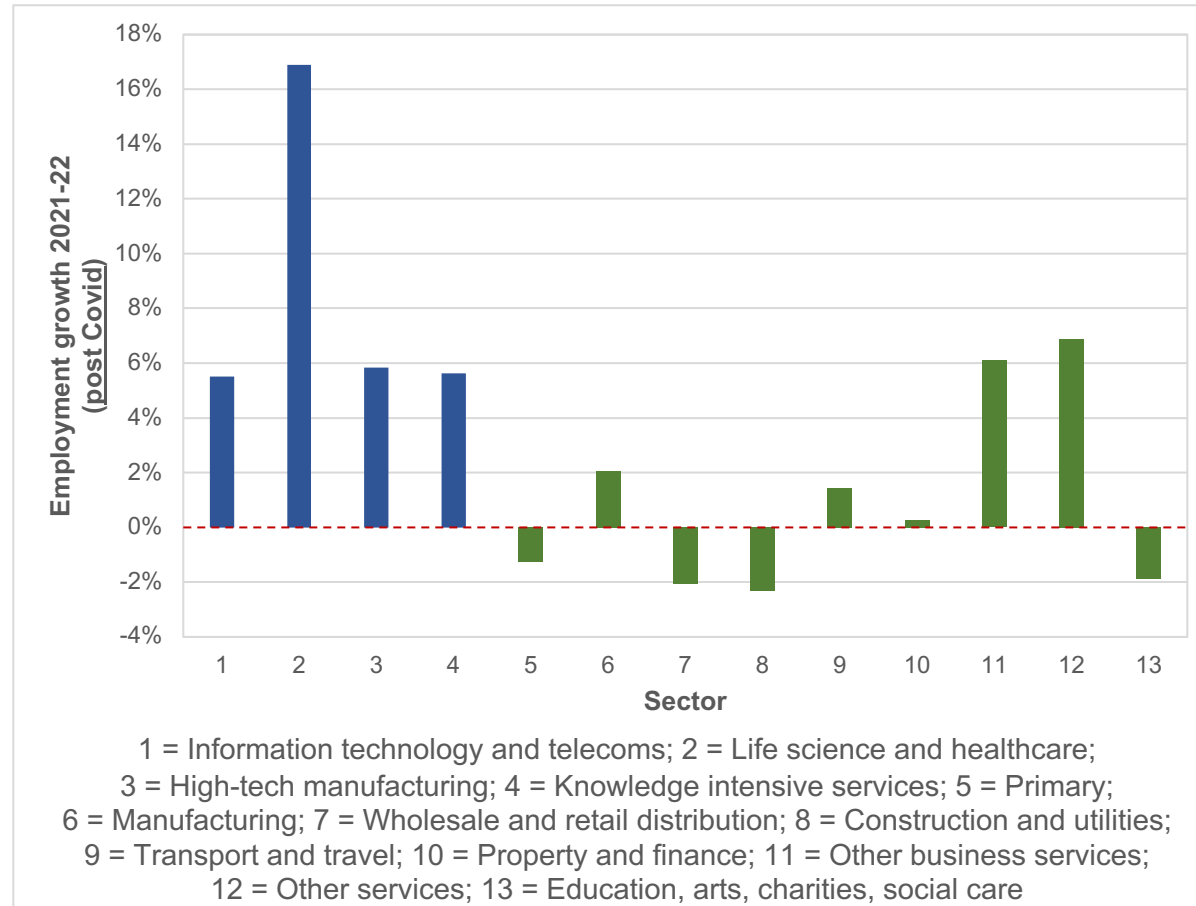
Figure 3 Employment growth by area: 2021-22 (post Covid) vs 2019-20 (pre Covid)



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.

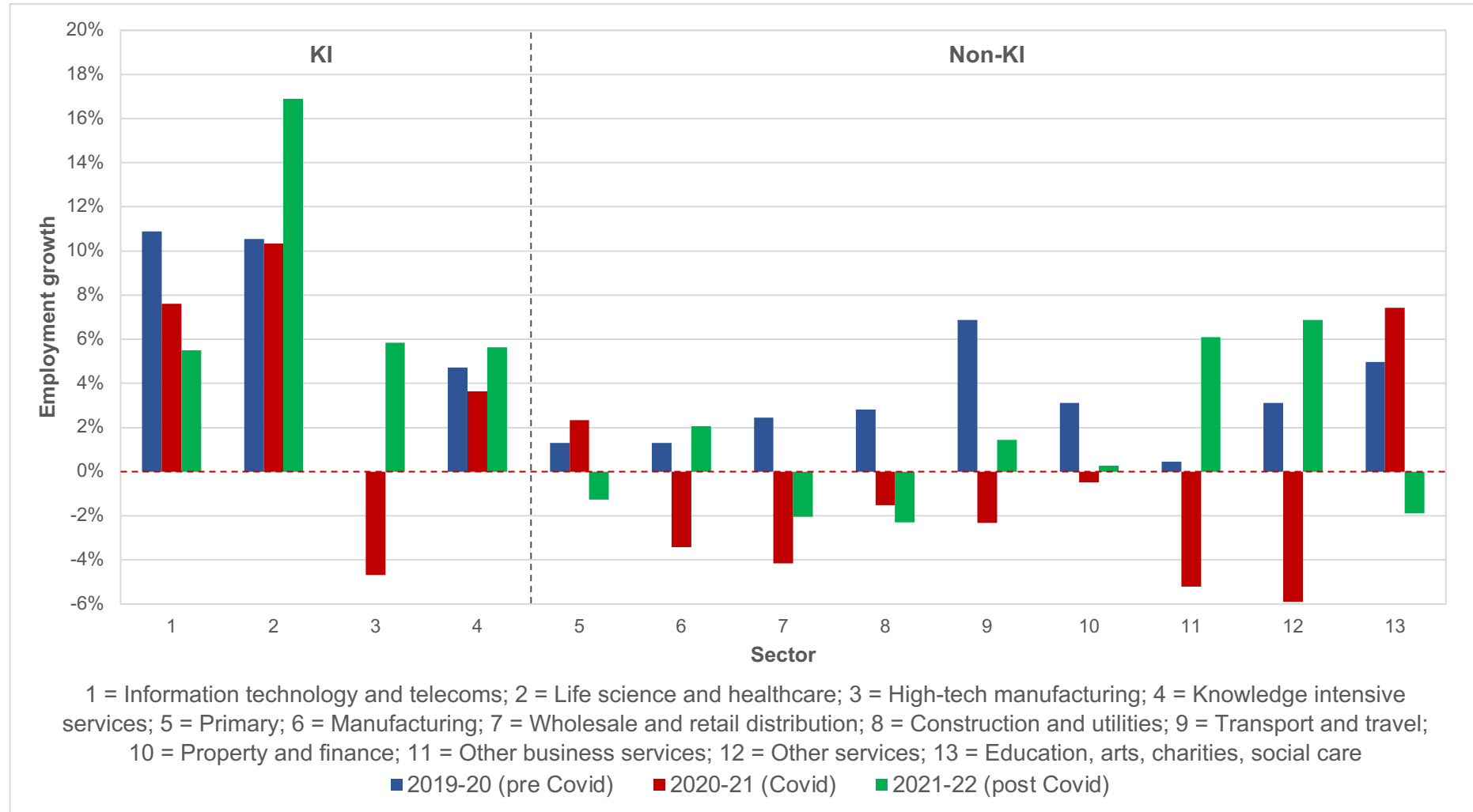
Figure 4 Employment growth 2021-22 (post Covid) by sector in the Greater Cambridge area



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

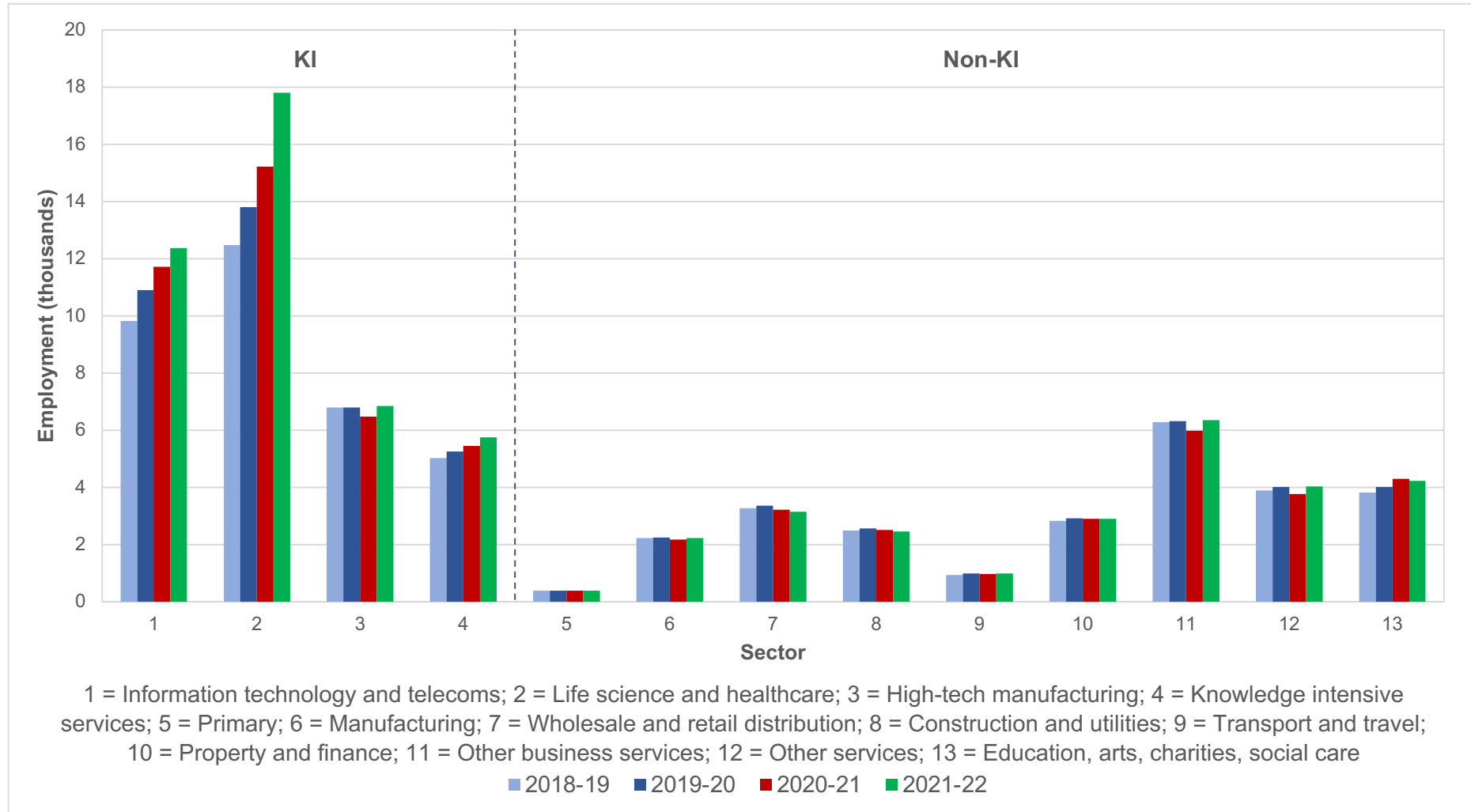
Source: Cosh & Caselli, CBR.

Figure 6 Employment growth by sector in the Greater Cambridge area



Source: Cosh & Caselli, CBR.

Figure 5 Employment by sector in the Greater Cambridge area

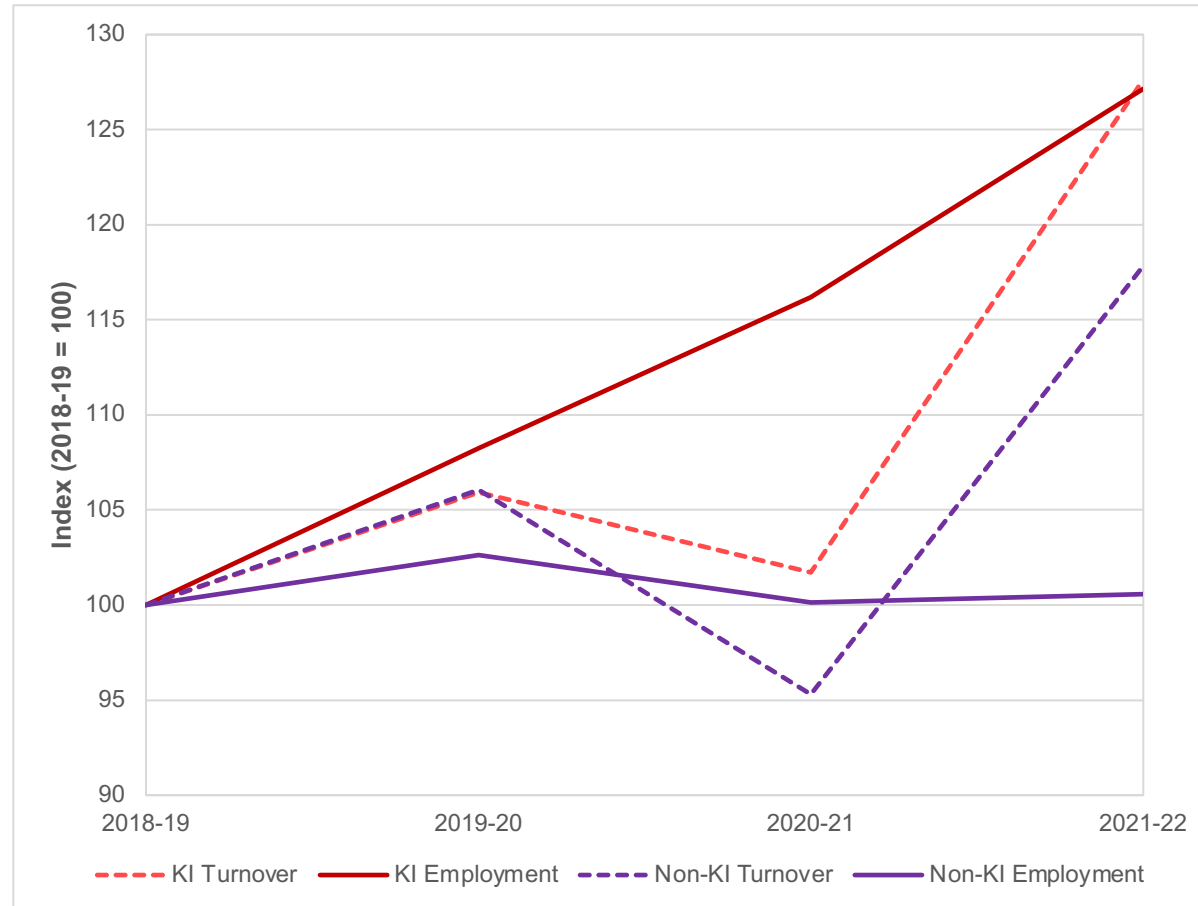


Source: Cosh & Caselli, CBR.

Summary of October 2022 employment update results

- The results for the pandemic period show a significant impact on performance.
- Employment growth of Greater Cambridge-based businesses slowed down during Covid, largely reflecting a weaker performance of non-KI sectors.
- KI employment continued to grow at pace despite Covid-related restrictions, testifying to the resilience of the Greater Cambridge KI economy.
- We find positive and much stronger overall employment growth in the post-Covid period, driven by large increases in employee numbers by KI companies – particularly in the Life Science sector.
- Our comparison of the performance before and after the lockdowns suggests that corporate employment has started to recover from the worst effects of Covid.
- Whilst the recovery is well underway for KI sectors, employment growth in non-KI sectors remains below its pre-pandemic levels despite having picked up in 2021-22.
- 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 four years.

Figure 10 KI and non-KI turnover and employment indices



Source: Cosh & Caselli, CBR.

Highlights

- *Overview*
 - The current business environment makes it important to have timely data on employment changes. This is the seventh of a series of updates that bring up-to-date information about what is happening to corporate employment in the Greater Cambridge area.
 - The October 2022 Update covers accounting year ends between December 2021 and April 2022 (the median year end is early March 2022). This is the first time since we started our employment updates work that we are able to compare three years: the first (2019-20) largely unaffected by Covid; the second (2020-21) including all three Covid lockdowns; and the third (2021-22) looking at post-lockdowns performance.
 - This update is obtained by sampling the CBR annual corporate database of all businesses based in the wider Cambridge region. It covers a large sample of companies representing 59% of corporate employment in Greater Cambridge.

Highlights

- *Areas*
 - Corporate employment growth in the Greater Cambridge area slowed down from 5.5% in 2019-20 to 2.5% in 2020-21, reflecting the impact of the three Covid lockdowns. However, this slowdown is modest considering the unprecedented disruption to business caused by the pandemic (**Figure 1, p8**).
 - The lower employment growth in the area during Covid was due to a weaker performance of non-KI sectors compared with the pre-Covid period. Whilst employment growth in KI sectors remained high at 5.8%, non-KI sectors saw employment growth decline from 2.6% in 2019-20 to -2.1% in 2020-21 (**Figure 1, p8**).
 - Employment growth in Cambridge in 2020-21 was strong at 4.2%, yet lower than in 2019-20 (6.8%). South Cambridgeshire exhibited a more significant slowdown from 4.7% in 2019-20 to 1.4% in 2020-21 (**Figure 1, p8**).
 - The data covering the post-Covid period reveal that overall employment growth was positive and much stronger than during the Covid period. Employment growth increased from 2.5% in 2020-21 to 6.7% in 2021-22, possibly implying that businesses discovered how to live with Covid (**Figure 2, p9**).

Highlights

- *Areas (continued)*
 - The faster employment growth in the area during the most recent year was driven by a strong performance of KI sectors, which saw employment growth accelerate from 5.8% in 2020-21 to 10.0% in 2021-22. In turn, non-KI employment increased by 1.8% post Covid after declining by 2.1% during Covid. This result indicates that the impact of the pandemic on the non-KI economy has lasted longer (**Figure 2, p9**).
 - Turning to the individual districts, employment growth in Cambridge was high at 7.3% in 2021-22, up from 4.2% in 2020-21. Similarly, employment growth in South Cambridgeshire was 6.4% in the last year against a 1.4% rate in the previous year (**Figure 2, p9**).
 - We examine whether post-Covid growth rates have resumed their pre-Covid levels. The recovery has been helped by the robust performance of KI sectors, whilst employment growth in non-KI sectors picked up in 2021-22 but remained below its pre-pandemic levels (**Figure 3, p11**).

Highlights

- *Areas (continued)*
 - Both Cambridge- and South Cambridgeshire-based companies achieved higher employment growth in the post-Covid period than in the pre-Covid period. Employment growth in Cambridge was slightly faster in 2021-22 (7.3%) compared with 2019-20 (6.8%). In South Cambridgeshire, employment growth was much stronger in the latest year (6.4%) than it was two years ago (4.7%) (**Figure 3, p11**).

Highlights

- *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. ICT companies 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 retail businesses have been severely affected by lockdowns and other restrictions.
 - In line with these observations, we find that ‘Life science and healthcare’ maintained strong growth in 2020-21 despite Covid, followed by much higher growth in the post-lockdowns period. Employment growth remained high during Covid, although somewhat lower than one year earlier, also in ‘Information technology and telecoms’ (**Figure 5, p14 & Figure 6, p16**).
 - The results for the non-KI sectors paint a more multifaceted picture. Employment growth in the ‘Other business services’ and ‘Other services’ sectors fell in 2020-21; it then picked up in 2021-22. The results for the ‘Other services’ sector point to strong employment growth after Covid within a sector that was hit the hardest by Covid-related restrictions. Nevertheless, 2021-22 employment in the sector was only slightly higher than in 2019-20 (**Figure 5, p14 & Figure 6, p16**).

Highlights

- *Sectors (continued)*
 - Employment growth appears to have picked up in the post-Covid period also in 'Transport and travel' and 'Property and finance'. However, it remained significantly below its pre-Covid levels, particularly in the 'Transport and travel' sector (**Figure 5, p14 & Figure 6, p16**).
 - We found rather different results for the other four non-KI sectors. There are signs that 'Wholesale and retail distribution' and 'Construction and utilities' have been struggling to return to growth in the aftermath of Covid. Whilst both sectors enjoyed robust employment growth before Covid, they witnessed a drop in employment during 2020-21 that persisted into 2021-22 (**Figure 5, p14 & Figure 6, p16**).
 - In turn, the 'Primary' and 'Education, arts, charities, social care' sectors showed a strong performance during Covid, followed by negative growth after Covid. This result might reflect some specificities of our October 2022 Update sample, for example the inclusion of large non-school organisations (**Figure 5, p14 & Figure 6, p16**).

Highlights

- *Comparison of employment and turnover growth*
 - We complement the findings from the employment update by examining a sample of 129 companies with accounting year ends between December 2021 and April 2022 which have provided both employment and turnover data for the last four years.
 - Our results show that both turnover and employment of the KI companies were strong before the pandemic struck. Growth of turnover in 2019-20 was also strong for the non-KI companies, but their growth of employment, whilst positive, was not as strong as that of the KI sector **(Table 1, p24 & Figure 10, p25)**.
 - Employment growth of KI companies slowed markedly during Covid, 2020-21, but their total turnover actually fell. The picture is worse for non-KI companies, which suffered a fall in employment and an even greater fall in turnover. These findings bear witness to the support provided by the furlough scheme **(Table 1, p24 & Figure 10, p25)**.
 - Looking at the recovery year, 2021-22, KI employment has resumed its previous vigorous growth and turnover has rebounded to its previous growth trajectory (+25% in 2021-22). By contrast, the impact of the pandemic on non-KI employment appears to have lasted longer, whilst turnover has rebounded from lockdown giving a growth of 24% for these companies **(Table 1, p24 & Figure 10, p25)**.

Highlights

- *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 and June 2022. For each company we look at turnover in the same six-month period in 2019-20, 2020-21 and 2021-22.
 - By looking at interim reports, the snapshot is a whole year on compared with the update. The first year (2019-20) shows the pandemic effect; the second year (2020-21) the recovery from the worst impacts of the pandemic; and the final year (2021-22) examines whether Putin's war has started to impact these companies.
 - Within this group of companies (all knowledge intensive), total turnover grew by 20% in their latest six months (2021-22) compared with a growth of 19% in the same period last year (2020-21) and -9% in the first six months of the pandemic (2019-20).
 - Therefore, our findings suggest that the growth of these successful KI companies has remained robust into 2022. To date we cannot identify any impact of Putin's war and the associated rise in energy prices and falls in living standards.

Highlights

- *Concluding remarks*
 - Overall, our comparison of the performance before, during and after the Covid lockdowns suggests that Greater Cambridge corporate employment has started to recover from the worst effects of the pandemic. Whilst the recovery is well underway for KI sectors, employment growth in non-KI sectors remains below its pre-pandemic levels despite having picked up in 2021-22.
 - The results from comparing turnover and employment growth during the pandemic demonstrate the importance of the furlough scheme. However, we find no evidence that the cessation of this unprecedented support package has led to employment loss in the corporate sector.
 - Our October 2022 Update covers only the very early days of the UK cost of living crisis and largely predates Putin's war. We will explore corporate employment changes over the period including the first months of the UK cost of living crisis and the start of Putin's war in our February 2023 Update.

Figure 1 Employment growth by area: 2020-21 (Covid) vs 2019-20 (pre Covid)

- **Key findings:**

- Figure 1 portrays a picture of continued but lower overall employment growth in the Greater Cambridge area during Covid. Growth in the area slowed down from 5.5% in 2019-20 to 2.5% in 2020-21, reflecting the impact of the three Covid lockdowns in England. However, this slowdown is modest considering the unprecedented disruption to business caused by the pandemic.
- Our data show that the lower employment growth in the area was due to a weaker performance of non-KI sectors since the onset of Covid compared with the pre-Covid period. Whilst employment growth in KI sectors remained high at 5.8% (against a figure of 7.7% in 2019-20), non-KI sectors saw employment growth decline somewhat markedly from 2.6% in 2019-20 to -2.1% in 2020-21.
- Our finding of a robust performance of KI sectors during Covid holds even if we exclude AstraZeneca (measured by its employment in the Cambridge area only) from the analysis. With over 4,000 employees in the Cambridge area, AstraZeneca dominates total employment for our sample. KI employment growth after excluding AstraZeneca would be 7.5% in 2019-20 and 5.3% in 2020-21. Overall employment growth in the area would be 5.2% and 2.0%, respectively.

Figure 1 Employment growth by area: 2020-21 (Covid) vs 2019-20 (pre Covid)

- **Key findings (continued):**

- Employment growth in Cambridge in 2020-21 was strong at 4.2%, yet lower than in 2019-20 (6.8%). South Cambridgeshire exhibited a more significant slowdown from 4.7% in 2019-20 to 1.4% in 2020-21.
- The KI sectors fared better in Cambridge, where KI employment growth was close to reaching a double-digit figure (9.8%) even during Covid. The growth of the KI sectors in South Cambridgeshire decreased from 5.8% in 2019-20 to 3.4% in 2020-21.
- We found a rather different picture for the non-KI sectors, which suffered a fall in employment during 2020-21 in both districts despite the furlough scheme being in place. Non-KI employment growth dropped from 1.7% during 2019-20 to -2.9% during 2020-21 in Cambridge, while it showed a similar drop from 3.2% to -1.5% in South Cambridgeshire.

Figure 2 Employment growth by area: 2021-22 (post Covid) vs 2020-21 (Covid)

- **Key findings:**

- The data covering the post-Covid period reveal that overall employment growth in the Greater Cambridge corporate economy was positive and much stronger than during the Covid period. Employment growth increased from 2.5% in 2020-21 to 6.7% in 2021-22, possibly implying that businesses discovered how to live with Covid.
- The faster employment growth in the area was driven by a strong performance of KI sectors, which saw employment growth accelerate from 5.8% in 2020-21 to 10.0% in 2021-22. In turn, non-KI employment increased by 1.8% post Covid after declining by 2.1% during Covid. This result suggests that, although there seem to be signs of recovery also amongst non-KI sectors, the impact of the pandemic on the Greater Cambridge non-KI economy has lasted longer.
- If we exclude AstraZeneca, KI employment growth would be 5.3% in 2020-21 and 8.8% in 2021-22. Overall employment growth would be 2.0% and 5.9%, respectively.
- Turning to the individual districts, both Cambridge and South Cambridgeshire achieved faster employment growth in the latest year compared with one year earlier. Employment growth in Cambridge was high at 7.3% in 2021-22, up from 4.2% in 2020-21. Similarly, employment growth in South Cambridgeshire was 6.4% in the last year against a 1.4% rate in the previous year.

Figure 2 Employment growth by area: 2021-22 (post Covid) vs 2020-21 (Covid)

- **Key findings (continued):**

- The KI economy showed a particularly high degree of dynamism in Cambridge, where KI employment growth increased from an already high figure of 9.8% during Covid to 11.2% after Covid. The increase in employment growth amongst KI sectors was even larger in South Cambridgeshire, reaching 9.3% in 2021-22 compared with 3.4% in 2020-21.
- Non-KI sectors witnessed a return to growth in both districts, albeit at considerably lower rates than the KI sectors. Employment growth in non-KI sectors increased from -2.9% in 2020-21 to 1.7% in 2021-22 in Cambridge and from -1.5% to 1.9% in South Cambridgeshire.
- However, it must be noted that our results might reflect the performance of a somewhat exceptional sample of companies, which did not delay publication of their latest accounts despite the ongoing uncertainty about the unfolding of Covid and the cost of living crisis. The fact that most of the sample companies did not need more time to file their accounts could suggest that they have been less impacted by the changing business environment than companies that have yet to file their latest accounts. We have attempted to mitigate selection bias by conducting another data draw a week before releasing the full version of the report, which allowed us to include the latest data for a further 525 companies.

Figure 3 Employment growth by area: 2021-22 (post Covid) vs 2019-20 (pre Covid)

- **Key findings:**

- The results illustrated in Figure 3 suggest that corporate employment growth in Greater Cambridge has started to recover from the effects of the pandemic. After slowing down during Covid (Figure 1), growth in the area was 6.7% in the post-Covid period compared with 5.5% in the pre-Covid period.
- The recovery has been happening faster than many would have anticipated, helped by the robust performance of KI sectors. KI employment growth was higher in 2021-22 (10.0%) than in 2019-20 (7.7%), which is consistent with some KI companies (particularly in the Life Science and ICT sectors) benefiting from the opportunities brought about by the pandemic. Employment growth in non-KI sectors picked up in 2021-22 but remained below its pre-pandemic levels.
- Looking at the individual districts, both Cambridge- and South Cambridgeshire-based companies achieved higher employment growth in the post-Covid period than in the pre-Covid period. While employment growth in Cambridge was slightly faster in 2021-22 (7.3%) compared with 2019-20 (6.8%), employment growth in South Cambridgeshire was much stronger in the latest year (6.4%) than it was two years ago (4.7%).

Figure 3 Employment growth by area: 2021-22 (post Covid) vs 2019-20 (pre Covid)

- **Key findings (continued):**

- Behind the much stronger performance of South Cambridgeshire corporate employment in 2021-22 against 2019-20 is the fast growth of KI sectors, which continued to expand at a rate of 9.3% (5.8% in 2019-20). KI employment growth in Cambridge exhibited virtually the same growth in both years (11.2% and 11.1%, respectively).
- The two districts also differ with respect to the speed at which the recovery has been happening amongst non-KI sectors. The Cambridge non-KI economy grew by 1.7% in 2021-22, the same rate it had in 2019-20. By contrast, non-KI employment in South Cambridgeshire showed lower growth after Covid (1.9%) than before Covid (3.2%).

Figure 4 Employment growth 2021-22 (post Covid) by sector in the Greater Cambridge area

- **Key findings:**

- ‘Life science and healthcare’, the largest KI sector in the Greater Cambridge area, was the fastest growing sector during 2021-22 (16.9%). Employment growth in this sector was driven by the performance of AstraZeneca, Abcam and CMR Surgical, who added over 1,000 employees combined. The 2021-22 growth in Life Science employment after excluding AstraZeneca would be 15.3%.
- The second-largest KI sector in the area, ‘Information technology and telecoms’, saw employment growth of 5.5% in the post-Covid period. This was helped by the continued growth of some of the largest ICT companies based locally, including Amazon’s EVI Technologies, Redgate Software and Raspberry Pi.
- Similar growth rates were also achieved by the other two KI sectors, ‘High-tech manufacturing’ (5.8%) and ‘Knowledge intensive services’ (5.6%). The strong performance of the ‘High-tech manufacturing sector’ partly reflects the return to growth by Xaar following a period of divestitures and the continued increase in employee numbers by Sepura. In turn, TTP Group and Evonetix were among the fastest-growing ‘Knowledge intensive services’ companies.
- We found mixed results for non-KI sectors.

Figure 4 Employment growth 2021-22 (post Covid) by sector in the Greater Cambridge area

- **Key findings (continued):**

- The 'Other services' sector had the highest employment growth amongst all non-KI sectors (6.9%). The largest sub-sector within 'Other services' includes doctors, dentists and other incorporated healthcare businesses, which grew their employment by 8.5% during 2021-22. Hospitality businesses, the second largest group of businesses within the 'Other services' sector, saw a similar growth of 8.6%. Among the companies that contributed to this growth are Ieso Digital Health, a leading digital mental healthcare provider, and Gonville Hotels, which owns and operates the Gonville Hotel in central Cambridge.
- The 'Other business services' sector experienced similar growth (6.1%), while 'Manufacturing' (2.1%), 'Transport and travel' (1.4%) and 'Property and finance' (0.3%) all had positive but more modest growth.
- Conversely, employment fell in the 'Construction and utilities' (-2.3%), 'Wholesale and retail distribution' (-2.0%), 'Education, arts, charities, social care' (-1.9%) and 'Primary' (-1.3%) sectors.

Figure 4 Employment growth 2021-22 (post Covid) by sector in the Greater Cambridge area

- **Key findings (continued):**

- We observe that employment of the 'Education, arts, charities, social care' sample is dominated by large non-school organisations such as Fauna & Flora International (international conservation charity), Camfed International (non-profit organisation tackling poverty and inequality through girls' education) and VoiceAbility (provider of advocacy services for people with disabilities).
- Therefore, we analysed the latest corporate and non-corporate employment data from the Business Register and Employment Survey (BRES), which covers the growth period to September 2021. BRES data shows a similar fall in Education employment in Greater Cambridge during the most recent year (-1.6%). However, in the past we found the comparison of CBR results with those from BRES to be rather unhelpful, due to significant volatility in BRES employment as well as large revisions to the data (e.g. -12,000 employees in the 'First-degree level higher education' sub-sector alone when revised estimates for 2020 were published in October 2022).

Figure 4 Employment growth 2021-22 (post Covid) by sector in the Greater Cambridge area

- **Key findings (continued):**

- Although our sample covers only a limited number of schools, we expect their employment growth to have picked up slightly post Covid but to remain below its pre-pandemic levels. Growth might have picked up particularly amongst foreign schools, which saw the return of foreign language students to the Cambridge area after Covid lockdowns were lifted.

Figure 6 Employment growth by sector in the Greater Cambridge area

- **Key findings:**

- The differences in performance among sectors become even more apparent when examined in terms of employment growth.
- ‘Life science and healthcare’ and ‘Knowledge intensive services’ are two KI sectors that maintained strong growth in 2020-21 despite the Covid outbreak, followed by much higher growth as the economy started to recover from the worst impacts of the pandemic. The pickup in employment growth was more pronounced for the ‘Life science and healthcare’ sector, where employment grew by 16.9% in 2021-22 against 10.3% in 2020-21 and 10.6% in 2019-20. Life Science employment growth excluding AstraZeneca would be 15.3%, 10.0% and 10.6%, respectively.
- Employment growth remained high during the Covid period also in ‘Information technology and telecoms’, although it was somewhat lower in the latest year compared with one year earlier.
- The ‘High-tech manufacturing’ sector saw a return to growth in 2021-22 after two challenging years. Our data reveal that ‘High-tech manufacturing’ was the only KI sector to suffer employment losses during Covid.

Figure 6 Employment growth by sector in the Greater Cambridge area

- **Key findings (continued):**

- The performance of the 'High-tech manufacturing' sector is mirrored by that of the low- and med-low-tech 'Manufacturing' sector. Employment growth of 'Manufacturing' businesses fell somewhat markedly in 2020-21. It then picked up in 2021-22, when employment increased by 2.1% compared with 1.3% in 2019-20.
- 'Other business services' and 'Other services' exhibited a similar pattern. The results for the 'Other services' sector are particularly encouraging, in that they point to strong employment growth after Covid within a sector that was amongst the most severely affected by the pandemic.
- Employment growth appears to have picked up in the post-Covid period also in 'Transport and travel' and 'Property and finance'. However, it remained significantly below its pre-Covid levels, particularly in the 'Transport and travel' sector.
- We found rather different results for the other four non-KI sectors.

Figure 6 Employment growth by sector in the Greater Cambridge area

- **Key findings (continued):**

- There are signs that 'Wholesale and retail distribution' and 'Construction and utilities' have been struggling to return to growth in the aftermath of Covid. Whilst both sectors enjoyed robust employment growth before Covid, they witnessed a drop in employment during 2020-21 that persisted into 2021-22.
- In turn, the 'Primary' and 'Education, arts, charities, social care' sectors showed a strong performance during Covid, with higher employment growth than in the pre-Covid period (albeit from a relatively low base for the 'Primary' sector). Growth in these sectors turned negative after Covid, possibly reflecting some specificities of our October 2022 Update sample – which, as discussed above, includes large non-school organisations and only a limited number of schools.

Figure 5 Employment by sector in the Greater Cambridge area

- **Key findings:**

- ‘Life science and healthcare’, ‘Information technology and telecoms’ and ‘Knowledge intensive services’ saw a continued rise in employment during the four years covered by our study.
- The largest increase is found for ‘Life science and healthcare’, which employed 17,800 people in 2021-22 compared with 12,500 people in 2018-19. Employment went up by over 2,500 people during the post-Covid period alone. AstraZeneca accounted for 23% of total employment in the sector during 2021-22.
- After remaining unchanged between 2018-19 and 2019-20, employment in ‘High-tech manufacturing’ dropped by 300 people during Covid. It then increased by almost 400 people during the period after Covid, exceeding its pre-pandemic levels.
- The picture looks different for non-KI sectors. Figure 5 reveals that none of them exhibited a continued rise in employment over the four years from 2018-19 to 2021-22.

Figure 5 Employment by sector in the Greater Cambridge area

- **Key findings (continued):**

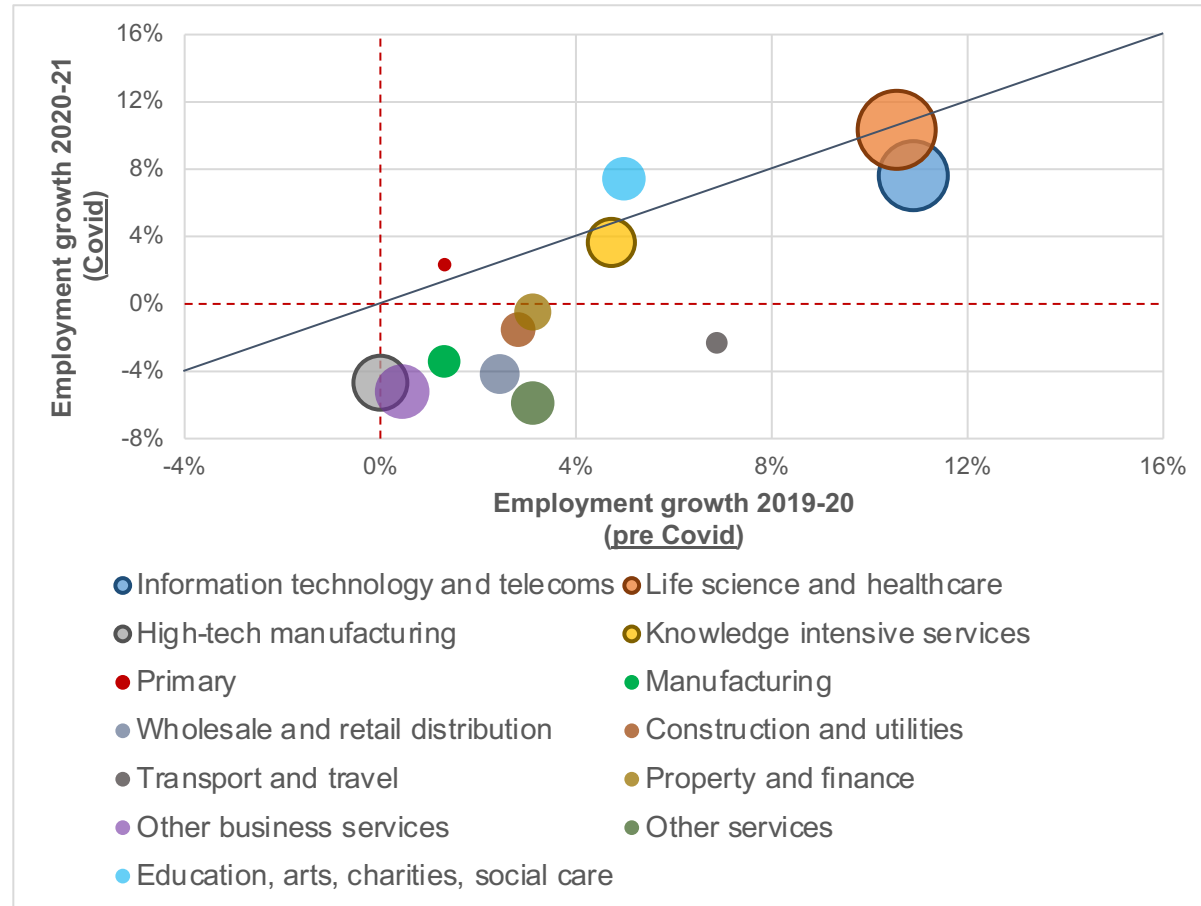
- ‘Manufacturing’, ‘Transport and travel’, ‘Property and finance’, ‘Other business services’ and ‘Other services’ suffered a fall in employment during Covid. Employment in these sectors increased afterwards but, except for ‘Other business services’ and ‘Other services’, it was still below 2019-20 levels. Even for ‘Other business services’ and ‘Other services’, their 2021-22 employment was only slightly higher than in 2019-20. This result is not surprising, as sectors such as ‘Other services’ include a number of in-person service businesses (e.g. hairdressers, pubs and restaurants) that were severely impacted by the pandemic and are likely to require some time before a full recovery is achieved.
- Employment in ‘Wholesale and retail distribution’ and ‘Construction and utilities’ increased between 2018-19 and 2019-20, before declining as the pandemic hit the UK. Since then, both sectors witnessed a steady fall in employee numbers.
- The ‘Primary’ and ‘Education, arts, charities, social care’ sectors had a steady increase in employment up to 2020-21, with a robust performance through Covid. This trend was reversed in 2021-22, when both sectors showed lower employment than one year earlier.

Figure 5 Employment by sector in the Greater Cambridge area

- **Key findings (continued):**

- Therefore, we find that Covid had little impact on KI employment, whilst several of the non-KI sectors were severely impacted. Sectors like low- and med-low-tech 'Manufacturing' seem to have managed the furlough scheme better than other non-KI sectors, possibly reflecting their effort to keep highly qualified staff for which significant investment in training had been made.

Figure 7 Employment growth by sector in the Greater Cambridge area: 2020-21 (Covid) vs 2019-20 (pre Covid)



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.

Figure 7 Employment growth by sector in the Greater Cambridge area: 2020-21 (Covid) vs 2019-20 (pre Covid)

- **Key findings:**

- The onset of the pandemic impacted employment growth across a variety of sectors.
- ‘Life science and healthcare’ is the only KI sector that had employment growth virtually unaffected by Covid. Employment in the Greater Cambridge Life Science cluster increased by 10.3% in 2020-21, down only marginally from 10.6% in 2019-20. Cambridge Healthcare Research (65.0%), Healx (62.1%) and CMR Surgical (44.6%) are some of the Life Science companies to have achieved fast growth during Covid.
- Employment growth in ‘Information technology and telecoms’ remained high at 7.6%, yet not as fast as in the year before Covid struck (10.9%). Among the companies which contributed to this growth are Amazon’s EVI Technologies (23.6%), Redgate Software (12.0%) and Aveva (11.1%).
- A slowdown in employment growth 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). The pandemic posed some challenges for ‘Knowledge intensive services’ businesses, as clients tightened their belts as a consequence of the impact of Covid on their businesses. Employment growth in the sector went down to 3.7% in 2020-21 from 4.7% in 2019-20.

Figure 7 Employment growth by sector in the Greater Cambridge area: 2020-21 (Covid) vs 2019-20 (pre Covid)

- **Key findings (continued):**

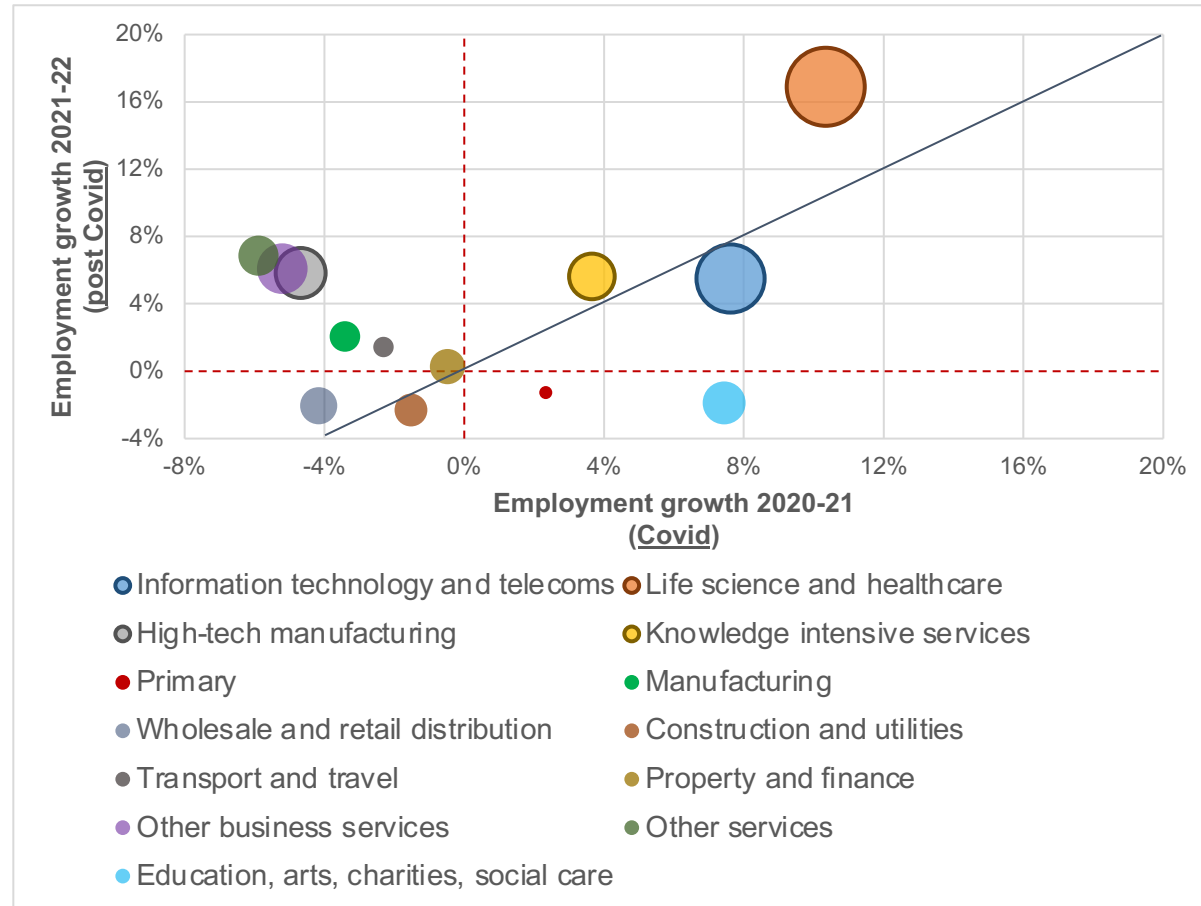
- By contrast, we found a considerable drop in employment growth in ‘High-tech manufacturing’, which was the only KI sector to experience negative growth during the Covid-affected year. This was due primarily to a drop in employee numbers by Hexcel Composites (-23.1%) – a leading supplier of composite materials for the commercial aerospace industry – who suffered from a reduction in demand from the impact of Covid on its customers.
- Similarly, the low- and med-low-tech ‘Manufacturing’ sector was one of seven non-KI sectors that showed a decline in employment growth during Covid. ‘Other services’, ‘Other business services’, ‘Wholesale and retail distribution’ and ‘Manufacturing’ witnessed the largest decline in employment growth. These results suggest that non-KI sectors have been hit the hardest by Covid restrictions.
- The ‘Other services’ sector, which includes many hospitality businesses, was severely impacted by the pandemic. Employment growth in the sector dropped from 3.1% in the pre-Covid period to -5.9% in the Covid period, with just over one in ten companies reporting an increase in employee numbers during Covid.

Figure 7 Employment growth by sector in the Greater Cambridge area: 2020-21 (Covid) vs 2019-20 (pre Covid)

- **Key findings (continued):**

- The 'Education, arts, charities, social care' and 'Primary' sectors were the only sectors with positive employment growth in 2020-21. Fauna & Flora International (29.8%) and VoiceAbility (16.5%) are examples of 'Education, arts, charities, social care' companies which increased their headcount despite Covid, while the steady growth of the 'Primary' sector was helped by higher employee numbers at several farming businesses (e.g. Harrold Fruit Farming; 14.7%).

Figure 8 Employment growth by sector in the Greater Cambridge area: 2021-22 (post Covid) vs 2020-21 (Covid)



Note: The size of each bubble is proportionate to the number of employees in 2020-21 on a continuous scale. Bubbles with an outline identify KI sectors.

Source: Cosh & Caselli, CBR.

Figure 8 Employment growth by sector in the Greater Cambridge area: 2021-22 (post Covid) vs 2020-21 (Covid)

- **Key findings:**

- The results presented in Figure 8 show that employment growth picked up in a number of sectors during 2021-22 as businesses learn how to live with Covid.
- ‘Life science and healthcare’ saw employment growth accelerate from 10.3% in 2020-21 to 16.9% in 2021-22. Besides strong employment growth by some of the largest Life Science companies (e.g. AstraZeneca, Abcam and CMR Surgical), growth in the sector reflects increased employee numbers at companies such as Illumina (+95 employees), Healx (+33 employees) and Cambridge Healthcare Research (+29 employees). This result is particularly encouraging if one considers that our October 2022 Update sample covers 82% of corporate employment in the Life Science sector in Greater Cambridge.
- ‘High-tech manufacturing’ was the second fastest-growing KI sector in the post-Covid period (5.8%), which came following a drop of 4.7% during the pandemic. Some of the ‘High-tech manufacturing’ businesses with robust growth in 2021-22 were ION Science (14.5%), Xaar (11.5%) and Industrial Inkjet (10.2%). ‘Knowledge intensive services’ also reached a similar growth rate in 2021-22 (5.6%), driven by increased employee numbers at companies such as Evonetix (44.2%), Cambridge Mechatronics (15.7%) and TTP Group (14.7%).

Figure 8 Employment growth by sector in the Greater Cambridge area: 2021-22 (post Covid) vs 2020-21 (Covid)

- **Key findings (continued):**

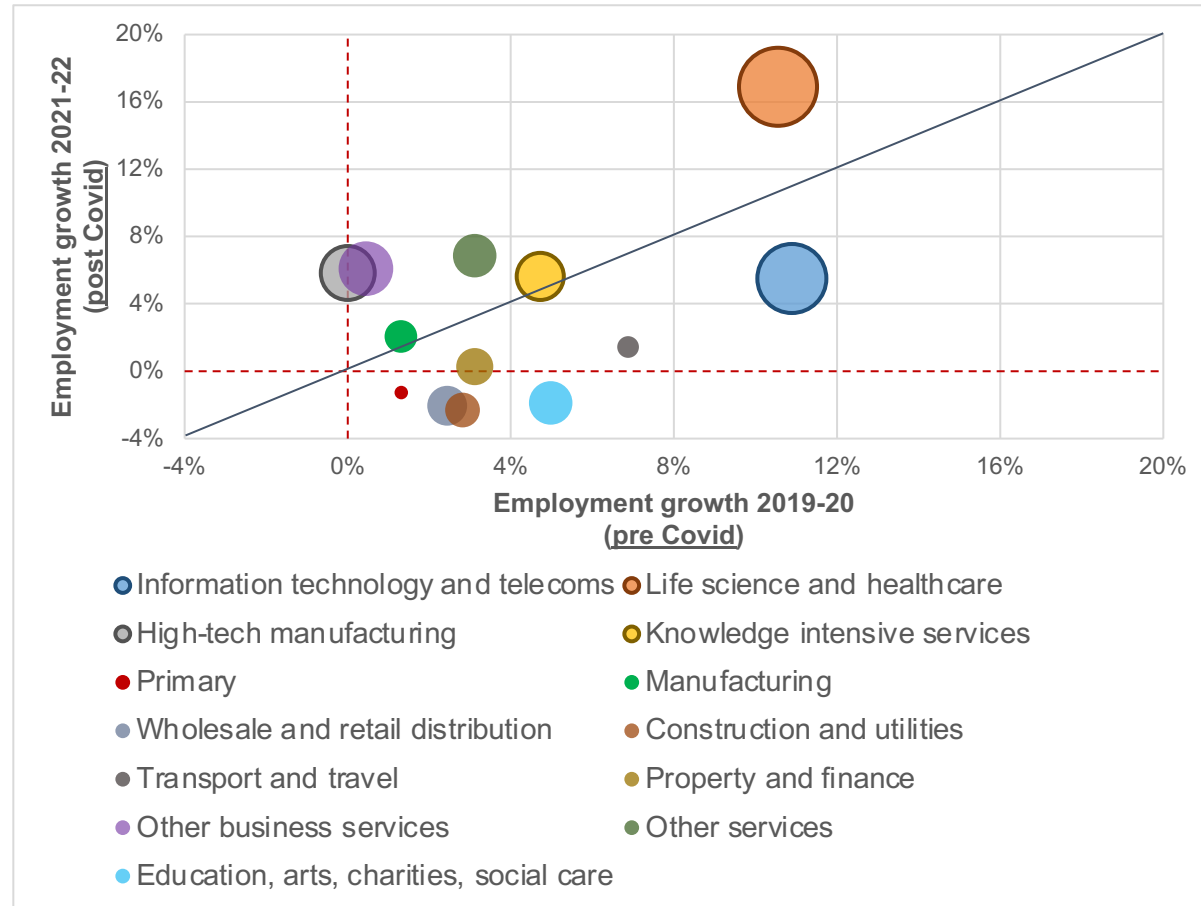
- Employment growth in 'Information technology and telecoms' was not as high in 2021-22 (5.5%) as it was in 2020-21 (7.6%), partly because of a reduction in employment by Aveva. However, many of the other large ICT companies in the area continued to exhibit strong growth in the latest year, for example Quartix Technologies (15.2%), Raspberry Pi (11.3%) and MathWorks (8.4%).
- Among non-KI sectors, 'Manufacturing', 'Transport and travel', 'Property and finance', 'Other business services' and 'Other services' saw a return to growth in 2021-22 after suffering employment losses during Covid.
- 'Other services' achieved the fastest rate of growth amongst all non-KI sectors (6.9%), which is in stark contrast to the 5.9% drop it endured only one year earlier. Ieso Digital Health, a leading digital mental healthcare provider, Gonville Hotels, which owns and operates the Gonville Hotel in central Cambridge, and SRD Group, which runs the Clayton Hotel Cambridge, are but a few examples of 'Other services' companies with stronger growth in 2021-22.
- Conversely, employment growth continued to be negative after Covid in 'Wholesale and retail distribution' and 'Construction and utilities'.

Figure 8 Employment growth by sector in the Greater Cambridge area: 2021-22 (post Covid) vs 2020-21 (Covid)

- **Key findings (continued):**

- Companies in 'Wholesale and retail distribution' showed a 2.0% decline in employment during 2021-22 compared with a 4.2% decline during 2020-21. The decline in employment was similar between wholesale companies (-1.9%) and retail companies (-2.1%).
- In turn, employment in the 'Construction and utilities' sector fell by 2.3% in the latest year compared with a fall of 1.5% in the previous year. Despite the steady growth by some construction companies such as CPS Building Services (10.1%), the decrease in employee numbers by several other companies (e.g. JCW Group and Coulson Group) led to a second consecutive year of negative employment growth in the sector.
- The results for the 'Primary' and 'Education, arts, charities, social care' sectors are at odds with the results for the rest of the non-KI sectors. Employment growth of 'Primary' businesses dropped from 2.3% in 2020-21 to -1.3% in 2021-22, while it dropped from 7.4% to -1.9% respectively in the 'Education, arts, charities, social care' sector. As noted above, our results for the 'Education, arts, charities, social care' sector are in line with the latest results from BRES, although they are based on a sample that is dominated by large non-school organisations such as Fauna & Flora International, Camfed International and VoiceAbility.

Figure 9 Employment growth by sector in the Greater Cambridge area: 2021-22 (post Covid) vs 2019-20 (pre Covid)



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.

Figure 9 Employment growth by sector in the Greater Cambridge area: 2021-22 (post Covid) vs 2019-20 (pre Covid)

- **Key findings:**

- Figure 9 sheds light on the extent of the recovery from the pandemic in each of the 13 sectors used in the analysis.
- Businesses in 'Life science and healthcare', 'High-tech manufacturing' and 'Knowledge intensive services' grew their headcount faster in the post-Covid period than in the pre-Covid period. A case in point is the Life Science sector, where employment growth accelerated from 10.6% in 2019-20 to 16.9% in 2021-22. The picture is somewhat different for the other KI sector, 'Information technology and telecoms', which continued to grow at pace after Covid yet well below its pre-pandemic rate.
- The results for the non-KI sectors paint an even more multifaceted picture.
- 'Manufacturing', 'Other business services' and 'Other services' achieved faster growth in 2021-22 than in 2019-20. This finding provides some reason to be optimistic about the speed of the recovery from Covid, since sectors such as 'Other business services' and 'Other services' include consultants, hospitality businesses and other in-person service companies that had their business severely disrupted by the pandemic. However, the ongoing cost of living crisis may well delay any return to normality.

Figure 9 Employment growth by sector in the Greater Cambridge area: 2021-22 (post Covid) vs 2019-20 (pre Covid)

- **Key findings (continued):**

- In turn, 'Primary', 'Wholesale and retail distribution', 'Construction and utilities' and 'Education, arts, charities, social care' suffered employment losses in the latest year, whilst they showed positive employment growth before the onset of the pandemic. Although the information provided in the company accounts does not enable us to explore this issue in more detail, it is possible that the cessation of the furlough scheme in September 2021 (our sample covers companies with accounting year ends between December 2021 and April 2022) might partly explain the fall in employment during 2021-22 captured by our data.
- A final and third group of non-KI sectors includes 'Transport and travel' and 'Property and finance'. Employment growth in these sectors was positive post Covid, albeit considerably lower compared with the pre-Covid period.

Table 1 Comparison of employment and turnover growth rates in the Greater Cambridge area

Greater Cambridge area Sample of companies with both employment and turnover for the last three years	Turnover growth %pa			Employment growth %pa		
	2019-20	2020-21	2021-22	2019-20	2020-21	2021-22
	<i>Before</i>	<i>During</i>	<i>After</i>	<i>Before</i>	<i>During</i>	<i>After</i>
ALL COMPANIES						
Number of companies	129	129	129	129	129	129
Totals at end of each year	£5,159m	£4,891m	£6,121m	14,540	15,159	16,188
Median growth	8.0%	1.3%	10.8%	2.9%	0.0%	2.9%
Weighted average growth	5.9%	-5.2%	25.1%	6.4%	4.3%	6.8%
KI COMPANIES						
Number of companies	71	71	71	71	71	71
Totals at end of each year	£4,141m	£3,976m	£4,990m	9,969	10,699	11,709
Median growth	8.3%	1.7%	10.2%	6.3%	1.6%	7.2%
Weighted average growth	5.9%	-4.0%	25.5%	8.3%	7.3%	9.4%
NON-KI COMPANIES						
Number of companies	58	58	58	58	58	58
Totals at end of each year	£1,018m	£915m	£1,131m	4,571	4,460	4,479
Median growth	7.3%	-5.5%	12.4%	0.0%	0.0%	0.0%
Weighted average growth	6.1%	-10.2%	23.6%	2.6%	-2.4%	0.4%

Source: Cosh & Caselli, CBR.

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

October 2022 Update	Number of companies	Total empl 2021-22	% of GC total 2020-21	Empl growth 2019-20	Empl growth 2020-21	Empl growth 2021-22
KNOWLEDGE INTENSIVE SECTORS						
Information technology and telecoms	599	12,371	66.6%	10.9%	7.6%	5.5%
Life science and healthcare	183	17,799	81.9%	10.6%	10.3%	16.9%
High-tech manufacturing	156	6,853	76.9%	0.0%	-4.7%	5.8%
Knowledge intensive services	178	5,757	79.9%	4.7%	3.7%	5.6%
TOTAL KI SECTORS	1,116	42,780	75.6%	7.7%	5.8%	10.0%
OTHER SECTORS						
Primary	78	390	14.9%	1.3%	2.3%	-1.3%
Manufacturing	175	2,223	57.2%	1.3%	-3.4%	2.1%
Wholesale and retail distribution	347	3,155	49.9%	2.4%	-4.2%	-2.0%
Construction and utilities	417	2,460	51.1%	2.8%	-1.5%	-2.3%
Transport and travel	75	986	53.4%	6.9%	-2.3%	1.4%
Property and finance	424	2,908	48.2%	3.1%	-0.5%	0.3%
Other business services	851	6,354	49.8%	0.4%	-5.2%	6.1%
Other services	468	4,031	43.2%	3.1%	-5.9%	6.9%
Education, arts, charities, social care	239	4,225	33.8%	5.0%	7.4%	-1.9%
TOTAL NON-KI SECTORS	3,074	26,732	44.3%	2.6%	-2.1%	1.8%
TOTAL ALL SECTORS	4,190	69,512	58.9%	5.5%	2.5%	6.7%

Source: Cosh & Caselli, CBR.

Appendix A2. Employment growth by sector in Cambridge

October 2022 Update	Number of companies	Total empl 2021-22	% of Camb total 2020-21	Empl growth 2019-20	Empl growth 2020-21	Empl growth 2021-22
KNOWLEDGE INTENSIVE SECTORS						
Information technology and telecoms	247	7,872	79.8%	11.9%	8.7%	5.8%
Life science and healthcare	61	6,791	82.3%	12.4%	13.4%	19.2%
High-tech manufacturing	29	484	35.4%	-3.7%	-1.3%	5.4%
Knowledge intensive services	70	1,454	70.0%	8.2%	5.7%	9.2%
TOTAL KI SECTORS	407	16,601	76.8%	11.1%	9.8%	11.2%
OTHER SECTORS						
Primary	12	108	54.1%	4.0%	9.7%	-4.4%
Manufacturing	37	264	37.5%	1.1%	0.7%	-4.3%
Wholesale and retail distribution	119	731	28.8%	2.5%	-8.2%	-3.4%
Construction and utilities	98	419	46.1%	1.6%	-6.3%	-2.1%
Transport and travel	20	163	32.4%	3.1%	-29.2%	-2.4%
Property and finance	160	1,658	50.8%	2.9%	0.1%	-0.1%
Other business services	321	3,010	43.6%	-3.1%	-8.8%	6.2%
Other services	189	1,543	37.1%	6.3%	-7.6%	7.2%
Education, arts, charities, social care	107	2,769	37.5%	4.1%	8.9%	-1.7%
TOTAL NON-KI SECTORS	1,063	10,665	40.1%	1.7%	-2.9%	1.7%
TOTAL ALL SECTORS	1,470	27,266	55.7%	6.8%	4.2%	7.3%

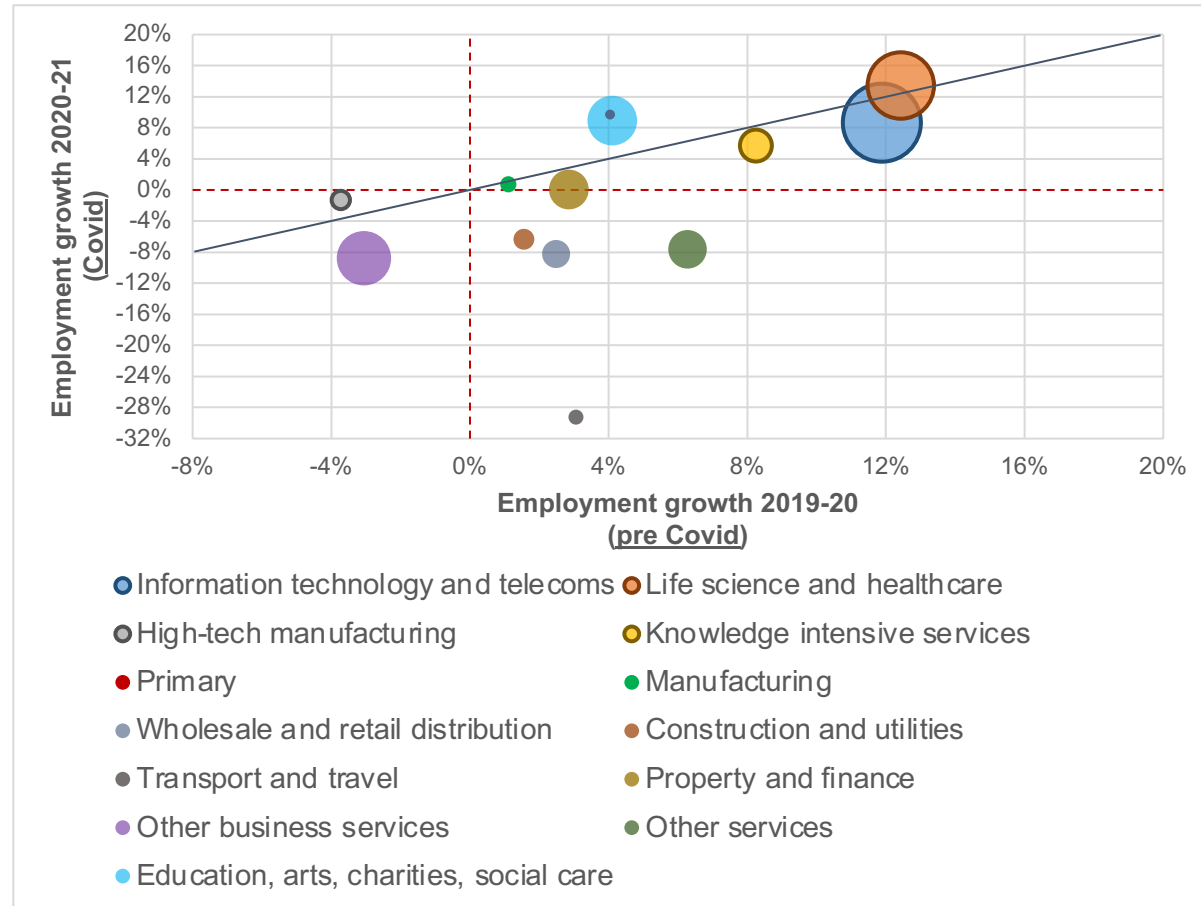
Source: Cosh & Caselli, CBR.

Appendix A3. Employment growth by sector in South Cambridgeshire

October 2022 Update	Number of companies	Total empl 2021-22	% of S Cambs total 2020-21	Empl growth 2019-20	Empl growth 2020-21	Empl growth 2021-22
KNOWLEDGE INTENSIVE SECTORS						
Information technology and telecoms	352	4,499	51.7%	9.3%	5.9%	5.0%
Life science and healthcare	122	11,008	81.7%	9.5%	8.6%	15.5%
High-tech manufacturing	127	6,369	84.4%	0.3%	-4.9%	5.9%
Knowledge intensive services	108	4,303	83.7%	3.7%	3.0%	4.5%
TOTAL KI SECTORS	709	26,179	74.8%	5.8%	3.4%	9.3%
OTHER SECTORS						
Primary	66	282	11.6%	0.4%	-0.4%	0.0%
Manufacturing	138	1,959	61.9%	1.3%	-4.0%	3.0%
Wholesale and retail distribution	228	2,424	64.2%	2.4%	-2.8%	-1.6%
Construction and utilities	319	2,041	52.3%	3.1%	-0.5%	-2.3%
Transport and travel	55	823	61.7%	8.1%	6.1%	2.2%
Property and finance	264	1,250	45.1%	3.5%	-1.2%	0.8%
Other business services	530	3,344	57.1%	4.1%	-1.7%	6.0%
Other services	279	2,488	48.0%	1.2%	-4.8%	6.6%
Education, arts, charities, social care	132	1,456	28.4%	6.6%	4.7%	-2.2%
TOTAL NON-KI SECTORS	2,011	16,067	47.7%	3.2%	-1.5%	1.9%
TOTAL ALL SECTORS	2,720	42,246	61.1%	4.7%	1.4%	6.4%

Source: Cosh & Caselli, CBR.

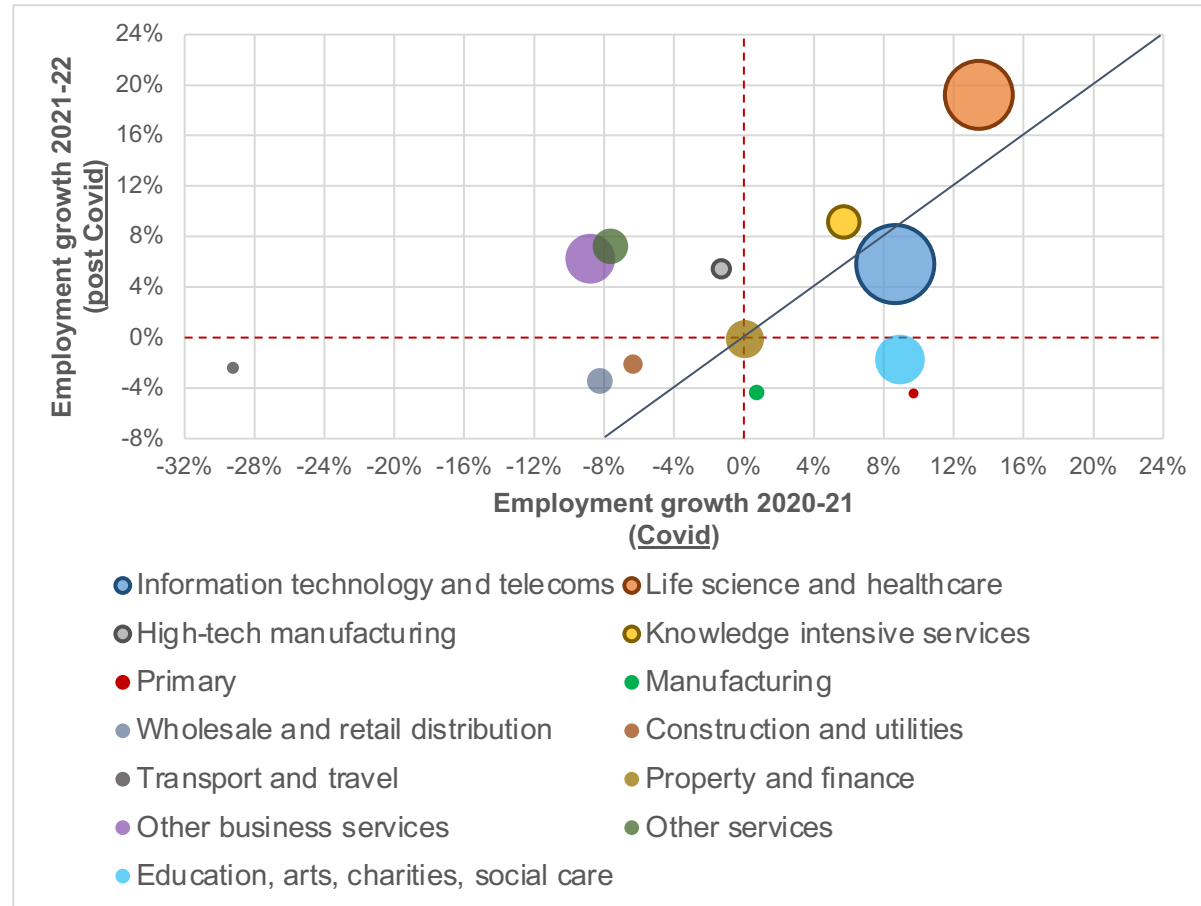
Figure A1 Employment growth by sector in Cambridge: 2020-21 (Covid) vs 2019-20 (pre Covid)



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.

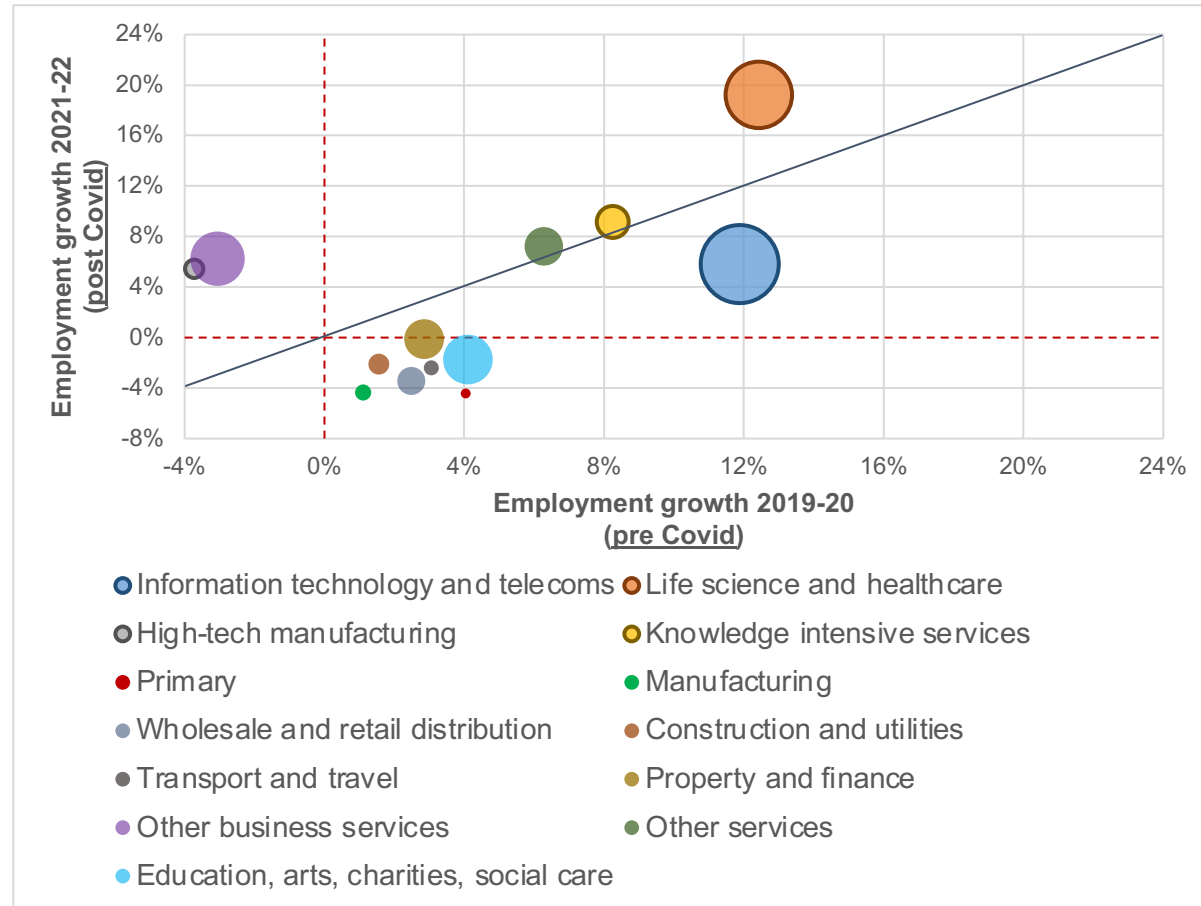
Figure A2 Employment growth by sector in Cambridge: 2021-22 (post Covid) vs 2020-21 (Covid)



Note: The size of each bubble is proportionate to the number of employees in 2020-21 on a continuous scale. Bubbles with an outline identify KI sectors.

Source: Cosh & Caselli, CBR.

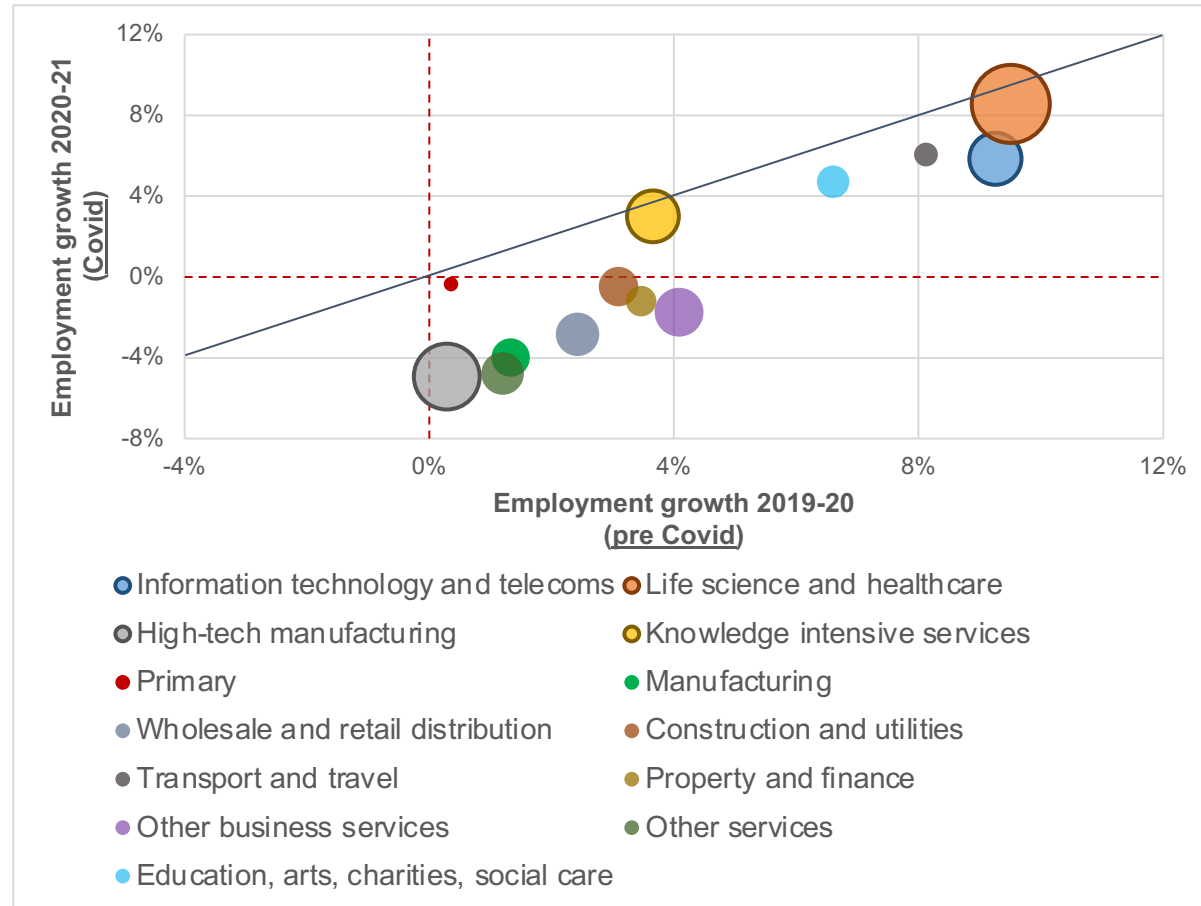
Figure A3 Employment growth by sector in Cambridge: 2021-22 (post Covid) vs 2019-20 (pre Covid)



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.

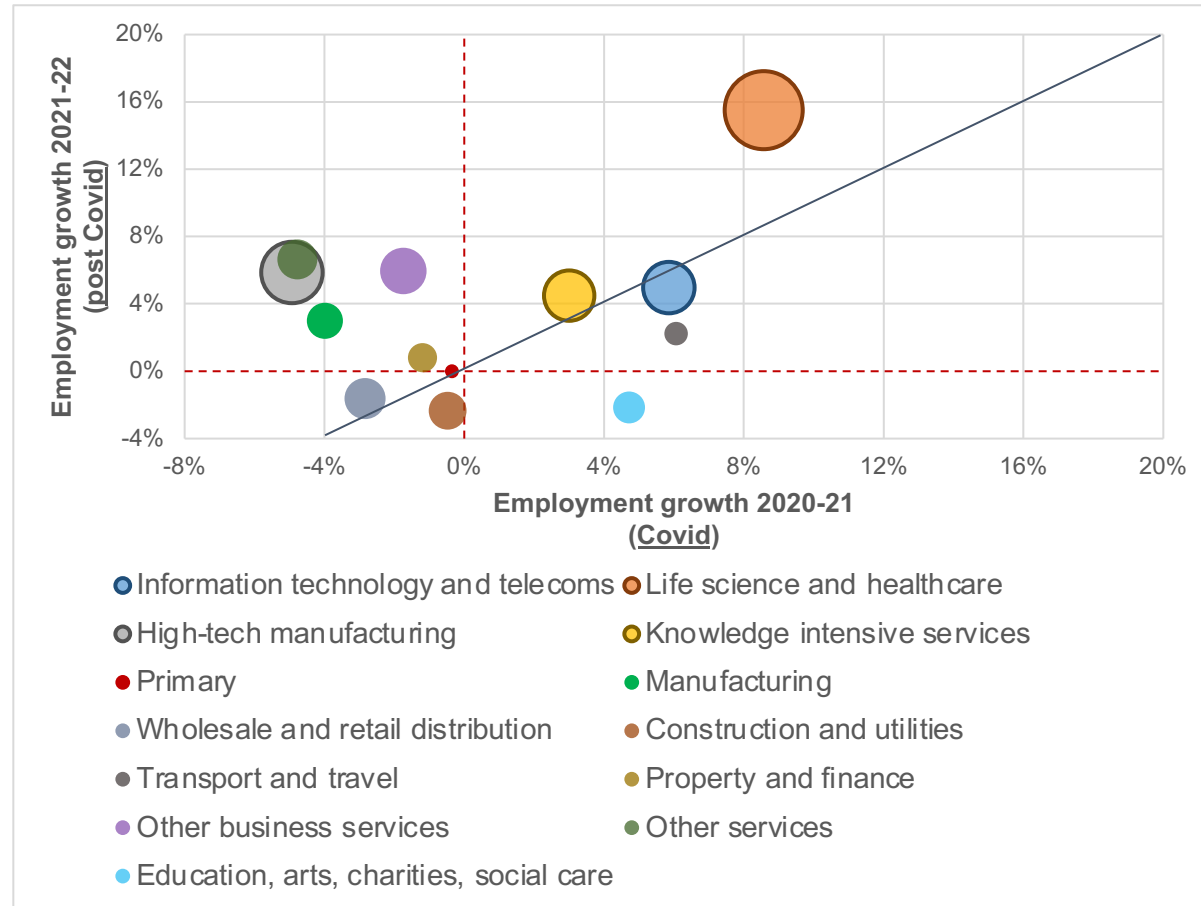
Figure A4 Employment growth by sector in South Cambridgeshire: 2020-21 (Covid) vs 2019-20 (pre Covid)



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.

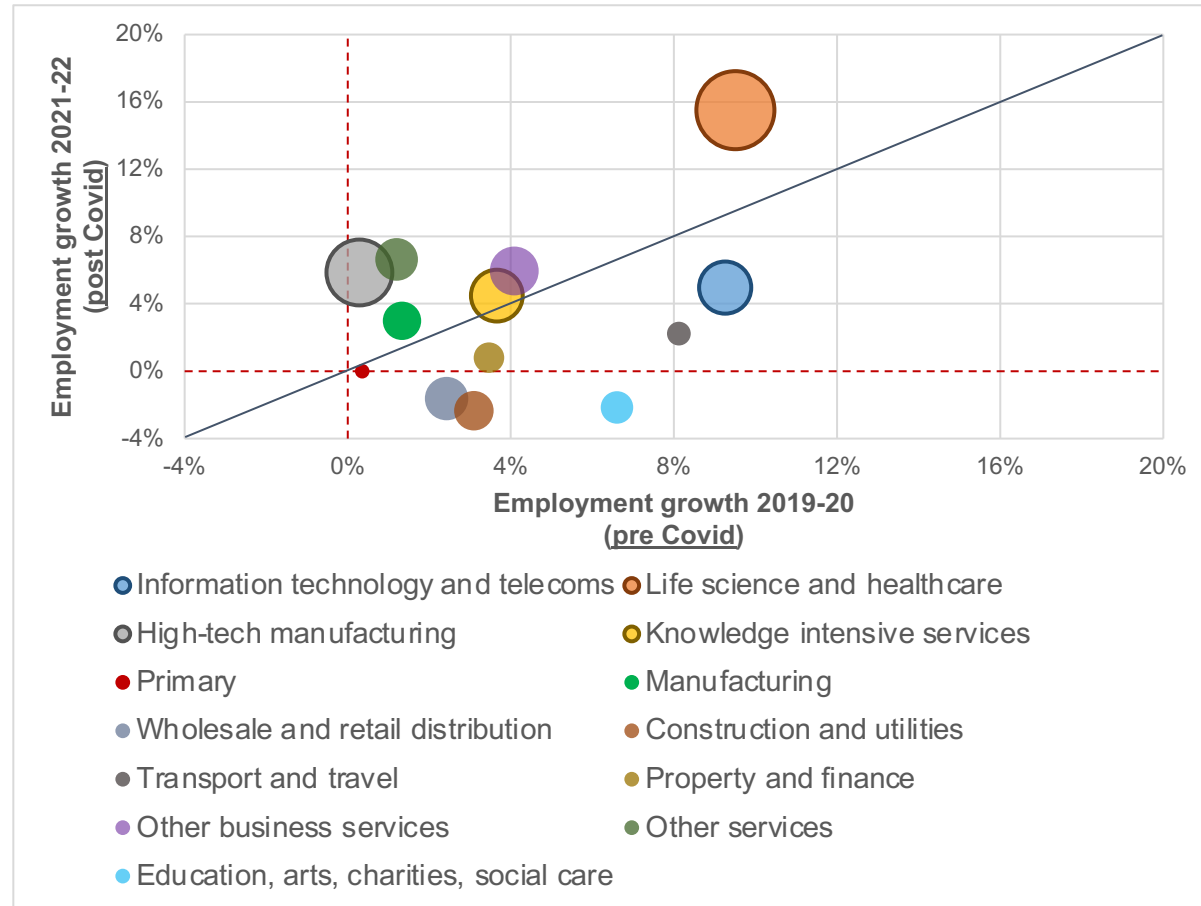
Figure A5 Employment growth by sector in South Cambridgeshire: 2021-22 (post Covid) vs 2020-21 (Covid)



Note: The size of each bubble is proportionate to the number of employees in 2020-21 on a continuous scale. Bubbles with an outline identify KI sectors.

Source: Cosh & Caselli, CBR.

Figure A6 Employment growth by sector in South Cambridgeshire: 2021-22 (post Covid) vs 2019-20 (pre Covid)



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.